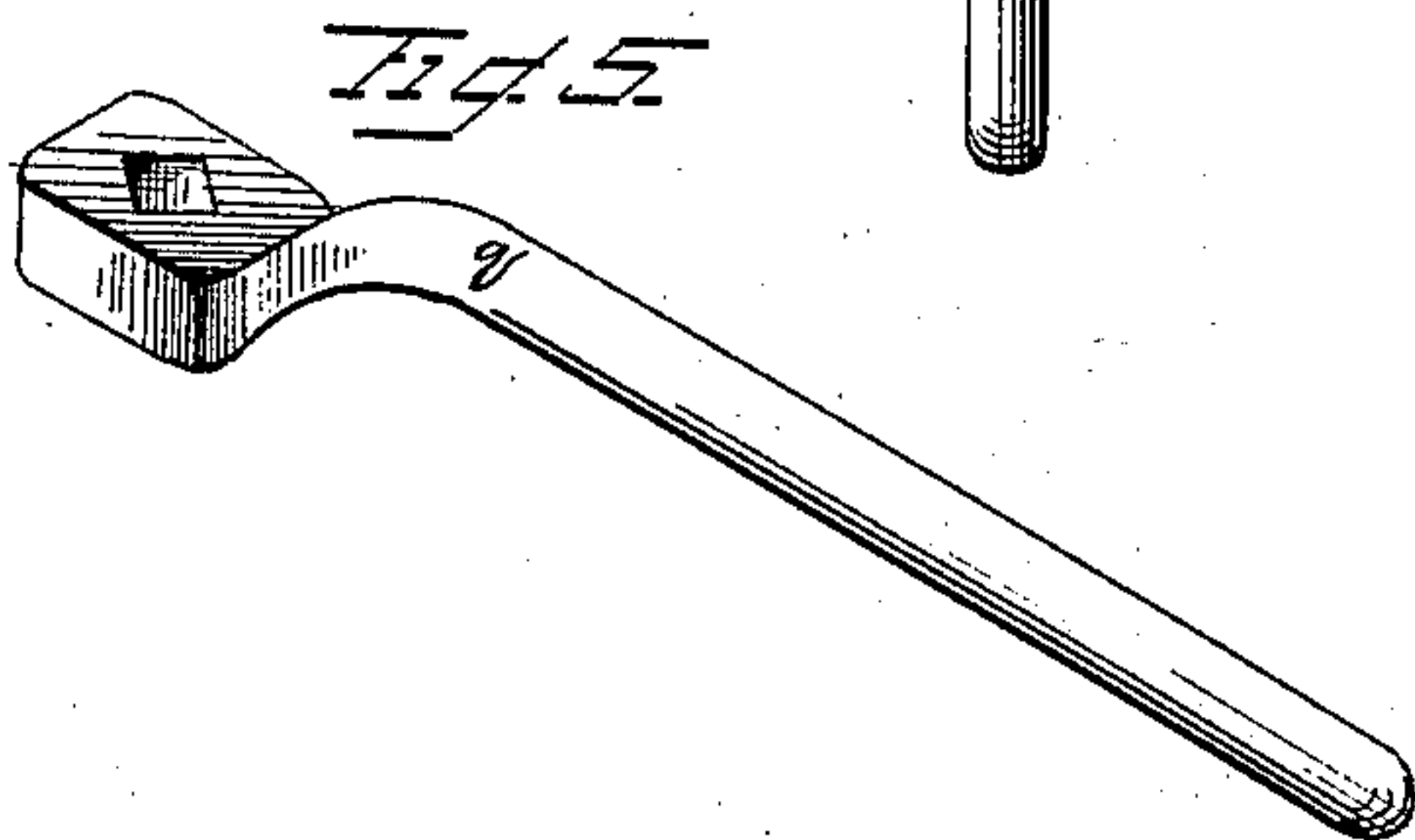
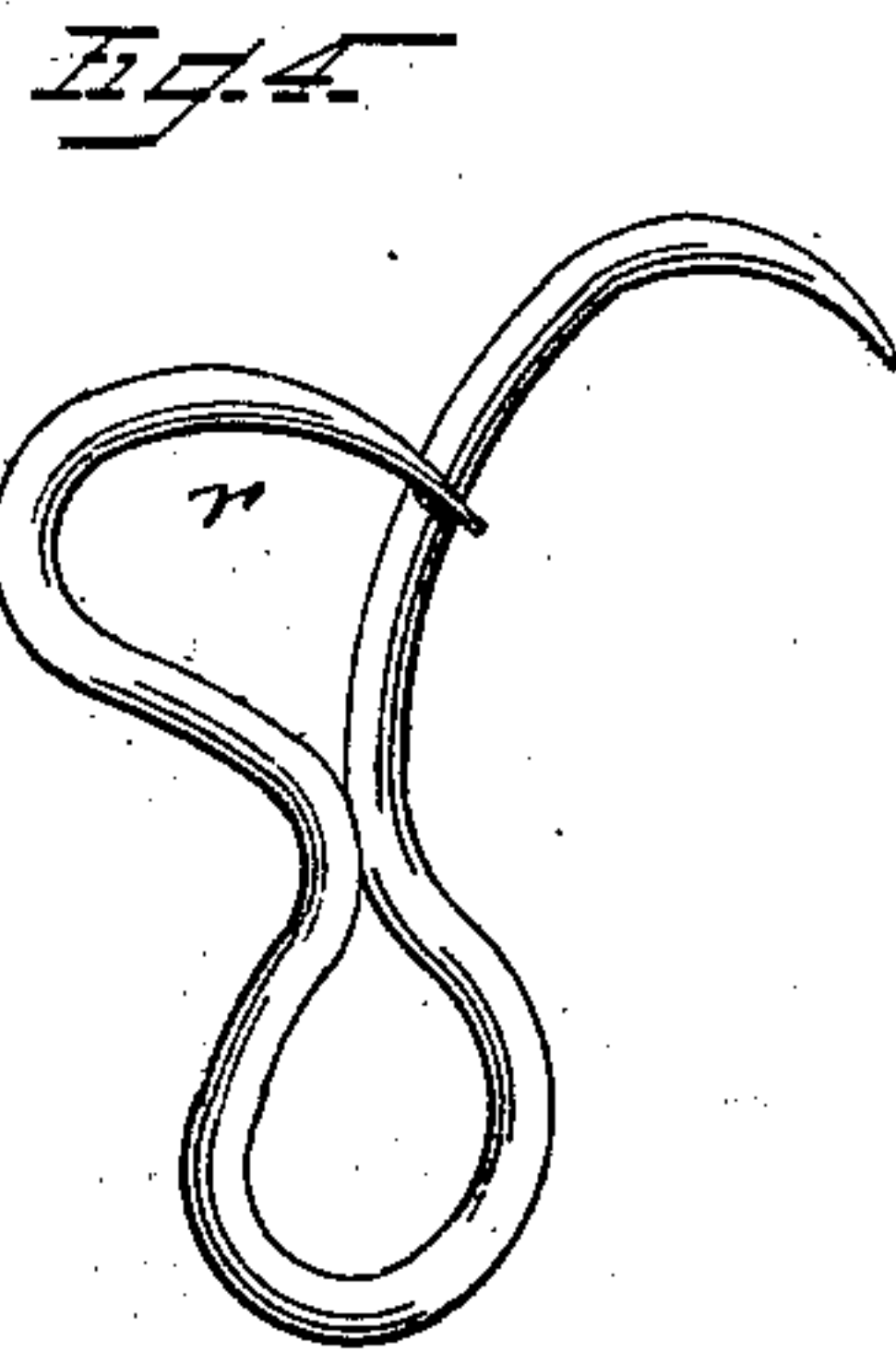
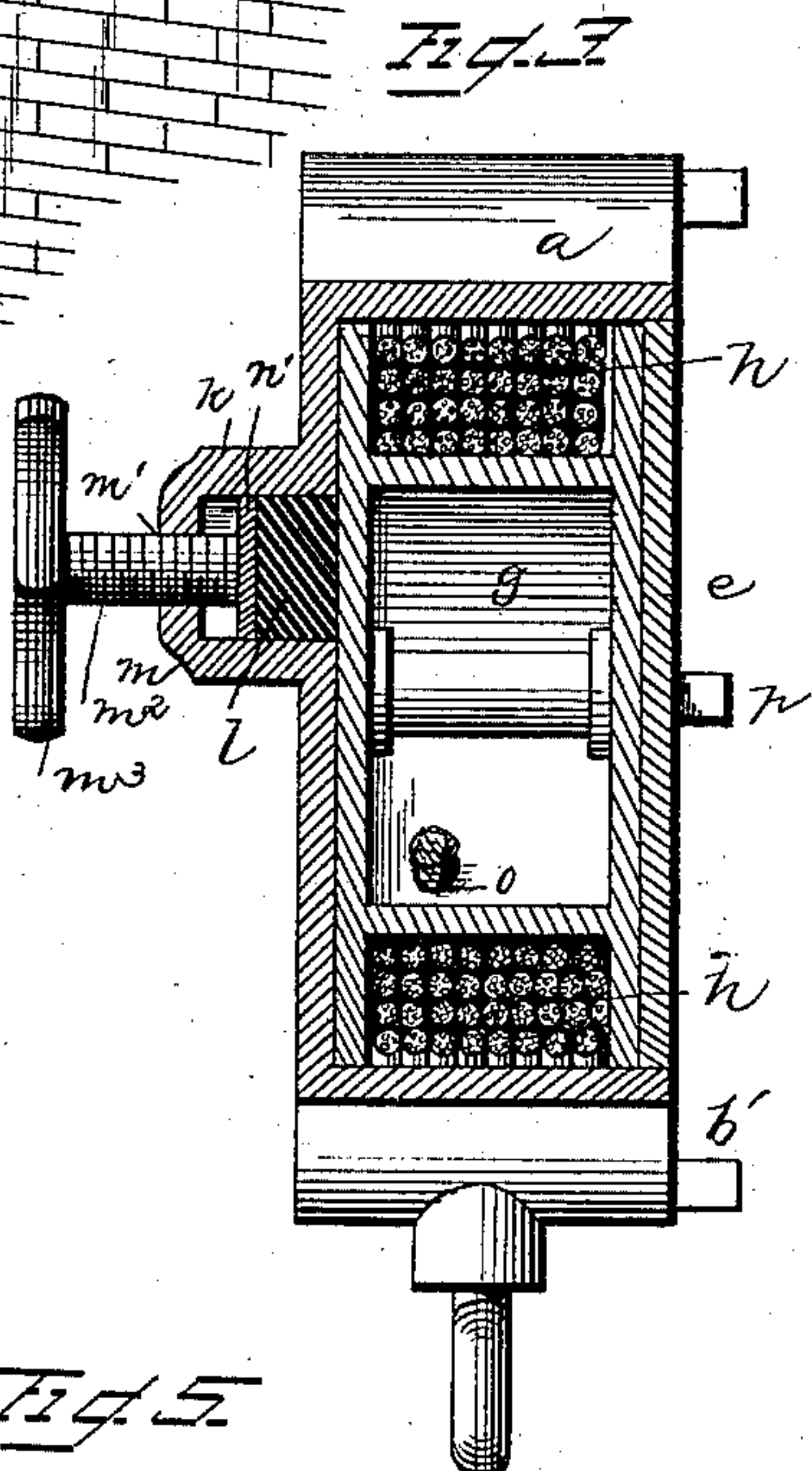
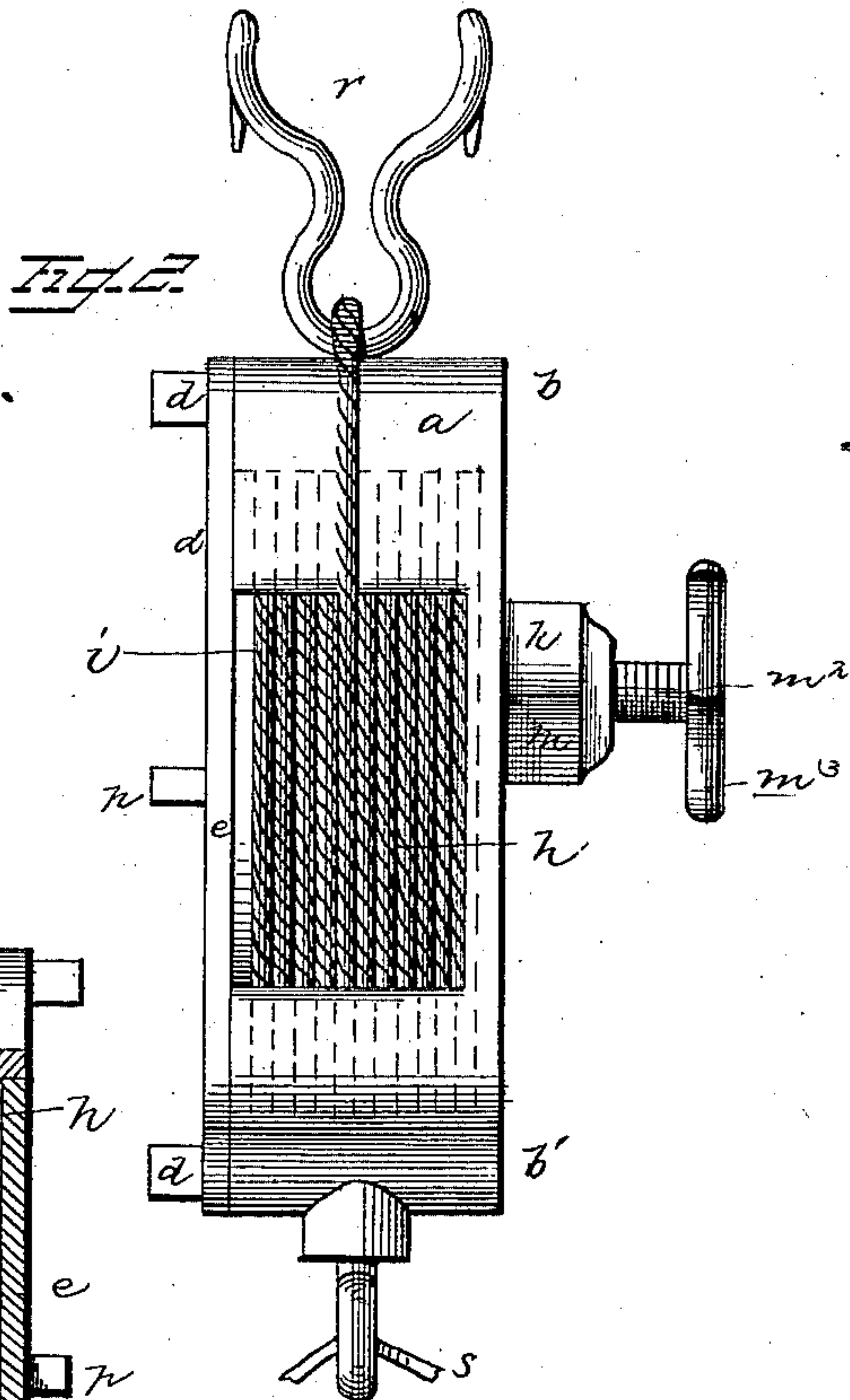
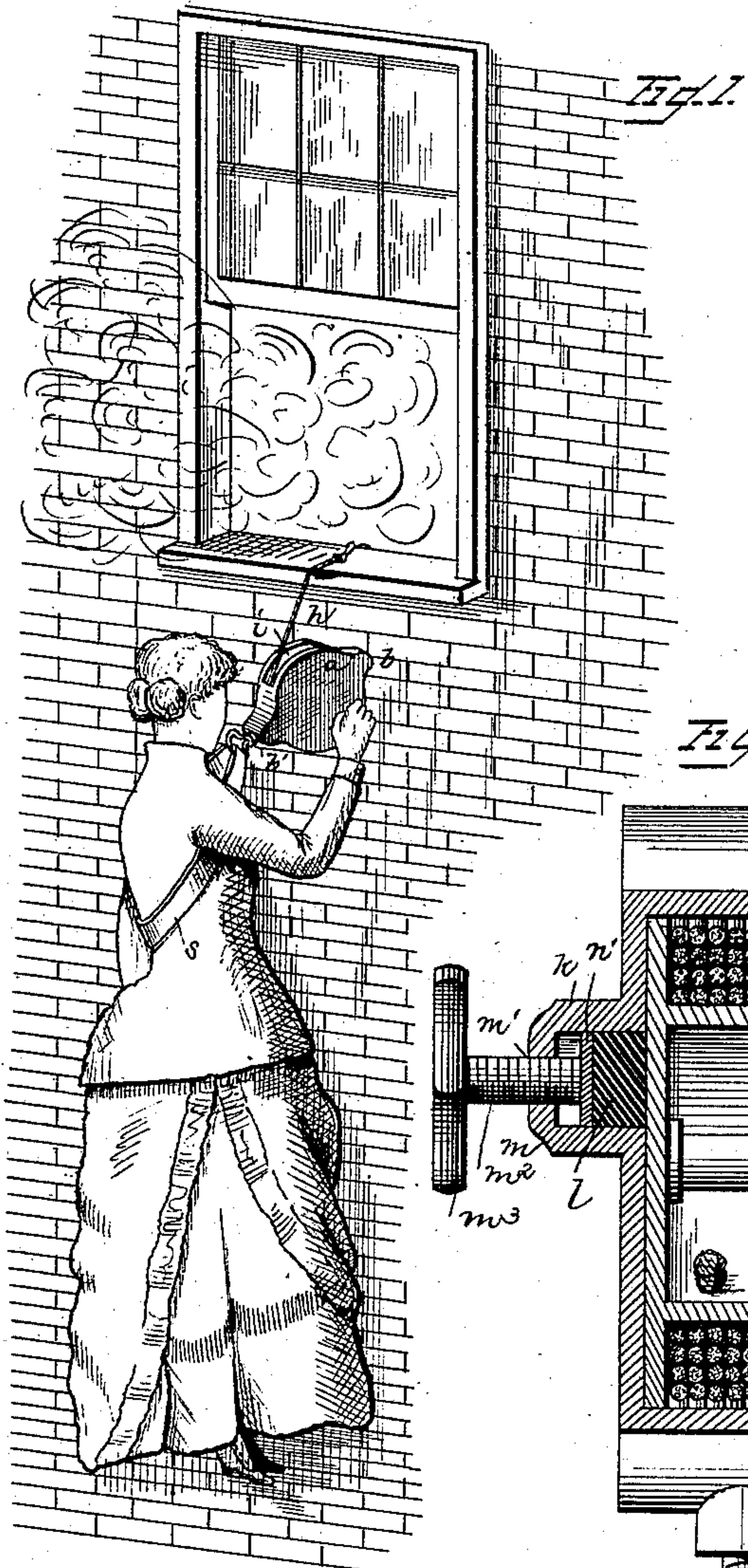


(No Model.)

F. I. FREEMAN.
PORTABLE FIRE ESCAPE.

No. 297,126.

Patented Apr. 22, 1884.



WITNESSES
F. L. O'Rand
E. G. Siggers.

Francis I. Freeman
INVENTOR

by C. A. Snow & Co.

Attorneys

UNITED STATES PATENT OFFICE.

FRANCIS INGERSOLL FREEMAN, OF WARREN, OHIO.

PORTABLE FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 297,126, dated April 22, 1884.

Application filed February 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS I. FREEMAN, a citizen of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have invented a new and useful Portable Fire-Escape, of which the following is a specification, reference being had to the accompanying drawings.

Figure 1 is a view in perspective, showing the improved fire-escape attached to a building and adjusted to the person who is to make the descent from an upper floor. Fig. 2 is a view of the fire-escape, showing the wire cable coiled upon the wheel ready for use. Fig. 3 is a cross-section, showing the rubber friction-brake in its seat in the wall of the case and the hand-wheel and closely-threaded screw for applying and operating the brake. Fig. 4 is a detail view of the steel grappling-hook by which the escape is connected to the roof, window-sill, or other convenient place of attachment; and Fig. 5 is a detail view of the lever for winding the wire cable upon the wheel.

This invention has relation to portable fire-escapes; and it consists in the novel construction and arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claim appended.

This improved fire-escape is designed more especially for traveling men, as it is made small enough and light enough to be conveniently carried in a valise. I construct the case and wheel of brass or malleable iron and the rope of wire. The grappling-hook, which is connected to the free end of the cable is of steel. The casing is strong, but is very small and light. It is about four and a quarter inches in diameter, is two and a half inches wide, and weighs about five pounds with all attachments for a machine that will descend ninety feet. The cable is of steel wire, is about one-eighth of an inch in diameter, and will support six hundred and seventy-five pounds. It is of course obvious that the machine may be put up in hotels, boarding-houses, factories, and the like. It would be preferable, in the latter instance, to put the machine in cases with glass fronts and lock them in, so that they will not be tampered with, and provide directions for their use. In case of a fire the glass front could be broken and the machine taken out and used.

Referring by letter to the accompanying drawings, *a* designates the casing of the fire-escape, consisting of the part *a'*, provided with diametrically - opposite lugs *b b'*, having threaded holes *c c* in one of their ends for the reception of the screw-bolts *d d*, by which the cap-plate or part *e* of the casing is secured to the body or part *a'*. The casing *a* is provided in each end with a central bearing, *f*, for the journals of the flanged drum or wheel *g*, upon which the wire cable *h* is wound, and from which it unwinds through an opening, *i*, in the periphery of the casing *a*. The fixed side of the casing *a* is provided in its inner face with a rectangular depression or receptacle, *k*, which forms the seat for the soft-rubber friction-brake *l*. That portion of the receptacle *k* which lies outside of the wall of the casing *a* is formed by casting a rectangular box, *m*, on the outer face of this wall of the casing and providing the end of this box *m* with a threaded hole, *m'*, in which a finely-threaded screw-rod, *m²*, provided with a hand-wheel, *m³*, works to operate the friction-brake. The outer face, *n*, of the friction-brake *l*—i. e., the face that comes against the screw-point—is of metal, as at *n'*, secured to the soft-rubber portion, to prevent wearing of the rubber and to insure positive and equal pressure of the brake upon the face of the flanged drum or wheel *g*. The end of the wire cable that is secured to the drum is passed through a hole, *o*, in the periphery of the drum between the flanges, and is securely knotted in the hollow portion of the drum. The end of the shaft *p* that forms the journal of the drum in the cap-plate or part *e* is made rectangular in form to receive the wrench or handle *q*, by which the drum is revolved to wind the steel-wire cable thereon. The grappling-hook *r* is made with sharp points, so that it will take a strong and safe hold of the window-sill or other support with which it is engaged when the weight comes upon it. I employ the soft-rubber friction-brake for the reason that I have found by experiment that where a wooden or metal friction-brake is used a very slight turn of the hand-wheel toward the operator will release the brake and permit a very rapid and dangerous descent of the person to the ground, thereby either killing or crippling them. The lug *b'* of the body of the casing is provided with a strong metal

loop, through which the strap passes. This strap encircles the body of the wearer under the arms, as shown, and leaves the hands and feet free to be used to control the brake and to keep the body away from the rough wall, window-caps, window-sills, &c., in making the descent from the upper portion of the building. When the wire cable has been wound upon the drum, the grappling-hook projects through the opening in the periphery of the casing. The hand-wheel is then turned up tight, so that the friction-brake will prevent the drum from revolving at all. After the strap has been adjusted and the grappling-hook properly engaged to some convenient attaching-point, the descent may be commenced. The threads of the screw that controls the brake being very fine, several turns of the hand-wheel will need to be made before the person will begin to move down, and at first the descent will be very slow—say, two feet to the minute; but as the person becomes confident a few more turns of the hand-wheel toward the operator will permit the speed of the descent to be increased, and it may be increased to escape the flames emitted from the window of the building which must be passed, and diminished afterward to avoid the window-caps, &c.

This fire-escape is cheap, absolutely safe, and is simple and easily operated. It possesses great strength, and yet is small enough and light enough to be carried in a trunk or valise, ready for use at all times in cases of fire.

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

In a fire-escape, the combination, with a two-part casing, the body portion of which is provided with a rectangular depression in its side wall, said depression having a threaded opening through its outer wall, of a finely-threaded screw seated in said opening, and provided on its outer end with a hand-wheel, a rubber friction-brake seated in said rectangular depression in the side wall, and a revolving flanged drum carrying the cable, substantially as specified.

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

FRANCIS INGERSOLL FREEMAN.

Witnesses:

DAVID R. GILBERT,
H. M. STONE.