

what remains of it back to their home in Dayton, O., where they expect to incorporate the knowledge they have gained in the machine which they have contracted to deliver to the Government in the next three months, or by August 28.

Later the same journal, reviewing the trials, added:—All those who witnessed the flights agree that the performance of the machine was marvelous, and that the speed attained with the small motor of 30 horse-power was remarkable. As already noted in our last issue, the speed in question appears to have been from 45 to 48 miles an hour, although the last flight was timed in 7 minutes and 40 seconds, during which the life savers claim that the machine travelled slightly over 8 miles. The distances are said to be fairly accurate, since they were gauged by the known space between telegraph poles and the number of poles in the course. The probability is, however that the speed of the machine did not at any time exceed 48 miles an hour. In fact the Wrights do not claim a speed of much over forty miles. Still according to report they state that before the flights witnessed by outsiders they made three flights of 18, 24, and 32 miles respectively. In their final flight they had intended to remain in the air an hour and twenty minutes, or a third longer than is required in the Government test; but a false movement of one of the operating levers caused them to plunge downward. Not more than 50 dollars worth of damage was done to the machine, and save for a few scratches the aviator was uninjured.

In the tests recently made, the Wright brothers were trying out their new form of steering and control by means of levers and with the operator in a sitting position. In their former flights in 1905, the operator lay prone, and the change in a sitting position necessitated a different method of control.

An explanation follows here of why the brothers paid no attention whatever to the challenge they received from Mr. Farman after these Carolina trials, the reason being their confidence that nothing more was required to assure their pre-eminence in aviation. That pre-eminence the American scientific journal claims for America "without a doubt." Our contemporary does more: It announces its intention of arranging an exhibition in New York at an early date, at which all prominent aviators from all parts of the world may compete to show the progress of aviation and demonstrate its final success. Such crowing is, under the circumstances, justifiable.

The Delagrangé Aeroplane.

We give an illustration of the celebrated flight of four miles which entitled this aviator to second place in the list of successful fliers of the heavier-than-air type. His rise to that position is the most rapid in the history of aviation, as it only required a few weeks' practice for him to obtain mastery. Easier, he declared himself, to learn to ride an aeroplane than a bicycle. This will be modified since the Wrights have demonstrated how to fly in a sitting posture, but that does not detract from the merit of Delagrangé's early performance. On the occasion in question Delagrangé remained in the air nine and a-half minutes, covering a distance of about four miles. He had



made many flights, and some of them actually longer, but technically inadmissible as records, by reason of his having touched ground during their continuance at one or more points. Before making this flight, the water tank had been augmented by a supplementary 5-litre reservoir, so that the total quantity of cooling water carried was 20 litres (5½ gallons). With this amount of water the engine can be run stationary for eighteen minutes without overheating. Thus, it was possible from this point of view for Delagrangé to remain in the air 15 minutes, and win the prize of 5,000 francs offered for this performance.

Electricity

HOLMES-ALLEN TROLLEY-HEAD.

From reports to hand the above mentioned patent is rapidly attaining the universal success which all the experts in the Dominion had predicted for it. Since its introduction to the tramway and railway world it has been the subject of the most favourable criticism, and it has now the unique and proud record of having never been "cold shouldered" by any tramway that has tried it; on the contrary indeed so pressing have been the solicitations for trials and the consequent orders that the supply available proved quite unequal to the demand, and Messrs. Holmes and Allen's workshop and office staffs At Home have been kept going at high pressure in the attempt to ameliorate



HOLMES-ALLEN TROLLEY-HEAD IN LONDON.

this state of affairs. Overtures have also come in from several of the tramways supply companies who find their clients are beginning to specify Holmes and Allen heads, which has resulted in the building up of a very substantial wholesale business.

It has therefore been found necessary to place the work out, and now no less than six of the leading engineering firms in Great Britain and the Continent have signed contracts for manufacturing the article.

There is scarcely a civilised country now that cannot boast of the Holmes and Allen heads in operation on one or more of its tramway systems; among which we see the names of Salford, Glasgow, Manchester, Paisley, Ayr, Sunderland, Sheffield, Liverpool, Plaistow, Rochdale, Brooklyn (N.Y.), Montreal (Canada), Copenhagen (Denmark), Nottingham, Chester, Newport, Oldham, Halifax, Gloucester, Plymouth, Leicester, Bournemouth, Southampton, Derby, East Ham, West Ham, Bombay (India), Aberdeen, Sutton, Portsmouth, etc.

This is indeed a wonderful record when consideration is given to the fact that no piece of mechanism has ever proved such a "pons asinorum" to the inventive genius of the electrical tramway

world as the little wheel which alone makes this form of traction possible. The absolute safety of the Holmes and Allen heads has elicited praise from all quarters, not the least gratifying being the special commendation of that august and fatherly body, the British Board of Trade.

A striking concomitant advantage which has been remarked on by users of the heads is the greatly increased life given to the wheel itself, which will run for double the mileage possible under the old system. That the results of Messrs Holmes and Allen's labours will be of a highly satisfactory nature can be adduced from the remarks of the American engineer, Mr. John Hobbs, who, in a treatise on the subject, stated that the "safe" trolleyhead was "as alluring and as seemingly impossible to reach as the pot of gold at the end of the rainbow; but if the path of the inventor is rather a thorny one, the reward is equally commensurate; and the electric railway fraternity is always willing to adopt a piece of apparatus that proves itself of worth and it is ready to pay well for it."

If the prominence and attractiveness of Messrs Holmes and Allen's full page advertisement in the May Tramway and Railway World serves as a criterion of worth then truly their future will be a very enviable one.

MICROBES IN THE TELEPHONE.

When the telephone settled down in our streets and effected entrance into our houses, we were jubilant in our welcome. We called him, amongst other things, an unmixed blessing. It is true he was a blessing, but as we have to pay for him, he is therefore not unmixed. The debts we owe him are collected by his messengers, who are microbes. This was inquired into recently by the medical officer of Westminster, who, like other of the faculty, has a mind suspicious of everything, even the telephone. He proceeded one day to one of the telephone offices of his district, and there, not being announced, he bowled out some of the messenger microbes at their nefarious work. He adopted the simple expedient of wiping a mouthpiece with a "swab." The contents of this he collected, and with them he inoculated two guinea pigs. In three weeks the unhappy animals were grievously consumptive, and rapidly nearing death. No wonder the officers of the London Stock Exchange have contracted the habit of spraying their fifty telephones daily with disinfectants. Nor is this all. The *Lancet* declares that the call boxes are "very suitable places for spreading diphtheria and influenza, as well as consumption." On the whole, a good case is here made out for a daily dose to your telephone of vigorous "spring cleaning."

Canada's trade for the fiscal year ended March amounted to £127,678,058, being an increase over the previous year of £5,163,788.

We require from buildings, as from men, two kinds of goodness—First, the doing their practical duty well; then that they be graceful and pleasing in doing it; which last is itself another form of duty.