

July 7, 1931.

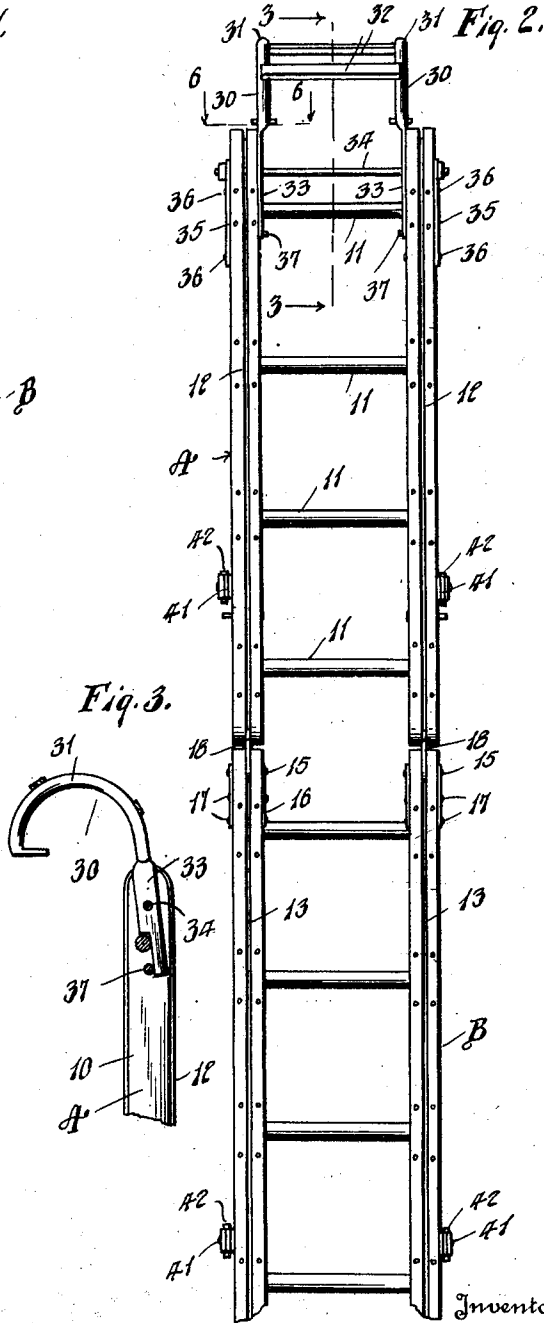
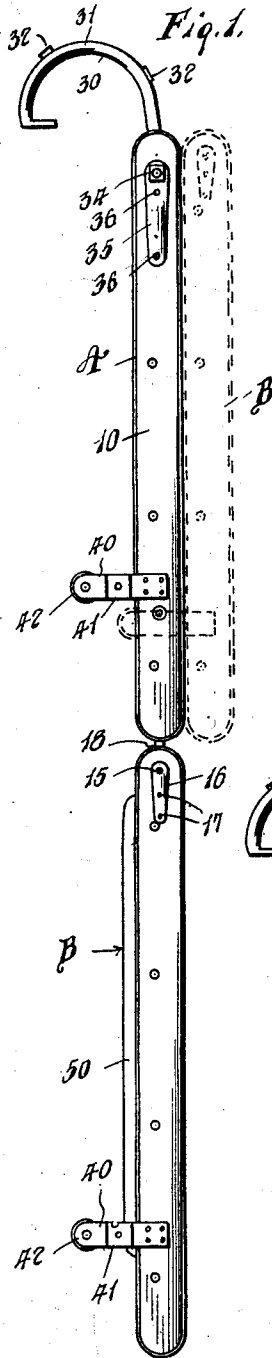
J. REESE

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FIRE ESCAPE LADDER

Filed May 22, 1930

2 Sheets-Sheet 1



J. Reese.

By *L. F. Kauder, Jr.*
Attorney

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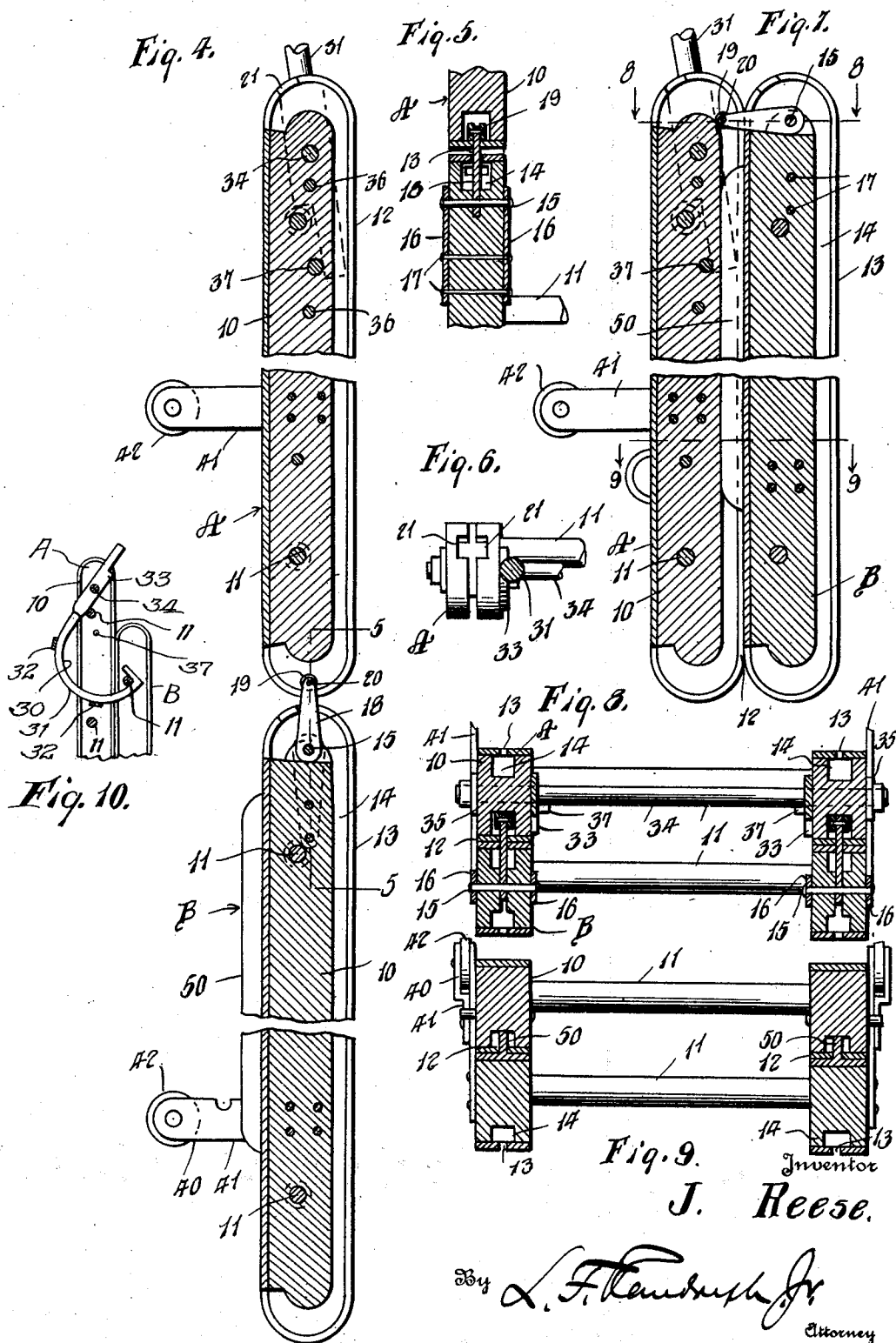
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

JOHN REESE, OF GOODHUE, MINNESOTA

FIRE ESCAPE LADDER

Application filed May 22, 1930. Serial No. 454,725.

This invention relates to a fire escape ladder.

It is aimed to provide a novel construction which may be normally maintained in an exceedingly compact condition and which has sections designed, in case of use, to slide relatively into elongated ladder form.

It is aimed to provide a novel, relatively inexpensive, durable and efficient construction and especially one having novel means whereby the ladder sections are connected for relative sliding movement.

Another object is to provide a construction having a novel hook means for suspending the ladder from a window sill or the like which may normally be used as a suspending means for the ladder in its folded condition.

Various additional 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 side elevation of the ladder in condition for use, its folded condition being suggested by dotted lines,

Figure 2 is a front elevation of the ladder,

Figure 3 is a detail sectional view taken on the line 3—3 of Figure 2,

Figure 4 is a central vertical sectional view through the ladder,

Figure 5 is a detail sectional view taken on the line 5—5 of Figure 4,

Figure 6 is a detail sectional view taken on the line 6—6 of Figure 2,

Figure 7 is a view similar to Figure 4 but with the parts in folded relation,

Figure 8 is a cross sectional view taken on the line 8—8 of Figure 7,

Figure 9 is a cross sectional view taken on the line 9—9 of Figure 7, and

Figure 10 is a fragmentary sectional view showing the position of the parts when folded for hanging up during storage.

Referring specifically to the drawings, the improved fire escape or other ladder constituting my invention may comprise any desired number of ladder sections, two being shown by way of example and designated A

and B, respectively. Such sections as far as the ladder feature is concerned are similar. Each has stiles 10, for instance of wood, connected by rungs 11 which may also be of wood although of metal if desired.

The edges of the stiles are covered and reinforced by continuous metallic strips or plates 12 and such strips 12 and stiles are cut away or slotted as at 13 and 14, respectively, in registry, along one side and both ends of each stile, the slots 13 however being narrower than the slots 14 so that the strips 12 will overlap the slots 14 at the sides thereof.

Disposed transversely of each of the stiles 10 of the ladder section B are rods 15, the same being mounted in any suitable way but preferably in metal plates 16 secured to the sides of the stiles as by means of bolts or other fastenings at 17.

Connecting and suspending links 18 are pivoted on the rods 15 and at their free ends have rollers 19 pivotally connected thereto by pins 20 and which are located in the slots or grooves 14 of the other ladder section A, the links 18 and rollers 20 thereby constituting a connection between the two ladder sections and permitting the same to occupy the folded position shown in Figure 1 in dotted lines, normally, and to fall to the extended position shown in full lines in Figures 1, 2 and 4. The folded position is shown in section also in Figure 7.

Said sections of the ladders A and B may be readily detached if desired to which end the strips or plates 12 are cut away as at 21. The rollers 19 may be readily inserted and removed with the links 18 through the enlargement 21 and guard against accidental detachment. Said enlargements 21 are arranged rearwardly of the vertical line passing through the axes of the rods 15.

In the use of the device, the same is adapted to be supported from a window sill or the like to which end a double ended hook 30 is provided, the ends or hooks thereof being designated 31 and rigidly connected together by cross members 32 or the like. Such hooks 31 have extended arms 33 which are pivotally mounted on a cross bolt or the like 34, the latter being mounted by plates 35 secured by

suitable fastenings 36 to the stiles 10. In the unfolded position of the ladders as shown in the drawings, they abut the uppermost rung 11 of the ladder section A and also abut metallic stops or pins 37 suitably secured to the stiles 10 of the upper ladder section.

In cases where the ladder is adapted to be hung when not in use, the bolt 34 may be engaged with the suspending element and the hooks 31 swung on the pivot 34 downwardly and between the ladder sections so as to extend under the uppermost rung of the ladder section B and by engaging it prevent undue sliding or unfolding of the said ladder section B, this position being shown in Figure 10.

Each ladder section may carry a suitable abutment or spacing means as at 40, comprising arms 41 and rollers 42, for example, the same being adapted for engagement with the outer surface of a wall or building when the ladder is in use. Also, the plates of the lower ladder section may have integral ribs or flanges 50 thereon which are adapted to extend into the adjacent slots or grooves 13 and 14 of the other ladder sections when the same are folded as in Figure 9.

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

I claim as my invention:—

1. In a ladder of the class described, a plurality of ladder sections having stiles, said stiles having slots opening outwardly of their edges, and link means pivotally and slidably connecting said ladder sections and extending through said slots.

2. A device of the class described comprising a ladder section having slots, a link pivoted to the ladder section and extending through said slot, said link at its free end having an enlargement thereon, and a second ladder section having a slot in which said enlargement is received and is movable.

3. A device of the class described comprising a ladder section having slots, a link pivoted to the ladder section and extending through said slot, said link at its free end having an enlargement thereon, a second ladder section having a slot in which said enlargement is received and is movable, the second mentioned ladder section having an enlargement for said slot whereby the link may be detached therefrom.

4. A device of the class described comprising a ladder section having slots, a link pivoted to the ladder section and extending through said slot, said link at its free end having an enlargement thereon, a second ladder section having a slot in which said enlargement is received and is movable, and a rib on the first mentioned ladder section adapted to engage the slot in the second ladder section in the folded condition of the sections.

5. A device of the class described comprising

a ladder section including stiles, a metal plate extending around the edges of each stile, said plates and stiles of the section having slots, the slots of the plates being narrower than those of the stiles, links pivoted to the stiles within the slots, a second ladder section, said second ladder section having plates surrounding the edges of its stiles, the last mentioned stiles and plates having slots with those of the plates narrower than those of the stiles, and means on the free ends of said links engaging the slots of said second mentioned stiles and plates.

6. A device of the class described comprising a ladder section including stiles, a metal plate extending around the edges of each stile, said plates and stiles of the section having slots, the slots of the plates being narrower than those of the stiles, links pivoted to the stiles within the slots, a second ladder section, said second ladder section having plates surrounding the edges of its stiles, the last mentioned stiles and plates having slots with those of the plates narrower than those of the stiles, means on the free ends of said links engaging the slots of said second mentioned stiles and plates, the slots of the second mentioned plates being enlarged whereby the links may be detached therefrom.

7. A device of the class described comprising a ladder section including stiles, a metal plate extending around the edges of each stile, said plates and stiles of the section having slots, the slots of the plates being narrower than those of the stiles, links pivoted to the stiles within the slots, a second ladder section, said second ladder section having plates surrounding the edges of its stiles, the last mentioned stiles and plates having slots with those of the plates narrower than those of the stiles, means on the free ends of said links engaging the slots of said second mentioned stiles and plates, and ribs integral with the first mentioned plates adapted to engage the slots of the second mentioned plates and stiles in the folded condition of the ladder.

8. A device of the class described comprising a ladder section including stiles, a metal plate extending around the edges of each stile, said plates and stiles of the section having slots, the slots of the plates being narrower than those of the stiles, links pivoted to the stiles within the slots, a second ladder section, said second ladder section having plates surrounding the edges of its stiles, the last mentioned stiles and plates having slots with those of the plates narrower than those of the stiles, means on the free ends of said links engaging the slots of said second mentioned stiles and plates, ribs integral with the first mentioned plates adapted to engage the slots of the second mentioned plates and stiles in the folded condition of the ladder, a hook

pivotally connected to one of the sections adapted to support the ladder from a sill or the like, and abutment means carried by the sections adapted for engagement with a wall when in use.

5 9. A device of the class described comprising a plurality of slidably connected ladder sections, a suspending hook for the device pivoted to one of said sections, said hook
10 being movable downwardly between both ladder sections whereby it will in that position engage the topmost rung of the other section and prevent relative sliding movement thereof.

15 10. A device of the class described comprising a ladder, a suspending hook therefor pivoted thereto, said hook being provided with a shank engageable with a rung on the
20 ladder in its extended position, and the ladder having abutments adjacent the rungs also engageable by the shank.

In testimony whereof I affix my signature.
JOHN REESE.

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