(No Model.)

T. PENN.

FIRE ESCAPE.

No. 263,952. Patented Sept. 5, 1882.

Fig 1

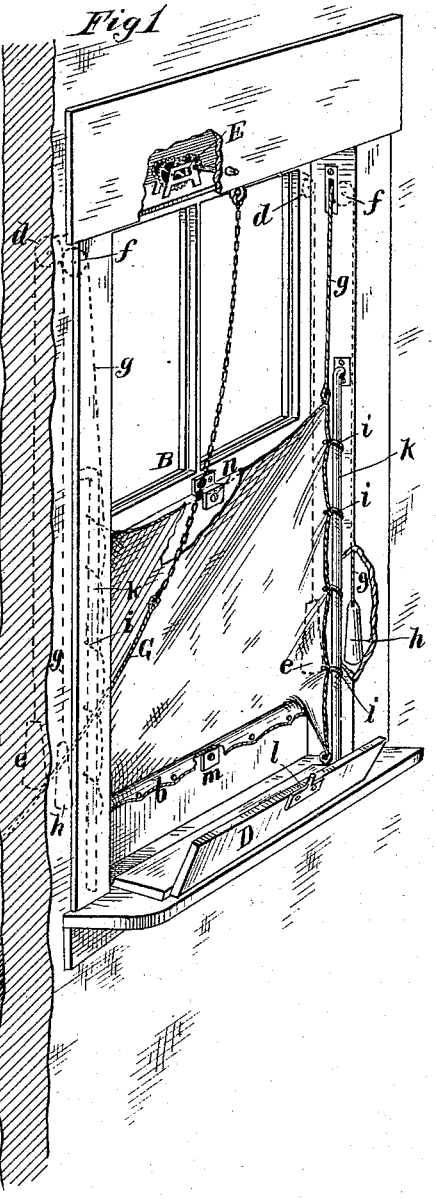
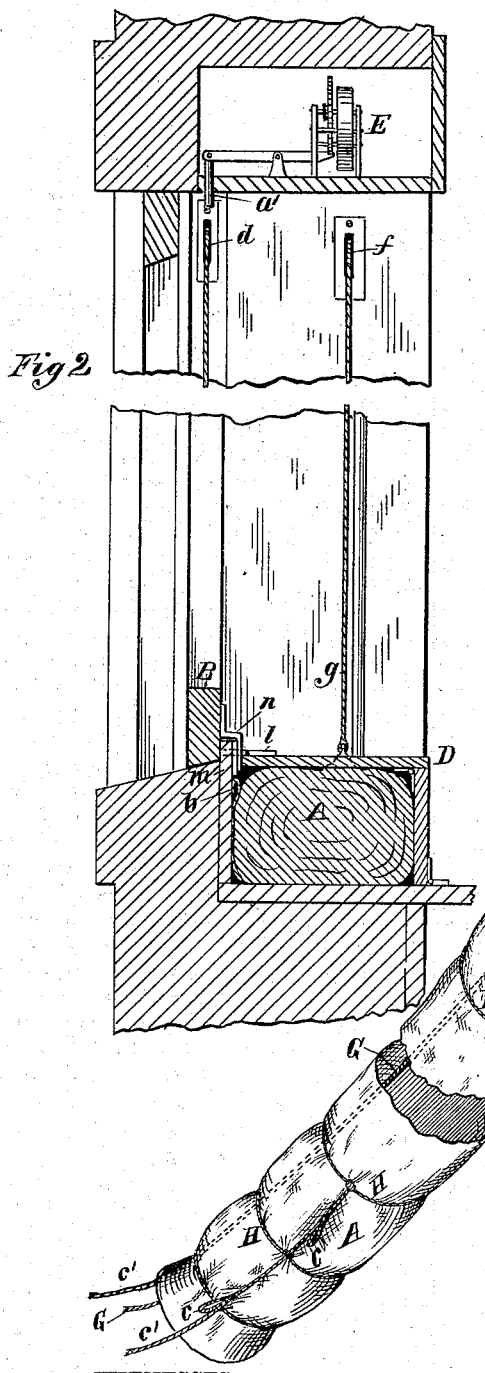


Fig 2



WITNESSES:

J. D. Garfield

C. Sedgwick

INVENTOR:

T. Penn

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS PENN, OF NEW YORK, N. Y.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 263,952, dated September 5, 1882.

Application filed April 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS PENN, of the city, county, and State of New York, have invented a new and useful Improvement in Fire-Escapes, of which the following is a full, clear, and exact description.

This invention relates to that description of fire-escapes in which a flexible chute or conveyer is used for passing persons from the window of a building to the street, such chute being of a close or tubular construction, so that the person passing down through it is under cover, while the flexibility of the device provides for its being bent or inclined to ease the descent of the person through it, and also provides for its being stowed away in a small space and convenient for use.

The object of this invention is to more effectually provide for the adjustment of the chute, and to facilitate entry thereto to give a better control and check by the person descending through it, to make the projection of the chute automatic by the opening of the window to which it is applied, and so that an alarm will be sounded to others in the building or outside of it, and to provide for the chute or conveyer being used also as a scaling-ladder and means of escape from the outside of it.

To these ends my invention consists in the combination and arrangement of parts, substantially as hereinafter more fully set forth.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a view in perspective of my invention applied to the window of a building and ready for use; and Fig. 2 is a vertical section upon a larger scale of the same, in part, in a plane which is transverse to the width of the window, and showing the chute as rolled up within the window-casing.

In the drawings, A is the chute or conveyer, which may be made of any suitable fabric, including duck, canvas steeped in a saline solution, asbestus mixture, or otherwise protected against the action of fire. This chute is sufficiently long to reach the opposite side of the street from the window to which it is applied, and of a sufficient capacity for a person to pass down through it. It is made enlarged or hopper-shaped at its mouth or upper end to fit the window, and the under edge, *b*, of its upper end is securely fastened to the inside of the sill of the window. The lower or outlet end of the chute has loops and ropes *c c'*, which may be furnished with gripping attachments and extensions for manipulating the chute from the street—that is, for extending, inclining, and holding it to make the descent of the person through it easier and more secure.

The window-frame is constructed with boxings and slides for the lower sash, B, of the window, and is fitted with pulleys *d* for cords having weights *e* at their ends to run up said sash when liberated. There are also arranged within extra boxings in the window-frame other pulleys, *f*, over which chains or cords *g*, having weights *h* on their one end and attached at their opposite end to the upper edge of the chute, pass to pull up or spread open the mouth end of the chute, so as to form a ready entry for the person about to descend and a curtain to prevent any embarrassment which might arise from viewing the distance of the descent, as shown in Fig. 1. The upper end or mouth of the chute is thus extended when said chute is liberated for the purpose, which may be done automatically, as hereinafter described, by releasing the lower sash, B, and allowing it to run up under the control of the weights *e*. The chute, in thus being spread open or extended at its upper end, is guided at the side edges of its mouth by rings *i* attached thereto, and arranged to run upon upright guide-rods K, secured to the window-frame.

When not in use the mouth end of the chute is drawn down or closed and the chute rolled up, as shown in Fig. 2, within a spring hung or hinged shelf and lid, D, applied to the window-sill or bottom of the window-frame on its inner side. This shelf and lid, when closed, keeps the chute down, and it may be secured in its closed position by a draw-pin or catch, *l*, arranged to engage with a keeper, *m*, on the window-frame, and with a keeper, *n*, on the lower sash, so that on liberating said catch the shelf and lid will be thrown back or open, the sash B be run up by its weight, and the chute be ejected from the window and its upper end or mouth extended ready for use.

Upon the lower sash, B, being run up by its

weights it strikes an alarm-liberating device, *a'*, which starts an alarm, E, of any suitable description, arranged within the upper portion of the window frame or casing. The sounding of the alarm, which, by reason of the window being open, will be heard in the street, will indicate to a policeman or others on the outside that the building is on fire and call their attention to the necessity of holding and directing the ejected chute. Said alarm will also serve to indicate to others in the building the existence of a fire and where the means of escape may be found; also, it may be extended or continued to liberate alarms on other floors of the building.

Inside of the chute A is a rope, G, which is connected by a short chain with the upper portion of the window-frame, directly over the chute, down and out through the lower end of which it passes when the chute is extended, and is coiled or rolled up with the chute when the latter is stowed away, after, if desired, first leading the upper portion of said rope over a hook suitably arranged to pass said portion of the rope down the side of the window-frame, so as to be out of the way when not required for use. This rope may be made of any suitable material, preferably of a fire-proof description, or which may be made fire-proof, and by uncoiling with the chute, as the latter is ejected from the window, serves as a safety or check rope for the person passing down through the chute to hold onto, also serving, if desired, for adjusting the inclinations or bend of the chute after its projection to the ground, when said rope may be held or secured at its lower end.

Outside of the chute is an escape and scaling ladder, which is formed of a series of rope rings or stays, H, of somewhat less circumference than that of the exterior of the chute. These rings, which are arranged at suitable distances apart transversely of the chute, are fastened at numerous points in their circumference to the chute, and form an outside ladder for firemen or others to ascend either to the floor from which the apparatus is ejected or to any lower floor, or for persons on the lower floors to make their escape by, the suspension and flexibility of the chute admitting of its being directed or manipulated to facilitate such uses of it. The rings or stays H, being made a little smaller than the chute, act more or less as a check to the too rapid descent of the person through the chute.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The flexible chute or conveyer A, attached at or along the lower edge of its upper end to the window-frame or interior of the building, and provided at or near opposite ends of its upper edge with cords or chains *g*, arranged to pass over pulleys *f*, and having weights *h* attached to them, whereby the chute is made self-opening at its mouth or upper end, essentially as herein described.

2. In combination with the weights *h*, cords *g*, pulleys *f*, and flexible chute or conveyer A, the fixed side guide-rods, K, and the rings *i*, attached to opposite side edges of the mouth end of the chute, substantially as specified.

3. In a flexible-chute fire-escape of tubular construction, the combination, with said chute A, having weights applied to open or extend its upper end, of the shelf and lid D, arranged to hold down said chute when coiled or folded up, and the lower sash, B, of the window, having attached weights operating to elevate it when released from its catch or fastening, substantially as and for the purpose or purposes herein set forth.

4. In a flexible-chute fire-escape, the combination, with the window-frame to which said fire-escape is applied, of the lower sash, B, of the window, having attached weights operating to elevate it, and an alarm, E, having its liberating device arranged for operation by said sash when raised, essentially as specified.

THOMAS PENN.

Witnesses:
A. GREGORY,
C. SEDGWICK.