STEAM TRAMWAY ENGINE, BRUSSELS EXHIBITION.
la cie. metallurgique, tubize, engineers.


LOCOMOTIVE FOR BELGIAN " VICINAL" RAIL WAYS AT THE BRUSSELS EXHIBITION.
THE steam tramway locomotive ill was designed and constructed for the Natrated above and on p. 323 was designed and constructed for the National Belgian Society out of the shops at Tubize of the company known as La Metal lurgique, which has its head-quarters in Brussels. This company besides its deliveries to the National Society as the result of public tender, has supplied the whole of the rolling stock, including the composite saloon and smoking cars with open space between the two compartments, that recently formed the subject of a note in The Exaisker, to the two steam tramways
worked successfully by public companies between Bruxelles. worked successfully by public companies between BruxellesLiege and Jeneppe, following the Meuse and passing opposite to Seraing, where are the famous Cockerill Works
The locomotive has six wheels coupled, and weighs $27 \frac{1}{2}$ tons in running order, and with a cylinder diameter of 0.35 m ., and stroke of 0.36 m . or about 14 in . and 15in. respectively; exerts a tractive effort of $0.65 \times \frac{\mathrm{P} d^{2} l}{\mathrm{D}}=4.046$ tons. The remaining dimensi

valve rods
siot links


7956 kg . 7444 kg.
7595 kg
$29,995 \mathrm{~kg}$.
9402 kg.
884 kg.
9805 kg.
2500 litres.
850 litres.
To facilitate the running round sharp curves a play of 3 mm

or rather more than gin., is given on each side to the driving axleboxes, and the flanges of the corresponding tires are made only
20 mm . instead of 24 mm ., or in . bare instead of 1 in . full, as usual. An enlarged section of the rail and wheel is given in the small cut.

## "THE SNARK."

In reference to the interesting articles which appeared in The Enginger some months back respecting the "Zephyr" spirit launches, probably some of your readers may be still
further interested by a few particulars from one who purchased a 20 ft , spirit launch from Mesre Yars from one who purchased use, weather permitting, for over two months, and is vastly pleased with his investment. I like to be as precise as possible, o, truste in your forbeara On the 6th of June I paid an aginning
orks, Isle of Dogs. All I wished to see or inquire abbut the works, Isle of Dogs. All I wished to see or inquire about was
most kindly and courteously responded to by Messrs. Yarrow, though I am not aware they at that time looked upon me as more than a visitor. I was invited to try a run, so again went to the Isle of Dogs, and have been "going to the Dogs" ever since, which is not half so bad as some people might think, I can hear someone say, "Well, if he has been going there ever since, there must have been something wrong with the boat." mind. Moreover, I reformed on July 24th, the day I took the Snark away.
I may here account for the heading of this communication.

You are aware that all launches on the Thames must have a name. Everyone knows about the Snark; it cannot be said to be a "he, she," or "it." The spirit launches are somewhat nondescript; they cannot accurately be called steamboats; I there a lock, in company with some other boats, I heard someone say, as if to himself, "The Sneak," and repeated it. Perhaps he could not spell.' Never mind, he unintentionally paid my boat a great compliment, as a sneak is something that steals along very quietly without noise, which it does. When first I read about these spirit launches, I thought how convenient for taking with me by train to the sea, the Norfolk Broads, kc., on account of the weight being so much less than I shall presently be able to show that I was not mistaken. On Tuesday, July 24th, 12.50 p.m., the Snark started on voyage up river. There were four on board all told- $\mathbf{A}$ (W.) Marriner, a doctor, a waterman, and an individual who is never so happy as when dirtying his fingers, though no class of engine
could be cleaner to work; so we were well found. "Each could be cleaner to work; so we were well found. "Each thought he was thinking of nothing but Snark," and the signs of ahead, and tide in favour. Shortly after casting off, we observed Mr. Nesbitt on board the Tucunaré-intended for the Amazon-describing circles in the air violently; but a moment's thought suggested life buoys, so put back we did, and pleased to have them. All went well, although the Snark had only been launched the previous Friday, and had not had a proper trial until the day of the voyage. The running time from the yard to Richmond Bridge, twenty-three miles, was $2 \frac{3}{4}$ hours, that is exclusive of one stop for a few minutes, namely, at Westminster.
There may be a few of your readers who are somewhat vague respecting the working of this beautiful invention. I will therefore endeavour to describe it as shortly as possible. In the bows of the boat is a closed copper tank for holding the spirit, surrounded by water, and cut off from the rest of the boat by a bulkhead. In the stern are the engines and evaporator-boiler. There are five copper pipes leading from the tank to the stern; hree of these run outside and just above the keel, two of which are for condensing the vapour on leaving the engine, and for
conveying the condensed vapour back to the tank to be used over again; the other conveys the spirit from the tank through a stop valve to a small hand pump, and is also in connection with a pump worked by the engines. The other two pipes from the tank run under the floor boards inside the boat; one is connected to a small hand air pump, the other to a small burner underneath the evaporator. The small hand spirit pump and air pump are close to the engines nave three inverted singlich are or simplest construction, have three inverted single-acting cylinders and pistons, and the other. The three cylinders are bolted to, and project downwards from a plate, which plate is bolted on the top of a box casting, through which, near the bottom, runs the crank shaft. In this plate are the cylinder ports. Above this plate is a casting containing the valves, and through which the cranked valve spindle passes. On the back end of the crank shaft, which projects through the box casting, is a toothed wheel; also on the prose two wd of the cranked valve spindle is a toothed wheel; wheel supported by a bracket attached to the box casting. On the extreme back end of the cranked valve spindle is apparently a small wooden wheel only, which, however, conceals a beautiful arrangement easier to appreciate than accurately describe, but an idea may be formed of it when it is stated that this wheel yay be grasped when revolving at full speed with the engines by a child, thus stopping the engine instantly, or when revolving the other thus reversing silarly be instantly made to revolve in is placed immoreversing tie engines. The evaporator-boilerof a few feet of coiled copper pipe, one end of which is con nected with the pump driven by the engines, also with the small

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