

**THE FIRE APPARATUS OF PARIS.**

When a house takes fire, it frequently happens that the exits that would permit of the surprised inhabitants' escape are rendered inaccessible by smoke or fire. We then, as in the case of the burning of the Opera Comique at Paris, see unfortunate persons making frantic appeals from the high windows of the edifice, while others, who have taken refuge on the roof, would not fail to lose their lives were it not for life-saving ladders. There are several styles of these ladders. The one most used in the regiment of Paris firemen is Bayley's, and is the one that is here illustrated.

This ladder is not only designed for saving life, but also for supporting the hose when it becomes necessary to throw water into the upper parts of a burning building.

In the saving of life the ladder is used either as a means of descent or merely to allow the firemen and their apparatus to reach the upper stories. The height reached by this ladder is 88 feet, which about corresponds to the eighth story. When it is upright and not extended it reaches the third story.

The Bayley ladder, which has been used for several years by the Paris fire department, is kept at the engine house upon a truck that is always ready to have horses harnessed to it and to start with its men at the first signal. The truck, which is a two-horse one (Fig. 1), consists of a fore and hind carriage, a movable pole, four wheels, two cheeks of wood, a seat, and two rack brakes. The ladder is maneuvered through ropes and pulleys. It is made of wood, and consists of three sections, which slide within one another. Each section consists of two uprights, each strengthened internally by an iron cable, and provided with twenty-eight rounds, twenty-seven of them of wood and one of iron. Each section is provided with two iron cables, with stretchers designed to prevent flexion.

The first section is held by two stretchers fixed to the upper part on the one hand and to the back of the frame on the other. Two rollers fixed at the upper part of the third section facilitate the sliding of the end of the ladder against the wall.

The sliding sections are maneuvered through winches fixed to the extremities of a windlass. The accessories kept in a box in the truck comprise three 100 foot ropes for steadying the ladder during high winds, a rope used in tilting the ladder, keys for tightening nuts, etc.

The truck, with its ladder and its set of eleven men, weighs 9,250 lb. The truck alone weighs 4,488 lb., and the ladder 3,070.

The ladder is maneuvered by a sergeant, a corporal, and eight firemen.

Fig. 2 represents the ladder standing upright, and Fig. 3 shows it drawn out to its full length.

Among the other ladders that are most used by the Paris fire department, we may cite the Shand-Mason one, which is of rolled and hammered iron, and the Lieb one, which is in four sections. In addition to these large ladders, we may mention the ordinary hook one, which is provided with but a dozen rounds, which is maneuvered by hand, and which can be used for

mounting from one story to another through the windows.—*La Nature.*

**The Portable Water Tower.**

Among the modern devices brought into use for the important purpose of conquering large fires is the movable water tower. In construction it is simply an upright tube by means of which the streams from three or four engines are united in one, carried to a consider-

metropolis it may be considered as indispensable. The water tower is a portable standpipe which, for convenience of carriage, is in four sections. The lower section, fourteen feet and six inches long and nine inches in diameter at the base, is fixed upon a heavy iron platform mounted on a four-wheel carriage. This section, when not in use, lies horizontally on a framework, and in that position looks like a long mounted cannon. Two other sections of the pipe, twelve and nineteen feet respectively, are carried in racks at the side of the platform. These gradually diminish in size, and the fourth section is a pipe in immediate connection with the nozzle. The sections are joined together by large couplings similar to hose couplings. The entire length is fifty feet. When less than this is required, but a part of the sections are mounted. The nozzles in use are six in number, and range from 1 3/4 to 2 3/4 inches, the 1 3/4 being that most frequently in service.

When the tower is to be used, on a special call or third alarm, it is placed in front of the burning building, and on account of the exposure to danger in that position, the horses are immediately removed. The platform is made level by jackscrews. The sections are firmly put together. An elevation of thirty feet is secured by coupling the twelve-foot section to the lower one, and this is sufficient when the building is not more than fifty feet in height. When the situation so requires, the entire length of all the sections is brought into use. The nozzle having been screwed on, and the swivel guy ropes adjusted, the tower is raised with a hand wheel, and made secure in a perpendicular position. All this is done in about fifteen minutes. The water connection is then made. To the four inlets in the suction pipe can be attached the discharge pipes of four different engines, although generally but three are used. The water from the several engines is concentrated into one volume in the tower, and forced in a solid, rushing stream into the center of the fire. Through the mechanism employed, the nozzle is under perfect and easy management. The stream of water can be thrown into any part of the building, and places are thus reached to which access would otherwise be impossible. By means of the swivel pipe attachment, invented by Assistant Chief Bonner, of New York, the power is doubled. The water tower works well for all heights up to 75 feet. When buildings exceed this height, the fire department sees good reasons for insisting that the upper stories should be made absolutely fire proof.

The *Insurance Critic* says: For the materials embodied in this account

of a useful and valuable invention for extinguishing large fires, acknowledgment is due to the *Fireman's Herald* of New York, which adds the further information that the New York Fire Department has three water towers, two of which are in active service while the other is kept as a reserve. On a corner building two towers are sometimes used. Illustrations of this invention were published in the *SCIENTIFIC AMERICAN* of August 9, 1884.

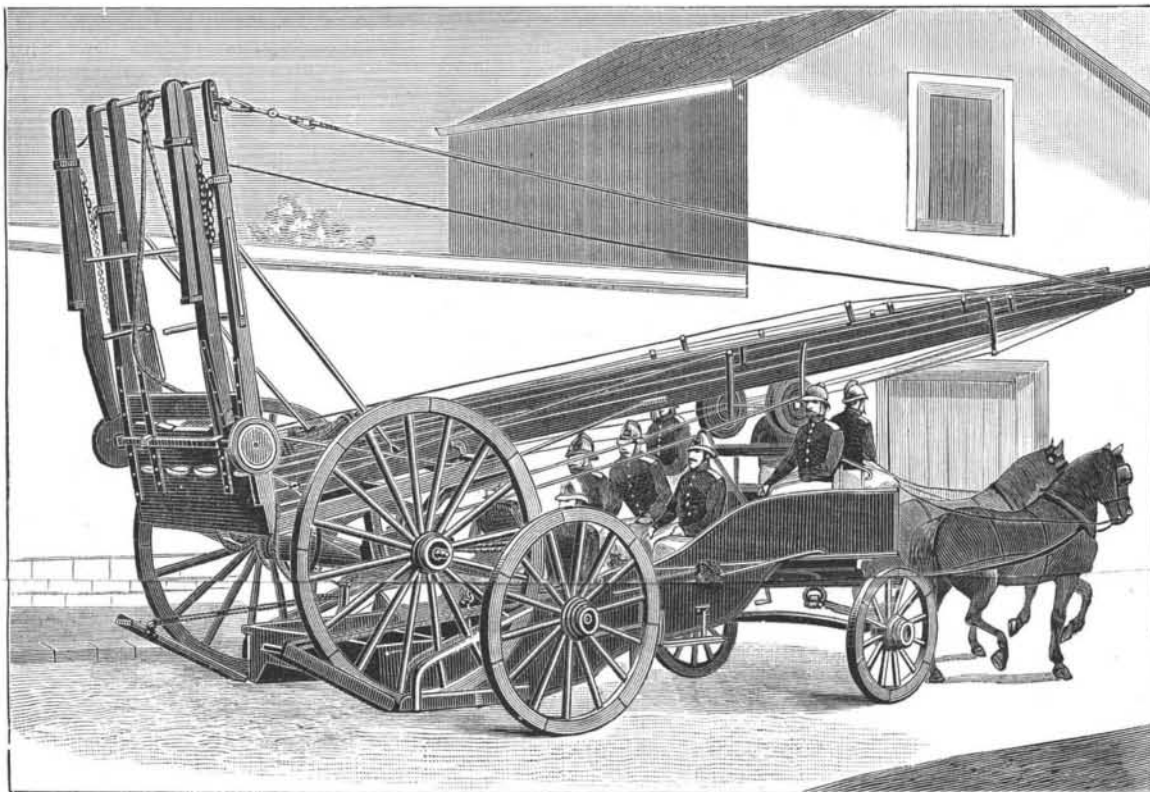


Fig. 1.—BAYLEY'S FIRE LADDER ON ITS TRUCK.



Fig. 2.—THE LADDER UPRIGHT.



Fig. 3.—THE LADDER EXTENDED.

**PARISIAN FIRE LADDERS.**

able height, and poured in a miniature deluge upon the very focus of the flames. It has been in use in the New York Fire Department about nine years. Its inventor, Abner Greenleaf, of Baltimore, had spent many years previously in perfecting his plan. The machine has now passed beyond the stage of experiment, and its value as an auxiliary force in the conflict with fires in great warehouses has, in the estimation of all, become fully established. For the needs of the