

(No Model.)

W. BLOCK.  
FIRE ESCAPE.

No. 383,613.

Patented May 29, 1888.

Fig. 1.

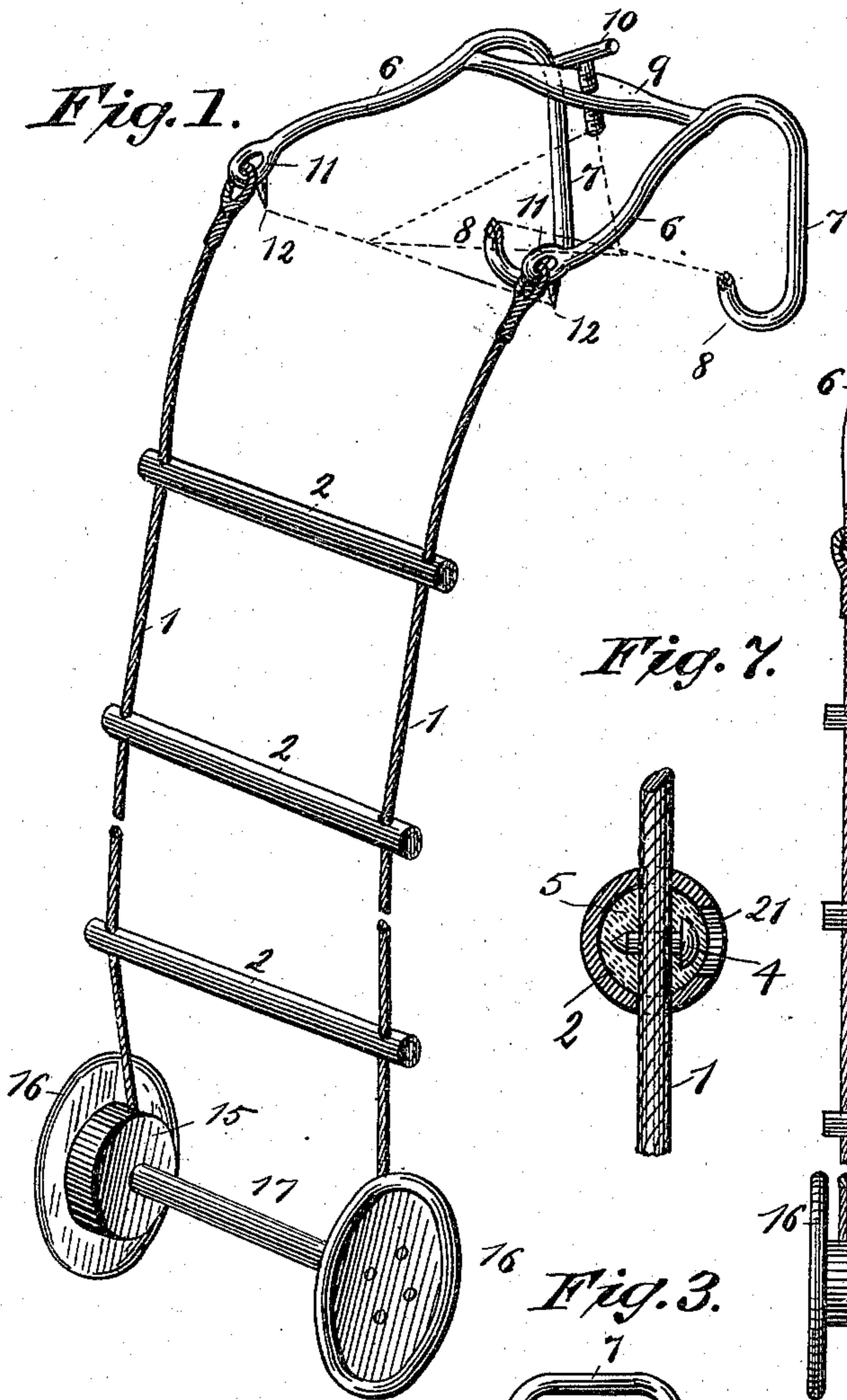


Fig. 2.

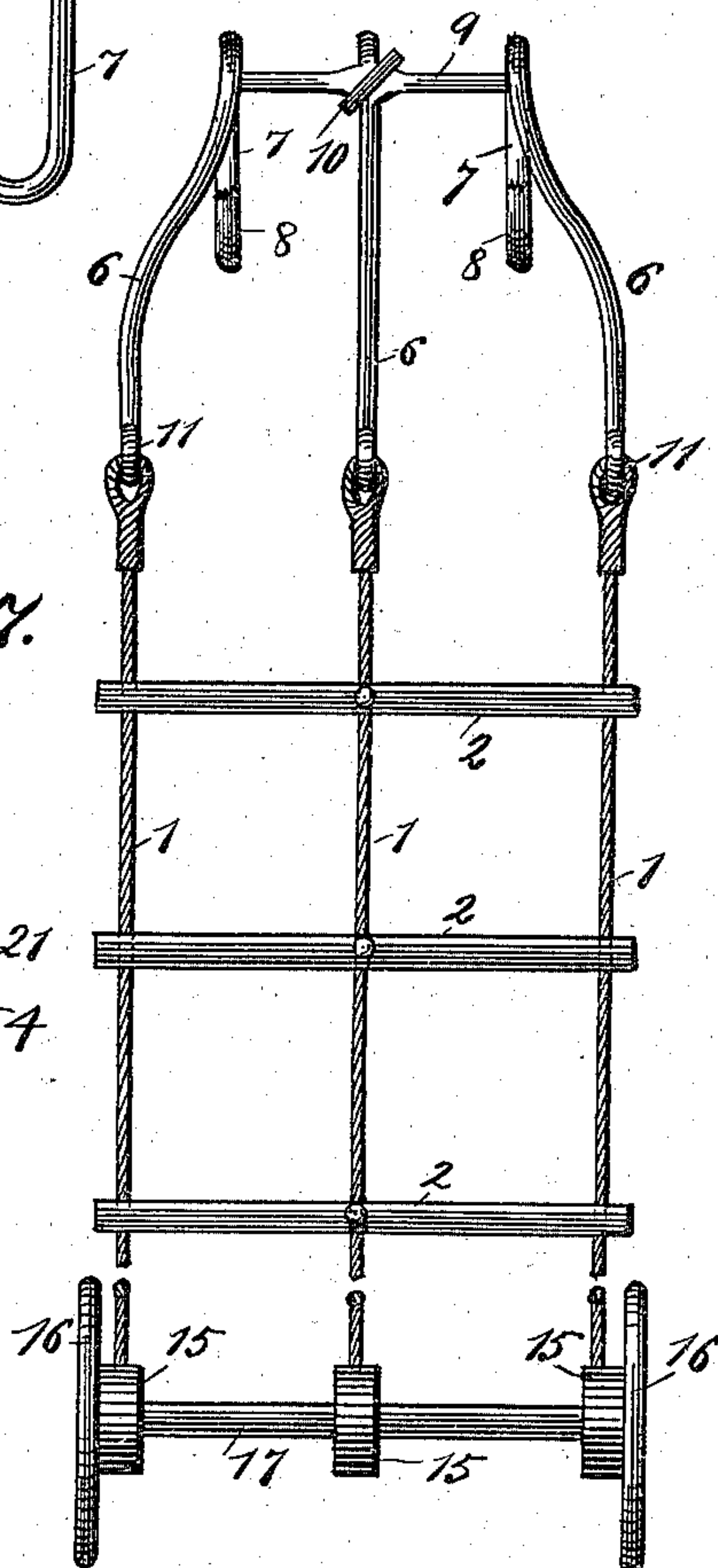


Fig. 7.

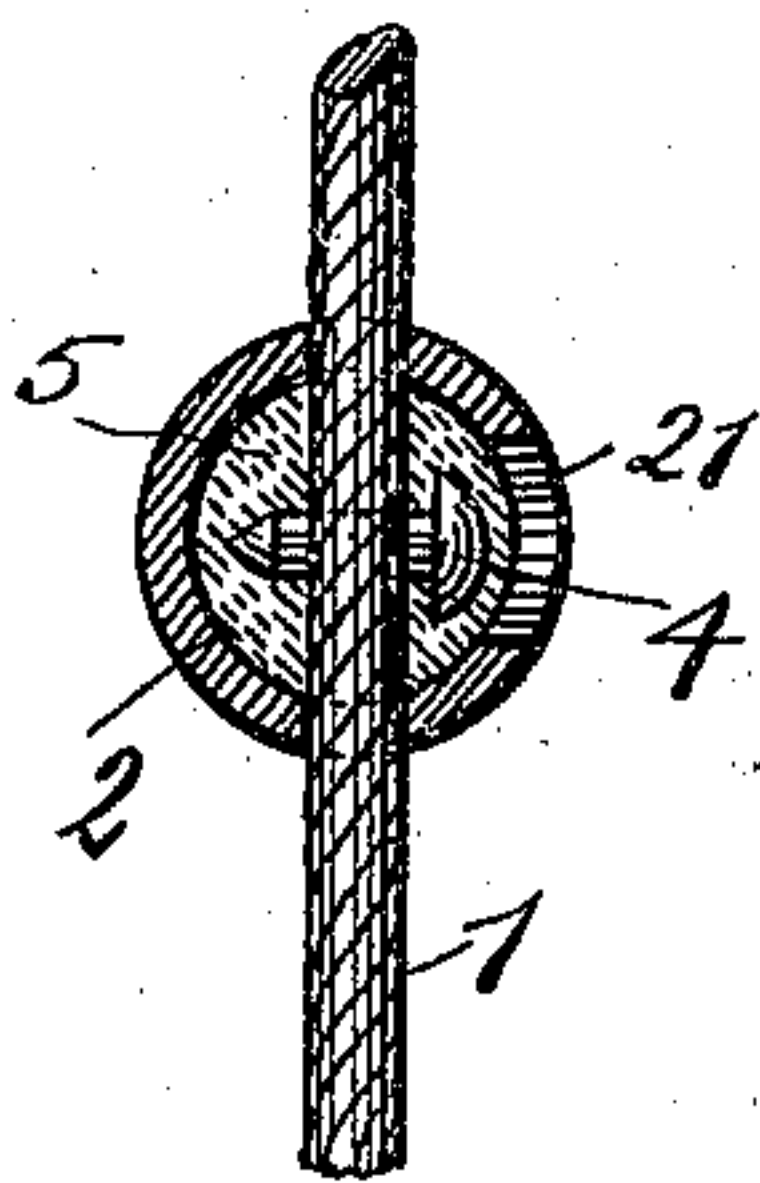


Fig. 3.

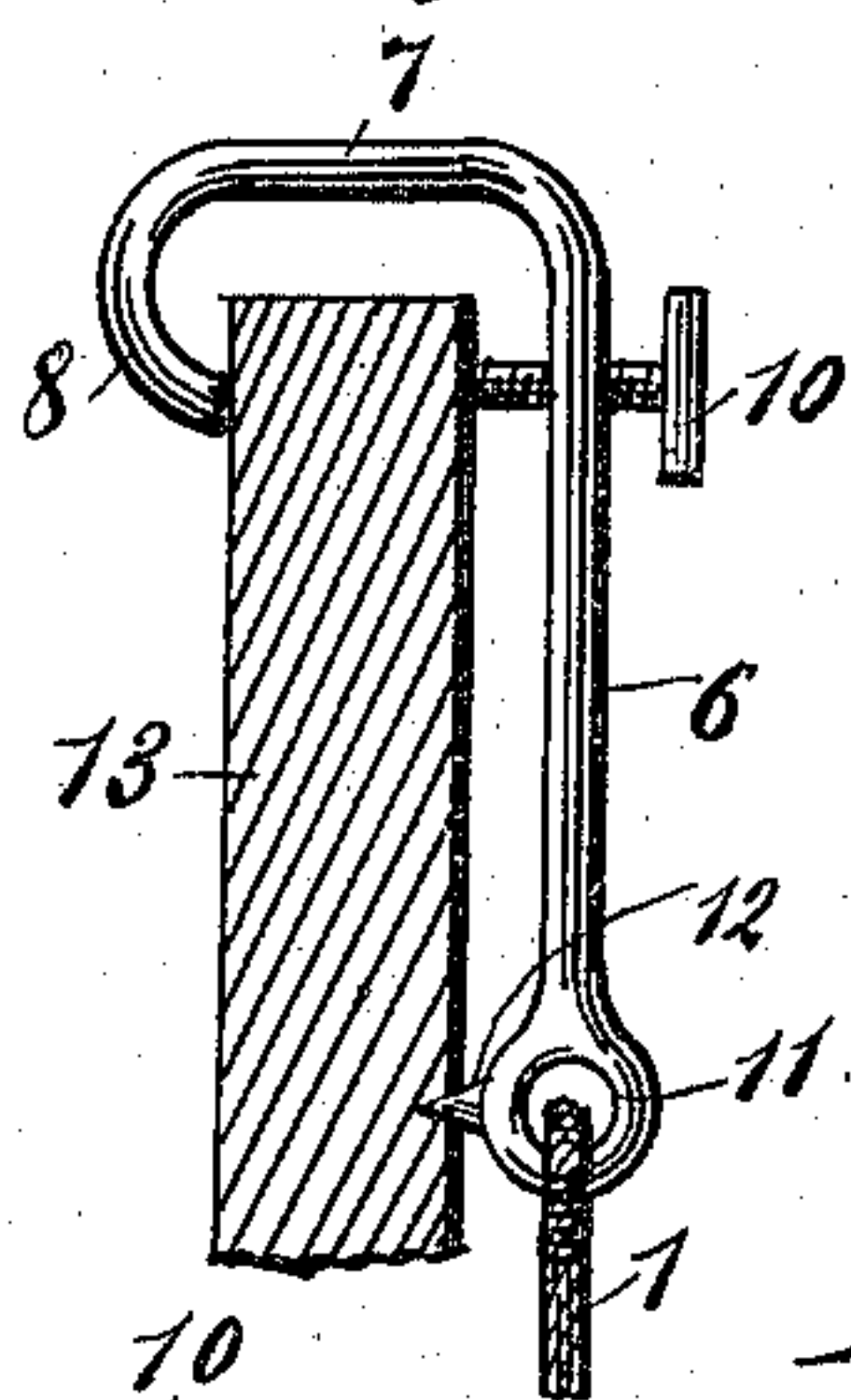


Fig. 5.

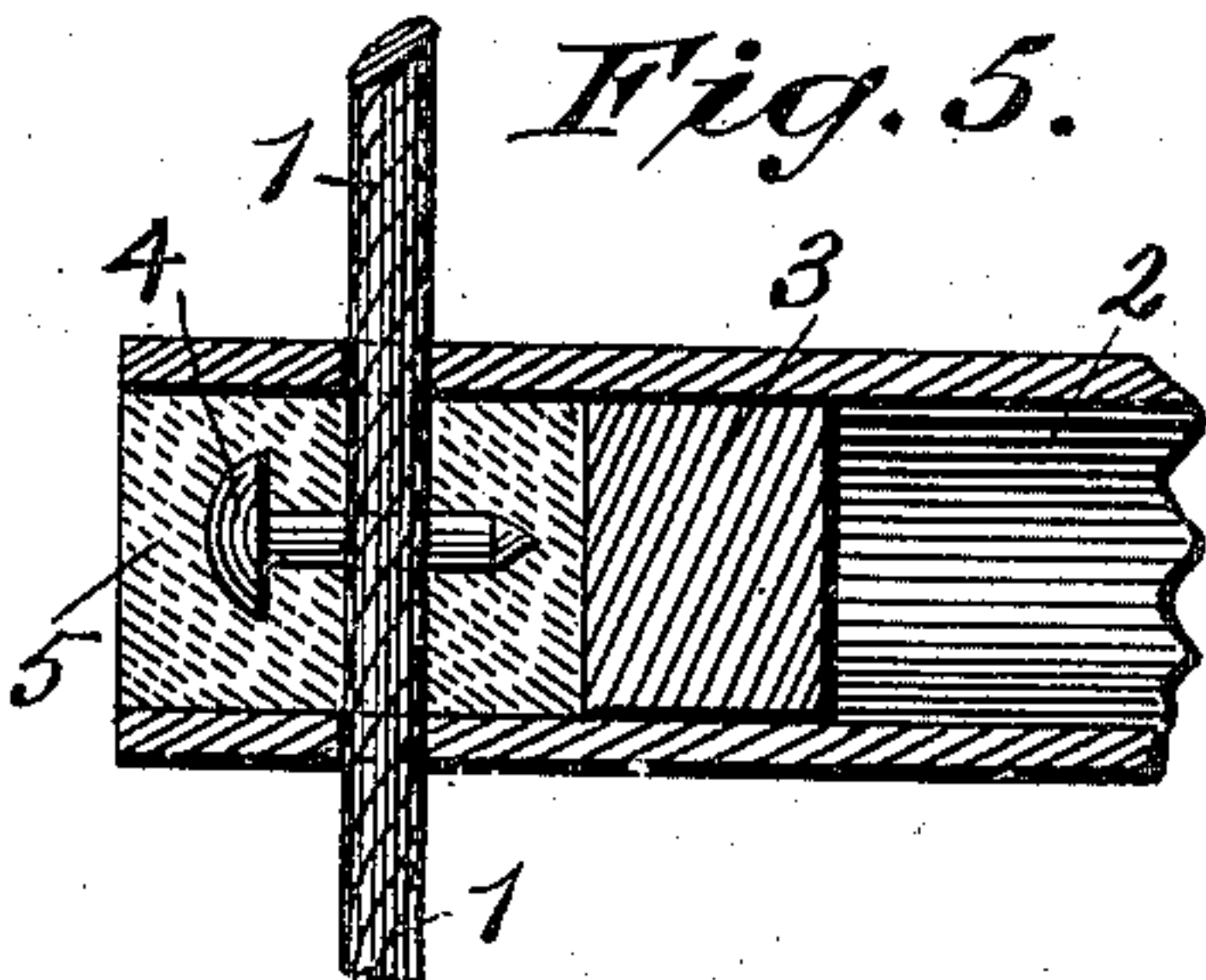


Fig. 6.

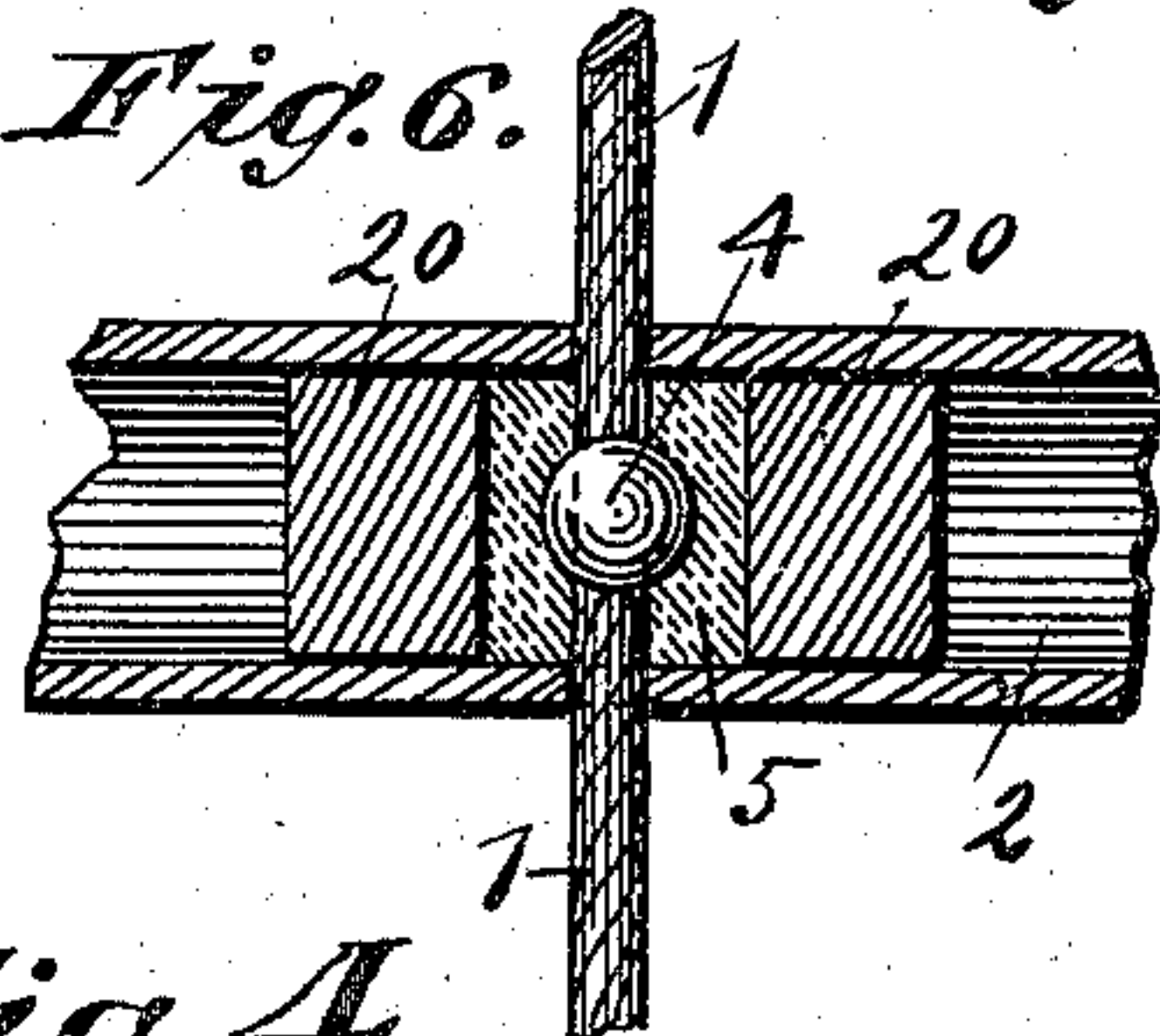
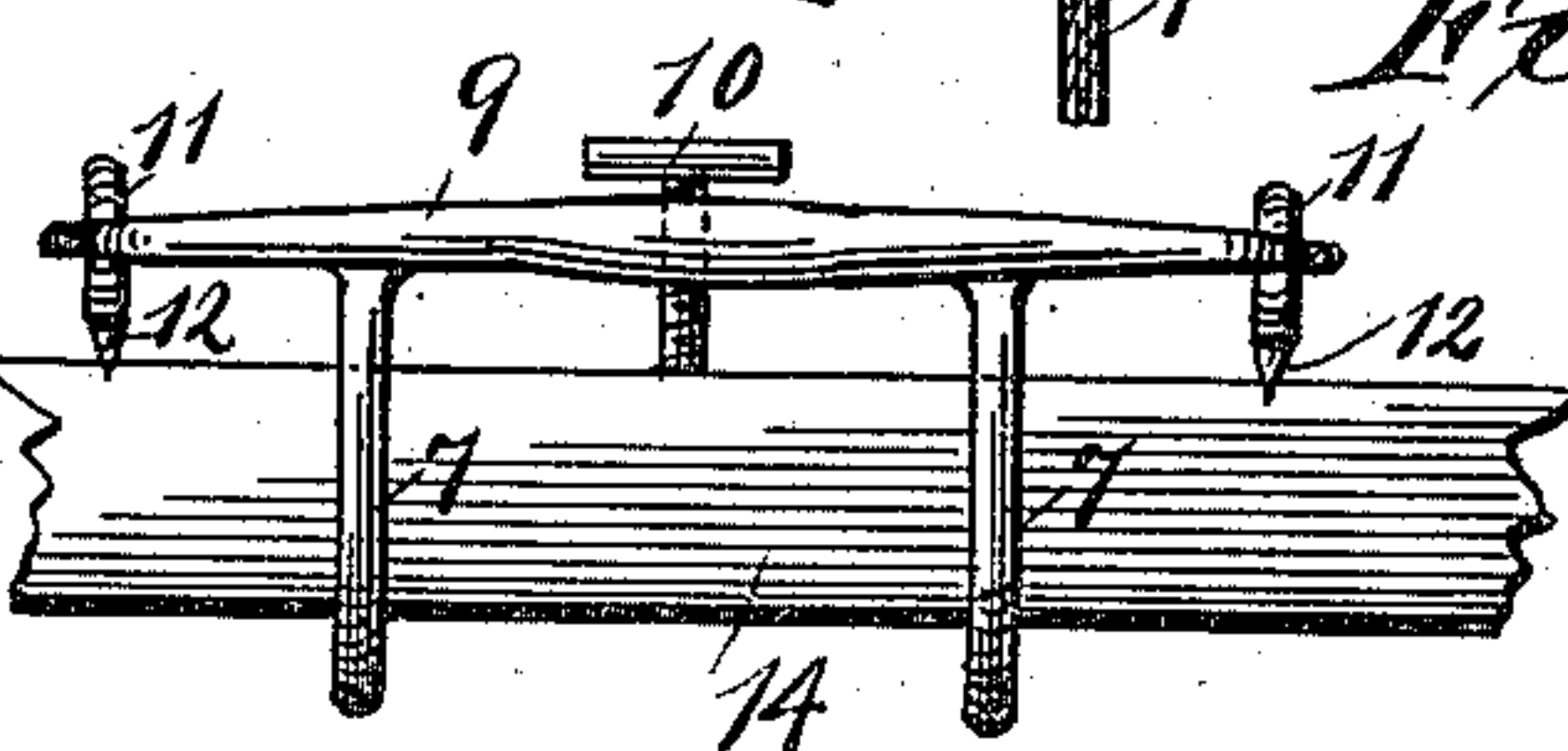


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 383,613, dated May 29, 1888.

Application filed April 2, 1888. Serial No. 269,251. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM BLOCK, of St. Petersburg, Russia, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

This invention relates to that class of portable flexible fire-escapes which are adapted to be attached to a window-sill or other support on a building and extended to the ground, thereby affording a means for persons in the building to descend to the ground.

The invention has for its object to provide a light, strong, and durable fire-escape of this kind, which may be easily and securely attached in position for use.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the invention in an extended position. Fig. 2 is a front view, partly broken away, of a modification in an extended position. Fig. 3 is a side view of the attaching device, showing one method of attaching the same. Fig. 4 is a front view thereof, showing another method of attaching it. Fig. 5 is a detail view in section and broken away, showing the method of attaching the rounds to the ropes. Fig. 6 is a detail view in section and broken away, showing the method of attaching the middle of the rounds of the modification; and Fig. 7 is a transverse section of the same.

In the construction of portable flexible fire-escapes it is necessary that the fire-escape should be light, so as to be easily handled, and should take up as little room as possible, and also strong, so as to bear the weight of a number of persons on it at the same time. It is also necessary that the means for attaching it should be such as to enable the fire-escape to be easily and securely fastened to any window-sill or other support.

With these objects in view I have devised a fire-escape formed with the ropes 1, preferably of steel wire, on account of strength and to avoid decay, secured to the rounds 2 in any suitable manner.

The rounds 2 may be of any desirable shape and material, but are preferably made of metal pipe, on account of lightness and strength. The wire ropes 1 pass through holes adjacent

to the ends of the rounds 2, and the latter are held in place thereon by the following means: A plug, 3, of wood or other suitable material, is inserted in each end of each round 2, so as to form sockets in the ends of the rounds, through which the rope 1 passes. The ropes 1 having been passed through the rounds 2 and the latter arranged at suitable intervals apart, pins 4 are passed through the ropes 1 within the ends of the rounds 2 and molten solder, 5, is poured into the sockets formed by the plugs 3, filling the sockets to the ends of the round. The pins 4, being embedded in the hardened solder, 5, hold the ropes 1, so as to prevent the rounds 2 from slipping thereon.

The upper ends of the ropes 1 are provided with a suitable device for attaching the fire-escape to a window-sill or other suitable support, the attaching device being of such a shape as to be adapted to sills or other supports of different thicknesses. As here shown, I have provided an attaching device consisting of rods bent to form a horizontal portion, 6, and a portion, 7, extending at right angles to the portion 6, and formed at their ends with hooks 8. The horizontal portions 6 are connected by a cross-bar, 9, through which passes a clamping-screw, 10. The ropes are connected to the attaching device in any suitable manner, and, as here shown, by eyes 11, which are formed with spurs 12, adapted to press into the wood-work of the support.

By means of an attaching device constructed in this form it may be engaged with a narrow support, as 13 in Fig. 3, or with a broad support, as 14 in Fig. 4, in the first instance the horizontal portions 6 being in vertical position, and in the second instance extending across the top of the window-sill or other support. In either case the attaching device is securely fastened by means of hooks 8, pressing against one side of the support, and the set-screws 10, screwed up in tightened position opposite to the hooks 8. The spurs 12 are also pressed into the wood and afford additional hold for the attaching device.

The lower ends of the ropes 1 are firmly secured to rollers 15, having secured thereto disks 16, which serve as flanges to hold the ropes in place rolled up on the rollers 15. The latter are mounted on the ends of a bar, 17, which may be of metal pipe in order to render it



light and strong. When the fire escape is not in use the ropes 1, with their rounds 2, may be wound up on rollers 15, the ropes and the ends of the rounds lying against the disks 16, and the rounds extending across from one side to the other parallel with the bar 17. The whole affords, when wound up in this position, a comparatively light and compact package, which can be stored away in any convenient location without taking up much room.

When desired for use, it is carried to a window, and the attaching device is easily and quickly secured in place by engaging the hooks 8 with the projection of the window-sill and adjusting the set-screw 10 in tightened position. The frame, consisting of the rollers 15 and connecting-bar 17, is then dropped from the window, which will rapidly cause the ladder, consisting of the ropes 1 and rounds 2, to be unwound therefrom until it reaches the ground.

In the modification shown in Fig. 2 the escape is, in its general features, similar to that already described in connection with Fig. 1, excepting that two ladders are provided instead of one, by means of making the rounds 2 longer and forming the attaching device with a central rod, 6, in addition to the side rods connected by the cross-bar 9, the central rod, 6, being formed similarly to the rods described in Fig. 1. The rod 17, connecting the rollers 15, is also formed with a central roller, 15, to which is secured the end of a third rope similar to the ropes 1. The third or central rope is connected to the rounds 2 in a somewhat different manner from that shown in Fig. 1, as follows:

Wooden plugs 20 are inserted in the rounds 2 and located therein on each side of an opening, 21, formed in the side of the rounds, through which is inserted a pin, 4, passed through the rope 1. The molten solder is then poured through the opening 21, filling the spaces formed by the plugs 20, and upon hardening firmly holding the pin 4 embedded therein in a fixed position.

By means of a fire-escape constructed according to the modification shown in Fig. 2 a strong and light device is provided practically comprising two ladders, allowing a greater number of persons to descend at once than on the single ladder shown in Fig. 1. The modified device is employed similarly to that shown and described in Fig. 1.

By means of my invention I have provided a fire-escape which may be quickly and securely attached in position to any form of support, and which will be light, strong, and durable.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A portable fire-escape consisting of an attachable frame to engage a window-sill or other support, a flexible ladder having one end attached thereto, and a frame to which the other end of the ladder is secured and

upon which it is adapted to be wound, formed of a rod having rollers, and disks at its ends of greater diameter than the rollers, substantially as described.

2. In a portable fire-escape, a frame upon which a flexible ladder may be wound, consisting of a rod having rollers, and disks at its ends of greater diameter than the rollers, substantially as described.

3. In a portable fire-escape, a flexible ladder consisting of ropes and hollow rounds, the ropes being secured to the rounds by passing through them, and having a projection within the round, the projection and rope within the round being embedded in solder, substantially as described.

4. In a portable fire-escape, a flexible ladder consisting of ropes 1 and hollow rounds 2, through which the ropes 1 pass adjacent to their outer ends, the ends of the rounds 2 having a plug, 3, inserted therein, and the cavity formed thereby filled with solder inclosing the rope 1, and a pin, 4, projecting through it, substantially as shown and described.

5. In a portable fire-escape, the joint for securing hollow rounds to flexible ropes, consisting of a hollow round, 2, a rope, 1, passing through the round, an opening, 21, in the side of the round, a plug, 20, in round 2, on either side of the opening 21, a pin, 4, projecting through the rope 1, and solder, 5, inclosing the pin 4 and rope 1 within the round, substantially as shown and described.

6. In a portable fire-escape, an attachable frame to engage a window-sill or other support, consisting of rods formed with the vertical portions 6, having eyes 11, with spurs 12, and connected by cross-bar 9, having clamping-screw 10, and the horizontal portions 7, with hooked ends 8, substantially as shown and described.

7. In a portable fire-escape, a flexible ladder consisting of wire ropes 1 and hollow rounds 2, the ropes passing through the rounds, and the central rope being connected to the rounds 2, having opening 21, by solder, 5, filling the round 2 between plugs 20 therein, and inclosing the rope 1, and a pin, 4, projecting through the rope 1, and the side ropes connected to the rounds 2 by solder, 5, filling a cavity formed in the end of the round by a plug, 3, and inclosing the rope 1, and a pin, 4, projecting through it, substantially as shown and described.

8. In a portable fire-escape, a frame upon which a flexible ladder may be wound, consisting of hollow rod 17, rollers 15, mounted thereon, and disks 16 on the ends of the rod 17, of greater diameter than the rollers 15, substantially as shown and described.

9. A portable fire-escape consisting of an attachable frame to engage a window-sill or other support, formed of rods with vertical portions 6, having eyes 11 and spurs 12, and connected by cross-bar 9, having clamping-screw 10, and horizontal portions 7, with hooked ends 8, in combination with a flexible ladder formed



of wire ropes 1, connected to eyes 11, and  
hollow metallic rounds 2, through which the  
ropes pass at their center and adjacent to  
their ends, and fastened thereto at the center  
5 of the rounds by a pin, 4, projecting through  
the rope and embedded in solder, 5, filling the  
round between plugs 20 and opposite an open-  
ing, 21, in the round, and at the ends of the  
rounds by a pin, 4, projecting through rope 1  
10 and embedded in solder, 5, filling the cavity in  
the end of the round formed by an inserted

plug, 3, and a frame on which the flexible lad-  
der is to be wound, consisting of a hollow rod,  
17, having rollers 15 mounted thereon, to  
which the ropes 1 are fastened, and disks 16 15  
at the ends of rod 17, of greater diameter  
than the rollers 15, substantially as shown and  
described.

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Witnesses:

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