

T. B. ERWIN & H. C. MEYER.

FIRE ESCAPE.

APPLICATION FILED OCT. 3, 1908.

952,315.

Patented Mar. 15, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

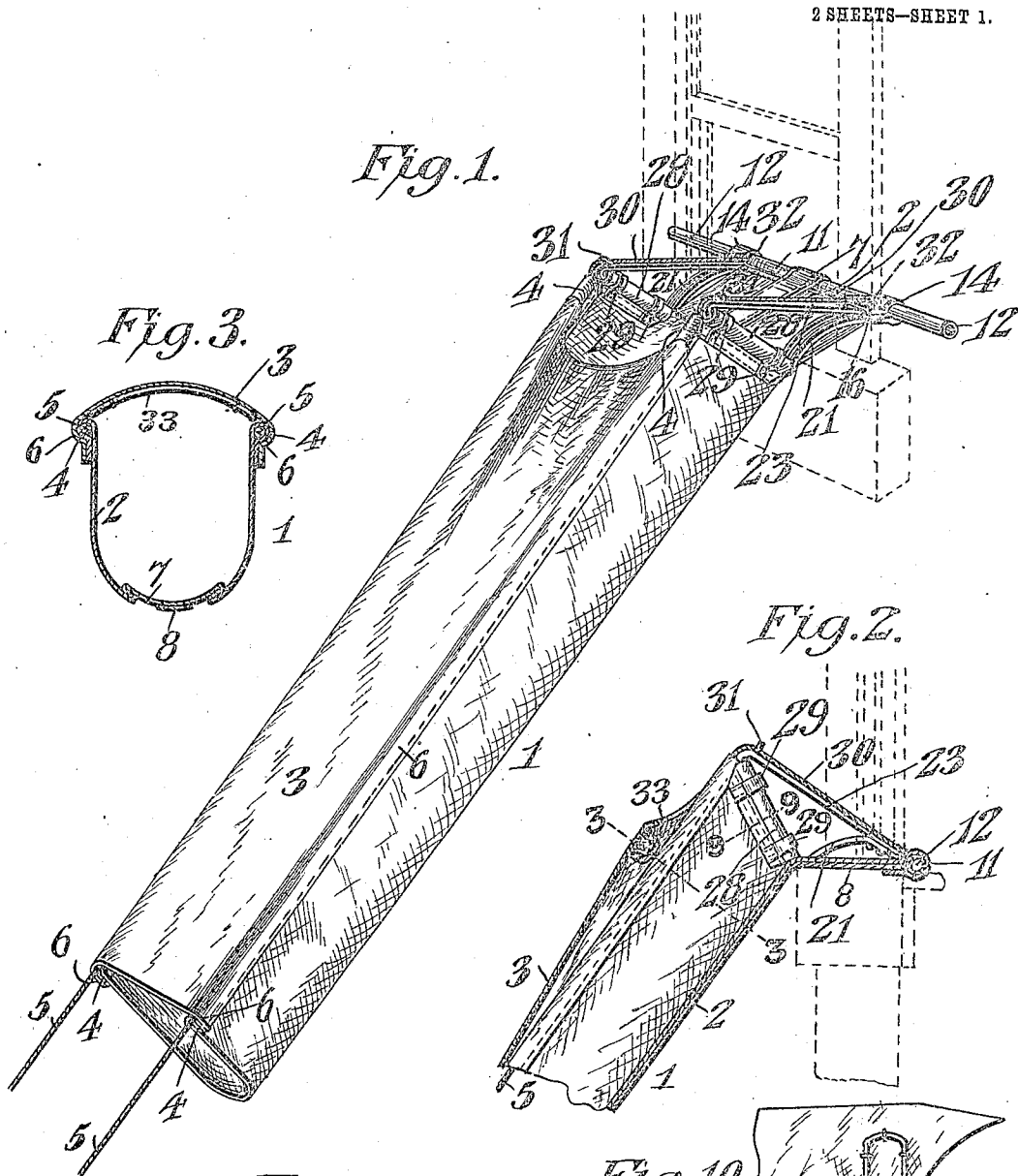


Fig. 3.

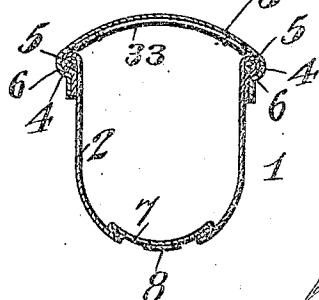


Fig. 2.

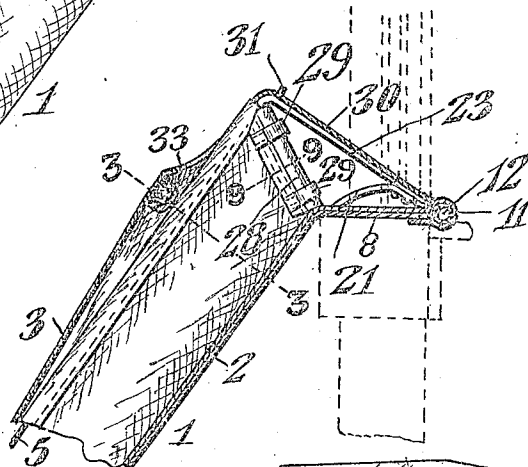
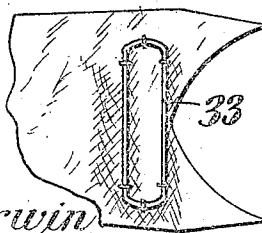


Fig. 9.



Fig. 10.



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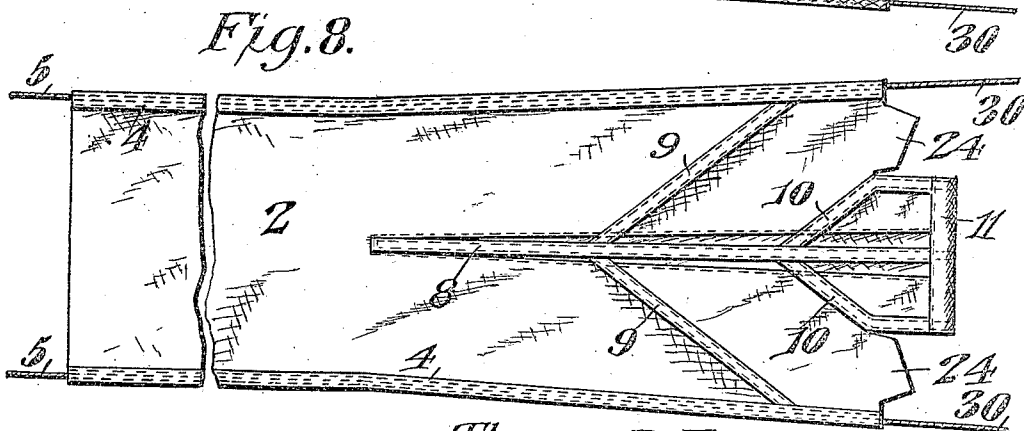
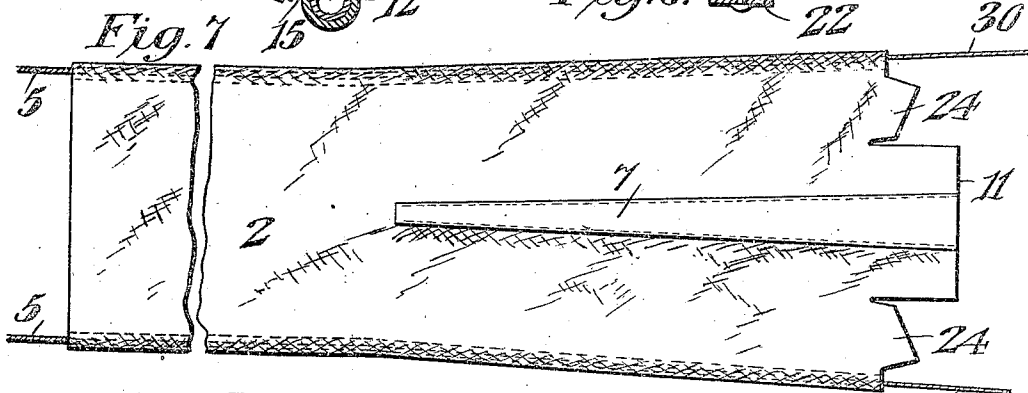
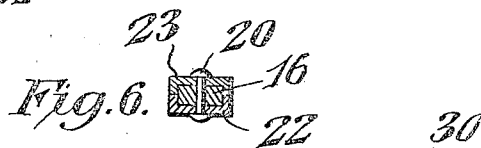
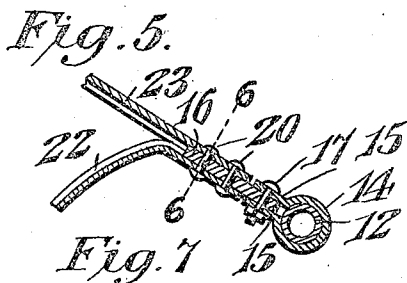
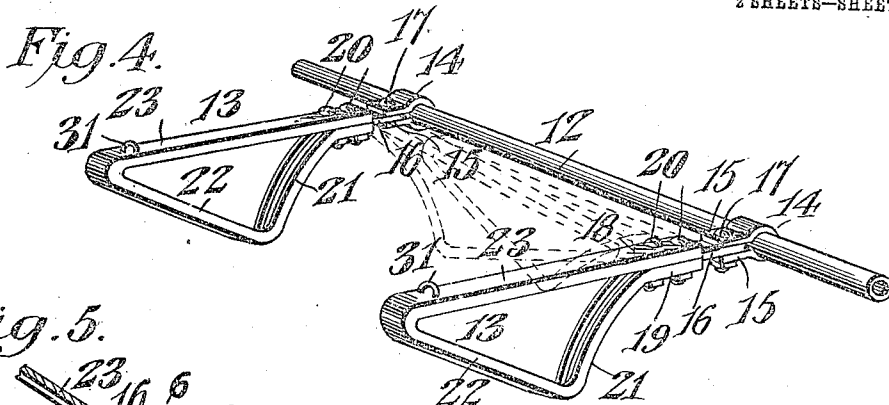
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

THOMAS B. ERWIN AND HENRY C. MEYER, OF BRITT, IOWA.

## FIRE-ESCAPE.

952,315.

Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed October 3, 1908. Serial No. 456,068.

*To all whom it may concern:*

Be it known that we, THOMAS B. ERWIN and HENRY C. MEYER, citizens of the United States, residing at Britt, in the county of Hancock and State of Iowa, have invented a new and useful Fire-Escape, of which the following is a specification.

The invention relates to improvements in fire escapes.

The object of the present invention is to improve the construction of fire escapes, and to provide a simple and comparatively inexpensive one, equipped with a flexible chute for transferring the occupants of a building to the ground, and adapted to be rolled up into compact form, and capable of being instantly applied to any window and arranged for use without employing additional fastening means.

A further object of the invention is to provide for fire escapes of this character safe and convenient means for enabling persons to enter the upper end of the chute from a window without danger of falling, and to afford a hand hold until a person has entered the chute.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a perspective view of a fire escape, constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the upper portion of the chute. Fig. 3 is a transverse sectional view of the same, taken on the line 3—3 of Fig. 2. Fig. 4 is a detail perspective view of the transverse bar or member and the foldable side frames. Fig. 5 is a detail sectional view, illustrating the manner of hinging the side frames to the transverse bar or member. Fig. 6 is a detail sectional view on the line 6—6 of Fig. 5. Fig. 7 is a plan view of the body portion and the flexible chute. Fig. 8 is a reverse plan view of the same. Fig. 9 is a detail sectional view, taken on the line 9—9 of Fig. 2 and illustrating the manner of securing the sides of

the chute to the foldable side frames. Fig. 10 is a detail view, illustrating the construction of the arched loop or frame for spreading and bowing the top of the chute.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates an inclined flexible chute, designed to be constructed of canvas, or other suitable material and composed of a body portion 2 and a top portion 3. The body portion has its sides bent upward to form the sides of the chute, as clearly illustrated in Figs. 1 and 3 of the drawings, and the longitudinal side edges 4 of the body portion of the chute are secured to side ropes 5, preferably by being bent around the same and stitched to form a casing. The top portion, which is a separate piece from the body portion, has its side edges 6 secured to the body portion of the chute at the side edges thereof. The top portion 3, which connects the sides, forms a covered chute, but it will be readily apparent that the top portion 3 may, if desired, be omitted to form an open chute. The chute is tapered, and the upper end of the body portion is cut along the median line, and a downwardly tapering longitudinal piece 7 is inserted to taper the upper portion of the chute and provide a more or less flaring mouth or entrance, the flare or taper being varied by tapering the piece 7. The inserted piece 7 is stitched to the body portion of the chute, and the said body portion is reinforced at the lower face by a central longitudinal strip 8 and angularly disposed transverse strips 9 and 10, constructed of webbing, or other suitable material. The body portion of the chute is also provided at the upper end with a flap or extension 11, arranged to extend across a window sill, as clearly illustrated in Fig. 1 of the drawings. The upper end of the chute is attached to a transverse bar or member 12 and foldable side frames 13. The transverse bar or member is adapted, as illustrated in Fig. 1 of the drawings, to engage a window at the interior of a building, and it is of sufficient length to extend across and project beyond the opening of the window, whereby the upper end of the inclined chute is securely anchored. The foldable side frames, which are hinged to the transverse bar or member 12 by the means hereinafter described extend through the window and are arranged upon the window sill and they form guards for

enabling a person to enter the chute with safety, and at the same time maintain the upper end of the chute open to facilitate a convenient entrance into the same. The transverse bar or member is equipped with hinged elements 14, consisting of sleeves or ruffs, arranged at opposite sides of the center of the bar or member and provided with projecting terminals 15, spaced apart to receive hinged leaves or plates 16 and pierced by pintles or pivots 17, which also pass through the leaves or plates 16.

The side frames, which are approximately triangular, are preferably constructed of channeled metal, the terminals 18 and 19 of the pieces being brought together and secured to each other and to the leaves or plates 16 by rivets 20, or other suitable fastening devices, the channels or grooves being located at the inner faces of the terminals receiving the outer portions of the leaves or plates 16. Each triangular side frame is composed of a bowed bottom bar or member 21, an upwardly inclined outer bar or member 22, and an inclined inner bar or member 23. The bottom bar or member is bowed to clear the projecting portions of a window sill and to enable it to fit firmly thereon. The inclined inner bar or member forms a guard rail and is arranged in convenient position to be readily grasped by the person entering the chute to enable the latter to be entered with perfect safety and without danger of falling.

The sides of the chute are connected to the outer bars or members of the foldable side frames, and are provided with flaps or extensions 24, which are folded around the outer bars or members and secured by stitching, or other suitable means. The foldable side frames are provided at the outer bars or members with strips or pieces 26, approximately semi-circular in cross section to present inner flat faces to the bars or members 22 and rounded faces to the canvas, or other material of the chute. The attached portions of the sides of the chute are also reinforced by separate pieces 28 of canvas, or other suitable material and by short strips 29 of webbing, which are folded around the bars 22 and 26 and stitched to the sides of the chute. The flap or extension 11 is folded around the central portion of the bar or member 12 and is secured to the same. The upper or outer end of the tapered inserted piece 7 forms a portion of the flap or extension 11, which is reinforced by the outer portion of the central longitudinal strip 11 and the outer portions of the transverse strip 10. The upper portions 30 of the side ropes are passed through eyes or loops 31 of the side frames and extend along the inner inclined bars or members 23, and are provided with terminal loops 32, which receive the transverse bar or member 12.

The side frames are foldable inward laterally of the chute, as illustrated in dotted lines in Fig. 4 of the drawings, and when they are folded in this manner, the flexible chute is adapted to be rolled up on the bar or member 12 and the side frames to arrange the fire escape compactly.

The fire escape may be instantly arranged for use by unrolling it and then placing the transverse bar or member across a window in the position before described. The lower or outer portions of the side ropes are designed to be held by one or more persons, or anchored by any suitable means.

The fire escapes are designed to be constructed of a width to permit them to be used in any of the windows of a hotel, or other building, and the cuffs or sleeves 14 are readily adjustable to permit the fire escape to be varied in width to adapt it for windows of different sizes, and they may be secured in their adjustment by clamping screws, or other suitable means, if desired. The flexible engagement, however, between the cuffs and the transverse bar or member may be utilized for retaining the former on the latter.

The top portion 3 of the chute is equipped with a transversely disposed arched spreading device or member, consisting of a loop or frame 33 of spring wire, or other suitable material. The loop or frame, which is located at the lower face of the top portion 3 of the chute, consisting of an elongated annulus and may be stitched, or otherwise secured at its sides and ends to the chute, and it prevents the upper end of the top portion from sagging and provides an enlarged entrance to the chute. Instead of employing a loop or open frame, a bowed spring or plate may be employed for arching the top of the chute.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is—

1. A fire escape including a flexible chute, a transverse bar or member connected with the upper end of the chute and extending laterally beyond the sides of the same and adapted to engage a window frame at opposite sides thereof and anchor the fire escape to the same, and independent metallic side frames connected with the chute and directly with the transverse bar at points intermediate of the ends thereof and extending outwardly from the latter to hold the mouth or upper end of the chute open, said side frames being also provided with portions arranged to form guards to enable the chute to be entered with safety.

2. A fire escape including a flexible chute, a transverse bar or member connected with the upper end of the chute and extending laterally beyond the sides of the same and adapted to engage a window frame at oppo-

site sides thereof, and side frames hinged to the bar or member at points intermediate of the ends thereof and foldable transversely of the fire escape, said frames being connected with the upper end of the chute and arranged to hold the mouth of the same open and forming guards to permit the chute to be entered with safety.

3. A fire escape including a flexible chute, a transverse bar or member arranged to extend across a window frame, and approximately triangular side frames carried by the bar or member and connected with the chute and having bowed bottom bars or members, and inclined upper guard rails, said bottom bars or members and upper guard rails being rigidly connected with each other.

4. A fire escape including a flexible chute, a transverse bar or member, and foldable side frames of approximately triangular shape hinged to the bar or member and composed of bowed bottom portions, inclined outer bars or members connected with the sides of the chute, and inclined inner or upper bars or members extending from the transverse bar or member to the sides of the chute and forming guard rails to permit the chute to be entered with safety.

5. A fire escape including a transverse bar or member, cuffs arranged on the bar or member and having extended terminals, side frames constructed of channeled metal having terminal portions fitted together with the groove or channel at their inner faces, leaves or plates secured in the grooves or channels and pivoted between the terminals of the cuffs, and a flexible chute connected with the side frames.

6. A fire escape including a transverse bar or member, side frames forming guards and connected with the transverse bar or member, said side frames being provided with guides, and a flexible chute connected with the side frames and provided with side ropes extending through the guides of the said frames and connected with the transverse bar or member.

7. A fire escape including a flexible chute having an attaching extension and provided with a tapered longitudinal piece inserted in the bottom of the chute and forming a tapered upper portion, a longitudinal reinforcing strip extending along the said piece, and angularly disposed transverse reinforcing strips also secured to the bottom of the chute.

8. A fire escape including a flexible chute having a top and provided with a spreading device consisting substantially of an elongated annulus secured at its opposite sides to the top of the chute.

9. A fire escape including a flexible chute having top, bottom and sides, attaching means at the upper end of the chute, and a resilient loop or frame spaced from the attaching means and extending across the top of the chute and bowed transversely to arch the chute.

In testimony, that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

THOMAS B. ERWIN.  
HENRY C. MEYER.

Witnesses:

C. W. ERWIN,  
F. T. BURDICK.