

A FIRE ESCAPE FOR TOURISTS AND TRAVELERS.

BY W. G. FITZ GERALD.

The problem of the sky-scraper hotel is a very serious one for the traveling public, but it seems to have been solved in a very ingenious manner by an Englishman after a brief, but scared, visit to this country.

Lying in his bed at night on some incredibly lofty floor, he read all kinds of uncheerful things about fierce conflagrations that have devastated entire cities. He wondered whether there was no way of sleeping in peace and comfort of mind, even on the twentieth floor, with an infallible fire escape at the foot of his bed, thus rendering him absolutely independent of extraneous assistance.

He went home and devised the ingenious traveling-bag escape, shown in the accompanying photographs. This will cost, at any bag and trunk maker's, very little more than an ordinary portmanteau of the same kind; and moreover, the fire escape part of it does not interfere to any extent with its capacity for holding your dress suit, boots, shirts, or a hundred and one other things requisite for the traveler.

In one small compartment will be found some hundreds of feet of that fine, light rope used by mountaineers in the Swiss Alps, for roping themselves together while crossing glaciers and climbing precipitous ice slopes. There is also a particularly ingenious little brake arrangement, and two pairs of steel snap hooks. That is all, but it certainly enables the possessor of this useful article of baggage to rest easy in his bed in an American sky-scraper hotel.

Let us suppose that an alarm of fire is given in the dead of night, and the flames cut off every means of communication with the outside. Well, the possessor of this portmanteau fire escape simply slips out of bed, snaps one set of hooks round the bed leg or other substantial piece of furniture, and the other set to the sides of the portmanteau. This last he then throws out of the window, gets into it himself, and then lowers himself just as quickly or as slowly as he pleases by means of the brake. This useful article of baggage has not yet made its appearance in this country, but beyond question it will do so pretty speedily.

Carbureted Air Light.

Dr. Hugh Marshall, fellow of the Royal Society of Edinburgh, lecturer on chemistry in the University of Edinburgh, has invented another method of using carbureted air for lighting. It is an improvement upon the form of lamp devised by M. Naum Notkin, of Mos-

To reduce the manipulation necessary with such a lamp when used in incandescent lighting, Dr. Marshall has invented a form of burner tube, which is sunk axially into the body of the containing vessel, and which enables the user to regulate the mixture of vapor and air to a nicety by simply rotating the tube in one direction or the other. The new method of using carbureted air has been applied by Dr. Marshall to various types of lamps—table and portable, hanging, basket, and also in lantern form for outdoor lighting. These show a brilliant incandescent light, without any liquid

**THE PORTMANTEAU FIRE ESCAPE.**

or wicks being used, and are free from smell or smoke. Dr. Marshall claims also that carbureted air can be supplied all over a house without danger or complicated processes, and that the gas can be applied to other purposes than lighting, such as for heating and motive power.—Rufus Fleming, Consul, Edinburgh.

A NOVEL ITALIAN UNICYCLE.

BY EMILE GUARINI.

The accompanying engraving illustrates a motor unicycle invented by Signore Lilio Negrone and constructed by the Garavaglia establishment of Milan. At the last exposition of automobiles, at Turin, it was one of the greatest attractions. In the motor unicycle, the motor and the cyclist are mounted within a single wheel. The object of the inventor in ordering the construction of this strange vehicle, which appears to be the first practical application of a theoretical principle, was, according to him, to offer to cyclists the marked advantages, from the viewpoint of convenience, safety, economy, and even esthetics, over the ordinary motorcycles. The Negrone unicycle consists of a laminated steel hoop provided with a pneumatic tire and designed to revolve upon the ground. A circular frame is arranged concentrically within the hoop and carries the motor and the seat for the cyclist. The frame, motor, and cyclist together, when the hoop revolves upon the ground, move along over the latter just as does an ordinary motor bicycle. In its rotating motion around the circular frame, the hoop is guided by a system of small wheels distributed and fixed in the periphery of the frame and bearing constantly against the internal surface of the hoop. The mechanical reaction necessary for starting and driving the vehicle is obtained from the weight of the frame, the motor and its parts, and the cyclist. The motor drives through a friction clutch, by means of a chain and sprocket, a gear wheel mounted on the frame, and this gear engages with an internal gear fixed to the hoop. The friction clutch allows of starting the motor independently of the hoop, and of transmitting motion to the latter by degrees and without shock.

The steering of the unicycle is very sensitive. In fact, in order to make it turn to one side it is merely necessary for the operator to displace the center of gravity by swaying his body. Despite this, and in order to make the control of the vehicle still easier, the inventor has provided it with a small handwheel, the turning of which displaces the seat and rider to one side or the other. The brake is provided with an automatic arrangement that prevents the motor and the cyclist's seat from becoming locked to the external hoop and thus being carried along by the latter in its rotary motion.

Signor Negrone does not conceal the fact that his apparatus is not yet free from defects, although these may be successively eliminated by appropriate modifications of each of the parts of the vehicle. He thinks, too, that after his unicycle has been sufficiently improved, it will possess over ordinary motor bicycles all the advantages mentioned above. However this may be, the trials of it that have so far been made have

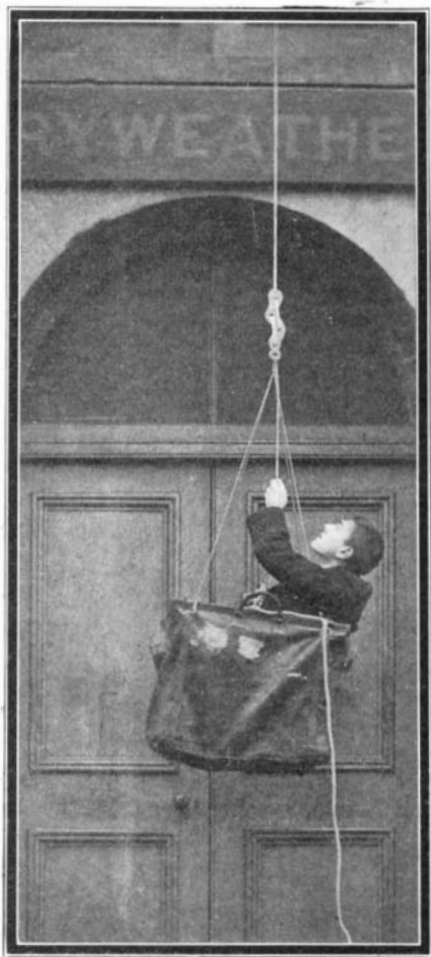
from every point of view, given excellent results. They permit of the assertion that, although the vehicle may not have an extensive practical application, it will at least always remain an ingenious, curious, and interesting apparatus.

Gilsonite and Elaterite—How Used.

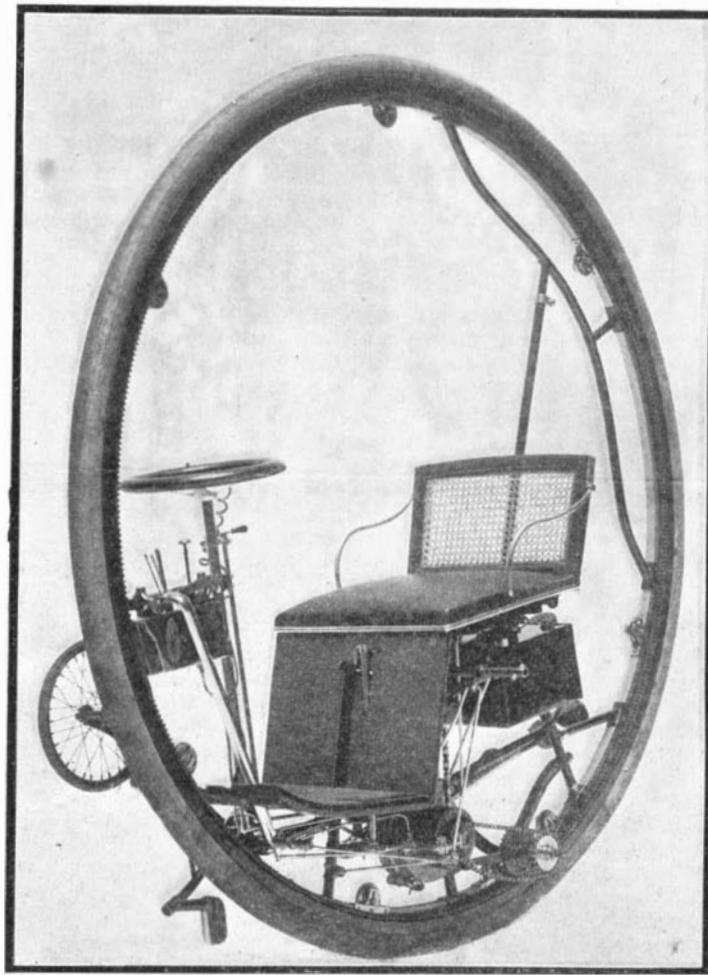
The uses to which gilsonite and elaterite are put are varied. There is a big shortage in the world's supply of vegetable rubber, and these hydrocarbons are now taking its place. They are made into a mineral rubber that unites perfectly with tree rubber, thus permitting a very large reduction in the amount of the latter used, and cheapening its cost materially. Second-grade gilsonite is used for paving cement by melting it with petroleum residue and mixing it with ground asphaltic limestone and the requisite amount of sand. Gilsonite is also manufactured into varnishes, lacquers, waterproof paint for gun carriages, and steel and wood work of every description known to ship building; as a paint for ship bottoms, it prevents barnacles from attaching themselves. It is also used for pipe coatings, reservoir coatings, floorings, roofings, and railroad work. The following is a further list of some of its uses: For coating barbed-wire fencing; coating sea walls of brick and masonry; coating paving brick; acidproof lining for chemical tanks; roofing pitch; insulating electric wires; smokestack paint; coating poles, posts, and ties; lubricant for heavy machines; covering wood-block paving; binding pitch for carbon in making coal briquettes.

Elaterite is being largely used now to make flexible and heatproof varnish and paints, which are excellent for coating shaft and tunnel timbers, for painting hemp and wire hoisting ropes, pump columns, pipes, chains, ore cars, and all steel and iron work where the surfaces are exposed; also for coating vats, tanks, and pan covers used in chlorination works, smelters, and refineries, and in the cyanide process. On ironwork it prevents corrosion and resists great heats. On woodwork it prevents absorption, and defies the elements.—Mines and Minerals.

An improved railroad crossing has recently been patented by Mr. J. H. Higgins, of Wanatah, Ind., that is said to be a great improvement over the crossings now in use universally. The invention provides for continuous frog intersections or steel filler blocks, slightly elevated at the place of crossing, so that the

**THE FIRE ESCAPE IN USE.**

cow, in which carbureted air was obtained by employing paper pulp saturated with gasoline to produce the vapor required. In this Notkin "gravity" lamp the carbureted air, being denser than air itself, flowed from a higher to a lower level, instead of ascending like coal gas, and could therefore be poured from one vessel to another, like a liquid. In the Marshall lamp the necessary current of air through the carbureter is not maintained by the effect of gravity, but by means of the draft from the lamp chimney. It is thus possible to have the body of the lamp below the actual burner.

**A UNICYCLE DRIVEN BY A GASOLINE MOTOR.**

wheels are carried for a short distance on the flanges, instead of on the wheel proper. As this carries the wheel slightly above the track, the usual bumping caused by the break in the track is eliminated. This is very desirable, as everyone knows how annoying it is to go bumping over a crossing, and especially over one that has been in use for some time. This improvement is also said to be very valuable because it materially extends the life of a crossing, as shown by experiment. Several railroads are already adopting this device.