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[54] **PORTABLE EXTENSIBLE FIRE ESCAPE SLIDE**

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[52] **U.S. Cl.** **182/48,** 193/6

[51] **Int. Cl.** **A62b 1/20**

[58] **Field of Search** 182/48; 193/6

[56] **References Cited**

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[57] **ABSTRACT**

A portable fire escape comprising a plurality of generally U-shaped chute members, the outside edges of one turned outwardly over the corresponding turned edges of the next, to provide a slidably interlocked, telescopically extensible system, with stops to limit the sliding of one chute member relative to its adjacent counterpart. The upper entrance end of the fire escape chute is pivotally connected to at least one clamping support strap for anchoring the chute to the escape window sill, with means provided for maintaining a suitable angle between the chute and the vertical wall of the building to be evacuated.

4 Claims, 10 Drawing Figures

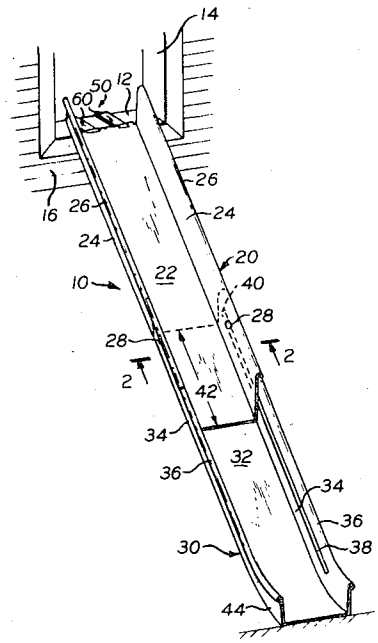


FIG. 1.

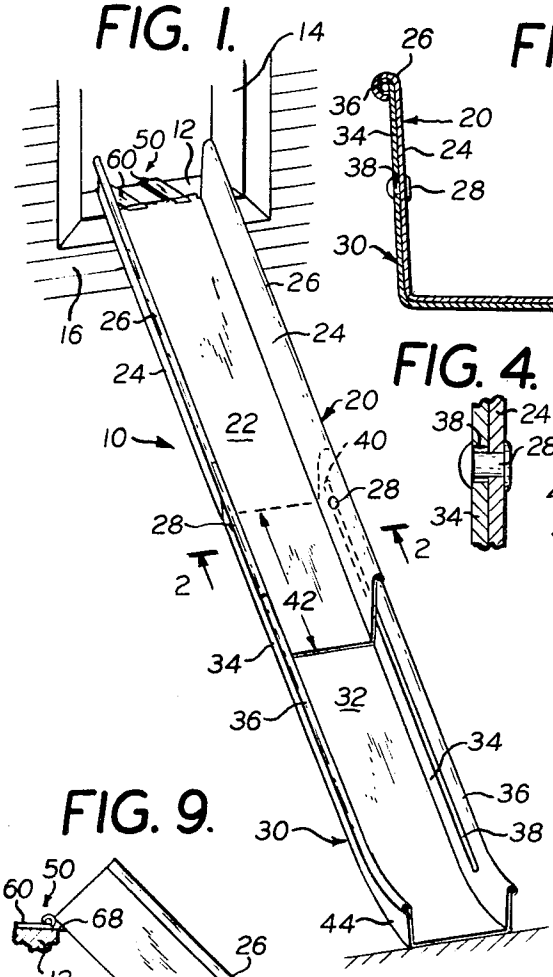


FIG. 2.

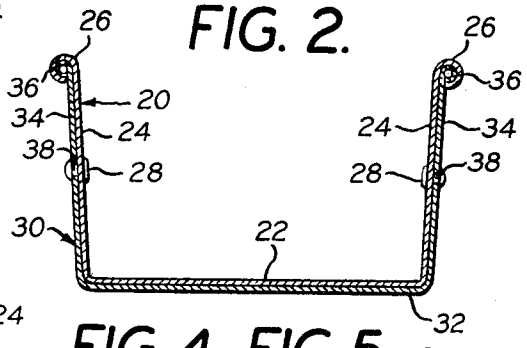


FIG. 3.

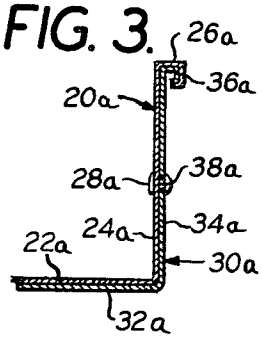


FIG. 4.

FIG. 5.

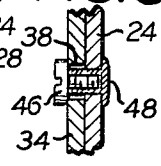


FIG. 6.

FIG. 7.

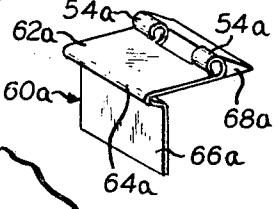


FIG. 9.

FIG. 8.

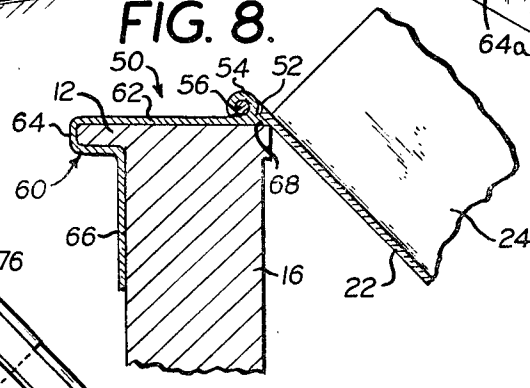
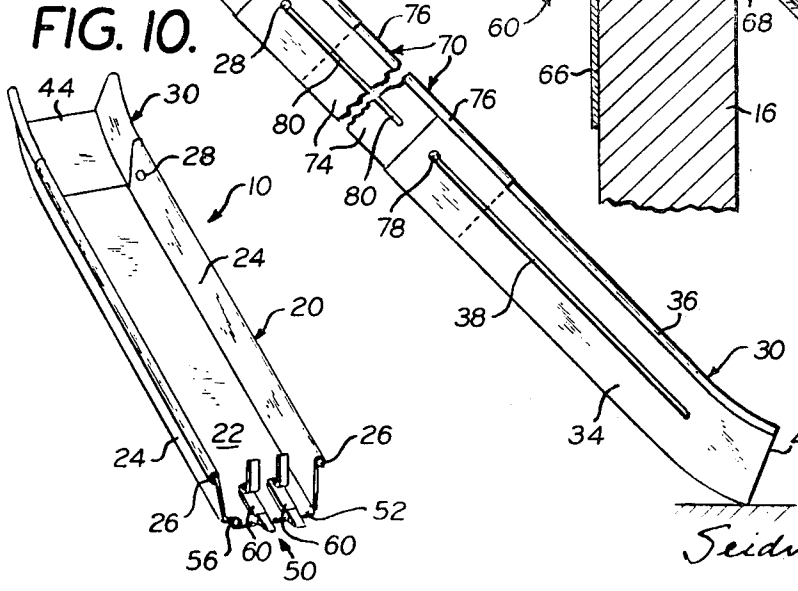


FIG. 10.



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PORTABLE EXTENSIBLE FIRE ESCAPE SLIDE

BACKGROUND OF THE INVENTION

The loss of life by fire and smoke inhalation of people trapped on the upper floors of one-family and multiple-dwelling homes, where building codes do not require permanent fire escapes, is a constantly recurring tragedy. Various prior-art fire escapes have been proposed, some retractable, for installation in such homes, but all have the disadvantage that they require permanent mounting at a preselected window of the home. At best, such installations are unsightly; more importantly, if access to that specific window is cut off by fire, heat, or smoke, escape is thwarted.

SUMMARY OF THE INVENTION

The present invention provides a portable fire escape device which avoids the disadvantages of the prior art. The telescopic chute in its completely assembled ready-to-use retracted position may be stored in any convenient accessible location. Made as light weight as possible consistent with adequate strength, the escape chute, when danger is signalled, may be carried to any accessible window, thrust out, clamped to the window-sill, and permitted to drop. An escape route is thus quickly established, and children as well as adults may be slid safely down, guided by the side walls of the chute; if time permits, even valued possessions may be rescued in this manner.

It is therefore a principal object of this invention to provide a portable extensible fire escape chute, easy, foolproof and safe to use from any accessible upstairs window of a home,

It is also an object of this invention to furnish a portable fire escape simple in construction and inexpensive to produce.

Various other objects and advantages will become apparent from the following descriptions and drawings which exemplify the concepts of this invention.

DRAWINGS

In the drawings:

FIG. **1** is a perspective view of a fire escape chute according to this invention, mounted on a window sill in its extended position and ready for use;

FIG. **2** is a sectional view taken along line **2—2** of FIG. **1**;

FIG. **3** is a partial sectional view similar to FIG. **2**, but showing a modified embodiment of the invention;

FIG. **4** is an enlarged sectional view of the stop means of FIGS. **1** and **2**;

FIG. **5** is a view similar to FIG. **4**, but showing a modified stop means;

FIG. **6** is an exploded perspective view of the upper, window end of the escape chute, its clamping support straps and connecting means;

FIG. **7** is a perspective view of a modified clamping support strap;

FIG. **8** is a sectional view of the assembled parts of FIG. **6** mounted on a window sill;

FIG. **9** is a side elevational view of a fire escape chute in its extended ready-to-use position; and

FIG. **10** is a perspective view of a fully assembled fire escape chute in its retracted storage position.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. **1** shows portable fire escape **10** mounted on sill **12** of window frame **14** set in vertical house wall **16**. Fire escape **10** comprises upper chute member **20** and lower chute member **30**, both of substantially U-shaped configuration. Chute member **20** has a flat base portion **22** and upstanding side guide walls **24**, each terminating at its upper end in rolled-over portion **26**. Chute member **30** has a flat base portion **32** and upstanding side guide walls **34**, each terminating at its upper end in rolled over portion **36**.

As seen in FIGS. **1** and **2**, chute member **20** nests snugly within chute member **30**, except where rolled over portion **26** encompasses portion **36**, thus providing a slidably interlocking structure of rigidity and strength where the two chute members overlap. Sides **24** and **34** are tapered slightly outwardly to facilitate the sliding of one chute member relative to another, as well as to insure easy stacking of fire escape chute components.

Chute member **20** has mounted in each side wall **24** a rivet **28**, designed to cooperate with slot **38** in each side wall **34** of chute **30**. When fire escape **10** is lowered, each rivet **28** guides and allows its associated slot **38** to slide until upper end **40** of slot **38** reaches rivet **28**, at which point chute **30** can no longer slide relative to chute **20**, and the most extended position of fire escape **10** has been reached. Slots **38** and rivets **28** are positioned so that a considerable overlap of chutes **20** and **30**, indicated at **42** in FIG. **1**, remains at full extension to provide rigidity to the device.

Chute members **20** and **30** may be constructed of any lightweight strong material, such as sheet aluminum. Their length may vary with the height of the windows from which fire escape **10** is to be used, the number of chute sections (see FIG. **9**), and storage considerations. The lower ground-contacting end **44** of chute **30** may be advantageously curved as shown to facilitate the ground approach of a person using the fire escape chute.

An alternate construction is shown in FIG. **3**, where chute members **20***a* and **30***a* have side guide walls **24***a* and **34***a* respectively, each perpendicular to base portions **22***a* and **32***a* respectively. Also, interlocking end portions **26***a* and **36***a* are turned outwardly over in a rectangular rather than cylindrical configuration. In FIG. **5**, the rivet **28** is replaced by screw **46** in combination with headed nut **48**, making it possible for fire escape **10** to be shipped as separate components for assembly in the home.

The pivoted chute anchoring means **50** is best shown in FIGS. **6** and **8**. Chute member **20** carries at its upper edge integral rolled extensions which form hinge sockets **52**. Clamping support straps **60** have corresponding hinge sockets **54**. A hinge pin **56** is tapped at one end to accept screw **58**, which, when all the components of FIG. **6** are assembled as in FIG. **8**, locks the anchoring straps **60** pivotally to the chute **20**.

Each clamping support strap **60** comprises, in addition to hinge socket **54**, a horizontal portion **62**, adapted to rest on window sill **12**; a generally curved portion **64**, designed to embrace the inner end of window sill **12**; and a downwardly depending end portion **66**, adapted to rest against the inner side of house wall **16** for full support of fire escape **10**. The end of each

strap **60** opposite end **66** is provided with a wedge-shaped extension **68**, on which the end of chute **20** rests and which determines the angle of the combined escape chute **20,30** with the horizontal sill **12**, and hence with the vertical wall **16**.

It is evident that various modifications of chute anchoring means **50** may be substituted. As shown in FIG. **7**, a single support strap **60***a* may replace the pair shown in FIG. **6**. Also, the configuration of straps **60** or **60***a* may be modified to fit any specific sill construction, and wedges **68** may be varied to achieve any desired angle.

FIG. **9** illustrates a longer fire escape chute **10'**, for use in a window higher off the ground than that shown in FIG. **1**. Here, chute sections **20** and **30** are operatively connected not to one another, but to one or more intermediate chute sections **70**, each of which is slidably interlocked with the succeeding one. Side walls **74** each have turned-over upper edges **76**, rivets **78**, and slots **80** to cooperate with either rivets **28** or rivets **78**.

To use the fire escape **10**. it is necessary merely to rest the chute on the window sill, clamp the anchoring straps **60** to the sill, and release the chute. Chute member **30** will slide and extend until curved end **44** reaches the ground. It is obvious that a rope or cable (not shown) may be attached to an outer wall **34** of lowermost chute member **30**, for the purpose of retracting the fire escape **10** to its storage position shown in FIG. **10** after use.

The foregoing description and drawings thus have illustrated without limiting the concepts of this invention.

We claim:

1. A portable extensible fire escape for use in conjunction with the sill of a window in an upper story of a building, which comprises:

at least two substantially U-shaped chute members disposed in nested relationship with each other, each of said chute members having a substantially flat base portion and two upstanding side guide walls, each of said guide walls terminating at its upper end in an outwardly turned-over end portion, whereby each of said chute members is slidably interlocked with its next successive chute member;

means for limiting the sliding extension of each of said chute members relative to its next successive chute member;

anchoring means comprising at least one strap, shaped and adapted to embrace the window sill, said anchoring means being pivotally attached to the uppermost end of the uppermost of said chute members; and

means for establishing a predetermined angle between said chute members and the window sill when the fire escape is in operative position, said anchoring means and said means for establishing the angle between said chute members and the window sill being incorporated in a single element.

2. The portable fire escape as described in claim **1**, wherein said outwardly turned-over end portions of said side guide walls are rolled into a substantially cylindrical configuration.

3. A portable fire escape according to claim **1**, wherein said means for limiting the sliding extension of each of said chute members relative to its next successive chute member comprises: said two upstanding side walls of one of said chute members each being slotted longitudinally for a substantial portion of its length; and said two upstanding side walls of said next successive chute member each having affixed thereto a cylindrical element adapted to pass through each of said slotted side walls and to permit slidable movement of said slotted side walls relative to said side walls bearing said cylindrical elements only as far as the slots extend.

4. A portable fire escape as described in claim **1**, wherein said means for establishing the angle between said chute members and the window sill comprises at least one wedge-shaped element adapted to rest on the window sill and support said chute members at a predetermined angle.

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