

Scientific American.

A JOURNAL OF PRACTICAL INFORMATION IN ART, SCIENCE, MECHANICS, AGRICULTURE, CHEMISTRY, AND MANUFACTURES.

VOL. III.—No. 3.

NEW YORK, JULY 14, 1860.

NEW SERIES.

HOLWELL'S FIRE-ESCAPE.

Although quite a number of fire-escapes have been recently brought before the public, the subject has not been exhausted. Much experience has been acquired, which has revealed original defects in these agencies, and this has led to the invention of useful improvements for rendering them better adapted for rapid and practical application. A "fire-escape" should combine the qualities of being easily and quickly brought to the scene of danger; also a capability of applying it easily and safely. The accompanying illustration represents an improved fire-escape, as applied to the saving of life in a lofty building, the under stories of which are on fire, and escape in the ordinary way—by stairs—cut off by the flames.

A series of ladders—two or more—which may be able to reach the highest stories of buildings, are employed in this fire-escape. These ladders are so connected together as to slide upon one another, and be drawn out so as to form a continuous ladder, as shown by the illustration, for being raised up against a building by the power of block and tackle, to rescue persons from dangerous situations. These ladders slide upon one another so as to occupy but a very small space on the carriage when they are not in use.

The nature of this invention consists in arranging the arch supports or legs, usually called "tormentors," which serve to elevate and keep the ladders steady, with wheels or rollers at their lower ends, and with suitable sockets to receive the ends of pointed rods which are attached to the truck, in combination with ropes extending over a windlass in such a manner that by turning the latter the arch supports serve to assist in elevating the ladders; and when elevated, the truck and fire-escape can be easily drawn along, say from window to window, and from house to house in a block. The arch supports are also connected together by an adjustable cross-brace in such a manner that they can be brought close together or stretched further apart, as circumstances and situation may require.

A double truck is employed as a carriage for the fire-escape. The front and back trucks are connected together by a long reach, and they are arranged similarly to the carriages of hook-and-ladder companies. When the apparatus is drawn to a fire, the truck is removed in the usual manner—as shown at the one side, with one fireman moving it. The fire-

escape—composed of the ladders, their supports and the windlasses—is secured on one truck, A, of the carriage. The under or base ladder, B, is attached to an axle, a, which passes through the legs into the sides of the truck.

the escape steady. F F are two adjustable supports or legs, called "tormentors." They are attached to the sides of the lower ladder by pivot joints, and they have wheels or rollers on their lower extremities. These sup-

ports are united together by an adjustable brace, G. They rest upon the ground and form a support to the ladders, so as to combine strength and firmness, and, at the same time, they permit the escape to be moved easily in position from window to window, a very important consideration. The adjustable brace, G, having a clasp at its middle, permits the two bars of the brace to slide past one another, so that the legs, F F, can be greatly distended or brought close together as circumstances may require. Two adjustable rods, b b, are also connected with the truck, and the legs, F F, render the latter firm and steady.

When this fire-escape is run to a fire and is placed in position, the levers, L, of the windlasses, C C', are alternately turned by the firemen, when the ropes are wound up and the ladders elevated, as shown, with wonderful rapidity. At the same time, as the legs of the supports or "tormentors," F F, are drawn out into place, they assist to elevate the ladders and to sustain them firmly and safely for persons to ascend and descend with security. A chain is connected with the tongue of the truck and the back end of the frame; and a small ladder is employed to ascend and descend from the ground to the top of the truck frame. Suspension braces are also employed to stiffen the lower ladder, B, and to answer the purposes of a perch for uniting the trucks. This fire-escape is portable and is designed to be run to any distance and place where there is a fire, and to be there applied. It embraces great stability, combined with ingenious devices for ready adjustment and application in all cases. It is not only a convenient fire-escape but extension-ladder for painters and others, as it can be raised and lowered with great facility by simply turning the windlasses. We have been given to understand that this invention has met with deserved favor from several in authority in our Fire Department who have examined

it carefully. It would cost but a small amount (to the city) to apply it to all carriages of hook-and-ladder companies, as the improvements may be applied to the common trucks and ladders now in use. A patent was issued for it on the 26th of June last, to J. J. Holwell, No. 184 East Twelfth-street, this city.



HOLWELL'S IMPROVED FIRE-ESCAPE.

There are two windlasses, C C', which have their axles secured in the frame of the truck. Wire ropes extend from the windlasses over the blocks, D D', on the ladders, and also pass over the windlasses, C, and are attached to the legs of the supports. A rope is attached to each side of the top ladder to act as guys for keeping

it carefully. It would cost but a small amount (to the city) to apply it to all carriages of hook-and-ladder companies, as the improvements may be applied to the common trucks and ladders now in use. A patent was issued for it on the 26th of June last, to J. J. Holwell, No. 184 East Twelfth-street, this city.