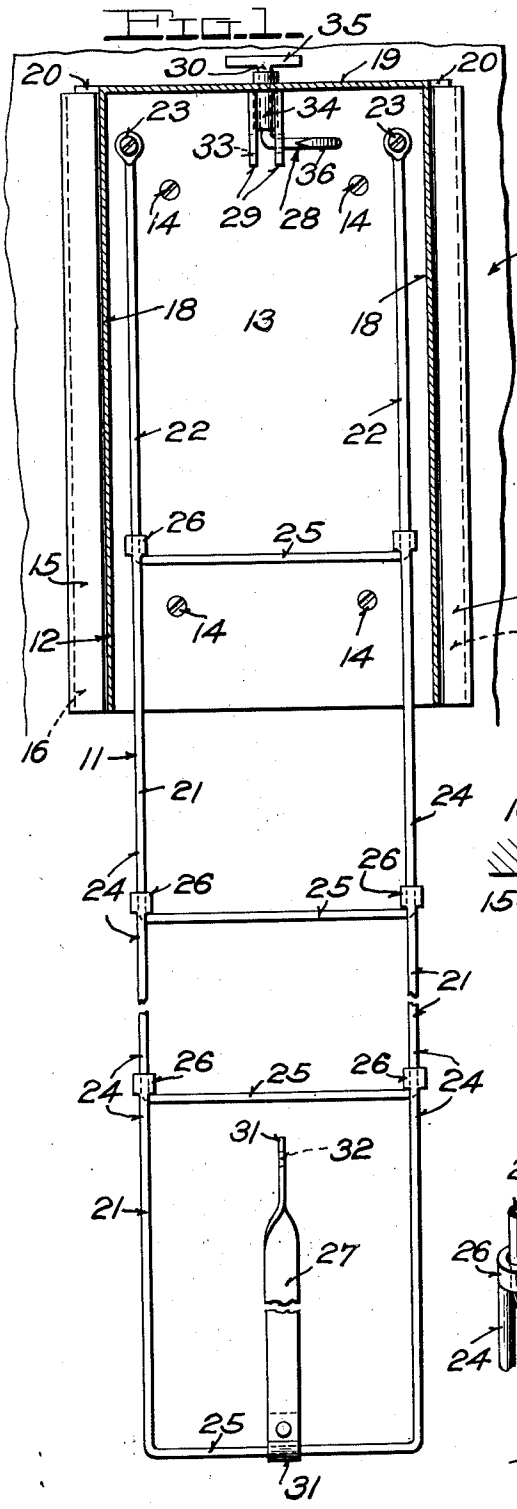
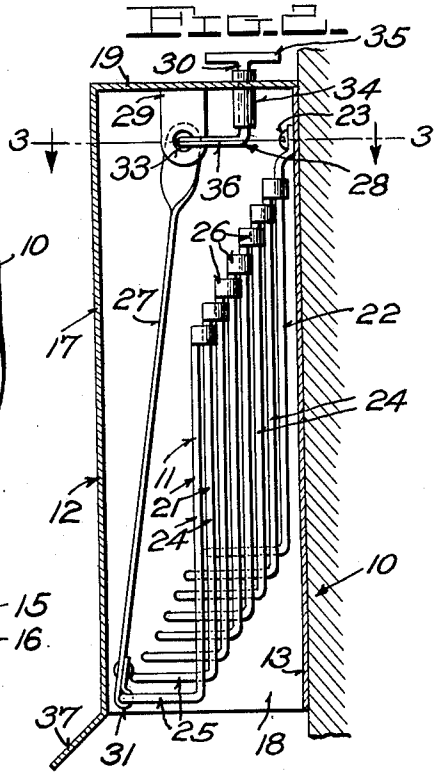
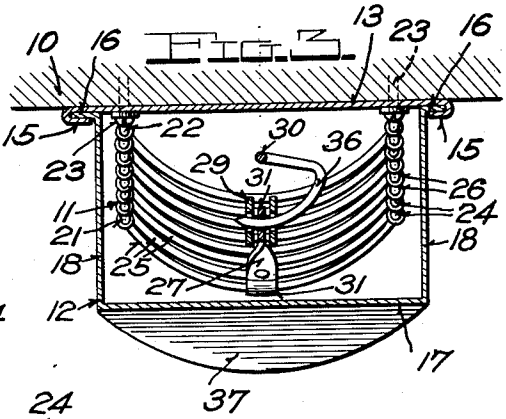
Dec. 12, 1950 A. A. McCALL 2,534,202

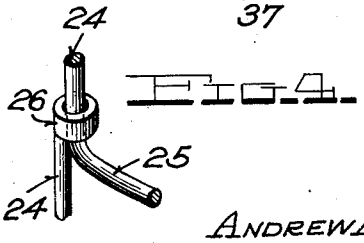
FIRE ESCAPE LADDER AND STORAGE MEANS THEREFOR

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FIRE ESCAPE LADDER AND STORAGE MEANS THEREFOR

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8 Claims. (Cl. 228—38)

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This invention relates to fire escapes of the type mounted on the outside wall of a dwelling or other building immediately below the sill of a second or third floor window and consisting of a folded or telescoped ladder normally housed within a casing but readily releasable in case of a fire so that the ladder may drop to a usable position and permit occupants of the building to descend from the window to the ground.

The principal object of the invention is to provide a small and compact fire escape of the above character which will be reliable in operation and effectively usable in an emergency.

A further object is to provide a simple means for holding the ladder in its telescoped form in a removable casing by a locking means which is readily releasable and which also serves as a handle to facilitate the removal of the casing after the ladder is released.

With the above and other objects, and advantages in view, the invention consists in the novel construction, combination and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawings in which:

Fig. 1 is a front view of the fire escape with the ladder in its lowered or usable position, parts being broken away and in section,

Fig. 2 is a vertical front to rear section through the casing, the ladder being shown in its collapsed or telescoped position,

Fig. 3 is a horizontal section taken on the plane of line 3—3 of Fig. 2 looking in the direction of the arrows, and

Fig. 4 is a detail perspective view showing one of the slidable connections between the sections of the ladder.

Referring more in detail to the drawings which show the present preferred embodiment of the invention, the numeral 10 denotes the wall of a building, 11 the ladder and 12 the casing which encloses and protects the ladder when it is in its collapsed position shown in Figs. 2 and 3. The casing is removably mounted on a supporting plate 13 suitably secured by screws, bolts or other fastenings 14 to the wall 10 immediately beneath the sill of a window (not shown) as is customary. The attaching or mounting member 13 is preferably a rectangular metal plate and has its side edges bent forwardly and inwardly to provide guide channels 15 adapted to removably receive oppositely projecting flanges 16 on the casing 12. The latter is shown as a substantially rectangular metal box having a front wall 17, two side walls 18 and a top wall 19, the bottom being open and the rear being closed by the plate 13 when the

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casing is supported upon it as seen in Figs. 1 and 2. The flanges 16 are formed by outwardly bending the edges of the walls 18 and they slide downwardly into the channels 15, their downward movement being limited by the engagement of the inner edge of the top 19 with the upper edge of plate 13 or by lugs or projections 20 on the top 19 resting on the upper ends of the guides 15.

The ladder 11 comprises a suitable number of similar links or sections 21 slidably connected to each other, the uppermost section 22 being permanently connected to the plate 13 by welding, rivets, bolts or other fastening means although if desired suitable bolts or screws 23 may be used to extend into the wall 10 as indicated in Fig. 3. Each ladder section is U-shaped being formed by bending a metal rod to provide parallel side bars 24 connected at their lower ends by an outwardly bowed cross bar or round 25. These curved rounds project outwardly from the wall 10 to give clearance for a part of the foot while descending the escape. At the upper ends of the side bars 24 are integral sleeves 26 which slide on the bars 24 of the next above ladder section, the sleeves being of sufficient vertical height to guide the sections on each other to keep them in line and prevent binding as the sections slide on each other while the ladder is being either extended or collapsed. The construction is such that the sections slide vertically being slightly off-set from each other as seen in Fig. 2 and hence the sections may be telescoped or collapsed into a very small and compact arrangement.

A novel combination locking and releasing means for both the ladder and the casing is provided, a part of such means permitting the quick and easy removal of the casing or cover when the ladder has been dropped for use. It includes a link or strap 27 for holding the ladder sections folded or collapsed, a latch 28 and coacting keeper 29 to lock the casing and the strap together and a latch operating member 30 which also serves as a handle to permit quick removal of the casing after the casing and strap have been disconnected from each other. The link 27 is preferably in the form of a strip or strap of flexible metal such as copper or brass having one end 31 passed around the round 25 of the lower most section 21 and riveted to loosely and pivotally secure said end. The other end of the strap is given a right angular twist to permit it to enter between spaced lugs 29 depending from the underside of the top 19 and forming the keeper for the latch. Said twisted end is formed with an aperture 32 which may be aligned with apertures 33

formed in the lugs 29, the aligned apertures receiving the latch 28. The operating member 30 is in the form of a vertical shaft rotatable in a tubular bearing 34 extending through and fixed in the top 19, the upper end of the shaft carrying a suitable handle 35 preferably in the form of a cross bar. The latch is carried by the lower end of the shaft and comprises a curved portion on the end of a radially projecting arm 36 fixed to the shaft. It will be seen on reference to Fig. 3, that when the shaft 30 is given a quarter turn or less in a counter clockwise direction the curved latch 29 will be moved out of the said aligned apertures to release the strap from its connection with the casing, and the collapsed ladder sections will instantly drop by gravity to the usable position shown in Fig. 1. The operator uses the handle 35 in releasing the latch and he may then pull upwardly on the handle to lift the casing 12 entirely free from the channels 15.

A small hand-hole normally closed by a pivoted or removable cover (not shown) may be provided in the upper part of one of the walls 17 or 18 to facilitate the engagement of the latch with the aperture 31 in the strap to lock the parts together after the sections of the ladder have been telescoped to folded or collapsed position. The casing 12 may extend sufficiently below the collapsed ladder sections to protect them from snow, sleet and rain, and if desired the front wall 17 may be provided with an outwardly and downwardly extending deflector 37 which will tend to direct rain, etc., from the ladder. All parts may be made of rust-proof metal or treated to prevent rust or corrosion so that the escape will be in condition for use at all times.

It is believed the operation will be apparent from the foregoing without a more extended explanation but attention is called to the following advantages of the invention. To put the escape into usable form it is only necessary to reach over the window sill and give the handle a slight turn and to then pull upwardly on it. The device is therefore practically automatic in operation and will enable persons to make an immediate escape from a second or third floor window in case of a fire or other emergency. The locking of the collapsed ladder, which is connected to the anchored wall plate, to the casing will prevent a prowler or anyone on the ground from releasing the ladder and using it as a means to enter the house through the upper window. The vertical disposition and sliding of the ladder sections with their outwardly bowed steps or rounds enables the ladder to be collapsed in a very compact form so that the projection of the device from the building wall will be comparatively slight. At the same time the sections will quickly drop straight down when the ladder is released. The device is therefore sure and reliable in operation, and will be at all times ready for instant use since the casing protects the ladder parts from the weather so that snow or ice cannot form upon them.

From the foregoing, taken in connection with the accompanying drawing, it will be seen that novel and advantageous provision has been made for carrying out the objects of the invention, and while preferences have been disclosed, attention is invited to the possibility of making variations within the scope of the invention as claimed.

I claim:

1. A fire escape comprising an attaching member to be anchored to the outside of the wall of a building, a casing supported by said member and upwardly removable therefrom, said casing having an open bottom and a closed top, a vertically collapsible ladder in said casing having slidably engaged sections movable downwardly through said open bottom, the uppermost ladder section being secured to said member, a link for holding the ladder collapsed in said casing, said link having one end attached to the lower most section of the ladder and its other end disposed adjacent the top of the casing, a keeper on the under side of the casing top, and a manually actuated latch carried by said casing and engagable with said keeper and with the upper end of said link to hold the ladder collapsed in said casing and to prevent upward removal of said casing.

2. A fire escape comprising an attaching member to be anchored to a wall, a casing supported by said member and upwardly removable from the same, said casing having an open bottom, a vertically collapsible ladder in said casing having slidably engaged sections movable downwardly through said open bottom, the uppermost section being secured to said member, and manually releasable means connecting the lowermost section of said ladder to said casing to hold the collapsed ladder in the casing and to prevent upward removal of said casing, said releasable means comprising a link connected to the lowermost section of said ladder and a movable latch carried by said casing and releasably engaged with said link.

3. A fire escape comprising an attaching member to be anchored to a wall, a casing supported by said member and upwardly removable from the same, said casing having an open bottom, a vertically collapsible ladder in said casing having slidably engaged sections movable downwardly through said open bottom, the uppermost section being secured to said member, and manually releasable means connecting the lowermost section of said ladder to said casing to hold the collapsed ladder in the casing and to prevent upward removal of said casing, said releasable means comprising a link connected to the lowermost section of said ladder, a swingable latch within said casing to releasably engage said link, a rotatable shaft extending through the top of said casing and carrying said latch, and a handle on the outer end of said shaft.

4. A fire escape comprising an attaching member to be anchored to a wall, a casing supported by said member and upwardly removable from the same, said casing having an open bottom, a vertically collapsible ladder in said casing having slidably engaged sections movable downwardly through said open bottom, the uppermost section being secured to said member, and manually releasable means connecting the lowermost section of said ladder to said casing to hold the collapsed ladder in the casing and to prevent upward removal of said casing, said releasable means comprising a strap having its lower end connected to the lowermost section of said ladder and an aperture in its upper end, a vertical shaft extending through and rotatable in the top of said casing and having a handle at its upper end, a swingable latch on the lower end of said shaft, and a keeper carried by said casing and having an aperture with which the aperture in said strap may be aligned, said latch being movable into and out of said aligned apertures.

5. In a fire escape, a support for mounting on the wall of a building, a collapsible ladder having vertically disposed sections slidable upon each

other, the uppermost section having means at its top for attaching it to a building wall, a vertical link connected at its lower end to the lowermost section of said ladder and having its upper end disposed adjacent said support when the ladder sections are telescoped to collapsed position, and a manually operable latch carried by said support and releasably engaged with said link to hold the sections of said ladder in collapsed position.

6. A fire escape comprising an attaching member to be anchored to the outside of a wall of a building, a casing supported by said member and upwardly removable from the same, said casing including a top and having an open bottom, a vertically-collapsible, sectional ladder in said casing, and having its uppermost section fixed against vertical movement, the other sections being movable downwardly through said open bottom, a link for holding the ladder collapsed in said casing, said link having its lower end attached to the lowermost ladder section and its upper free end disposed adjacent to the top of the casing, a keeper fixed in the upper part of said casing adjacent its top and a manually releasable latch carried by said casing and engagable with both said keeper and the upper end of said link to hold the ladder collapsed in said casing and to prevent upward removal of said casing from said attaching member.

7. The structure of claim 6 in which said manually releasable latch comprises a vertical shaft extending through the top of the casing and rotatably mounted thereon, a swingable latch on the inner end of said shaft and a handle on the outer end of said shaft, said handle being useable to lift the casing from said attaching member when said latch member is in released position.

8. A fire escape comprising a flat rectangular attaching plate to be anchored to the outside of the wall of a building and having at its sides oppositely facing vertical guides, an open-bottom casing having top, front and side walls, said side walls having vertical, oppositely projecting flanges to slide in said guides and permit upward removal of said casing from said attaching plate, a vertically-collapsible, sectional ladder in said casing, the uppermost section of the ladder being secured to said attaching plate within the casing and the other sections being movable downwardly through the open bottom of the casing, a member to hold the ladder collapsed in said casing, said member having its lower end attached to the lowermost section of the ladder and its upper end disposed adjacent to the top of the casing, a keeper on the under side of said casing top, and manually actuated latch carried by said casing and engagable with said keeper and with the upper end of said member to hold the ladder in collapsed position and to prevent upward removal of said casing.

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