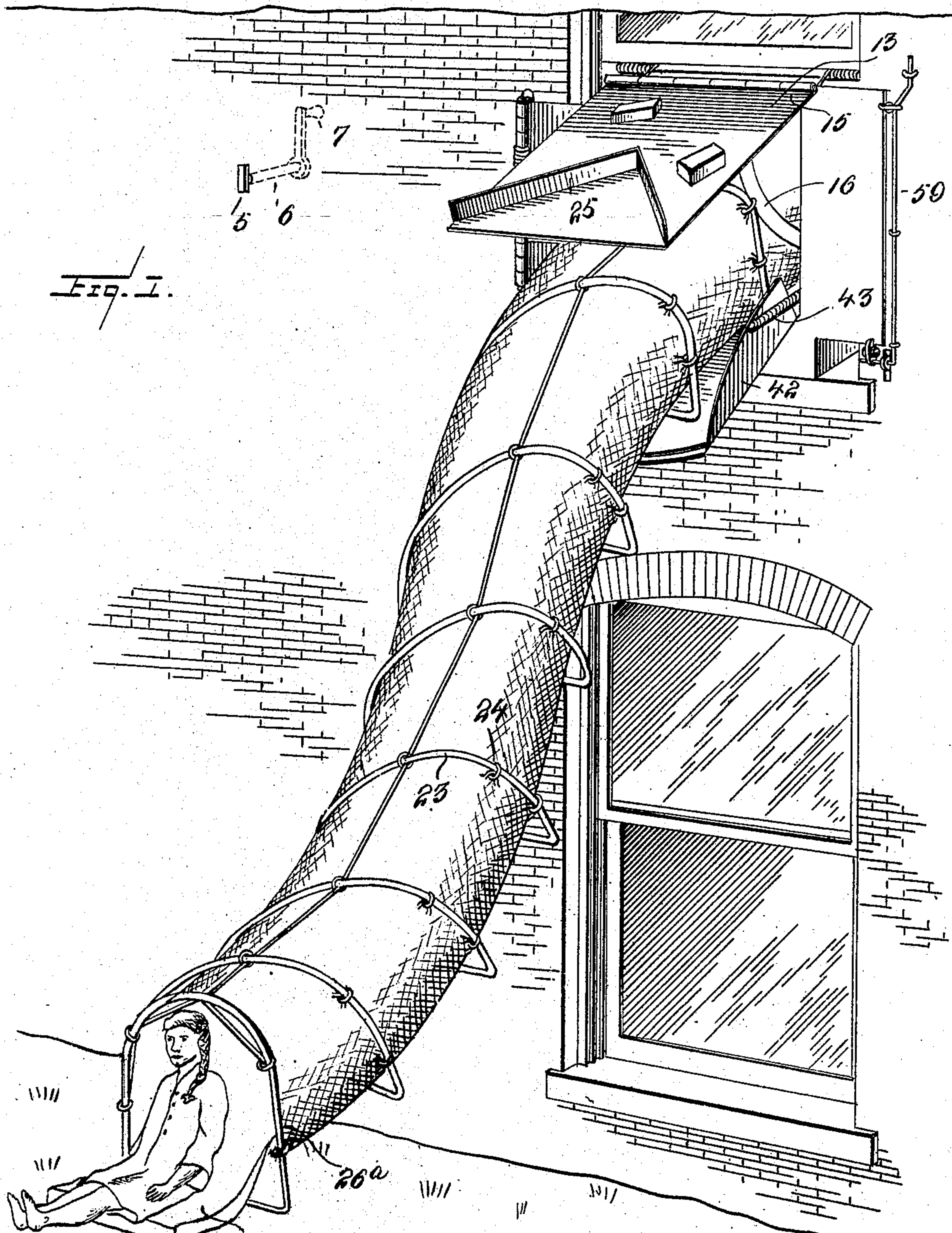


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AUTOMATIC FIRE ESCAPE.
APPLICATION FILED JULY 1, 1908.

Patented Dec. 29, 1908.
4 SHEETS—SHEET 1.



WITNESSES

Wm. F. Hoyle
E. R. Ruppert

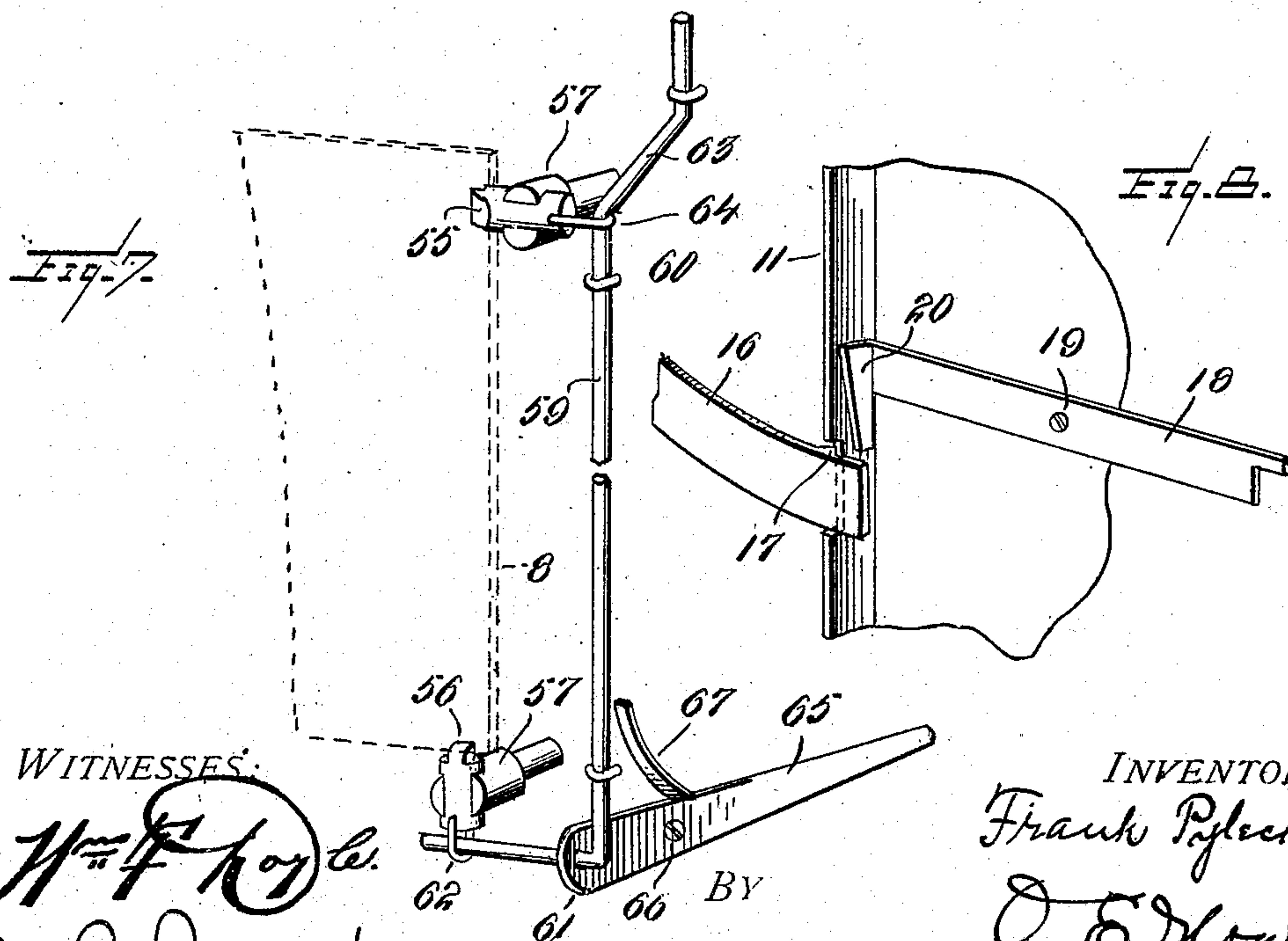
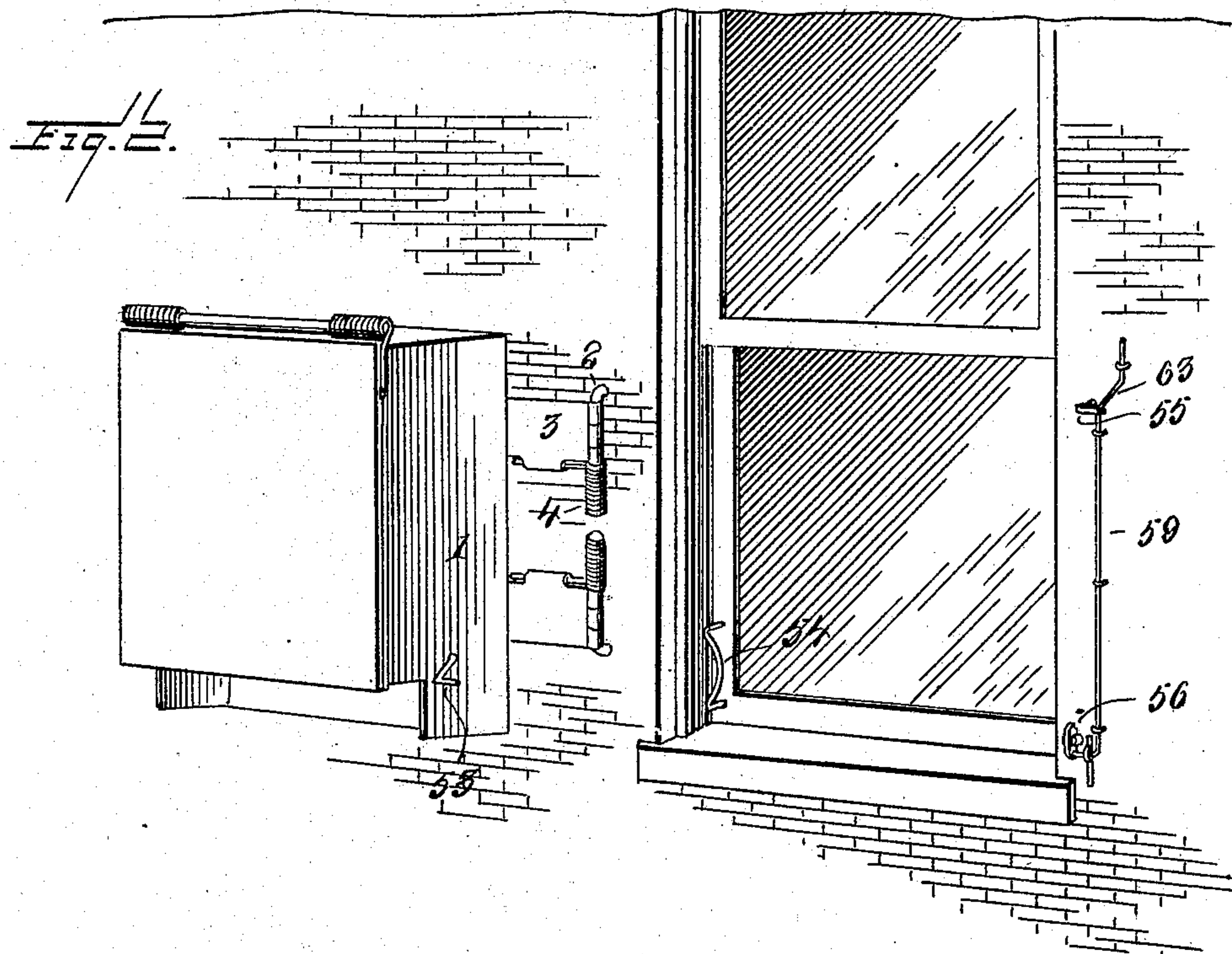
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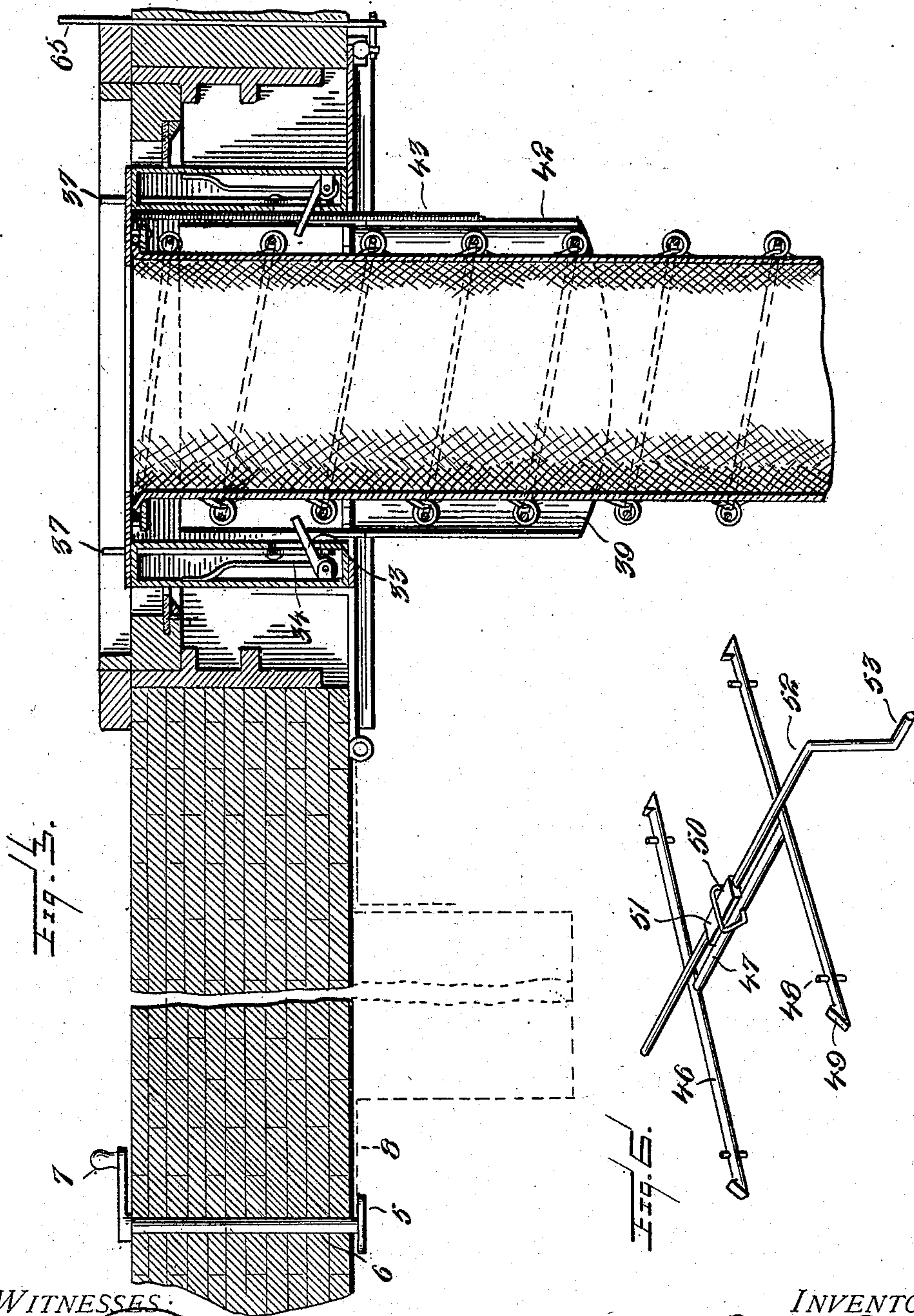
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WITNESSES:

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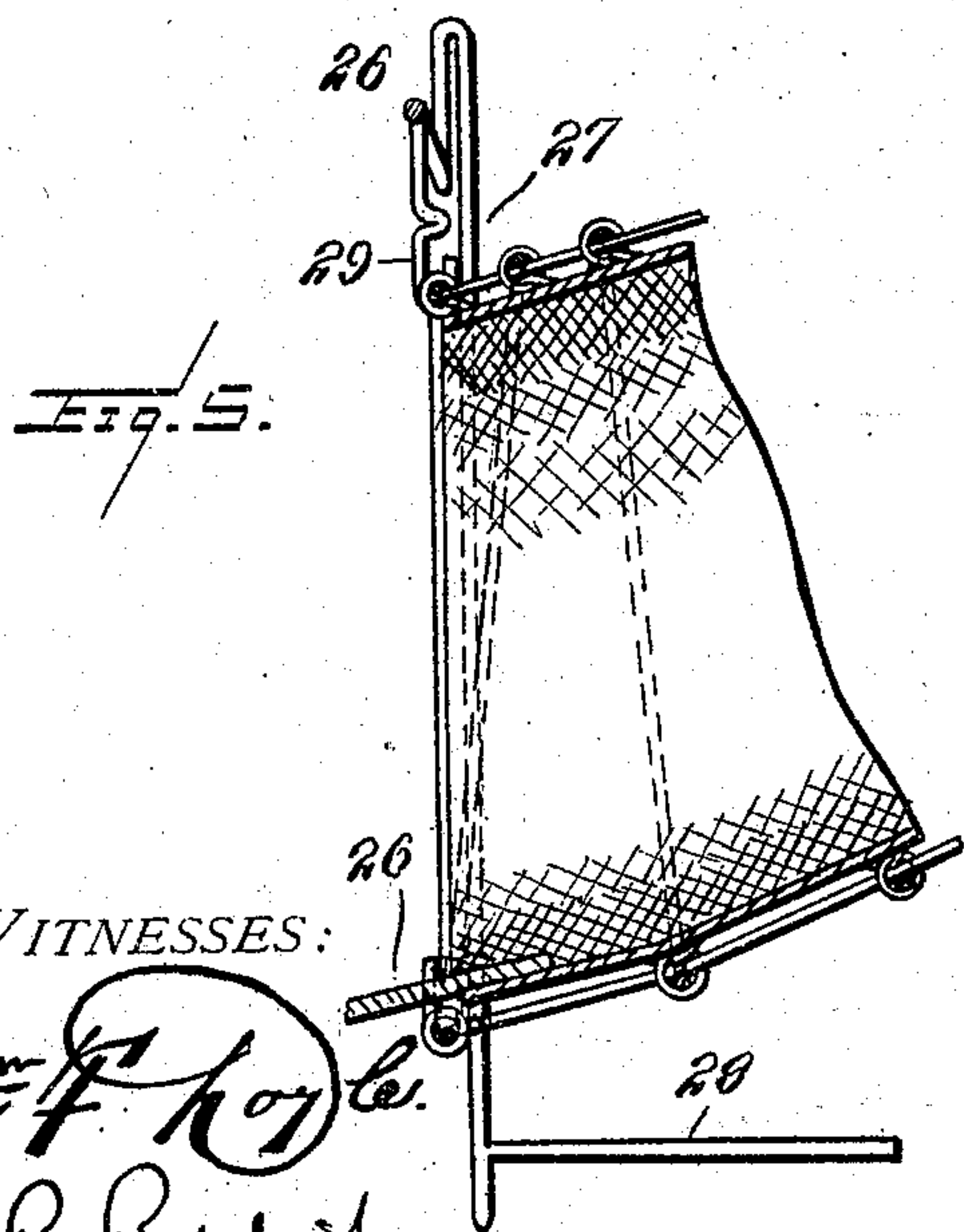
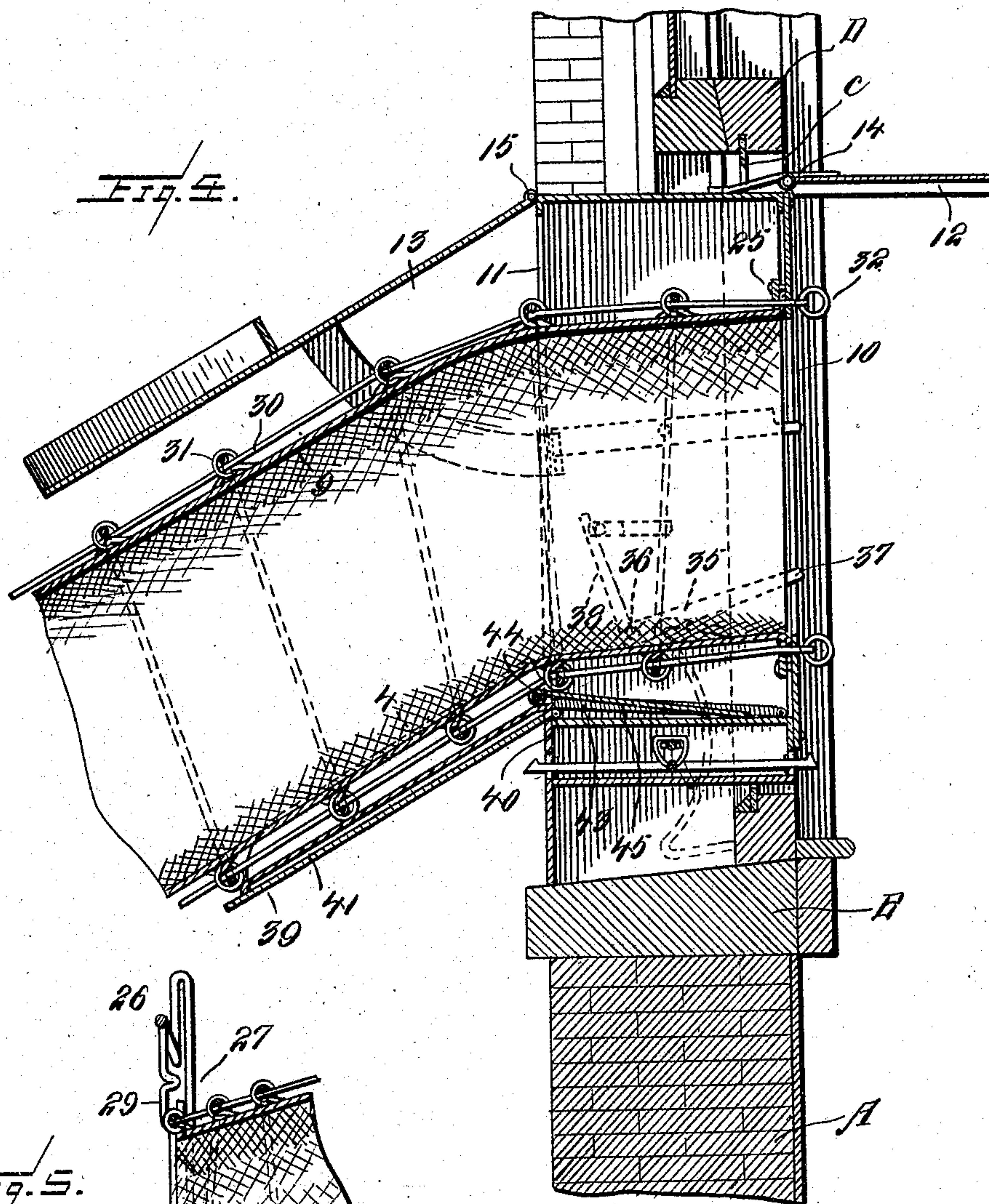
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WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK PYLECK, OF CLEVELAND, OHIO.

AUTOMATIC FIRE-ESCAPE.

No. 908,034.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed July 1, 1908. Serial No. 441,356.

To all whom it may concern:

Be it known that I, FRANK PYLECK, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automatic Fire-Escapes, of which the following is a specification.

This invention relates to improvements in automatic fire escapes for buildings; and more particularly to one which may be mounted in an out-of-the-way position upon the outside of a building, and which, when tripped by a person within the building, will automatically assume an operative position in a window and simultaneously project a tubular conveyer or chute down which persons or things may slide with safety to the ground, or to a nearby building.

The object of the invention is to provide a fire escape of this character which will be simple, strong and durable in construction, automatic and reliable in operation, and entirely safe in use.

With the above and other objects in view, as will hereinafter more fully appear, the invention consists of the novel features of construction and the combination and arrangement of devices, hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of a portion of the exterior of a building showing the improved fire escape applied thereto and in its projective or operative position; Fig. 2 is a similar view showing the invention in its closed or inoperative position; Fig. 3 is a horizontal section showing it in its operative position in the window in full lines and in its inoperative position or closed position in dotted lines; Fig. 4 is a vertical section, the parts being in a position shown in Fig. 3; Fig. 5 is a detailed vertical section through the lower end of the chute and an upright frame which may be arranged on the ground to support said end of the chute; Fig. 6 is a detailed perspective view of the latch device for retaining the doors of the box closed; Fig. 7 is a similar view of the latch device for retaining the box in its operative position in the window; and Fig. 8 is a detailed perspective of the latch device for retaining the outer door in its open position.

The preferred embodiment of the invention illustrated in the drawings comprises a box or body 1 pivotally mounted on the outer side of the wall A of a building of any

description and adapted to swing into a window frame B in said wall. The box is hinged on one side by means of spring hinges consisting of vertical pintles 2 arranged on the wall near the window and carrying arms 3 projecting from the box and coil springs 4 actuating said arms. Said spring hinges tend to swing the box into the window frame and the box is of such size and shape that it will break the glass C in the lower sash D and enter the latter as presently explained. The box is retained in its normal or operative position against the wall by a catch 5 in the form of a finger upon the outer end of the shaft 6 which extends through the wall and has a crank handle 7 upon its inner end. By turning this crank the catch finger may be swung into and out of engagement with a projecting portion or plate 8 on the free side of the box.

The box forms a closed casing for a collapsible and extensible tubular conveyer or chute 9 and when in its operative position in the window its inner and outer faces have their openings 10, 11 exposed to permit of access to the chute. Said openings 10, 11 are adapted to be closed by doors 12, 13 which are hinged to the top of the box by hinges 14, 15. The hinges 14 for the inner door are spring hinges which tend to open said door and maintain it in its position shown in Fig. 4. The outer door 13 is opened by the extension of the chute and it is adapted to be retained in its open position by means of curved resilient latch arms 16 which work in notches in the sides of the opening 11 and have catch shoulders 17, as clearly shown in Fig. 8. Said door 13 is adapted to swing by gravity to its closed position when its latch or brace arms 16 are released by means of levers 18 pivoted at 19 on the side walls of the box and having at their outer ends cam projections 20 to disengage the catch shoulders 17 from the side of the opening 11. Upon the outer face of the door 13 are provided diverging deflector ribs 21 which serve to deflect bricks or other falling objects away from the chute, as will be understood upon reference to Fig. 1.

The chute 9 consists of a tubular casing of flexible material adapted to reach from the window to the ground or to any other point of safety and it is arranged within and secured to a spiral coil 23 of resilient metal. This coil serves to project the chute tube

from the box and hold it extended or open so that persons or objects may readily slide down the chute. The tube is attached to the coil by rings 24 which receive the latter
 5 and are fastened to the tube. The upper end of the chute is clamped, as shown at 25, around the opening 10 and at its lower end is a pad or cushion 26 to prevent injury to the persons or objects which pass through
 10 the chute.

If desired the lower end of the chute may be supported slightly above the ground by the upright frame 26^a shown in Fig. 5. This frame is of inverted V-shape and has
 15 two upright portions 27 formed with feet 28. Its upper connecting portion is provided with hooks 29 to engage the coil 23 so that the end of the chute will be supported in the frame.

The chute is adapted to be drawn up into the box by means of two cords 30 passed through guide rings 31 upon the top and bottom of the chute. The lower ends of the cords are fastened to the lower end of
 25 the coil 23 and their upper ends are passed through openings in the inner wall of the box and are provided with handle rings 32. When the chute is collapsed and folded into the box by drawing upon the cords
 30 30, it is adapted to be retained in such position temporarily while the box is being closed, by pivoted catches 33 which are projected by springs 34 and retracted by angular levers or bell-cranks 35. The latter
 35 are pivoted at their angles at 36 and have their inner ends forming handles 37 and their outer ends 38 adapted to engage and actuate said catches 33.

When the chute is open or in its projected position, its upper portion is adapted to be supported and protected by a plate
 40 39 pivoted at 40 to swing up into box beneath the outer door 13. The inner or upper face of the plate 39 is covered by a spaced protecting plate 41, and upon its sides are flanges 42 which cause it to guide the chute into the box. Said plate 39 is actuated to its elevated position by a coil spring 43 and upon its inner portion is pivoted at 44 a
 50 deflector plate 45, which latter prevents the coil of the chute from catching when it is released.

The doors 12, 13 are adapted to be retained in their closed position by means
 55 of the double latch device which is shown in Figs. 4 and 6 and which is adapted to be automatically released by a trip upon the window sash when the box swings into the latter. Said latch device consists of
 60 two resilient latch bars 46 connected by a rod 47 and having at their ends pins 48 and beveled and shouldered projections 49. The rods 46 are arranged for vertical sliding movement in slots in the inner and outer
 65 walls of the box and the latch projections

49 are arranged outside of said walls and are adapted to simultaneously engage and disengage doors 12, 13. A loop 50 is arranged on the center of the rod 47 and surrounds a cam or eccentric 51 on a rock
 70 shaft 52 journaled in the lower portion of the box and having one of its ends projecting and carrying a crank 53. The latter is adapted to engage and be actuated by a curved stationary trip 54 on the sash
 75 D, when the box swings into said sash. When said shaft 52 is thus rocked the four latch projections 49 will be simultaneously lowered and disengaged from the doors
 80 12, 13.

In order to fasten the box in its operative position in the window, its projecting portion or plate 8 is adapted to engage horizontal and vertical latch bolts 55, 56 mounted for sliding movement in bearing brackets
 85 57 on the wall. These latch bolts are simultaneously actuated by a rod 59 mounted for sliding movement in guides 60 on the outer face of the wall and having a right angular lower end 61 to engage a loop 62
 90 upon the bottom of the bolt 56. The upper portion of the rod 59 has an angular or cam portion 63 arranged in a loop 64 on the horizontal bolt 55. The rod 59 is operated from the inside of the building by a lever 65
 95 which extends through the wall and is pivoted at 66 intermediate its ends. Its inner end forms a handle and its outer end receives the end 61 of said operating rod 59. A spring 67 actuates the lever so that the
 100 bolts are normally projected. When said lever moves against the tension of its spring the two bolts will be disengaged from the plate 8 so that the box may be swung out of the window to its normal position against
 105 the wall.

The operation of the invention is as follows, assuming the parts to be in the normal or closed position when the crank handle 7
 110 is turned the plate 8 or free side of the box will be released and the spring hinges of the latter will swing said box around and cause it to break through the glass C and assume the position in the sash D as shown in Figs.
 115 1, 3 and 4. When this happens the crank 53 will engage and be actuated by the trip 54 so that both doors 12, 13 will be released. The spring hinges of the inner door 12 will swing it to its open position. The outer door 13 confines the chute so that when it is
 120 released the coil 23 of the chute will force said door to its open position in which it will be retained by its latch arms 16. The chute also actuates its support and guard 39 to the position shown in Fig. 4. When the
 125 chute is in its open position persons or objects may slide in safety down through it. When it is desired to close the device, the cords 30 are drawn upon until the coil 23 is entirely within the box and its outer
 130

end is engaged and secured by the catches 33. The levers 18 are then actuated to release the latch arms 16 so that the outer door 13 will drop by gravity to its closed position. When said door is fastened by its latch the levers 35 are actuated to release the catches 33 so that the coil bears against the plate 39 which latter is elevated by the spring 43 when the chute is collapsed. The inner door 12 is then swung down and latched, and the lever 65 is then operated to release the latch bolts 55, 56 so that the box can be swung out of the window and against the wall and be fastened by the catch 5.

While the preferred embodiment of the invention is shown and described in detail, it will be understood that various changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention as defined by the appended claims.

Having thus described the invention what is claimed is:

1. In a fire escape the combination with a wall having an opening, of a support mounted upon the wall to move to an operative position at said opening, and a spring for actuating said support towards the opening, means for retaining the support against the wall, a collapsible chute within the support and composed of a tubular casing and a supporting and projecting coil, means for retaining the chute in its collapsed position and means for releasing said chute retaining means when the support enters opening.

2. In a fire escape the combination with a wall having an opening, of a support mounted upon the wall to move to an operative position at said opening, and a spring for actuating said support towards the opening, means for retaining the support against the wall, a collapsible chute within the support, means for projecting the chute to an operative position when the support aligns with the opening, and means for retaining the support at the opening.

3. In a fire escape the combination with a wall having an opening, of a support mounted upon the wall to move to an operative position at said opening, and a spring for actuating said support towards the opening, means for retaining the support against the wall, a collapsible chute within the support and composed of a tubular casing and a supporting and projecting coil, means for col-

lapsing the chute, means for retaining the chute in its collapsed position, means for automatically releasing the chute when the support assumes an operative position at the opening and means for supporting the lower end of the chute when in its projected position.

4. In a fire escape, the combination with a wall having an opening, of a box pivotally mounted upon the wall and spring actuated to swing in said opening, a spring actuated self opening inner door for the box, a gravity closing outer door hinged to the top of the box, a latch for retaining the outer door in its open position, a double latch device for simultaneously releasing both of said doors, a self projected, collapsible chute in the box and confined by the outer door, and means for actuating said latch device when the box swings into the said opening in the wall.

5. In a fire escape, the combination with a wall having an opening, of a box pivotally mounted upon the wall and spring actuated to swing in said opening, a spring actuated self opening inner door for the box, a gravity closing outer door hinged to the top of the box, a latch for retaining the outer door in its open position, a double latch device for simultaneously releasing both of said doors, a self projected, collapsible chute in the box and confined by the outer door and means for collapsing said chute, means for temporarily retaining the chute in its collapsed position and means for actuating said latch device when the box swings into said opening.

6. In a fire escape the combination with a wall having an opening, of a support mounted to swing to said opening, and a collapsible chute upon the support, means for retaining the chute in its collapsed position, and a trip at the opening for releasing said chute retaining means when the support assumes an operative position.

7. In a fire escape the combination with a wall having an opening, of a support mounted to swing to said opening, and an automatically projected collapsible chute carried by said support, means for retaining the chute in its collapsed position, and a trip at the opening for releasing said chute retaining means.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK PYLECK.

Witnesses:

WILLIAM LERCH,
J. D. YOAKLEY.