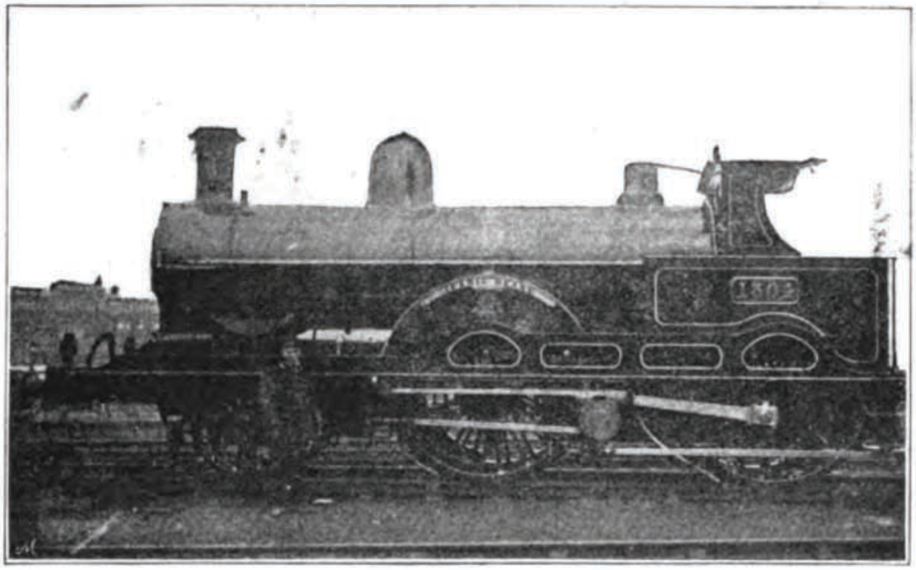
Engine Drivers and Their Work.

BY ALFRED T. STORY.

I.



From a] "JEANIE DEANS," WITH JEM BROWN, DRIVER. *[Photograph.*

THERE is perhaps no body of men to whom the public are so much indebted for their daily convenience and safety as to the engine driver and his mate, the fireman. Everybody, of course, is acquainted with their appearance as they come thundering into the station upon their engines, often enough grimy and weather-stained, but sturdy and resolute-looking, as they need well be, seeing the dangerous and responsible work they have to do. We may, too, have sauntered up to the marvellous machine which they have in charge—a machine, perhaps, the most wonder-working the world has ever seen—and "taken stock," to use the common phrase, of its construction, so far as that can be done from the outside, and of the multiplicity of valves and appliances whereby its Titanic powers are brought into action and controlled. We may have watched the ease with which it is put in motion and with which it is stopped, and it may have appeared to us a simple thing after all to run a locomotive engine, and so take charge daily of the lives and fortunes of hundreds of people. But to few has it occurred, perhaps, to inquire more narrowly into the daily work of these men, and into the course of training they have to undergo before they can be intrusted with the charge of an engine.

Marvellous as has been the development of railways all over the world, and complicated as is the system by which the world's land-travel is conducted, there is, perhaps, no part of the railway system so admirable, and showing so much care, as the method by which the men who have the actual working of this instrument of civilization are selected and trained for their work. It is, perhaps, a misfortune that we do not know more of the lives and the education of the men who do the hard work of the world; we might then have more sympathy with them and with their aims and aspirations. It will not be the fault of the present writer if, after the perusal of this article, the reader does not know all, or nearly all, about the engine driver and his work. For, as will be seen, the driver himself has been approached and interviewed as to his work and the means by which he attained his position.

Three representative companies have been selected from which to obtain information. The London and North-Western Railway was first approached, and Lord Stalbridge, the chairman of the company, at once gave every facility for looking over the works of the company; seeing and talking with the men, and, in short, for obtaining such information as was desired. It need hardly be said that the general managers of the two other lines selected, the Great Western and the London and South-Western, were equally courteous.

On all the railways of this country the locomotive department is under one responsible head, who has charge of the construction of the engines, as well as of their daily employment. Under him, however, are inspectors and foremen, who are responsible for the supply of engines, and for their assignment to their proper duties over a given district. To them also belong the selection and charge of the men who run the engines. No one is better qualified, therefore, to give information touching the work of drivers and others engaged about a locomotive engine than these inspectors, many of whom have risen from the ranks. This, however, is not the case with Mr. A. L. Mumford, who has charge of the locomotives on the London and North-Western Railway between London and Crewe, his office being at Rugby; but his knowledge of a locomotive engine and of the duties of those who have charge of it is as thorough as though he had gone through all the grades; and for much of the following account of an engine driver's career and duties I am indebted to him.

The future engine driver generally begins his career about fourteen years of age, though some may commence at the age of sixteen or seventeen. Sometimes they start in the fitter's room, in which repairs are done to running engines; sometimes as bar-lads and call-lads. The duty of bar-lads is to put the bars into the fire-boxes of engines. A call-lad is employed to call up drivers and firemen in the morning, so that there may be no delay through over-sleeping. As the men sometimes live a mile—or perhaps more—distant from the station, and they have to be called at all hours of the night, the call-boy must be free from tremors and night fears; in other words, he must be a youth of nerve and courage. This appears to be especially the case in the neighbourhood of Willesden, where, notwithstanding the very matter-of-fact character of a large railway junction, ghosts have been known to prowl, putting the call-boys into unseasonable frights.

From these various duties the youth generally goes on to engine-cleaning, helping an older cleaner at first, and doing the rougher parts of the engine; and then, when he knows the work thoroughly, having an engine assigned entirely to himself. By this means the future driver learns to know all about an engine, from observing it being prepared for duty, and seeing it come off duty, and likewise in all stages of "convalescence."

From cleaner, the next upward step is that of extra fireman, who is employed assisting drivers and moving engines in the shed from the coal stage to the place for going out. After some time spent in this way he goes as a regular fireman upon a goods train. But before he is made a full fireman he has to pass through an examination as to his general knowledge of his duties, and of the rules relating thereto. This examination, so far as men in Mr. Mumford's district are concerned, generally takes place in his office. Questioned on the point as to wages, Mr. Mumford said:—

"As an extra fireman, his pay when firing is 3s. 6d. a day. As soon as he passes as a regular fireman, and signs his agreement, he gets 3s. 9d. a day for twelve months; after that he gradually increases in wage until he goes on a main line express train, goods or passenger, when he receives 4s. 6d. a day. The next step in advance is to become a driver."

In answer to the question how long it takes to reach the last-named stage, Mr. Mumford said:—

"It depends upon the demand for enginemen and on the capacity of the man how long it takes him to go through the various stages of fireman to be a driver. The average time would not be less than five years. Some firemen remain in that stage eight or ten years, some as long as twelve years.

"The driver's first experience is to turn and move engines in the shed yard. Then he passes on to a shunting engine and to a local goods train, next to an ordinary goods train, then to a main-line express goods, then to a local passenger train, then to a better-class passenger train, and lastly to a through express."

In reply to a question as to the wages of drivers, Mr. Mumford said:—

"A shunting engine driver gets 5s. 6d. a day; a local goods train driver, 6s. 6d.; and so on, the pay gradually rising to 8s., according to the nature of the work done. As to hours of work, the engine-man's time is sixty hours a week. But, in running, 120 miles is reckoned as a day's work for through goods trains, and 150 miles for passenger trains. From here (Rugby) to London and back," added Mr. Mumford, "is 165½ miles,

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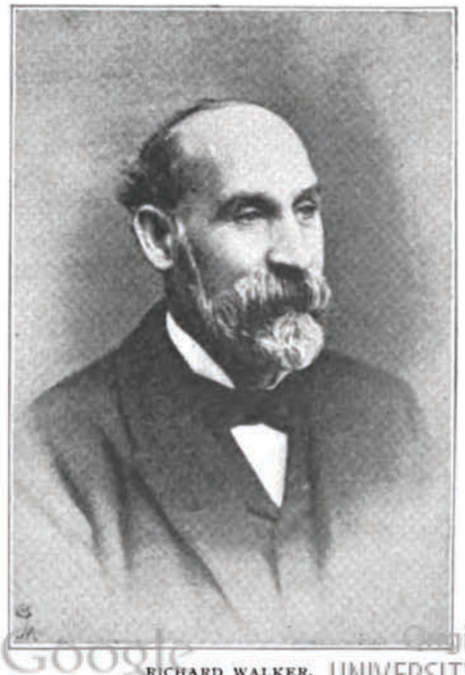
and is reckoned as a day and an hour. From Crewe to London is 157½ miles, and is equal to a day's work, or ten hours; there must be a little give and take."

Continuing, Mr. Mumford said: "In assigning a man's duties our aim is to obviate, as far as possible, his being employed more than ten or eleven hours a day, and to enable him to be at home as much as possible. With this object in view, the men are arranged into 'links,' for certain fixed duties. For instance, we have two men here who work certain trains. One joins the Scotch express here with his engine and takes it up to London. He returns by the 8.50 north train, finishing his duty at Rugby. The second man takes the train here and goes on with it to Crewe, where he arrives at 12.49. He returns at 10.30 a.m. with another Scotch express, and is relieved here, where another engine comes out to take it on to London. The man who takes up the 5.2 p.m. to London, arriving at 7, leaves London again at 10.10 p.m., with the Liverpool and Manchester express, and brings it to Rugby. Another man takes the train with his engine at Rugby, and works it to Crewe at 1.35 a.m. He leaves there again at 3.30 with a return train, and is at Rugby at 4.57, when the first engine takes it up again. We keep two big engines here for this service, and the two men I have spoken of work them. All our trains are worked in this way. The 'Charles Dickens' train, which runs from Manchester to London every day, leaving Manchester at 8.30 and due in London at 12.55, and leaving London again at 4, arriving in Manchester at 8.20, is worked between here and London by two engines and two men, who take the trips alternately—a trip to London and then a day off. The same arrangement holds with regard to the 2 p.m. from London to Crewe—the 'Corridor' train—arriving at 5.20. Two of our best men are here now, and you may talk to them yourself and elicit any information from them you like. I should say, however, that the quality of our drivers has improved greatly during the last thirty years—especially in regard to habits of sobriety."



RICHARD WALKER.
From a Photo. by Speight, Rugby.

"I suppose a man is fined for drunkenness on duty?"

"No; he is discharged at once. If a man in a siding leaves his engine and goes into a public-house, he is at once dismissed. But it is very seldom now that a man is dismissed for drunkenness—rarely, indeed, that a case is reported. No; if you look in this book you will see the matters for which a man is fined."

In the book in question were recorded small fines for "absenting himself without leave," "causing damage to buffer," "not having engine out of shed in time," "running short of water in his tender," "allowing the small end of strap to become hot," "allowing the engine to smoke," etc. The amount of the fine generally ran to a few shillings, half a crown being a common figure.

As regards the offence of allowing an engine to smoke, this is strictly forbidden in going through towns, where it is liable to cause complaint. It is quite needless, too, to offend in this way, for if it is necessary in stoking to let off smoke, a little steam turned into the chimney, by turning the smoke white, obviates all cause of complaint. This is commonly done to prevent the smoke being seen. The information on this point, however, was not given by Mr. Mumford.

The two drivers were now introduced, and I proceeded to question them on their experience.

Richard Walker, a remarkably sturdy, well-preserved man, said: "I have been nearly thirty years a driver. I began my career on the railway at the age of fourteen as a fitter's assistant, in which position I remained four or five years. I thus became thoroughly acquainted with the engine and all its parts. I was to have been a fitter, but they would not let me be one. Our fitter said there was no scope in fitting—that there was much more scope in driving. So I went on the engine. I was firing for three or four years. I started driving in February, 1865, at

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Peterborough, and went first on the goods. I have been sixteen years on express work, and am at the top of the tree. I always run express and mail trains."

"And your pay?"

"Eight shillings a day."

"How do you find driving as regards health?"

"I have always kept my health in the work, and have never lost a day through accident. I was selected to run the special express carrying the Empress of Austria from Herne Hill to Crewe."

"Have you driven the Queen?"

"Yes, I drove Her Majesty when she went to Derby twelve months ago last spring. I drove her from Leamington to Derby on our line."

"I suppose you have to take extra special precautions when the Queen travels?"

"Oh, yes; we take very great care of the old lady! We bring out one of our very best engines, and it is carefully overhauled. Then special precautions are taken all along the line, and nothing is allowed to move for half an hour before her train is due. Then a pilot engine runs a quarter of an hour before her train. The locomotive foremen of the respective districts and a guard, supplied with hand lamp and fog signals, travel on the pilot engine. Then there is a distinctive code for signalling both the pilot engine and the Royal train. This year when Her Majesty went to Ballater it was twelve strokes, like this: ---- ---- ----"

"You take it as an honour, then, to be selected to drive the Queen?"

"Oh, yes; we like to be put on that duty, although we do not much care to go off our own line."

Mr. Mumford here interposed with the remark that one driver who was chosen to drive the Queen, on getting back to Willesden from Herne Hill, exclaimed, "Thank God, we have got into England again!"

There is a good deal of character about some of these men, and many good jokes are told both of and by them. One old stager, who was driving a train that happened to be a bit behind time, observed a gentleman go up to the guard, put half a crown into his hand, and say: "Do your best, guard, to make up your lost time, or I shall lose my train at such a junction, which I want very much to get." "All right, sir," said the guard, touching his hat. Before starting he gave a hint to the driver; but the driver had his own views on the "morality" of the question, and when his engine sailed into the junction, the train the passenger wished to catch was seen to be quietly steaming out at the other end of the station. The disappointed traveller, greatly annoyed, approached the driver and said: "I thought, driver, you might have enabled me to get my train. Half a minute would have done it." "Ah, sir," replied the old driver, "it might have been done easily; but, you see, you greased the wheels at the wrong end of the train."

In reply to the question, "Will you now tell me what is your day's routine?" Walker said:—

"When we come on duty, the first thing we have to do is to report ourselves at the office in the shed. We there write our name in the book, and our time is taken. This is necessary, in order that the timekeeper may see that we are in a proper condition to go on duty. We then take a look at the notice board to see if there is anything there affecting our particular line. Everything in the way of change relating to the working of the line—change of signals, the arrangement of the 'links,' and so forth—is posted there. This done, we go to our engine and see that all is in order—the fire lighted and steam up. We are expected to be in the shed an hour before the time for us to join the train, in order to give us plenty of time for preparation. The next thing, after seeing that all is in order, is to proceed to the tank and take in water. Then we move up to the siding in readiness for the train.

"I am just now going out with the 5.2 to London. I arrive at 7, and leave Euston again at 10.10 with the Liverpool and Manchester express, arriving here at 11.45. My mate takes the train here and carries it to Crewe, and I go to bed. This trip constitutes my day's work, although I have only been out seven hours; I have, however, run 150 miles, which constitutes a running day."

"Having finished your trip, I suppose you have nothing else to do but to go home and go to bed?"

"Before we can do that, we have to take our engine to the coal siding and have it supplied with fuel for the next day's run. This is the invariable rule. Then we take her into the shed and hand her over to the turner, who puts her on the turn-table and turns her round, and places her in such a position that she can be taken out in the morning without any more trouble. The fire is then taken out of her, and she is handed over to the cleaners. If she is in need of any repairs, they have to be reported

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to the shed foreman, who sees that they are attended to. When everything has been done, we have again to go to the office and report ourselves, and sign the book. We generally give a look at the notice-board, too, to see if there is anything posted concerning our 'link' or the line we work on."

"And about your premiums for saving fuel: are you allowed a premium?"

"Yes; we are allowed so much coal per mile. My quantity is 30lb. Some have 36lb., others 38lb. The majority of the goods trains are allowed from 45lb. to 50lb. per mile. They require more than the passenger trains, because they have so much shunting—especially the coal trains. If a man takes an interest in his work it leads him to be economical; it also shows the company what men are interested in their work. All the coal is weighed out to the engine. At the end of each month a sheet is issued, showing, amongst other details, the actual working of each engine during the month, and if any driver has been able to do the whole of his work with a less consumption of coal than the standard allowance, he is paid a premium of 2s. for each pound of coal used per mile less than the standard, the fireman being allowed 8d. per pound. For instance, engines working the heaviest express passenger trains between Rugby, Crewe, and London are allowed 38lb. per mile; and if a driver can do his work for the whole month with a consumption of 36lb. per mile, he gets a bonus of 4s., and his fireman 1s. 4d. That pays the company and also the driver. In the last sheet issued I got 16s."

"When do you consider your work to be the most dangerous?"

"In times of fog and snow, of course. I do not mean when the snow is on the ground; that is simple enough. It is when the snow is falling that it bothers us, especially with a head-wind. It is then driven against the engine and covers the glass of the look-out, so that we can't see. Then driving becomes very difficult."

"Have you special rules to guide you in such cases?"

"The rules are the same as when fog prevails."

"And what are they?"

"Well, when the fog is so thick that we cannot see the signals we have to feel our way with the help of the fog-signalmen. The signals are working as usual, of course, but we can't see them. The fog-signalman, therefore, is employed to help us. He is stationed within call of the signal-box, and acts under the direction of the signalman If I am coming from London and want to get into the station, I go on until my engine explodes a detonator. Then I know that I must shut off steam and bring my train under complete control, and wait for a signal from the fog-signalman. He has a shelter on the road near the signal-box, and generally has a fire blazing near (to give light as well as to keep him warm), and if he gives me the red, or danger, hand-signal, I must at once bring my engine to a stand, and then proceed cautiously to the point the hand-signal is intended to protect, or until I get the signal to proceed. If I am stopped by a detonator[*] and am kept waiting very long, I let them know of my presence by blowing my whistle from time to time. We are able to talk with our whistles, and so can let the station-master or the signalmen know where we are and where we want to go."

"You need all your caution at such times?"

"Yes, we do; but the only danger is when signals fail, or the wrong ones are given. When the 'block' is perfect there is no danger."

"I suppose it requires good nerves to be a driver of an express?"

"Yes; many men have not nerve enough for it. They refuse, saying they would prefer to remain at Pickford's work—that is their expression for the goods. But when a man feels equal to it, it is the lightest work, and he can keep at it until very old."

"Have you any very old drivers at work now?"

"I think I am one of the oldest in the express work. But up to very recently we had a driver at work who was sixty-seven years of age. He had to go to a somewhat lighter job than express driving towards the end, however."

In conclusion, Walker said that he and the next man interviewed constituted No. 3 link, known generally amongst engine-men and others on the line as the "Top Hat Link."

The next man interviewed, James Pennington, was a perfect picture of health, rosy-cheeked, bright-eyed, and evidently still full of "go." He said he started as stoker on a colliery line at the age of nineteen, remaining in that employ eight or nine years. He then went on to a stationary engine for winding coals from the shaft. "After that," he con-

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[*] A detonator, or fog-signal, is constructed in the form of a circular disc about 2in in diameter; it is made of a mixture of iron and tin, is filled with gunpowder, and charged with three percussion caps. It is provided with strips of tin on either side, with which it is fastened on to the upper flange of a rail.

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JAMES PENNINGTON.
From a Photo. by Speight, Rugby.

tinued, "I was engaged as a fireman on the London and North-Western at Wolverton, and remained at that work, off and on, for about five years. I was then driving for four years, chiefly on a goods and coal pilot engine. I then went on the goods and express goods to Leeds and Liverpool. After a few years at that I got to passenger work. I am now on express work, No. 3 link, from Rugby to London, and Crewe and Manchester."

"How long have you been connected with the London and North-Western Railway?"

"Thirty-three years."

"Have you ever been in an accident?"

"I have been in four accidents; but I have never been in an accident where there were any lives lost."

"Do you like the work?"

"Yes; I could not stop at home; I would sooner have any trip."

"Have you found that the exposure injures your health?"

"I don't think I look as if it did. I am nearly sixty-three years of age, and I should like to have another ten years' service, if the company will allow me. John Middleton knocked off at seventy-five. He was put to driving a pilot engine a few years before that, and seemed rather aggrieved that he had been taken off the better work. I feel as well as ever I did, and I can run a train better than I did twenty years ago."

In reply to another question, Pennington said:—

"Railway work does not injure a man if he has a good constitution. Driving affects a man if he is at all nervous. A good deal depends on himself. Mr. Webb, the superintendent of the Locomotive Department, has named three engines Pluck, Patience, and Perseverance, and those are the qualities that an engine-man wants."

In reply to a question as to the hours of his work, Pennington said:—

"We average about sixty hours a week, or the mileage equivalent to that. When we work on Sundays, we are paid at the rate of time and a half, so that for a full day we should get 12s. instead of 8s."

Jem Brown, driver of the Scotch express, known as the "Corridor Train" (stationed with the three following at Camden), commenced as a cleaner in 1858, became a fireman in 1859, and a driver in 1864. In 1875 he was promoted from a goods engine to driving passenger trains, at which work he has been ever since. Asked as to his experience as a driver, he said:—

"I have had two accidents. They were both to goods trains. I had a collision at

JEM BROWN.
From a Photo. by G. W. Roberts, Kentish Town, N.W.

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Coventry, when I had my engine knocked clean over, and blocked both lines for half a day. A ballast train was turned out of a siding without a signal, and I ran into it. That was before the block system was introduced. My engine was damaged a good deal, and some of the trucks also."

"Were you not hurt yourself?"

"No. When my engine was turning over I gave a spring, so as to get as far away as possible. You have to keep your wits about you when on an engine, and you sometimes get some rough riding."

"What was your other accident?"

"That was on the 11th of December, 1875, when I ran into a coal train at Leamington. The block system was then introduced, but was not thoroughly carried out. It was a very thick fog. They gave me 'clear' at Polesworth, and the train was only just within the signals at Armington, near Tamworth. Under the present system of blocking that could not have happened. I should be stopped at Polesworth and cautioned: 'Section clear, but station blocked!' Then you may go on, but be prepared to stop at the next—which would be the home signal, and not go past it."

JOHN BUTTON.
From a Photo. by H. J. Taylor, Kentish Town Road, N.W.

"How did you come off this time?"

"The engine was knocked to pieces, also a lot of coal trucks. Both the lines were blocked."

"Were you hurt?"

"Not much. I jumped again when the engine was going over. I hurt my finger a bit, and my nose was marked—that was all."

"How long have you been running the Scotch express?"

"For the last three years, although it is only since July last year that it was converted into what is called the Corridor Dining Train. It leaves London at 2 p.m., and reaches Crewe at 5.20. It is taken by another driver from there, and I come back with another express at 7.32, arriving at 10.45. I and another man take this train alternately. I run to Crewe and back every other day. My mate runs the alternate day."

"Then you only work three days a week?"

"That is all. The actual running time to Crewe and back is 6 hours 40 minutes, that constitutes two days' work—reckoned, of course, by mileage."

"Do you find the work trying?"

"Not in the least; we get used to it. I have had thirty-five years of it, and I am not much the worse."

John Button (in the same "link" as the above) began his career in 1862, and was promoted to passenger driving in 1880. Asked if he had ever been in an accident, he said:—

"I have been very fortunate. I have never had an accident of any kind—have not even so much as broken a buffer plank" (*i.e.*, the beam in front of the engine which carries the buffers).

"You are now working the Corridor Train with Brown?"

"Yes; I worked the train yesterday; Brown works it to-day."

In further conversation, Button said he enjoyed perfect health. He thought there was nothing in driving to injure the constitution. Some men had not nerve enough to take charge of a big engine. He did not find the great speed of travelling affected the nerves, "but," said he, "it makes you anxious. For my part," he added, "I prefer to go at a topping speed. I have read in books that the higher the speed the more the nerves are affected; but I don't find it so. You feel a sensation of positive pleasure in going along at a rattling speed. Of course, we are well protected from the weather by our cabs; formerly it was not so, and in bad weather the men were often soaking wet. But all that has been changed since Mr. Webb introduced the cab. That was about 1873. The engine Brown and I

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run is the 'Jeanie Deans.' She was built by Mr. Webb for the Edinburgh Exhibition, and is a 7ft. compound engine, of the latest type. She runs every day to Crewe and back."

"I suppose you can tell pretty well the speed you are going at?"

"Yes; we soon learn to judge by the movement, the oscillation, how the engine is going. You *feel* the speed. The other day I looked at my watch at Crewe, and did not look at it again till I got to Euston. I found I was one minute to the good."

Joseph Edwards, in the service of the London and North-Western Railway Company since 1863, and seventeen years a passenger driver, said he was one of the men chosen a year or two ago to run the 10 a.m. train from Euston to Edinburgh. It was known as the "racing train," and was run against the East Coast train for Scotland. "I ran it," he said, "from here to Crewe, 158 miles, without a stop. We were timed to arrive at Crewe at 1 p.m. I was always before time; sometimes ten minutes before. I could have done the distance in much less time than that if Mr. Mumford would have allowed me. The engine we worked with was the 'Marmion,' 7ft. 6in. driving-wheel. She is a splendid engine, and very suitable for the work. We could work her at the same uniform rate up hill and down. We ran the 'racer' for a month, and never had a hitch. I was chosen for the work because I was accustomed to that class of engine." In reply to a question, Edwards said that during these trials of speed the "Marmion" never had a hot axle.

JOSEPH EDWARDS.
From a Photo. by G. W. Roberts, Kentish Town, N.W.

(To be continued.)

Engine Drivers and their Work.

BY ALFRED T. STORY.

II.

JOHN CHALLON, who began his career at Watford in 1853, and commenced driving in 1859, said he was fifty-six years of age, but did not look much over forty. His father took the first engine from Euston to Boxmoor. Describing his "hair-breadth escapes," Challon said he was once standing with his engine in a siding at Crewe, waiting to take on the 3.45 Scotch express, when he was run into by another Scotch express and had a "narrow squeak of it." The driver of the express had failed to put on the brake soon enough, or something of the kind, and as he was bound to run either into him or into a full train standing in the station, the signalman put the points so as to turn him into the siding. By his presence of mind he undoubtedly saved a great number of lives. As it was, only a lady passenger was much hurt. His engine, the engine of the express, and another were badly injured.

JOHN CHALLON.
From a Photo. by A. Scott, Oxford Street, W.

"You were not hurt?"

"No, the first I saw of what was coming was that my fireman said, 'Look here, mate!' I was off the engine in an instant, and so was he."

"Do you always jump off when you see a collision inevitable?"

"It depends how you are going. If I were running at a high speed I should prefer to stay on my engine. We should have a better chance. It is always safest to stay where you are if you are going more than ten miles an hour. In jumping, you get down on to the foot-board, and jump as far as you can the way the engine is going. Even then, if the train is travelling only at the rate of ten miles an hour, you may get a nasty knock. If there is a hedge near, it is pretty safe to spring for that. Sometimes when you jump you are rolled over and over several times like a hoop, but that does not hurt you."

Another narrow escape which Challon described was one in which he and Brown were concerned. It occurred near Nuneaton. Brown was working down an empty waggon train from Camden to Crewe, and Challon was running the Scotch express, leaving Crewe at 5.32 in the morning. Brown was being shunted to let the express pass, and was lying right across the main line. This was before the block system was introduced, and it was a very foggy morning. Brown heard the express coming, knew what a terrible catastrophe would happen if the express were not stopped, and blew his whistle as hard as he could. Fortunately Challon heard it, put on his brake, and thus barely escaped a collision, as it were, by the skin of the teeth. Said Challon: "We had not the brake-power then that we have now. Now we can stop easily within 300 yards; then it took us more than half a mile. I thought we were surely in for a smash, and when we were slowing down I jumped for it. Luckily we avoided it; but there was not more than a yard between my engine and Brown's train when we came to a stand." In conclusion, Challon said he is generally chosen to take the Prince of Wales when he goes to Tring to visit Baron Rothschild. He added, "My engine is of the 'Precedent' type, 6ft. 6in., four wheels coupled."

It should be added here that every man, before he is put on an engine, has to undergo a sight examination. This is designed to test not only his sight as such, but also his ability to distinguish colours. In addition to this the men are examined from time to time to see that there is no failure of sight. Slightly different tests are employed by the different companies, but the effect is the same. On the London and North-Western a card, five inches long by four broad, divided into coloured sections, and covered with dots, is used. This is placed at a distance of from fifteen to twenty yards, and if the person tested can distinguish the colours and count the dots at that distance, with one eye or with both, his sight is considered all right, and he is passed.

A day spent among the Great Western Railway Works at Swindon is an education in railway matters in itself. There seem to be miles upon miles of factories, sheds, and sidings; but as our subject is enginemen, we must keep to them. Mr. W. Dean, the head of the Locomotive Department, deputed his assistant, Mr. Williams, to select suitable men to give their experience.

William F. S. Ball said he began his career in connection with the Great Western Railway at Gloucester, in 1844, at fourteen years of age, as an engine cleaner. He went through every grade from that position until he became a driver. He has now been a driver thirty-eight years. He first worked on the Vale of Neath Railway, and was taken over by the Great Western along with the line. Questioned as to his day's work, he said:—

"When I arrive at the shed in the morning, the fire has been put in my engine. My first duty is to see that it is all right. We examine the whole of the engine minutely, and see that it is fit to go out. If I found anything wrong, or in any way defective, I should communicate with my foreman at once. When we have satisfied ourselves—I mean myself and my fireman—we then join the train. Our time is ten hours a day. I am at work nine and a half hours. I and another man are running special trains from here to London. One day I run from the station at 9 a.m., being on duty at eight and finishing at five. We arrive from London at 4.30. That is one day. We are three hours in London, and then return. On alternate days I come on at 1 p.m., and am back again by 9.30, finishing about ten. The alternate day's train back is a stopping train."

Asked if he had ever been in an accident, Ball said:—

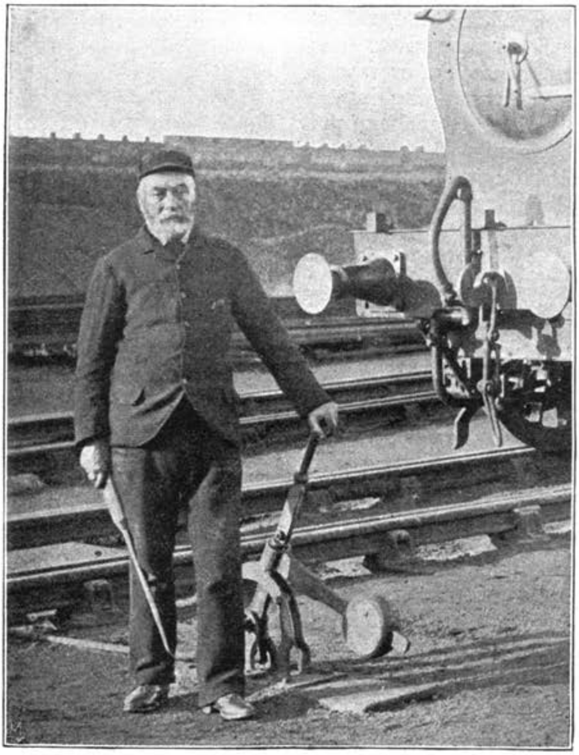
"I was in an accident in South Wales. We ran our train into a coal train. It was no fault of mine, however; it was in consequence of a wrong signal. I was not hurt. Our chief danger lies in wrong signals. We have to take them, right or wrong. As far as our duty is concerned, we have to be always on the alert."

In reply to a question as to the wear and tear of the work of driving, Ball said:—

"An engine-man needs to have a good constitution." He added, "The Great Master has given me good health, and I have taken good care of it. I never had any ill-health, and I know nothing about it. I do not find that the exposure tells upon me at all."

"Do you receive a premium for economy in the use of fuel?"

"Not exactly for that, but for economy in the use of coal and other things, and for good conduct generally, I get a premium of £10 a year. I receive that every year."

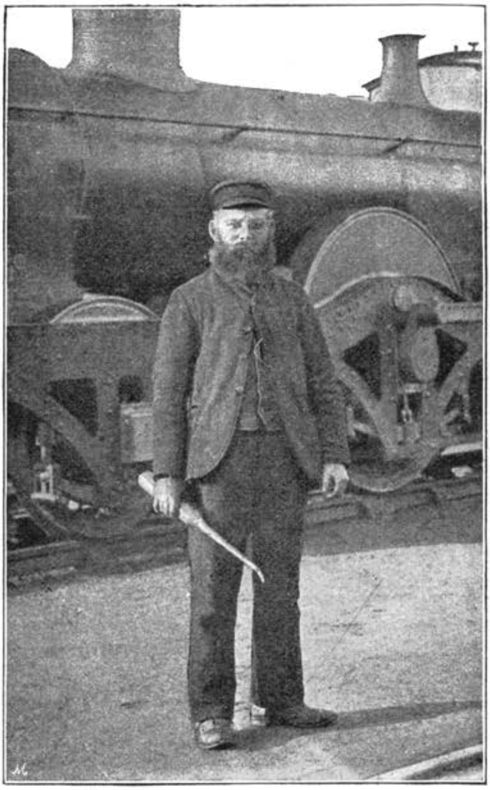


From a] W. F. S. BALL. [*Photograph.*

While this conversation was going on, Ball was oiling his engine and getting ready to take on the express to London. We then went on his engine to the water tank, and from thence to the siding to be in readiness for the express from Bristol. On the way up Ball explained that the oiling of the engine was one of the most important duties of the driver, and he always attended to it himself. He pointed out also that the driver's place on the foot-plate is on the right side and the fireman's on the left. The chief handles and other gear connected with the control of the engine are on the right side, while those connected with the fire, the sand-box, and boiler are on the left. The driver keeps a good look-out on the right—the signals being generally on that side—while the fireman, when not engaged with the fire, watches from the left side.

A. Dickenson said he was doing goods work, and had been twenty-two years firing and driving. He commenced as a cleaner, but never did much cleaning. He was put on the engines from the first, and employed on jobs in the sheds. He then went on to say:—

"I have been an engineman now twelve years. I am in a second-class 'link' that runs trains to London, Ilfracombe, and Neath. I have been on duty eight and a half hours to-day. I am running to London and back this week. I have finished now till 5.30 to-morrow morning. Next week I go to Neath; then I take a rest and come back from Neath next day."



From a] A. DICKENSON. *[Photograph.*

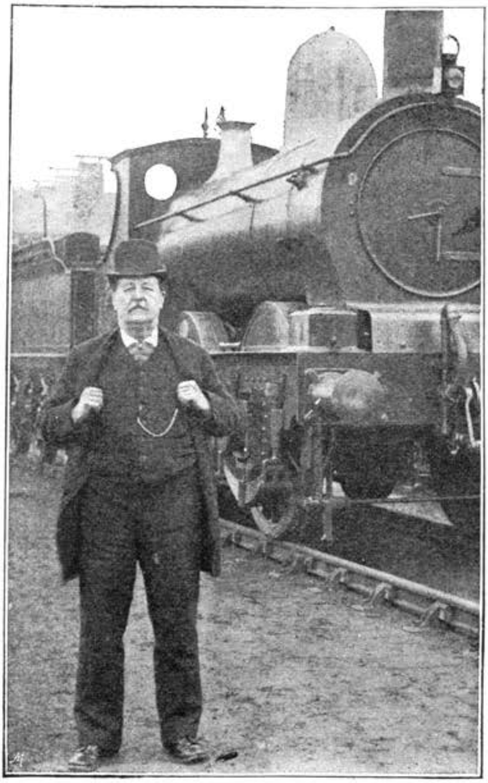
Mr. Martin, formerly a driver, now foreman of the engine-shed, said he started at fifteen-pence a day as cleaner. He used to work from six till six, with meal times. He was allowed to work three days extra, for the sake of making overtime. That was a regulation that would not be allowed now. At present a man was not allowed to put in more than sixty hours a week. Drivers, as well as others on the line, were 30 or 40 per cent. better off now than they were thirty years ago. He joined the Great Western service in 1858, and started driving at Reading in 1867 or '68 on a goods train. Later he went on to passenger work, and for nine years drove on the broad gauge from London to Bristol. He was inspector for some years before he became foreman.

Asked if he had ever been in an accident, Mr. Martin said:—

"Yes, I have been in one or two. When I was driving a goods engine, I once got into a bad mishap at Lilliput, in South Wales. We were going at the rate of ten miles an hour up a heavy gradient, the points being in our favour, and everything apparently all right, when suddenly I found the engine give way beneath me and myself flying through the air. The embankment had broken down, and the engine and some of the waggons had gone over into a field. I was shaken a bit, but not hurt, neither was my mate. The accident happened two days after my marriage, and I remember thinking what would become of my poor wife as I was going through the air."

"What other accident were you in?"

"I was coming up from Bristol in the month of June, somewhere about 1880 or '81, with the 12.45 limited mail. There was a dreadful thunderstorm at the time, and what with the noise of the train and the rolling and crashing of the thunder, I did not hear that the line was covered with water. The worst of the storm was just as we had passed Reading. It would be about three o'clock in the morning, and the thunder and lightning were something fearful. About two miles on the London side of Twyford I saw a goods



From a] MR. MARTIN. *[Photograph.*

train coming down, and the driver was holding a red light and signalling to us. We were running at the rate of sixty miles an hour at the time. I shut off steam and was preparing to pull up, when I felt the engine run into something soft, and then felt it coming out of the fire-hole door. The side of the cutting had come down; it was of limestone, and the débris had become mixed with the water. The fire was, of course, put out, and we were covered with lime, right back to the tender. We had broken away from our train, and there is no telling what might have happened but for the timely warning of the goods' driver."

Referring to the introduction of the improvements in signalling, Mr. Martin said: "The block system was introduced on the Great Western in the seventies. When I first became an engineman the signalling was very defective, and we never knew exactly what might happen. The signalman would say: 'There is such a train on the line in front of you. It started about ten minutes ago. You can go on; but keep your eyes open.' So we would go on, feeling our way; but it was dangerous and hazardous work—although there were not nearly so many trains as now—and I had several narrow escapes at one time or another."

When a Great Western driver arrives for the first time at a new terminus, and is obliged to stay there for the night, he is allowed half a crown for his expenses. After the first night he is allowed eighteenpence. On other lines there is either a similar allowance, or else the men—fireman as well as driver—are provided with accommodation for cooking their food, resting, and sleeping in "barracks" built for the purpose. Those at Crewe, Rugby, and Camden, on the North-Western, are very extensive, accommodating in all many hundreds of men.

The London and South-Western, although not one of the largest, is among the best managed lines. The company pays special attention to its workmen; and when a man retires, at the age of sixty or over, he is given a free superannuation, varying from five to twenty-one shillings a week, according to rate of pay and length of service. The general rules and arrangements under which the men work are much the same as on the other lines, and need not be specially described. The wages and hours of working are also much the same. Mr. Thomas Higgs was the first to be interviewed. He is the chief assistant in the running department of Mr. Adams, superintendent of the Locomotive Department. Mr. Higgs said:—

"I have the superintendence of the engines, the enginemen, firemen, cleaners, coalmen, and everything connected with the running department. I commenced my career on the London and North-Western Railway at Rugby in 1846, as office and bar-boy. I worked through the sheds and fitting shops until 1853. Then I commenced on the road as a fireman, and worked in that position until 1854, when I retired from the service of the London and North-Western Railway. After a short turn on the South Staffordshire Railway, and then some months in Dublin and Belfast, I joined the service of the London and South-Western Railway in 1856 as a fireman, and in the following year was promoted to the position of relief driver on the Dorset and Weymouth line. The same year I was made engineman, working on different parts of the railroad, running goods and passenger trains. Finally, in 1859, I settled at Salisbury, running between Salisbury and London. On the opening of the Exeter line I was shifted to Exeter, and then ran between Exeter and Salisbury. After that I was promoted to the express running between Exeter and London, up one day and down the next. That position I held until the 8th of July, 1868, when I was appointed locomotive foreman for Exeter, having in addition the supervision of all the signals and the gas and carriage departments from Yeovil to Bideford. In 1872 I was appointed district chief foreman for the Western District, from Basingstoke to all stations in the West of England. Ten years later I was removed from Exeter to London to take charge of the running department of the London and South-Western Railway, which position I have held ever since."

Asked if he had had any accident while working as an engineman, Mr. Higgs said:—

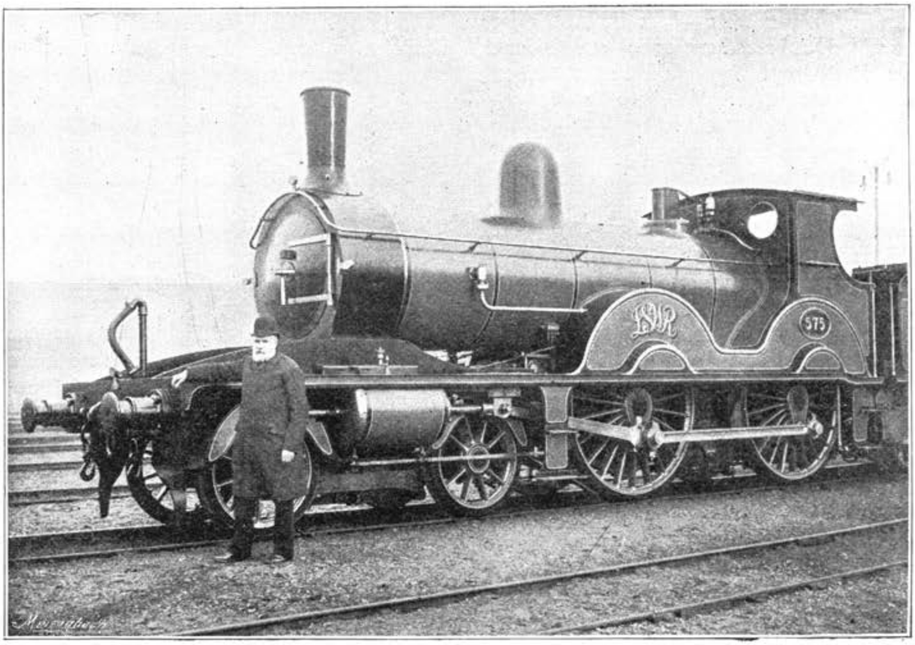
"I have never met with any serious accident, but was once scalded very severely in the execution of my duties. It occurred in October, 1862, and was caused by the heating apparatus giving out. I was laid up for five or six months. In 1863, a man attempted to throw me off the road with the mails coming over the North Devon line from Bideford to Exeter. Fortunately I managed to bring the train to a stand before any serious result occurred. Had I not stopped the train when I did, it would have been precipitated through a bridge into a river."

"Did the man place something on the line?"

"Yes; he took a gate off its hinges and laid it across the road. Fortunately I saw him and pulled up in time. When he perceived that he was discovered, he ran away across the fields. I got down from my engine, and chased and caught him. He tried hard to get away; but I brought him to my engine, and carried him on to Crediton, where I handed him over to the police. I afterwards gave evidence against him at Exeter, and he was sentenced to five years' penal servitude."

"Through seeing the man's attempt, then, you prevented a fearful accident?"

"It must have been terrible, as we carried a great number of passengers. For my conduct on that occasion our directors gave me a silver medal and five pounds."



From a] THOMAS HIGGS—WITH ENGINE USED WHEN THE QUEEN TRAVELS. [*Photograph.*

"Is it customary for your directors to reward such conduct?"

"Yes; I have been rewarded on several occasions for preventing accidents and serious loss of life. I am happy to say that, during all my career, I have had to attend but one inquest on a person run over. This was at a level crossing. I never broke down on the road but twice. Once I broke the driving axle on an engine called the 'St. George,' but managed to bring the train on to the next station. I broke down once afterwards on the Exeter line. During all my career I have never travelled in a train where the engine has failed; and I have never at any time been travelling in a railway train where anything has gone wrong with the train."

"The engineman is better cared for now than formerly, is he not?"

"As the engine has been improved, his position has been improved, too. A major consideration now, in constructing an engine, is the comfort of the driver. When I first went on to an engine there was nothing but a small hand-rail to prevent the men from falling off the footplate. There was nothing like the present protecting plates or cabs for the comfort of the men."

"Are your men, Mr. Higgs, allowed a premium for economy in the use of coal?"

"Yes; there is a certain quantity of fuel allowed per mile. Express engines are allowed 27lb. per mile—that is, on the best engines. Double duty men are allowed 28lb.; Southampton goods 28lb., Yeovil and Exeter goods men 30lb., and in many cases these quantities are not consumed. We give a premium in this way: the men who show the least consumption of fuel on their engines and keep the best time receive—the driver 20s. and fireman 10s. each four weeks."

LONDON
AND
SOUTH
WESTERN
RAIL
WAY
COM
PANY
FOR DUTY ABLY DONE

MEDAL PRESENTED TO THOMAS HIGGS.
From a Photograph.

"I suppose, Mr. Higgs, when the Queen travels over the South-Western line, it falls to your lot to accompany the train?"

"Yes; whenever Her Majesty travels on our line, I go on the engine. You see, it is necessary for someone to be on the train who would know what to do in case anything went wrong. One can never foresee what might take place, especially on a line like that from Windsor to Gosport, between which places there are no fewer than fourteen or fifteen junctions. The best run I ever did with Royalty on board was early last year, when we fetched the Prince and Princess of Wales from Wimborne. When I left London there was a dense fog. The Prince asked me what the weather was like in London. I said if there proved to be as much fog on the way as I had left in London, we should arrive two or three hours late. As a matter of fact, we found the fog in patches—here and there very dense, while here and there we found it quite clear. Whenever we got into the fog we had to crawl along, feeling our way and going along very cautiously; but as soon as ever we got a bit of clear daylight, I made her waltz along. Once or twice I put her to sixty-five miles an hour. When we reached Waterloo the finger was just on the point of twelve: we had done the journey to the minute. Our general manager was very pleased at the splendid run we had made, and so was the Prince."

William Lawrence said: "I began on the Great Western in 1839, at Maidenhead. I then migrated to Twyford, where I was fitter's assistant. I subsequently became fireman and then driver. I joined the South-Western in 1849, and ran from Nine Elms to Southampton with goods. Was advanced to the passenger work in 1851. In the month of November that year I was transferred to Twickenham, and ran from Twickenham to London and Windsor. In 1856 I came from Twickenham to Windsor, and continued to run betwixt here and London until 1881, when I met with a serious accident from a collision between Wraysbury and Datchet, which occurred on the 18th of January in that year."

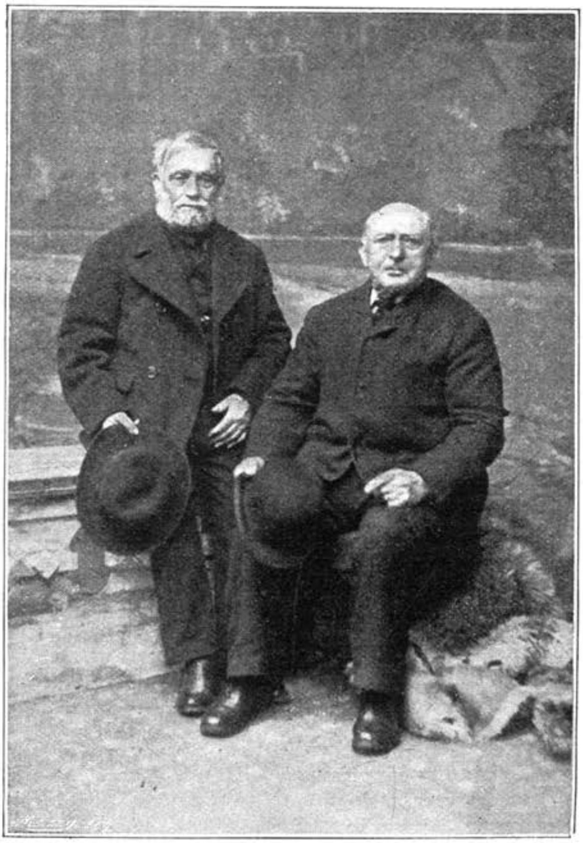
"What was the nature of the accident?"

"Two trains were snowed up between Wraysbury and Datchet, and they telegraphed to Windsor for help. I and my mate were sent on with our engine. When we got to Wraysbury we did not know whether to go on or not, and so waited for information. In the meantime four engines had come up from London and had worked their way through, and not knowing I was on the line they ran smash into me. My mate had got off the engine and had asked me for the shovel. He wanted to keep himself warm by shovelling away the snow. Suddenly he says, 'Look out, mate!' But before I knowed where I was, the engines had struck my engine. I was knocked down and my left leg broken. The engine was sent along for some distance by the concussion. Then it stopped, and the engines struck it again. I was banged about once more, and half the coals in the tender heaped upon me. I had my senses all the time, and knew what was going on, but I was pretty well done for. My left leg was broken in two places, my right hip was put out, my jaw was broken, and I was otherwise hurt. I was in the hospital a long time, but finally came out as you see me. I'm able to get about a bit, but I think I should have been all right, and able to go about my work, but for the hip being put out."

Although Lawrence said this, he did not look like a man who, even without the dislocated hip-joint, would be fit for much service. His broken jaw had resulted in permanent lockjaw, which, though he was enabled to talk well enough, prevented him from taking any but liquid or semi-liquid nourishment by means of a spoon.

Nor was this finishing accident the only one that Lawrence had been in. In 1851 he was disabled for some time by an accident which resulted in the loss of one of the fingers of his right hand. It was caused by an operation which was then all but universal, but which is now well-nigh forgotten by all except old railway men, namely, the "roping-in" of trains into terminal stations. In those days an engine was not allowed to go into a terminal station, but was hauled in by a rope, the engine being unhooked and run into a siding for that purpose. On the occasion in question, the man who had hooked the rope on to the engine and was going to hook on the train rolled down the embankment. Lawrence then got down from his engine and was about to hook on the rope, when he got his hand entangled by some means in the footboard, with the result that his finger was broken in several places.

Lawrence, who notwithstanding his many accidents is still full of spirit, described his experience at St. Thomas's Hospital with much humour. "When," he said, "the head doctor looked at my finger, says he, 'You had better have it off. If we fix it up for you it will be stiff, and you will be poking it where you should not do.' Says I, 'Doctor, you know your business and I know mine, so you just do what you think best.' With that he winks to a student, who outs with a lancet, makes a cut this way, a cut that way, and then across, and the finger was off—just as quick as that; and I hardly felt it. But when it came to joining the leaders—Oh, my eye! Didn't it pay me out? But they made a good job of it."



WILLIAM LAWRENCE. JOHN DEAR.

From a Photo. by H. W. Macdonald, Eton.

"Had you any other accident?"

"Yes, I was in a rather serious one in 1859 or '60. It occurred to the 11.25 train from here (Windsor), between Ashford and Feltham. The rails had come away from the sleepers, and we ran right into a wheat-field, the train turning upon its side on a hedge. When I felt the engine going I jumped right over the fireman. He followed suit. When we found ourselves on the ground my mate says to me, says he, 'Bill, are you hurt?' I says, 'No, I'm not hurt, mate. Are you?' 'No,' says he; 'so let's thank God that neither of us is hurt.' Then he suggested that we should go and look at the train and see if anybody was injured. We peeped down the funnels to see who was in the carriages. There weren't many passengers in the train. But there was an old lady in a first-class compartment, along with a little girl, who was screaming and making a great hullabaloo. So we fetched assistance and set to work to get them out. But it wasn't an easy matter, for the train was on its side, and the carriage door was locked. Howsomdevers, we got the window open, and soon had the little girl out all right. But it was quite a different affair with the old girl, for she was eighteen stone if a pound. After considering a bit, my mate gets in through the window and tells the old lady to mount on the arm of one of the seats. Then he gives her a bump up behind, and me and another as we got to help us pulls up above, and presently, him thrusting and us pulling, we brought her out safe and sound. But it was a tough bit of work, and for a time it seemed as though she was going to stick, half-way in and half-way out. She was a good deal frightened, but not hurt; neither was anybody else in the train."

"And since your accident in 1881, you have been pensioned by the company?"

"Yes, I have been able to do nothing since then, and the company has very kindly looked after me."

The following have been selected as typical drivers on the South-Western Railway:—

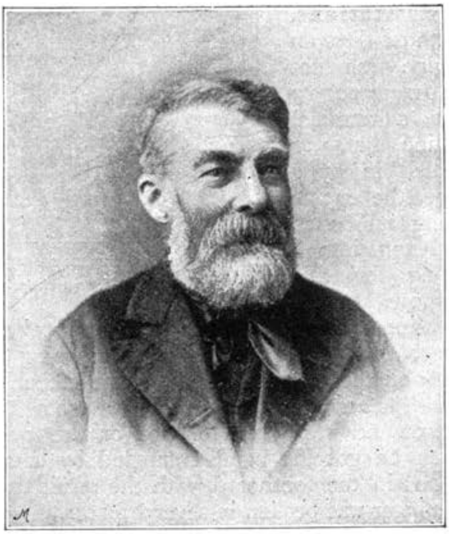
John Dear, seventy-five years of age, said he began his career on the railway in 1837. After a short experience on the London and Birmingham Railway, he joined the South-Western in 1840 as fireman, becoming a driver about 1842. He continued driving until 1884, when he was made inspector for the Windsor Station, having to look after the engines and men, which position he held until 1891, when—to use his own words—"in consequence of ill-health the directors kindly granted me a pension, as they do to all their old servants."

Dear continued: "I ran a passenger train between Nine Elms (the London terminus at that time) to Southampton till the end of 1849. Then, on the opening of the Windsor branch (in 1850), I was shifted to Datchet; and when the line was completed I ran between London and Windsor."

"Were you ever in an accident?"

"I was in an accident at Richmond once, when a man ran out of the yard and met me with a ballast engine. I was coming from London with the 5.50 train. I saw the ballast engine coming and ducked down, and so escaped being hit with the pinch-bar, which, by the concussion, was sent thirty or forty yards. If I had not ducked, it would have gone right through me. As it was, one of the taps went against my chest and broke my breast-bone. I have suffered with my chest in consequence ever since. A collision of that sort could not occur now. It was a ballast engine going to Nine Elms. The driver of the engine let himself out of the yard, thinking I had gone by. They could let themselves anywhere in those days. That was about 1845 or '46. Both the engines were smashed. I went to work again almost immediately. I never had a day's illness till I had that accident. I do not think I ever lost a day's work through ill-health. I had many narrow squeaks; but I did not think much of them in those days. In later times driving was much better and safer. When I began there were no 'distant' signals and no 'home' signals, and we had to clamber over the coke to get at the brake, which was at the end of the tender. It was both dangerous and very rough work. We wore a pair of boots out almost every fortnight by going over the coke."

Charles Payne, who started on the Great Western Railway, and had had eight years' experience on it before joining the South-Western, said that he had been forty-six years in the service of the latter—twenty-six of which had been spent as a locomotive fireman, and eighteen as a driver. He described several accidents in which he had been concerned. The first was at Ashe, where his train came into collision with a ballast train, which ought to have cleared before he arrived. When he saw that a collision was inevitable, he jumped off the engine and told his mate to jump. They both of them got off unhurt. The two men on the ballast train, however, were badly injured.



CHARLES PAYNE.
From a Photo. by W. Shawcross, Guildford.

The next accident he had was near Shalford Junction. It was caused by some young colts getting on to the line. When the engine struck them, the concussion caused the engine to leave the metals. Fortunately, it ran into the "six-foot," and so no great damage was done to the train itself, but two of the colts were killed, one of them being cut up into mince-meat by the wheels of the engine and carriages.

Most drivers have had experience of cattle getting on the line, but it is not all who have had the experience of a driver who used to run over one of the western lines threading a well-preserved country. Game was in abundance, and frequently coveys of birds were seen on the line. One day, however, while going slowly up a steep incline with a goods train, he astonished his mate by stepping down from his engine, getting over the fence into a field, and immediately afterwards returning with two live hares. As they were going up the incline he saw the two hares fighting. When they do this they sit on their hind-quarters and go at it like two boxers. This they generally do in such a blind rage that they may be approached unnoticed. Our driver knew this, and so quietly went up to them and took first one and then the other by the scruff of the neck, as he put it, and then walked off with them to his engine.

But to return to Payne's experiences. Between Swindon and Gloucester there is a bank known as Brown Rock. This bank is five miles in length, and the incline is 1 in 70. Going down this bank one frosty morning, when the line was "greasy," he found that there had been a fall of rock just before he arrived, which had doubled up the line, and which resulted in throwing the engine off the road, together with some of the carriages. One large stone went underneath the engine and stripped off the feed-pipes, and then bent the axle of the tender. He stuck to the engine and brought the train to a stand. Fortunately no one was hurt.

CHARLES TURTON.
From a Photo. by W. Shawcross, Guildford.

On another occasion, while going with the mail train over this same bank, he felt the engine give a sudden lurch. He afterwards learned that the bank had sunk over eighteen inches while he was going over it. It was only the speed at which they were travelling that saved them. The depth below the bank was sixty feet, so that, had they gone over, the carnage would have been terrible. "I often shudder when I think of the near escape we had," Payne remarked.

Charles Turton, like Payne, is stationed at Guildford. He is sixty-seven years of age, and was last year still at work driving an engine from Guildford to Farnborough and Ascot; having been forty-six years in the service of the South-Western Railway Company. One of his chief recollections is driving troop trains during the early part of the Crimean War. He considers that he has been very fortunate as regards accidents, never having been in a serious one, although he has had his quota of breakdowns.

Once when driving between Guildford and Alton his driving-wheel broke. He got out his tools, uncoupled the wheel, packed it up, and drove into Alton with one side only working. He prides himself on always having been able to take his engines to their destination. One Sunday night, going to Guildford with the 9 p.m. train, he had the misfortune to break the right trailing axle when between Surbiton and Esher. He managed to pack it up against the box of the wheel, and work on to Guildford and Godalming.

It should be said now, if it has not been already, that it is part of the training of a driver to learn enough of engineering to be able to take out his tools and rectify any little mishap that may occur to his engine on the road.