

May 24, 1932.

J. REESE

1,859,984

FOLDING FIRE ESCAPE LADDER

Filed Oct. 2, 1930

2 Sheets-Sheet 1

Fig. 1.

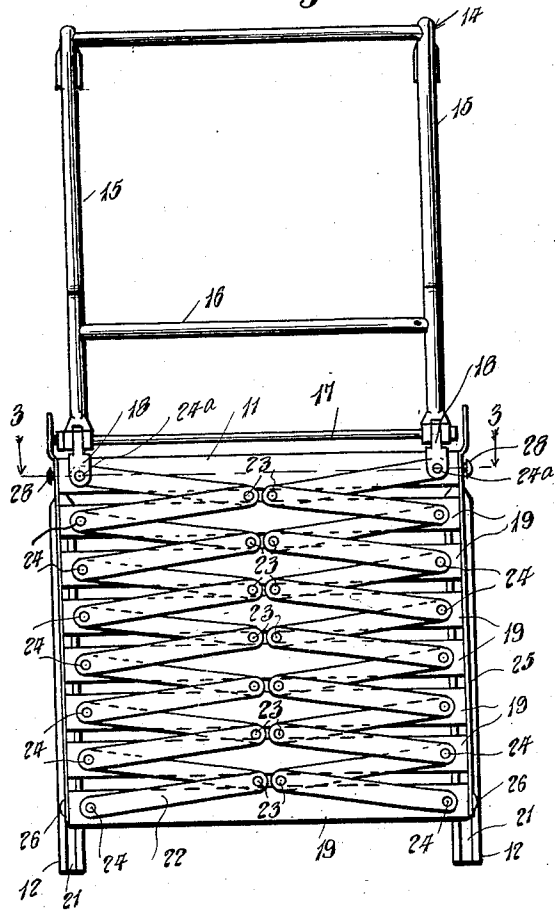


Fig. 2.

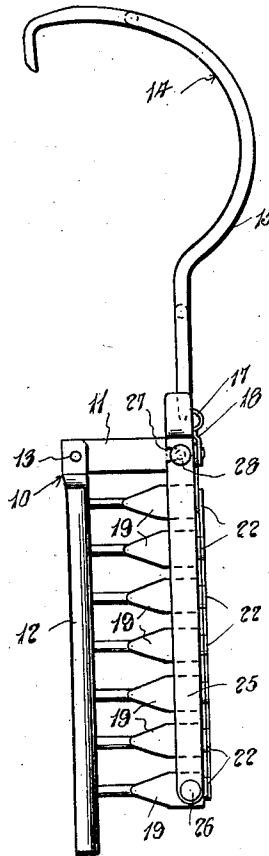
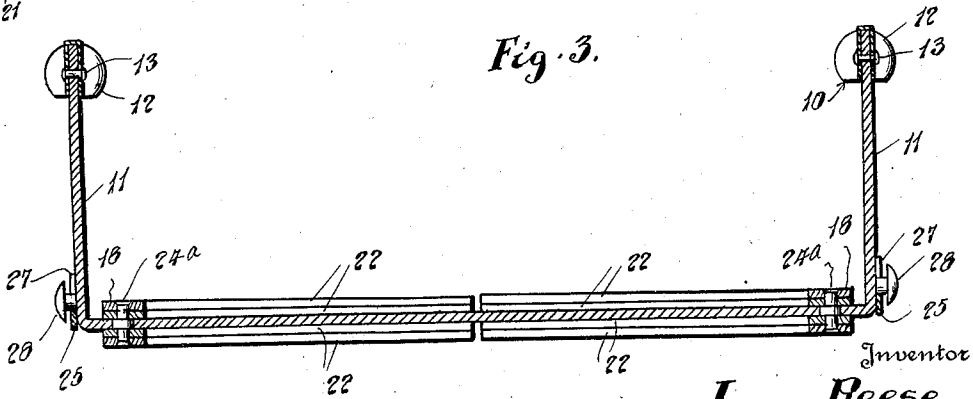


Fig. 3.



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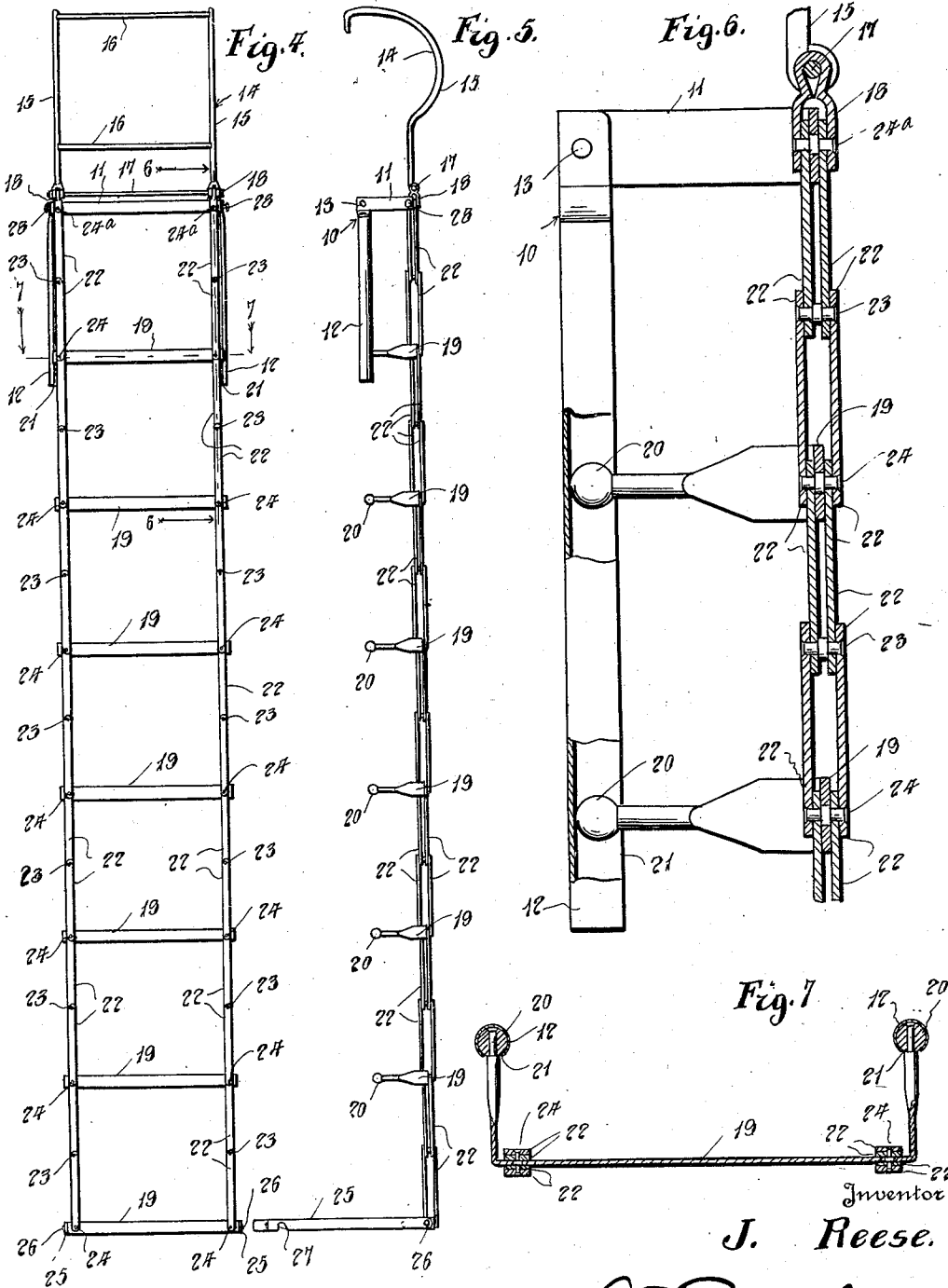


Fig. 7  
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## UNITED STATES PATENT OFFICE

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## FOLDING FIRE ESCAPE LADDER

Application filed October 2, 1930. Serial No. 435,939.

This invention relates to a ladder of the folding type adapted for use primarily as a fire escape but capable of use for other purposes if desired.

It is aimed to provide a novel construction which may be folded into and maintained in compact form and against danger of extension, when not in use, and a construction which is exceedingly strong and rigidified and will not catch onto or engage obstructions on a window sill or the like when being used in an emergency.

Another object is to provide a novel construction which will permit the folding and unfolding of the parts with minimum friction.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings:—

Figure 1 is a view in front elevation showing the ladder in folded condition,

Figure 2 is a side elevation showing the ladder in folded condition,

Figure 3 is a cross sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a front elevation showing the ladder extended,

Figure 5 is a side elevation showing the ladder extended,

Figure 6 is an enlarged sectional view taken on the line 6—6 of Figure 4, and

Figure 7 is an enlarged sectional view taken on the line 7—7 of Figure 4.

Referring specifically to the drawings, a rigid frame is provided as at 10 which consists of a U-shaped bracket 11 at the top, and depending bars 12, rigidly riveted or otherwise connected therewith as at 13.

A suspending hook device is provided at 14 adapted to engage over a window sill or the like which may comprise two side or hook members 15 connected by cross bars 16 and pivoted by a rod 17 to clips 18, fastened to the bracket 11.

A multiplicity of rungs are employed as at 19, which are of U-shape as best shown in Figure 3, and at their terminals have balls

20 pivoted thereon, constituting heads. The bars 12 are hollow or of channel form and have constricted entrance slots at 21, whereby the balls, which are of greater diameter than the width of the slots 21, cannot be laterally withdrawn therefrom.

Lazy tong links or levers 22 are pivoted together at 23 and at their outer ends are pivoted at 24, to the rungs. The uppermost links 22 are pivoted at 24\* to the leaves 18. As a result, the rungs may extend, by gravity, from the position shown in Figure 1 to that shown in Figures 4 and 5 with the links 22 limiting the relative movement of the rungs. It will be realized that most of the rungs disengage the side bars 12 when the ladder is extended.

Normally the parts are held in the folded or compact relation shown in Figures 1 and 2 by means of latch bars 25 pivoted at 26 to the side of the lowermost rung and which latch bars have slots 27 adapted for engagement with buttons 28 carried by the sides of the bracket 11. When the latch bars 25 are moved to the right in Figure 2 so as to disengage the buttons 28, the weight of the rungs and links, will cause the same to automatically extend to the position of Figures 4 and 5. Obviously after use, the ladder may be folded back into the position shown in Figures 1 and 2 and secured in that position by reengaging the latches 25 with buttons 28. Also it will be realized that the hook means 14 may be folded compactly with respect to the remainder of the structure to occupy minimum space when not in use.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:—

1. A ladder of the class described comprising a bracket, bars extending therefrom of channeled form having restricted openings, rungs having enlarged terminals engageable in the channels of the bars and prevented from lateral disengagement therefrom, and link means pivoted together and to the rungs and adapted to limit their opening movement.
2. A ladder of the class described comprising a bracket, bars extending therefrom of

channeled form having restricted openings, rungs having terminals with enlargements thereon engageable in the channels of the bars and prevented from lateral disengagement therefrom, link means connecting the rungs and adapted to limit their opening movement, said enlargements constituting friction reducing means on the terminals of said rungs and within said channels, and latch means securing the rungs in the bars against extending movement.

3. A ladder of the class described comprising a bracket, bars extending therefrom of channeled form having restricted openings, rungs having terminals with enlargements thereon engageable in the channels of the bars and prevented from lateral disengagement therefrom, link means connecting the rungs and adapted to limit their opening movements, said enlargements constituting friction reducing means on the terminals of said rungs and within said channels, latch means securing the rungs in the bars against extending movement, clips secured to said bracket, and suspending means attached to the clips, the uppermost links being attached to said clips.

4. A ladder of the class described comprising a bracket, hollow bars depending from the bracket, rungs substantially of U-shape having their terminals engaged in the hollows of the bars in folded condition, links pivoted together and to said rungs, clips secured to said bracket, the uppermost links being pivoted to said clips, suspending means connected to said clips, said links serving to limit the opening movement of the rungs, a latch pivoted to the lowermost rung, and a button on said bracket engageable by the latch to maintain the rungs and links in folded relation.

In testimony whereof I affix my signature.  
JOHN REESE.

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