

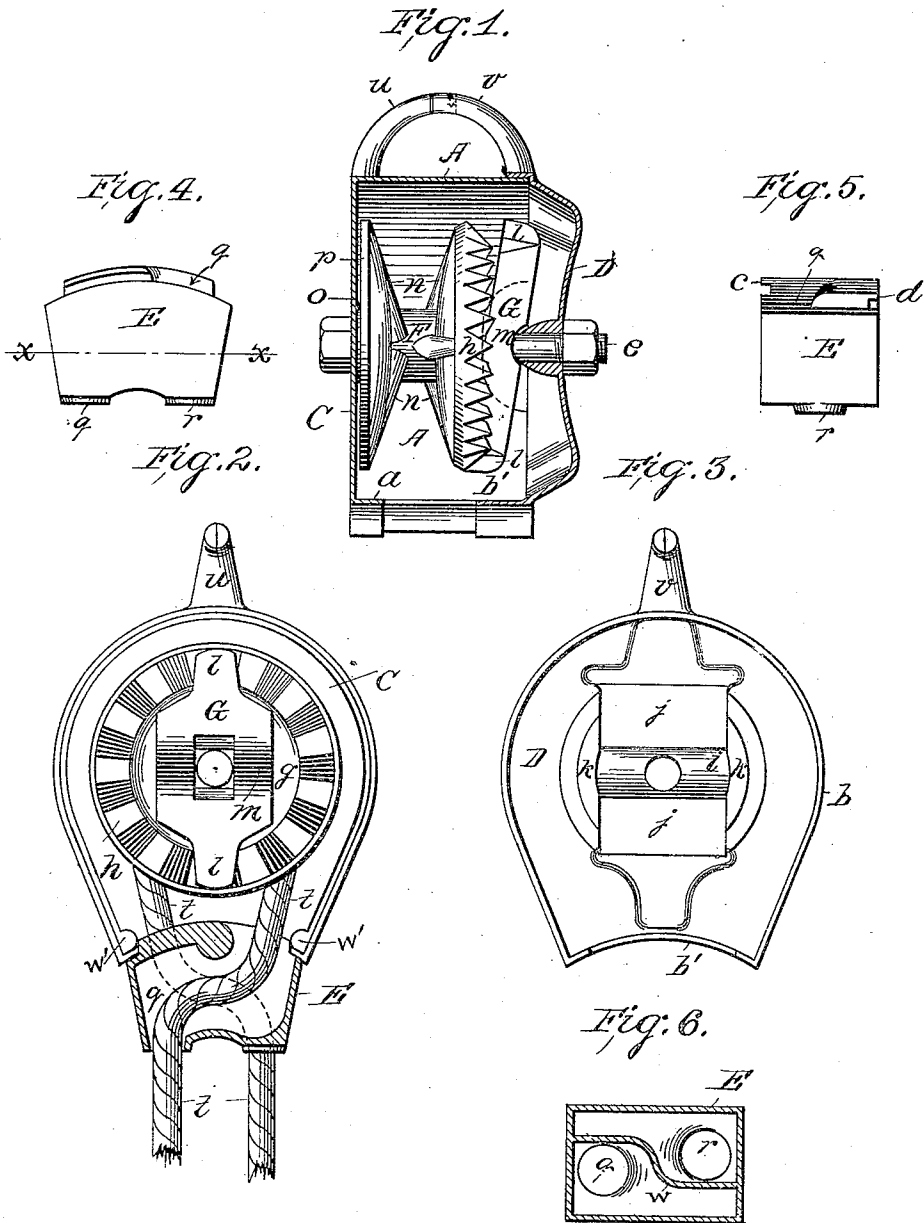
(No Model.)

2 Sheets—Sheet 1.

J. F. SHAW.
FIRE ESCAPE.

No. 511,714.

Patented Dec. 26, 1893.



Witnesses:

Mark M. Decker
[Signature]

Inventor,
John F. Shaw,

By *[Signature]*

Attorney.

(No Model.)

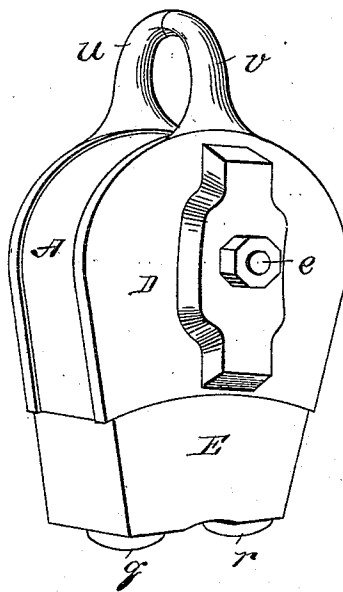
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FIRE ESCAPE.

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Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN F. SHAW, OF AUBURN, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 511,714, dated December 26, 1893.

Application filed December 31, 1892. Serial No. 456,893. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. SHAW, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a full, clear, and exact specification.

My invention relates to fire escapes whereby persons may be safely lowered to the ground from buildings and other places, and its object is to provide certain improved means for enabling descents to be made at a moderate speed, to prevent casualties, with provisions for stopping the journey downward at any point desired with ease and facility.

Further my improvements consist in the simple and cheap construction of the apparatus in which the parts are made easily adjustable for use, and adapted to be all held together by a single bolt and nut.

In order that my invention may be properly understood I have hereunto annexed a sheet of drawings on which similar letters of reference indicate corresponding parts on all figures alike.

Figure 1 is a vertical transverse sectional view with the drum and rocking arm and pin shown in full lines, and with the rope guide removed. Fig. 2 is a side elevation of one of the plates and wall of casing showing the interior mechanism in full lines and the rope guide in section, also the rope in its operative position. Fig. 3 is an inverted plan view of the opposite side plate, showing the bearing, recess, and guides. Fig. 4 is a side elevation of the rope guide and friction brake. Fig. 5 is an end elevation of the same. Fig. 6 is a horizontal section taken on line *x-x* of Fig. 4, and Fig. 7 is a perspective view showing my improved fire escape complete.

In the drawings A represents the casing employed with my apparatus, to contain the working parts. This casing comprises a casting preferably in the shape of a horseshoe, forming a wall and having the side plates C D. The plate C is permanently secured to the wall B, and has an inwardly projecting flange *a* formed at its lower end and running crosswise between the two ends of the wall, the purpose of which flange will be described hereinafter. The side plate D is provided

around its entire edge with the inwardly projecting flange *b* the lower portion of said flange having the extension *b'*, shown best in Fig. 1. The purpose of this flange is to hold the plate in its proper position relative to the wall. The flanges *a* and *b'* are provided for the purpose of supporting what I please to term a rope guide and friction brake E, said rope guide and friction brake having outwardly projecting flanges *c d* forming hangers to engage with the flanges *a* and *b'*.

The parts thus far described, forming the casing and rope guide, being assembled together are held in position by a pin or bolt *e* which is passed centrally through the casing, and secured by a nut *f*. The said bolt *e* also acts as a shaft upon which a drum F is rotatably mounted within the casing, the face *g* of said drum being provided with a crown gear *h*, acting as a pinion and consisting of an uneven number of V-shaped teeth for a purpose to be hereinafter described.

The side plate D has upon its inner surface an upwardly projecting portion *i* forming a bearing for a rocking arm or double acting pawl G, a suitable recess *j* being formed in the plate D to provide a suitable space in which the rocking arm may be free to vibrate. Guides *k* are also formed on the inner surface of the plate D to prevent the rocking arm from rotating with the crown gear *h* and drum F, said guides also serving as a bearing to prevent the gear from coming in contact with the plate D. The rocking arm is formed of substantially oblong shape with a V-shaped extension *l* at either end forming pawls to engage with the V-shaped teeth of the beveled gear *h*. The rocking arm is somewhat hollowed out on its under side at *m* forming a bearing surface adapting it to bear against and rock upon the bearing *i*. The rocking arm is mounted upon the pin or shaft *e* and is so adjusted in relation to the gear *h* that a vibrating motion is imparted to said arm by the rotation of the drum and gear.

The rope used with my escape is preferably wound twice upon the drum, suitable ribs *n* being provided upon the inner surfaces of the drum plates forming a tension to prevent the rope from slipping. The drum hub *o* is

extended somewhat beyond the drum plate *p*, forming a bearing to prevent friction between said plate and the side plate C.

The rope guide or friction brake E is provided with passages *q r* of substantially S-shape in vertical longitudinal section taken on line *x-x* of Fig. 5, the inlets and outlets of the two passages being opposite to each other, this arrangement enabling the rope *t* to be crossed, whereby it is adapted for use as a friction brake. In rigging my improved escape the end of the rope is passed through one of the passages *q r*, thence around the drum (preferably twice) and returned through the opposite passage in the guide, when either end of the rope may be used. If preferred an endless rope may be employed whereby either of the depending parts can be employed at will.

I may use a hanger to support the apparatus, which hanger may be permanently secured where required. A supporting bail for engagement with the hanger aforesaid is formed in two parts *u, v*, each part being made integral with the side plates C and D, the meeting ends of said parts *s t* being halved and adapted to fit together and appear as one piece.

Another advantage of my apparatus is that it may be utilized as a pulley by simply removing the rocking arm, whereby the drum will be free to revolve upon the shaft in the manner of a sheave turning within its block.

A wall *w* extends vertically from one end of the rope guide or friction brake to the other; the object of said wall being to divide the interior of the guide or brake E into two separate passages for the rope.

w' indicates strengthening ribs for the cas-

ing, also serving to prevent the rope guide or brake from moving laterally.

Having now described my invention, I declare that what I claim is—

1. In a fire escape a casing consisting of a substantially horse-shoe shaped wall having one side plate permanently secured thereto, the said side plate being provided with an inwardly turned flange, also a separate side plate having an inwardly turned flange around its end and adapted to fit loosely over and close the open side of the wall, together with a rope guide and friction brake having outwardly projecting flanges or hangers for engaging with the flanges on the side plates to connect the rope guide with the casing, substantially as and for the purpose described.

2. In a fire escape a casing consisting of a substantially horse-shoe shaped wall having one side plate permanently secured thereto, the said side plate being provided with an inwardly turned flange around its end and adapted to fit loosely over and close the open side of the wall, together with a rope guide and friction brake having outwardly projecting flanges or hangers for engaging with the flanges on the side plates, the said friction brake being provided with passages for the ropes; the inlets and outlets of the passages being obliquely opposite to each other, as and for the purposes shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of December, 1892.

JOHN F. SHAW.

Witnesses:

ALEX. M. LOWRY,
ALBERT G. BURTIS.