THE TELEPHERAGE SYSTEM OF TRANSPORTATION.

Although the aerial cable or rope tramway system of transportation is old, and well recognized as one of the standard methods of transferring freight, the recent modification which is shown in the accompanying illustration is distinctly novel and of considerable interest. The ordinary cableway is operated by a rope of fiber or metal, which is attached to the drum of the stationary engine which furnishes the hauling power. The fundamental difference between the old system and the one here shown is that the motor forms

Carrying a Barrel of Liquid.

THE TELEPHERAGE SYSTEM OF TRANSPORTATION.

part of the traveling carriage on which the load is suspended.

As usually constructed, the weight-carrying cable is supported from projecting arms, which are fastened directly to stout wooden or iron poles, the height of the cable above the ground varying from 20 to 50 feet, or more, according to the nature of the buildings or other obstructions which have to be cleared. This supporting cable forms a track for the trolley as in the ordinary cableway; but here the resemblance ceases. Above the cable rope is suspended the feeder wire, as in the ordinary street railway trolley system, the wire being attached to the posts which support the cable and tied in such a way that it is held directly above the cable at a distance of about 18 inches. The trolley wire is itself carried by a supporting wire, from which it is suspended by means of a short wire with insulated fastenings. The traveler or trolley runs upon the main cable by means of a pair of flanged wheels, upon the axles of which are one or more small electric motors which take their current from the feeder wire by means of a trolley bar of the kind shown in the illustrations. From the frame of the traveler depends a stout bar which carries at its lower end a differential pulley hoist, to which the freight which is to be transported is attached and hauled up clear of the ground. The electric controller from the trolley is operated by a couple of wires, which extend from the trolley and are made fast to the chain of the differential pulley hoist. In operation, the freight is hung from the pulley, hoisted to the desired height and started on its trip by a pull on the controller wire. The trolley may be controlled either by motormen, two of whom are usually employed, one at each end of the system, or, if the line is of sufficient length to warrant it, a motorman may be located at intermediate stations. The control from these stations is worked by means of controller wires which extend up the trolley posts to the feeder wire, and the load may be started or stopped from either of these stations, or it may be stopped at any desired position along the line by means of the controller wires already referred to, which are carried by the trolley itself.

The trolley can be operated at various rates of speed, and it is so arranged that, in descending grades and rounding curves, it automatically controls its own speed. When the weight reaches its destination the freight is lowered to the surface by hand.

Mangoes in India.

India is the home of the mango. They seem to grow everywhere in its tropical zone. They are found wild in the jungles and are highly cultivated in gardens and mango groves. The mango of Bombay is especially famous, and is one of the most highly prized of Indian fruits.

The genus belongs to the cashew family, of which we have in the United States a native representative in the "sumac." I believe there are some fourteen species known; some have been completely naturalized in the West Indies and other tropical countries. The most important species is the *Magnifera Indica* or "mango," the Indian native name, of which there are numerous varieties.

The tree is large and spreading, with leathery, lanceolate leaves and large terminal panicles of flowers. The fruit, like the apple of the temperate zone, varies greatly in size, shape, color, and flavor, being sometimes three or more inches long. The largest varieties weigh 2 pounds, but they are usually not larger than a goose egg. The mango is at first green, then becomes partly red or orange color. Beneath the tough skin there is in the better varieties a rich, fleshy, delicious pulp, in the center of which is a large flat stone, to which the inner portion of the pulp is attached by coarse fibers, something after the manner of our clingstone peach. The poorer varieties are smaller in size, tough, and stringy, and are not edible, on account of their strong flavor of turpentine. One writer compares them to "a mixture of tow and turpentine."

The mango season commences in this part of India in May and June, just before the monsoon. The "Alfoos" (or Alphonso) is claimed to be the best variety of the mango. The finest sell in the Bombay markets at the beginning of the season at 4 rupees ($1.30) per dozen, and later drop in price one-half. The other varieties cost according to quality, some as low as 3 annas (6 cents) per dozen; in fact, "jungle mangoes" may be had for even less, but this wild kind is only eaten by the natives.

Inarching is the favorite system of improving the mango by grafting in Bombay.

The wood of the tree, together with sandalwood, is used by the Hindoos for burning. The bark possesses astringent properties, and when cut exudes a resinous and astringent gum. The natives make use of the leaves and leaf stalks in hardening the gum, and the undeveloped fruit (ground into a paste) is claimed to possess vermifugal properties. The seeds when boiled are eaten in times of scarcity of other food.

The fruit is sent from the West Indies in the form of a sweetmeat, but in that state the sweetness has displaced the flavor. The green fruit, pickled and highly spiced, has for some years been exported from India to England. Fresh mangoes, for the first time, have been exported in large numbers from Bombay to London during the present season. It is claimed that they not only reach their destination in fairly good condition, but are fetching fancy prices, being superior to the mangoes from the West Indies. The cast-off wooden boxes used by the Standard Oil Company in shipping case oil to India are utilized in this enterprise. This crude beginning promises to develop into a considerable trade.

I am shipping this week, in a specially made case with plate-glass top, twelve mango grafts of nine different varieties to an enterprising horticulturist at West Palm Beach, Indian River, Florida. This is the second shipment, the first being made at about this time last year, but, on account of the delays attending

Carrying a Workman.

THE TELEPHERAGE SYSTEM OF TRANSPORTATION.

transshipments at London and New York, the grafts were about ten weeks in reaching their destination and were all dead on arrival. It is hoped better success will follow this consignment.

Almost all the fruits of the Old World are said to be improved by being transplanted in American soil. If the Bombay Alfoos mango can be thus improved, we shall have found a delicious fruit.—Wm. Thos. Fee, Consul at Bombay.

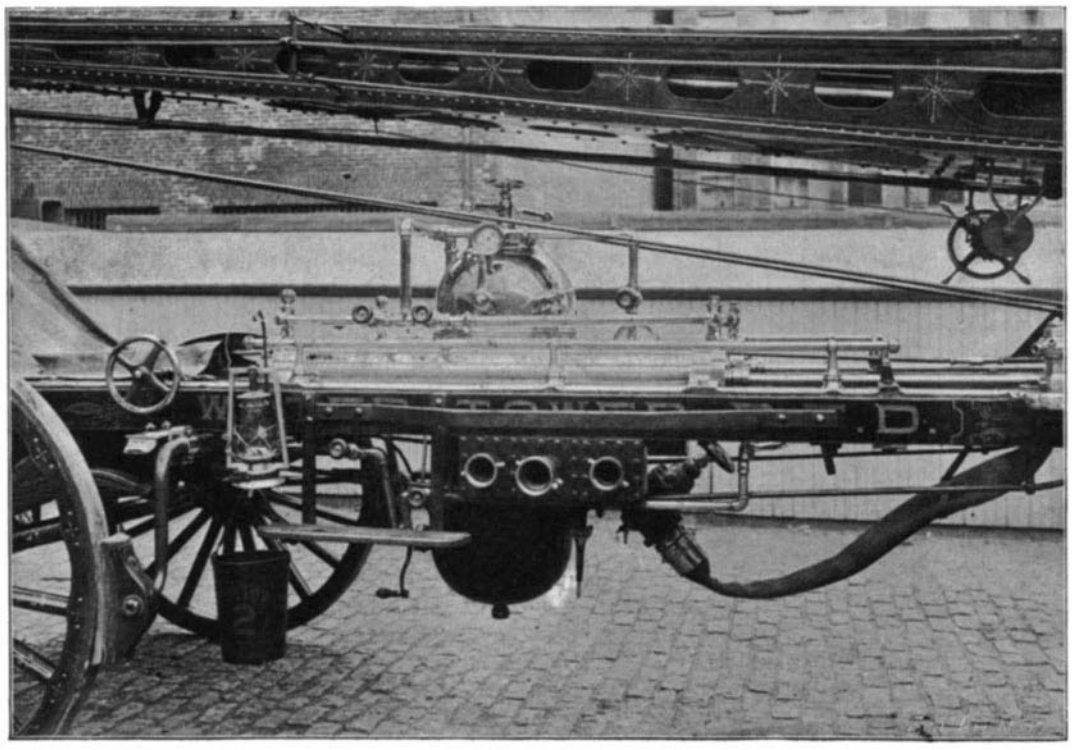
A FIRE DEPARTMENT DRILL SCHOOL.

BY WALDON FAWCETT.

Even with the present keen rivalry among the fire departments of the leading American cities in the maintenance of drill classes designed to afford instruction in every branch of fire fighting and the saving of human life at fires, the Boston Fire Department Drill School ranks as an exceptionally interesting institution, and one wherein the training is as thorough as it well may be.

Every pupil in the school during his attendance goes through all the maneuvers necessary to the handling of the various pieces of machinery, ladders, etc., now used by modern departments for subduing all manner of fires under all possible conditions. This training does not, of course, include instruction in the management of steam fire engines, a class of duties for which a special branch of schooling has been provided.

Every new member of the Boston department must attend this school for a period of thirty days, at the expiration of which time he is, if he proves satisfactory, placed "on probation" for six months. During this half year interval the recruit is in reality a regular member in all his duties and virtually is merely waiting for time to advance to the higher positions. About 5 per cent of the men who enter the drill school never get into the department. They come to a realization, of their own accord usually, that they are not suited to the work, and thus it is only on rare occasions that the instructor is obliged



WATER TOWER USED IN PRACTICE BY FIREMEN.