

## MONARCHS OF THE IRON ROAD.

## Chats About our Great Express Trains.

## THE LARGEST LOCOMOTIVE IN ENGLAND.

BOYS who take any interest in locomotives, and are acquainted with the various types, will have noticed that the engines on the London and North-Western Railway are not particularly picturesque to look at, though many of them are very ordinary in shape. Before the advent of that clever locomotive builder, Mr. F. W. Webb, the engine used by the L. and N.-W. R. was a single-wheel driver, a seven-foot-six type, with outside cylinder; and this was the one which achieved such great things for the line during the famous race to Scotland. When Mr. Webb first set to work, he built a coupled engine with six-foot six-inch wheels, but without bogies. This proved a very useful servant, drawing the heavy loads which the line carries at an even pace up hill and down dale; but it is far from a fine engine in appearance, and the dirty black colour it is painted is not ornamental.

For some years these small "coupled" locomotives were the only ones used by the company. But one day Mr. Webb had an inspiration. He remembered that the engines of all large steamers have three cylinders. The steam goes into the small cylinders, and then, instead of being passed into the condenser, it is used up in a large cylinder which permits greater expansion. He asked himself why this system could not be adopted for locomotives. He saw no reason against the course; and he built a three-cylindered or "compound" locomotive.

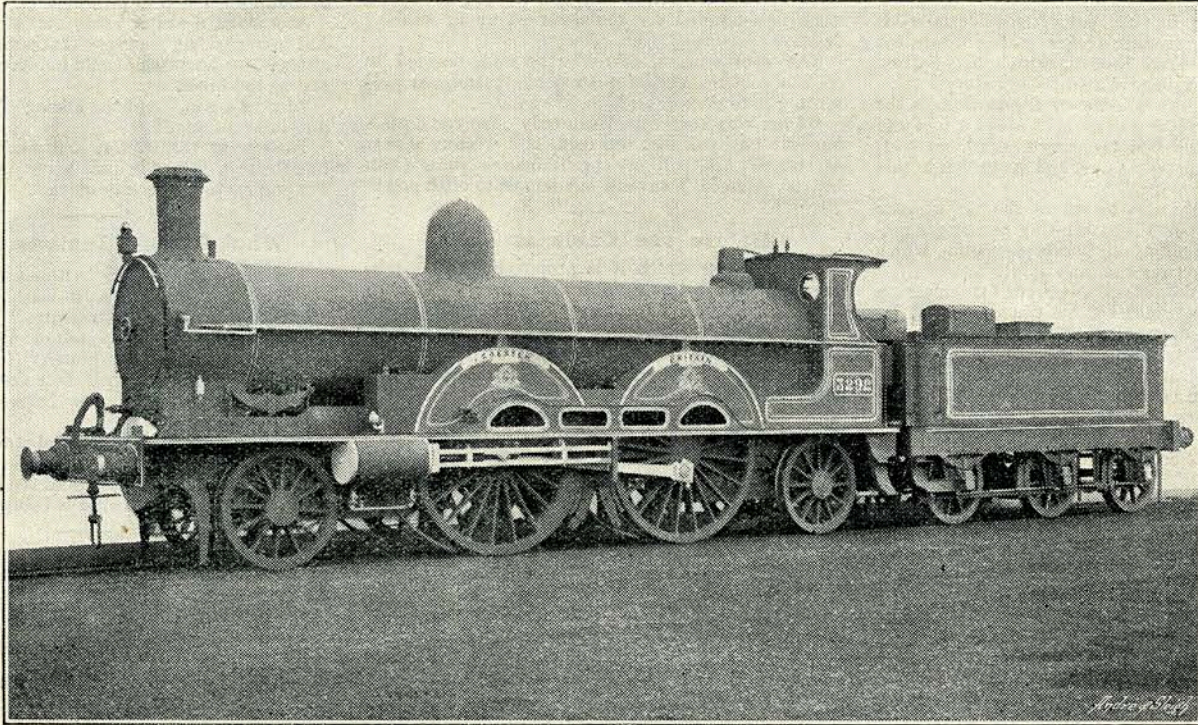
This system of his, carried to perfection, you have in the engine we give in the picture. The "Greater Britain" is the largest locomotive in the country. She has an enormous boiler; her driving wheels are seven feet one inch in diameter; she weighs 52 tons 2 cwt. in working order; she is driven by three cylinders, the smaller or high-pressure cylinder working the aft pair of driving wheels; the middle and large cylinder working the forward pair of wheels. She is indeed a superb thing to look at—a wonder of the engineering world; and when she first steamed out of the works at Crewe, on the 29th October, 1891, a mass of "burnished brass and shining steel," I do not wonder that a shout of triumph followed upon her advent.

These compound engines, and the "Greater Britain" in particular, have been wonderfully successful, so far as saving coal goes; but, if the truth must be confessed, they are disappointing where speed is concerned. I was coming down in the "Irishman" the other day, behind a fine "compound" with six-foot nine-inch wheels (I think), and I timed our pace carefully. Where the road was level we made fifty-eight miles an hour; where there was a rise, say of one in two hundred, we fell to fifty-four miles; and at a rise of one in a hundred we did little better than forty-eight or fifty. Downhill the results were better. We touched sixty-two miles an hour passing through Pinner, and sixty-three and a half by Harrow; yet how poor is this contrasted with the eighty miles an hour of the G. N. R. past Stoke Box, and the eighty-

three miles an hour of the Great Western, uphill, from Didcot to Swindon!

These facts will admit of no dispute. The fastest engines in the world are the Great Western and the Great Northern. But this being admitted, we have to remember that Mr. Webb burns much less coal than many other companies, and that his engines draw loads which would paralyse many of the weak engines of the South. Nor in the matter of great trains is this magnificent line behind its rivals. Its Scotch express works its way to Crewe at a speed of forty-eight and a half miles an hour, the road rising continuously for the first thirty-nine miles out of town.

During the race to the North far better things were done. One day an engine ran from Preston to Carlisle over the Shap Fells, and averaged the extraordinary speed of sixty miles an hour the whole way, the Shap Fell gradient being one in seventy-five. But, on the whole, Mr. Webb prefers steady averages, with a low consumption of coal, to dashing and showy runs, which are useful merely as showing what a locomotive can do when she is pressed.



THE "GREATER BRITAIN."

There is one feature on the North-Western line which is quite peculiar to it. I am referring to the practice of taking up water while the train is in motion. Some years ago I ran to Rugby on a fast train, and found a humble place in the tender of the engine. For the first few miles out of town we made a poor pace, running through Harrow at a bare forty miles an hour, and little better by Pinner. During this long ascent to Tring the shovel of the stoker was rarely at rest, and the engine snorted like a whale in pain, shooting up great lumps of coal high above the bridges. You could feel the strokes of the cylinders thumping away, with a vibration which ran up your legs and seemed to come out at the back of your head. Yet the experience was exhilarating to a degree, and not until Watford was reached did I receive my first shock.

Had I been peering out through the spy-glass with the driver this would not have occurred. But I was hugging a lump of coal on the tender, trying to look happy. Thus I did not notice that we had come up to the great water tanks which lie between the rails just here and fill the tenders of the engines. Suddenly the driver made me stand on one side. Helping the stoker, they lowered a kind of shoot into the tank below us. Up rushed the water in great foaming masses. The spray of it covered the engine. I was wet through to the skin, and for some minutes, in the words of the immortal bard, "I did not know where I were." This operation has to be timed to a great nicety. If the stoker keeps his shoot down too long, the water rushes up out of the tender and gives him a bath. It has been known also to put out the fire, which, of course, is a very ungentlemanlike thing to do, as an engine without a fire is much like a horse without legs. But the men get so accustomed to the work that they just fill

their tender, and no more; and the water tanks are valued by them as giving a lighter load of water at starting, and, therefore, greater possibilities of keeping time.

It is this care for detail, this possession of clever, thinking heads, this regard for economy and efficiency, which has made the North-Western what it is—perhaps the first railway in the whole world. At the same time, no mention of its engines and of its great trains would be interesting without a glance back at that one terrific calamity with which its history is associated. I am thinking of the crash at Abergele on August 20th, 1868.

In those days the "Irishman" started from Euston at a quarter-past seven in the morning. On that never-to-be-forgotten occasion the mail started as usual, and reached Chester in safety. Thence she passed to the North Wales Line to run the eighty-five miles to Holyhead. Just ahead of her was a goods train, largely composed of trucks containing barrels of petroleum. These should have been shunted at a station called Llandulas; but the siding

would not hold the whole of the trucks, and the driver, in his haste to deal with the overplus, shunted with such force that he sent some of the waggons carrying petroleum on to the main line, and they started furiously towards the advancing express.

Just think of the position. A great train full of happy people, a magnificent locomotive doing fifty-six miles an hour on that which the driver thought to be a clear road; and, rushing down to crash into the express, a number of waggons

loaded with the most inflammable oil we have! Had fate been a little kind, and permitted the driver to get a sight of the trucks on a straight road, half the awful result might never have been chronicled. But such was not to be. The trucks were on a sharp curve close to the sea, when the express rushed round it and struck them with a thunderous report, heard miles away.

A hiss of steam, a flying of splinters, a recoil, another crash—and then? Would you say "silence broken by cries and screams, a search among the wreckage, a rush for doctors"? Alas! nothing of the sort. A crash, indeed, a hiss of steam; but then—awful silence and fire. The great engine had cut through the barrels as it would have cut through match boxes. The liberated oil ran swiftly beneath the tender. Bright, lapping, licking flames rushed up, as though from the bowels of the earth. They wound about the engine; they embraced in their deadly folds the first five carriages; they cut short the agonised screams of those who had been torn and cut by the collision itself; they burnt alive the poor wretches who, ten seconds before, had been looking out upon the sea in smiling content. A more awful holocaust a railway has never known—for here was the pain of fire added to the pain of bruise and cut and tearing splinter.

The amazing part of this catastrophe was the silence of those who thus suffered. The wife of a platelayer made the extraordinary statement that, although she begged a mother who stood at the window of one of the foremost carriages to throw her child out, the woman never said a word, but, with her infant in her arms, waited for the flames to coil about her. Others seem to have been equally paralysed. As the woodwork crackled, as the sparks were cast up in fiery fountains, as the flame roared, no

cry was heard, no voice was raised. The meaning silence, broken only by the hiss of the flame, accompanied the scene to its close; and the doctors attributed it to the fact that the wretched victims, covered from head to foot with sheets of fire, were robbed instantly of speech and life.

Let us trust that this was so. Otherwise the scene is too awful to dwell upon. A monument now marks it at Abergele, and the people about still speak of it in hushed whispers. For thirty-three persons in all were thus burned by the seashore in North Wales; and among the victims were the Right Hon. Henry Lord Farnham, his wife, Lady Chinnery, Judge Berwick, and the Rev. Sir Nicholas Chinnery, Bart.

### Losing a Friend.

Two Arabs who had been exhibiting three camels in London, were bereaved not long back of one of them. A correspondent, who describes the pathetic scene, found two camels standing with heads close together, shivering with fear, and now and then uttering short, "sigh-like cries."

An Arab came forward out of the darkness—it was late in the evening—tears rolling down his cheeks, and in broken French, which his distress made hardly intelligible, related the sad story.

He walked to the middle of the yard (says the writer) and showed us a deep hole about a foot and a half square, which had formerly held a huge post. In the darkness the poor camel had stepped into this hole, and broken his leg.

The man led the way to where the unfortunate creature stood on three legs, uttering piercing, agonising cries, and holding up the broken limb, which dangled helplessly from the knee-joint.

With broken voice, the Arab prayed for something to relieve his pet, which by this time had been induced to lie down upon its side; but the fore-leg was broken in two places, and a surgeon who had been sent for announced, after making a short examination, that nothing could be done.

When this was explained to the Arabs, one of them buried his face in the thick hair of the animal, while the other, with his arms round the poor beast's long neck, spoke soothingly to it in his native tongue, as he might have spoken to a child.

The scene was sad and grim, the darkness broken only by the glimmer of lamplight, which occasionally showed the other two camels huddled together in a corner shivering and moaning as though they understood the tragedy going on so near them.

Presently one of the Arabs arose and brought from the living quarters one of those terrible, sharp, dagger-like swords which his countrymen know so well how to use.

Kneeling over the doomed animal, he and his friend

seemed to utter a short prayer. The sword gleamed through the darkness, and was drawn with deadly swiftness across the camel's throat. Its suffering was ended, and the poor Arabs had lost a friend.

When a camel breaks its leg in the desert—not an uncommon occurrence—it is always killed at once; but these Arabs had heard much of the skill of English doctors, and hoped that this time the life of their dumb companion might be saved.

### Hadn't One Left.

A young gentleman, when on a walking tour, lost his way in the woods in the neighbourhood of V—. After wandering about for several hours, he came at last to a little farmhouse, where he asked leave to rest himself. The farmer's wife asked if he would like some refreshment.

"Thank you," replied the tourist; "let me have a bottle of cider, and, if you have nothing ready cooked, I'll take a preliminary omelet."

The woman, not having the slightest notion what "preliminary" meant, ran to ask her husband, who, after mature reflection, told her it was, no doubt, some new-fangled vegetable, served up in wealthy families.

The poor woman, at her wit's end, decided to cook a savoury omelet with parsley, and, on presenting it to the young man, she said—

"I am very sorry, sir, I can only offer you a plain omelet; but, you see, the cold, last winter, was so severe, sir, that all my preliminaries were frost-bitten. Indeed, I haven't one left fit to offer you!"

### Before the Cable is Laid.

THE lines over which it is proposed to lay a telegraphic cable are now as carefully surveyed beforehand as a line of railway is surveyed before construction.

Not only are soundings taken to find out the inequalities of the ocean-bed, but the nature of that bed is also investigated.

This is done by using a sounding-machine, which brings up a portion of the bottom itself.

The following account of the survey between Cadiz and the Canary Islands, by a correspondent who was on board one of the ships, gives a good idea of the care with which the work is done:—

"Two ships made zigzag courses across the proposed line of the cable, and soundings were taken every few miles, and more frequently if circumstances warranted it. In this manner the ground was covered effectually.

"On board the *Dacia*, where I was, we had an interesting time, and made some remarkable discoveries.

"We came across several banks where deep water

had been supposed to exist. One of these banks nearly escaped us, as we were sounding at long intervals; but a suspicious shoaling was noted on comparing one sounding with the previous one, and, as a little further on, deeper water still was found, we tried back, stopping to sound every few miles.

"The depth decreased very rapidly, and excitement ran high when the sinker found bottom at sixty-eight fathoms.

"We had found a submarine mountain raising its crest to within a few hundred feet of the surface, rising precipitously from a depth of nearly two thousand fathoms.

"Such incidents as this show clearly the necessity for careful surveys of ocean cable routes. This bank was right on the proposed course of the cable, and, if this had been laid as originally intended, the strain would have proved fatal to its existence."

### Making Peace.

SIMPLE words are best, though a very busy man cannot always stop to pick one.

At a hotel a waiter came out of the coffee-room and informed the manager that a man was raising a disturbance because he could not have his accustomed seat at the table.

"Go in again," said the manager, "and propitiate him in some way."

Back went the waiter, and said: "If you don't like the way things is done here, you can get out, or I'll propitiate you pretty quick."

### What Certain Instruments Said.

VIOLIN: "I'm nothing without my beau."

Trumpet: "My hopes are blasted!"

Harp: "Alas! I am unstrung."

Banjo: "My master is nigger-dly."

Drum: "I admit I'm beaten."

Violoncello: "My position is un-knees-y."

Organ: "I'll be blown before I'll ever play again."

Hurdy-gurdy: "One good turn deserves another."

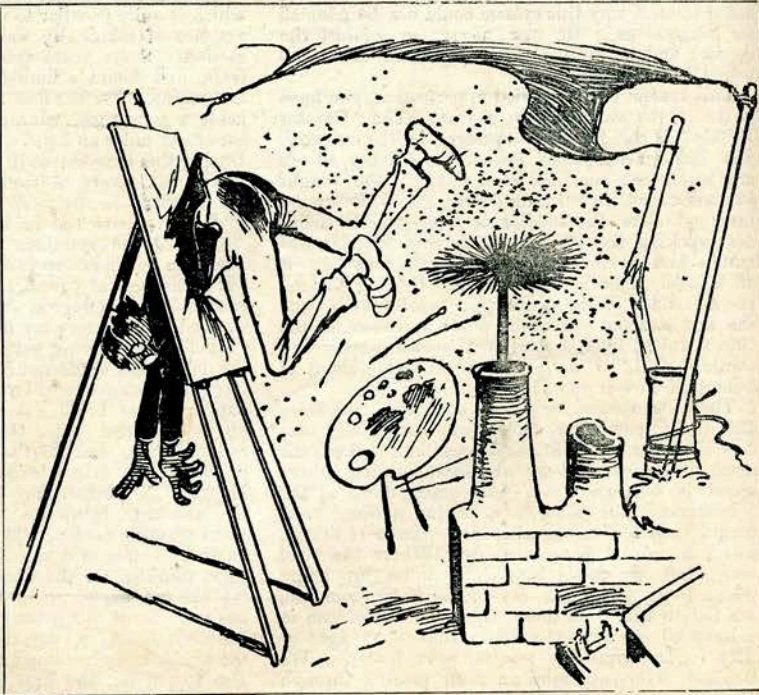
Bones: "Give us a shake of the hand."

Tambourine: "I'm always being knocked about."

A CELEBRATED actor was seldom known to be in a passion. When at Oxford, he was one day debating with a fellow-student, who, not keeping his temper, threw a glass of wine into his face, when the good-natured man took out his handkerchief, wiped his face, and coolly said:—

"That, sir, was a digression; now for an argument!"

### With Unexpected Results.



1.—Emerald Leighton Green hit upon a good idea this summer. He rigged up an awning and sat upon the roof painting. It was so nice and cool, you know, but— 2.—He forgot that certain arrangements for that morning has been made with the sweep.

## MONARCHS OF THE IRON ROAD.

## Chats About our Great Expresses.

## ENGINES OF THE GREAT EASTERN.

I WAS down, not very long ago, at a little country station on the main line of the Great Eastern Railway, and I used to spend my evenings going up to the level crossing and watching some of the fast trains pass. The gate was a pleasant place to sit upon while one smoked, and the old crossing-keeper himself was as full of stories as a good book. One of his anecdotes struck me as particularly amusing. He was talking about the force of an express engine travelling at a high rate of speed, and the effect of a meeting between a heavy train and a hay waggon.

"Yes," said he, "they do come on this bit of road. You see they have a fine run down hill all the way to Chelmsford, and some of 'em ain't going far short of seventy when they pass by me. It's tight work running a crossing like this, and it don't do to go to sleep on it. I remember, not a while ago, letting a hay waggon on the road one morning when the fog was thick, and you couldn't see ten yards out of your eyes. I'd give the man time enough, but his horse was freshish, and the down train to Colchester was just about five minutes afore her time. It's mighty good ears I've got, too; for just as that waggon was on the metals, I heard the rails begin to buzz, and I know'd the express wasn't far off. Enough to put a man in a fluster, wasn't it?—and the waggoner was a silly chap as wouldn't listen to my shouts. I had to get up on the shaft and haul him down; and we weren't two yards off the metals when the engine suddenly come up out of the fog, and went bang into his old waggon and bust her."

"It must have been a fine shock," said I.

"Shock?" said he, "that won't the word for it. Look here, have you ever hit a match-box with a stick? Well, that was just like it. Afore you could think, there was 'ay everywhere—'ay all over me, and 'ay all over the other chap. When the engine struck her I see nothing but a shower of sticks and splinters, and that 'ay falling like rain. We used what was left of the old waggon for fire-wood, and it didn't go fur neither. Oh, I tell you, it don't do to try shoulders with an engine, or to argue with 'em. You take my advice, gov'nor, and get out of the road when you see one."

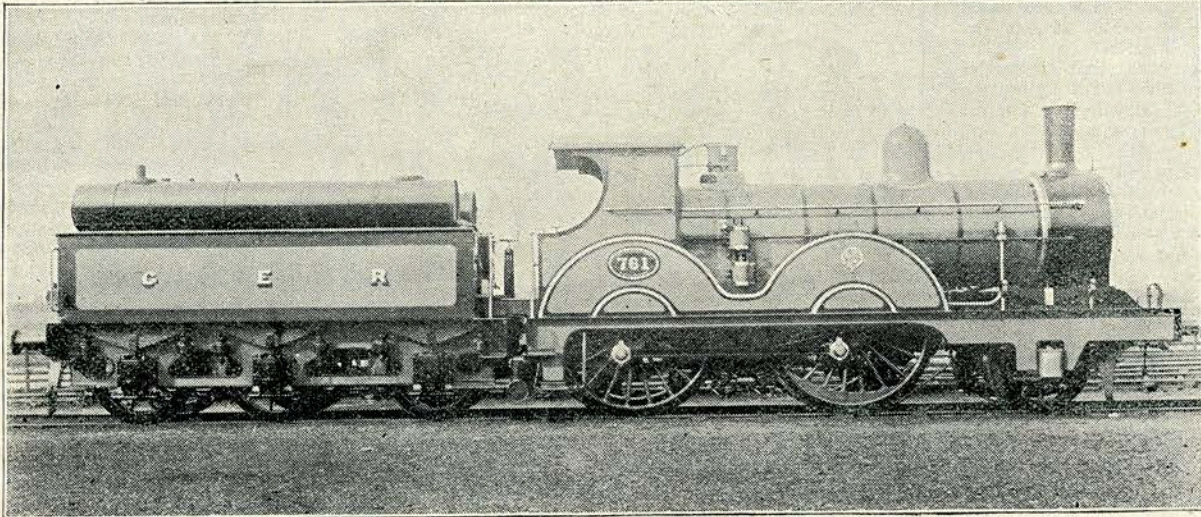
This was obvious advice, but well meant. An engine does not bear arguing with, especially when she is travelling as some of these new Great Eastern engines can travel. A wonderful line it is, and wonderfully improved since it was the "Eastern Counties," and used to run our forefathers down to Yarmouth in cattle-trucks. Third-class in those days was simply an open waggon. The company made you a present of all the smuts you got in your eyes. They charged nothing for the bits of gravel that hit you on the head, or for the rheumatism which you carried away from their line on a wet day. Now all is changed. The line is one of the best managed in the kingdom. Its engines are magnificent, and it possesses in Liverpool Street one of the finest *termini* in the city.

If you will look at the type of G.E.R. locomotive we show in the illustration, you will see that there are curious cylinders placed upon the tender. These, oddly enough, do not contain water, but oil; for this is an oil-burning engine—a new departure altogether, and one which the company has been experimenting with during the last two years.

The idea is that you burn petroleum instead of coal. The fire is lighted with coal in the first

instance, but, after that, cunningly-contrived jets of oil are kindled, and they serve perfectly for keeping up the pressure of steam. The novelty is likely to be largely used, for locomotives so fitted have shown excellent pace; and one such an engine took the Duke and Duchess of York down to Norfolk on the day they were married.

Otherwise, the G.E.R. engines are of a simple pattern. They have four drivers coupled, and single wheels in front. They are somewhat short in the boiler, and they look a little rough, perhaps; but they are "good uns" to go, and are driven by men who possess absolutely no nerves to trouble them. Sometimes when I have been travelling to Chelmsford, the famous ten-miles dip—I think it is ten—to that town has positively frightened me. I have timed six miles by the posts, and have found that we got over them in five minutes. Seventy miles an hour is a common speed for the last part of the run, and the sensation in the carriage is not a thing to make you jubilant. It just feels as though you were being shot through the air out of a cannon; and if you fall to thinking what would be the result of a spill, well, then your hair rises off your forehead, and the cold perspiration trickles gently down your nose.



ONE OF THE GREAT EASTERN OIL-BURNING EXPRESSES.

I have told the hay cart incident in the beginning of this paper, because it was upon the Great Eastern that I myself experienced a very narrow escape from a similar collision. I was coming up from Cambridge one snowy morning in January, and had travelled exceedingly well until Bishop's Stortford was passed. Just afterwards I was suddenly thrown clean off my seat by the application of the steam brake. The carriages quivered violently; hats, coats, and sticks careered wildly about the floor. When I put my head out of the window, I saw that the engine had stopped within three feet of a great waggon drawn by a stout pair of horses.

It was very lucky for those horses, I fancy, that they pulled up where they did. It seems that they had been led across the line at the very minute our train appeared in sight; and, taking fright, they ran, not from us, but towards us. The driver saw them coming, and slammed on the brake, pulling us up in a couple of hundred yards, although we were travelling at a speed of fifty miles an hour. We made a collection for him upon the spot; and that little episode was worth about five pounds to him.

At Liverpool Street, I asked him why he did not charge the waggon, and he told me—

"It's just this way, sir," said he, "when a driver sees anything ahead, he must use his own judgment. I saw the waggon coming, and a sort of instinct told me that the 'old girl' wouldn't go through it. It was a great clumsy thing, and, like enough, if I'd have charged it, we should have all been in the ditch. Sometimes you must know, charging's the only thing to do. I remember a year ago running up towards Doncaster, and, coming round a curve, to see a great tree-trunk right ahead of me. There was no time to check her, so I threw open the regulator, and put her at it. She gave a bit of a kick like, but took it beautiful; and save for a bend of the front irons, there wasn't sixpennorth of damage done."

Altogether, the Great Eastern has been rather a lucky company, so far as accidents go, though the last three years has done something to mar its

record. I suppose the one supreme accident was the crash at Thorpe. Two trains then met face to face on a single line. The horror was aggravated by the darkness, and by the fearful piling of the wreckage, which reared itself up like a great house of splinters.

A more curious accident never was. It all came about through the lateness of the Great Yarmouth train. The station-master usually let this train go first across the few miles of single track beyond Brundall; but, being late, he wrote out a telegram, asking that the express from the other end should come on. Leaving the telegram upon his desk he went out into the station to find that the Great Yarmouth train was in, and so he let her go, intending to tear up the message he had just written out. What was his despair a few minutes later, on returning to his office, to find that his clerk had dispatched the wire, and that the two trains were roaring towards each other upon a single track!

In those days the steam brake was not common. Even had it been in use, it is to be doubted if the smash would have been much less severe. The two trains met upon a curve near Thorpe. Each was travelling at a speed of forty miles an hour. They struck engine to engine, and the light carriages behind were piled up in towering masses. One terrific,

thunderous crash was followed by stillness—then by shrieks of despair. Through the remainder of the long night, the doctors were busy dragging out the dying and the dead. The station-master who had sent the telegram was found in his office, a raving lunatic. The mistake had cost him his reason.

I have no space here to note other crashes upon this line; but I may, before concluding,

tell the lover of locomotives, that the "coupled" engine is not the only one the Great Eastern Railway use. Much of their track runs through the Fen country, and for the more level work they employ a Sinclair "single driver," with outside cylinders. This is a fine locomotive, and capable of high speed. But, so far as I am aware, this type does not now commend itself to the engineer of the company, and he is confining himself to building the "coupled" engines. His "locals," however, are powerful and fast—though they are exceedingly ugly.

## Shooting the Rapids.

ARAB boys are expert swimmers, and, like boys in general, are fond of displaying their skill before strangers, if only they are rewarded by some small coin.

How they shoot the rapids of the Nile has recently been described:—

Seating themselves astride a log of wood about six feet long, and buoyant enough to support them waist high out of water, they ride it with the seat and gestures of a jockey, and with hands and feet keep it straight with the line of the current.

The fall is shot with an ease and grace that do away with the sense of danger one would expect to feel at seeing a man hurried along amid such a boil and turmoil of waters; but once at the bottom they have a hard struggle to induce their horses to turn out of the course.

To do this they avail themselves of the impetus acquired by the log in its shoot, and, throwing themselves full length upon it, they seem, with a sudden stroke from the left leg and arm, to drive it and themselves out of the current.

To fail in this would be dangerous even to Arab swimmers. Immediately below lie ugly rocks, on which the heavy stream breaks with fearful violence.

WHY.—Mr. Dobbs says that he has one of the most obedient boys in the world. He tells him to do as he pleases, and he does it without a murmur.

## MONARCHS OF THE IRON ROAD.

## Chats About our Great Expresses.

## "THE YELLOW ENGINES"

MOST of us who take an interest in locomotives have jogged down to Brighton at one time or other, and we have not failed, *en route*, to admire the capital engines which the London, Brighton and South Coast Railway Company possesses. I doubt if there is a prettier locomotive existing. The bright yellow colour which it is painted, its excellent symmetry and balance, and its invariable high state of cleanliness and polish, are all features of the Brighton line, and noteworthy ones.

If you will look at the illustration which we print this week, you will notice things about it which are peculiar. In the first place, the engine has no bogie wheels in front; it has not even the usual small running wheel, with which express engines are provided when they have not bogies. On the contrary, its pair of six feet six inch drivers are set at the extreme front of the engine-truck, and are followed by the small wheel, instead of following it. The design is Mr. Banister's own. As the engineer of the company, he has produced this curious model of locomotive, and he avows that it is one of the steadiest, over all kinds of roads, that we have. Certainly, it is a very pretty engine; and I, for one, am a very stout admirer of the bright yellow paint with which it is covered.

I was having a chat with a driver on the Brighton line the other day—he had just come up with a train from Hastings—and I asked him how he liked the pattern of the engine he drove. His answer interested me very much.

"Well, sir," he said, "I don't know that you could find a better engine between here and Scotland. She has only six feet six inch wheels, but I can get sixty miles an hour out of her on the level, and what more can any man want? Not, of course, as it is necessary to put her at sixty, unless you're running down the Brighton express—but it's in the old girl, and more, I daresay, if she was really forced. Most days, and when I come up with this Hastings train, I have no need to force her above five and fifty, but that's warm going over points; and there are plenty of points between Lewes and London."

I asked him if he always drove the same engine, and he said—

"Yes. That's a rule of this line. If you'll look down there, you'll see my name painted on her. Every driver on the London, Brighton and South Coast has his own engine, and his own name painted on the foot-plate. That gives him an interest in her. He sees that she's clean, and he takes as much care of her as he would of a child. What's more, he feels like the captain of a ship; and if he can help it, he isn't going to risk losing his command by being late or getting into difficulty."

"Do you find that the driving-wheels, being in front, make the engine run less steady?"

"Not a bit of it; they take points and crossings as well as any locomotive I was ever on. But, I'll tell you what—they want a lot of oil. I should say that this is the result of the best part of the weight being thrown forward on the driving-wheels. It's awful the oil we've got to use; and I'm always fearing a hot wheel."

"What does a driver do when he's got a hot wheel? How does he find it out?"

"Oh, he finds it out quick enough. His nose tells him all about it. Why, if one of my bearings was hot now you could smell it all over this station."

"Does it really get red-hot?"

"Aye, white-hot; and if you didn't stop, your wheel would burn clean off the axle. The best thing to do when you're like that is to throw as

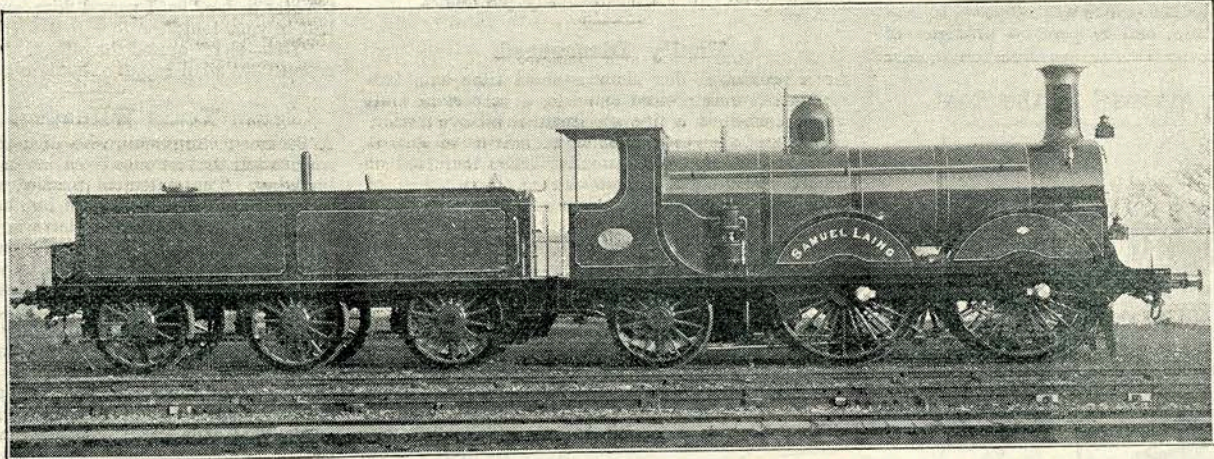
many buckets of water as you can get over the bearing, and then work soft grease into it. But you can't rely on taking a train on if the axle has really fired."

"What is your best train on this line?"

"Our afternoon down-train to Brighton, and the morning train from Brighton up. They do the fifty miles in one hour and five minutes, but it means more, for they can't get into any speed between here and Croydon; and they've got to make more than sixty miles an hour for two-thirds of the way. That's good running; and when you come to think how few smashes we've had, it's very wonderful running."

"By the way, didn't you have a bridge crash a few years ago?"

"Ah, you're thinking of the Portland Road bridge near Norwood Junction. The eight-forty-five up from Brighton was coming across that when the girder gave, and the guard's van dropped through into the road. Wonderful narrow escape it was too. The engine and all the carriages left the metals, but the driver stuck to her, and pulled her up; and the guard, who fell through the bridge, wasn't much hurt. But it was a near thing, sir."



ONE OF THE "YELLOW" EXPRESSES.

With this reflection, he backed his train out of the station, and I saw no more of him. It occurred to me as he went, however, that if the Brighton and South Coast has had few smashes, it has had one overwhelming horror. I refer to the murder of Mr. Gold by Thomas Mapleton Lefroy, on June 27th, 1881. Mr. Gold was a simple old merchant, going down to Brighton for a little change. Lefroy was a shifty, hard-up loafer, who entered the old man's carriage with the intent to murder and to rob him.

The tale has oft been told, but can never lose its horror. The old man was dozing peacefully in his corner, when the assassin suddenly sprang upon him, and fired four times from his revolver. Wounded, yet not wanting his courage, Mr. Gold closed with the ruffian. Lefroy, now unable to use his revolver, produced a deadly knife; and thus the armed and the unarmed fought together for eight long minutes, while the train rushed on through meadows and through tunnels, and the only witness of the dreadful encounter was a woman, standing at her cottage door, who saw, as the carriage flashed by, the blurred figures of two men fighting to the death.

And to the death the fight was. Stabbed in fourteen places, weak and faint from loss of blood, Mr. Gold at last succumbed. With herculean efforts, Lefroy dragged him, still breathing and conscious, to the carriage door. The train entered Balcombe Tunnel as the old man was forced upon the foot-board; and then he made an awful, despairing effort to clutch the handle rail of the carriage. But the murderer hacked his fingers away with his knife; the heroic old merchant fell at length, and in the darkness of the tunnel he died.

What followed is a lasting testimonial to the incredible stupidity of some railway officials. At Preston, Lefroy alighted, with Mr. Gold's watch sticking out of his boot. He made up some cock-and-bull story about a struggle with two other people in the carriage, and, oh! *mirabile dictu!* he was allowed to go free! Two days later, the detectives found him, wan, and terrified, and starving, in a lodging-house in Stepney. He was conveyed to Lewes jail, and, after the usual formality of a murder trial, he was hanged. Never did a man deserve a fate so richly.

This tragedy is the one horror of the Brighton

line, which, in the main, has been a line of peace and safety. Its engines, as I have said, may be only little monarchs of the iron road, but they are "good 'uns" to go; and in point of looks they have few rivals. Its carriages are not, I admit, all that could be desired; but it runs some fine Pullman trains, and you can go down to Brighton like a prince, though you are a very ordinary person indeed. Altogether, a pleasant little line, whereon the servants are well satisfied, and the engine-drivers ready to swear by their employers. And no wonder, since, as we have learnt, to each of them an engine is allotted, and the man comes to regard it as his own property. And this is why the locomotives of the company are ever so trim and spruce, and worthy of our admiration.

## They Travel Incognito.

THE example of the Caliph Haroun al Raschid, who used to go nightly in disguise among his people in order to see how the laws were being enforced, is not often followed by modern European sovereigns. Photography has made the features of monarchs so familiar to the people that a disguise is practically

impossible; and, moreover, assassins lurk at every corner.

Nevertheless, there are heads of state, even in Europe, who go about unattended. The Emperor Francis Joseph of Austria, who is probably as little in danger of assassination as any potentate in Europe, is one of these.

Another is Monsieur Casimir - Périer,

President of the French Republic, who has not, since his election to that high post, given up his practice of walking alone on the boulevards in the midst of his Parisians.

During the recent summer, just before the President's departure for his château in the country at Pont-sur-Seine, a plain-looking man, with a parcel wrapped in a newspaper, came into a toyshop on one of the boulevards and began to undo his package.

"Mademoiselle," he said to a young woman at the counter, "I have here a little phonographic doll which has been slightly crushed in. Can it be repaired?"

The girl looked at it. "Certainly, sir," she said.

"And can it be sent to me in the country?"

"Yes, sir. What is the address?"

"Monsieur Casimir - Périer, Pont - sur - Seine, Aube."

The girl at the counter, who did not dream that she was dealing with the President of the Republic, was so much overcome that she fainted on the spot. The proprietor and others came rushing up, and the unfortunate President for the moment wished that he were a little more obscure.

## Another "Distribution" Competition.

## More Prizes for "Chums" Workers.

OUR "Distribution" Competition—arranged, it will be remembered, in consequence of the numerous applications for specimen copies of "CHUMS" received by us—which closed in August last, created so much enthusiasm amongst readers that, in response to a large number of requests, we have determined to have another one.

To any reader of "CHUMS"—Weekly or Monthly—who sends to the Editor his name and address, together with a reference, we will forward some specimen numbers. When he has given them away, let him post us a letter, saying how he distributed them, adding the names and addresses of the people who received the copies.

On JANUARY 31st, 1895, the communications will be read, and to the senders of the dozen adjudged by us to be the most worthy we shall award

TWELVE PENCIL-CASES OF SOLID SILVER.

It will be remembered that our readers worked so well on the last occasion that we very largely increased the number of prizes; and we shall be happy to do so again if justified by the results of the Competition.

## MONARCHS OF THE IRON ROAD.

## Chats About our Great Expresses.

## THE L. C. &amp; D. COUPLED ENGINES.

SOME few years ago the London, Chatham and Dover engines were chiefly remarkable, not for speed or beauty, but for knocking down walls. I can remember well when the high wall at the end of Ramsgate station used to be smashed up by big locomotives about once a quarter; and as I witnessed one of these very smashes, the history of it is strong in my mind.

Most of you have been down to Ramsgate, and having been there, you do not forget that tunnel through the cliffs which you enter shortly after passing Broadstairs, and leave only on Ramsgate sands.

There is, I believe, rather a stiff incline in this tunnel, the drop being towards the town, and that is the reason why so many drivers have been unable to pull up as they approached the terminus. At any rate, on the day I am thinking about, I can remember standing on the platform waiting for the express and for a friend, and being not a little astonished when the engine came roaring out of the tunnel. Instead of the speed of ten miles an hour—her usual speed on near-

ing the platform—she must have been travelling at twenty; and we all flew as though an avalanche was after us. The engine did precisely the same thing. She flew on in spite of the driver's heroic attempt to reverse her; and so great was her delight at being by the seaside, and her longing for a dip, that she refused to abate her antics or to moderate her pace until she had run over the turn-table and hit the brickwork.

From that moment it was a contest between brick and iron. I had turned back at the station door to look, and I saw the wall, which was of considerable height, give a sort of groan, and then go flying into the street. A shower of dust and mortar, a terrific crash, some shrieks from the women, a crunching of carriages—all this, I say, followed before the frisky locomotive had done with it. Nor did it stop when it had knocked down the wall, but went out to do a little shopping; and, having finished this task, and also laid low some half a dozen oyster carts, it sought an undignified repose and turned upon its side, steam mounting in fountains from its valves and cylinders, its fire scattered upon the thoroughfare.

I tell this story of a somewhat trivial accident simply because that accident was so often repeated at Ramsgate that the builders began to ask themselves if they would ever build a wall which would not be knocked down. Happily, the steam-brake has done much to relieve their anxiety. And, since the days of which I write, the London, Chatham and Dover has made such an advance in the construction of its locomotives that one no longer is able to scoff at them, but only to praise. The great engine, a photograph of which we give you to-day is, beyond question, as highly finished and as remarkable as many of the fliers of the famed Northern Companies. It may not be booked to do the averages which the "Scotchman" accomplishes; but, as I have often said in this series, there is no locomotive existing which could accomplish those averages on a Southern road, with its multitudinous points, its maze of crossings, its constant inclines, and its heavy loads.

If people would only realise this, there would be less nonsense talked about the slowness of our Southern

lines. I will try to make it more clear to you by describing a bit of the run to Dover as performed by this very engine which is the subject of our picture. Let us take the morning "boat" train. She is timed to travel from Herne Hill to Dover, a distance of seventy-four miles in ninety-six minutes—in other words, to make an average of forty-six odd miles an hour. From Victoria to Herne Hill, a distance of only three and three-quarter miles, she has travelled very slowly, for the road is all crossings, and there is always a long stop at Herne Hill to hook on the Holborn half.

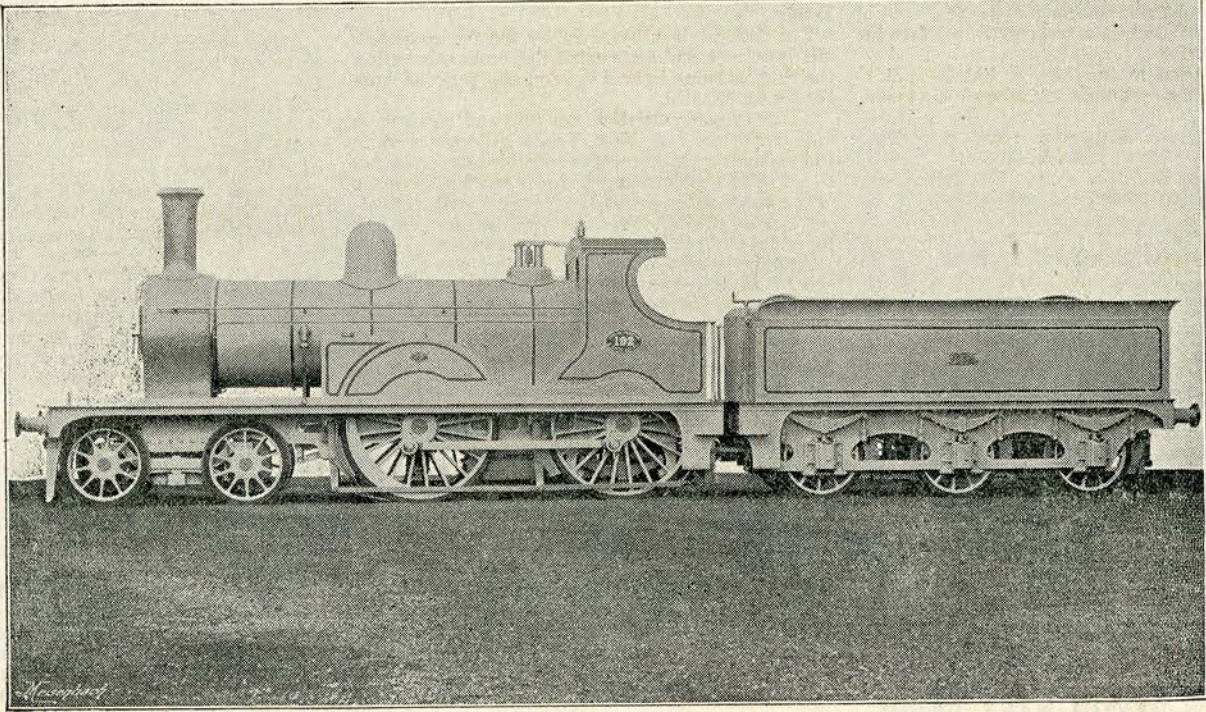
For this reason I start my engine at Herne Hill. She has a load behind her varying in weight from one hundred and fifty to two hundred tons. She herself is a six-foot, six-inch coupled locomotive, with a bogie-truck, and bogie-wheels three feet, six inches

with his shovel. And so it is until we come to the great drop into Chatham—a wild rush down-hill enduring for many miles, a rush so fast and terrifying that I never travel over this portion of the line without a tremor and a twitching of the nerves. Not so the driver; working the "old girl" up gradually, he lets her go "all out," and go she does. I have timed the "Granville Express," and found her doing seventy-six miles an hour on the last mile before the great curve into Chatham. Even higher speeds must have been attained. And when you remember that the line turns with incredible sharpness as it crosses the River Medway, you will understand what such a pace means.

It is this curve which again checks our average. Half a mile before we reach it the driver just touches the wheels with the Westinghouse brake; at the

quarter-mile he puts the brake on harder; two hundred yards from the corner the carriages shiver as the blocks grip the rims. We slow down to thirty-five miles an hour, and so we labour through Rochester and Chatham, and out on to the run for Faversham.

I have said enough, I think, in this sketch to show you the difficulties of making pace on a Southern line. And if you follow this description you will understand why I think the new engines of the Chatham and Dover are to



A LONDON, CHATHAM AND DOVER COUPLED EXPRESS.

in diameter; a low-pitched, handsome engine, designed by Mr. William Kirtley, and worthy of him. Well, she gets off at Herne Hill, and though her cylinders are well warmed with the run from Victoria, she does not steam freely for some miles, and she must pass Penge and negotiate the stiff hills on the road through Kent at a pace of no more than thirty or thirty-five miles an hour before she really finds herself going. I should say, in fact, that it is not until she reaches the long drop to Farningham Road that she touches any fine speed. But all this slow puffing up inclines has played the deuce with her average; and having travelled over many parts of the line at a speed of no more than thirty miles an hour, she has now got to put it in if she would keep time.

On the drop to Farningham Road she does put it in. This station is said to be the one in the whole kingdom through which trains travel both ways at the highest speed—a speed rarely falling below sixty-five miles an hour. The reason is that it lies in a hollow so that trains approach it down-hill from either side. If you are in the "boat" express, you will realise this as you rush by the platform. The driver is making up time here. He has cut off steam in the cylinders until only a notch or two remains on his reversing wheel; he has, perhaps, checked slightly the head of steam from his regulator. The result is that, there being less back pressure in the cylinders, they fly in and out at lightning speed. The great engine rocks to her work, but bounds onward with impressive force. The last carriages roll from side to side with long sweeping rolls, like a toy pulled with a piece of string. There is a roar and a cloud of dust, a shriek of the whistle, a glimpse of a high embankment and of houses lying far below you in the valley. Then you strike the rise at the opposite side, and the pace is moderated.

From this point until Sole Street is almost sighted it is collar work. No cutting off steam now, or we should never move our load of two hundred tons. Our reversing wheel is well open, we have a good head of steam from the regulator; the fireman is busy

be praised for their speeds. They are, indeed, handsome things to see, and I find that they work at a pressure of one hundred and fifty pounds to the square inch. In each boiler, two hundred and five tiny tubes allow the fire to obtain a vast heating surface; their tenders carry four and three-quarter tons of coal, and two thousand and six hundred gallons of water. Their driving-wheels, as you know already, are six feet six inches in diameter; the bogie-wheel, three feet six inches; and the wheels of the tender three feet nine inches. The total weight of this fine locomotive, including tender, is seventy-six tons twelve hundredweights. It is painted in the dark blue-black tints the company has always used, and it has already proved itself one of the most useful hill-mounters and steadiest pace-makers we have.

Before leaving the subject, I should like to say a word for the drivers of this line. I think they are altogether the most fearless men I have met. Much of their work consists in making up time by flying down hills at a tremendous speed. Nor do you find them shirk it. They will drive an engine over the points near town at a pace which makes your hair stand on end; and when they are flying that incline into Chatham, they seem to have thrown nerves to the dogs, and for the moment to be made of steel. A fine body, worthy of any company, and of our admiration.

## OUR PICTORIAL PUZZLES.

## Have You Any Ideas?

As announced in previous numbers, a Solid Silver Pencil-Case is offered for each design for a "Chums" Pictorial Puzzle that is drawn well enough for reproduction, and inserted by us.

In the event of a sketch being sent, good in design, but badly drawn, we shall be happy to have it properly redrawn for printing, and give the sender some reward for his suggestion.

Designs and suggestions—in the drawing of which good black ink should be used—are not returned by us. We shall print, in due course, those which we accept; and the sender of each successful design or suggestion will receive his Pencil-Case, or other reward, as soon as our decision has been made.

All drawings or suggestions to be addressed to the "Puzzle-Editor of 'Chums,' La Belle Sauvage, London, E.C.1.

## MONARCHS OF THE IRON ROAD.

## Chats About our Great Expresses.

## THE NEW SOUTH-EASTERN ENGINES.

I SUPPOSE the South-Eastern has been the best abused line in England in its day. I am not going to say that there has never been a period in its history when it did not deserve this abuse. I myself can remember going down to Hastings in a carriage not fit for the common or tin-can dog. I know that some of its ancient engines are still models of decay and slowness. But any man who would get up to-day and deny the vast and admirable improvements which have been made by the company would not be a just man. In many ways the South-Eastern Railway has been foremost among Southern lines in putting its house in order. It has shared with the South-Western the honour of bringing fine drawing-room cars from America, and it has lately built engines which would do credit to any Northern company.

I was having a chat recently with a railway engineer about the relative pace of locomotives. I chanced to ask him what he thought would be the result if we could have a number of lines side by side and a race between engines from every company? He shook his head at the suggestion, and said:—

"No man can tell. It would all depend upon the road. Given a fine piece of level—say, a stretch of the Great Western between Hanwell and Slough—and you might put your bottom dollar on one of the single-drivers, either a Great Western or a Great Northern. But upon a hilly road, I should not wonder if some unknown tank-engine did not bounce the lot of them. Anyway, the Chatham and Dover and the South-Eastern have been building some rare hill-climbers lately, and it would not be a rash thing within the meaning of the Bankruptcy Act to back one of them for a place. Often, you know, engines get a fictitious reputation. Do you remember how the Americans boasted of engine 999 on the Pennsylvania road? They said she could run a hundred miles an hour on the level—to which we answered, 'Rot!' Well, last year one of Mr. Webb's compounds—for which nothing more than seventy miles an hour on a fair road was claimed—went over and raced her, and in a ten-mile run the Englishman was half a mile ahead."

I had heard of this race, but a different version of it.

"They told me," said I, "that when it came to it, Mr. Webb's engine was not able to pull the load, and stuck in the station? Your account does not agree."

"You mean," he replied, "their account did not tell the truth. On the first trial, as I have heard it, something went wrong with a pipe in our engine, and the race had to be postponed. But when both got fairly away, the Yankee wasn't in it."

"How do you like the new S.E.R. engines?" I asked, changing the subject suddenly.

"Very good, indeed," said he; "they were designed by Mr. James Stirling, and are very much like the Chatham and Dover new 'six-foot sixers.' Up hill, they're as fast as anything I know; and I've timed some very good work with them over the level. A sound engine, but, of course, not a flier of the first water like a Great Northern eight-footer."

This is quite true; but then, it is to be asked,

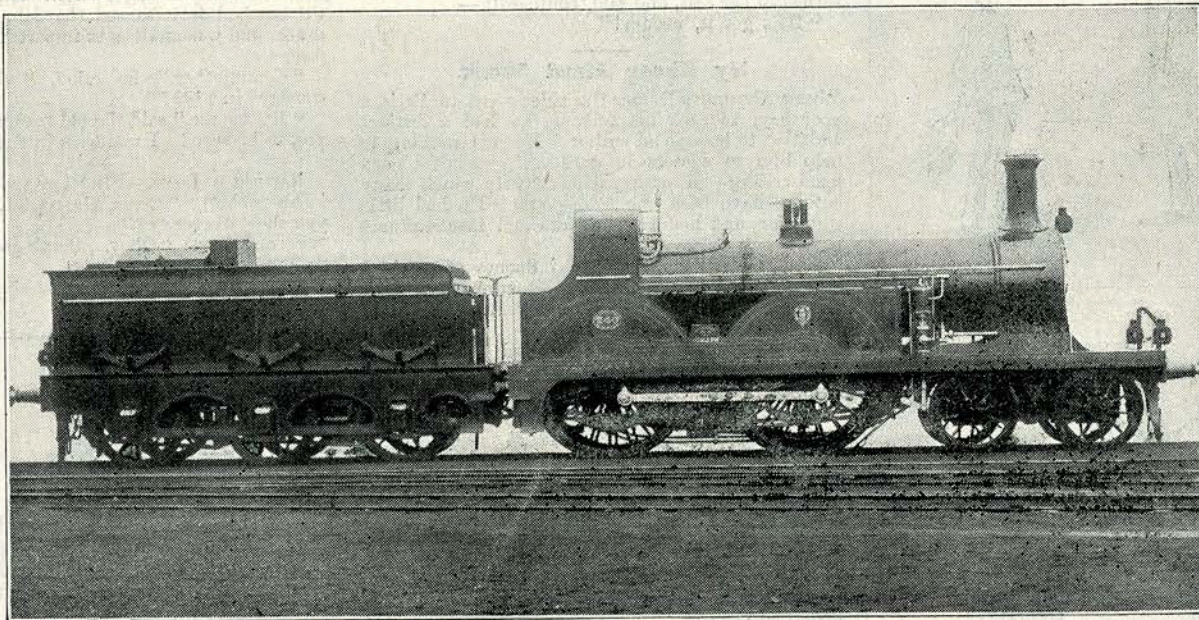
what would a flier of the first water do on the South-Eastern road—what would her driver say to the labyrinth of points and crossings, to the innumerable hills, the sharp curves, the amazing junctions? There is a story told of a London and North-Western driver who had to take the Queen from Willesden to Herne Hill over the Chatham and Dover. The line down South bothered the poor man dreadfully. When he returned to Willesden, his first words were, "Well, thank heaven, I'm back in England again!" He quite thought that anything so bad as the crossings of the Chatham and Dover must be the work of Frenchmen. And I fancy if he had been compelled to drive the Boat-train to Folkestone, his words would have been too full of feeling for the light of print.

No, you could not drive a big single-wheel engine on the S.E.R. and keep time with her. For one thing, it is about ten minutes before you can get any pace at all on her, and the frequent checks would prevent her ever attaining any real speed. Just recall the journey to Hastings, and remember how the driver of a South-Eastern engine feels his way. He has a locomotive with six feet six inch wheels, and she starts quickly, getting into her swing, and

upon the roof which was like a veritable bombardment. Glass was broken, open compartments were showered with gravel, the whole train might have run into a stone storm. And I need not tell you the passengers were in a deuce of a funk until the engine was brought up and the driver made his explanation.

It proved then that, just as the express was swinging along across the flat at a pace of a little more than fifty miles an hour, the driver suddenly observed a troop of horses galloping merrily upon the permanent way. They were not a hundred and fifty yards away from him when he first saw them, and nothing was to be done but to open the brake valve, and trust to luck. Happily, the S.E.R. uses the Westinghouse brake, and it did not fail the company then. Indeed, it brought the train up, just as the troop was reached, and it was the merriness of the nags scampering by the side of the line which sent the gravel rattling upon the roofs of the carriages.

This was an unusual incident, for the South-Eastern is a very safe track, and even its little mishaps are few. As you may see from the photograph, its latest form of express engine is a fine-looking



ONE OF THE SOUTH-EASTERN EXPRESSES.

steaming freely, when she has travelled a mile or two. You may check her with the Westinghouse brake, and yet get her going again in six hundred yards. She will creep steadily over all the points outside London Bridge, and yet be travelling at forty miles an hour before she has seen the last of London's slums. She will face the hills and mount them, still doing forty; and she will rush down the other side at a speed which relieves you of the superfluous hair upon your forehead. She will go comfortably at a swinging fifty on the level; and, what is more important, she will rarely ever bring you to grief.

The rare occurrence of an accident on Sir Edward Watkin's railway is, indeed, a marvellous testimony to its good management. Writing from memory, I can remember but one catastrophe in the last five years; and that was a trivial one. A train was passing the entrance to Cannon Street, when a short coach, running between two heavy bogie carriages, was forced from the track, and killed a poor plate-layer standing at the side of the line. Until that time no one had suspected any danger from putting a short vehicle ahead of a long one; but it is now proved that such an arrangement is likely to lead to a fatality. The heavy car presses upon the light one, so that when a curve is reached the smaller carriage has the flanges of its wheels forced over the line, and may come to grief.

This, as I say, was a very trivial accident, but two or three years ago the Boat-train had a very narrow escape while it was making the morning journey to Charing Cross. A friend of mine was in the express, and he told me that he never knew a more alarming experience. They were travelling at a high rate of speed through meadow-land, upon which a faint mist lay. Suddenly, the passengers felt that the brake was being rammed on hard. But more than this, while the wheels were skidding, and the carriages were rocking, there came a shower of stones

thing, not at all unlike the Chatham and Dover locomotive I discussed in my last paper. The same engineer designed the pair, and built them for a similar class of work. The engine in the picture has drivers six feet six inches in diameter, inside cylinders, and a bogie truck. To my way of thinking, this bogie truck might be carried a little further forward with advantage. It would give the engine that dignified and stately look worn by the fliers of the Great Northern, the Midland, and the Great Western. And I don't like the uncovered valve in the middle of the boiler. Elsewhere the engine can be accorded nothing but praise. It is well-finished, well set up; it works at a pressure of 150 to 160 pounds to the square inch, and, as I have said, it is a fine hill-climber. Compared with the South-Eastern "best" of ten years ago, it is a veritable monarch; and, judged by the severest standards, it is not unworthy to be included in our series.

## On a Dangerous Seat.

DURING the English war with China in 1842, a naval lieutenant was sent ashore from his ship one morning to bring off some guns from a captured battery. He started before breakfast, and on getting ashore with his crew he made a fire, and all hands proceeded to forage for something to cook.

One of the men, noticing a large-bore gun of a peculiar shape, looked into it out of curiosity, and to his delight found inside a hen with a brood of well-grown chickens. Of course no time was lost in securing them.

A fine blaze had already been raised by dragging close together and setting fire to the gun carriages, and as the morning was cool, the lieutenant perched astride one of the guns, which was already steaming with heat.

Presently he heard a queer rumbling inside the piece. Perhaps there was a hen in this gun also. He laid upon it and peered over the edge into the muzzle. To his horror he discovered that the gun was crammed almost to the mouth with powder and grape.

With a very short continuance of the heat, the charge would have exploded, and blown to atoms not only the officers but several of the marines who sat in front of the muzzle plucking the chickens.

## MONARCHS OF THE IRON ROAD.

## Chats About our Great Expresses.

## THE NORTH-EASTERN "SCOTCHMAN."

THE man of London who has not been to Edinburgh town is "no acquaintance," as poor Robert Louis Stevenson would have said, with the North-Eastern Railway. Somehow he always mixes it up with the Great Northern, thinking it to be a small sort of branch line running from Yorkshire to some vague place in Scotland. He is properly astonished when you tell him that it is the richest railway corporation in the kingdom; and he lifts his hands in amazement, when you remind him that it possesses some of the finest engines in the world.

This is a fact of which there can be no mistake. Of all the great lines existing, the North-Eastern is one of the most curious. It runs some of the fastest trains—and some of the slowest—in the world; it has some of the grandest sleeping cars and some of the most awful third-class dens on any road; it owns one of the finest termini in England and a score of the most dilapidated and tumble-down. But withal, it is a line to be proud of; and, as I say, in the matter of engines, there is no other line to surpass it.

When you go to Scotland by a fast express on the Great Northern, you travel so far as York only on Great Northern Railway lines. After that, the great eight-foot engine leaves your train and its place is taken by one of the magnificent coupled express locomotives which Messrs. Worsdel and Von Borrie have built for the North-Eastern. From this point onwards to Edinburgh, the track is the property of the latter company; and a fine and difficult track it is, rising with tremendous inclines nearly all the way to Berwick and giving you some of the grandest scenery and grandest runs you could possibly get for your money.

The North-Eastern engines are "compounds," that is to say, they work with a high-pressure cylinder as well as a low-pressure. They are also "coupled," and have seven-feet or six-foot six-inch driving-wheels. This latter plan is made necessary by the stiff gradients they have to mount, for a single-wheel engine cannot mount an incline with a heavy load, and coupled ones are necessary wherever you get many hills. But the strange thing about the North-Eastern locomotives is, that despite their being compound and having four driving-wheels, they seem capable of very high speeds upon the level, and have touched eighty miles an hour down hill. This is a tribute to the magnificent workmanship with which they are built, and to their fine design and construction.

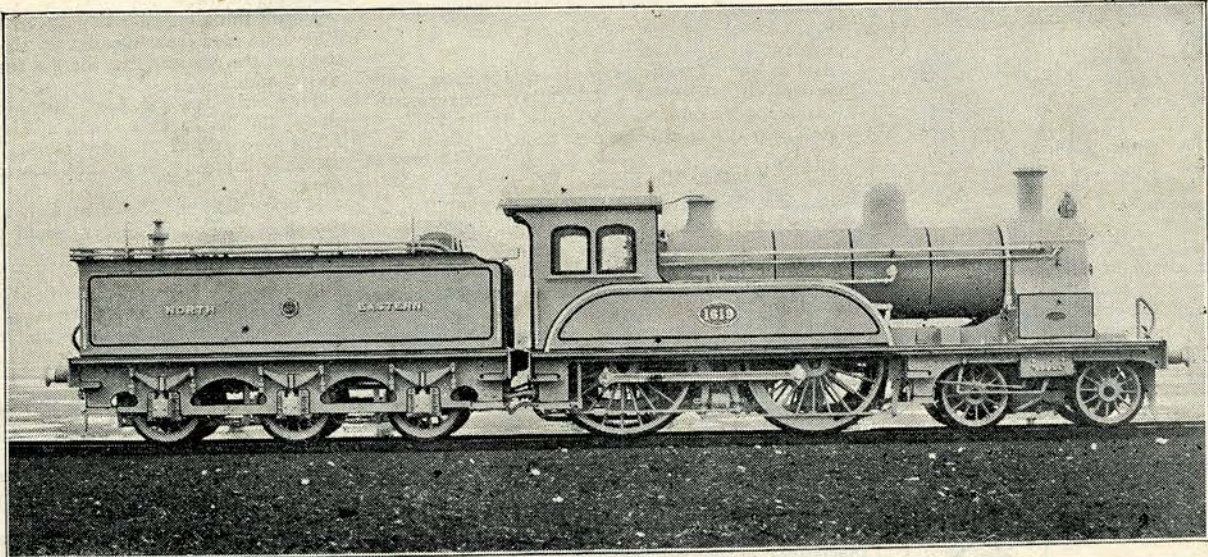
Search the kingdom through and you will not find a handsomer engine than this. The way it is perched upon its frame is at once astounding and most dignified. I should say at a rough guess that no locomotive has such an altitude from the floor to the top of the funnel. If one were not very sure that the designers knew what they were about, one would say that such a high-perched thing must rock terribly, and be in great danger when travelling fast; but the North-Eastern fliers are in no such danger. They travel with delightful smoothness and ease; they perform a large part of the quickest journey in England, and they undertake the longest run set down for any locomotive out of America, going from Newcastle to Edinburgh without a stop—a distance of 124½ miles.

When you have to run an engine more than one hundred miles without stopping, she must be pretty large. The North-Eastern "cracks" are enormous. If you stand below one, it seems just as though you

were standing with a great iron house towering over you. Your chin scarce reaches to the hub of the driving-wheel, and yet above that the great dome of the boiler rises like a giant of steel, and is imposing to a degree in its very height. The size of this boiler is terrific, and it is pierced by more than two hundred fine tubes. The tender carries between four and five tons of coal, and a huge supply of water. The engine is run upon bogies beautifully placed, and is painted in the prettiest shade of blue imaginable.

Here is the "machine," then, with which they run the "Scotchman" from York to Edinburgh—and fine times they have of it in the process. The track is always a difficult one. There are scores of furlongs where, coal as you may, you cannot force these monsters above the fifty miles an hour; scores of other furlongs where, let the fireman's shovel be unrelenting, the engine will not pass forty-five. And yet she has to make the whole journey at an average speed of fifty-one; and to do that she must just go downhill at a tremendous pace.

I have heard of men clocking a North-Eastern express on a run down from Berwick, and timing



THE NORTH-EASTERN "SCOTCHMAN."

her to do three consecutive miles at a speed of eighty miles an hour exactly. I know for a fact that during the race to Edinburgh one of these engines covered sixty miles in sixty minutes, hills and all thrown in. A single-wheel locomotive, even a G.N.R. single-wheeler, would never do that on this road. The hills would beat her, and while she would show a clean pair of heels to the "coupled" on the down runs and the levels, the inclines are so many that she would never keep time.

In a bitter winter, driving the "Scotchman" on the North-Eastern Railway is far from being beer, and is not varied with skittles. Sometimes the snow lies so thick upon the line that the whole train is hidden from your sight and must be searched for like a penny dropped in a room. Often the drivers run for miles with sleet beating upon the windows of their cabs so that they can see neither points nor signals; often they get their fingers nipped with the frost and their faces half-skinned. At such times, if one of them forgets, and puts his hand on the iron of the tender, he leaves the skin of it as a memento. No sinecure a job like this, for a truth!

Just fancy driving a fast express through a snow-storm on a blinding night, when you cannot see twenty yards ahead of you, and the glasses in the cab are frozen over and as white as the snow upon the ground. We, in the carriages, are snuggling in our rugs; we have the windows shut close, warm air to soothe us, and all comforts; yet we say to each other, what a terrible night, what cold! But think of the driver and the fireman on the foot-plate, exposed almost to the full fury of the blast, their hands blue with cold, their faces frozen stiff with the storm, their legs burnt with the furnace fire. And be the cold or the snow as severe as you will, they must be awake at their post, vigilant, ever busy, peering out into the dark and the storm for signals, wary at crossings, watchful to keep steam at its best pressure, and to see that no bearings heat. We should be grateful truly to such men. Alas! It is the rare exception amongst travellers even to remember their existence.

*Apropos snow, by-the-way, I once rode upon a*

goods engine on the North-Eastern early in the morning after a heavy frost. The experience was one I shall never forget. Looking out from the foot-plate, I could make out no lines, no track. Far as the eye could see there was a plain of white; an unbroken stretch of silvery sparkling snow. Only the telegraph posts marked the course of the railway, and it was difficult to assure myself that we were not loose in a field, uncontrolled by lines, liable at any moment to strike upon a hummock or a tree. Yet we travelled smoothly as though no ice hid the way. The journey was silent to the point of charm. The snow flew from our wheels, yet the weight of our engine crushed it down; and when we had passed over the unbroken level of pure white, we left two black lines behind—lines from which we had taken the spotless covering.

This experience is no novelty to drivers upon the North-Eastern. They are splendid fellows; men of iron nerve and colossal physique. Frost or snow, rain or sun, hail or sleet, they care for nothing. They handle their engines as though they loved them, flying with reckless bravery down the hills, coaxing their beloved pets up the rises with fine skill and matured knowledge. And they are proud of the compounds and believe in them as they ought to do.

Of smashes upon the North-Eastern I have little to say, since the line has known so few of them. Perhaps its greatest calamity of all was that of Thirsk; but this is fresh in the minds of most of us, and a general account of it would be tedious. One lesson, however, it taught to all railway men, and that was the strength of the Pullman car. When the "Scotchman" crashed into the slowly-moving goods train, its ordinary carriages crumbled like matchwood. But its one Pullman car was unbroken. Sleepers were awakened rudely from their dreams it is true; a few timbers cracked and glasses flew; but the huge car kept the metals, and all those within her were unharmed. Give us, therefore, I say, cars built like the Americans build them, and the danger to English travellers will be decreased a hundredfold.

With which more or less sapient observation, I close my little series of chats upon "Monarchs of the Iron Road." Another is shortly going to speak to you of "Monarchs of the Sea," and I doubt not that he will hold your interest unflinchingly. And when he has spoken, it may be that the chief who rules the destinies of "CHUMS" will bid me write of other railway subjects of a wider and less special character. And so may we meet again in the discussion of things which must ever fascinate every man who takes a grain of interest in the development of one of the greatest of industries; in a subject both romantic and dramatic and of daily moment to all of us.

## OUR PICTORIAL PUZZLES.

## Have You Any Ideas?

As announced in previous numbers, a Solid Silver Pencil-Case is offered for each design for a "CHUMS" Pictorial Puzzle that is drawn well enough for reproduction, and inserted by us.

In the event of a sketch being sent, which is good in design, but badly drawn, we shall be happy to have it properly redrawn for printing, and give the sender some reward for his suggestion.

Designs and suggestions—in the drawing of which good black ink should be used—are not returned by us. We shall print, in due course, those which we accept; and the sender of each successful design or suggestion will receive his Pencil-Case, or other reward, as soon as our decision has been made.

All drawings or suggestions to be addressed to the "Puzzle-Editor of 'CHUMS,' La Belle Sauvage, London, E.C."