LORD MAYOR'S COACH.

The illustration which we give below shows the lord mayor's civic state coach, which was built by Messrs. Offord & Sons, Limited, of 67 George Street, Portman Square, in 1887, and which is more generally known as the "Jubilee" state coach. As will be seen, it is a most handsome turn-out, and has been greatly admired by visitors to the Crystal Palace Exhibition. This carriage was constructed for use in the city ceremonies during the office of Sir Polydore de Keyser, and, as will be noticed from our "cut," it is of exceedingly expensive and elaborate construction. It is hung on C and under springs, with swan-necked double steel perch, giving full lock under for turning in the narrow city streets. The brass and gilt work which is introduced is very massive in appearance, and the decorations embrace both national and civic emblems. Especially noticeable are the rose, shamrock and thistle of the solid roof cresting. The interior is adorned with the most costly golden and blue silk; while the lamps, of solid chased brass, are also noteworthy and exhibit very fine workmanship. We are indebted to the Hub for our illustration.—The Road.

LORD MAYOR'S COACH.

A Curious Accident.

A peculiar accident occurred on July 16 at the new tower of the New York and Westchester Water Company, in Glen Park. A sheet iron worker was on the tower, eighty feet above the ground. He lost his balance and fell down the inside of the tower. As he felt himself going over he threw himself against the side of the tower. All the way down he bounded involuntarily from side to side. As he neared the ground he struck the sides of the tower less frequently and his velocity increased. The zig-zag course saved his life, as he will probably recover.

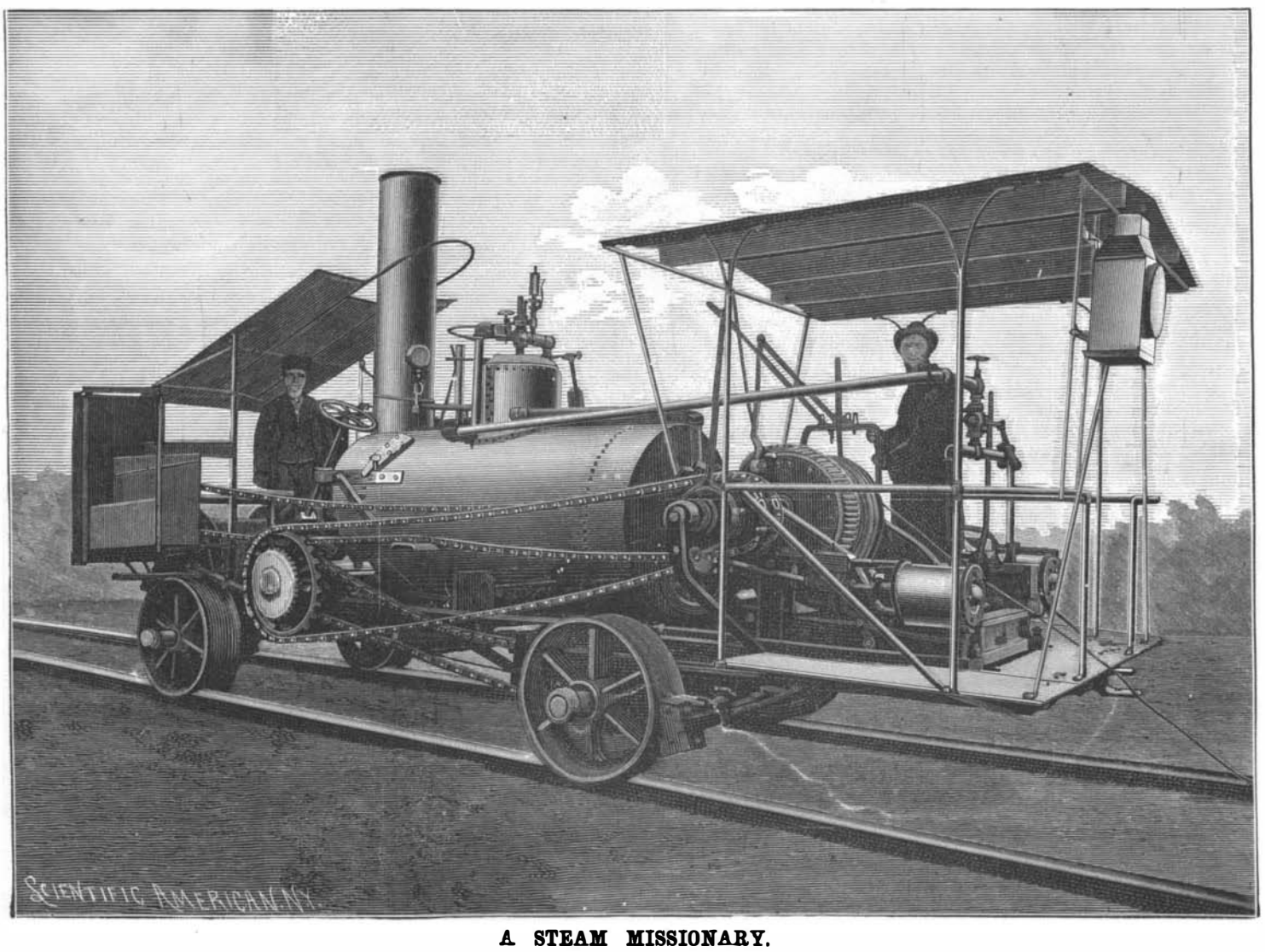
A STEAM MISSIONARY.

We have received from Mr. James H. Stevens, of the Barney & Smith Car Company, Dayton, O., a photograph of a novel and interesting logging machine, which we herewith reproduce. Mr. Stevens has forwarded the design with the request that it should be "brought before the mechanics of the country merely as a suggestion in the direction of cheaper logging in timber too sparsely distributed to justify the use of steel rails," and he trusts that "some one may be stimulated to get up something on the same order that will be a great deal higher, with the same or greater power, and that can be utilized for pioneer work as well as lumbering."

The engine, as will be seen, is adapted to run on a pole road; but it is also arranged so that it can be quickly changed so as to run on a standard iron road; or, if desired, upon the ground as a traction engine. The engines are of 30 horse power, and steam is supplied by a boiler of the Scotch marine type. The weight of the whole engine is about 11 tons, and the cost about $3,000. The train, when equipped for work, will consist of the engine, as shown, a water car, and four logging cars. The engine is provided with sheet-iron wood boxes, one at the front and one on each side; and on the right hand side, as shown in the cut, is a water tank which counterbalances the weight of the heavy chain gearing on the opposite side of the boiler. It is provided with a shaft and pulley through which it could furnish power for a sawmill or for other purposes.

The engine is mounted on springs and the boiler is arranged so that it can be tilted on sharp grades in order to maintain the water level. To enable it to turn very sharp curves without breaking the driving chains it is provided with compensating gear. At each end of the engine a steam reel is provided, each of which can carry 2,000 feet of wire rope, by means of which the engine can haul in logs from a distance of 2,000 feet to right or left. By means of these ropes it can haul itself up a grade of 1,700 feet to the mile; and then use its whole force in hauling the load up after it. This system of wire haulage it is claimed is specially adapted to logging in swampy country, where the ground is too soft to permit the use of cattle. The first machine to be built has been shipped to Nicaragua, where it will be used in getting out mahogany logs in a locality where the ground is wet and spongy. In explanation of the novel name which it bears Mr. Stevens says: "I named it this because the thought occurred to me that if it were placed in the proper hands, a machine like this would become a great civilizer."

We place this invention, which is not patented, before our readers, as possessing features of real merit and utility, and well worth examination. The machine is not built for looks, and is open to that improvement which Mr. Stevens invites; but for work in virgin forest lands, and particularly in getting out those valuable hardwoods which abound in swampy jungles, it certainly should prove to be well adapted.



A STEAM MISSIONARY.

A New Thames Tunnel.

The Bridges Committee of the London County Council have prepared a scheme which will shortly be submitted to the Council for approval, for the construction of a tunnel under the Thames to connect Millwall with Greenwich. It is intended that the tunnel shall be for foot passenger traffic only, having a footway of 8 feet, with a headway of 9 feet 4½ inches in the center, reduced to a minimum of 7 feet 6 inches at the outsides. The cast iron tubing would be lined inside with concrete, faced with glazed tiles, and the tunnel would be lighted by electricity. The shafts on either side of the river would be 32 feet 8 inches internal finished diameter, and a spiral staircase 6 feet wide would be constructed, 20 feet clear diameter being left in the middle, in which hydraulic lifts might be constructed at some future date, should necessity arise. The height of the stairway would be 43 feet 6 inches on the north and 51 feet on the south side of the river. The total estimated cost of the works amounts to £65,000. The land which would be required would cost £5,500, making a total for land and works of £70,500. In addition to that, as the law at present stands, £25,000 would have to be paid as compensation to persons interested in the existing ferry and ferry rights, but the committee hopes the Council will succeed in obtaining a clause by which the improvement of interest will be considered, thereby reducing this amount very considerably. The capital cost of the tunnel, including compensation for the ferry rights—viz., £59,500—has been reduced to an annual sum, and amounts to about £4,190 per annum for the first year, diminishing each year till the debt is paid off in fifty-three years. The committee asks the Council to seek the necessary parliamentary powers to carry out this scheme, which they state will meet a long desired requirement of the people living on both sides of the river.—London Times.

AT a recent meeting of the Royal Society, Prof. Worthington and Mr. R. S. Cole showed instantaneous photographs of splashes taken each with an electric spark giving an exposure of less than three-millionths of a second. The spark could be so timed as to pick out any desired stage of the splash. In this way the progress of a great variety of splashes has been followed in minute detail. Especially interesting are those which illustrate the formation of a bubble.