Dec. 27, 1949 W. W. YEHLING 2,492,511

FIRE ESCAPE

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Fig. 1.

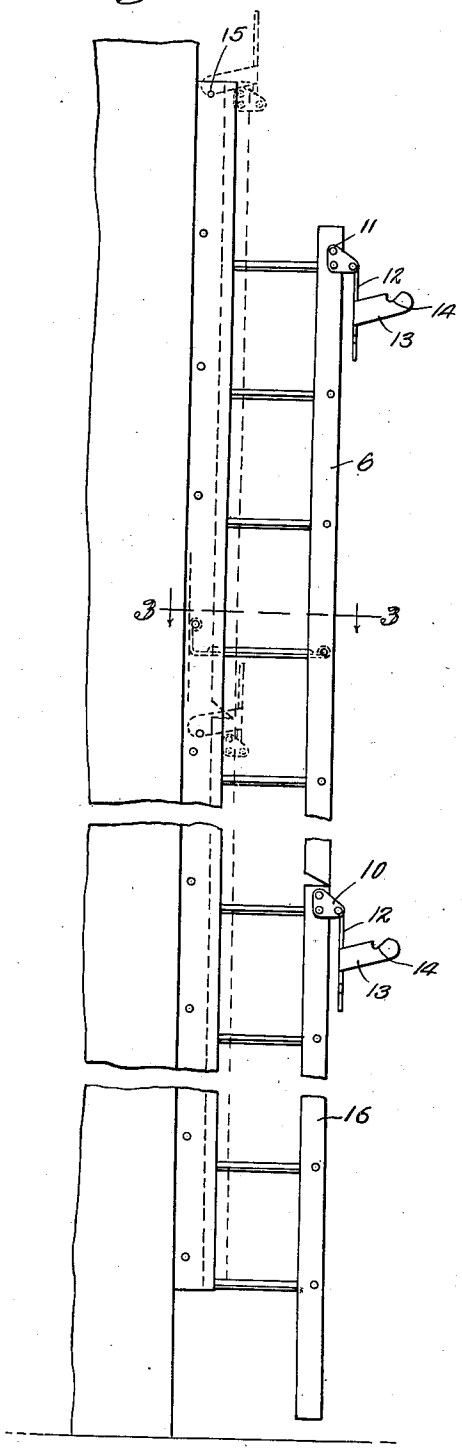
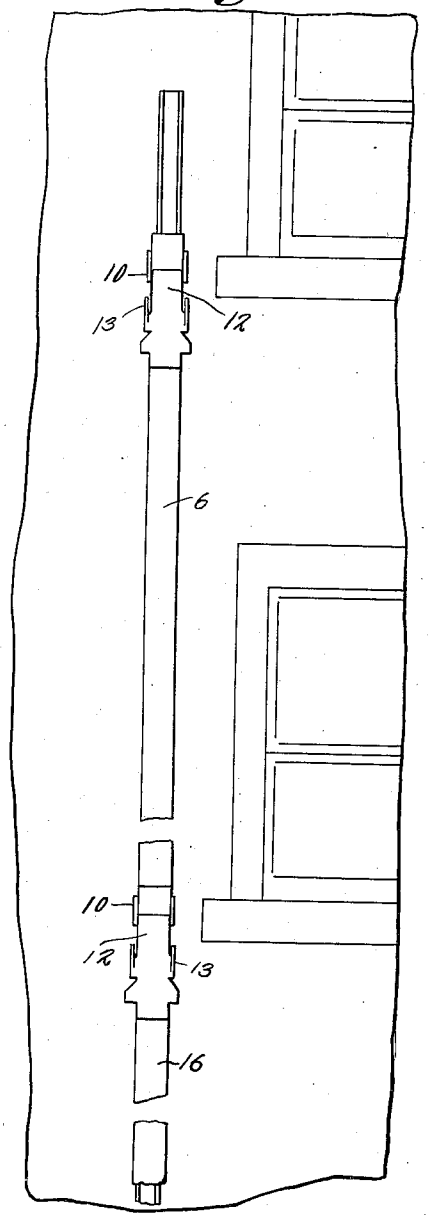


Fig. 2.



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Fig. 3.

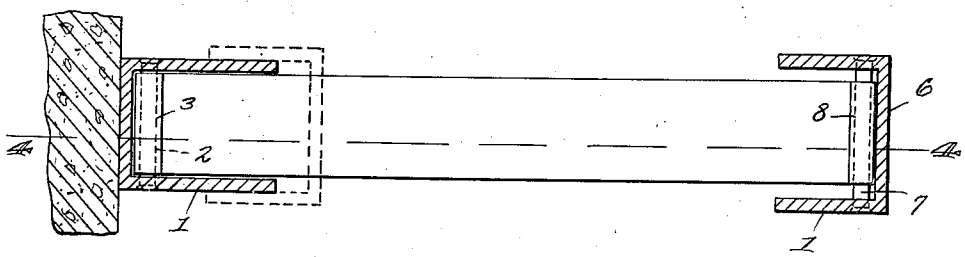


Fig. 4.

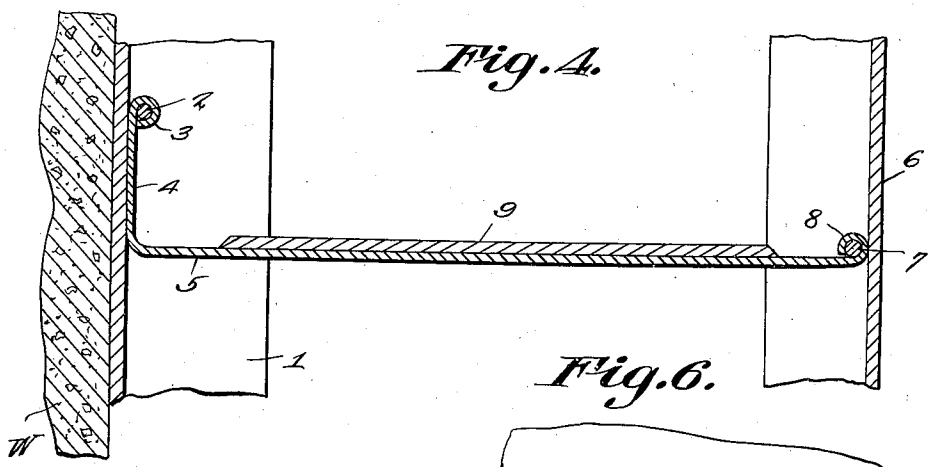
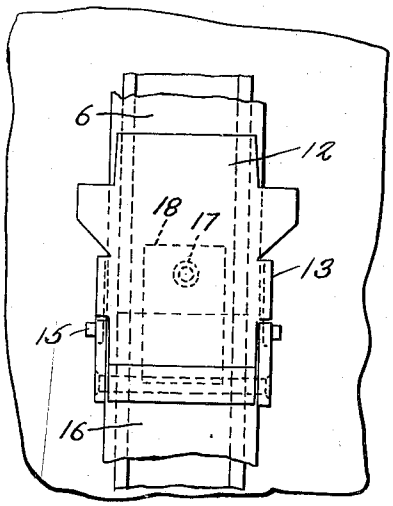


Fig. 6.



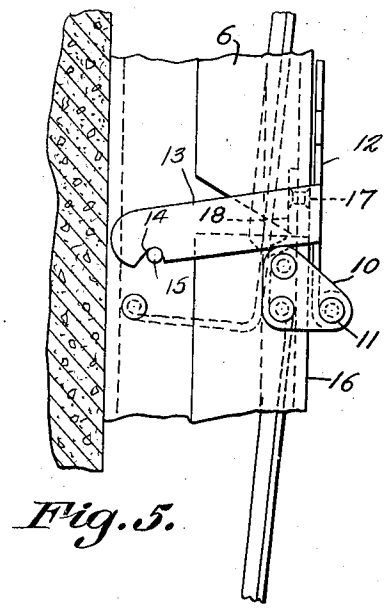


Fig. 5.

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FIRE ESCAPE

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Application February 14, 1946, Serial No. 647,470

1 Claim. (Cl. 228—36)

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This invention relates to fire escapes designed primarily for use on the outside of buildings at points where they can be reached readily from the adjacent windows or other outlets.

An object of the invention is to provide a fire escape, which, when not in use, would be collapsed so as to be inconspicuous and with the greater portion thereof protected from the weather.

Another object is to provide a fire escape which can be quickly released so as to swing outwardly into active position at which time it assumes the form of a substantially vertical ladder.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing the preferred form of the invention has been shown.

In said drawing

Figure 1 is a side elevation of the fire escape set up for use, portions being broken away and the position of the parts when the fire escape is collapsed, being indicated by broken lines.

Figure 2 is a front elevation of the structure shown in Figure 1.

Figure 3 is an enlarged section on line 3—3, Figure 1, the collapsed position being indicated by broken lines.

Figure 4 is a section through a portion of the ladder taken on the line 4—4 Figure 3.

Figure 5 is an enlarged side elevation of the latch portion of the fire escape.

Figure 6 is a front elevation of the structure shown in Figure 5, a fire escape being shown secured in collapsed position.

Referring to the figures by characters of reference 1 designates a channeled main member of such length as to extend from a point adjacent to the ground or other receiving surface thereunder to the uppermost point to be reached by the fire escape. This main channeled strip 1 can be fastened flat against a wall W in any suitable manner so as to be rigid relative thereto.

Extending through the main channel member 1 at regular intervals are transverse hinge bolts 2 and pivotally mounted on each of these bolts is a sleeve 3 provided at one end of a short arm 4 extending at right angles from one end of a step 5. The length of the arm 4 is equal to or less than the depth of the channel in the strip 1 but the steps 5 are of such length that, when extended at right angles to the strip 1, they will extend a considerable distance there beyond. To the outer ends of each of the steps 5 is pivotally connected an outer or movable channeled strip 6, the connection being effected by means of transverse pivot or hinge bolts 7 extending through sleeves 8 at the outer ends of the respective steps 5. The channeled movable member 6 is of greater width than the member 1 so that said movable strip 6 thus can be placed astride the member 1 as hereinafter explained.

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Each of the steps 5 can be provided with a tread 9 of any desired material.

One or more yokes 10 are mounted astride the movable strip 6 and are joined rigidly thereto by means of rivets 11 or the like. These yokes are extended outwardly from the strip 6 and to each of them is pivotally connected a latching plate 12 having a tongue 13 extending therefrom and formed with a notch 14.

Keepers in the form of laterally extended studs 15 are located at the sides of the main strip 1 and are so positioned that when the movable strip 6 is swung upwardly and backwardly toward the strip 1 so as to straddle it, the tongues 13 can be swung upwardly and backwardly by means of the plates 12 so that the studs 15 or keepers will be received by the notches 14. At this time the latch plates 12 are located past their dead centers so that the tongues are maintained in engagement with their keepers or studs 15 as shown for example by broken lines in Figure 1 and full lines in Figure 5. With the parts thus located all of the steps will be housed between the strips 1 and 6, the steps 5 being extended upwardly within the strips or the arms 4 extending forwardly as shown by broken lines in Figure 5.

When it is desired to use the fire escape the movable member 6 is unlocked from the stationary member 1 by pushing outwardly on the latch plate or plates 12 so that the notched tongues 13 thus will become disengaged from their keepers 15. However by exerting sufficient outward pressure against the movable member of the fire escape the tongues can be caused to lift off of their keepers due to the fact that the notches 14 have inclined walls which would act to deflect the tongues upwardly if subjected to excessive outward force.

When the movable member is pushed outwardly from the fixed member 1 it will swing downwardly, the steps 5 and the arms 4 serving as connecting links between them, and this movement will con-

tinue until the arms 4 come against the member 1 or until the lower end of the member 6 reaches a supporting surface thereunder. With the parts thus opened out as explained, the entire device can be used as a ladder down which persons can move readily to a point of safety.

When the fire escape is not in use all that is necessary is to push the member 6 upwardly and backwardly until it straddles the member 1 and then to shift the latches into holding positions.

With further reference to Figs. 5 and 6, it should be noted that a means is provided whereby automatic latch release of a lower movable member is caused by release of the movable member next above for outward swinging. The upper movable member 6 is disposed above movable member 16 next below. Latch plate 12 extending upwardly from movable member 16 overlies the outer surface of member 6. Member 6 has secured to its inner surface, by means of rivet 17, a shoe 18 that extends downwardly into engagement with the inner surface of the lower member 16. Accordingly, assuming that the uppermost movable member is released for outward swinging, and is no longer latched to and supported by the stationary member, said uppermost movable member will exert outward pressure against the upwardly extended latch plate of the movable member next below. Additionally, shoe 18 will also exert outward pressure against the movable member next below, and the result will be that tongues 13 of said lower movable member, constituting a friction latch, will be given pull in a direction away from the stationary member, and such pull will be sufficiently strong to disengage the latch. Thus, each movable member automatically unlatches the movable member next below, and this is carried out all the way down the building.

While this invention has been described more especially as a fire escape, it is to be understood that it can be used in many places where foldable ladders are desirable. Therefore the term "fire escape" is to be understood as intended to apply to all forms of ladders within the scope of the claim.

What is claimed is:

In a fire escape a stationary member, upper and lower movable members, steps hingedly connected at their opposite ends to the stationary member and to the movable members for swinging of the movable members away from the stationary member to provide a ladder, a latch plate pivoted at the upper end of the lower member and including a friction latch normally engaging the stationary member and releasable by pull exerted in a direction away from the stationary member, said latch plate being extended upwardly to overlie the lower end of the upper member so as to receive pressure from the upper member when the upper member is freed for swinging away from the stationary member, and means at the lower end of the upper member for releasing the latch comprising a shoe extending downwardly from the lower end of the upper member and adapted to exert outward pressure against the lower member when said upper member is released for outward swinging.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
278,301	Welsh	May 22, 1883
289,876	Wilson	Dec. 11, 1883
691,520	Ballard	Jan. 21, 1902
704,126	Seessle	July 8, 1902
758,441	Harden	Apr. 26, 1904
785,810	Koopman	Mar. 28, 1905

FOREIGN PATENTS

Number	Country	Date
107,271	Australia	Apr. 26, 1939