

(No Model.)

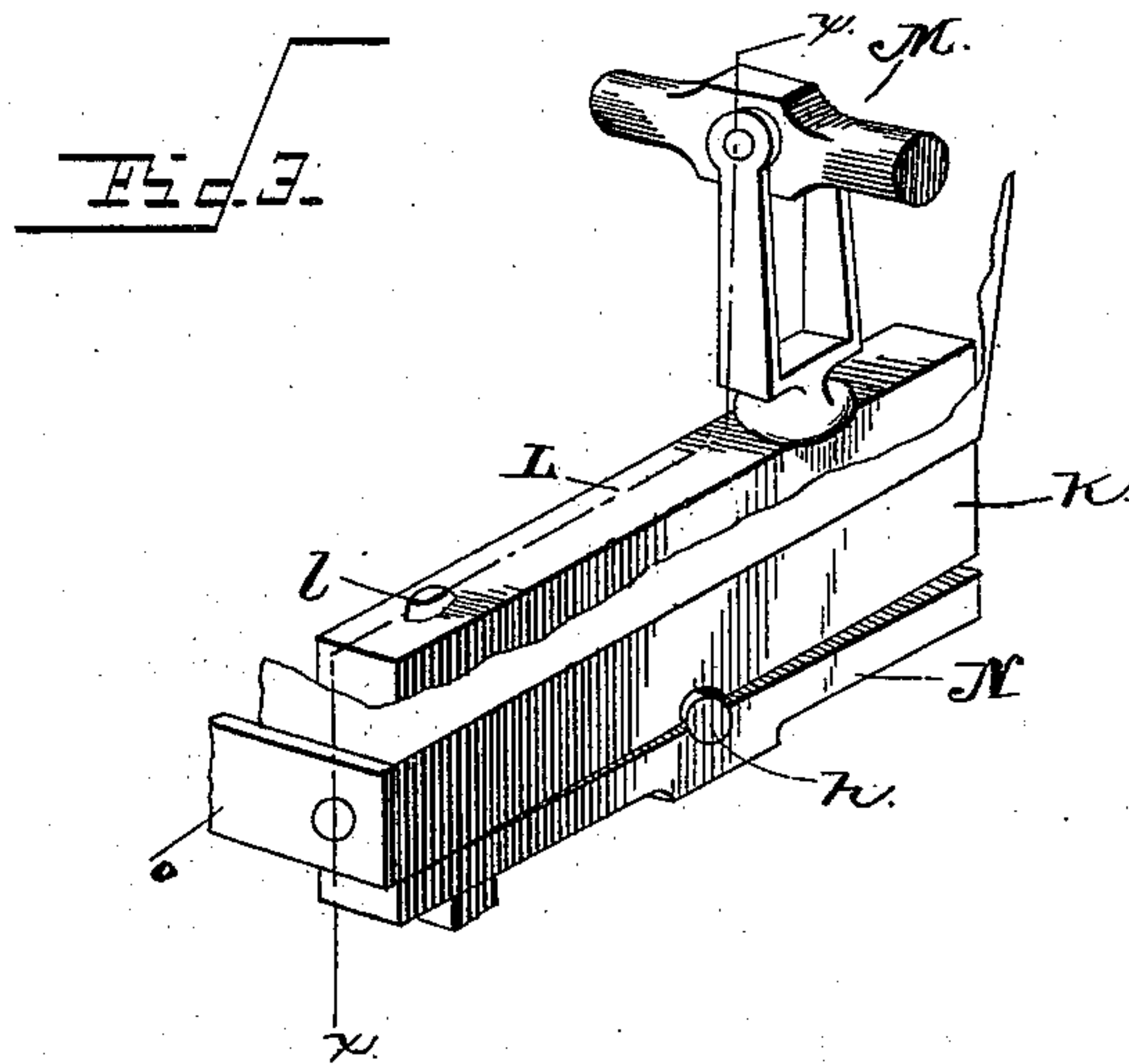
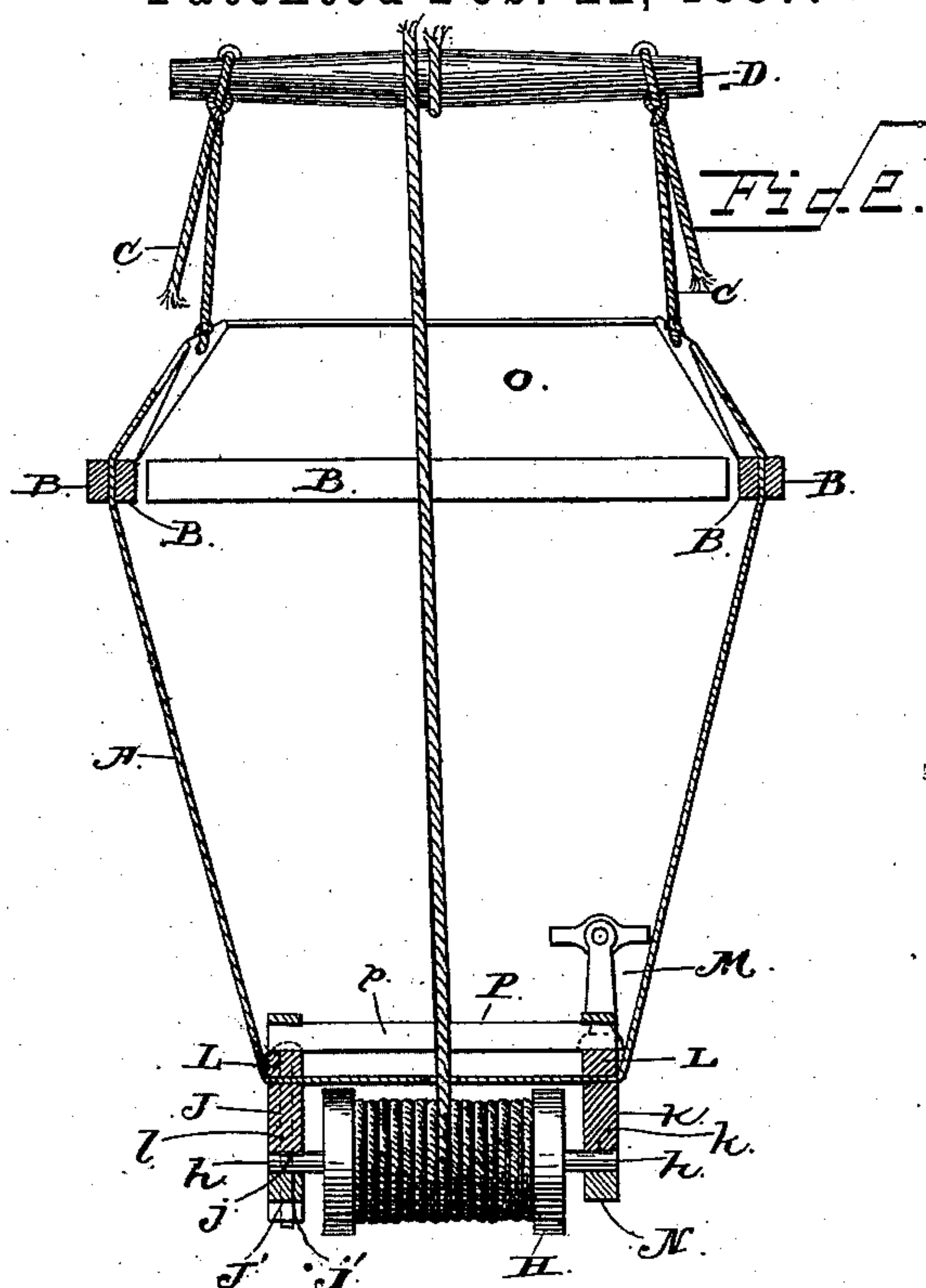
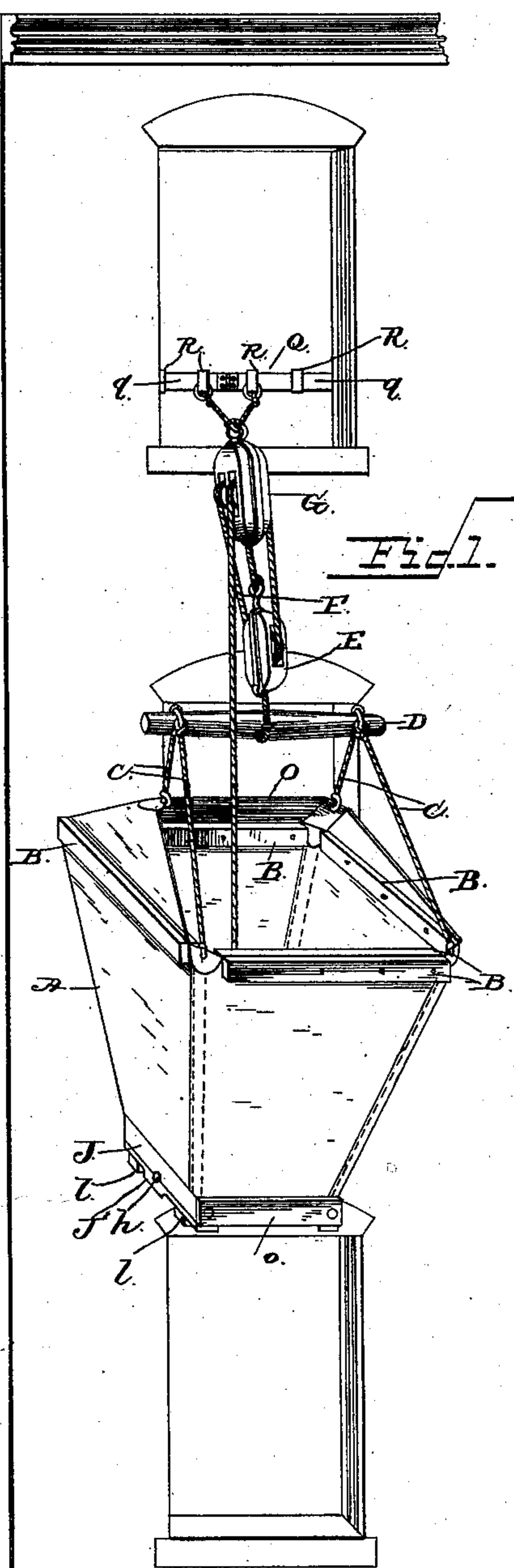
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J. C. BETTEN.

# FIRE ESCAPE.

No. 358,104.

Patented Feb. 22, 1887.



Witnesses

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H. F. Perkins

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(No Model.)

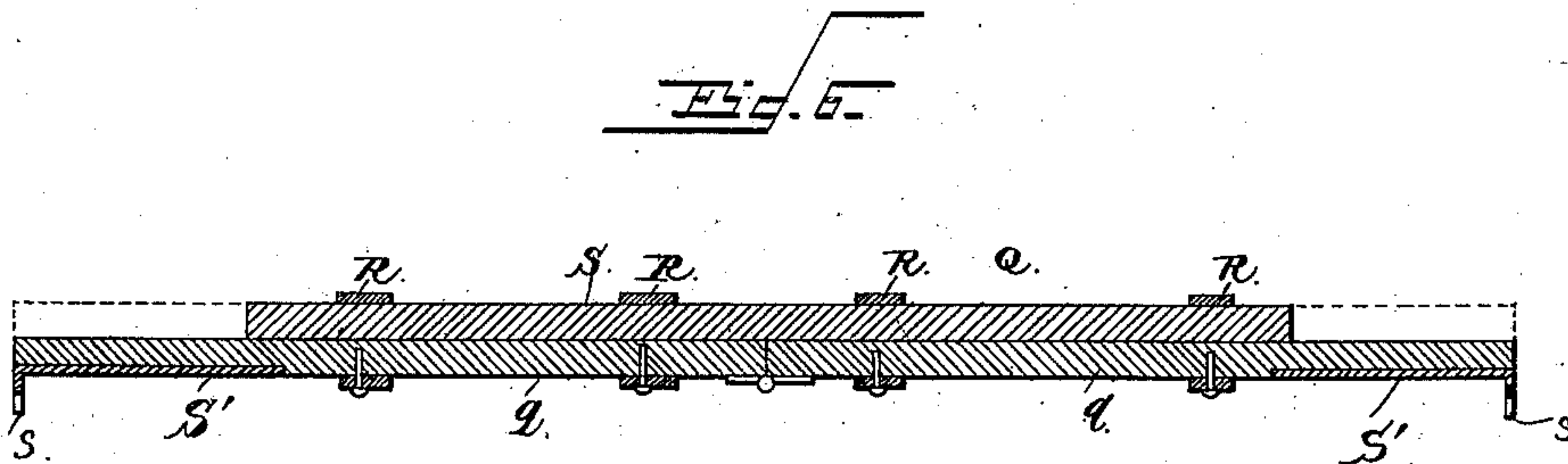
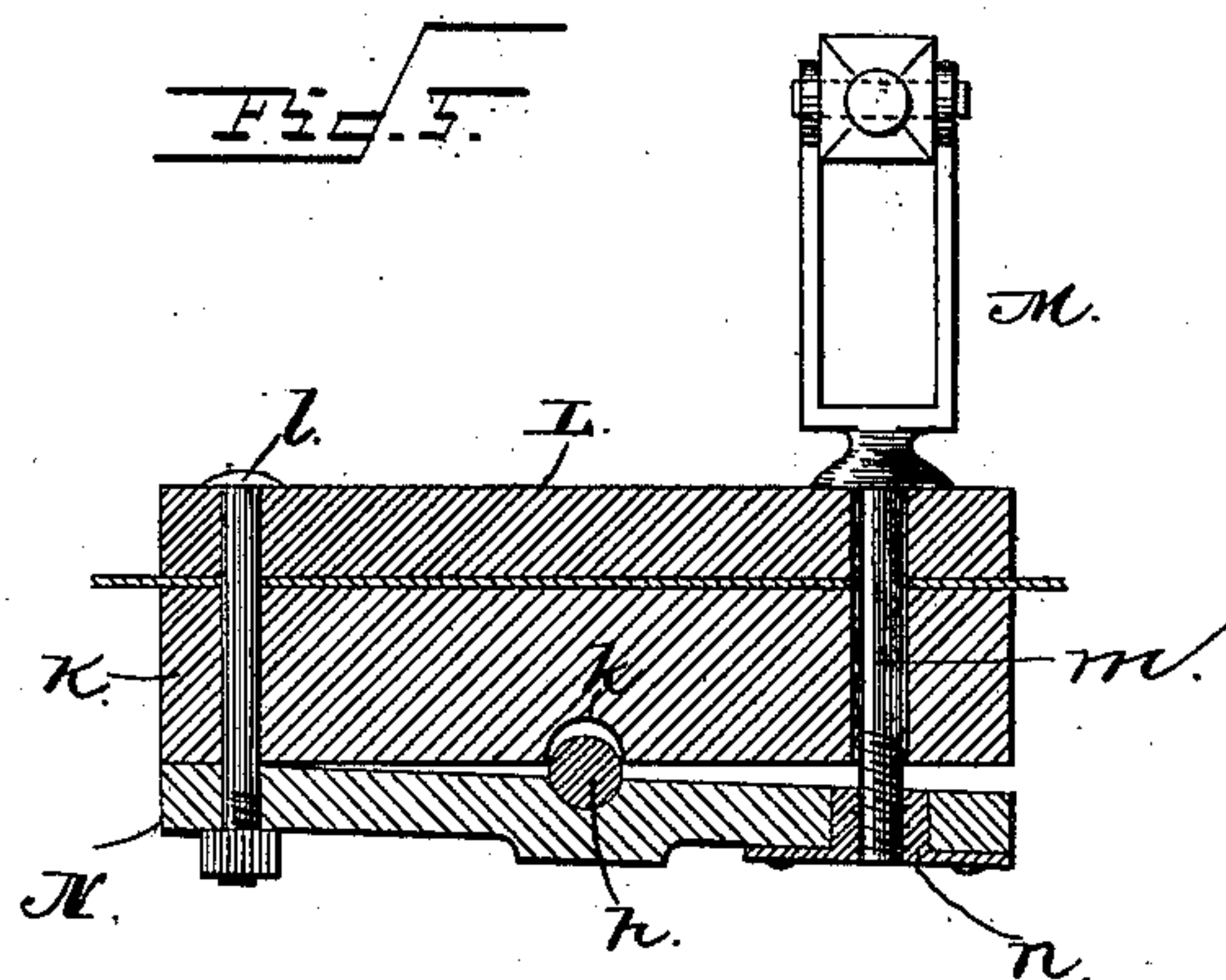
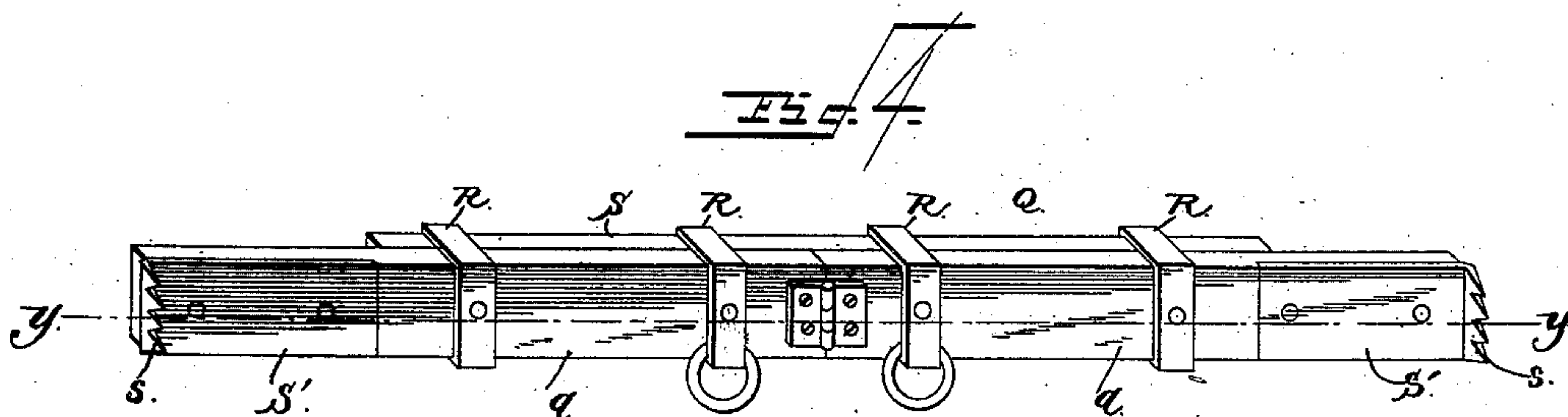
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Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN C. BETTEN, OF EUREKA SPRINGS, ARKANSAS.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 358,104, dated February 22, 1887.

Application filed May 27, 1886. Serial No. 203,460. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN C. BETTEN, a citizen of the United States, residing at Eureka Springs, in the county of Carroll and State of Arkansas, have invented a new and useful Improvement in Fire-Escapes, of which the following is a specification.

My invention relates to improvements in fire-escapes; and it consists of the peculiar combination and novel construction and arrangement of the various parts for service, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

The object of my invention is to provide an improved fire-escape which can be compactly folded up for transportation or storage, so that it can be conveniently carried by travelers in their trunks, valises, or other receptacles, and which can be easily and readily adjusted for use within a very short time.

A further object of my invention is to provide means for securely retaining or supporting the traveling car upon a window-sill or other place, to provide means for regulating the speed at which the car can descend, or to wholly stop the descent of the car, and to provide a fire-escape apparatus which shall be simple and strong in construction and effective in operation.

In the accompanying drawings, Figure 1 is a perspective view of my invention, showing it adjusted for use. Fig. 2 is an enlarged sectional view of the traveling car. Fig. 3 is a perspective view of the brake for regulating the descent of the car. Fig. 4 is a similar view of the supporting device for the car when the latter is adjusted for use. Fig. 5 is a vertical sectional view through the brake device shown in Fig. 3 on the line *x x* thereof. Fig. 6 is a longitudinal sectional view through the supporting device on the line *y y* of Fig. 4.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the traveling car of my improved fire-escape, which is made of any suitable pliable material, so that it can easily and readily collapse together for the purpose of storage or transportation. The car is made of any desired shape and size; but I prefer to make it rectangular in form, and

so that it will contain at least two persons. The upper edges of the car are braced and strengthened by means of brace-rails B, and these brace-rails are isolated or separated from each other at their extremities, so that the car can be more compactly folded. The brace-rails are each made in two pieces or sections, which are fitted on opposite sides of the pliable material of the car, and through the sections of the rail and the canvas or like material of the car, clamped between them, are passed securing screws or rivets, to rigidly and firmly connect the parts together.

The car is suspended by cords, ropes, or other like devices, C, which are secured at their ends to the corners or angles of the car and to a transverse suspending-bar, D, and the cords are suitably secured to the bar and car in any preferable manner to secure strength and stability to the structure. The suspending-bar is carried by a single pulley-block, E, of any ordinary or preferred construction, and the single pulley-block is connected by a single continuous cord or rope, F, with a double pulley-block, G, which is arranged above the single pulley-block, as shown more clearly in Fig. 1.

The elevating cord or rope F is secured at one end to a hook or eye on the single pulley-block E, then passes through and over one of the sheaves in the double pulley-block, then over the sheave in the single pulley-block E, and back again over the remaining sheave of the double pulley-block to and through the bottom of the traveling car, an opening being provided in the latter for the free passage of the cord or rope through the car to the spool or drum H, around which it is wound or coiled. The spool or drum is of any preferred form, and it is arranged beneath and exterior to the car, and it is provided with a shaft or trunnions, *h*, which are journaled in bearing-beams J and K of the traveling car.

On the interior of the car and at the bottom thereof two transverse strips or rails, L, are provided, which are arranged parallel with each other, and the bearing-beams J and K are arranged parallel with the rails L and bear against the latter on the outside of the car, the bottom of the car being interposed between



the said rails and bars, which are suitably connected together by means of through-bolts *l*, as shown.

The bearing-beam *J* is provided with a transverse groove or recess, *j*, in its lower edge, and against the lower edges of this beam bears a retaining-strip, *J'*, which is secured thereto by the through-bolts *l*, that connect the rail and beam *L* and *J*, the said retaining-strip being likewise provided with another groove, *j'*, one of the trunnions of the spool or drum being journaled in these grooves, as will be very readily seen. The beam *K* is provided with only one through-bolt *l*, for one end of the said beam and the fellow rail *L* thereto, and the other end of the beam *K* and rail *L* are connected together by means of a threaded stud or arm, *n*, of a brake, *M*. The bearing-beam *K* is also provided with a groove or recess, *k*, in which the other trunnion or end of the spool or drum shaft is journaled, and against the lower edges of the beam *K* bears a movable binding rail or beam, *N*, one end of which is connected with the beam *K* by the through-bolt that connects the rail *L* and beam *K* together, while the other end of the binding-rail is provided with a metallic threaded bushing or plug, *n*, that is securely fitted or secured thereto, and is adapted to receive the threaded end of the arm *m* of the brake *M*, whereby when the brake is turned or adjusted by the occupant of the car the binding-rail will be drawn toward or forced away from the trunnion or shaft of the spool or drum to increase the friction thereon or decrease it to allow the shaft and drum to rotate slower or faster, and thus govern the speed of the traveling car. The brake *M* is detachably supported upon one of the beams *L* of the car and within the latter, so that the brake can be conveniently operated or turned by the occupant of the car, and the brake is detachably secured to the car and provided with a swinging handle-bar, which is pivoted centrally therein, as will be seen by reference to Figs. 3 and 5.

The bearing-beams *J* and *K* of the traveling car are connected and strengthened by cross-bars or pliable straps *o*, and the car is further provided at its upper edges with a screen or sheath, *O*, which is secured to the edges thereof and extends or projects over only one-half of the car, so that the occupant thereof is prevented from falling out of the car and from being injured by falling sparks or fire. The bottom of the car is provided with a platform, on which the occupant of the car stands, and this platform is made of a series of bars or plates, *p*, which are flexibly connected together, so that they can be very compactly and closely folded together for shipment or storage, the ends of the platform being supported by and resting on the rails *L* of the car.

*Q* designates the support for the car when the latter is suspended from a window. This support comprises two foldable bars or sections, *q*, of suitable size and shape, which are

hinged together so that they can be folded one upon the other. The sections or bars are of sufficient length, so that when they are unfolded they can bear against opposite sides of the window-frame, and are thus prevented from falling out of the window and dropping the car when the apparatus is in use. These sections *q* of the foldable support are each provided with retaining loops or bands *R*, which are suitably secured thereto, and through these loops or bands is passed or fitted a brace-bar, *S*, which overlaps the joint between the hinged ends of the bars or sections to prevent them from collapsing, and this brace-bar *S* is of a length equal to the combined lengths of both of the sections or bars, or of only one of them. The ends of the sections are provided with angular plates or castings *S'*, which are suitably secured thereto and provided with teeth or claws that are adapted to take into or engage with the wooden window-frame and prevent displacement of the support when the apparatus is in use.

This being the construction of my improved fire-escape apparatus, the operation thereof is as follows: In case of an alarm of fire the foldable support is first unfolded, so that the bars or sections thereof are in alignment with each other, and the brace-bar is then fitted in the loops or bands of the sections to prevent them from collapsing under the weight of the car thereon, after which the support is adjusted upon the window-frame, so that the claws or teeth thereof engage with the window-frame, and thus prevent the support from movement while the apparatus is in use. The car is now thrown out of the window, after having been previously connected with the support or a bedstead, or other article in the room, by means of a suitable rope or other like device, the support being provided in the event that an article of furniture in the room is not of sufficient heaviness to resist the weight of the car. A person having descended into the car, the brake of which has been previously adjusted to prevent the spool or drum from revolving and thus lower the car, can now take in one or more passengers, according to the size of the car or his own personal or other valuable effects which he desires to save, and the occupant then releases or operates the brake to allow the car to descend in safety to the ground, the brake governing or regulating the speed at which the car descends, and when the car reaches the ground it collapses or falls together, to enable the occupant to make his or her escape very easily and with entire safety. The car can now be elevated again by drawing upon the elevating-rope to permit the descent of more persons, and they can escape with entire safety by means of the apparatus herein shown and described.

Various changes in the form and proportion of parts and details of construction may be made without departing from the principle or sacrificing the advantages of my invention.



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

1. In a fire-escape, the combination of a collapsible car, the rails fitted against the bottom of the car, the bearing-beams fitted against the rails and having the fabric or other pliable material of the car interposed between the same and the rails, the through-bolts for connecting the rails and beams together, a drum or spool journaled in the beams, and a rope passing through the car and wound upon the drum, substantially as described.

2. The combination of the collapsible car having the transverse rails L, a bearing-beam, K, fitted against one of the rails, a beam, J, bearing against and secured to the other rail, the through-bolt connecting one end of the rail and beam K, a binding-rail connected to the beam by the through-bolt and having a threaded bushing, a drum or spool journaled in the beam, and a brake having a threaded arm passing through the rail and beam K and entering the threaded bushing of the binding-rail to actuate the latter, substantially as described.

3. The combination of a collapsible car, the brace-rails made in two pieces and fitted on opposite sides of the upper edges of the car and clamping the said upper edges of the car

between the same, the suspending-bar, and the ropes or cords connected to the car and the suspending-bar, substantially as described.

4. The combination of the collapsible car, the suspending-bar, the ropes or cords intermediate of the car and bar, the single and double pulley-blocks, a single rope passing through the said pulley-blocks and the car, a drum journaled on the car and having one end of the rope wound around the same, and a brake carried by the car for regulating the revolutions of the drum, substantially as described.

5. The combination of a sectional hinged support having the claws, and a brace-bar detachably connected with the sections of the support for bracing the latter, substantially as described.

6. The combination of a foldable support made in two hinged sections having the loops or bands and the claws at their ends, and a brace-bar detachably fitted in the loops, substantially as described.

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

JOHN C. BETTEN,

Witnesses:

J. F. CADWELL,  
G. R. BODINE.