

No. 644,404.

Patented Feb. 27, 1900.

E. M. CHRIST & W. I. HALDEMAN.

FIRE ESCAPE.

(Application filed Sept. 19, 1899.)

(No Model.)

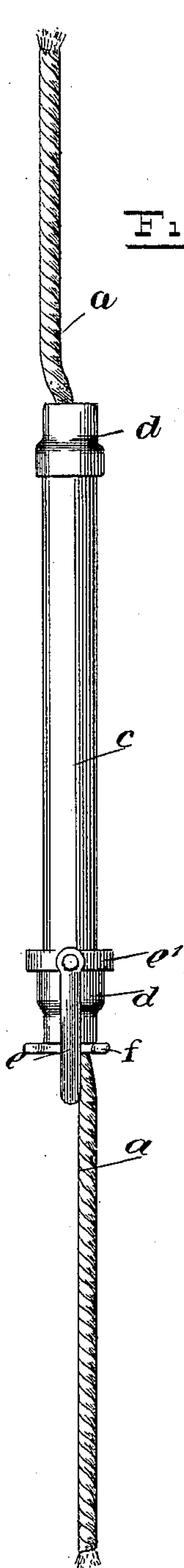


Fig. 1.

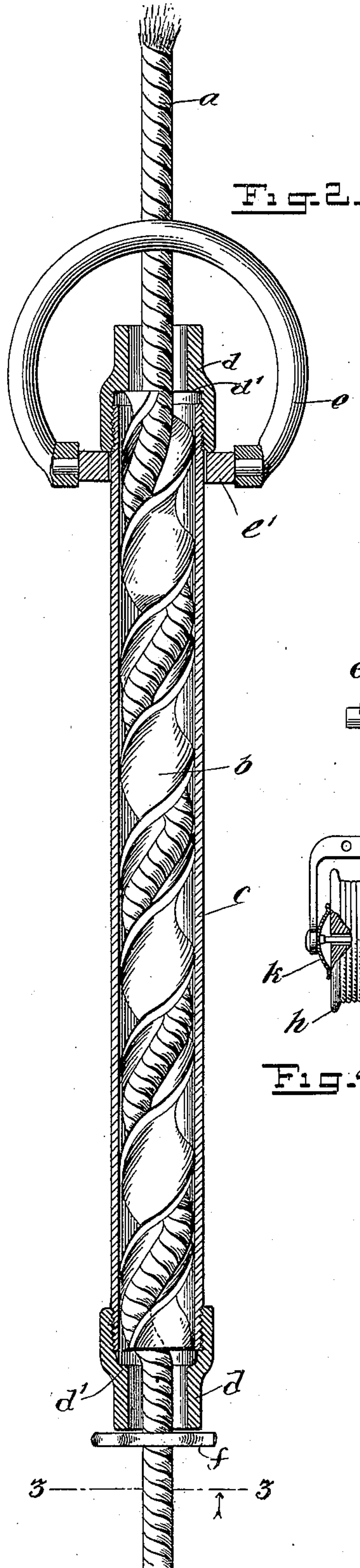


Fig. 2.

Fig. 3.

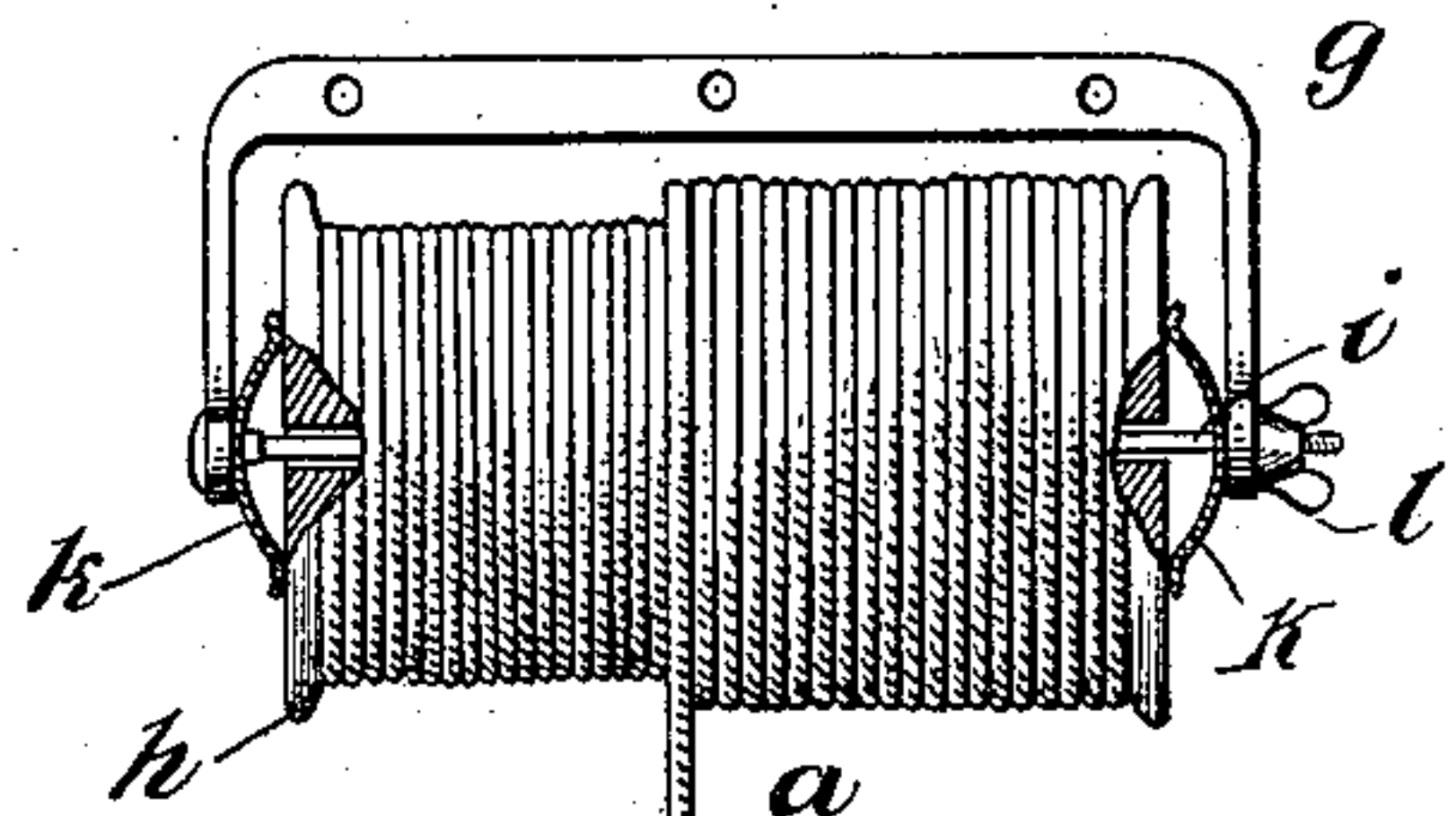
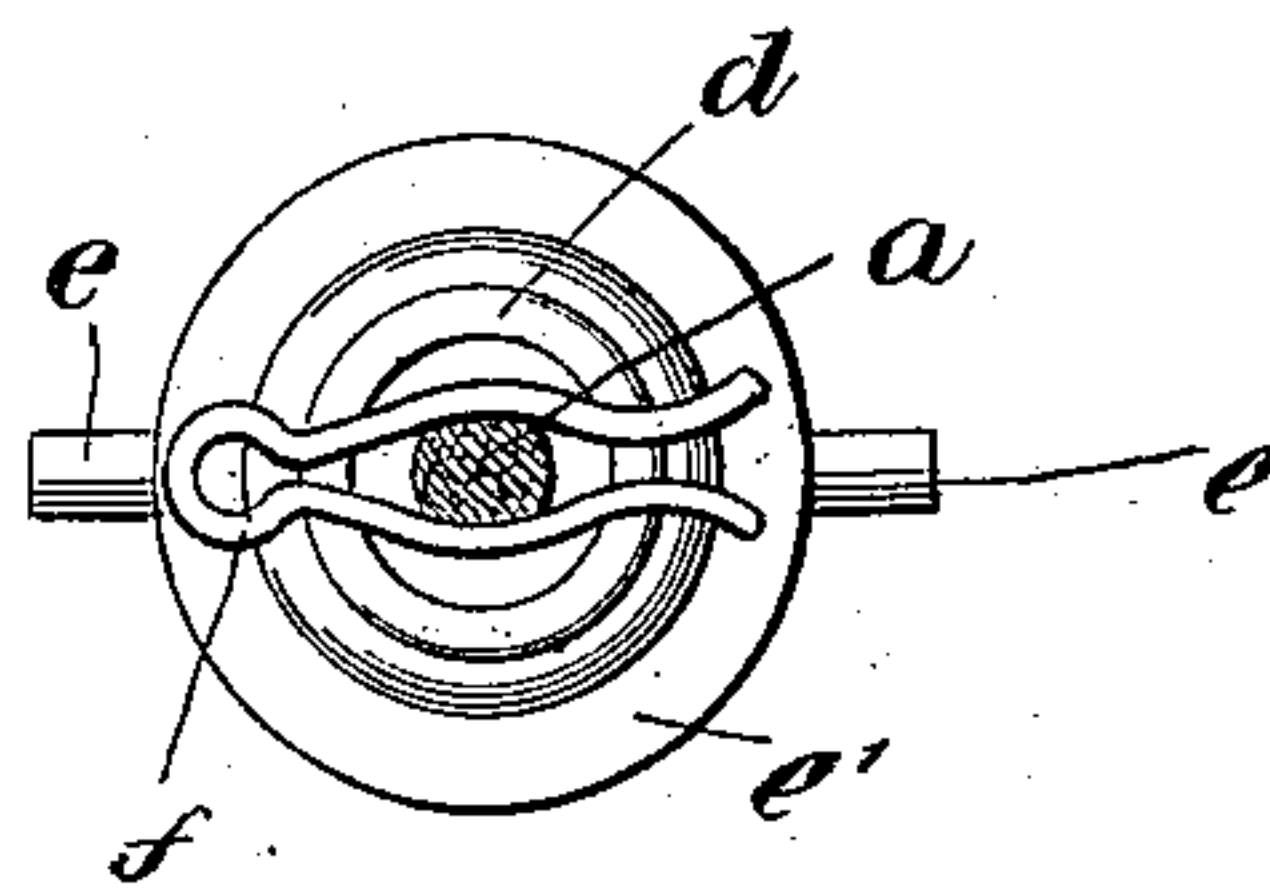


Fig. 4.

WITNESSES:

Geo. W. Taylor
Isaac A. Stevens.

INVENTORS

E. M. Christ
W. I. Haldeeman

BY

M. W. Haldeeman
ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD M. CHRIST AND WILLIAM I. HALDEMAN, OF PINE GROVE,
PENNSYLVANIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 644,404, dated February 27, 1900.

Application filed September 19, 1899. Serial No. 730,976. (No model.)

To all whom it may concern:

Be it known that we, EDWARD M. CHRIST and WILLIAM I. HALDEMAN, of Pine Grove, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Improvement in Fire-Escapes, of which the following is a full, clear, and exact description.

This invention relates to fire-escapes of that class in which a line or rope is employed with a friction device, so that a person may escape from a building by dropping with or by the rope, the friction device serving to retard and render gradual the descent of the person.

This specification is the disclosure of one form of our invention, while the claims define the actual scope thereof.

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

Figure 1 is an exterior view of the invention. Fig. 2 is an enlarged longitudinal section of the same. Fig. 3 is a section on the line 3 3 of Fig. 2; and Fig. 4 is a front elevation of the device connected with a reel, parts of the reel being broken away.

The fire-escape comprises a rope or other like flexible structure *a*, which is wound around a spiral strip *b* of metal, the spiral strip *b* being seated in a tube *c*. This tube is of a length equal to that of the spiral strip *b* and is provided at each end with a thimble *d*, rigidly attached and formed with an internal shoulder *d'*, such shoulders engaging the ends of the spiral strip to prevent its displacement. For attaching the tube *c* to a building or to a person the tube is provided with a bail *e*, pivoted upon a collar *e'*, encircling the tube and bearing against a thimble *d*. For further increasing the frictional resistance against the relative resistance of the rope and spiral strip we provide a spring-clamp *f*, resembling a cotter-pin, which is engaged with the rope and laid across one of the thimbles in such a position as will cause the clamp to be kept pressed against the thimble. A plurality of these clamps *f* may be employed should it be desired further to increase the friction.

In using the apparatus either the rope or

the tube may be attached to the building. Supposing that the rope be attached to the building, the person escaping should attach the tube *c* to his body by any suitable harness, and upon dropping from the building, the tube will be allowed slowly to descend. Should the tube be attached to the building, the operation will be the reverse of that described.

It will be observed that the most effective frictional resistance will be secured by the spiral strip and that it will not injure the rope, since sharp surfaces will be avoided. The clamp *f* is an auxiliary attachment that may be employed when a person of great weight is to be lowered, and this may be regulated according to the judgment of the operator.

In Fig. 4 we have illustrated an arched frame *g*, which is adapted for attachment to the window-frame or any portion of a building adjacent to such frame. This arched frame contains a reel *h*, which is mounted to turn on a shaft *i*, passed loosely through one end of the arched frame, the opposite end being polygonal and held against turning in the opposing member of the said frame. Springs *k* are mounted on the shaft *i* and have bearing against the ends of the reel and against the pendent members of the frame *g*, in which the shaft is mounted, and the said springs may be made to bear with more or less force against the ends of the reel by the manipulation of a thumb-nut *l* or its equivalent located upon the outer end of the shaft *i*. The rope *a*, that is to be passed through the frictional device, is wound upon the said reel, and ordinarily the device is supported below the reel by hooks *m* or equivalent devices attached to a suitable support and engaging with the bail *e*.

When a person has descended through the medium of the device, a second person may make a loop in the rope *a* below the frictional device and attach himself thereto and descend, the said frictional device being at that time fixedly attached to the building.

Various changes in the form, proportions, and minor features of our invention may be resorted to without departing from the spirit

and scope of the invention, and hence we consider ourselves entitled to all such variations as may lie within the scope of the claims.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A fire-escape, comprising a rigid tube, means within the tube for retarding the passage of a rope through the same, a thimble fastened to one end of the tube, a collar mounted loose on the tube and bearing against the head, and a bail fastened to the collar.

2. In a fire-escape, the combination of a rigid tube, a spiral strip fitting snugly within the tube, and a thimble or cap attached to each end of the tube, the thimbles or caps being formed with shoulders preventing the movement of the spiral strip endwise out of the tube, and the thimbles or caps being open to admit the passage of a rope through the tube and around the spiral strip, as described.

3. A fire-escape, comprising a rigid tube, a

spiral strip fitted snugly within the tube, and means attached to each end of the tube to prevent the displacement of the spiral strip by endwise movement, such means being open to permit the passage of a rope through the tube and around the spiral strip, as described.

4. A fire-escape, comprising a rigid tube, means within the tube for retarding the passage of a rope through the same, a collar mounted to slide loose on the tube between the ends thereof, a bail or fastening attached to the collar, and means at each end of the tube to prevent the movement of the collar off of the tube.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDWARD M. CHRIST.
WILLIAM I. HALDEMAN.

Witnesses:

A. M. ZIMMERMAN,
F. B. STINE.