S. P. TORNBERG.

FIRE ESCAPE.

APPLICATION FILED APR. 9, 1915.

1,198,489.

Patented Sept. 19, 1916.

4 SHEETS—SHEET 1.

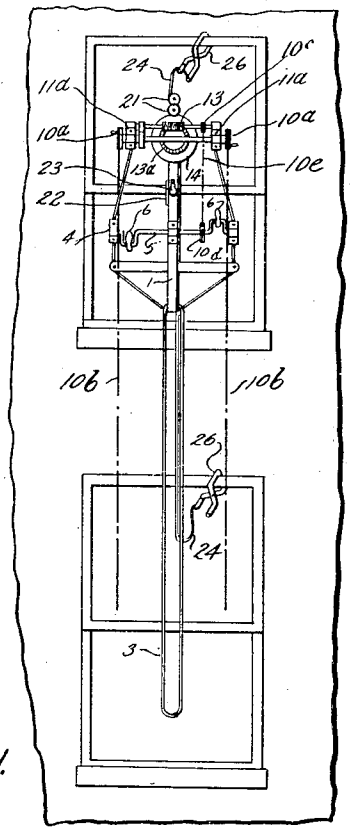

Fig. 1.

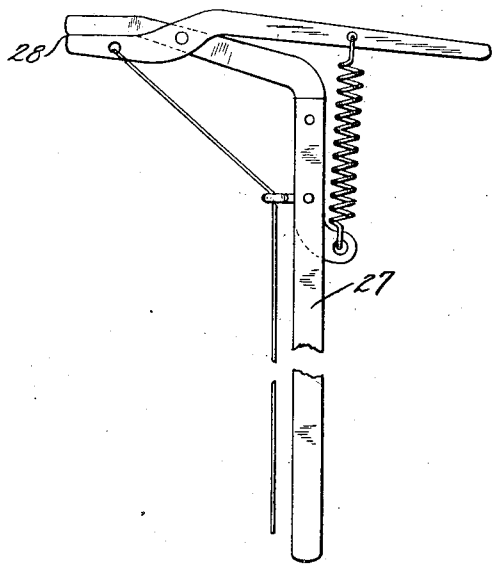

Fig. 8.

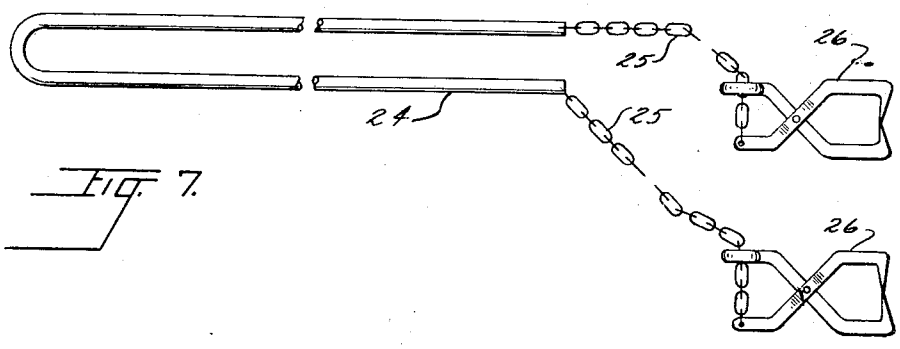

Fig. 7.

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4 SHEETS SHEET 2.

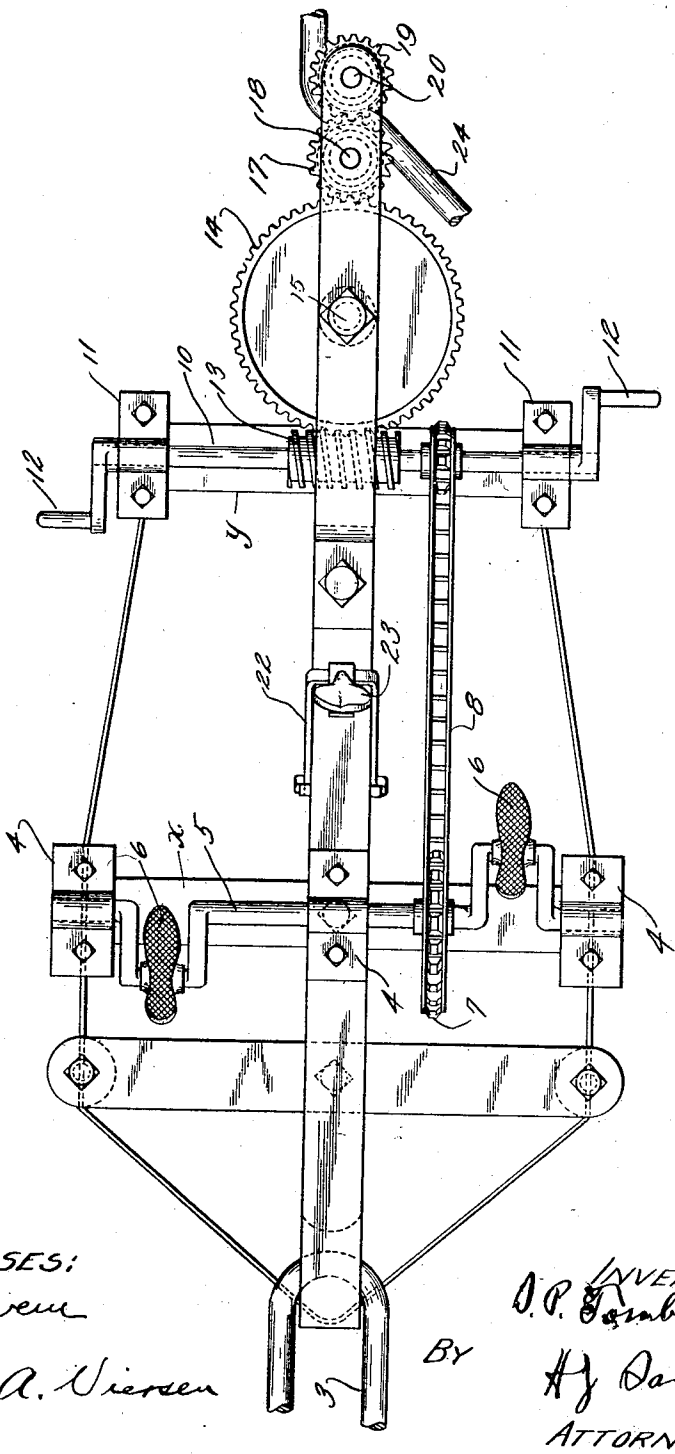

Fig. 2.

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4 SHEETS—SHEET 3.

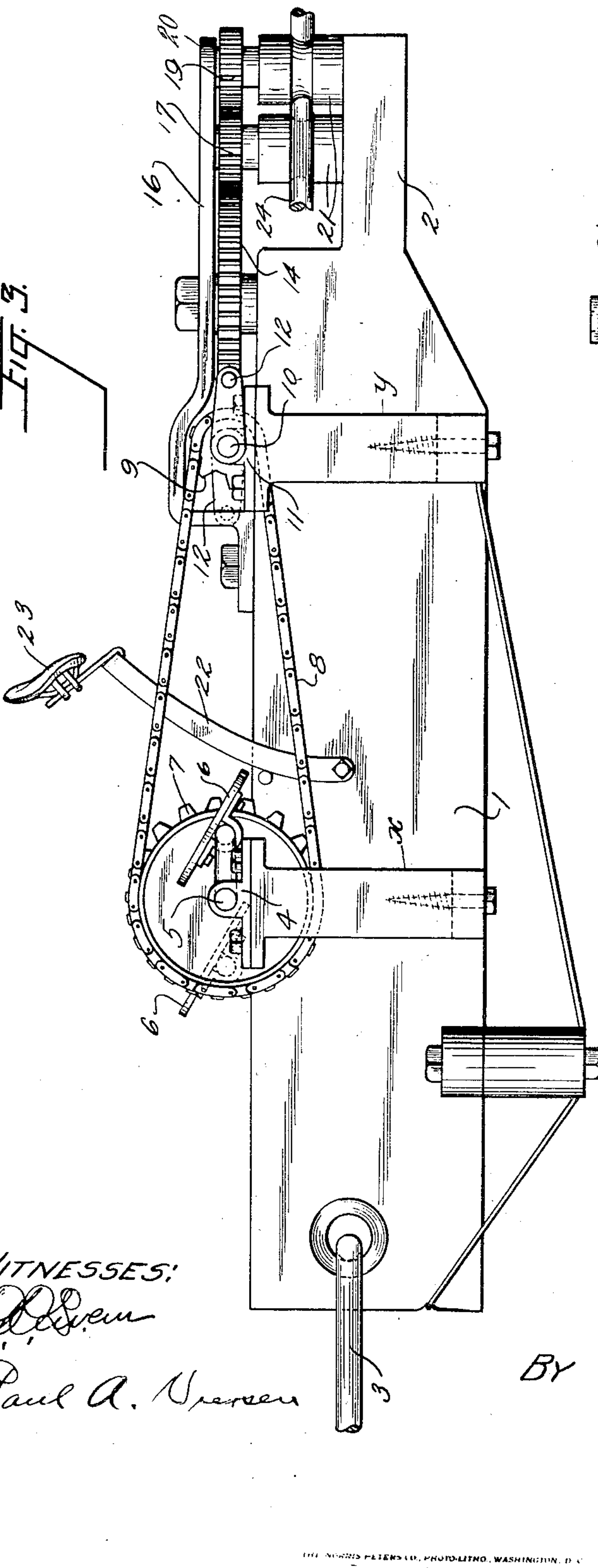

FIG. 3.

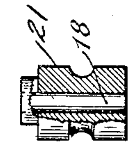

FIG. 4.

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[illegible]

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4 SHEETS—SHEET 4.

FIG. 5.

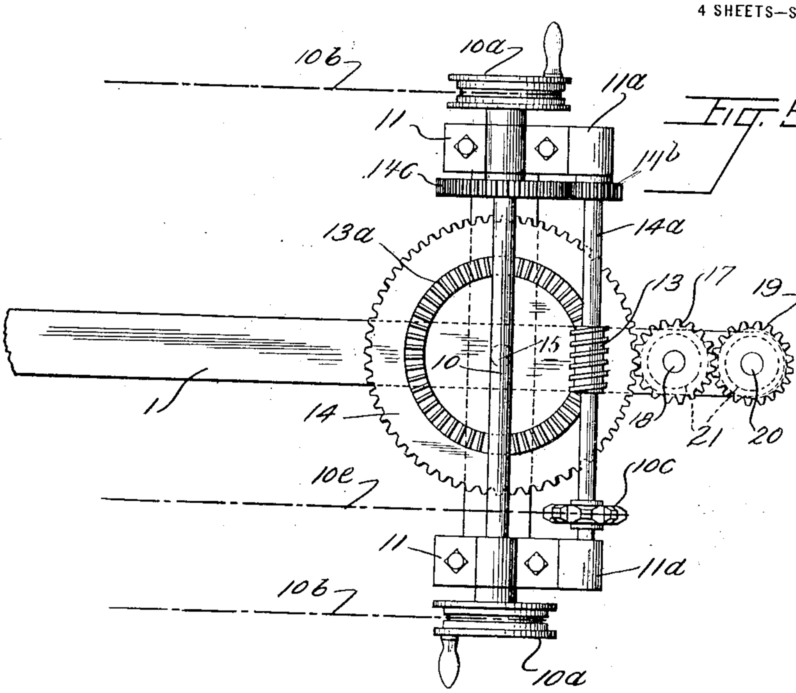
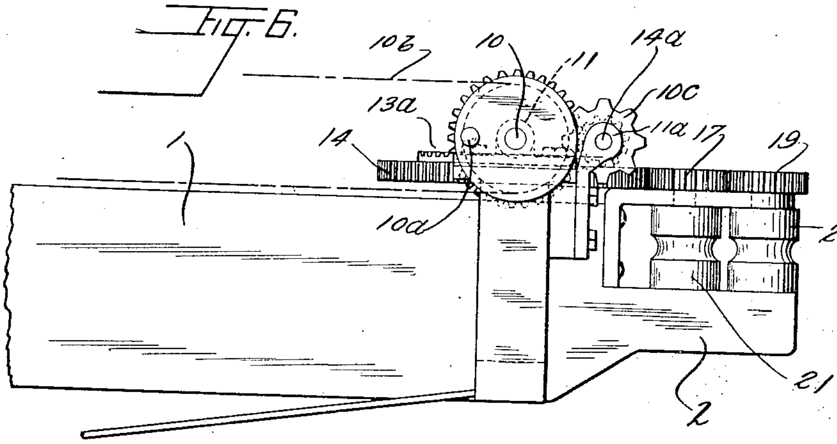


FIG. 6.



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UNITED STATES PATENT OFFICE.

SVEN PETTER TORNBERG, OF BROCKTON, MASSACHUSETTS.

FIRE-ESCAPE.

1,198,489. Specification of Letters Patent. Patented Sept. 19, 1916.

Application filed April 9, 1915. Serial No. 20,192.

To all whom it may concern:

Be it known that I, SVEN PETTER TORNBERG, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

This invention relates to improvements in fire escapes and it contemplates the provision of a truck provided with a climbing pulley adapted to ascend or descend a cable which cable is adapted to be releasably attached to the windows of a building so that parties may be rescued from any floor of the building and transported upon the truck safely to the ground.

With the foregoing and other objects in view the invention consists in the combination and arrangement of parts to be hereinafter fully described in the following specification, pointed out in the claims and illustrated in the accompanying drawings which form a part of said specification and in which—

Figure 1 is a plan view of my improved fire escape applied to the side of a building. Fig. 2 is an enlarged plan view of the truck alone. Fig. 3 is a side view of the same. Fig. 4 is a detail of one of the climbing pulleys partly in section. Fig. 5 is a plan view of a portion of the truck embodying a slight modification. Fig. 6 is a side view of Fig. 5. Fig. 7 is a detail of the hooks and supporting cable employed. Fig. 8 is a view of the release hook employed.

Like reference characters indicate corresponding parts throughout the several views.

My fire escape comprises a traveling truck or frame comprising a spine 1 formed with a neck 2 and provided with a tail rope 3 that depends from the frame or spine when the same is in use. The frame or spine, further, comprises a pair of lateral arms X, Y suitably spaced apart and bolted to the spine 1, which arms carry bearings 4, 4, 4 in which the pedal shaft 5 is journaled that carries the pedals 6, 6 and that is provided with the sprocket wheel 7 that is connected with sprocket chain 8 with a small cog wheel 9 arranged upon a crank shaft 10 journaled in bearings 11, 11, also carried by the frame; said crank shaft being terminally provided with the hand cranks 12, 12. A worm 13 formed upon the crank shaft (see Figs. 2 and 5) meshes with a large gear wheel 14 arranged upon the stub shaft 15 journaled in the frame and in a casting 16 extending longitudinally of a portion of the frame, and said gear wheel 14 meshes with the cog wheel 17, of pulley shaft 18, which cog wheel also meshes with a cog wheel 19 of another pulley shaft 20; the pulley shafts 18 and 20 being journaled in the casting 16 and in the neck 2 of the frame and each of said shafts being provided with a grooved climbing pulley 21. In the slight modification shown in Figs. 5 and 6 the worm 13 engages a circular rack 13^a fast upon the gear wheel 14 and through said rack imparts motion to said gear wheel; said worm being mounted upon a transmission shaft 14^a journaled in extensions 11^a of the castings 11, 11, which shaft is provided with a pinion 14^b in mesh with a gear wheel 14^c of crank shaft 10. The crank shaft 10, further, is provided with terminal pulleys 10^a upon which cables 10^b are wound that may serve to raise or lower anyone to safety and said transmission shaft 14^a being provided with a pulley 10^c connected to pulley 10^d of the pedal shaft by a cable 10^e.

Referring again to the frame 1 the same is provided with a seat post 22 provided with a seat 23 upon which the operator sits, and who may be strapped to the frame in any suitable manner, who pedals the pedal shaft and manually rotates the crank shaft to impel the truck up or down over the cable 24 which extends between the climbing pulleys 21 in the grooves thereof. The cable 24 is provided at each end with a chain 25 that carries one of the anchor tongs 26 adapted to engage the head of a window (as shown in Fig. 1) or the sill thereof to position the cable 24 for travel thereover of the truck.

The operator is provided with a hook or hand grapple 27 in the jaw 28 of which he may grasp one of the tongs 26. He first breaks the glass of a window with the hand grapple and then with the same hand he places the tongs in engagement with the head of the window. The friction of the climbing pulleys upon the cable 24 is sufficient to hold the grapples 26 fast in an adjusted position but by pedaling and turning the crank shaft in one direction the truck may be made to ascend the cable, and by pedaling and turning the crank shaft in the

reverse direction the machine may be made to descend the cable. When one pair of tongs is placed in engagement with one of the windows of the first story of a building the truck is pedaled up almost to the said tongs; the tongs at the opposite end of the cable are then placed, by means of the hand grapple, in engagement with a window of the story next above and the truck again moved up one story. This operation is repeated until the truck is moved to the top of the building or as near the top as may be desired or possible. The truck is now lowered in the following manner: The pedaling operation and the cranking operation are reversed and the truck caused to descend one story or until its weight is borne by the pair of tongs that were positioned below the truck at the time the descent began. The relative upper pair of tongs are now disengaged from the window by the hand grapple and moved into engagement with a window of the story next below the position of the truck. Pedaling and cranking to cause a descent of the truck one more story are again resumed until the weight of the truck is borne by the relatively lower tongs, and this operation is repeated until the truck is lowered to the ground.

What is claimed is:—

A fire escape comprising a carriage consisting of a spine, a pair of transverse arms secured thereto and spaced apart thereon, a brace and stay rod connecting the outer extending ends of said arms and one end of said spine, an operator's seat carried on said spine mediate its ends, power transmitting mechanism carried on said carriage comprising a pair of driving shafts, one journaled to each of the arms, a pair of climbing pulleys journaled to the outer end of said spine, means for transmitting power from one shaft to the other, and their combined power to said climbing pulleys, and a cable adapted to be engaged by said climbing pulleys.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two subscribing witnesses.

SVEN PETTER TORNBERG.

Witnesses:
OBADIAH LYON,
OSCAR F. PETERSON.