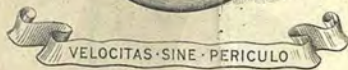
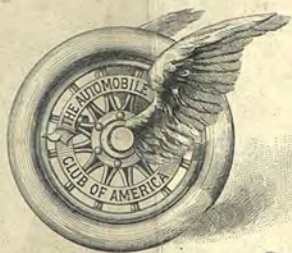




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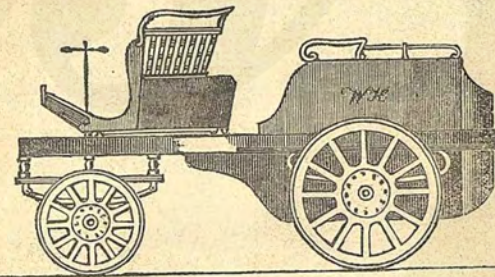
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NARRATIVE
OF
TWELVE YEARS' EXPERIMENTS,
(1824—1836,)
DEMONSTRATIVE
OF
THE PRACTICABILITY AND ADVANTAGE
OF EMPLOYING
STEAM-CARRIAGES
ON
COMMON ROADS:

WITH
Engravings and Descriptions

OF
THE DIFFERENT STEAM-CARRIAGES CONSTRUCTED BY THE AUTHOR,
HIS PATENT BOILER, WEDGE-WHEELS, AND OTHER INVENTIONS.



[STEAM PHAETON.]

BY WALTER HANCOCK, ENGINEER.

London:

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AND J. MANN, CORNHILL.

1838.

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* * At the moment of going to press, the writer has been informed that there are persons making attempts to improve both railway and common-road steamers, by adopting colorable imitations of his patent: should any ungenerous rival, however, so far degrade himself, the writer relies with confidence on the justice of the public. Whatever improvements may result from the mode of generating steam by means of flat chambers, exposing large thin sheets of water to the action of corresponding thin volumes of heated air, through flues formed by alternate chambers placed side by side—the writer claims this as the grand and principal feature of his invention; and should tortuous or colorable expedients to deprive him of the results of his long-continued and expensive exertions be attempted, he confidently hopes that the support of the public will in vain be sought in behalf of the authors of such proceedings.

INTRODUCTION.

THE last twelve years have produced a great revolution in popular opinion regarding the expediency of employing steam as a locomotive agent on common roads; and this chiefly through the persevering exertions of a few ardent individuals, unconnected with, and acting indeed in rivalry of each other, to demonstrate, experimentally, that it is at once the cheapest and most efficient agent that can be employed.

No doubt, the discussions which the subject has undergone in the public journals, and the Parliamentary inquiries of which it has been thought worthy, have helped to bring about this favourable change; but neither the warm advocacy of intelligent journalists, nor the deliberate recommendations of Select Parliamentary Committees, would have availed much, without those *ocular proofs* of the ease with which steam carriages can be employed on common roads, and of the many national benefits that would result from their universal adoption, which the practical men who have devoted their talents and energies to the business, have continued to furnish—day after day, and year after year—in spite of a thousand opposing difficulties—and under favour of the slenderest possible public encouragement.

Now that the public seem to have at last reached the point of taking up in good earnest this improvement in the means of internal communication—the “most important” in the opinion of the Select Parliamentary Committee of 1831, “that was ever introduced”*—it is but natural that those who have been the active instruments of its development, should be anxious to vindicate, each for himself, the share of praise which is his due. Neither, perhaps, is it more than what experience might lead us to expect, that those who have done the least, should make the most noise about their doings, and clamour most for public honours and rewards.

The author of these pages believes he should offend alike against truth and genuine modesty, were he to yield to any of the steam-carriage inventors who have appeared in his day, in a single particular of desert; he began earlier (with one abortive exception) and has persevered longer and more unceasingly than any of them; he was the first to run a steam carriage for hire on a common road, and is still the only person who has ventured in a steam vehicle to traverse the most crowded streets of the metropolis at the busiest periods of the day; he has built a greater number of steam carriages (if not better) than

* “These inquiries have led the Committee to believe that the substitution of inanimate for animate power in draught on common roads, is one of the most important improvements in the means of internal communication ever introduced. Its practicability they consider to have been fully established; its general adoption will take place more or less rapidly in proportion as the attention of scientific men shall be drawn by public encouragement to further improvement.”—*Report Select Parliamentary Committee of 1831.*

any one else, and has been thus enabled to try a greater variety of forms of construction, out of which to choose the best; and all that he has done, has been with his own means chiefly, while his rivals—the more prominent of them at least—have been largely assisted by others. He has never, however, been an obtrusive suitor for the favour of the public—neither pestered it with boastful pamphlets, nor with wild exaggerations; he has been all along more anxious that his works should speak for him, than he for them. His steam carriages running on the public roads, have been his best witnesses. He has been occasionally obliged to address the public journals, for the purpose of correcting erroneous statements that had gone abroad respecting particular performances of his carriages; but beyond that he has hitherto troubled the press but little.

Nor perhaps should he have been now inclined to depart from the quiet, yet earnest, course he has hitherto pursued, were it not that he sees himself in some danger of being thrust aside in public regard, through the extraordinary efforts made by others to arrogate to themselves all the praise, where they have at best had but a share of the merit.

That neither the public may be the dupes, nor he the victim of false pretensions, he has at length resolved on publishing a complete and faithful narrative of his steam carriage experiments from their commencement, twelve years ago to the present period, along with engravings and descriptions of all the carriages he has built, and of the particular mechanical improvements which have from time

to time been embodied therein, and have led to that perfect success, which his performances have so often and so publicly attested.

In making public these experiments, he must distinctly disclaim being actuated by any vindictive motives; he certainly feels none, and has but small cause to feel any; for much as his rivals have occupied the public attention with their vaunts, they have, as it happens, left him almost alone in the pursuit, and the field of locomotive enterprise as open as ever. His sole object is to do justice to himself, and justice to the cause in which he has been so long engaged, and the success of which he can never cease to have deeply at heart. He is anxious to make the whole truth known, in order that if it should be deemed expedient to promote, by any public grant, the general introduction of steam travelling on common roads, or to recompense in any way those who have been chiefly instrumental in advancing it thus far, the Government and the Legislature may have the means before them of judging, impartially, whose hands it would be best to strengthen for that purpose, and who, for their past exertions in this department of public improvement, have deserved most of their country.

Stratford, October, 1836.

NARRATIVE,

&c. &c.

THE attention of the author of this Narrative was first turned to the subject of steam locomotion on common roads, by the circumstance of his having invented, in 1824, a steam engine of a very novel description, which seemed to him peculiarly well adapted to the purpose. Metallic substances enter but in a very limited degree into the construction of this engine, and in the prime movers are almost entirely dispensed with; instead of iron or copper, an article is used which is not only much lighter, but free from all liability to fracture; and hence both a great reduction of weight and great capability of resisting tear and wear, two of the most important desiderata in a steam carriage intended for common roads. A front elevation of this engine is exhibited in Plate I. It has two flexible steam receivers (*f, f*), which are composed of several layers of canvas, firmly united together by coatings of dissolved caoutchouc or India rubber, and are thus enabled to resist a pressure of steam of sixty pounds upon the square inch. B is a four-way cock, which communicates with the steam receivers, and alter-

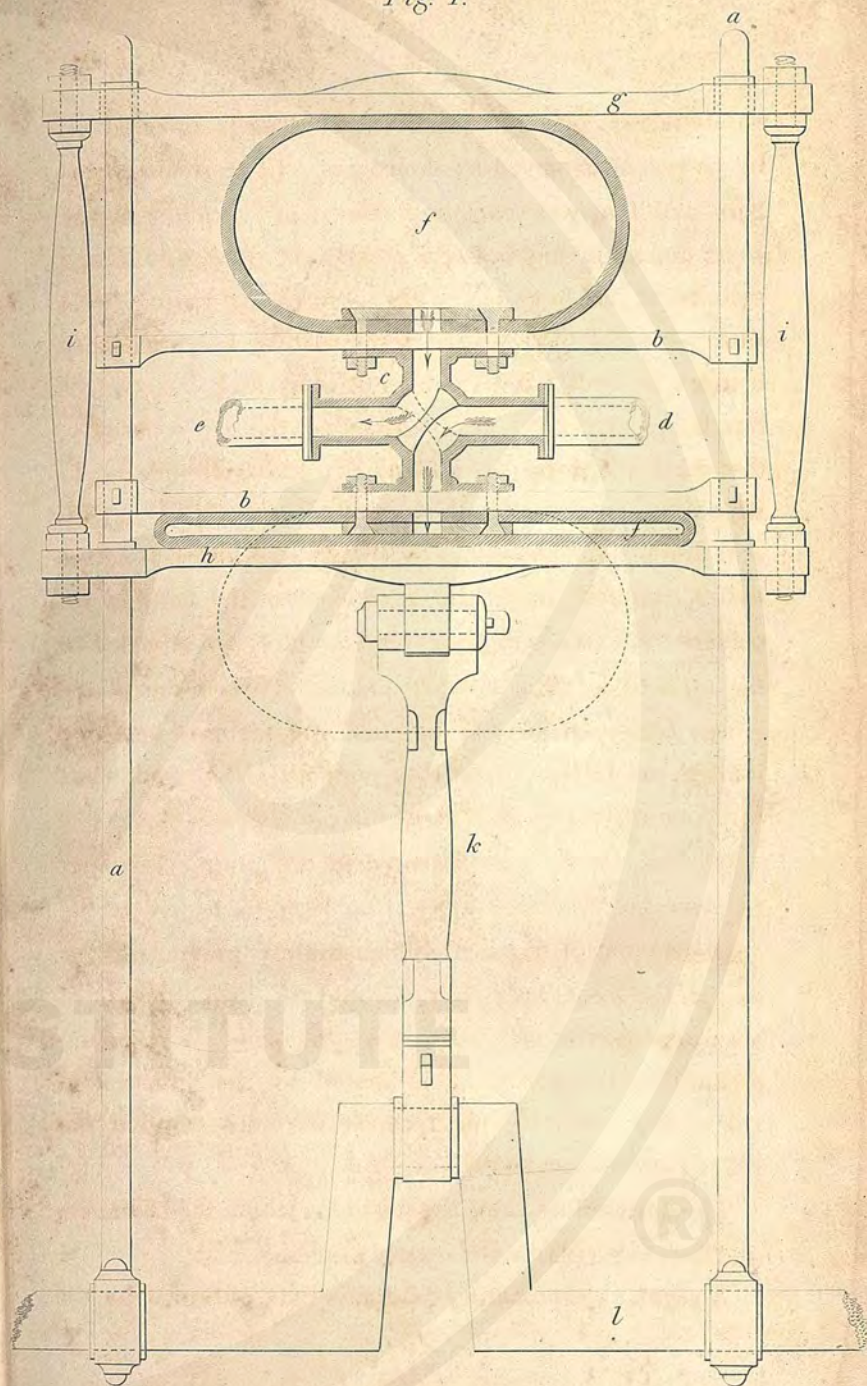
nately admits and shuts off the steam, as it is acted on by an eccentric moved by the engine. (The steam chambers and four-way cock are shown in section, that the communication may be more clearly seen): *a, a*, are two cylindrical guide rods, firmly secured at bottom to a timber-framing *C*, (not seen in the plate); *b, b*, stationary bearers or beds fixed to the rods, to which bearers the flexible receivers are firmly attached, the one superiorly, the other inferiorly; *g*, and *h*, two moveable plates, to which the receivers are also united, which pass freely up and down the guide rods *a, a*; *d*, the steam pipe from the boiler, through which the steam enters the flexible receivers; *e*, exit steam pipe (both *d*, and *e*, are attached to the same cock); *i, i*, are connexions between the plates *g*, and *h*, at each side; *k*, the crank rod, fastened by a free joint to the inferior moveable plate *h*; *l*, the crank shaft carrying a fly wheel (not shown in the engraving).

In the engine as represented in the plate, the upper receiver is filled with steam, and consequently at its extreme point of expansion, immediately previous to the exit of the steam by the pipe *e*, and the lower one is in a state of perfect collapse, but on the point of receiving steam from the pipe *d*, as intimated by the direction of the arrows. As the one receiver becomes emptied, the other is filled, and so on.

The dotted lines show the positions which the chambers and moveable plates alternately assume.

A regular reciprocating motion is thus obtained by the

Fig. 1.



alternate filling and discharging of the receivers, and is converted into a rotary motion by a crank in the usual way. An engine on this construction, of four-horse power, has been employed, at the author's manufactory at Stratford, for some time, and worked most satisfactorily. Its simplicity, comparative cheapness, and diminished friction (pistons, &c., forming no part of it), are its principal recommendations.

Anterior to the invention of this simple application of steam as a motive power, the writer had casually met with a print of a steam carriage, built by Messrs. Bramah for a Mr. Griffiths; and it now occurred to him that his new engine was well adapted to sustain the concussions to which such a machine must necessarily be exposed. A model of a steam carriage on this plan he accordingly constructed, which so far bore out his previous conception, as to determine him to commence the building of one on a larger scale. But after many trials and experiments, he found that the requisite degree of power for locomotive purposes could not be attained by means of his new engine.

When once the mind, however, has been much exercised towards a certain point, it is no easy matter to apply it in a different direction; at least, it proved so in this case. Although his experiments demonstrated the inefficiency of his new engine as a locomotive agent, they left on his mind a strong conviction, that the application of steam power to the propulsion of carriages on common roads

was decidedly a practical object. The great and essential desideratum seemed to him to be—a boiler that while it should generate steam rapidly, and produce a sufficient and continuous supply, should occupy but little space, be of small weight (comparatively speaking), harmless if it should burst, simple in its construction, and inexpensive in its manufacture; to construct such a boiler became now, therefore, his chief study. The first result, after many tryings and changings, was a boiler of the construction represented in Plate II. This boiler consisted of sixteen *horizontal* tubes or pipes, each connected by lesser tubes with those immediately above it and on either side, so that the contained water or steam might circulate through the entire series of tubes. The large horizontal tubes were each four and a half inches in diameter, clear of the metal, and four feet long, arranged as shown in fig. 1 of Plate II., where *a, a, a*, represent the ends of the horizontal tubes, and *b, b*, the smaller connecting tubes; *c*, is a steam box or chamber, to prevent any water that might be driven out of the tubes along with the steam from entering through the exit pipe into the cylinder; *d*, is the safety valve; *e*, pipe for supplying and replenishing the boiler; *f*, steam exit pipe; *p, p*, pipes which convey the steam from the boiler, first into the steam box or chamber *c*, and then to the working cylinder; *g*, one of the lower horizontal tubes which conveys the water carried up by the force of the steam back into the boiler.

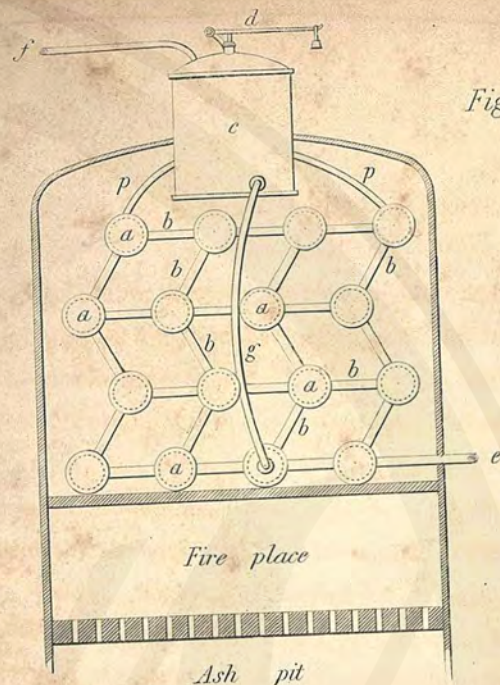


Fig. 2.

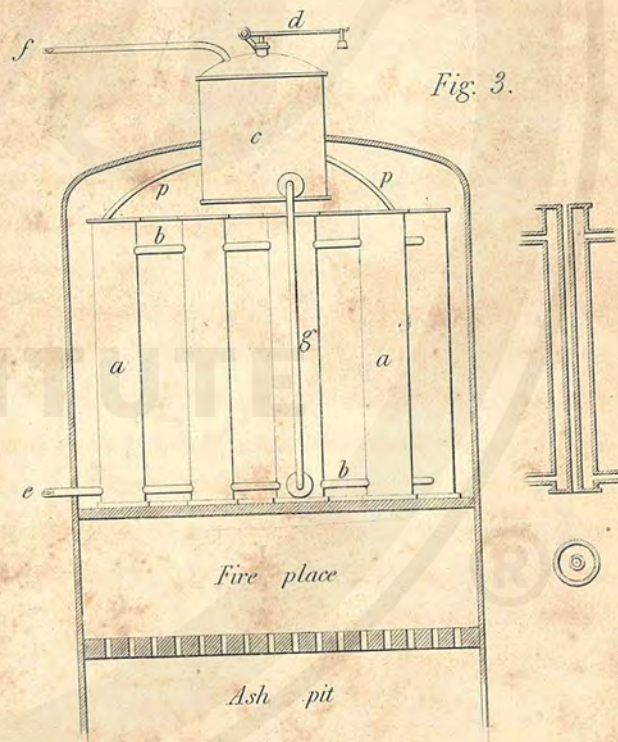


Fig. 3.

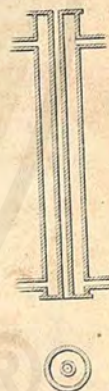


Fig. 4.

For the particular kind of tubes of which this boiler was constructed, the writer obtained a patent in 1825.

The reader will not fail to perceive that by this arrangement a very extensive surface is exposed to the influence of the fire, while a perfect circulation of the water within the tubes is established throughout the entire series; and consequently, that a very rapid generation of steam must be the result. The steam-box appendage, however, the writer considered to be extremely objectionable, both on account of the considerable space which it occupied; and of its lessening that security from explosion, which the employment of numerous tubes of small dimensions seemed to promise. The effect of a similar arrangement of tubes, but disposed *vertically*, was, therefore, next tried, as shown in fig. 3, Plate II.

This change in the position of the tubes was found to accelerate the generation and separation of steam, but there was still water enough forced out of the tubes along with the steam to make it impossible to dispense with the steam box. To get rid of this dangerous and inconvenient adjunct, now formed the chief object of the writer's attention. Many fruitless endeavours to accomplish this end followed in quick succession. One device better worth notice, perhaps, than the others, consisted in enlarging the heating surface, by passing a flue, two inches in diameter, up the centre of each of the four and a half inch generating tubes, as shown in fig. 4, Plate II., where two sections, one vertical, the other transverse, are given

of one of these tubes. The quantity of steam generated in a given time was much increased by this means, but the multiplication of the parts was objectionable, as rendering their connexion both complicated and expensive; the number of joints and rivets afforded, moreover, but little security in regard to leakage.

The unsatisfactory result of every attempt to produce a safe and efficient boiler, on the tubular principle, led the writer to consider of some arrangement by which the water, exposed to the action of the fire, might be less divided, and yet extended over a large surface; and the plan now occurred to him, which he has since successfully followed in the several steam carriages he has built, and applicable also to a variety of other purposes. For this invention, which he has denominated the chamber boiler, he obtained a patent in 1827.

This boiler (of which a front view is given at fig. 5, and plan at fig. 6, Plate III.) possesses all the advantages which the writer had sought for in tubular boilers, without their defects. The front view, fig. 5, it will be observed, is partly shown in section, to give a better idea of the internal construction; the shaded part from the bottom, more than half way up, represents the usual proportion of water under the process of evaporation.

This boiler is composed of a series of distinct thin parallel chambers, or compartments, *cc*, placed side by side in a vertical position: all these chambers are of one width, extending across the whole breadth of the fire-

Fig. 5.

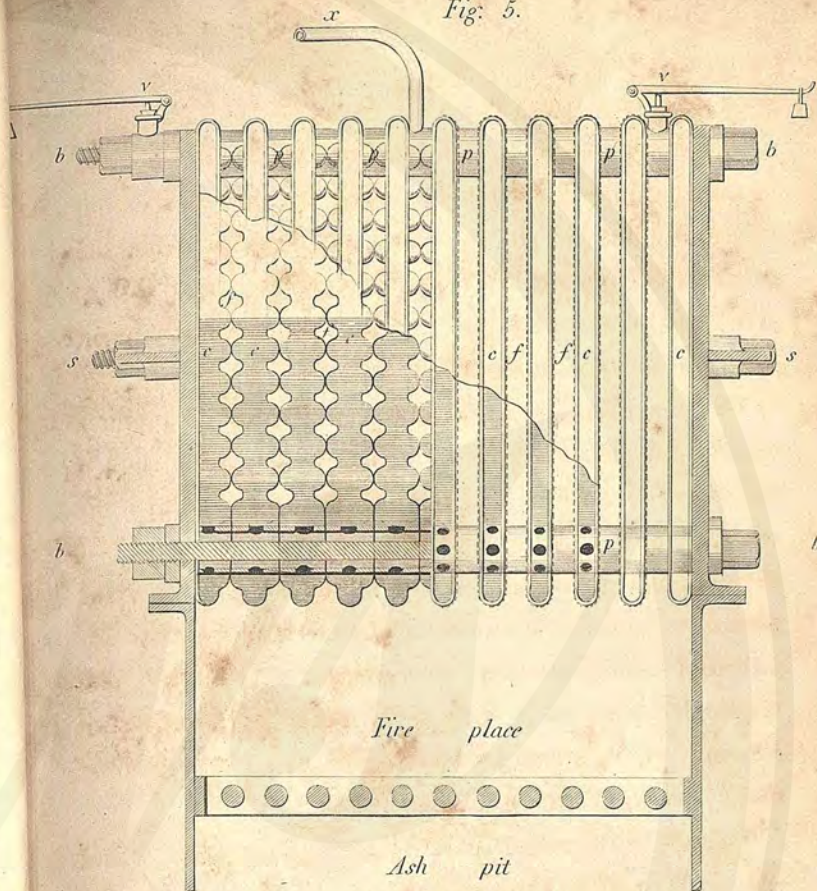
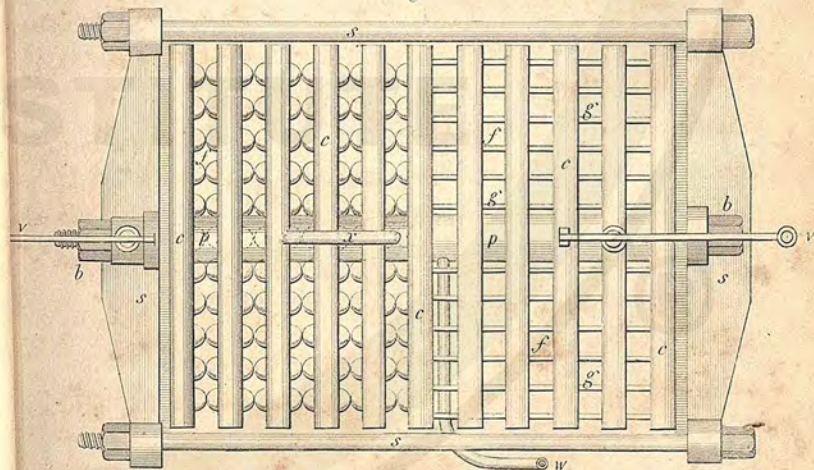


Fig. 6.



place beneath them, with sufficient spaces, *ff*, between the chambers for the play of the fire upwards.

The chambers are connected throughout, near to the top and bottom, as shown at *pp*; and each chamber is prevented from distending, and thereby choking up the fire-ways or flues, by vertical bars *gg*, as shown on the right-hand half of the boiler, or by hemispherical or other formed embossings or projections, made on the sides of the chambers, and meeting each other in juxta-position, as shown on the left-hand half of the boiler, in figs. 5 and 6.

A boiler constructed on the embossed plan is lighter, and a greater surface is obtained than in one in which divisional bars are used.

About four or five years ago, the writer tried various forms of projection in the sides of the chambers; some of them were channelled or corrugated the whole length, so as to form straight flues, and others were of irregular forms, to cause the heated air in its ascent to impinge on their lower surfaces, with a variety of other similar contrivances; but after giving the best consideration to all the forms, he was upon the whole induced to adhere to the hemispherical embossing, conceiving that form to possess the greatest advantages, although he is still of opinion, that the use of vertical bars to prevent the distension of the chambers, and to form the flues, will have advantages in some cases, and may hereafter be recurred to.

The hemispherical projections on the sides of the chambers the writer has occasionally employed almost from the

first; but the corrugated form was suggested to him accidentally, in a boiler composed of plain-sided chambers, with vertical bars between, which (through inattention to the due supply of water,) being allowed to get almost red hot, instead of maintaining the shape shown in the horizontal section of two chambers at fig. 1, Plate IV., the metal became so yielding by the heat, that the internal pressure caused them to assume the form shown at fig. 2: by simply taking out the bars, and bringing the protruded parts in contact, the open spaces would, of course, allow a sufficient passage for the fire upwards, without the divisional bars or gratings *g g*: such is the arrangement of two chambers shown at fig. 3.

A view of part of one of these corrugated chambers is shown at fig. 4, and a similar view of a chamber hemispherically embossed at fig. 5, same plate; in each of which the perforated rings, through which the bolts *b* pass, may be observed, one of which rings is shown more clearly at fig. 6.

Fig. 7, is a horizontal section, corresponding with the plan, fig. 6, Plate III., the darkly-shaded parts showing the interior of the chambers.

The whole boiler (whatever the form of chamber) is braced together by bolts *b b*, and stays *s s*, figs. 5 and 6, Plate III., and fig. 7, Plate IV.

v v, the safety valves; *w*, the feed-pipe conveying in water; *x*, the steam exit-pipe.

The connexions *p p*, through which the bolts pass, have

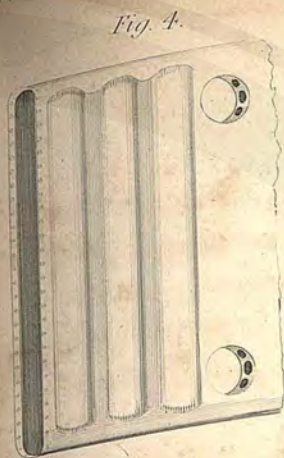


Fig. 4.



Fig. 5.

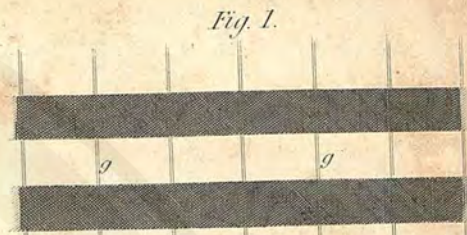


Fig. 1.



Fig. 2.



Fig. 3.

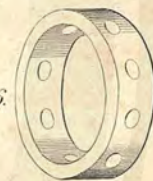


Fig. 6.

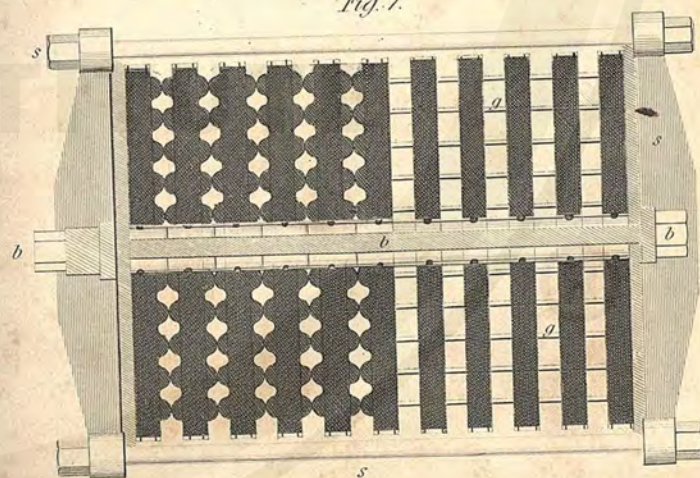


Fig. 7.

been named; but it may be proper to observe, that such connexion is composed of a series of rings so much larger than the bolts *bb*, as to allow steam in the top, or water in the bottom line of connexion, to pass freely from one side of the boiler to the other, through the perforated rings (shown at fig. 6, Plate IV.), one of which is contained in each chamber, at each bolt or line of connexion; and where the gratings *gg* are used, a ring of equal diameter, but imperforated, is also used between each chamber.

The form of these chambers, and the immediate connexion of them with each other, are such as to ensure an equal height of water throughout the series, by the perfect and uninterrupted range or flow of both water and steam through the openings provided for the bolts; the steam is rapidly generated, and there is no tendency in the water to rise above its average level, and, thereby mixing with the steam, escape with it; therefore, to this boiler no separator is either required or used, nor is there any vessel besides the chambers to contain steam, so that any dangerous accumulation of it is impossible.

The perfect safety of this boiler arises from the ample subdivision of its parts and power, and the weakness of the chambers, as compared with the bolts and braces by which the whole series is combined: the utmost that can happen is the rupture of one chamber, and this with a force equal to only one-fifteenth or one-twentieth of the whole; and this rupture would release all: an explosion of the whole is impossible, because the bolts and braces

by which all the chambers are held together, are of such size and strength, as to be capable of resisting a pressure twenty times greater than the chambers are calculated to sustain.

In tubular boilers there is a confinement or throttling in the tubes, so that the steam is not freely disengaged, but goes off in gusts or starts, agitating or displacing the water, part of which it carries off with it; but in the chambers of this boiler, steam is formed and separated in a more uniform manner, the whole surface of heated water giving out its volume of steam freely, whilst the body of water is in a state of comparative quiescence.

Mr. John Farey, in his evidence before the Select Committee of the House of Commons on steam carriages, at page 42, says—"Mr. Hancock has taken the middle course in subdividing the water in his boiler, having all that can be required for safety; and the weight, I believe, on the whole to be less than that of any other boiler, which will produce the same power of steam: for owing to the freedom with which the steam can get away in bubbles from the water, without carrying the water with it, the surface of the heated metal is never left without water. Hence a greater effect of boiling is attained from a given surface of metal and body of contained water, and that with a much greater durability of the metal plates, than I think will ever be obtained with small tubes."

The writer believes this boiler to be superior to any that has yet been produced, whether for steam carriages on com-

mon roads, or for railways or steam-boats, and in many cases for stationary engines. They are lighter, take up less room, economise fuel, and are at once powerful and safe. They are also less expensive of renewal and repair. For places difficult of access they are particularly suited, as they may be taken in parts, so as to be carried by men or mules over mountains or in mining operations, and put together with facility by persons possessing little skill, as is the case also with repairs; the substitution of a new chamber for a defective one is neither difficult nor tedious.

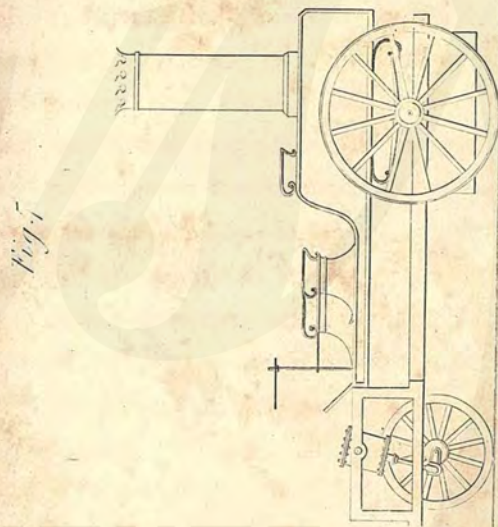
These facilities apply equally to sea-going vessels; a spare boiler or spare chambers may be stowed in a small compass, and the means always at hand of putting in a new boiler, or replacing a chamber in the midst of the ocean at any time with comparative ease.

Being satisfied that in this boiler he had at length attained the prime requisites of a boiler for locomotive purposes, namely, great steam producing power within a small compass, and entire safety from explosion; the attention of the writer was next directed to a better construction and arrangement of the propelling machinery. Laying aside his propelling flexible engines, which he had despaired of rendering available, he determined to make those of the ordinary construction, subsequent to his purpose. His first attempt resulted in the carriage, represented in Plate V. This vehicle was supported on three wheels, and the power applied from a pair of vibrating or trunnion engines, fixed upon the double-

crank axle of the *fore wheel*, as shown in the engraving. The direct application of the power to the crank by this method gave encouraging hopes of success; and the arrangement had this further recommendation, that it admitted great facility in steering. After a variety of trials and alterations, however, it was found attended with so many practical drawbacks, that it was finally abandoned. The writer devoted much time to the construction of a propelling apparatus for this carriage, under the idea that the friction of the wheels would not be sufficient; but experience proved the utter uselessness of any such adjunct, and this first carriage was propelled by the fore wheel alone, which was found to have quite sufficient bite upon the road.

Defective as this carriage was, however, it ran many hundred miles in experimental trips from the writer's manufactory at Stratford, sometimes to Epping Forest, at others to Paddington, and frequently to Whitechapel. On one occasion it ran to Hounslow, and on another to Croydon. In every instance it accomplished the task assigned to it, and returned to Stratford on the same day on which it set out.

Subsequently, this carriage went from Stratford, through Pentonville, to Turnham Green, over Hammersmith Bridge, and thence to Fulham. In that neighbourhood it remained several days, and made a number of excursions in different directions, for the gratification of some of the writer's friends, and others who had expressed a desire to witness its performance. In the course of these

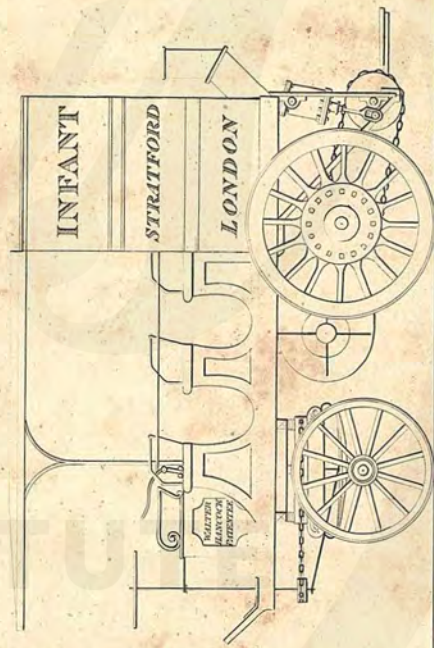


early experimental trips, the writer experienced the usual fate of all who run counter to long standing usages and prejudices; namely, to be ridiculed by the many, encouraged by but a very few, and fiercely opposed by all whose personal interests were threatened with injury by his proceedings. The popular mind had not yet become sufficiently familiarised to the notion of dispensing with horses in common road travelling. The newspapers had made mention about this time of some *private* trials made by Mr. Goldsworthy Gurney, in a steam drag of his construction; but hitherto there had been no *public* exhibition of any thing of the sort. All had heard something of a scheme for riding by steam, but most persons with much the same degree of incredulity that we now listen to tales of journeying in the air. The writer was the first, or with the first, to offer, to all who chose to come and see, ocular demonstration of the practicability of the thing—to exhibit in the face of day, and on the public highways, a carriage propelled by steam. But though this was evidence not to be gainsayed, it was not a little mortifying to see how the force of it was evaded. Some would admit frankly that the carriage worked well; but expressed as frankly their decided conviction, that it would never answer for a continuance. Others would depreciate its performances, exaggerate its defects, and exult, as it were, in every instance of accidental stoppage. If requiring temporary accommodation, through the failure of some part of the machinery,—a circumstance naturally enough

of frequent occurrence in this early period of his locomotive career, he usually experienced the reverse of kind or considerate treatment. Exorbitant charges were made for the most trifling services, and important facilities withheld, which it would have cost nothing to afford. If, again, he happened to be temporarily detained on the road from want of water, or from any other cause, he was assailed with hootings, yellings, hissings, and sometimes even with the grossest abuse. It is true, this latter description of treatment proceeded chiefly from the rabble; but he regrets being obliged to add, not exclusively so. Great obstruction was also continually experienced on those occasions from waggons, carts, coaches, vans, trucks, horsemen, and pedestrians, pressing so close on the carriage, as sometimes to preclude the possibility of moving. Altogether the writer's situation was in general any thing but agreeable; often most irksome and irritating, sometimes very hazardous.

No ways disheartened by any of these untoward circumstances, the writer persevered in his experiments; and as the novelty of such exhibitions wore off, so also did the excitement and the opposition which they at first produced. Clearer-sighted views and kindlier feelings began gradually to prevail; more serious convictions of the practicability and advantages of substituting inanimate for animate power in common road travelling; and greater readiness to promote, by word and deed, the success of the project.

Fig. 8.



Having clearly ascertained the disadvantage of applying the power directly to the crank, as before described, the writer next placed the engines quite behind, and at the same time altered the form of the carriage, so as to make it more nearly resemble an ordinary horse carriage. These new arrangements are represented in Plate VI. Much thought and labour were spent upon them, and many alterations suggested and tried from time to time. But the difficulty of keeping the machinery clean, owing to its proximity to the fire-place, as well as to the road, was found in practice to be so strong an objection, that this form of carriage had also to be abandoned.

With this carriage, however, defective as it was, one point of the greatest importance in common road steam travelling was most satisfactorily determined. The possibility of a steam carriage ascending steep hills had been doubted and questioned by many; and to remove, if possible, all scepticism on the subject, the writer fixed a day for taking his carriage up Pentonville-hill, which has a rise of 1 in 18 to 20, and invited a numerous party to witness the experiment. A severe frost succeeding a shower of sleet, had completely glazed the road, so that horses could scarcely keep their footing. The trial was made, therefore, under the most unfavourable circumstances possible; so much so, that, confident as the writer felt in the powers of his engine, his heart inclined to fail him. The carriage, however, did its duty nobly.

Without the aid of propellers, or any other such appendage, (then generally thought necessary even on a level road,) the hill was ascended at considerable speed, and its summit successfully attained, while his competitors with their horses were yet but a little way from the bottom of the hill.

The feelings of the writer at that moment fully compensated him for all his previous annoyances. He had dissipated the doubts of friends, and disappointed the anticipations of enemies; he had conquered difficulties before deemed insurmountable, and placed the power of steam, in comparison with that of horses, in the most advantageous position. He enjoyed, therefore, the gratifying sensation of having effected a proud triumph, and returned the hearty congratulations of hundreds of spectators in the good old English fashion of proclaiming victory.

The writer was stimulated by these experiments to fresh ardour. Assured that he was approaching towards complete success, he remodelled the entire arrangement of the machinery. The trunnion engines were laid aside, and fixed ones substituted; and such other alterations and improvements adopted, as had suggested themselves during actual work upon the road. The carriage, as thus reconstructed, was called, in reference to the infancy of the undertaking, the "INFANT," and is represented at Plate VII.

The bulk of the machinery, it will be observed, is fixed

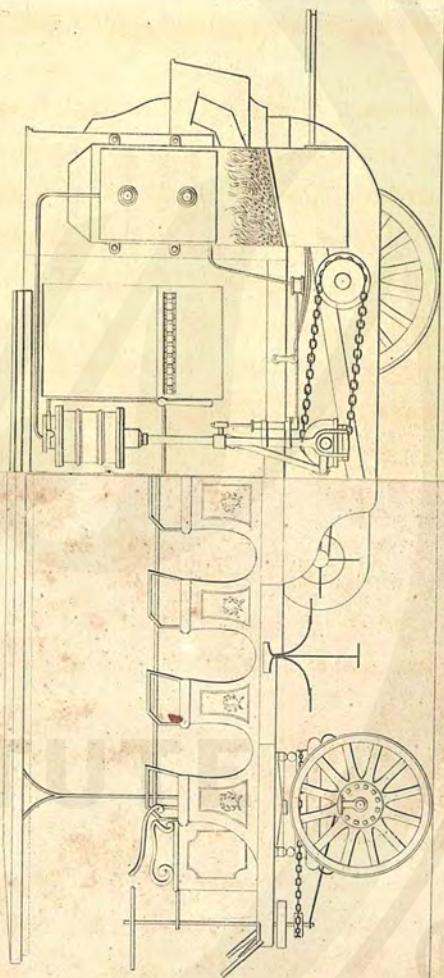


Fig. 9.

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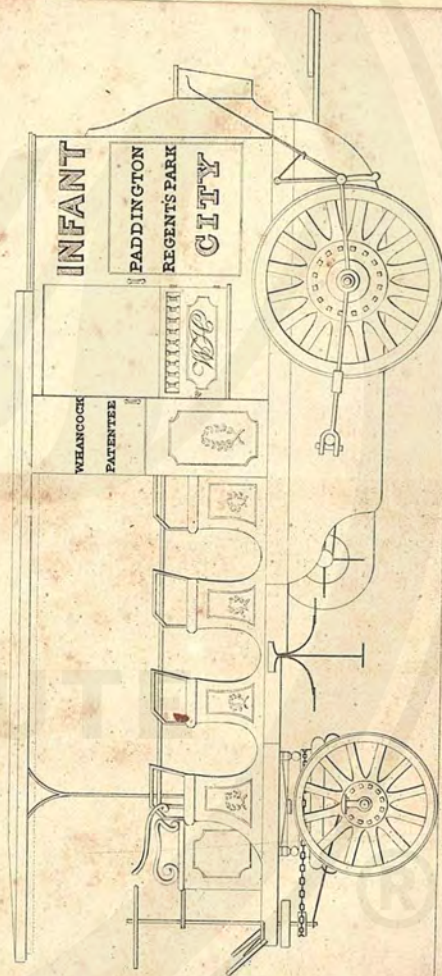


Fig. 9.

in the rear of the carriage, or body part appropriated to the passengers. There is, first, the boiler, with the fire-place under it. Second, a space, between the boiler and passengers, for the engines and the engineer who accompanies the carriage, whence he has the whole of the machinery within his reach, and open to his view; and is thus enabled, during the progress of the carriage, to lubricate the parts requiring oil—attend to the gauge cocks, and regulate the supply of water to the boiler, as well as the degree of blast from the blower—to increase or diminish the generation of steam, according to the various states of the road, and the wants of the engines,—and generally to give his immediate attention to any portion of the machinery requiring adjustment. And, third, a pair of inverted fixed engines working vertically on a crank shaft.

The steering apparatus is at the extreme front of the carriage.

The whole is on one framing, supported by four common coach springs, on the axle of each wheel.

On the crank shaft and on the axle of the hind wheels are fixed indented pulleys, around which an endless chain passes, which communicates the power and rotary motion of the crank shaft to the hind axle, and propelling wheels, and thereby effects the progressive motion of the whole carriage. When it is desired to back the carriage, the action of the engines is merely reversed, which can be effected almost instantly. The advantages realised by

the improved arrangement shown in the "Infant" are numerous. The engines are completely protected from the dirt and dust of the roads; are at all times in sight of the engineer, and every part of them is within his reach. The passengers, engines, boiler, fire-place, &c., are all equally relieved from concussion, by complete suspension on springs, similar to a stage coach; the chains allowing full play to the springs, and a vibrating stay from the crank to the axle preventing the pull of the chains, and securing a uniform distance between the axle and crank shaft. By the employment, too, of a distinct crank shaft, the axletree, which has to carry all the weight, is not only preserved straight, and consequently of the best form to sustain that weight, but it is also relieved from the strain which it has to bear, where it forms both crank and axle, and has to propel the carriage, and carry the weight as well. The "Infant" thus fitted up, was tried in every possible way, during several months, and proved so perfectly efficient, that in all the carriages which the writer has since constructed, he has adhered to the same general plan of arrangement, with the exception of some modifications in the details, which more extended experience has suggested.

Actual practice on the road, has been from the first the grand test to which the writer has subjected all his ideas of improvement—the entire novelty of the pursuit in which he was engaged, precluded him from obtaining correct data in any other way. Nor were the various experiments which

he instituted, or the necessary perseverance with which he prosecuted them, without many beneficial effects; for as he constantly accompanied his carriage himself, he rarely took a trip that some improvement in minor points did not, in the course of it, suggest itself, or become obvious on inspection of the working parts of the machinery, after the completion of the journey.

But though the general arrangement of the "Infant" was such as to leave but little occasion for alteration, there were yet several important points that remained to be cleared up, such as the best proportions and size for the chambers of the boiler—the best form for each separate portion of the machinery—the proper position, size, and strength of the various parts, and also the most suitable kind of materials, so as to avoid, as much as possible, superfluous weight.

Experiments to ascertain these various points occupied the writer till the beginning of the year 1831, so that full six years had elapsed from the commencement of his locomotive pursuits, before the "Infant" was produced in a state somewhat to the satisfaction of his own mind.

The trials made with the "Infant" during this probationary period, comprise a total of many hundred miles, all made upon the high roads, near London—principally in the vicinity of the writer's manufactory at Stratford. He has been censured (strange as it may seem) for not pursuing his experiments in more retired situations—but he had no motive for shrinking from public observation. Vehicles

of every description being in constant motion on the road from Bow to Whitechapel, afforded him an excellent opportunity of obtaining practical experience, under every circumstance of difficulty, in which a steam-carriage might be expected to be placed; and this consideration alone was sufficient to determine him to give the most frequented road the preference.

In February, 1831, he commenced running the "Infant" regularly for hire on the road between Stratford and London, not, certainly, with an anticipation of profit, although the writer's outlay at this time, as the reader may imagine, had been considerable, but as a means of dissipating any remaining prejudices, and establishing a favourable judgment in the public mind as to the practicability of steam travelling on common roads. It is an undeniable fact, and a source of proud satisfaction to the writer, that a steam-carriage of his construction was the first that ever plied for hire on a common road, and that he achieved this triumph single-handed.

Of its performances at this time, Mr. John Farey, the eminent engineer, made afterwards to a Committee of the House of Commons the following highly-favourable report:—

"Were you ever in Mr. Hancock's carriage when travelling?" "Yes, I have ridden on it. I have examined all his present machinery in detail, and think it very judiciously planned."

"Did you find that it annoyed passengers?" "I found

riding in Mr. Hancock's carriage to be exceedingly like travelling in a stage-coach."

"Did you observe any horses or carriage passing his carriage?" "Yes; there is so much curiosity excited by the novelty of a steam coach in motion, that all the horses on the road are drawn up to get a sight of it, and many are turned to follow it. I have observed that some horses take very little notice of the steam coach, others are a little startled; but I never saw any difficulty which the reins could not control with the greatest ease."

Again:—

"Had you occasion to turn any sharp corners when in Mr. Hancock's carriage?" "Yes, many; the yard of his premises is exceedingly narrow and inconvenient to turn into and out from; but it is done with ease by the steam coach: the same place would not do at all for a coach and four horses to put up at."

"Going at what speed, can you turn round a sharp corner without any danger?" "I do not remember turning with any considerable speed, nor should it be attempted with any carriage if it can be avoided; and there can be no pretence or necessity for going quick when turning a steam coach, as its power is quite controllable, in which respect it has a great advantage over a common carriage. In a steam-carriage, the conductor has such a perfect control of the power, that he can never fail in checking the speed at the moment of turning. I observed

that Mr. Hancock's carriage is steered with the greatest ease, and will turn round in a very short space. I have seen him turn round without backing the carriage at all, although he was in the middle of the road when he began to turn."

"Have you seen Mr. Hancock's last improvement?"

"Yes; I consider Mr. Hancock's boiler to be much better for steam coaches than any other which has been proposed or tried."

"If that boiler were to explode, it is understood that there would be no danger at all?" "It is very difficult to foresee that; at the same time, the risk of explosion in Mr. Hancock's boiler is certainly very much less than in the locomotive boilers which are in constant use, on a large scale, on railways, and where we have proof that the extent of the danger is very small."

The following extract from the evidence given by the writer himself on the same occasion, will show that the danger alluded to at the close of the preceding extract from Mr. Farey's evidence is quite imaginary.

"Suppose one of your boilers were to burst, what would happen?" "I will give the Committee an instance. I was travelling about nine miles an hour at the time; the boiler was the twenty-fourth part of an inch thick. I was working then at 100lbs. on the square inch, with thirteen persons on the vehicle, and all of a sudden the carriage stopped—for what purpose I was at a loss to know. I got

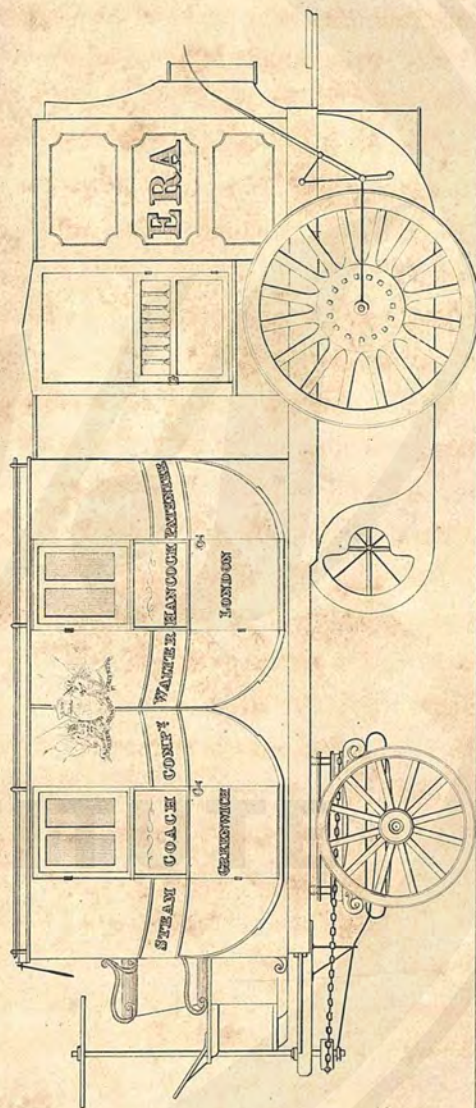


Fig. 10.

from my steerage seat, and went to the engineer to ask him what was the reason he had stopped the steam? He told me he had not stopped the carriage; and he immediately applied his hand to the gauge cocks, and found there was neither steam nor water in the boiler. I immediately knew that the boiler had burst. They (the passengers) said they did not know it, as they heard no noise; I told them I did not mean they should know it. I said that I would show them it was so; and I took the boiler from the carriage and unscrewed it, and there were four large holes that I could put my hand into. This occurred from the chambers being too thin; all the water was driven out of the boiler, and yet there was no injury to any person; there was not one person that heard any report; there was no steam, and there were no symptoms in any way that the machine itself had burst."

The next carriage which the writer built was the "ERA," represented in Plate VIII. It was completed in the year 1832. It was ordered by an association of persons styled "The London and Brighton Steam-Carriage Company," and was intended to ply between London and Greenwich. This carriage performed one journey to Windsor shortly after its completion, since which it has only made some trial trips, the Company being as yet undecided as to their future movements.

The writer has now arrived at a period in the history of his locomotive career, when it became rather disagreeably chequered by an association with other individuals. In

the latter end of 1831, a scheme was set on foot for forming a company to run steam-carriages from Paddington to the City; and the writer was applied to for data upon which the estimates of such an undertaking might be formed. A meeting of the promoters of this scheme took place on the 2nd of February, 1832, to inquire into the best means of carrying it into effect. With these proceedings the writer had no connexion further than having acceded to a request to run the "Infant" over the proposed line, for the satisfaction of those who might be disposed to embark in the undertaking.

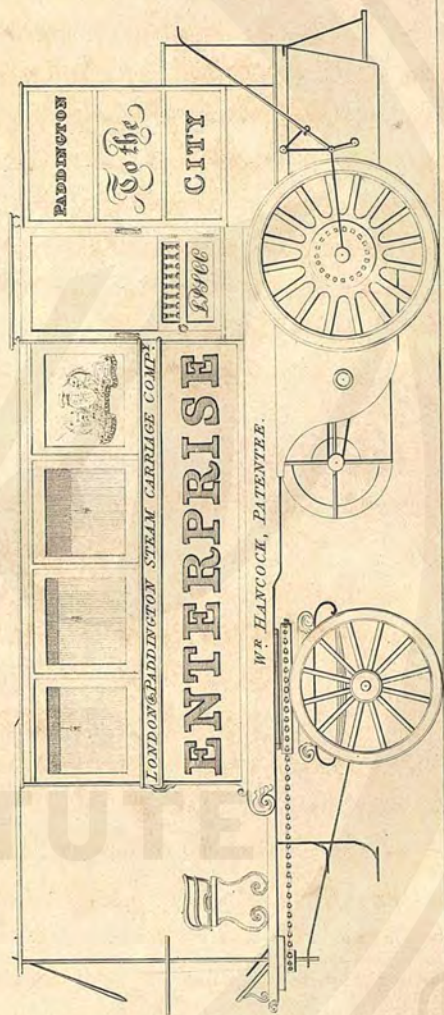
This journey was performed on the 7th of the same month, and, in consequence of the favourable opinion excited by it, another meeting was held on the 9th, which was followed by several others, and at length the company was formed, under the denomination of the "London and Paddington Steam-Carriage Company."

An arrangement was subsequently entered into between the writer and the Company for the building of one carriage, and, in the event of its performing a specified duty, the order was to be extended to two other carriages on a similar construction.

The carriage built in conformity with this order was named the "ENTERPRISE:" a representation of it is given at Plate IX.

It was on the occasion of working the engines of this carriage during its construction, that the only serious accident occurred throughout the whole series of the writer's

Fig. II.



experiments; and this, it will be seen from the verdict of the jury and the remarks of the coroner upon the inquest, did not happen from any defect in the principle upon which the boiler was constructed, nor in any part of the machine itself—it was altogether the sufferer's own fault, his, it may be said, criminal carelessness. The following report of the inquest is from the *Kent and Essex Mercury*, of January 1st, 1833:—

“ On Saturday, the 22nd December, an inquest was held by the Coroner of Essex, at the Harrow Inn, Stratford, on the body of Richard Outridge, an engineer, in the employment of Mr. W. Hancock, of Stratford, who met his death on Thursday, under the following circumstances:— George Bish, foreman to Mr. Hancock, deposed, that the deceased, who had been some months in the employ of Mr. Hancock, was, with other workmen, putting the machinery of a new steam-coach in action on the premises, in order to try its performances. The witness described the peculiar construction of Mr. Hancock's chamber boilers, and deposed that there were two safety-valves on the boilers in question, one of which he had himself weighted to the pressure of one hundred pounds upon the square inch, the deceased undertaking to adjust the one on the other side of the boiler to the same pressure. The witness then left the carriage for a short time, and on his return discovered that the steam was blowing off very powerfully from the valve which he (the witness) had adjusted, and that the sides of the boiler were rapidly distending. Witness

called to the deceased (who was standing in the engine room of the coach, with his back to the boiler, examining the working of the engines,) to throw off the blower, by which means the fire would have nearly ceased its action, but that the deceased replied he had forgotten to fix the lever on; the deceased then stopped the engines; the witness cast his eyes to the valve which had been left to the care of the deceased, when he saw it fastened down by a strong copper wire; he called to the deceased to relieve it, but before he could effect this (through the wire being twisted several times round an iron punch which the deceased had strongly driven into the wood-framing of the engine-room in the absence of witness) one of the eleven chambers composing the boiler was rent, and the great force of the accumulated steam threw the deceased back against the engines. The deceased was removed into the house, and medical assistance immediately obtained, but he expired in about an hour. The witness, in answer to questions from the Jury, said, that had it been a boiler as constructed by others years ago, much injury must have ensued from the fragments of metal which would have been driven in every direction with great violence amongst the men who were at the time around the coach.

“Other witnesses were examined, and on its being ascertained to the satisfaction of the Coroner and Jury that the fastening down of the valve was the act of the deceased, the Coroner observed, that had the deceased survived, and

any other person met his death, in that case the deceased would have taken his trial for manslaughter, from his culpable negligence in the management of a thing which he, by his occupation, so well understood, it being proved that he had been for a length of time engaged in similar work, and was well aware of the nature and operations of steam.

“The Jury having minutely examined the boiler and engines of the coach in question, as also another coach upon the same construction, and which was put at work for the purpose, and all its parts being explained to them, brought in the following verdict—‘Accidental Death, *caused by the deceased’s own negligence.*’ The Jury added, that they were quite of opinion that Mr. Hancock’s boiler, from its peculiar construction, was as free from danger as any boiler could be: in which opinion they are borne out on their examination of the body of the deceased, which was not at all mutilated; neither was the machinery nor the body of the coach injured. The deceased, who bore the character of a steady workman, was twenty-eight years of age, and has left a widow and three children to deplore his loss.”

That this accident was occasioned by the rupture of one of the chambers of the boiler, is certain—but it was not in consequence of any bodily injury inflicted thereby, either external or internal—there was neither contusion, wound, or even scratch, upon his person. Some imagined that he was choaked by the rushing of the escaping steam into his lungs, supposing him to be in the act of inspiration

at the time ; but this the surgeon, examined on the inquest, denied. His death was occasioned solely by *fright*. It may also be remarked, that he was in a very weak state of health at the time of the accident, having only returned to work on that morning, after an illness of considerable duration.

The "Enterprise" was so far completed by the 26th of January, 1833, as on that day to be taken from the manufactory to the Company's premises, in order that it might be appropriately painted and decorated. In the month of April it commenced running for hire on the road between the City and Paddington, under the writer's personal superintendence, and, on account of the Company : the "Enterprise" continued to run for sixteen successive days. The particulars of the journeys were reported in the current numbers of the *Mechanics' Magazine*, and in the daily papers of the time, from which are selected the following extracts : the first is from the *Mechanics' Magazine* :—

"THE PADDINGTON STEAM-CARRIAGE COMPANY.

"A steam omnibus, constructed for this Company, on the plan of Mr. Hancock, has at length made its appearance on the road between the City and Paddington. We saw it at work on Monday, Tuesday, and Wednesday last, and were very well pleased with the manner of its operation. It seemed to be as perfectly under the regulation of the steersman as any of the rival vehicles drawn by horses, went a good deal faster—as much so, perhaps, as the crowded state of the road would allow, and caused

no annoyance by noise or smoke to either bipeds or quadrupeds. In external appearance it differs little from an ordinary omnibus, and contains accommodations for exactly the same number of passengers. The part for the passengers is in front, the furnace in the rear, and the engine work (which occupies but a small space) between the two. The motive power is communicated by chains. The internal arrangements are, we believe, similar to those of the carriage made by Mr. Hancock, which plied for some time on the Stratford-road, and is fully described in the *Mechanics' Magazine* for the 28th April, 1832. All that (apparently) now remains to be done, is to ascertain the average cost of this mode of conveyance, as compared with horse power ; and this, of course, must be an affair of time. We trust the Paddington Company will act more openly by the public in this respect than previous speculators have done ; and that they will make known the result of their experience, whatever it may be, without any mystification or evasion."

"Since writing the preceding notice," says the editor of the *Mechanics Magazine*, "we have received the following very frank and satisfactory letter on the subject from a shareholder of the Company :—

"Sir,—The London and Paddington Steam Carriage Company have tried and proved the effectiveness of their carriage, by taking it from Paddington to London-wall, and thence up Houndsditch, through Whitechapel (on market-day), and on to Stratford and West Ham, and

returning the same way back again ; thus proving its capability of proceeding through crowded thoroughfares without inconvenience or liability to accident to the persons in the carriage, or others. We have also on Monday begun to ply to and from Paddington to the City for hire ; and intend, for the present, continuing to go once or twice a day, for the purpose of developing the wants of the road, and also such imperfections as may appear in practice, in order that we may remedy them in the other carriages in progress of preparation. As soon as we have got two more carriages ready, the whole three will commence running in regular succession on this line of road, each carriage performing fourteen journeys, to and fro, per day, which is nearly the work of three omnibuses and thirty horses. During the early journeys of this single carriage, the fare will be one shilling. We do not, however, wish people to think we have commenced business as we mean to go on ; for, at present, we are really only going for the purpose of satisfying the public of the safety and perfect practicability of this mode of travelling, and also of getting practice on the road, so that we may find out and apply every improvement that may be requisite. When the novelty of the thing has worn off a little, it is to be hoped that the road will not be so crowded with curious gazers as it is every time we now go out, to the great prejudice of the speed of the vehicle, which it requires no small portion of skill and care, on the part of the guide, to steer with safety through the multitude of coaches, gigs, carts, drays, &c., that constantly beset its

path. As it is, a second journey each day would, *at present*, become a perfect nuisance ; but as soon as the road, by our frequent journeys, becomes less crowded, we shall even with the one carriage go two or three journeys occasionally, *perhaps more*, as soon as we are satisfied that we have adopted every improvement in strength and quality that daily practice may show to be necessary. The carriage has been open to public inspection on these premises for nearly three months ; but, now that we go out daily, strangers are not admitted on any account, as it would interfere too much with the regular business of the establishment, and also with the progress of the other carriages.

“ I have now, sir, presented you with a few *facts* as to the present and future ; and facts only, for I hate puffing and lies as much as you can do in a great national matter like this. I do not know whether I am too sanguine or not, but I conceive we shall be able to satisfy the public that the important question as regards steam-travelling on common roads—‘ *to be, or not to be*’—will now be solved.

“ I am, sir, your obedient servant,

“ CANDIDUS.”

“ *London and Paddington Steam-Carriage
Company's Office, 68, Charles-street,
City-road, April 24, 1833.*”

As it appeared to the writer, that in the letter of “ Candidus,” appended to the Editor's remarks some further details were desirable ; and also, that some

uncertainty existed relative to the precise number of journeys, and some other points, the writer, during the current week, addressed the following communication to the editor of the *Mechanics' Magazine* :—

“ MR. HANCOCK'S STEAM OMNIBUS.

“ Sir,—More than six years have elapsed since I began my experiments on steam locomotion; and I have followed it with an ardour that did not admit of any diversion from the grand object which I kept steadily in view. During the past week I have exhibited daily on the Paddington-road a steam omnibus, the result of my experience: and having hitherto carefully steered clear both of extravagant anticipations and exaggerated statements, I should be sorry now if any such should find their way into the public prints. In order to prevent this, as far as I am able, I beg to hand you for insertion in your wide-spreading miscellany the following results of the first six days :—

“ April 22.—Started from Cottage-lane, City-road, to Paddington, and from Paddington to London Wall, and back to Cottage-lane—9 to 10 miles; 1 hour, 8 minutes. Delays, 18 minutes; travelling, 50 minutes.

“ — 23.—From Cottage-lane to Paddington, and back to Cottage-lane—8 miles; 1 hour 11 minutes. Delays, 9 minutes; travelling, 62 minutes.

“ — 24.—Same ground—1 hour, 4 miles. Delays, 11 minutes; travelling, 53 minutes.

“ April 25.—Same ground, and back as far as St. James's Chapel; piston broke.

“ — 26.—Same ground and back to Cottage-lane—49 minutes. Delays, 5 minutes; travelling, 44 minutes.

“ — 27.—Same ground—50 minutes. Delays, 5 minutes; travelling, 44 minutes.

“ Average quantity of coke, 1 sack to each trip.

“ It is not intended to run this carriage more than about a week longer; partly because it was only intended as a demonstration of its efficiency, and partly because my own occupations will not admit of my personal attention to the steering, which I have hitherto performed myself, having no other person at present to whose guidance I could with propriety intrust it. During the time that it will require to build two or more carriages for the Paddington Company, I shall have one or two others of my own running, which will afford me an opportunity for training steersmen; &c., for this road, which, of all others I am acquainted with, requires the greatest steadiness and attention.

“ I am, sir, your obedient servant,

“ W. HANCOCK.”

“ *Stratford, May 1, 1833.*

“ N.B.—I would just observe, that your correspondent ‘Candidus’ has, I think, stated the number of journeys rather too high. From the manner also of wording his letter, it would almost seem to imply that the ‘Enterprise’ was built in the City-road, and that other carriages

were in progress of building there; but I have no establishment in London, and the 'Enterprise' was built at my own place at Stratford, and had its first trials on that road. I took it to town merely to avail myself of the assistance of London artists in its decoration, &c.; after which, and before its delivery, I ran it over its intended road, &c. as stated by 'Candidus.' Thus much for steering clear of all mistakes."

The following very flattering letter appeared in the *Morning Advertiser* of April 26th:—

"PADDINGTON STEAM-CARRIAGES.

"To the Editor of the '*Morning Advertiser*.'

"SIR,—It is gratifying to every enlightened and rightly constituted mind to witness any step in advance in the attempts to appropriate more extensively to the service of mankind the great forces with which nature works, and which she employs hourly around us, as if to court our imitation; but it is doubly gratifying to witness the success of those attempts which go to the substitution of inanimate force in our needful occupations, for a force heretofore obtained at the cost of great animal suffering, and of vast expenditure of life, aggravated, too, by a seemingly inevitable deadening of the best feelings of our nature—sympathy with the pain of sentient beings—in that portion of mankind, whose interests have been made to grow, as it were, out of the extortion of the maximum of power from the wretched animals which they use as instruments of gain. Those who go no

further in their contemplation than the abatement of a vast amount of pain and hardship, now accruing to the ill-used animals which slave in our public vehicles, likely to be produced by the substitution of mechanical force for horse power in effecting conveyance on common roads, hail with great satisfaction the appearances which indicate a near approximation to the much-desired, and, in all respects, most desirable, change.

"I have watched with intense interest, for some days past, the first trials of a new steam-coach on the Paddington line of road, the first coach brought out by the London and Paddington Steam-Carriage Company, with the design of carrying passengers for hire. This carriage has so far performed its experimental trips, which it has made once daily during the week, in an exceedingly satisfactory manner. There appears to be an adequate power for the quick propulsion of the vehicle with its load on an ordinary road, certainly not more favourably circumstanced than the generality of public roads through the kingdom; and the machine is more decidedly under the control of the conductor, than is the best appointed and best driven horse coach. Yesterday, in passing through the assembled crowd at King's-cross, a boy, in running across the road, was knocked down and ridden over by a horseman immediately before the coach. Mr. Hancock, who guided the steam-carriage, perceived the accident, and so instantaneously stopped the vehicle as to prevent further mischief; a pair of horses, under the same circumstances, could scarcely have failed to aggra-

vate it. The steam-coach ascends the Pentonville-hill with apparent ease, at a rate varying from six to eight miles an hour. On the level road it makes from ten to twelve. In a complicated piece of mechanism devised for the attainment of a new purpose, it necessarily happens that some of the parts will be found on trial of insufficient strength. It is only experience which can bring all the working parts into due proportion. So it is in the present instance, and will for long be with the infant efforts of steam-coaches; the failure of some of the minor parts causes occasional impediments, and points out where more strength is called for; but these are very tolerable, because remediable evils. When we are once satisfied that we have acquired the needful power, and that it is appropriate to the purpose, safe, controllable and economical, all the subsidiary details of mechanism can readily be worked out by practical judgment and the artificer's skill.

“ In watching, as I have done, the early operations of this new steam-coach, the ‘Enterprise,’ on the Paddington-road, I have been pained, though not surprised, to see the malignant efforts of some of the drivers of the horse vehicles to impede and baffle the course of the new competitor. It is not to be expected that men of their stamp can estimate very correctly the value, the extent, or the results of the great power which is coming into the field against the old system, of which they are certainly very unamiable appendages; but they must be taught by wiser heads than their own, and the knowledge must be en-

forced upon them by an authority stronger than that of their own lawless passions, that they must not endanger the lives of the passengers who have intrusted themselves to their guidance, by a wanton courting of collision with a body so vastly more weighty, more strong, and more powerful than their own frail vehicles, and feeble, staggering beasts of draught. One of these infatuated men to-day crossed short upon the path of the steam-coach palpably with a mischievous design, which was only rendered abortive by the vigilance and prompt action of Mr. Hancock. Had these been wanting, loss of life would probably have resulted, and the occupants of the weaker carriage have most cause of self-gratulation on the event. Should any of these ill-judging men provoke a collision, where less vigilance, less self-command, or less forbearance preside over the movements of the more powerful body, they may have reason to rue their desperate folly. Can these men be so stupid as not to see that if they court forcible contention with an antagonist greatly more powerful than themselves they are volunteering their own ruin? But it is not simply the risk of their own violent destruction, and that of their vehicles and horses, which their senseless proceedings incur; they are accelerating and pulling upon themselves prematurely the very evil which they fancy is impending over them—the loss of employ for themselves and their vehicles. The sooner they convince the travelling public that they, the drivers of horse-coaches, are recklessly bent on courting danger

for themselves and for their passengers, the sooner that self-loving public will leave these mad and wicked coachmen to drive their empty vehicles into whatever difficulties or dangers they may severally prefer.

“ The change we are about to witness in the system of public conveyance is great and extensive, and ramifies into a boundless field of collateral influences. But it is fraught with positive benefit to man; gives ampler scope to those feelings which indicate his advancement in civilisation and humanity, and the means of effecting it are within our grasp, therefore the change must and will come; but like all other extensive changes in human pursuits, it will be slow and progressive. It will not be like the tempest, but like the course of the seasons. It will allow every one of the present race of horse tormentors to run out his brief career in the exercise of the lowest passions which debase our nature. The common casualties of their intemperate lives and hazardous avocations will furnish ample vacancies for the necessarily gradual introduction of the new power. The dealers, workers, whips, curry-combs, and cads of the present hour, will find the means of enjoyment in their own peculiar ways to the end of their days. The only mournful anticipations which they can reasonably draw from the impending change is, that they will not be enabled to bequeath brutality and blackguardism as heir-looms to their posterity. But this evil in the background ought not to embitter their present hour. Let them drink,

curse, and wrangle as usual, and, like sensible men, leave unborn posterity to its own shifts, and to become wiser and better than themselves, if possible.

“ I am, Sir, your obedient Servant,

“ OBSERVATOR.”

“ April 26, 1833.”

Every imaginable variety of annoyance, as is mentioned, and very justly commented upon in the above letter of “ Observator,” was practised by the drivers of the Paddington omnibuses; but as this had been anticipated, the writer had previously determined to use the greatest circumspection, so that, if any accidents should occur, the blame might rest on those whose conduct should occasion them. He has, however, the satisfaction to state, that, notwithstanding the repeated attempts to place him and the passengers in situations of great danger and difficulty, even so far as to cause a collision of vehicles, no accident occurred in the course of any of these journeys. A single instance will suffice to show the extent and nature of the opposition which was carried on, and is selected by the writer in preference to others, in consequence of its having formed the subject of a complaint published on the following day in the police reports of the London papers, of which the subjoined is a copy from the *Morning Advertiser*, May 4th, 1833.

“ WORSHIP-STREET.—THE STEAM OMNIBUS.—Yesterday, John Hall, driver of the Paddington omnibus, No. 3926, appeared before Mr. Broughton, upon sum-

mons, charged with driving against, and wantonly damaging the steam omnibus recently started upon the Paddington-road. The fine of 5*l.* was, in consequence of the defendant's good character, mitigated to 40*s.* and costs, which he immediately paid. The moiety of the penalty due to the complainants was left by them for the use of the poor."

After this check the annoyance in a great degree subsided.

The writer has the gratification to record here a circumstance highly to the credit and liberality of the Government—the exemption of steam-carriages, during the infancy of the invention, from the imposition of any duty, by a particular clause in the Hackney-carriage Act. A gentleman, connected with the public vehicles, thinking that, by running only from Paddington to the Bank, they came within the limits of the Hackney-coach Act, and were, in fact, steam hackney-coaches, requiring a license—a *pro forma* information, for the purpose of deciding the point, was consequently laid against the writer at Bow-street. The magistrates, after a week's consideration, decided that the wording of the Act did not appear to them to exonerate steam-carriages from the liability. On presentation, however, of a memorial to the Government, founded on this decision, a clause was introduced into a bill then passing through Parliament, with reference to hackney coaches, declaring the act not to be deemed to extend to steam-carriages.

The "Enterprise" having exceeded the stipulated per-

formances, the writer naturally expected directions for the fulfilment of the contract entered into between him and the Company, namely, to build two steam-carriages on a similar plan. Various pretexts were, however, resorted to for delay, which subsequent proceedings proved were merely employed by a party as feints to conceal a design which, for effrontery and dishonesty, has seldom been exceeded. The writer will not interrupt the thread of his narrative by entering here into a detail of these proceedings, but as an evidence that he has not applied to the conduct of the party in question in appropriate terms, copies of two letters, which terminated a long and tedious correspondence on the subject, will be inserted, together with a few observations, in the Appendix. This the writer has considered advisable also on other grounds—that of enabling some of the individuals more immediately implicated, but whom he has reason to believe were never assenting parties to these proceedings, fairly to compare the writer's conduct with that pursued by others in the transactions referred to. At first the writer contemplated the publication of the whole correspondence, and nothing but its length and want of general interest has deterred him, most reluctantly, from this course; he begs, however, to state his readiness at all times to submit it to the inspection of any interested party who may be unacquainted with its true bearings.

Chronological order has been deviated from in some degree, in order to bring all the writer's transactions with the Paddington Company together: this having been done,

he now returns to the period at which the narrative was broken in upon.

On the 31st of October, 1832, the "Infant" took a trip to Brighton, the following account of which is quoted from Mr. Alexander Garden's "Journal of Elemental Locomotion:"—

"JOURNEY TO BRIGHTON BY MR. WALTER HANCOCK'S
STEAM-CARRIAGE.

"Mr. Hancock having intimated to us that he proposed trying his steam-carriage, modestly yclept 'The Infant,' on the turnpike road to Brighton:—despite of the article in the 'Foreign Quarterly,' the best upon locomotion which has yet appeared in any periodical—despite of the Reviewer's opinion, that Mr. Hancock's carriage 'does not seem adapted for rapid motion,' we ventured to accept the invitation, with the certain conviction, that we should ultimately reach Brighton, and return, unscathed by the scaldings, to give an unbiassed and satisfactory account of our trip. *Ecce signum!*

"The 'Foreign Quarterly,' we find, is *foreign* in this instance. Therein, it is said, 'imperfect suspension has been the ruin of every machine that has yet been constructed.' This 'Infant' has been growing for many months, and improving apace,—a promising child of art. Not only has the 'Infant' not been ruined by 'imperfect suspension,' but it is so admirably and completely hung on 'steel springs,' as the coach advertisements used to announce 'sixty years since,' that the master-hand of Houl-

ditch, in Long Acre, or Windus, in the City, could not have shielded us from concussions more delightfully; and not only were so luxuriously and tenderly treated, but the engine itself was equally saved from the roughness of the passage.

"The crank-shaft, upon which the engines work at right angles, communicates its motion by two chains to the straight hinder axle; thus causing one or both wheels to revolve, and the carriage to be propelled by the adhesion of the periphery to the road. Any shock, which effects the carriage, can only be felt by the steam-engine, through the chain or through the very flexible springs upon which the body of the vehicle, containing engines and passengers, is placed.

"From the extreme ends of the hinder axletree to the corresponding ends of the crank-shaft, strong bars proceed. These bars serve to keep the crank-shaft always equi-distant from the hinder axletree; so that any concussion, which may affect either the wheels or the body, cannot force the crank-shaft nearer or farther from the axletree. These rods are constantly vibrating; but the steam-engine is securely and *perfectly suspended*. We do not say, that the whole affair will not be susceptible of great improvement; nor, we apprehend, does Mr. Hancock. Its name, the 'Infant,' implies beauty and efficiency of structure; but does not pretend to robust and active maturity.

"Well do we recollect Fulton's first steam-boat: numberless were its imperfections, and irregular were its time

and its operations, when first launched on the public gaze. Then was its infancy—now we see it increased in magnitude, speed, and fair proportions ; but when it will arrive at the *ultima Thule* of perfection, who will presume to predict? Once, Fulton's boats were at the tender mercies of the rival Albany sailing packets. Eventful time! how hast thou changed its lot, and enabled it in better fortune, to lead the sailing craft 'gainst wind and tide.'

" On Wednesday, October 31, this steam-carriage came from Stratford, through the streets of the City, at the different speeds necessary to keep its pace behind or before other carriages, as occasion required, and took up its quarters on Blackfriars-road, to prepare for the following day's trial. Accompanied by a scientific friend, a distinguished officer in the navy, we, determined upon criticism, joined Mr. Hancock's friends on the Thursday morning, making eleven passengers in all.

" We started at a quarter past six o'clock, at the rate of nine miles an hour, until we came to Streatham, where we took in water. Proceeding again at the same speed, we passed Croydon, where we took in coke. In the course of a few miles we found the speed decreasing, without apparent cause. For three or four miles it varied from six to eight miles an hour, until we reached Hooley-lane, where we again took in coke, which had been sent from Croydon. This coke being of a very inferior quality, hard and heavy, was, no doubt, the cause of the falling off in speed. As we approached Red Hill, the coke boxes getting low, the fireman came again to a small

quantity of London coke, when the carriage immediately improved its speed, and carried us up the hill (a hill on which all the coaches in such weather require six horses), in fine style, at the average speed of six and seven miles an hour. Soon after, the bane of our journey, an insufficient supply of fuel, caused us to flag, within sight of our station at Horley. A return post-boy took a message forward, and we were met by a wheelbarrow with a bag of coke, which carried us to the King's Arms. We now took in water and a scanty supply of fuel, and started at a fair speed over Crawley Common to Hand Cross; and taking the small quantity of coke that had been left there, we soon arrived at the King's Arms, Hazledean, where we had the extreme mortification of being obliged to put up for the night, simply for want of coke. We had, however, steamed thirty-eight miles under great disadvantages. A friend proceeded immediately to Brighton, by the horse coach, and forwarded coke, the only thing necessary for proceeding in the morning. This arrived accordingly; the steam was soon got up, and off we set in good style, continuing our course at the varied rate of nine, ten, and eleven miles an hour, till we came within two miles of Brighton, where we fortunately met with a small supply of fuel. Thence we proceeded to Brighton, passed to the Pavilion-gate, round the Grand Parade and Waterloo-place to the town tank, apparently to the great surprise and satisfaction of a large concourse of persons who had by this time assembled. After staying about an hour in Brighton, waiting for our ill-arranged feed of

coke, we started with four additional passengers, two gentlemen and two ladies, on our return, at nine or ten miles an hour, till we came to the end of the dead wall. Here our friends alighted, and we were off again at full eleven miles per hour. The speed of the carriage here increased in an extraordinary manner, although upon a very considerable ascent all the way. One of the miles was done in three minutes and a half, and that which terminates at the branch road to Cuckfield and Piecomb, was done in three minutes fifty-eight seconds (above fifteen miles an hour), reaching Aldbourne (nearly ten miles) within fifty-five minutes, including stoppages for water. The small quantity of fuel we obtained here, only enabled us to reach our former quarters at Hazledean, fifteen miles and a half from Brighton.

“ With great unwillingness we were now compelled to leave them, although we had been so much delighted with the trial, that we would gladly have remained, had other engagements permitted.

“ A gentleman, whose account we can every way depend upon, has furnished us with the following continuation :—

“ “ The ill-arranged supplies of coke (perhaps *necessarily* ill-arranged, for few country people on the road knew what coke was,) detained the steamer for the night (of Friday), whilst a messenger was sent forward for a supply of coke. From hence to Handcross was by far the most critical and interesting part of the journey. Almost the whole distance is an ascent, and one part is a hill nearly

a mile long, terminating in a still steeper ascent. No anxiety would have been felt for a carriage built for such a road, but the thing was to be done by the ‘ Infant.’ We were told that we should never get up Slaugham Park Hill; the road being in so bad a state that the stage-coaches, at the best of times, put on two extra horses. However, in the morning, the fire-bars were well raked, and the best fire made, of which the stock of fuel would admit. A little coal was added to help out, and the ‘ Infant’ started to the task. A run of two or three miles before coming to the hill, so as to have blown the fire a little, would have been better. As it was, the ascent was commenced cheerfully, the pace gradually decreasing till we came to the steepest part. Here three or four of us got off, and the engine was stopped for a minute or two to raise the steam higher. Again started slowly. The engine laboured, and evidently had no power to spare. In a few minutes, however, all anxiety was at an end, and this imperfect, experimental, and weakly ‘ Infant’ cleared all its difficulties, and arrived at Handcross. Two gentlemen in the neighbourhood, Mr. Kinder and a friend of his, came on purpose to witness this part of our performance, and declared that they had fully made up their minds to witness a failure, conceiving the achievement impossible. The landlady, Mrs. Bachelor, at Handcross, *could not* lend pails, nor would she spare us water, and we might have been in an awkward position had not Mr. Steel, the wheelwright, generously come forward, and offered us his well water and workmen, together with his

own active exertions, to supply our empty tanks. Mr. Steel, and one or two others, took their seats on the steamer, and we were presently off again; speed, two miles in ten minutes. We reached Horley without being able to hear of a relay of coke, which had been promised us at Crawley. It was now perceived that one of the wheels rolled considerably, so as to produce a great deal of friction by the tire and felloe rubbing against the side of the carriage. This gradually got worse till we came to Salford Mill, twenty-two miles from London, where we stopped to examine. The owner, Mr. Newnham, in the most handsome manner, gave the use of his yard. The cast-iron flange at the back of the nave was broken off all round, and it was useless to attempt proceeding until the wheel was repaired. We accordingly left for town, but not before experiencing, at the hands of Mr. and Mrs. Newnham, the hearty welcome and the good cheer of true English hospitality.'

"OBSERVATIONS.—This experimental trip will be viewed by different persons in different ways. However, this one thing is certain, the carriage that has performed it was ill calculated for the undertaking. Independent of the smallness of the boiler, intended only for experimental purposes; the carriage itself is a thing of 'shreds and patches,' having undergone endless alterations and trials. The roads, which were become exceedingly heavy from the previous rains, had not been so bad for twelve months before; and it is not improbable that had the experiment been made during the fine weather of the previous week, we should have got back to town on the

day we started. It is better as it is; because the heavy roads have brought this comparatively fragile machine to a test so severe, that the most sceptical can hardly fail of arriving at the obvious conviction, that if the 'Infant' has proved itself almost equal to the task, maturity cannot fail to perform it with ease and regularity.

"It is gratifying to observe, that upon the whole we met, almost universally, with good-will and attention to our wants all down the road: great curiosity and interest were excited, particularly among the ladies; and at Brighton, notwithstanding the unpleasant state of the weather, the concourse of people before we left was very great. Not the slightest accident, however, occurred, either there or on any part of the road.

"Some of the coachmen were exceedingly civil and polite, and voluntarily told us their horses passed the steamer without any trouble. Mr. Wilkins, of the *Coronet*, is one of them. Others again shook their heads like Washington Irvine's doubter.

"On this trip, the water, not being regularly stationed, as it must be when a steam conveyance is established was sucked by the engine through a huge proboscis, one of Hancock's caoutchouc hose pipes, forty feet long. It answered the purpose admirably; but required much exertion from the workmen, whose zeal and persevering activity were in every case highly praiseworthy.

"We were invited in our editorial capacity, and went for the purpose of criticising, not as the friend of the inventor. We were delighted with the regularity of the

speed and soundness of the work, in very trying circumstances, and highly gratified by the politeness and practical knowledge of Mr. Hancock. The defect of the journey was in the supply of coke, which, in a good state of the roads, need not have been more than half a bushel per mile; on this trip it exceeded the half bushel considerably, perhaps twenty-five per cent. The only discomfort of the journey was a feeling of the want of courtesy, which our conductor showed to other coaches. He most obstinately kept the crown of the road, to our great annoyance; and when he did take the side, it was not to the extent he ought. Steam conductors must conciliate.

“A word to the person by whose order fifty yards of Streatham Hill was covered with broken stones, six inches deep all the way across, ‘to prevent the return of the steam-carriage.’ We withhold his name; though such an exhibition of ignorance and hostility well entitles it to public exposure. We have taken upon us the duty of advocates for elemental locomotion; and, whilst we shall endeavour to discharge ourselves of the task, with courtesy to all who choose to stand up against it in the fair field of argument, we will not be slack to reprobate the conduct of whosoever resorts to any other means. We are not ashamed of being warm in the cause:—for it is associated both with humanity and patriotism. When next the individual we allude to reads of a ship-load of poor emigrants, let him consider, that twist the case as he may, still the affecting truth must meet his inquiry—that they are torn from home, from country, from kindred, and friends, to

leave a sufficiency for these now unproductive and unnecessary consumers of *the food of the poor*—the horses which he desires to preserve.”

The “Infant” again ran to Brighton in the month of September following. Mr. Busby, the well-known architect and engineer of that town, who personally witnessed its performances while there, gives an account of them in the following letter to the *Brighton Herald*:—

“HANCOCK’S STEAM-CARRIAGE.

“To the Editor of the ‘*Brighton Herald*.’

“SIR,—I have thought a few particulars of the visit of Mr. Hancock and friends, in his steam-carriage to this place, would not be unacceptable to your numerous readers.

“Mr. Hancock and party started from Stratford, in Essex, three miles and a half east of Whitechapel, a few minutes before six o’clock on Wednesday morning, and arrived at Brighton forty minutes after three, having transacted, when in motion, at the pace of twelve miles per hour; the whole distance from Stratford was about fifty-seven miles, and all the time not occupied in progression was expended in taking in water and coke, and in that no less necessary operations, of breakfasting and dining on the road; the stoppage on the latter account being two hours and a half, as the party thought themselves entitled to regale at the Pitt’s Head.

“Yesterday the steam-carriage made a *detour* through the Grand Parade, Church-street, New-road, East-street,

and along the Cliff to Brunswick-terrace, going round Brunswick-square, and returning along the Cliff, when, unluckily, an inferior part of the mechanism, technically called a *clutch*, gave way, and led to the fracture of a cogged wheel, which gave motion to the centrifugal fire-fanner, and the carriage was brought to a dead stand. This accident would have been speedily remedied, had Mr. Hancock been provided with a spare wheel; but as it was, he was compelled to wait until Messrs. Palmer and Green, who very kindly rendered every assistance in their power, were enabled to cast a new wheel, which was a work of considerable difficulty from the want of a model, the fractured wheel being a most awkward and unmanageable substitute.

“ Mr. Towner, of the above firm, accomplished the object in a masterly style, and the carriage was put in motion, and lodged at the Kerrison Arms, Mr. Ireland having in the handsomest manner volunteered the use of his premises on the occasion.

“ To-day at one o'clock, every thing being set right, the carriage was started again—it went westward, to the extremity of Adelaide Crescent, and turned round; it then came up the Wick-road to my house, where a few of my friends were taken up, and the party proceeded along the Cliff to the Chain-Pier entrance; then back again to Brunswick-terrace, and returned along the Cliff, through East-street, North-street, the New-road, Church-street, and the Grand Parade, to the Tank at the New Church, where, after taking in a charge of water and coke, the carriage proceeded on its way towards London.

“ On the occasion of yesterday's trip, Mr. Hancock was, among other gentlemen, favoured with the company of Captain Heaviside and Mr. Ricardo, who are well known among us for their scientific acquirements; and this day Captain Heaviside and myself had the pleasure of accompanying Mr. Hancock to the Pitt's Head, sixteen miles on his road homeward. That distance was accomplished in one hour and forty minutes, twenty minutes of that time being spent in taking in coke and in procuring water from ponds at various places as they presented themselves on the road. The stoppages under an organized system would not require six minutes.

“ I am, Sir, your very obedient servant,

“ C. A. BUSBY.”

“ Stanhope-place, Brunswick-terrace,
Friday, Sept. 13, 1833.”

This account being extracted from the Brighton paper to the *Mechanics' Magazine*, the writer thought some further particulars necessary to be published, and accordingly addressed a letter, of which the following is an extract, to the Editor of that work, which was inserted in the number for November 2nd, 1833:—

“ SIR,—Having read in your Magazine of September 21, an account of the trip made to Brighton on the 11th by the ‘ Infant,’ I forward for insertion the following particulars connected with that journey, and with steam-locomotion generally.

“ We were retarded in our progress, as on our former journey to the same place, by an irregular supply of

coke and water on the road, and which must, of necessity, be more or less a hindrance on any roads, until steam-carriages and convenient stations are regularly established on them.

“When we had run about twenty-four miles from London our speed decreased very much, owing to the incrustation of clinkers upon the fire-bars. After clearing them as well as we could, in the usual way, by the rake, we proceeded, but still under diminished speed, because the operation of clearing can only be perfectly accomplished by taking out all the fuel, and allowing the bars to cool.”

The remainder of this letter contained a description of the writer's patent furnace, by which the difficulty referred to is obviated, and will be found in a subsequent page of this narrative.

When his transactions with the Company were brought to a conclusion, the writer applied his undivided attention to the completion of a carriage, in the construction of which he had for some time been engaged,

The “AUTOPSY,” represented in Plate X., was completed about the end of the summer of 1833, when it performed a journey to Brighton, where it remained two days. During these days the writer ran the carriage through the principal streets and squares of the town. On returning to Stratford, he passed over London Bridge and through the City during the middle of the day; thus proving the ease and facility with which he could accommodate the movements of his carriage to every incident to which it

might be liable, even in the most crowded thoroughfares, and fully establishing the writer's own confidence in its fitness for all the purposes to which horse carriages are at present applied.

Since that time the writer has frequently run his carriages during the busiest part of the day, through the most crowded streets of the metropolis, never turning out of his way for the purpose of avoiding them, and this without causing any accident.

In the month of October, 1833, the “Autopsy” ran for hire, between Finsbury-square and Pentonville, and continued to do so daily without accident or intermission for nearly four weeks. The inconvenience, however, resulting from the want of suitable premises and stations for the store of coke, supply of water, standing for the carriages, &c., superadded to the necessity of the writer's daily personal attention at this period at his manufactory, at Stratford, induced him to withdraw it until he should have completed at least one more carriage. His intention in this instance was interrupted by an order, which he received in the spring of 1834, to build a small steam drag or tug for a gentleman of Vienna, which was completed and shipped for its destination in July of the same year.

A representation of this machine is given in Plate XI. It differs from his other carriages only in not being provided with the accommodation necessary for passengers, it being intended to draw after it any vehicles which might be attached to it. Although the “drag” or “tug” system possesses some advantages, such, for instance, as greater

compactness of the machinery, a subdivision of the weight, and some others, yet after mature deliberation the writer gives a decided preference to the plan of carrying the power and passengers on the same carriage.

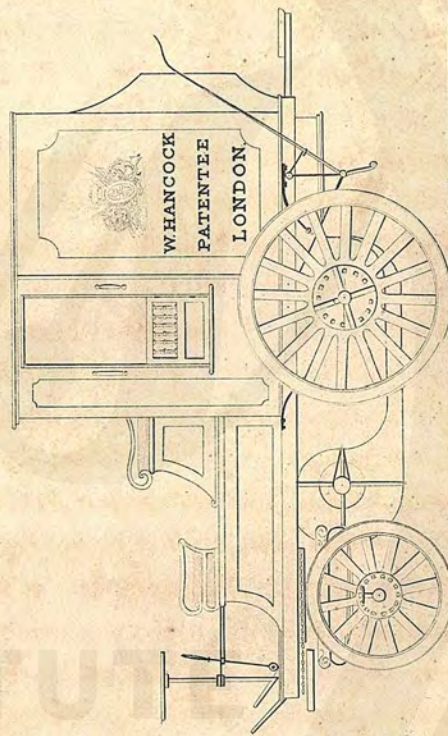
This machine underwent a variety of trials previous to its leaving England; on one occasion it carried seven passengers and three attendants on itself, and a close four-wheeled carriage, occupied by six other passengers, was attached behind, making in all sixteen persons, seven above the number stipulated for. Thus loaded it was steered by Mr. Voigtlander, the proprietor, through Bow to Homerton, Clapton, Crouch-end, and over Stamford-hill, to Tottenham, thence through Ball's-pond and Islington, to the City-road: the distance altogether being about fourteen miles. The speed at which this trial-journey was performed was fourteen miles an hour on the level road, and from eight to nine miles an hour up the hills.

By the month of August of the same year (1834), the writer completed another carriage, called the "ERA,"* and having in the interim fitted up premises in Windsor-place, City-road, with all the requisite conveniences for a steam-carriage station, and effected arrangements for the necessary supply of water, also at the Paddington-end, on the 18th of that month he recommenced running for hire daily with his two carriages, the "Autopsy" and "Era,"

* See Frontispiece.

† The distance from Moor-gate to Paddington and back is nine miles, and the time occupied in the completion of this distance, including numerous stoppages to take up and sit down passengers, obtaining supply of water and fuel, averaged one hour and ten minutes.

Fig. 13.



Drag built for Mr. Voigtlander of America.

between the City, Moor-gate, and Paddington, and continued to do so without intermission (except on occasions which will be noticed hereafter) till the end of November.

During the running of these carriages the writer was highly gratified with the liberal patronage and encouragement which he received from the public generally of this new mode of conveyance: this, no doubt, partly arose from the steam-carriages starting punctually, and performing the journey in less time than the horse vehicles. The number of passengers carried amounted, during this time, to nearly 4000.

The following account of the travelling on this occasion is extracted from the *Morning Chronicle* of the 19th of August:—

“ STEAM-CARRIAGE TO PADDINGTON.

“The steam-carriage which ran between Pentonville and Finsbury-square, during a part of the autumn of last year (and for which Mr. W. Hancock, a gentleman who is indefatigable in his exertions to make the powers of steam available to the purpose of propelling carriages on common roads, has obtained a patent), has resumed its station on the same road, and will now continue regularly to ply between Moorfields and Paddington. The carriage is capable of carrying ten or twelve passengers, besides the persons required in its management. It started from Moorfields yesterday morning on its first trip, at a few minutes after ten o'clock, with a full complement of passengers, and completed the journey to Paddington (five miles), in half an hour, including stoppages; the rate of

travelling, exclusive of stoppages, was exactly twelve miles an hour.

“This rate must not, however, be considered as a criterion of the velocity of which the carriage is capable, as at no period of the journey, excepting in going up Pentonville-hill, was the whole power of the steam applied; and accordingly at intervals, a considerable quantity of extra steam was allowed to escape. The patentee stated that his object was rather to show the public that they might depend on his steam-carriage as a safe and steady means of conveyance, than to acquire an extraordinary, and, as it would be on so crowded a road, a dangerous degree of velocity. The first trip (the only one which we saw) was attended with complete success. The carriage proceeded on its route quietly and steadily. It appeared peculiarly easy of management, and was directed through a crowded thoroughfare with a neatness and precision equal to the best-driven horse-coach in the kingdom. In the course of the journey it was occasionally driven faster, occasionally slower, and sometimes it was stopped altogether, and that with a quickness which was perfectly wonderful, and would be impossible in a horse-coach going at the same rate.

“The motion of the carriage is as easy as that of a common carriage, and is unaccompanied by any disagreeable or startling noise.

“The noise is not greater than that of a common omnibus; indeed so trifling is it, or the peculiarity of the appearance of the machine altogether, that horses meeting

it hardly appeared in the least degree frightened. There is neither smoke nor disagreeable smell of any kind; the motion is not so great as in a coach; and, in short, as a conveyance, it is fully as comfortable as the best-constructed stage-coach.

“In returning to Moorfields, some little time was lost in ascending Pentonville-hill, owing to the fire having been allowed to get low; but, by the application of a few puffs from the blower, the difficulty was got over, and it proceeded up the hill at a diminished, but sufficiently rapid rate. On the whole, the result of the first day's trip has been such as cannot leave a doubt upon the mind as to the ultimate success of steam-carriages upon common roads. No roads in the neighbourhood of the metropolis, and few in the kingdom, are more difficult to travel than that which Mr. Hancock has chosen for the scene of his exertions; and since he has been successful on it, there can be no doubt of his being successful on almost any other roads.

“The great question as to the expense incurred in running steam-coaches is still to be determined. It is stated by all who have any knowledge of the subject to be extremely small, but in their estimates we suspect they lay too little to the account of tear and wear, investment of capital, and incidental expenses. Mr. Hancock is at present, however, keeping an exact account of his expenses, which will give more exact and particular data on the subject than we hitherto have had; and we hope at some future period to be able to publish it. Meantime we can say, that Mr. Hancock has our best wishes for his success. He has spent a great deal of valuable time,

and expended a large amount of capital, in bringing his carriage to perfection; and we should consider it a misfortune to the public, as well as a matter of regret to all the lovers of science, if a gentleman who had displayed so much spirit should be an ultimate loser by his exertions.

“Great crowds were attracted to all parts of the route which the steam-carriage took to witness its performances, and great numbers went away disappointed at not been able to obtain a seat in it. We understand that Mr. Hancock has two other steam-carriages now building, which he intends shall also ply upon the Paddington-road; and we have little doubt of their being all kept in full employment.”

About the end of November the writer was induced, at the particular request of some influential parties, to make arrangements for the conveyance of one of his carriages to Dublin, and in consequence discontinued running on the Paddington-road.

The “Era” was the carriage chosen for the trip, and preparatory thereto, its outward embellishments were altered, and its name changed in compliment to the country of its temporary destination, from “Era” to “Erin.” It was shipped on board the “Thames” steam-vessel on the 30th of December, 1834, and arrived safely in Dublin on the 6th of January, 1835.

On being landed, the writer commenced running it on the Howth-road, and through all the principal streets, and most frequented thoroughfares of the city of Dublin. As this was the first steam-carriage that ever plied upon any common road in Ireland, its appearance naturally attracted an immense

concourse of spectators; all of whom, as well as those who rode in the carriage, and the public prints of the City, bore ample and gratifying testimony to the efficiency of its performances.*

Stewart's Dispatch of the 19th of January gives the following account of its running:—

“HIBERNIAN STEAM-COACH COMPANY.

“Since the experimental locomotive carriage, the “Erin,” has commenced running through town, we have invariably had bad weather, with the exception of yesterday; it does not, however, seem to have had the least effect on the carriage: hail, rain, or snow, has not prevented the ‘Erin’ steaming through every part of the City daily. The directors, very prudently, never gave any previous notice of their route, or the hour; still the crowds were tremendous. The ‘Erin,’ on Saturday, left the station-house at Clontarf with a large party of ladies and gentlemen, at one o’clock, going by Ballybough and Annesley bridges, through Abbey-street, Sackville-street, Westmorland-street, Grafton-street, Nassau-street, and Dawson-street, to Stephen’s-green, round which it went three times, at the rate of eighteen miles an hour: it then returned to the station-house in Great Brunswick-street, where having taken in a supply of water, it proceeded to Sackville-street, at the time crowded with vehicles of every description; this street it traversed repeatedly, showing the perfect control the steersman has over the carriage; he turned a dozen different times,

* On its first appearance in the streets of Dublin, it was imagined by some that one of the Dublin and Kingstown railroad engines had broken from the rail, and ran into the town.

in a shorter space than any carriage drawn by horses would have ventured on. After going round Mountjoy-square, and the other leading streets on the north side of the City, the carriage returned to the station at Clontarf. The total absence of noise or smoke, and the little notice taken by horses, is most extraordinary."—*Stewart's Dispatch, January 19th, 1835.*

Having remained eight days in Dublin, a period, the writer conceived, fully sufficient to effect the purpose of the visit, the carriage was re-shipped on board the "Shannon," and arrived safely at its old quarters at Stratford.

As experience had proved that in some instances even the "Era" engines were scarcely powerful enough to bring the loaded carriage over new-laid gravel in steep ascents, the writer determined on building a larger carriage, capable of carrying twenty or more passengers, to be propelled by engines of larger capacity. This carriage, when nearly finished, was, at the particular request of a party, converted into a drag, and on some of its first trials drew after it, on a level road, at the rate of ten miles an hour, three omnibuses and one stage coach, carrying in the whole fifty passengers. On the 30th June, 1835, this drag, with an omnibus in tow, took up at the House of Commons, a party of gentlemen, eighteen in number, and proceeded through Whitehall, Charing Cross, Regent-street, Oxford-street, and by Shepherd's Bush, to the neighbourhood of Brentford, and returned by the same route at the rate of fourteen miles an hour, leaving the party at Charing Cross.

On another occasion, with an omnibus in tow, it took a

party to Reading on the 18th July, 1835. The distance, thirty-eight miles, was done in three hours, forty minutes, twenty-five seconds,—thirty-two minutes fifteen seconds of which there was of delays, leaving three hours, eight minutes, ten seconds, actual running, or at the rate of upwards of twelve miles an hour, a speed which the writer believes might easily be maintained on good roads.

In the beginning of August, in the same year, the writer ran the "Erin" to Marlborough, and back again. The following account of the trip, by one of the passengers, is taken from the *Mechanics' Magazine*:—

JOURNEY FROM LONDON TO MARLBOROUGH IN MR. WALTER HANCOCK'S STEAM-CARRIAGE, THE "ERIN."

"SIR,—The 'Erin' steam-carriage, which was built by Mr. W. Hancock, to run on the Paddington-road, and originally called the 'Era,' started from Stratford on Tuesday morning last, at half-past four, for Marlborough, with a party of gentlemen. Mr. Hancock had attached a small tender to the carriage, containing coke and water sufficient to have lasted us to Reading; but the bar of wood, through which the bolts ran that fixed the tender to the carriage, gave way in Cheapside, and we were obliged to leave the tender behind us.

"The carriage reached Hyde-park Corner by six o'clock, where we remained about half an hour to take in some more of our party, and proceeded on to Reading, which we reached at eleven minutes past eleven o'clock. The company stopped

there an hour and a half and dined ; after which the journey was resumed.

“ The carriage reached Marlborough by half-past six o'clock, with no other accident than the breaking of one of the bands of the blower. The total time on the road was a minute or two short of twelve hours, of which four and a half were occupied in stoppages, leaving seven and a half hours for travelling the seventy-five miles, being at the rate of just ten miles an hour.

“ No one who has not travelled by steam-carriages can imagine the inconvenience and delay which results from the want of regular and ample supplies of water ; the carriage having to stop from fourteen to eighteen minutes every ten or twelve miles to fill the tanks by hand-buckets from pumps, with sometimes the additional inconvenience of having to take the supply from some neighbouring stream or pond. While the carriage is stationary, the fire slackens in consequence of the blower being stopped, and it requires about two miles running to get it again into full play. By observations which I made on the road while timing the carriage, I found that the rate of the first three miles after taking in water, averaged seven and half minutes a mile, whilst the latter part of the distance, till the carriage again stopped for water, averaged one mile in five minutes. Frequently the men were obliged to use any kind of water they could get ; some being filled with duck-weed, straw, and filth of every description, which, of course, very much retarded the generation of steam. The inconveniences arose in the present case chiefly from the loss of our tender, which would have carried us to Reading without any stoppage.

“ All these delays would, of course, not happen, if water stations, having tanks with large hose, which might fill the carriage in a minute, were provided. There is no doubt, that had such arrangements been made for supplying the ‘ Erin’ on the present journey, it would have performed it, including stoppages, in six hours ; though the carriage was not built, I am informed, nor intended for long journies, but for such short distances as between London and Paddington.

“ Mr. Hancock started from Marlborough to return to London on Friday at half-past five. The carriage accomplished the ascent of Marlborough-hill—the steepest acclivity on the Bristol-road, being full one mile long, and having a rise of about one in twelve, in six minutes, with a stoppage of four minutes. The ‘ Erin’ reached Reading by ten, and stayed one hour and a half for breakfast. After running through the town we continued our journey, and reached London by half-past five, being again twelve hours on the road, and having lost nearly about the same time in stoppages as on our journey down.

“ Our reception on the road was very cordial ; there was scarcely any manifestation of bad feeling throughout the journey ; indeed, wherever we stopped to take in water, we had every assistance given us by the bystanders. We were particularly well received at Marlborough, where we stayed two days. The carriage made a trip through the town each day ; and Mr. Hancock astonished the inhabitants by the easy manner in which he could turn, stop, or back his carriage. Two gentlemen of Marlborough most hospitably entertained the steam travellers whilst they remained in that town.

“Subjoined, I give a table of the performances of the steam-carriage taken from the notes of the gentlemen who timed the carriage.

“And remain, yours truly,

“R.

“London, August 10, 1835.”

TO MARLBOROUGH.	No. of Miles.	Miles from London.	Time.		Stoppages.	Time of Travelling exclusive of Stoppages.	Miles per Hour.
			h. m.	h. m.			
London	0	0	6 27				
Hounslow	10	10	7 27	0 8	0 53	11 3	
Maidenhead.....	16	26	9 37	0 41	1 29	10 8	
Reading	13	39	11 11	0 13	1 21	9 6	
Dine at Reading.....	—	—	—	1 20	—	—	
			P. M.				
Newbury.....	17	56	3 11	0 54	1 46	9 6	
Marlborough	19	75	6 23	0 50	2 22	8 0	
Total.....	75		11 54	4 6	7 49	9 6	
TO LONDON.							
Marlborough.....	0	75	5 32				
Newbury	19	56	8 12	0 52	1 48	10 6	
Reading.....	17	39	10 10	0 19	1 39	10 3	
Breakfast at Reading ..	—	—	—	1 30	—	—	
			P. M.				
Maidenhead	13	26	1 31	0 46	1 5	12 2	
Hounslow	16	10	4 10	0 30	2 9	7 4	
London	10	0	5 30	0 25	0 55	10 9	
Total.....	75		11 58	4 22	7 36	9 8	

Shortly afterwards the “Erin” ran to Birmingham, at the desire of some capitalists who contemplated the formation of a company. The *Coventry Mercury* gave the following account of the journey:—

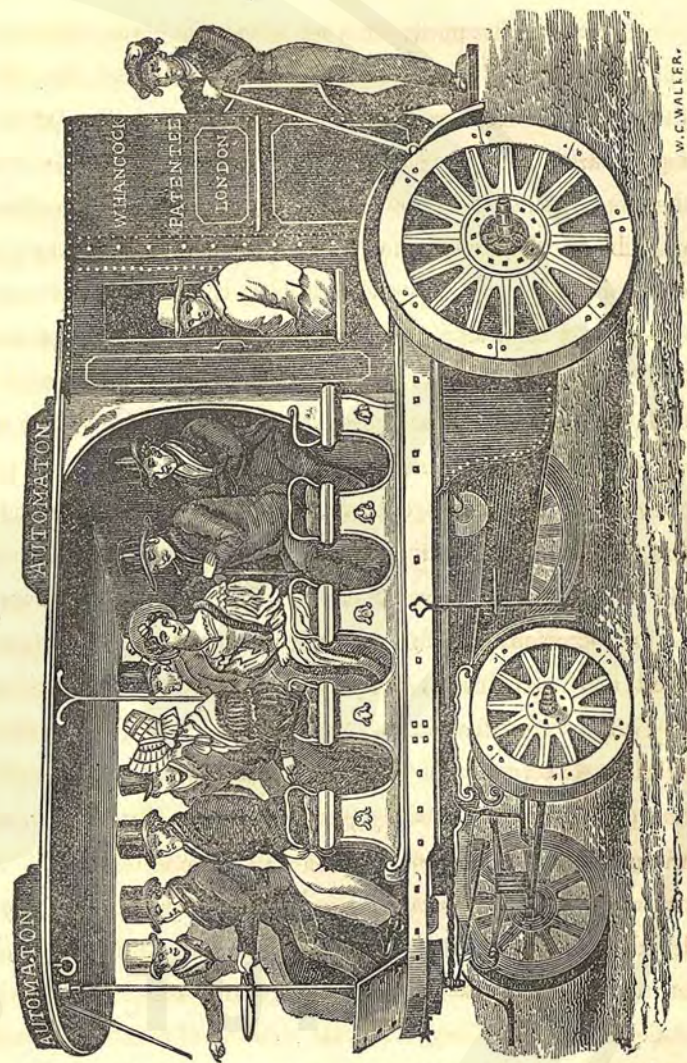
“JOURNEY FROM LONDON TO BIRMINGHAM.

“The London and Birmingham Steam-Coach Company, on Friday, August 28, started one of Mr. Walter Hancock’s steam-carriages, in order to ascertain the power required for running steam-carriages (for carrying passengers) on the turnpike-road between the above-mentioned places; and also for the purpose of building carriages for the aforesaid line of road. The trips were made to the following towns, where the Commissioners of the several Trusts were assembled to view its performance; namely, Redbourn, Brickhill, Dunstable, Daventry, Coventry, and Birmingham. These experiments pointed out that an engine of greater power was required between London and Dunstable than would be necessary between Dunstable and Daventry, arising from the nature of the soil, and the materials of which the roads were composed; showing that a level road of inferior materials is more injurious to draught than a hilly road formed of good stone, and properly constructed. The greatest obstacles the carriage met with were—Ridge-hill and River-hill, between London and Dunstable—Hockcliff-hill, Denbigh Hall-hill, and Weedon-hill, between Dunstable and Daventry—and on the third station, between Daventry and Birmingham, the ascent at Ryton Toll-gate, and the entrance to the town of Birmingham. The engine with which these experiments were made, was built for short runs and a level road; and having performed the distance between London and Birmingham at the rate of ten miles an hour, it clearly demonstrates that engines of the same weight, and possessing double

power, (of which one or two are now built,) will maintain a speed of from 14 to 15 miles an hour throughout the journey. These carriages are intended to carry about twenty-five passengers each; the fares inside not to exceed 1*l.*, and outside 10*s.* It is expected the arrangements will be completed and the carriages ready to start by the beginning of March, 1836. The manner in which the carriages were received by the numerous crowds of people on the road was truly gratifying. We hear that it is the intention of the Company to employ the present coachmen and guards as directors of the steam-carriages."

Some circumstances occurring relative to the parties who had induced the writer to make and construct the drag or tug before referred to (p. 68) as having run to Reading, which he had much reason to complain of (the expenses of its alteration from a carriage, for which it was originally intended, to a drag, and other claims, remaining to this day unpaid), he altered and enlarged it into a carriage, with accommodation for eighteen passengers, (upwards of thirty have, on several occasions, been carried upon it,) to which he gave the name of the "AUTOMATON." It was brought out on the Paddington-road about the middle of July, 1836. Its performances will be found referred to hereafter.

On the 11th of May, 1836, the writer commenced a course of traffic on the Paddington-road, with the whole of his carriages, which he has continued, without the intermission of a day, up to nearly the present time. A statement of that traffic, in a letter to the Editor of the *Mechanics' Magazine* is subjoined.



"Sir, Tuesday evening, the 20th instant, completed twenty weeks' continued running on the Stratford, Islington, and Paddington roads, during this year, and I beg to hand you as faithful an account as I can of the performances of my carriages.

“ Since the last notice in your Magazine, a new carriage, the ‘ Automaton,’ has been brought upon the road, the only difference between which and those preceding it is, that the engines are of greater power (having cylinders of twelve inches diameter, whilst those of the others are of nine inches), and the carriage altogether of larger dimensions than the others, it having seats for twenty-two, whilst they are only calculated for fourteen passengers. It is an open carriage like the ‘ Infant;’ and although only calculated for the accommodation of twenty-two passengers, it has carried thirty at one time, and would then have surplus power to draw an omnibus or other carriage containing eighteen more passengers, without any material diminution of speed; its general rate of travelling is from twelve to fifteen miles per hour. On one occasion it performed (when put upon the top of its speed, and loaded with twenty full-grown persons) a mile, on the Bow-road, at the rate of twenty-one miles per hour.

“ The first time the ‘ Automaton’ was brought upon the road (the latter end of July), it conveyed a party to Romford and back, at the rate of ten to twelve miles per hour, without the least interruption or deviation in its working, although it was the first, or as I may call it, the day of proving; nor has it required any repairs whatever to this time.

“ After this digression in describing the ‘ Automaton,’ I will return to the actual work done on the public roads and streets of the metropolis during the last twenty weeks, or five months, in as concise a manner as I can :—

The miles run, about	- - - -	4,200
Passengers carried	- - - -	12,761
Trips—City to Islington, and back	-	525
Do. - Paddington, do.	- -	143
Do. - Stratford, do.	- - -	44

Supposing the carriage had always been full,

the passengers carried would have been - 20,420

Average time a carriage has run each day—5 hours
17½ minutes.

“ An exact account of the number of times that the carriages have gone through the City in their journeys has not been kept, but I should suppose that it must be more than 200. For the last five weeks a carriage has been at the Bank twice a day, viz. between the hours of two and three, and five and six in the afternoon.

“ It was on one of the morning trips from Stratford to the Bank, through the City, that the steamer became entangled with a waggon at Aldgate; and which, I am happy to say, is the only accident worth recording. The shafts of the waggon were swung by the contact against the projecting front of a shop; the damage done was trifling, and occasioned by the wheels of the steam carriage having got into the iron gutter, and out of which it is not an easy thing to gain the fair surface of the street, with any ordinary carriage, in so confined a situation as that part of Aldgate in which the accident happened; and it should be observed, that this occurred in making way for another carriage passing at the time.

“ I will now give you an account of all other accidents (which have all happened to the damage of the steamers

themselves), viz. the chain pulley of the 'Enterprise' once broke on the axletree; the same occurred once to the 'Infant,' which were permanently and immediately replaced by castings from the same pattern, with a greater thickness of metal, and which have since stood well.

"The severe test afforded by the state of the City-road, and onward to Paddington, caused these failures; for the pulleys had stood well on the roads for many miles.

"Another accident was a hind-wheel of the 'Erin' coming off in the New Street, near the Bank, on which occasion the carriage sunk only about eight or nine inches, in consequence of the frame-work of the machinery taking the ground; and so little was the coach thrown out of the level, that the inside passengers were surprised when informed that the wheel was off. The concluding accident was by the steerage chain of the 'Infant' being too slight, and breaking at Islington, when the carriage turning short round, with one of the fore-wheels against the curb, the wheel was broken. This wheel was an old one, of much slighter construction than I now make them.

"In the early part of the five months' running, the close-bodied carriages, 'Erin' and 'Enterprise,' were about equally employed—in the latter part, and to the present time, in consequence of the weather, the open carriages 'Infant' and 'Automaton' have been running.

"I have occasionally examined the boilers and engines of all the carriages, and found that the engines have, in most parts, actually improved, whilst the boilers and fire-places

have suffered a deterioration less than could have been expected, from the use they have undergone.

"It may be remarked, that both boilers and machinery are suspended on well-acting springs, and which accounts for the state of all the parts being so well preserved. Some of the boilers have been in use for two or three years.

"There have been consumed in the before-mentioned traffic, fifty-five chaldrons of coke, which is equal to seventy-six miles per chaldron, or about $2\frac{1}{2}$ d. per mile for fuel; but this on long journeys would be much reduced by the application of the moveable fire-place, patented by me about three years ago, as our greatest expenditure of coke, in these short journeys, is in lowering and again raising the fire.

"I cannot conclude without noticing, with gratitude, the general civility and attention which I have met with, and my pleasure in discovering that the antipathies which existed in the earlier part of my career are gradually subsiding, and that, in fact, never now meet with incivility excepting with a few carters or draymen, who consider the introduction of steam-carriages as an infringement upon the old-established use of horse-flesh.

"Years of practice have now put all doubts of the economy, safety, and superiority of steam travelling on common roads at rest, when compared with horse travelling; and I have now in preparation calculations, founded upon actual practice, which, when published, will prove that steam-locomotion on common roads is not unworthy the attention of the capitalist, though the reverse has been disseminated rather widely of late by parties who do not desire that this branch of im-

provement should prosper against the interests of themselves.

“After twelve years of incessant labour in steam-locomotion,

“Your obedient servant,

“W. HANCOCK.

“Stratford, Sept. 22, 1836.”

“Mr. Hancock,” remarks the Editor upon this letter, “is now the only engineer with a steam-carriage on any road. Sir Charles Dance, Colonel Maceroni, Dr. Church, Messrs. Ogle, Summers, Squire, Russell, Redmund, Heaton, Maudsley, Frazer, and a host of others—where are they? Echo answers—‘Where!’ Strange to say, however, we see steam-carriage companies advertised, whose engineers have either never yet built a carriage, or whose carriages when built have never stirred out of the factory yard!”

During the last October the “Automaton” has taken several trips to Epping, by way of Hackney, Clapton, Woodford, Loughton, and the old road of Staple Hill. The following account of the first of these trips, on the 21st of October, is from the *Morning Herald* of the 25th:—

“STEAM-CARRIAGES ON COMMON ROADS.

“With the view of further testing the practicability of steam conveyance on common roads, Mr. Walter Hancock, accompanied by a party of gentlemen interested in mechanical inventions, started on Friday morning last in his steam-

carriage the ‘Automaton,’ from his station in the City-road, to Epping. This line of road was selected by Mr. Hancock on account of its being, for the distance, the most hilly and uneven out of the metropolis, as well as satisfying his friends that, even with this disadvantage, from the late improvements which he has introduced, that the carriage would perform, at least, ten miles an hour, and the result proved that he more than under-rated its power. On arriving at Woodford, Mr. Hancock stopped the carriage in front of the house of Mr. Rounding, the sign of the Horse and Groom, who kindly procured a fresh supply of water. After remaining nearly a quarter of an hour, Mr. Hancock again started at a rapid pace, and having ascended Buckhurst-hill at the rate of, at least, seven and a half miles an hour, entered Epping, amidst the loud cheers of some thousands who were collected in the town, it being market day, and created much astonishment among many of the country folk, who had never seen such a vehicle before, and who could not imagine how it was moved without horses. The party having remained for some time in Epping, returned to town, and the whole journey, notwithstanding the disadvantages before mentioned, was performed on the average of eleven and a half miles an hour. Among the party were two or three members of the Society of Friends, who, as well as all Quakers, took a very warm interest in the success and general application of this humane mode of conveyance, and they, as well as other gentlemen, expressed themselves highly pleased with this trip. The crowds along the road and different villages to see the carriage were immense.”

The following is a list of the steam-carriages built by the writer in the order of their construction, and the number of persons they were respectively calculated to accommodate, exclusive of the steersman, engineer, and fireman :—

Experimental carriage	- - - -	4	outside
Infant	- - (trunnion engines)	10	outside
Ditto	(enlarged with fixed engines)	14	outside
Era	- - (Greenwich)	16	inside, 2 out
Enterprise	- - - - -	14	inside
Autopsy	- - - - -	9	inside, 5 out
Erin	- - - - -	8	inside, 6 out
German Drag	- - - - -	6	outside, exclusive of those accommodated in the separate carriages behind
Automaton	- - - - -	22	inside.

All these carriages (except the drag, as has been before explained) are constructed to carry their passengers and machinery on the same wheels; but on one occasion, while running on the Paddington-road, the Era was unexpectedly called upon to perform the duty of a drag. This was caused by a trifling accident which occurred to the Autopsy: a pin having escaped from a part of the machinery, the vehicle was brought to a dead stand on the road near St. Pancras. To avoid the necessity of re-adjustment on the public road, which, however, might (as was apparent after examination) have been very readily effected, the Era was brought to its assistance, and the Autopsy being attached, it was towed up Pentonville-hill at the rate of full five miles an hour, to the station

in the City-road, where, in half an hour, the defect was remedied. The following account of the accident is from the papers of the day :—

“ As Mr. Hancock’s steam-carriage, Autopsy, was proceeding as usual yesterday morning to Paddington, a little beyond the Regent’s-park, the carriage was in a moment brought to a dead stand. As no derangement could be discovered in any of the exposed parts of the machinery, and as most of the passengers had before been put down, he decided on making no further examination on the road; but as he wished to try the power of his last new carriage, the Era, he determined on taking the Autopsy in tow of the Era back to the station in the City-road. The latter was soon on the spot, the former attached to it, and the carriages moved off in company; but the ascent of Pentonville-hill (nearly half a mile long, and rising one in twenty at the steepest part) was the point of greatest interest; however, the hill was ascended half way with ease, when the slow motion was put on, and the two carriages cleared it without any further stoppage. When it is considered that the two carriages could not weigh much short of seven tons, besides 14 or 16 persons on them, making nearly eight tons, there can no longer be any question that hills will form no formidable obstruction to these carriages—especially as the hill is in a bad state, and the road exceedingly heavy. The stoppage of the Autopsy was occasioned simply by the key in the rod of one of the slide-valves within the steam-box shaking out; this was replaced, and the Autopsy started again in the afternoon at the usual hour.”

It has never been the practice of the writer to over-rate

the capabilities of his carriages, as such a course could have ended only in disappointment both to himself and the public. He was, indeed, himself in some degree unprepared for the decidedly successful issue of the last-mentioned experiment. The weight of the carriage to be drawn, with its machinery, was not less than three tons, and the part of the road where the casualty occurred was for some distance unusually bad; the result therefore was not less strikingly illustrative of the power and efficiency of the machinery, than it was gratifying to the writer. As most persons connected with the metropolis are acquainted with the road between the City and Paddington, it will be unnecessary to enumerate the many difficulties connected with working a steam-carriage on that particular line, and he adverts to them here merely for the purpose of protecting himself from a possible imputation of having selected one that offered peculiar facilities for the undertaking; it is in fact, on the contrary, beyond question the least desirable for such a purpose of any of the roads in the vicinity of London, and over which no other carriages but his have ever yet been propelled by steam.

Considering the severe tests to which these recently-constructed carriages have been subjected, it affords the writer especial satisfaction to reflect, that not the slightest injury has ever been sustained by a single individual of the many thousands who availed themselves of them as a means of conveyance; and that during the entire period of their running only two accidents occurred to the Era, in both cases resulting from the same cause, and that simply the breaking of the crank-shaft, which had been made too slight. It has

been one of the principal problems in steam locomotion to determine the precise strength necessary to the several parts, to guard against *all* casualties arising from defective roads, or other circumstances, and without adding unnecessary weight to the carriage.

The only failures in the Autopsy have been already adverted to. In each of the cases the repairs were effected so promptly, that the public suffered no disappointment from a cessation of the working.

The estimate, on the next page, of expenses and wear and tear has been calculated, from the actual working of the writer's steam-carriages during their running for hire on common roads, but principally from the "Automaton," this carriage being the only one he has hitherto built of sufficient magnitude to cope with the ordinary contingencies always to be found on a long line of road. To this estimate the writer has added another, showing the outlay necessary for an establishment on a large scale, and the probable pecuniary results.

ONE DAY'S WORK, OR ONE HUNDRED MILES.

Expenditure.		Revenue.	
£	s.	£	d.
Coke, 1s. per mile	5	0	0
Repairs, and wear and tear	4	0	0
Oil, hemp, &c.	0	10	0
Two engineers, two steersmen, two stokers, one guard	2	0	0
Rent of stations and offices, wages of atten- dants, &c.	3	0	0
Tolls	1	10	0
Fund for renewal of carriages, £2 each.....	4	0	0
Contingencies	2	0	0
Daily profit.....	22	0	0
	10	9	4
	£32		9 4

ONE DAY'S WORK, OR ONE THOUSAND MILES.

£	s.	d.
Say 80 steam-carriages, £1,500 each..	120,000	0 0
— 50 common carriages, £120 each..	6,000	0 0
— Stations, &c.	14,000	0 0
	£140,000 0 0	

Profit on Capital, nearly 25 per cent.

VARIOUS

STEAM-CARRIAGE IMPROVEMENTS.

During the course of his various experiments in steam locomotion, the writer invented and constructed many minor parts of the apparatus of a novel character, which are not noticed in the preceding descriptions of his arrangements. Among these the most important of them he considers to be his WEDGE WHEELS.

The following description of these wheels was inserted in the *Mechanics' Magazine* of the 8th of February, 1834.

“IMPROVED WEDGE-WHEELS.

“Sir,—I forward you a sketch and description of the wedge-wheels which I have adopted for my steam-carriages, having found those of other constructions insufficient for the purpose. Being desirous of employing vertical wheels, and knowing that those on the common plan could not stand in this position, I determined on trying a pair constructed in the manner I am about to describe, and which description I am induced to send you, from a belief they may be useful generally, and more particularly to those who are engaged in similar pursuits with myself.

“ Fig. 1 is a front view of a wheel, with the front bind-plate removed, to show the meeting of the wedged spokes,

Fig. 1.

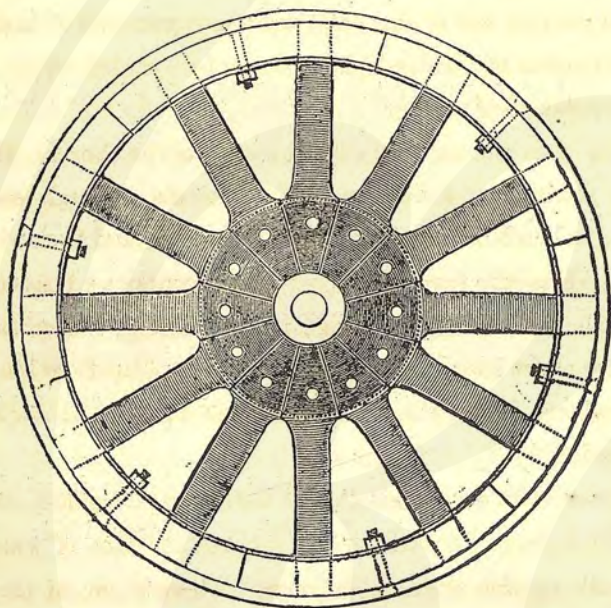


Fig. 2.

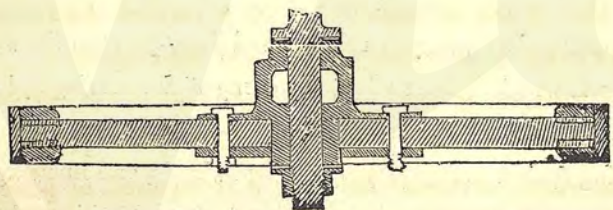
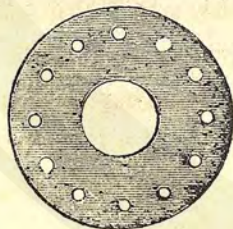


Fig. 3



which are of straight-grained, well-seasoned ash, tennoned into the felloes as in common wheels, but the nave ends are very accurately fitted to each other in radial joints butting against the iron box of the axle, and forming around it, to the circumference of the bind-plate (shown by a dotted circle), a solid connexion of timber.

“ Fig. 2 is a horizontal central section of the above. The tire is secured by a bolt and nut, or rivets, through each felloe, the heads being countersunk, so as to stand flush with the outside of the tire. The box, which contains a reservoir for oil, is formed with its flange in one casting, the outside diameter of the flange being the same as that of the front bind-plate, which is like a large wrought-iron washer, and shown detached at fig. 3.

“ Screw bolts pass through the back flange, spokes, and front bind-plate, the nuts turning against the face of which brace all together as one solid nave. There is one of these bolts on each spoke, as shown in figs. 1 and 3.

“ The spokes throughout are of a parallel thickness, as shown in fig. 2, the edges being slightly rounded off.

“ I have not entered into the details of the substance of metal and wood, as this must necessarily depend upon the size of the wheel, as well as the work it is required to perform. Having worked many such wheels on my carriages, I can say, from experience, that they are all that can be required in a wheel; they combine permanent strength with comparative lightness, and are by no means expensive in their first cost.

“ I am, Sir, yours, &c.

“ WALTER HANCOCK.

“ Stratford, Essex, Jan. 1834.

“ P.S.—The Infant has a set of *dished* wheels on this principle, now in good condition, after having performed work which would have worn out two or three sets of wheels on the common construction.”

Over the fore wheels are guards or fenders to protect the body of the carriage in the event of any accidental collision with another vehicle or other body.

Two strong iron bars are also attached in continuation of the front or platform steps, and approach to within a few inches of the road. These bars are intended as a precaution against danger, in the event of such an accident happening to the fore carriage as might occasion it to fall; they will also remove any obstruction from before the front wheels during the onward movement of the carriage. Stays of a similar description may also be advantageously attached to the hind axle.

In the early part of the writer's locomotive practice, the steering or guidance of the carriage claimed a considerable portion of his attention; and the result has been the adoption of a chain working over two horizontal wheels, one on the centre of motion of the fore carriage, the other on the steering spindle.

This arrangement places the direction of the carriage under the complete control of the steersman; but, as some inconvenience might be experienced from the necessity of constantly employing the arms in keeping the carriage steadily in the line of its course, a friction-wheel and band was attached beneath the steering spindle, by which the course was held, and the arms relieved by the mere pressure of the foot upon a lever.

The mode of turning on or cutting off the steam; the best form of the clutches for connecting or disengaging the machinery from the propelling wheels; creating a draft of atmospheric air through the fire, first by means of a blower, afterwards by an exhauster at the top, and finally by returning to a blower of better proportions; the best kind of fire-place, and the check when going down hill;—all these and various other minute particulars have each in their turn occupied the writer's particular attention, with what success he freely leaves to any unprejudiced and competent inspector of his recently constructed carriages to decide.

It would occupy several pages, and render many additional engravings necessary, were the writer to enter upon an explanation of all the contrivances he has subjected to experiment during his locomotive pursuits; but as this would be levying too great a tax upon the reader's attention, he will conclude his narrative with a description of but one of them, viz. his patent furnace, &c. As the particulars of this invention were embodied in a communication to the *Mechanics' Magazine* of the 3rd November, 1833, he will merely give an abstract of that communication:—

“ None but those practically acquainted with furnace-work can estimate the inconvenience and loss occasioned by a foul fire; nor is this drawback alike in the same furnace at different periods, but varying with the quality of the fuel, and other contingencies.

“ I have been informed by good authority, that, on the late trip of Sir Charles Dance on the same road, the machine laboured under similar difficulties from the same cause, and

with equal diminution of speed, in certain distances, as the "Infant" did.

"Having, during the whole of my experiments on steam-locomotion for the last six years, had to combat this difficulty,

Fig. 1.

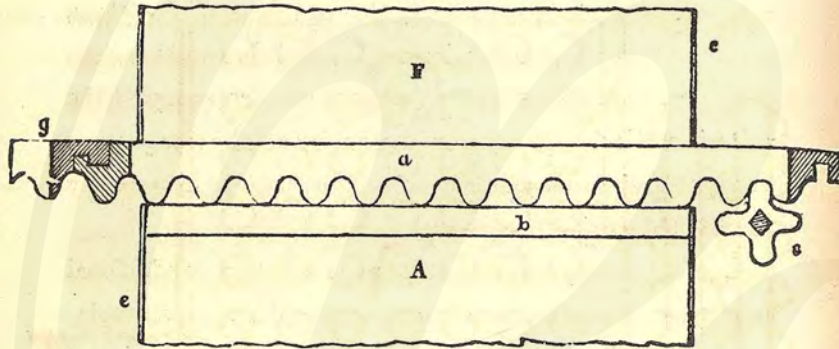
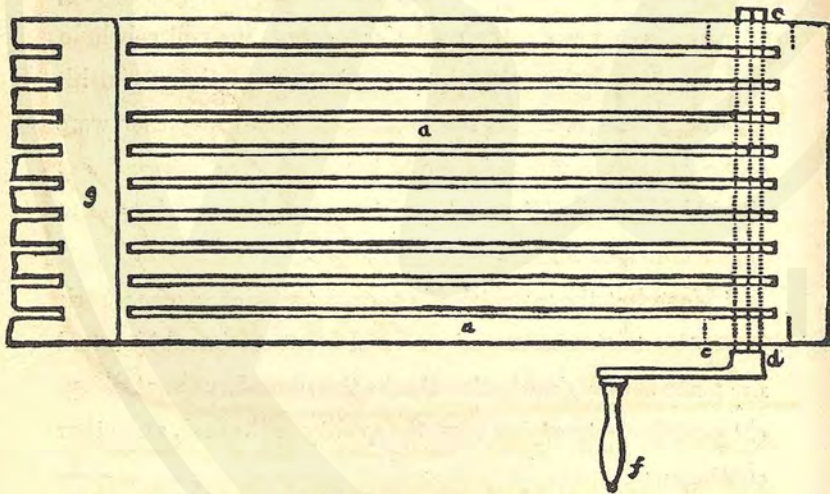


Fig. 2.



and finding that I could by no means prevent the formation of clinkers on the bars, I turned my mind to the invention of some mechanical contrivance, by which such an impediment could be readily removed. In this I have succeeded, and I

think it may impartially be deemed one of the greatest advances towards perfection in steam locomotion.

"By this invention, which I have recently patented, a foul set or floor of bars is readily taken out, and a clean floor intro-

Fig. 3.

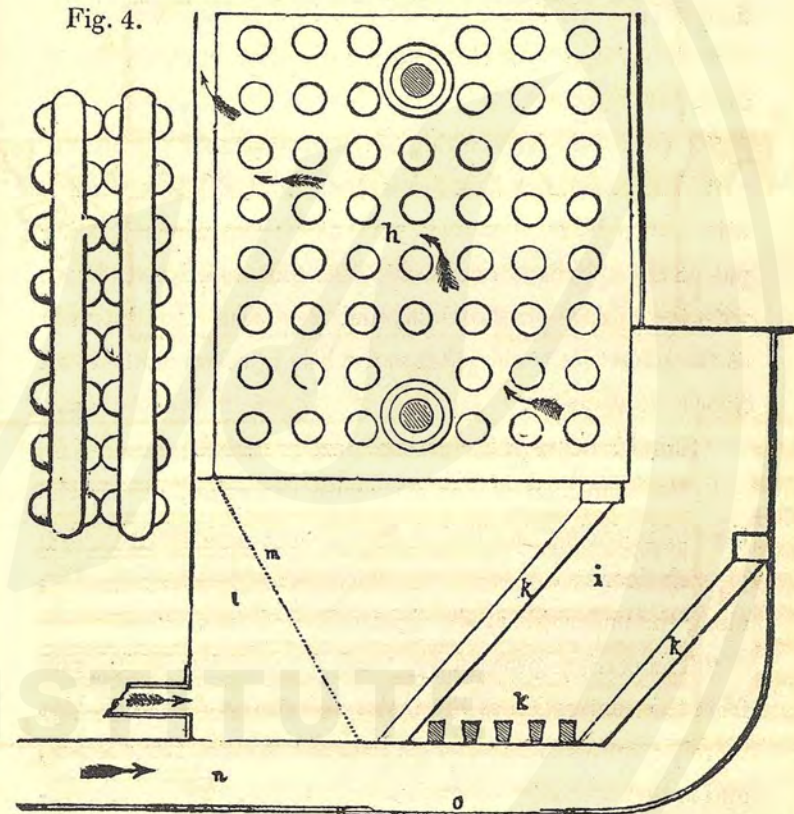
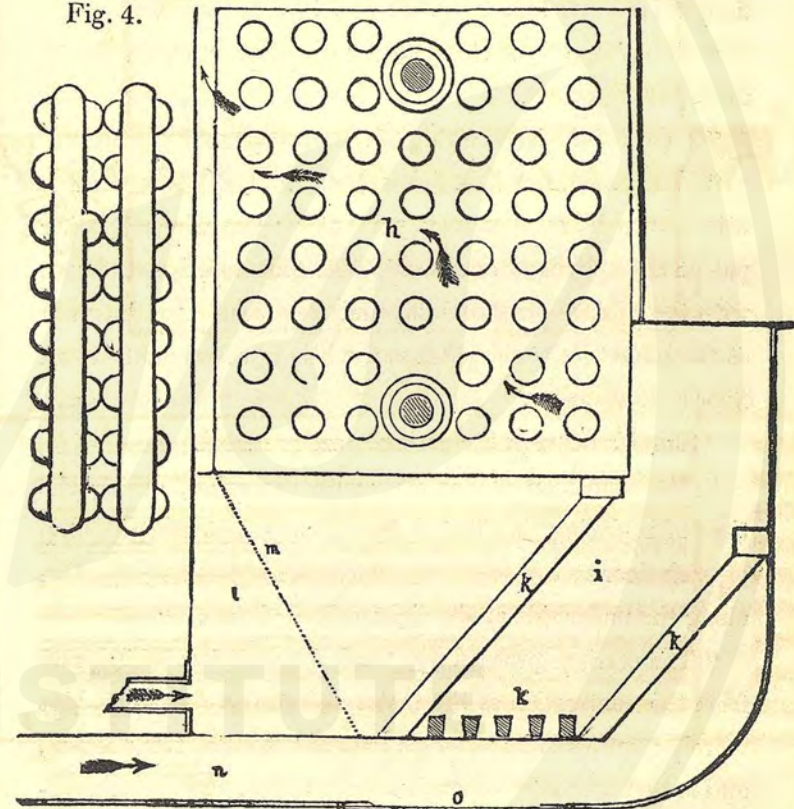


Fig. 4.



duced in its place, without losing heat; this is performed in much less time than is required to imperfectly clear by the rake.

"Fig. 1, in the annexed sketch, is a vertical section of the furnace, and fig. 2, a plan of the same. F is the fire-place; A the ash-pit.

"*a*, is a floor of bars in one casting, in their position for use; the outer bars, on each side, are cast with teeth underneath, forming racks.

"There is a fixed rail under each rack, one of which is seen at *b*. These support the racks, and consequently the whole floor of bars, whether at rest or whilst being removed.

"Two pinions *c*, working on one spindle *d*, engage with the racks before named.

"*e*, part of the iron casting of the fire-place.

"When a floor of bars has become foul, a clean floor is attached to it, as shown (in part) at *g*; the winch *f* being put on the spindle *d*, and turned, the foul floor is withdrawn with the clinkers on the right, and the clean floor drawn in at the same time at the left, the fire being pushed on the clean floor as it advances.

"Suitable doors in the casing *e*, are provided.

"The connexion of one floor with the other, during the time of replacing, is effected by a groove cast along the top of each floor at the left end, and a corresponding projection along the under side at the right end, as shown.

"The carriage proceeding, the foul floor is left behind, and from the contraction of the metal and clinkers when cold, it merely requires to be reversed to divest itself of the clinkers, and is then ready to be exchanged on the return of the carriage to the station.

"This contrivance is not costly, it involves no practical difficulty, is accompanied by a material saving of fuel, and removes what has hitherto been a great obstacle to steam locomotion.

"I used to construct my boilers with partitions or flues between the chambers, formed of vertical bars of iron, framed edgeways like a grating, by which the chambers are kept a proper distance apart for the action of the fire; but I now prefer embossing the metal of which the chambers are made from the inside, and thus do without those partitions.

"In fig. 3, *h* shows the sides of a chamber of this description; and fig. 4 a front view of two such chambers; and it will readily be perceived that the hemispherical projections, or embossings, meeting in horizontal as well as vertical rows, I can either have my fire under the chambers as usual, the flame rising vertically only, or I can have it in front, the flame then acting horizontally, as well as vertically, as shown by the arrows; or I can have the front of the fire-place inclined, as shown in fig. 3: an arrangement which has its advantages, particularly in feeding the fire.

"In fig. 3, *h* is a chamber; *i* the fire-place; *k* the fire-bars, which are either of solid metal, or of tubes connected with the boiler, or for waste steam to pass through, to prevent their burning out; *l* the waste steam chamber; the steam blowing through the perforated division *m*, into the fire, is decomposed into its constituent gases; *n* the tube conveying air from the blower to the fire; *o* is a slide door, by which the whole of the fire could be discharged in an instant, whenever required.

"I am, Sir,

"Your obedient servant,

"W. HANCOCK.

"Stratford, Essex, October 17, 1833."

The writer has only to observe, in conclusion, that much injury has been done to the cause of steam locomotion on common roads, by abortive and injudicious attempts to obtain momentary reputation, by the acquirement of a rate of speed not economically attainable in the present state of the invention; and while some, after an immense cost to the parties engaged, have either from difficulties they had not foreseen, or duly considered, or from impediments of a local nature, been compelled to abandon their undertakings, others, having reached a certain point, and unable to get further, have had recourse to meretricious display, floundering along at great speed, until exhaustion, at the end of two or three miles, brought them to a stand. The consequence has been, a certain degree of distrust in the public mind respecting the feasibility of the subject, which has required, and may still require, much time, and a series of convincing experiments, fully to dissipate.

The writer believes that at this moment he has not one competitor who, singly and steadily pursuing his course, has borne up against all opposition, and fought the battle to such a successful issue. In commencing the undertaking, he was fully aware that nothing short of a toilsome and steady perseverance could accomplish his purposes, and produce a steam carriage of real utility in the public service.

A drive round the Regent's Park, or over any other well-made level road, was a matter soon and easily achieved; but when the ordinary turnpike roads are attempted,—good and bad as we find them, rough and smooth, hard and soft, hill and dale, long and deep reaches of new laid metal,—then, and not till then, the decisive trial commences,

In such a course of experiments the "Infant" took the lead, and plied for hire on the Stratford-road, and Mr. Gurney shortly afterwards followed at Cheltenham. The latter road, and the centre or gravelled portions of the former, were much alike, but the Stratford-road has stone-paved portions on both sides, and on these paved parts, not always in the best condition, the "Infant" was driven; and this often by choice, for the sake of experiment and observation; the writer thus obtaining some of his best, although most expensive, lessons.

Setting aside, therefore, all exaggeration, the writer feels he has now demonstrated practically, that steam-travelling, at the rate of from ten to fourteen miles an hour with passengers, and for goods and merchandise at from five to seven miles an hour, can be effected safer, and on a scale of charge much below the present horse conveyances, and with a far greater return for capital employed.

July 4th, 1838.

The preceding sheets were printed nearly two years ago ; since that time I have brought out the Steam Pheaton shown in the title page, intended for my private use ; it has seats for three persons, independent of the one steering. It has run principally in the City, and upon the roads in the east of London; but, within the last few days, I have occasionally run it in several parts of the west end of the town, principally in Hyde Park, amongst the throng of carriages and horses which are always to be found there on fine afternoons at this period of the year. Of course it did not fail of attracting notice, and as there was no noise, nor any appearance of steam, fire, or smoke, I was gratified to witness the general expression of approbation, as well as particular inquiries of several noblemen and gentlemen, some of whom were pleased to request a ride with me.

I have, with this carriage, gone at the rate of twenty miles an hour, but its usual rate is not more than from ten to twelve. My object in building it was to demonstrate, that my boiler is applicable to the propulsion of carriages for actual use on common roads, of any and every degree of power ; and I am now engaged in applying this boiler to a locomotive engine for a railway train, from which I confidently anticipate very considerable advantages to arise.

W. H.

APPENDIX.

The facts of the case in regard to the "London and Paddington Steam Carriage Company" are simply as follow :—The engagements entered into with this Company have already been narrated, —shortly after the commencement of the running of the "Enterprise," the writer ascertained that the self-stiled "projector" of the Company, had (with the knowledge of a little clique of his among the subscribers), *for some months been engaged in building a steam carriage himself*; this carriage, when it came to be seen, was found *in its general arrangements, and in the strength and proportion of its parts—a copy of the "Enterprise,"* the principal difference, and the cause of its failure, consisting chiefly in the boiler, which, being secured by patent, the "projector" could not adopt ; to get over this difficulty he took out a patent for an imitation or piracy of part of the writer's boiler. The whole of this project, however, met with the fate it deserved, in a total and complete failure, alike disgraceful to the morals as to the pretensions of the parties concerned. The following is the letter alluded to in the "Narrative :"—

Stratford, November 4th, 1833.

TO THE DIRECTORS OF THE LONDON AND PADDINGTON STEAM-CARRIAGE COMPANY.

Gentlemen,—I am perfectly surprised at a communication which I have received from you, dated 29th October ; the alteration of your intentions and propositions from time to time, but to which, nevertheless, I was desirous of acceding, if possible, is so very

unlike business, that I must beg to inquire whether your letter of the 28th ult. is one upon which you intend to act; as it is so totally at variance with the negotiation at this time pending between us, and is not in the remotest degree an answer to my last letter, written to you on the subject of the "Enterprise" Steam Carriage.

But I take leave to point out to the Directors, and through them to the Company, the course which the proceedings have taken; and at the same time apologize for the length of my communication.

When the "Enterprise" ceased running, early in the month of May last, I undertook, at my own expense, to remove it to my own premises at Stratford, examine and revise it throughout, and return it to the Directors after such examinations; although I did not admit that it was not in a state for work, as it performed more work on the day it ceased to run, than on any other day.

I subsequently found that your engineer took it out, *without my knowledge*, and that damage occurred to it, (whether by accident, incompetency, or design, I will not stop to inquire); after the damage had been so done, several men were employed upon it, under the direction of your engineer. With such proceedings I thought I had reason to be dissatisfied. Feeling, however, how injuriously any long-continued absence of the carriage from the road would act upon the mutual interests of myself and the Company, I requested an interview with the Directors, and remonstrated with them, referring them to my letter of the day before, of my readiness immediately to attend to the carriage; taking an opportunity to express my desire to alter the fire-place, and my wish to take it home for that purpose.

To this the Directors consented, but on my applying for it, your engineer refused to deliver it to me; your engineer also wrote me a note to such effect, on the 16th of May.

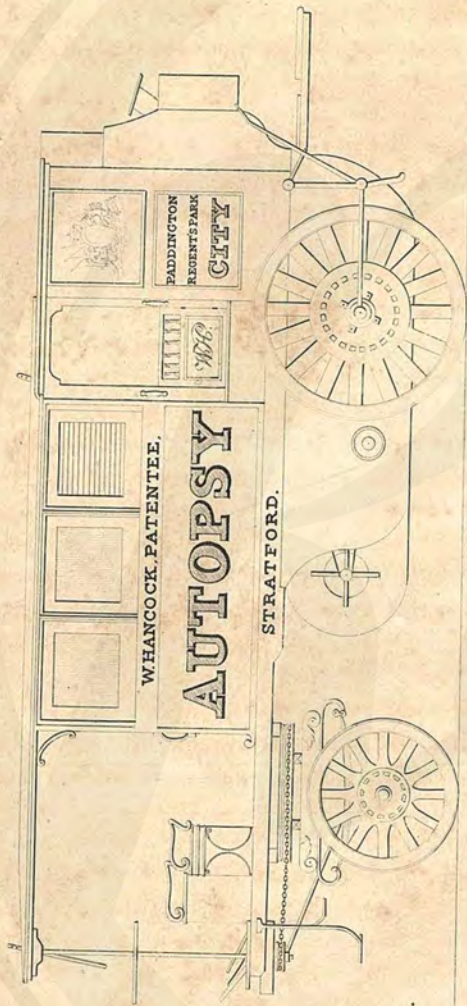
On the 17th I wrote an appeal to the Directors, to which they replied on the 18th by stating, that their responsibility for the *safe custody* of the carriage, unauthorized as they were to part with it even for a few days, would render *securities* necessary before they could allow it to be removed.

The application for securities, therefore, emanated from the Directors.

I wrote to them the same day, consenting to give such securities as they might require.

On the 20th I received another communication, in which a totally different objection was made—that the return of the carriage to my premises would impair the confidence of the public! To this I replied very fully on the 21st, and complained of the uncalled-for interference of your engineer. On the 23rd a number of interrogations were put to me, to which I replied fully on the 25th. On the 19th of June I wrote to the Directors, requesting payment of the balance due on the last instalment, and requesting some information as to the prospects of the Company, &c. On the 25th I received for answer to the first part of my letter, requesting payment of the balance due to me—that they employed an engineer to inspect the work in the carriage, and his report did not warrant a compliance with my request; and that “as to my other queries, they did not know of any ground on which I was authorized to make them.” Knowing, as of course I did, that the carriage had been three months painting on the premises of your engineer; had been running for hire more than a fortnight; had been taken on the road by your engineer; and had been then, altogether, six months in your possession: this appeared very strange. However, on the 8th of July, I wrote for a copy of the report of the engineer you had employed, but to which you returned me no answer; at length, a meeting of the proprietors was called, after which, on the 20th, I received a letter from you, inquiring if I would, on the carriage being put into my hands, give ample security, that on delivery, it should be in a state to stand a full day’s work of fourteen consecutive hours, on the London and Paddington road! This was quite new, both as a proposition, and in point of fact. I had never contracted for any thing of the kind, and no steam carriage had ever yet done such a day’s work; besides, the security is not now demanded on the ground of responsibility for its safe custody, but for its performance: however, I again offered to repair the carriage and give security for its re-delivery, within a specified time, without expense to the Company; and again, on the 1st of August, I made a formal proposition to the Directors, and I studied to make it in terms so fair and unobjectionable that the matter might, with certainty, be

Fig. 12.



brought to a close. I must beg to refer you to it for reconsideration.

On the 8th you propose, that I should pay 1000*l.* into the hands of bankers, (not for the safe custody but) as a penalty, to be forfeited if I failed to *perform the stipulations of a memorandum which I had never seen!* On the 10th, I sent to the Directors a copy of such an engagement as I would find competent persons to sign, and to which I again refer you. On the 13th, you ask for the names of the parties—you then require reference, which being furnished, you signify your approval.

I now thought every obstacle was removed; but you replied that the securities must be in the form of bonds, and that I must pay the expenses of them; to which I, of course, objected, conceiving that a written engagement, on the part of two respectable persons, was a sufficient guarantee for the re-delivery of the carriage; and that if any other was required, the party requiring it should pay the costs.

In your next you tell me, that unless I comply by a certain day you would have a fresh survey of the carriage made, put it into some other person's hands, and seek to recover the expense by proceedings, to be instituted against the former securities. On my stating, once more, that my securities were ready (for the re-delivery of the carriage), and myself still willing to examine and revise it without expense to the Company; inquiring at the same time what could induce you to put the carriage into other hands, and thereby incur unnecessary expense and litigation; but to this letter you make no reply, but serve me with a formal notice, that you now wish me to pay 960*l.* into the hands of a Mr. A. Booth, and take the carriage away forthwith. What I am to understand by such a series of proceedings I cannot tell, as they have been so constantly varied; besides, you have had the carriage long in your possession—you have given your receipt for it—you have rode in it, and expressed your satisfaction at its performance—based a Company upon it—took hire for it for more than a fortnight,—in fact, exercised all the rights of proprietorship, and paid the last instalment in part, only because your funds were not in a state to furnish the remainder,—and yet, after all this, you ask me to return you the money, and take back the carriage!

But let us take another view of this affair. On the 29th of April, and after the "Enterprise" had been running a week, your engineer addressed a letter to the shareholders, to which I respectfully beg to call your attention. This was not written by a person ignorant of the machine about which he wrote; he saw it built—he had it three months under his own roof—he had often been on it, and seen its performances, and extolled it,—nor was he altogether ignorant of the subject on which he spoke and wrote; and although his letter is indiscreet as to his anticipations, yet it is clear that having, both with regard to the build of the carriage and its performance, every opportunity of judging, he must either have been ignorant, as an engineer, or he must have written a deceptive description to those very persons whom he describes as having large claims upon his gratitude.*

I cannot conclude this letter without calling your attention to the manner in which the "Autopsy" steam carriage has been received on this road, and by the public almost universally, proving that, but for the strange and unfortunate management of this whole concern, with what facility the "Enterprise" might have been made to realize a considerable profit during the summer, by occasionally running it, and, what is of more importance, all the shares might undoubtedly have been sold, and the Company at this time enabled to have brought three carriages on the road; instead of

* CIRCULAR FROM THE PROJECTOR AND ENGINEER TO THE SHAREHOLDERS OF THE LONDON AND PADDINGTON STEAM CARRIAGE COMPANY.

"SIR,—My early statements regarding the performance of our first carriage being proved by demonstration to be strictly correct, as the Projector of the Company, and having a strong and grateful feeling towards all who united themselves with me in the early stages of the Company's progress, and who, by the liberal construction which they all along have put on my endeavours, I feel I should grievously fail in what I consider is due to them if I delayed one moment longer in informing them, that I have not the least doubt the shares of the Company will increase in value gradually to 100*l.** per share, within twelve months from this period; and I am equally satisfied that, in the succeeding six months, they will increase to at least 200*l.* per share. As this thing is so clear to me, I feel that I should be injuring myself in the future good opinion of shareholders by withholding the information one moment longer.

"I remain, yours respectfully,

"D. REDMUND,

"Projector and Engineer to the Company.

"April 29, 1833."

* The original price of shares was 25*l.*

which, six of the best months of the year have been lost, universal dissatisfaction with the past has been produced, whilst the carriage remains in the possession of the Directors, profitable to no one, and absolutely injurious both to myself and the proprietors at large.

I feel that I have only discharged my duty to the Company in making this communication to them through you; and I trust that no further step will be taken without a meeting being called; at the same time I am perfectly prepared either to defend any proceedings which you may be disposed to adopt, or to receive back the carriage and repair it free of expense, and give security (at the expense of the Company) for its re-delivery.

I am, Gentlemen, your obedient servant,

W. HANCOCK.

The Mirror

OF

LITERATURE, AMUSEMENT, AND INSTRUCTION.

No. XVI.] SATURDAY, JANUARY 15, 1823. [PRICE 2d.

Patent Steam Carriage.

ERRATA.

- Page 10 line 18 for *fig. 1*, read *fig. 2*.
 — 17 — 5 from bottom for *subsequent* read *subsequent*.
 — 38 — 2 from bottom, for *four miles* read *four minutes*.
 — 48 — 6 for *Garden's* read *Gordon's*.
 — 57 — 7 from bottom, for *that* read *those*.
 — 78 — 5 from bottom, for *the weather* read *the fine weather*.
 — 79 — 19 for *never now* read *I never now*.
 — 82 — 17 for 22 *inside* read 22 *outside*.
 — 94 — 10 for *casting*, read *casing*.
 — 98 — 4 for *pheaton*, read *phaeton*.

Instead of an axle-tree passing through both the front or both the hind wheels, as is usual in other carriages, the axis merely passes through the nave of each wheel, sufficiently to support on each side uprights, which strengthen and connect the frame of the waggon. From the hind part of this frame, or bed, proceed two perches, inclining inwards until they meet: and, being joined a few feet before they reach

gained by this pinion, that little force is required from the coachman to produce the necessary direction.

In addition to every other kind of security that the most profound reflection has enabled Mr. Griffith to adopt, there are two safety-valves calculated at fifty pounds upon a square inch, whilst every part of the steam apparatus has been proved at the rate of 200 pounds upon a square inch.

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The Mirror

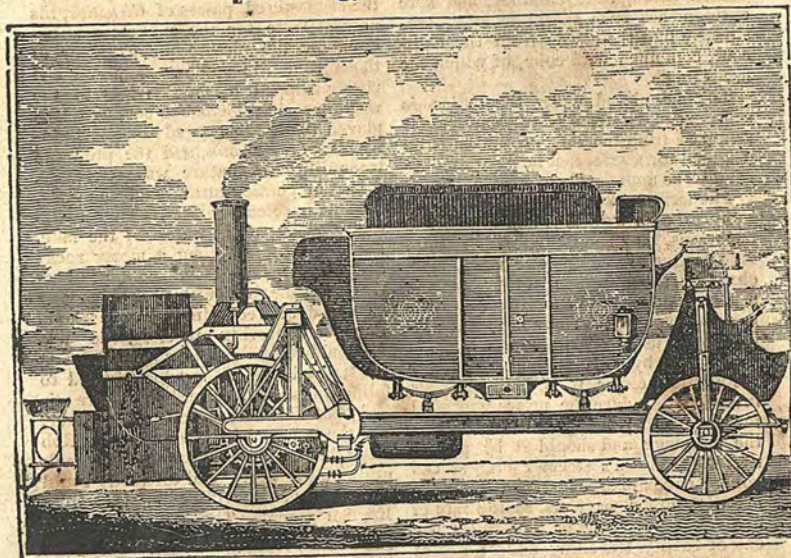
OF

LITERATURE, AMUSEMENT, AND INSTRUCTION.

No. XVI.] SATURDAY, JANUARY 15, 1823.

[Price 2d.

Patent Steam Carriage.



Our engraving, this week, presents a singular instance of the application of mechanical power—in fact, one of its proudest triumphs—the construction of a machine adapted to the transport of goods, without the necessity of animal labour. This is a carriage (for which Julius Griffith, Esq. of Brompton-Crescent, has obtained a patent) to be propelled by steam, upon common roads. The carriage, which has been constructed under the eye of Mr. Griffith, assisted by Mr. F. Bramah, at Pimlico, is twenty-seven feet in length, including seven feet for the fire, boiler, cylinders, and the mechanism connected with the driving-wheels.

Instead of an axle-tree passing through both the front or both the hind wheels, as is usual in other carriages, the axis merely passes through the nave of each wheel, sufficiently to support on each side uprights, which strengthen and connect the frame of the waggon. From the hind part of this frame, or bed, proceed two perches, inclining inwards until they meet: and, being joined a few feet before they reach

the front wheels, they form the bed of a revolving perch; this revolving perch is connected with the bed of the fore part of the carriage, or front wheels, and by its rotatory motion, when either of the wheels is more elevated or depressed than the other, preserves the horizontal position of the carriage.

The direction of the carriage is effected by the action of a bevel pinion, connected with a spindle, which is governed by the coachman; this pinion acts on a wheel, whose movements compel those of certain iron braces fixed to the exterior of the front wheels, which turn upon the same spot where they touch the ground; so much power is gained by this pinion, that little force is required from the coachman to produce the necessary direction.

In addition to every other kind of security that the most profound reflection has enabled Mr. Griffith to adopt, there are two safety-valves calculated at fifty pounds upon a square inch, whilst every part of the steam apparatus has been proved at the rate of 200 pounds upon a square inch.

From these safety-valves, as well as from the cylinders, the steam is conducted into two condensers, formed of flat copper tubes; that part of the steam which is condensed, falling to the bottom of the condenser, is conveyed to the reservoir of water for further use; whilst the uncondensed steam is conducted through the chimney, and here extinguishes such sparks as may occasionally find their way from the charcoal, combined with coke, of which the fire is made.

The fire, placed under the boiler, is surrounded by iron plates, and so far removed from the part of the carriage destined for goods, that no possible danger can be apprehended.

The weight of the carriage, (which is in form of a caravan), and the whole apparatus, may be calculated at $1\frac{1}{2}$ ton: it is destined to carry three tons of merchandize, making a total of four tons and a half, upon wheels conformable to the regulations established by law, and subject to the usual restrictions.

Actuated by a disposition to promote the public welfare, it is Mr. Griffith's intention to reduce the prices now paid for the carriage of goods throughout the country; and should it be proved that Mr. Griffith's steam carriages can convey goods in an equally secure manner with other waggons, at the rate of five miles per hour, or 100 miles per day of twenty travelling hours; and at a freight, 25 per cent. cheaper than the present prices, there can be no question that he will have deserved well of his country and of mankind.

ROB ROY.

This reputed chief of the warlike Macgregors was the hero of various exploits, commemorated in traditional story; and many of his "deeds of fame" display a generous magnanimity, which, in happier circumstances, might have rendered him an eminent benefactor of the human race. In early youth, he was distinguished by a passionate admiration of the poetry of his country, and he is said to have recited several thousand lines. Rob Roy's intimate acquaintance with the soul-exalting relics of bardic composition, no doubt, tended to inspire the liberal humanity, which softened the harsher features of his intrepid—or, perhaps, desperate character. The love of nature led him in boyhood, and in maturer age, to delight in wandering alone through the hills and glens of his native land. In peaceful times, he would, probably, have

been conspicuous as a poet; and if, instead of aggression, he had found protection from the powerful borderers of his little property, he was gifted with talents to anticipate the translator of Ossian. Tradition makes him the deliverer of many distressed damsels. On one occasion, travelling alone, through the sequestered passes of *Glenlivet*, his natural taste for the sublime was excited by the picturesque grandeur of those romantic scenes. The sun had nearly dipped his golden hair in the western main; but some parting tinges played upon the rugged towering pinnacles of *Cruachan*, and the profound tranquillity of nature was unbroken, except by gentle murmurs of the tides, that with solemn placidity gave a character of life to the waters of the lake. He threw himself along a mossy rock, and gazed on the magnificent perspective, until the slim outline could scarcely be traced, between him and the horizon. From enrapturing reveries, he was startled by female shrieks; and drawing his trusty blade he sprang forward to follow the sound. The shrieks were stifled; but the voices of men drew nearer, and they seemed in hot altercation. Rob Roy laid himself down among "tall rank grass of the wild," and distinctly could hear two persons disputing in a high English accent. The one expostulated in behalf of a captive lady—the other insisted upon his right to extort a compliance with his dishonorable solicitations. They still proceeded, through trackless paths; and Macgregor, with silent determination, pursued. They soon disappeared, as if elves of the wood had descended to their *Tomhans*. The screams of a female furnished a direction; while the Celt no longer stood in perplexity, and he lost not a moment in shaping his course according to the sounds, which led him to a decayed turret, the only remains of a fortress, situated upon a craggy eminence. The voice was, at times suppressed, and then burst forth with frenzied energy. Rob Roy feared not the face, nor the arm of man; but he afterwards confessed, that early impressions of supernatural agency daunted his courage. Again he recollected, that "the gleaming counterspell, the steel of the mighty was in his hand," and he pressed onwards to unravel the mystery. He could discover no door, no window, in the half-ruined tower; but he perceived, after surrounding the rock, that from a tangling thicket the tones of distress were most audible. The moon emitted

some feeble rays, by which he discerned a vaulted passage, which, with cautious steps, he explored. A faint glimmering of light guided him, where, with disordered dress, dishevelled tresses, and a lovely countenance, marked by tears, he found in a large apartment, a female stretched upon some grass, nearly exhausted by violent efforts. On seeing Rob Roy, she attempted to rise, saying, "If you come to end my life, cheerfully shall I meet the blow. Death is my only refuge." "Yield not to despair, lady," he replied. "Rob Roy Macgregor comes to release you. But every moment is precious, quickly tell me your name and your wrongs." "I am," said the lady, "a daughter of the chief of —, treacherously decoyed from the castle of my father, by a knight of England. He and his friend were visitors; they persuaded my mother to let me go out to ride with them, to learn some of the fine performances of English ladies in hunting; and after going some miles, I was forced into a stranger sloop, and carried away. I now find that each of the friends had designs on me. They deceived each other; but the younger has honour and pity." "Remain as you are," said Rob Roy, "I hope soon to return with good tidings." The chief, with an air of authority, stalked into a vault, where two gentlemen were harshly debating, and three armed men paced the floor. They all shrunk back from the terrible apparition. "Shame to manhood!" said Macgregor. "A lady of high birth insulted! tremble! for even the demons of darkness are stirring in her cause." After a pause, the elder knight said, "You, at least, are no airy demon, but substantial flesh and blood, and shall feel this, if you do not instantly take yourself off." He made a push at Rob Roy, as he spoke; but the chief was the most dexterous swordsman of the age, and soon laid his adversary at his feet. Calling for a parley, the younger knight was disposed to restore the lady; nor did the mercenary seamen oppose it, being unwilling to risk the consequences, when no further reward from their employer could be expected. Rob Roy bound up the wound of the elder knight, and by a shorter way, he and the lady were conveyed to the sea-side. In less than forty hours, the battlements of — castle were visible. At some distance from the common landing place, Macgregor desired to be put on shore. He proceeded with rapid steps to the castle, to inform the chief of his daughter's safety,

and to claim his hospitality for the wounded knight, for whose security he had pledged his honour. The younger knight was married to the lady, and the elder suffered to depart, unmolested, to his own country, for the chief considered himself bound in honour and gratitude, to fulfil the terms promised by Rob Roy.

In ancient times, and among chiefs of more modern date, the engagements made by a friend were esteemed inviolable by the party concerned.

A rivulet, which runs near the spot where Fletcher of Cameron, a follower of the Macgregor chief, murdered the boys who came as spectators of the battle of Luss, is called the Stream of young Ghosts; and it is believed, that if crossed by a Macgregor after sunset, he will be scared by unhallowed spectres. This is a remarkable proof that superstition is not only irrational, but unjust; since neither of the alleged murderers were of the Macgregor clan, and the chief when he compelled the boys to enter the church, instead of standing exposed to random shots from the combatants, had no view but to preserve their lives, and to detain them as hostages, if circumstances required a pledge for the safety of his own people. Yet superstition represents the ghosts of the victims peculiarly hostile to the clan of Macgregor. So late as the year 1757, every spring, the tragical fate of the scholars of Dunbarton was commemorated by the boys of that ancient town. They assembled on the supposed anniversary; the dux of the highest class was laid on a bier, covered with the clergyman's gown, and carried by his companions to a grave, previously opened. The whole school, bearing wooden guns reversed, performed the ceremony of interment, and recited *Gaelic* odes over the dead, allusive to the horrible massacre. They returned, singing songs of lamentation in the same language.

There are records to show that Sir Humphrey, laird of Luss, under pretence of desiring a permanent reconciliation, invited Macgregor of Glenstrae, and the principal vassals of his clan, to meet him at Lennox; but he prepared five hundred horsemen, and three hundred foot, to form an ambuscade, and cut off the retreat of the Macgregors. Their chief came from Rannock, with only two hundred followers; but they were a chosen band; and having discovered symptoms of enmity in the Colquhouns, they marched homewards with due precaution. At *Glen-*

fruin they were attacked, and the youths from Dunbarton school having come out to view the fray, Macgregor anxious to secure hostages from among the sons of so many powerful tribes, surrounded and confined them in the church, as we formerly related. The Macgregors had no friend at court to contradict the misrepresentations of their powerful foes. All their loyal services were forgotten—all they had done and suffered for the gallant Bruce—all their achievements with Glencairn, and several Highland clans, when they defeated Cromwell's troops at *Aberfoyle*. They were prohibited from bearing their hereditary name, and hunted with bloodhounds, like the most noxious beasts of prey. These cruelties form the best apology for Rob Roy, and his clan, in retaliating upon their oppressors; and no act of cruelty or meanness has been imputed to Rob Roy. The lawless propensities of a freebooter were softened by the humanizing influence of a poetical imagination, and in some measure exalted by the pride of ancestry, and natural greatness of soul. His death was in conformity to the romantic peculiarities of his life. A life of harrassing vicissitude had undermined his robust constitution, but his spirit was unsubdued, though his person evidently sunk under decay; and after manfully resisting his infirmities, he was confined to bed, when a gentleman who had done him a wrong came to see him. Being informed, that the stranger asked admission to his chamber, he exclaimed, that "an enemy must not behold Rob Roy Macgregor in the posture of defeat." He made his family raise him up, put on his clothes and warlike accoutrements, and then received the visitor with dignified civility. When he was gone, the dying man desired to be again laid in bed, and ordered the piper to be called in. He cordially shook hands with "the voice of war," instructing him to play, "*cha teill mi tuille*"—(I shall never return), and not to cease sounding the pipes while breath remained in the breast of Rob Roy. He was punctually obeyed, and expired with "the voice of battle," pealing around him. His funeral was respectfully and numerously attended.

The chivalrous alliance on the steel of their fathers, which formed a prominent feature in the characteristics of the *Gael*, has, in some instances, produced heavy loss to their posterity. Macdonald of Keshnock was offered a written charter for his lands in the fourteenth century; but he spurned at the

proposal, saying, "no *clan-donald* shall hold his right by a sheep's skin. The sword of their fathers shall remain, as it has been from the earliest time, a sufficient charter for the brave." In the sixteenth century, the superior reclaimed those lands, and they were lost to the family of Keshnock. The accomplished and valiant descendant of the first-mentioned leader of the brave, being asked, in the year 1744, the average revenue of his estate, replied, "I can bring to the field five hundred fighting men." The feudal power his lands afforded was all he deemed worthy of computation.

In the reign of George the First, the Grant chieftain was offered a patent of nobility, which he declined, saying, "who then would be laird of Grant?" This feudal chief felt, and expressed in a few emphatic words, that no euphony of sounds could add to the wealth and power derived from his wide stretching and populous lands.

THE SLEEPING BEAUTY.

'Tis said, in a bower, by fairy hands wrought,
Once Beauty in slumber repos'd;
And morn, noon, and even, no waking time brought,
For her eyes were by magic spell clos'd.
But time did the charm of this witchery break,
And though ages had pass'd o'er her now,
The rose and the lily were fresh on her cheek,
And no wrinkle was seen on her brow.
For softly she slept, and her dreams were so sweet,
Spotless innocence reign'd in her breast,
And passion was still, in that silent retreat,
And unbroken by care was her rest.
When Beauty awoke, and had look'd on the scene,
This dark scene of sorrow and sin—
She return'd to her bower, so lone and serene,
And peacefully slumber'd again.

LOVERS' VOWS.

Waters of Elle, thy limpid streams are flowing,
Smooth and untroubled o'er the flow'ry vale,
On thy green banks, once more the wild rose blowing,
Greets the young Spring, and scents the passing gale.

SIGNS AND OMENS.

To the Editor of the Mirror.

Here 't was, at eve, near yonder tree reposing,
One still too dear, first breath'd his vows to thee,
Wear this, he cried, his grateful love disclosing,
Near to thy heart, in memory of me.
Love's cherish'd gift, the rose he gave, is faded,
Love's brighter flower can never bloom again;
Weep for thy fault, in heart, in mind degraded,
Weep, if thy tears can wash away the stain.
Call back the vows that once to heaven were plighted,
Vows full of love, of innocence, and truth;
Call back the scenes in which thy soul delighted,
Call back the dream that bless'd thy early youth.
Flow silver stream, though threatening tempests lower,
Bright, mild, and clear, thy gentle waters flow;
Round thy green bank the spring's young blossoms flower,
O'er thy soft waves the balmy zephyrs blow.
Yet all in vain, for never spring arraying
Nature in charms, to thee can make it fair;
Ill-fated love clouds all thy path, pouring
Years past of bliss, and future of despair.

GLENARVON.

Itching of the eyebrows... indicates that some one is wishing for you.
_____ right eye... _____ that you are going to laugh.
_____ left eye _____ cry.
_____ nose _____ lose a friend.
_____ lips _____ get a strange kiss.
_____ elbows _____ bed-fellow.
_____ right hand... _____ receive money.
_____ left hand _____ pay away.
_____ knees _____ kneel in a strange church.
_____ feet _____ walk on strange ground.

That most people only amuse themselves with these omens and signs, I allow; but that there are many persons weak enough to credit them, is well known in every house in town and country; and in many instances the

best education cannot eradicate the idle impressions early inculcated by a superstitious parent. My friend himself, whom in every other respect is a man of sense, never accepts an invitation on a Friday, believing it to be

dies infaustus, and always remains at home to consult his musty astrological MSS. A neighbouring humourist invites him oftener on this day than on any other, but superstition prevails over a keen appetite. I am, Sir, your most obedient servant,

QUIZ.

THE RATTLESNAKE.

Mr. Pierce, the author of a Geological work on America, had a living rattlesnake two months in his possession, and every day watched its manners. He immediately killed most birds and small animals, when put into his cage, but did not eat them. He permitted a toad, however, to remain weeks with him unmolested, and allowed it to leap upon his body and sit upon his head. When he opened his mouth his fangs were not visible unless he was provoked; at other times they were covered with a membrane like a scabbard, only they were drawn back, so that the sheathing membrane formed only a slight protuberance on each side of the upper jaw. If irritated, he flattened his head, threw it back, opened his mouth wide, and instantly the fatal fangs were shot out of their sheath like a spring-dagger, and he darted upon his object. "After his death," says Mr. Pierce, "I examined the fangs:—they are shaped like a sickle: a duct led from the reservoir of poison at the bottom of the tooth, quite through its whole length, and terminated just by the point, which was exceedingly sharp. Thus the fang is darted out at the will of the animal; it makes the puncture at the instant, and simultaneously the poison flows through the duct and is deposited in the very bottom of the wound. As this rarely fails to touch a blood-vessel, the venom is thus instantly issued into the system, and without delay commences the march of death through every vein and artery."

One of the most remarkable circumstances connected with the rattlesnake is the taming of this reptile; and this has actually been done by a Mr. Neal, who has now an exhibition of tame rattlesnakes in the United States, which, as may naturally be expected, attracts great curiosity. We copy the following account of this exhibition from a New York paper:—

"Mr. Neal is a Frenchman; while in North Carolina, he attempted to procure some rattlesnakes, for the purpose of making out a collection. But some of the observations and experiments he made, induced him to believe the possi-

bility of taming this poisonous reptile: he finally made the trial, and has succeeded. What process he employed is unknown to us—he probably availed himself of the power, which a controul over the appetite of the animal gives him—he dwells very much too on the charms of music; while inflamed by hunger, and irritated by the application of hot iron, the creature is soothed and softened by a slow and plaintive strain.

"Mr. N. has two rattlesnakes—the male, which is 4 feet 8 inches long, has 8 rattles in his tail, thus proving him to be 9 years old—he has had this snake 4 years.—The female is much smaller, and has 5 rattles; she has been with him 33 months. So great is their docility, that he will take them up, after speaking a sort of jargon to them, and stroking down their backs, as if they were so many strings—he will make them crawl up his breast and face, caress and kiss him, coil round his neck, and while one of them is thus hanging around him, he will take up and exhibit the other. The perfect harmlessness of the reptile, and even attachment to his keeper, is astonishing. Meanwhile Mr. N. is himself thoroughly at his ease—completely self-possessed, diverting the spectator with the exhibition of his snakes, or instructing them by his explanations. He says, he has no fears himself: for independently of his command over the animal, he is satisfied he can cure the bite of it—of the remedy he makes no secret.—Wash your mouth first with warm sweet oil, and then suck the wound; next, drink most copiously of the decoction of snake root, until it operates as a strong emetic. This is the regimen he recommends—and which he believes to be infallible.

"There is no deception practised upon you. He opens the mouth of the snake and shews you his fangs. They are in the upper jaw alone—two on each side, and have the faculty of renewing themselves in case they are drawn out by a violent blow—the fang is within the mouth, bent, sharpened and sheathed like the claw of a cat, and turned towards the throat—the orifice through which the poison is ejected is a small groove on the upper side of the fang, between its point and the upper curve—the poison bags lie at the roots of the fangs.

"Perhaps no one has had so good an opportunity of studying the habits of the animal. His remarks will of course form a valuable addition to natural history. He is an intelligent man—and a

memoir may be expected from him, when he arrives in Europe. The male snake has just cast his skin—and the new one is most beautiful. The tail has a fine glossy black. He says, they renew their skins every two months; three times in the year: perhaps from October to April, they remain torpid, and this function is suspended. Most probably, it varies in different snakes with the quantities of food they can obtain. Mr. N. generally feeds his once a week.

They have also a rattle every year after the first.—They scarcely ever shake it but when they are strongly excited, or to strike the attention of their prey. He contends that the use of their rattles is to draw upon themselves the eyes of their victim, which generally consists of the fleetest animals, as birds, squirrels, &c. As soon as the eyes meet, he says, the process of charming commences. He believes in this faculty, for he has seen it exemplified in a garden by his own snakes; the victim will hop from bough to bough, and rock to rock, overcome with apprehension, until approaching each other, the snake seizes him.

THE HIGHLAND LASSIE.

A SCOTTISH SONG.—BY MR. PRINGLE.

The summer evening's caller breeze,
Refreshing nature's face around,
Made music 'mang the waving trees,
The burnie wimpled to the sound;
When on a green and bonny knowe,
Wi' modest gowans sweetly sprent,
Wi' tearfu ee' and pallid brow,
Poor Jeanie rais'd her wild lament
"Oh weary on the ruthless wight
That crush'd my fondest hopes and me;
O weary on the stormy night
That bore my laddie o'er the sea.
"Sigh on, thou breeze—ye birdies sing,
For me, your sweetest notes are vain;
O nought on earth can pleasure bring,
For he will ne'er come back again!
"Nae mair, nae mair at early morn
I'll meet him on yon sunny brae,
And dewy evening will return
Without a charm—*he's* far away!
"The sad saut tear, I aye maun weep,—
My throbbing heart will soon be still—
And mine shall be the lang lang sleep
'Neath the green sward by yonder hill!—

"Wha murmurs at the Power aboon,
Why is the sob of sorrow rais'd?
O gin ye say God's will be done,
Ye soon shall sing his name be prais'd!"

In glad amaze, now Jeanie rose,
And joy beam'd in her bonny face,
As reddening like the summer rose,
See sank into her lad's embrace!

SPIRIT OF THE Public Journals.

NAPOLEON AND MARIA LOUISA.

When the Emperor Francis had determined upon the union between Maria Louisa and Napoleon, he was not ignorant of the animosity borne by his daughter, wife, and mother-in-law, (Maria Beatrix d'Este), against his intended son-in-law. He had not the courage to make the first overture to his daughter; but charged the Countess Chanclos, governess to the Princess, to use every persuasion to prepare her for a close and near alliance with the French Emperor.

The Countess, thinking she had found one evening a proper occasion for introducing this subject, informed the Princess, that the Emperor, her father, had affianced her to the Emperor Napoleon Bonaparte. No words could do justice to the Princess's emotions upon hearing this declaration: she fell down upon the sofa, screaming, fainting, and crying, "No, no, never will I be married to such a monster;" and she forbade the Countess, once for all, ever to repeat his name in her presence.

The Countess having reported to the Emperor the ill success of her overture, his wishes and feelings inclined him to undertake the matter himself. On the day and hour appointed, accompanied by his daughters Leopoldina and Clementina, he repaired to the apartments of the Princess; and, with that paternal affection which characterises this sovereign, with candour and sincerity stated the necessity of such an alliance, as being the only means left to save the Imperial Family, and the whole country from subjection; that, should she persist in her refusal, they would be obliged to abandon the Empire a second time to the conqueror.

This conversation took place in a room, the windows of which opened upon the ruined walls and demolished fortifications of Vienna. Maria Louisa, taking her father by the hand, led him to the view of what that devoted city

had already experienced—a scene of wide-extended desolation. “Can you (said she) give the hand of your beloved child to such a destroyer?”—“True, (said Francis) but the evils which you deplore—all the misfortunes of the country—arise from the laws of war; the destructive machinations of which will begin with more fury than ever, involving the state, and all of us, perhaps, in one common ruin.”

The Emperor, observing the repugnance of his daughter, yet feeling the necessity of this sacrifice, besought the Princess with tears, and with so much importunity, that she could no longer resist. “Be composed, my beloved father (said she), and weep not so bitterly, my good sisters; you shall be obeyed: from this moment I will do every thing that you require of me.”

It is asserted by the Countess Chanclos, who was present, that when the Princess Leopoldina (then between thirteen and fourteen years of age), had seen the aversion of her eldest sister to this union, she said she would be married to the Emperor Napoleon, to deliver them all out of their painful situation. The Emperor Francis, tenderly smiling, replied, “You are a child; you don’t understand what you say.”

The Princess Maria Louisa was then married by proxy to her uncle, the Archduke Charles; after which she was accompanied by the whole Imperial Family to Branau, the frontier town.—There she was confided to the care of the Queen of Naples, Napoleon’s sister, and Murat’s wife. Proceeding on her way through France, the Emperor Napoleon met her near Compiègne, and in the open road entered her travelling coach.

In the month of June, 1810, Count Joseph Metternich, brother to the Austrian prime-minister, and one of the chamberlains that accompanied the Princess to Paris, returned to Vienna, and, with other despatches for the Imperial Family, was charged by the Empress Maria Louisa with an autograph letter, in German, for the old Count Edling, her quondam governor. The following is a translation of, and extract from, the same:—

My dear Count Edling,

I have received from you so many testimonies of your kind care and affection, that I feel an ardent desire to inform you, by Count Joseph Metternich, of the particulars of my present situation. When I left you, and all

my friends in Vienna, I saw the good people plunged in deep sorrow, from the persuasion that I was going as a sacrifice to my new destination. I now feel it an agreeable duty to assure you, that, during three months’ residence at this court, I have been, and am, the happiest woman in the world. From the first moment I saw, and met the Emperor Napoleon, my beloved husband, he has shown me on every occasion such respectful attentions, with every token of kindness and sincere friendship, that I should be unjust and ungrateful not to acknowledge his noble behaviour.

Believe not, my dear Count, that this is written by any order from my husband; these sentiments are dictated from my heart: nor has any one so much as read the letter.

The Emperor, who is at this moment by me, but will not know the contents, has desired me to send you, in his name, the insignia of the order of the Legion of Honour. This he had promised you, as a mark of his high esteem for you.

Respecting your wish to visit me at Paris, my husband and I will be very glad to see and receive you, in the month of September, at the Tuilleries; we shall then have returned from a little tour. You will then be a witness of my satisfaction, which I cannot describe to you in this letter.

Adieu, my dear and good Count Edling, remember me to all my beloved family and friends; tell them that I am happy, and that I thank God for this felicity, God bless and preserve you, my dear Count; and believe me that I remain, for ever, your affectionate

MARIA LOUISA.

Paris, June 16, 1810.

Monthly Magazine.

NADIR SHAH’S TENT.

Nadir Shah, after his plunder of Delhi in 1739, set out on his return to Persia, laden with the spoils of the country which had been the scene of his depredations. In his journey back, wherein he obtained conquests over the Afghans, Sindians, Turcomans, &c. he was accompanied by Khajeh Abdulkerem, a Cashmerlan of distinction, who published a memoir of that conqueror’s return. This was translated from the original Persian, and published at Calcutta, by Francis Gladwyn, Esq. From his summary history of that predatory incursion, I extracted his description of Nadir Shah’s tent.

Nadir Shah, when at Delhi, had such

a profusion of jewels, that he ordered the Moabir Bashy to make up arms and harness of every kind, inlaid with precious stones, and to ornament a large tent in the same manner. For this purpose, the best workmen that could be procured were employed a year and two months, during the march; and, when Nadir Shah arrived at Herat, the Moabir Bashy informed him that a great number of the following articles were prepared: Horse-harness, sword-sheaths, quivers, shields, spear-cases, and maces, with sundelees or chairs of different sizes; as also a large tent lined with jewels. The tent was ordered to be pitched in the Dewan Khaneh, or Public Hall, in which were placed the Tucht Taoufee, or Peacock Throne, brought from Delhi, the Tucht Nadery, with the thrones of some other monarchs; together with the inlaid sundelees. Publication was made, by beat of drum, throughout the city and camp, that all persons had liberty to come to this magnificent exhibition, such as had never before been seen in any age or country. Nadir Shah was not pleased with the form of the tent; and, besides, from its being lined with green satin, many of the jewels did not appear to advantage. He therefore ordered it to be taken to pieces, and a new one to be made; the top of which, for the convenience of transportation, should be separate from the walls, such as in Hindostan is called a Rowty.

When he retired to Meshed, from his expedition into Turan, his new tent being finished, was displayed in the same manner as the former one; but its beauty and magnificence are beyond description. The outside was covered with fine scarlet cloth, the lining was of violet-coloured satin, upon which were representations of all sorts of birds and beasts, with trees and flowers, the whole made of pearls, diamonds, rubies, emeralds, amethysts, and other precious stones; and the tent-poles were decorated in like manner. On both sides of the Peacock Throne was a screen, upon which was represented the figures of two angels in precious stones. The roof of the tent consisted of seven pieces; and when it was transported to any place, two of these pieces packed in cotton, were put into a wooden chest, two of which were a sufficient load for an elephant; and the screen filled another chest. The walls of the tent, the tent poles, and the tent pins, which latter were of massy gold, loaded five more elephants: so that for the carriage of the whole were required seven elephants.—*Ibid.*

MODE OF LIVING IN PARIS.

There is hardly any such thing as a domestic fire-side in Paris. The French have no comforts at home, and pass their leisure in coffee-houses and eating-houses. During the winter, there is no place so wretched as one’s own dwelling, a good fire cannot be had without opening the doors and windows, the chimnies being so badly constructed as to cause the greatest inconvenience from smoke, unless a great deal of wind is allowed to enter the apartment.—Wood is the fuel used by the Parisians, and it is so dear, that, in order to keep up one fire from morning till night, one must pay at least 14 or 15 francs a week. Such a fire, as a very poor person in England can afford to have, will here cost a franc a day. The poor, therefore, are destitute of this comfort. They get a little charcoal and an earthen pot, with which they make their coffee and soup. Those who are able, breakfast at a coffee-house, and dine at a restaurateur’s. A Frenchman of small income, who has no house-keeping, breakfasts upon dry bread, and dines at a restaurateur’s, for 22 sous to 2 francs, according to his means, where he has soup, three dishes, bread, half a bottle of wine, and dessert. Very few persons make more than two meals a day, breakfast and dinner; the former, where the means are equal to it, is generally *à la fourchette*; at the latter, the quantity eaten is enormous; indeed, the French are the greatest eaters in the world. A labouring man, who has only bread for his dinner, will, if he can get so much, eat from four to six pounds at this meal; and the Frenchman who dines at a restaurateur’s, generally eats two pounds, besides his soup and three dishes. At the leading restaurateur’s, a good dinner will cost seven or eight francs, exclusive of wine; but it is only doing justice to the French to say, that at their cheapest eating-houses the dishes are good, and the customers have silver forks with clean napkins. A Frenchman may well be disgusted at the mode of conducting business in the very best eating houses in London, when he contrasts them with the establishments of the same nature in Paris. The poor people who can get any thing to eat (many are without food for two days together) live upon soup made of vegetables and bread. The middle classes are also very economical in their mode of living; a very respectable tradesman and his family of seven or eight persons will dine for about 1s. 6d. One of the dishes is an excellent dish, made from beans, called *haricots*; the

beans are boiled for some time, and, when perfectly soft, they make a good dish, with a little butter, parsley, pepper and salt. To the water in which they were boiled, herbs, one of which is sorrel, are added, and one or two eggs are also beaten up and put in. When these have boiled for a short time, the soup is really excellent, and at the same time nutritious. Louis XVIII. has this dish three or four times a week, and many persons of rank also have it from choice. As there is so little comfort in the private houses, the French men and women are as little at home as possible. They go to the coffee-houses, and take a cup of coffee, a bottle of beer, or a glass of sugar and water. At some of these coffee-houses there are plays acted, which the customers see gratis; but the performances are of the lowest description, as may well be imagined. The French are also very economical in their parties, and I think properly so. In England, if a tradesman has a few friends, nothing is thought of but eating and drinking, and the guests talk of the party the next day, not of the society which they meet, but of the good things which they devoured. Here society, and not stuffing one's belly, is considered; a little punch and cake is all that is offered: even sometimes in the best families there is no refreshment. The visitors dine late before they go to the party, and return home to take refreshment, at their own expense, before they go to bed.

European Magazine.

PETER PINDARICS;

Or, Joe Miller versified.

No. II.

A DUEL.

Jack a quarrel had with Joe,
A lad who ne'er had injured friend or foe:
Save that one night by chance,
('Twas at a country dance,
He set his heel directly on Jack's toe;
To tread upon one's toe is not so much,
But Jack had corns, and could not
bear a touch.
Jack then let slip a furious oath,
That one of them should fall, or
both;*

* "For one or both of us the time is come."
SHAKESPEARE.

And hasted home a challenge to indite,
For be it known, Jack could not write
a single word;
So 'twould have been in him monstrous
absurd,
To try to put his thoughts in black and
white:
He did much better,
He got Sam Scratch to write the letter.
When Joe received the gentle *billet doux*,
He trembled and look'd rather blue;
Indeed 'twas no great wonder,
For thus the challenge ran,
"Fire and thunder!
You same Joe,
That trod upon my toe,
Meet me to-morrow like a man!
I'll make the light shine through you
if I can.

Your friend, et cetera, Jack Blunder."
Now, though poor Joe was terribly
alarm'd,
Fearing perchance he might not 'scape
unharm'd,

He it accepted,
And this was more than Jack expected,
Who in his turn was almost scared to
death,
Well knowing that a ball might stop
his breath:

But he had gone too far to turn about,
Of course resolv'd to fight it out.
Suppose at length the *warriors* in the
field,

Scarce yet determined for to fight or
yield;
With heavy heart each took his stand,
A pistol in his trembling hand,
With powder loaded;

For, reader, let me whisper in your ear,
The seconds wisely left out lead, for fear,
Their friends might be by bullets incom-
moded.

The word was given—off went the
pistols—crack,
Flat as a flounder fell heroic Jack,
And cried aloud in piteous strain,
"Alas, my friends, I'm slain! I'm
slain!"

Joe hearing this, thought it was true,
forsooth,
For sure a dead man would speak
nought but truth,

And fearing that perchance the law
On him might lay it's heavy paw,
He left the field, forsook his native
shore,

Went off to sea, and ne'er was heard
of more,
Jack having found at length he was
not dead.

Got up, went home, and sneak'd
away to bed.

The Nobelist.

No. XIV.

THE MIDNIGHT MURDER.

In the county of Galway, in Ireland, there lived a young couple, the children of two neighbouring cottagers, who were betrothed to each other from the earliest period of infancy. Their parents were of the lowest class of peasantry, and possessed no inconsiderable share of the national characteristics. With dispositions inherently good, their passions had been inflamed by the pressure of acute poverty, and finally induced them to join the rebellion, which terminated in the death of E—and his associates.

It happened that the father and mother of the young girl, with the youth to whom she was betrothed, were sitting round their fire side, when a sudden knock at the cottage-door induced them to hasten to the gate. A tall, elegant stranger, closely muffled in a military cloak, entered their humble dwelling, and through the folds of his roquelaure attentively surveyed the group. He appeared young, noble, but wrapt in gloom: which, at the period to which I allude, was felt by every Irish patriot.

After a long pause, he relaxed somewhat in his scrutiny, and having insisted on the departure of the females, commenced an animated recital of the civil dissensions of Ireland, and terminated his discourse by solemnly conjuring the cottagers, as they valued their rights, their liberties, and their principles, to participate in a rebellion, which was raised for the preservation of their country.

His appeal was not lost upon his audience. The iron of slavery had entered into their souls; they had felt the sting of poverty, and were ready to embrace any prospect of ultimate emancipation. They had hearts too that could feel, and hands that could wield a sword; and as the stranger saw the tears coursing down their cheeks, he embraced them with transport, and promised to meet them on the ensuing evening, on the bleak moor which adjoined the village where they resided.

The night soon arrived; and having taken an affectionate farewell, the one of his betrothed bride, the other of his wife and daughter, the couple set forward on their march. As the clock from the village church struck eight, they entered on the place appointed for their

meeting. At the remotest corner of the moor they observed a man hastening to join them. It was the stranger: he hailed their appearance with enthusiasm, and taking a hand of each, desired them to accompany him in silence. The party soon quitted the moor, and as they cut rapidly across the high-road, discovered a numerous company of horse patrol scouring along with swords drawn, and steel helmets, flashing through the darkness of the night. By creeping under the hedges they were easily enabled to avoid them; and when the sound of their receding steps could be heard no longer, they cautiously stole from their hiding-place, and pursued their mid-night march.

They had now entered on a dark mountain-pass, enclosed on either side by precipices, which rose to an awful distance above them. Beyond towered a gloomy forest of pines; and to the right in the distance appeared the bleak hills of Wicklow. The dead of night drew on; and as the wind roared through each opening cleft in the mountains, the spirits of the travellers assumed a corresponding tone of dejection. They moved along in silence—not, however, without an occasional murmur from the cottager and his son-in-law, as to the direction of the road they were pursuing; and they had already commenced an expostulation, when the moon peeped through the mass of clouds in which she was buried, and revealed the expanse of the deep blue ocean, which roared at the base of the mountain along whose summits they were winding.

In a few minutes they had gained the further side of the pass, and could distinctly hear the hum of human voices, and see the dim flickerings of a hundred torches, revealing to their surprise a cavern which seemed yawning to receive them. They advanced towards the entrance, where a sentinel, with a pike in his hand and a broadsword by his side, was stationed. "Who goes there?" he exclaimed, levelling his weapon at the approaching party. "Friends," was the reply. "The watch-word,"—"The Emerald isle," returned the other, and hastened on, accompanied by his two astonished associates.

After winding through a narrow passage that admitted but one at a time, their eyes were dazzled by the glittering radiance of torch-lights, which illumined the dark vaults of the cavern. A charcoal fire burnt in the middle of the cave, and threw a sulphurous glare on the

ferocious features of the surrounding group. From the centre of the arched roof a lamp was suspended, and on every side hung broad-swords, pistols, and other instruments of destruction. On the entrance of the stranger with his companions, the rebels advanced to meet him, and paid him that involuntary respect which true dignity never fails to elicit.—He had now thrown off his mantle, but his features were still carefully concealed. He was habited in a simple suit of green, and advancing towards his two companions, recommended them to the rest of the group as friends to the liberty of Ireland. They were received with shouts of applause, the fearful oath of allegiance was taken, and they were equipped with arms to be used in the ensuing contest.

Among the number of those who held their nightly meetings in the cavern, was an old enthusiast, well known by the name of "Allan of the Moor." He was a reputed wizard, and had no inconsiderable influence over the assembly by the wild and savage singularity of his demeanour. His face was cadaverous; his matted hair thinly strewed over his wrinkled brows; but his eyes were as the eyes of the dead. As his prophecies, the effects of a disordered imagination, invariably announced a successful issue to the contest, the rebels daily received a formidable addition to their reinforcements. They remained with their families during the morning and assembled each night in the cavern, but with such precaution, that they were enabled to baffle the penetration of the soldiers who were stationed in companies throughout the country. The troubles of Ireland meantime raged with unabated energy; the sentiments of liberty were tortured into the language of treason, and the military oppressed the unfortunate peasants with unexampled despotism. The whole of the lower classes, on whom the yoke fell the heaviest, resolved at last to take the earliest opportunity of recovering their freedom.

On a gloomy night in autumn, they assembled in Thomas-street, Dublin, where they had previously deposited their arms, and awaited in anxious expectation the signal that was to announce their rising. As the castle clock struck the hour of eight, lights were seen burning on the summits of the neighbouring hills; the roar of musquetry was heard, and a fearful contest took place in the crowded streets of the city.

The alarm-bell was immediately rung, the riot-act read, and the drums of the military called to action. At this instant, a party of rebels, with the young stranger at their head, moved towards the castle. A regiment was ordered to attack them; but such was the fury of their charge, that the soldiers were dispersed on the first onset. They had now gained the castle walls, and sword in hand the stranger, followed closely by the cottager and his son-in-law, mounted the ramparts. This last was shot dead at the first attack, and the other two separated from each other by the violence of the struggle. Numbers at length prevailed; the rebels were eventually subdued, their commander imprisoned, while the cottager was almost the only one who escaped. For days subsequent to the battle, he continued wandering about the streets in hopes of encountering the stranger, with whose fate he was yet unacquainted.

As the hour of trial approached, he resolved to enter the hall of justice, and boldly endeavour to address him. The conviction of the rebels had in part commenced; a deep silence prevailed, and a young man was busy in his defence. He was of a noble and commanding aspect, with a countenance shaded by the gentlest melancholy. But his voice—it struck immediately to the agonized feelings of the cottager, and convinced him that the person he now beheld, was the stranger of his fancy—the Emmett—the patriot of his country. He denied the charge of treason with the most impassioned eloquence, and sighed while he recalled the memory of the girl he loved, but whom he had given up in his superior attachment to his country. He wept, but he wept not for himself; and the tears that had never fallen for his own misfortunes, stole down his faded cheek, when he reflected on the miseries he had entailed on the poor associates of his rebellion. For himself he sought not pardon; but he supplicated the mercy of the judge for the wretched men he had misled, and concluded with that affecting appeal to posterity, which can never be forgotten: "Let no man write my epitaph; for as no man who knows my motives dare vindicate them, let not prejudice or ignorance asperse them; but let them and me repose in obscurity and peace, and my tomb remain unscrubbed, till other times and other men can do justice to my character." Even this appeal fail-

Miscellanies.

PRISONS IN VENICE.

BY DR. MOSELEY.

When I was in Venice, I descended into the cells of the Prigioni Pubbliche, or Great Common Prison. Here—even here—the soul of man clings to his body; and shews no more symptoms, or prescience of immortality, than if that body were on a bed of down, canopied in a gorgeous palace.

In the morning, when I set out on this gloomy expedition, Dominicho Zaccchi, my Venetian servant, who had attended Lord St. Asaph, Sir George Beaumont, and several other English travellers, during their residence at Venice, took his leave of me. This was on the 16th of September, 1787. Dominicho thought that I would never return, or if I did I might "a tale unfold" that would endanger my safety at Venice. But he said, from what he had heard, he did not think it possible for me to survive the foul and pestilential air I had to encounter.

It was with some difficulty that I obtained permission from the inquisitors, which was granted me merely on account of my being an English physician; a character much respected at that time in Venice. I wished to have seen the Sotto Piombi, where the state prisoners were kept, but that was refused. Here, under the roof of the public buildings, they are confined; exposed to the rigour of winter's cold, and summer's heat, and the vicissitudes of scorching days, and chilling nights.

I was conducted through the prison, with one of its inferior dependants. We had a torch with us. We crept along narrow passages, as dark as pitch. In some of them two people could scarcely pass each other. The cells are made of massy marble; the architecture of the celebrated Sansovino.

The cells are not only dark, and black as ink, but being surrounded and confined with huge walls, the smallest breath of air can scarcely find circulation in them. They are about nine feet square on the floor, arched at the top, and between six and seven high in the highest part. There is to each cell a round hole of eight inches diameter, through which the prisoner's daily allowance of twelve ounces of bread and a pot of water is delivered. There is a small iron door to the cell. The furniture of the cell is a little straw and a small tub: nothing else. The straw is renewed, and the tub emptied, through the iron door occasionally.

ed of its effect; he was condemned to die the death of a traitor, and his execution was ordered for the ensuing Monday.

The evening before his death, while the workmen were busy with the scaffold, a young lady was ushered into his dungeon. It was the girl whom he so fondly loved, and who had now come to bid him her eternal farewell. He was leaning in a melancholy mood against the window-frame of his prison, and the heavy clanking of his chains smote dismally on her heart. The interview was bitterly affecting, and melted even the callous soul of the jailor. As for Emmett himself, he wept, and spoke little; but as he pressed his beloved in silence to his bosom, his countenance betrayed his emotions. In a low voice, half-choked by anguish, he besought her not to forget him; he reminded her of their former happiness, of the long-past days of their childhood, and concluded by requesting her sometimes to visit the scenes where their infancy was spent, and though the world might repeat his name with scorn, to cling to his memory with affection.

At this instant the evening bell pealed from the neighbouring church. Emmett started at the sound; and as he felt that this was the last time he should ever hear its dismal echoes, he folded his beloved still closer to his heart, and bent over her sinking form with eyes streaming with affection. The turnkey entered at the moment; ashamed of his weakness, he dashed the rising drop from his eye, and a frown again lowered on his countenance. The man meanwhile approached, to tear the lady from his embraces. Overpowered by his feelings, he could make no resistance; but, as he gloomily released her from his hold, gave her a little miniature of himself, and with this parting token of attachment, imprinted the last kisses of a dying man upon her lips. On gaining the door, she turned round, as if to gaze once more on the object of her widowed love. He caught her eye as she retired, it was but for a moment; the dungeon door swung back again upon its hinges, and as it closed after her, informed him too surely that they had met for the last time on earth.*

(To be concluded next week.)

* It is scarcely necessary to remind our readers that Emmett is no ideal character, but he was executed in Dublin for high treason, in endeavouring to excite a new insurrection in Ireland.

The diet is ingeniously contrived for the perduration of punishment. Animal food, or a cordial, nutritious regimen, in such a situation, would bring on disease, and defeat the end of this Venetian justice. Neither can the soul, if so inclined, steal away, wrapt up in slumbering delusion, or sink to rest, from the admonition of her sad existence, by the gaoler's daily return.

I saw one man who had been in a cell thirty years; two who had been twelve years; and several who had been eight and nine years in their respective cells.

By my taper's light I could discover the prisoners' horrid countenances.—They were all naked. The man who had been there thirty years, his face and body was covered with long hair. He had lost the arrangement of words, and order of language. When I spoke to him, he made an unintelligible noise; and expressed fear and surprise; and, like some wild animals in deserts, which have suffered by the treachery of the human race, or have an instinctive abhorrence of it, he would have fled like lightning from me if he could.

One, whose faculties were not so obliterated, who still recollected the difference between day and night, whose eyes and ears, though long closed with a silent blank, still languished to perform their natural functions, implored in the most piercing manner that I would prevail on the gaoler to murder him; or to give him some instrument to destroy himself. I told him I had no power to serve him in this request. He then entreated I would use my endeavours with the inquisitors to get him hanged, or drowned in the canal d'Orfano. But even in this I could not serve him. Death was a favour I had not interest enough to procure for him. This kindness of death, however, was, during my stay in Venice, granted to one man who had been "from the cheerful ways of man cut off" thirteen years.

Before he left his dungeon, I had some conversation with him: this was six days previous to his execution.—His transport at the prospect of death was surprising. He longed for the happy moment. No saint ever exhibited more fervour in anticipating the joys of a future state, than this man did at the thoughts of being released from life, during the four days' mockery of his trial.

It is in the canal d'Orfano where vessels from Turkey and the Levant perform quarantine. This place is the

watery grave of many who have committed political or personal offences against the state or senate: and of many who have committed no offences at all. They are carried only through the city in the middle of the night, tied up in a sack, with a large stone fastened to it, and thrown into the water. Fishermen are prohibited, on forfeiture of their lives, against fishing in this district. The pretence is the plague. This is the secret history of people being lost in Venice.

What I now unfold in regard to the prison in Venice, is known but to a few people. I have reason to believe that no foreigner besides myself ever witnessed the scene I have related—the exploring of which nearly cost me my life. The heat and want of air in the passages so oppressed my strength and respiration, that I could scarcely walk or breathe when I left the prison. Sweat ran through every pore of my body—my clothes were, to my coat-sleeves, wet through—I staid too long there. I went to St. Mark's Place as soon as I could, and, by the assistance of the trembling Dominicho waiting for my return—the blessed light of day—fresh air—and a few glasses of Maraschino, I was enabled to get to my lodgings at the Scudo di Francia, on the side of the great canal near the Rialto, where I was for several hours extremely ill, and for several days much indisposed.

SATURDAY.

In glowing terms I would this day indite
(Its morn, its noon, its afternoon, and night.)

The busiest day throughout the week
—the latter day;

A day whereon odd matters are
made even,

The dirtiest—cleanest too—of all
the seven,

The scouring pail, pan, plate, and
platter day,

A day of general note and notability,
A plague to gentle folks and prime
gentility,

E'en to the highest ranks—nobility!
And, yet a day (barring all jokes) of
great utility,

Both to the rich as well as the mobi-
lity,

A day of din—of clack—a clatter day;
For all, howe'er they mince the matter,
say,

This day they dread;

(A day with hippish, feverish, frenzy
fed) [Saturday.

Is that grand day of fuss and bustle,—

INKLE AND YARICO.

Who has not shed a tear over the affecting story of Inkle and Yarico! Few, we believe, who have read it, or seen the exquisite drama that is founded upon it. The following is the original narrative, divested of the embellishments of poetry:

"An English ship having put into a bay, sent some of her men ashore to try what victuals or water they could find; but the Indians perceiving them to go far into the country, intercepted them on their return, and fell upon them, chasing them into a wood, where some were taken, and some killed. A young man, whose name was Inkle, straggling from the rest, was met by an Indian maid, who, upon the first sight, fell in love with him, and hid him close from her countrymen in a cave, and there fed him till they could safely go down to the shore, where the ship lay at anchor, expecting the return of their friends. But at last seeing them on the shore, the boat was sent for them, took them on board, and brought them away. But the youth, when he came to Barbadoes, forgot the kindness of the poor maid, who had ventured her life for his safety, and sold her for a slave. And so poor Yarico for her love lost her liberty."

The Gatherer.

"I am but a Gatherer and disposer of
other men's stuff."—WOTTON.
CURIOUS EPITAPHS.

Here lies entomb'd old Roger Norton,
Whose sudden death was oddly brought
on;

Trying one day his corn to mow off,
The razor slipp'd and cut his toe off:
The toe, or rather what it grew to,
An inflammation quickly flew to;
The parts then took to mortifying,
And poor old Roger took to dying.

Here lies the body of Joan Carthew,
Born at St. Columb, died at St. Cue,
Children she had five,
Three are dead, and two alive,
Those that are dead, choosing rather
To die with their mother, than live with
their father.

ON A TOMBSTONE AT GUNWALLAW,
NEAR HELSTONE, IN CORNWALL.

It may be read backwards or forwards.

Shall we all die?
We shall die all.
All die shall we?—
Die all we shall.

ON A VIOLENT SCOLD.

Beneath this stone, a lump of clay,
Lies Arabella Young,
Who, on the 29th of May,
Began to hold her tongue.

ON THE PARSON OF A COUNTRY CHURCH.

Come let us rejoice, merry hearts, at his
fall,
For if he had lived he'd have buried us
all.

AT ALNWICK, IN NORTHUMBERLAND.

Here lieth Martin Elphinston,
Who with his sword did cut in sun-
der the daughter of Sir Harry
Crispe, who did his daughter marry.
She was fat and fulsome;
But men will some-
times eat bacon with their bean,
And love the fat as well as lean.

IN A VILLAGE CHURCH-YARD IN NORFOLK.

Here lies James Bunn,
Shot by a gun.

ON A TOMBSTONE IN ESSEX.

Here lies the man Richard,
And Mary his wife;
Their surname was Pritchard,
They lived without strife;
And the reason was plain,
They abounded in riches,
They no care had or pain,
And the wife wore the breeches.

CHOCOLATE.—Chocolate called in the Mexican language, chocolate, was first made in Mexico. Both the name, the tools, and the proceeding in preparing it, have been borrowed by the Europeans from the Mexicans. Vanilla and honey were added to cacao, in order to render that beverage more wholesome and agreeable. The use of wax and tallow candles was unknown to the Mexicans: they burned wooden flambeaux, and kindled fires by rubbing pieces of wood against each other.

The three longest reigns in British history are those of three Kings, each the third of their respective names. Henry III. reigned 53 years, Edward III. 51, and George III. 59.

At Hastings there are the ruins of an ancient fortification, one of the parts of which presents, from the opposite hill of the East cliff, a most perfect colossal bust of his late Majesty George III.

THE SECRET.

In a fair lady's heart once a secret was lurking,
 It toss'd and it tumbled, it long'd to get out,
 The lips half betrayed it by smiling and smirking,
 And tongue was impatient to blab it, no doubt.
 But honour look'd gruff on the subject, and gave it
 In charge to the teeth, so enchantingly white,
 Should the captive attempt an elopement to save it,
 By giving the lips an admonishing bite.
 'Twas said and 'twas settled, and honour departed,
 Tongue quiver'd and trembled, but dared not rebel,
 When right to its tip secret suddenly started,
 And half in a whisper escaped from its cell.
 Quoth the teeth, in a pet, we'll be even for this,
 And they bit very smartly above and beneath,
 But the lips at that instant were bribed with a kiss,
 And they popt out the secret in spite of the teeth.

MAN.—Every man is a republic in miniature; and although very limited in its parts, yet very difficult to govern. Each individual is a little world, the elements; and having life like the brutes, and reason like the angels, it seems as though all were happily united in him. He can traverse the vast universe, comprehend the present, past, and future; in him are the principles of life and death, light and darkness; in him, also, are united the most contrary elements and most incompatible qualities.

GENEROSITY.—King Edward the Elder, lying at Aust Clive, invited Leonil, Prince of Wales, then at Beachly, on the opposite shore, to a conference about matters in dispute between them, but Leonil refused, and thereupon Edward passed over to him; which so affected Leonil, that he leaped into the water, and embraced the boat King Edward was in, saying, "Most wise King, your humility has conquered my pride, and your wisdom triumphed over my folly! Mount on my neck, which I have exalted against you, and enter into that country which your goodness has this day made your own."

The first season of performing the Fair Penitent, Mr. Powell represented the part of Lothario: he had a dresser called Warren, who claimed a privilege (which at that time existed, though not always observed) of performing the dead part of the hero, in the fifth act. Powell being ignorant of the station his man had taken, called aloud for him behind the scenes, in the middle of the last act. The sad representative of death, hearing his master's voice, and knowing that he was passionate, instantly replied—"Here am I, Sir!" Powell, being still ignorant of the situation of his servant, again called—"Come here this moment you son of a ———, or I will break all the bones in your skin!" Warren could no longer delay or resist, and jumped up, hung with sables, which, as it were to heighten his embarrassment, were tied to the handles of the bier: this, added to the roar in the house, urged his speed so earnestly, that, with the bier in his rear, he ran against and threw down Calista (Mrs. Barry,) overwhelming her with the table, lamp, book, bones, and all the drear lumber of the charnel-house, till at length he liberated himself, and precipitately took his flight. The play ended abruptly, but not without leaving the audience in high good humour.

BLUNDER. In the reign of James I. an Act was passed to prevent the further *growth of popery*, which, by the mistake of the printer, ran thus: "An Act to prevent the further *growth of poetry*."

TO CORRESPONDENTS.

The Indian Tale, by E. S. C. shall be inserted in an early number.

Female Heroism, and a choice selection of literary gems, in our next.

Natty Nix came too late for us, and his excellent article is ephemeral, but we shall be much obliged by the articles he promises.

The favours of our kind and constant correspondents W. W., C. J., J. Francis, Idem, J. M., F. L., Alfred, W. L—e, John Drax, X. Y. Z., E. S., W. H. Young, H., and D. B., have been received, and shall have immediate attention.

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