Oct. 28, 1952 K. BAXTER 2,615,665

SAFETY LADDER BRACKET

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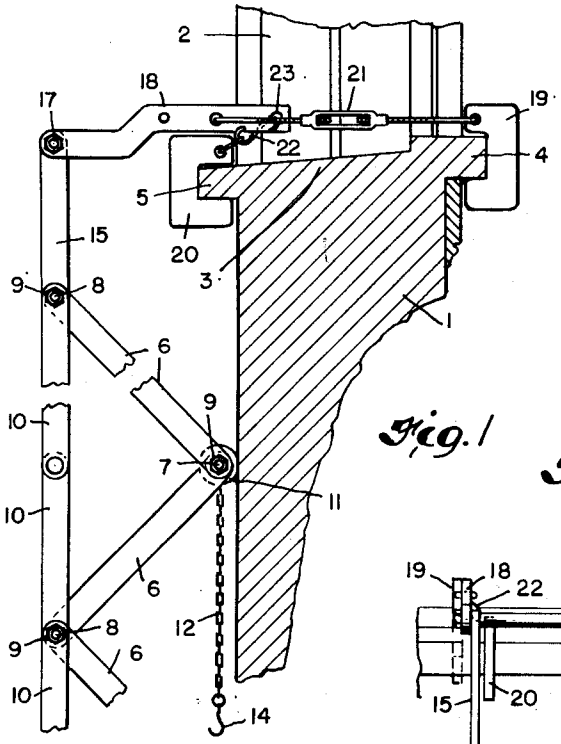

Fig. 1

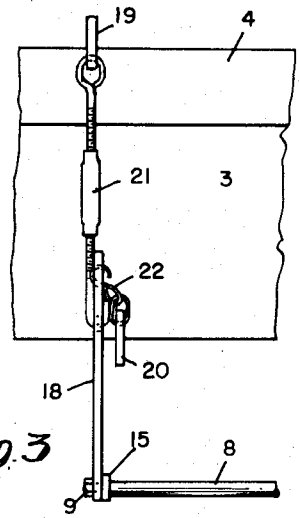

Fig. 3

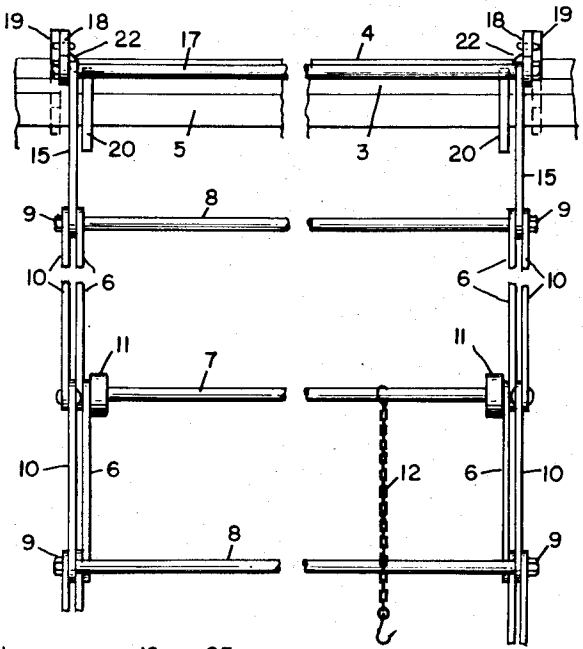

Fig. 2

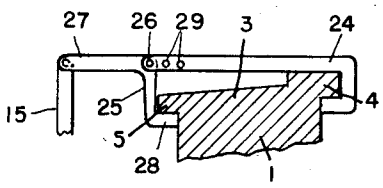

Fig. 5

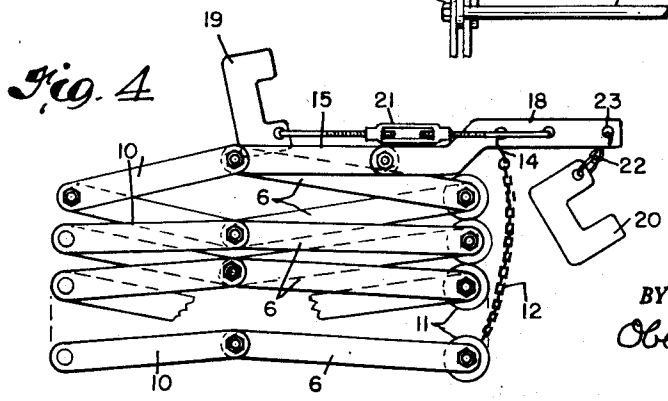

Fig. 4

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SAFETY LADDER BRACKET

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1 Claim. (Cl. 248—208)

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The present invention relates generally, as indicated, to safety ladders, and more particularly to a collapsible ladder which is adapted to be quickly secured to a window or like opening in a building and unfolded whereby to provide an escape in the event of fire or other emergency.

It is one of the principal objects of this invention to provide a novel ladder structure which when collapsed occupies a minimum of space for storage in any convenient out-of-the-way place.

It is another object to provide novel means whereby the ladder may be quickly and firmly clamped to a windowsill of a building with the ladder hanging downward along the outer wall of such building.

Another object is to provide a clamping means so constructed that the weight of the ladder plus that of the person or persons thereon is operative to effectively increase the clamping action effected by said means.

Other objects and advantages will become apparent as the following description proceeds.

To the accomplishment of the foregoing and related ends, said invention, then, comprises the features hereinafter fully described and particularly pointed out in the claim, the following description and the annexed drawing setting forth in detail certain illustrative embodiments of the invention, these being indicative, however, of but a few of the various ways in which the principle of the invention may be employed.

In said annexed drawing:

Fig. 1 is a side elevation view of a preferred embodiment of my invention showing the same in an unfolded position suspended from the windowsill of a building;

Fig. 2 is a front elevation view;

Fig. 3 is a top plan view;

Fig. 4 is a side elevation view illustrating the invention in its collapsed or folded position; and

Fig. 5 is a side elevation view of a modified form of clamping means by which the ladder may be suspended from a windowsill.

Referring now to the drawing and first to Fig. 1, there is shown therein a fragmentary vertical cross section of a building 1 through the window 2 thereof, the term "building" as used herein including dwelling houses, apartments, hotels, commercial and industrial buildings, etc. Said window is of the usual construction including a sill 3 having a projection 4 into the room and a projection 5 extending outward of the outer wall of the building.

The ladder structure herein illustrated comprises parallel side strips each of which comprises

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a string of long links 6 arranged in zig-zag form with the adjacent ends pivotally connected to one another by the rods 7 and 8, said rods extending across said sides to thus join them together. As shown, the links 6 fit over reduced end portions of said rods 8, and nuts 9 or the like threaded onto such reduced ends are employed for retaining said strings and rods together.

Pivotally connected to each of the rods 8 and also pivotally connected to one another are links 10 which, as best shown in Fig. 1, assume an in-line position relative to one another when the ladder is unfolded to thus retain the string of links 6 in a zig-zag form. Said links 10 also serve as convenient hand rails adapted to be grasped by persons going up or down the ladder. Thus the rods 8 constitute rungs which are spaced from the outer wall of the building to thereby provide toe clearance.

At the ends of the rods 7 there are provided rollers 11 preferably made of rubber or rubber-like material so as not to mar the outer wall of the building when the ladder is lowered from the window. Said rollers also facilitate unfolding of the ladder.

Connected to the lower end of the ladder is a short chain 12 provided with a hook 14 which is adapted to be hooked onto the suspending means, as shown in Fig. 4, whereby to retain the ladder in a folded condition.

Pivotally connected to the uppermost rod 8 is one end of a link 15 which has its other end pivotally connected as at 17 to the outer end of a generally horizontally disposed lever 18. Connected to the inner end of lever 18 are two hook members 19 and 20, respectively hooked under the projections 4 and 5 of the windowsill 3. The means which connects hook 19 to lever 18 preferably includes a turnbuckle 21 which may be suitably adjusted to accommodate different sizes of windowsills, such adjustment being preferably made in advance so that should it be necessary to use the ladder in an emergency it can merely be hooked over the windowsill and lowered without necessitating such time consuming adjustment.

The hook 20 is pivotally connected at the point 23 to lever 18 as by a chain or S-hook 22.

It is now apparent that with the suspending means just described any load applied at the point 17 as by the weight of the ladder suspended therefrom will cause the hooks 19 and 20 to be drawn toward one another to thus be firmly engaged with the sill projections 4 and 5, and, likewise, when one or more persons are on the ladder

such drawing-together action of the hooks will be correspondingly greater.

In the modified suspension means illustrated in Fig. 5 there is a hook member 24 associated with the inner projection 4 of the windowsill 3 and a hook 25 associated with the outer projection 5 of the windowsill, said hooks being pivotally connected to each other at the point 26 and the latter hook member being of Z-shape providing an outwardly extending leg 27 to the outer end of which the ladder is connected, and an inwardly extending leg portion 28 disposed under the projection 5. Here, again, as in the structure illustrated in Figs. 1–4, the weight of the ladder will effect drawing of the hooks 24 and 25 toward one another into firm clamping relation to the windowsill. In order to accommodate different sizes of windowsills the hook 24 is provided with a plurality of openings 29 about any of which said hook 25 may be pivotally connected.

In summary, it can be seen that I have provided a safety ladder which can be adjusted to fit different sizes and types of windows and which folds up to a compact size so that it can be stored either under the windowsill or some other convenient place near the window. Likewise, the ladder can be made of light-weight material and can be made to any convenient length, viz. long enough to extend from one window to the next one below or long enough to extend for two or more stories.

As an important safety feature I have provided a novel clamping arrangement which avoids the possibility of jarring loose but yet at the same time such clamping means is of such simple form that it can be quickly and positively attached to the windowsill.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the features stated in the following claim, or the equivalent of such, be employed.

I therefore particularly point out and distinctly claim as my invention:

In a window bracket structure, the combination of a hook member assemblage provided with opposed inner and outer C-shaped hooks respectively adapted to embrace the inner and outer projections of a windowsill of a building, a generally horizontally disposed lever adapted to extend outwardly from the window of a building and to suspend a ladder from its outer end, the inner end of said lever being disposed between said opposed hooks, link means pivotally connected at its opposite ends to the upper portion of said outer hook and to the inner end of said lever, and other link means pivotally connected at its opposite ends to the upper portion of said inner hook and to said lever at a point between the inner and outer ends thereof whereby the weight of a ladder on the outer end of said lever is operative through said lever and both of said link means to draw said hooks toward one another.

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