(No Model.)

J. STEVER.

FIRE ESCAPE.

No. 294,523. Patented Mar. 4, 1884.

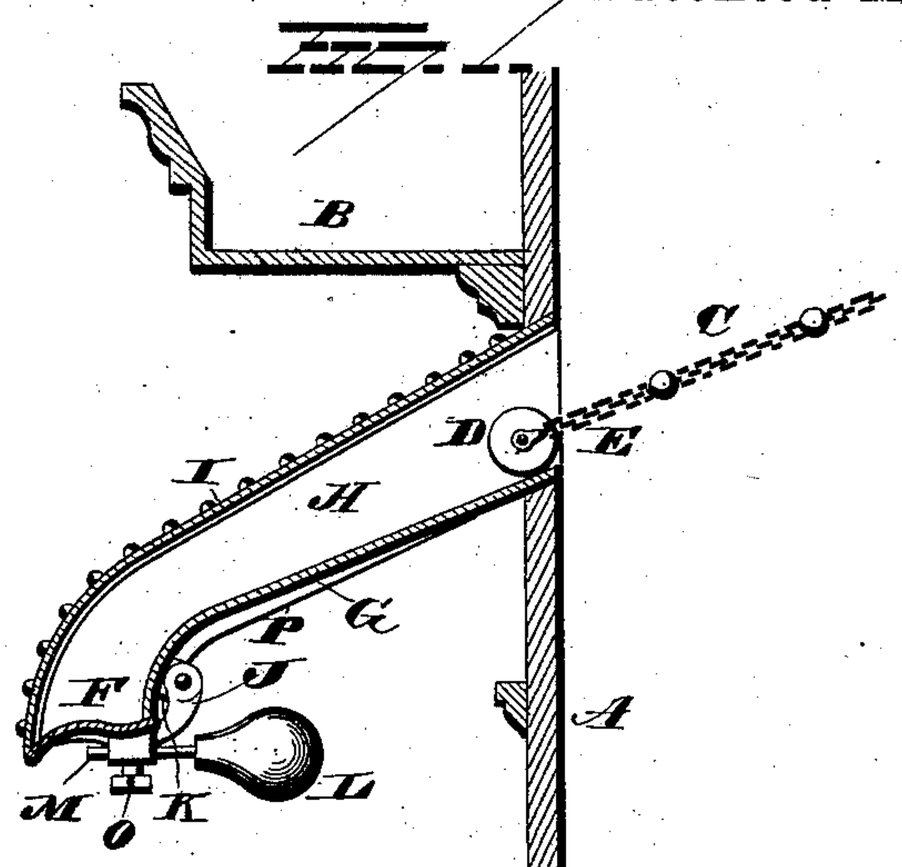


Fig. 2.

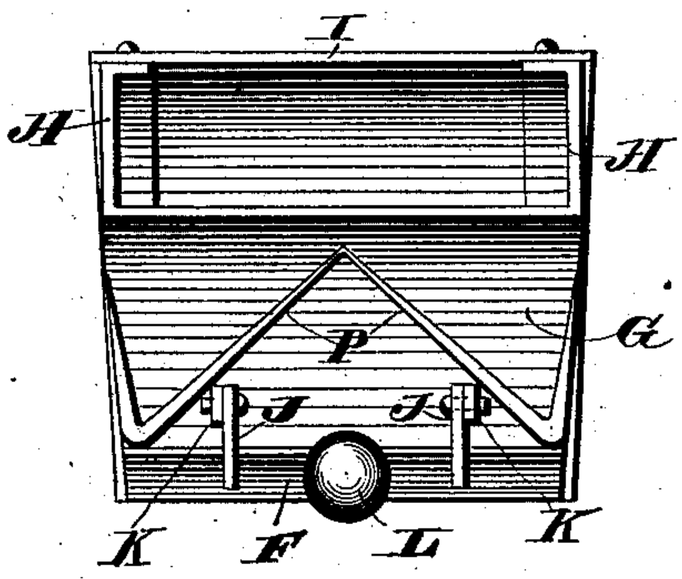


Fig. 3.

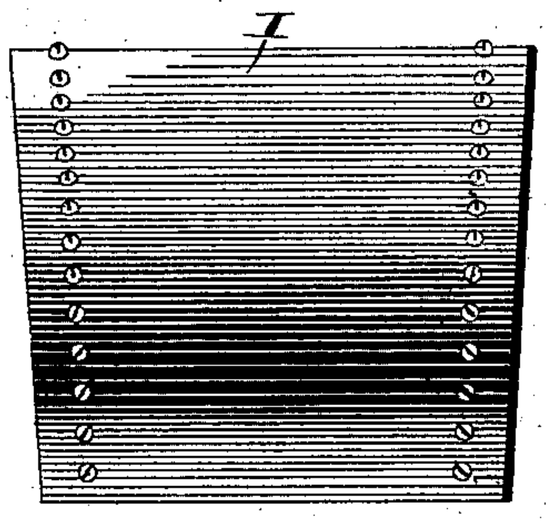
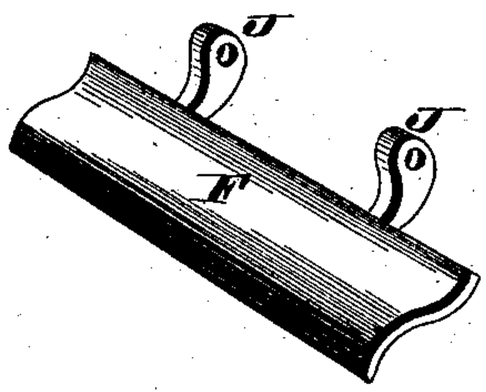


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

JEREMIAH STEVER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE BRIDGEPORT AUTOMATIC SAFETY LADDER AND HARDWARE COMPANY, OF SAME PLACE.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 294,523, dated March 4, 1884.

Application filed June 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH STEVER, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in fire-escapes, and more particularly to that class thereof which consist, essentially, of flexible metallic ladders, and of means for winding them upon drums located in the upper portions of the buildings to which the escapes are applied. Ladders of this class are guided in being lowered and raised, and also held at a suitable distance from the building protected by means of stationary chutes. As heretofore constructed these chutes have been found objectionable on account of their liability to become obstructed by accumulations of ice and snow, and by the buildings of birds, and on account of the tendency of high winds to interfere with their action.

The object of the present invention is to produce a chute which shall obviate the objections above recited, which shall be prompt in its action, and which shall combine simplicity, cheapness, and durability of construction.

With these objects in view my invention consists in the combination, with a flexible ladder and means for operating it, of a stationary chute opening downward and provided with a counterweighted valve or door, normally closing the opening, and arranged to be opened by the free end of the ladder or weight attached thereto.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view, partly in vertical section and partly in elevation, of my improved chute, the counterweighted valve or door thereof being shown in its closed position. Fig. 2 is an end view of the under side of the chute. Fig. 3 is a plan view, and Fig. 4 is a view in perspective of the valve or door.

A is the side wall, and B the cornice, of a building provided with a fire-escape embodying my invention.

The flexible metallic ladder C, which may be of any suitable construction, is attached to and adapted to be wound upon a drum located within the building, but not herein shown, as it constitutes no part of this invention.

A roll or cylinder, D, corresponding in length to the width of the ladder, is attached to the free end thereof by means of a chain, E, or other flexible connection. This roll, which acts as a weight, has the twofold function of steadying the ladder while being raised and lowered as well as when at rest, and of opening the counterweighted valve F, by means of which the opening of the chute G is completely closed and entrance thereto obstructed, except when the ladder is lowered. The said chute, which is rigidly secured to the side of the building protected, is preferably cast in one piece, although it may be constructed in sections, if desired. A shield, H, bolted or otherwise secured to the upper edges of the sides of the chute, is designed to exclude rain, snow, and all foreign matter therefrom, and to protect the free end of the ladder and the roll attached to it. The outer end of the chute is depressed from the horizontal, and curved so that it opens directly downward, whereby the valve or door which closes the opening is protected from all disturbing influences of whatever character acting from the top and sides of the chute, thus reducing its liability to get out of order to the minimum, whereas chutes having exposed openings and valves are not only often rendered ineffective by accumulations of ice and snow, but are open to injury from fragments of slate and pebbles, which may become detached from the roofs of protected buildings. The valve F is provided with two arms, J, which are preferably cast integral with it, and adapted to be pivotally secured to lugs K, depending from the bottom of the chute. Its outer end is curved, as shown, so that when in its open adjustment it will not engage with the ladder and prevent

it from being wound up. The valve or door is maintained in its normally-closed position by means of a weight, which may be arranged in any suitable manner. As herein shown, it consists of a ball, L, provided with a stem, M, fitting in a sleeve formed in the center of and on the under face of the valve. Whatever be the arrangement of the weight, however, it is adjusted so that while maintaining the valve or door in a normally-closed position it is so nearly balanced that it readily yields and opens under the weight of the roll which precedes the ladder in its descent. When the ladder and roll are retracted into the chute, the weight immediately acts to automatically close the valve. A set-screw, O, located in the sleeve is employed to retain the weight in place after being set with right effect. Two ribs, P, depending from the bottom of the chute and diverging to the outer edges thereof from a common starting-point, are designed to deflect water around and away from the valve, and thus prevent formation of ice, which would interfere with its operation.

By virtue of the construction of my improved chute, snow and ice are prevented from accumulating and interfering with its operation, it is not accessible to birds for building their nests, and its action, being entirely dependent upon a nicely-adjusted and counterweighted valve or door, instead of upon one arranged to be bodily lifted by the ladder, is always prompt, and, moreover, never affected by wind, however violent, whereas the pressure of the atmosphere upon the latter class of valves is sometimes so great during high winds as to prevent them from lifting and preventing the ladder from escaping. Inasmuch as the specific construction of my improved chute is susceptible of some changes, I would have it understood that I do not limit myself to the exact construction and arrangement of parts shown and described, but hold myself at liberty to make such alterations as fairly fall within the scope of my invention.

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

1. The combination, with a flexible ladder and means for operating it, of a stationary chute opening downward, and a counterweighted valve or door constructed and arranged to close the lower and open end of the chute, substantially as set forth.

2. The combination, with a flexible ladder and means for operating it, of a stationary chute having a downwardly curved outer end, the lower end being open, and a counterweighted valve or door constructed to be self-closing and to be opened by the ladder, substantially as set forth.

3. The combination, with a flexible ladder and means for operating it, of a stationary chute, and a balanced valve suspended from the bottom of the chute and arranged to normally close it and to be opened by the free end of the ladder, substantially as set forth.

4. The combination, with a flexible ladder and means for operating it, of a stationary chute, and a balanced valve arranged to normally close the chute and be opened by the free end of the ladder, and provided with an adjustable weight, substantially as set forth.

5. The combination, with a flexible ladder and means for operating it, of a stationary chute, a valve adapted to normally close it, and ribs depending from the bottom of the chute and arranged to deflect water away from the valve, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JEREMIAH STEVER.

Witnesses:
S. G. NOTTINGHAM,
GEORGE F. DOWNING.