(No Model.) 2 Sheets—Sheet 1.

CHARLES F. SPENCER.

FIRE ESCAPE.

No. 266,062. Patented Oct. 17, 1882.

Fig. 2.

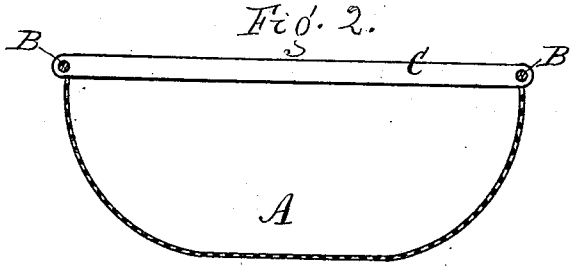


Fig. 3.

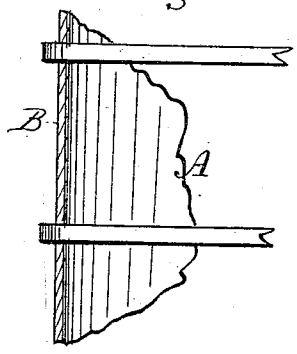


Fig. 1.

Attest.
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Chas. F. Spencer

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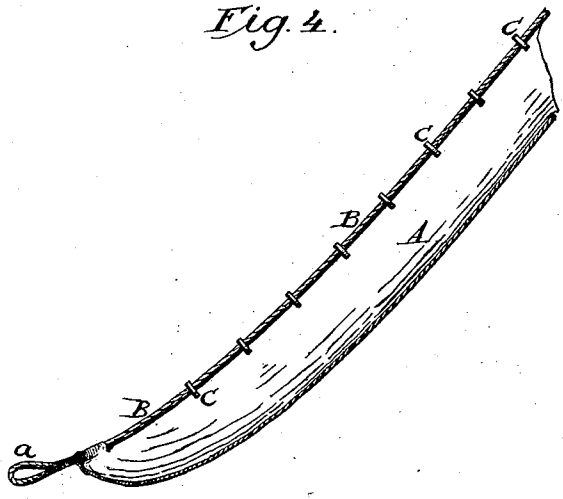
(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.



Attest.

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UNITED STATES PATENT OFFICE.

CHARLES F. SPENCER, OF ROCHESTER, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 266,062, dated October 17, 1882.

Application filed August 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, C. F. SPENCER, of Rochester, Monroe county, New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to a fire-escape in which there is combined with a flexible ladder whereon persons may ascend and descend in the usual manner a chute or trough suspended thereunder and adapted to permit the descent of persons therein.

The invention relates to the peculiar construction and combination of the foregoing elements, as represented in the drawings, and as hereinafter described, to check the motion of persons descending therein.

Referring to the drawings, Figure 1 represents a perspective view of my apparatus in position for use. Fig. 2 is a cross-section of the same. Fig. 3 is a top plan view of a portion of the ladder and chute. Fig. 4 is a vertical section through the lower end of the apparatus.

Referring to the drawings, B B represent two parallel ropes or cables, provided at suitable distances apart with transverse bars or rungs C, the ends of which are perforated to receive the ropes, as shown. By thus perforating the cross-bars to receive the ropes the parts are secured firmly and cheaply together and the spreading or widening of the apparatus prevented. At the upper ends the ropes may be provided with any suitable means of attachment to the window sill or frame, while at the lower end they are each provided with a loop adapted to be held by hand. By means of these loops the lower end of the ladder may be extended and held in any required position by persons standing at the lower end.

A represents the chute or trough, extending lengthwise beneath the ladder and attached at its outer edges thereto. This chute, which is of a U form in cross-section, as represented in Fig. 2, is secured firmly to the ladder in such manner as to hang suspended thereunder, and is made of suitable form to admit of the occupants sliding downward readily therein beneath the rounds of the ladder, which form a convenient means by which the person descending the chute may control the speed of descent therein, while at its lower end, instead of being left open, it has its bottom curved or rounded upward toward the ladder, in the manner indicated in Figs. 1 and 4, and attached to a flexible cross connection or rope, *d*, secured firmly to the ladder. This upward curvature of the bottom of the chute in relation to the ladder is a feature of the greatest importance, inasmuch as it serves to gradually arrest or check the motion of persons descending the chute, thus avoiding danger to life and limb. The use of the flexible connection *d* is also of importance, inasmuch as it will readily adapt itself to the form of the body descending the chute, and avoid the dangers which would be encountered were a rigid cross-bar employed. The cross-piece *d*, being made of such length that it may curve or sag downward slightly in the middle, will hang somewhat below the ladder until the trough is brought into use, whereupon it will be brought to the position represented in Fig. 1, thus holding firmly the lower edge of the chute in position to direct the descending body outward beyond the face of the ladder.

It will be seen that the lower upwardly-rounded end of the chute is in such position in relation to the rounds of the ladder that persons descending the chute are readily passed outward or upward below the rounds, and thus allowed to escape.

It is of course to be understood that when the apparatus is in use the lower end of the ladder will be held in such position as to keep the lower rounded end of the chute sustained above and clear of the ground.

The attachment of the mouth of the chute or sack to a cross-connection which is flexible instead of rigid is of the highest importance, since it avoids the great danger of injury to persons descending the chute, which would attend the use of a rigid cross-bar. It is also advantageous in that it permits the mouth of the chute to yield and hug closely around the body, thus developing an amount of friction sufficient to gradually arrest the descent—an action which cannot take place when the mouth of the sack is expanded by a rigid cross-piece. It will be perceived, also, that as the chute and the end of the cables by which it is sustained are extended beyond the ladder the attend-

ants may by means of the handles draw the sides of the chute together at the mouth, the better to check descending bodies, if required, without interfering with the use of the rigid ladder.

The employment of the perforated rounds or cross-bars, in connection with the ropes or cables passed through the same, is advantageous, as affording a cheap, simple, and secure construction, avoiding the usual expensive methods of lashing the rounds to the cables, and effectually preventing the usual liability of the cables being loosened from the rounds by the inward strain of the sack.

I do not claim broadly the combination of a ladder and a chute suspended thereunder; nor do I claim to be the first to curve the mouth of the chute toward the ladder; but,

Having thus described my invention, what I do claim is—

As an improvement in fire-escapes, the chute A, having its edges attached to the ropes or cables B, in combination with the rounds or cross-pieces C, having their ends perforated and mounted around the ropes B, as described and shown.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHAS. F. SPENCER.

Witnesses:
R. F. OSGOOD,
V. H. FELT.