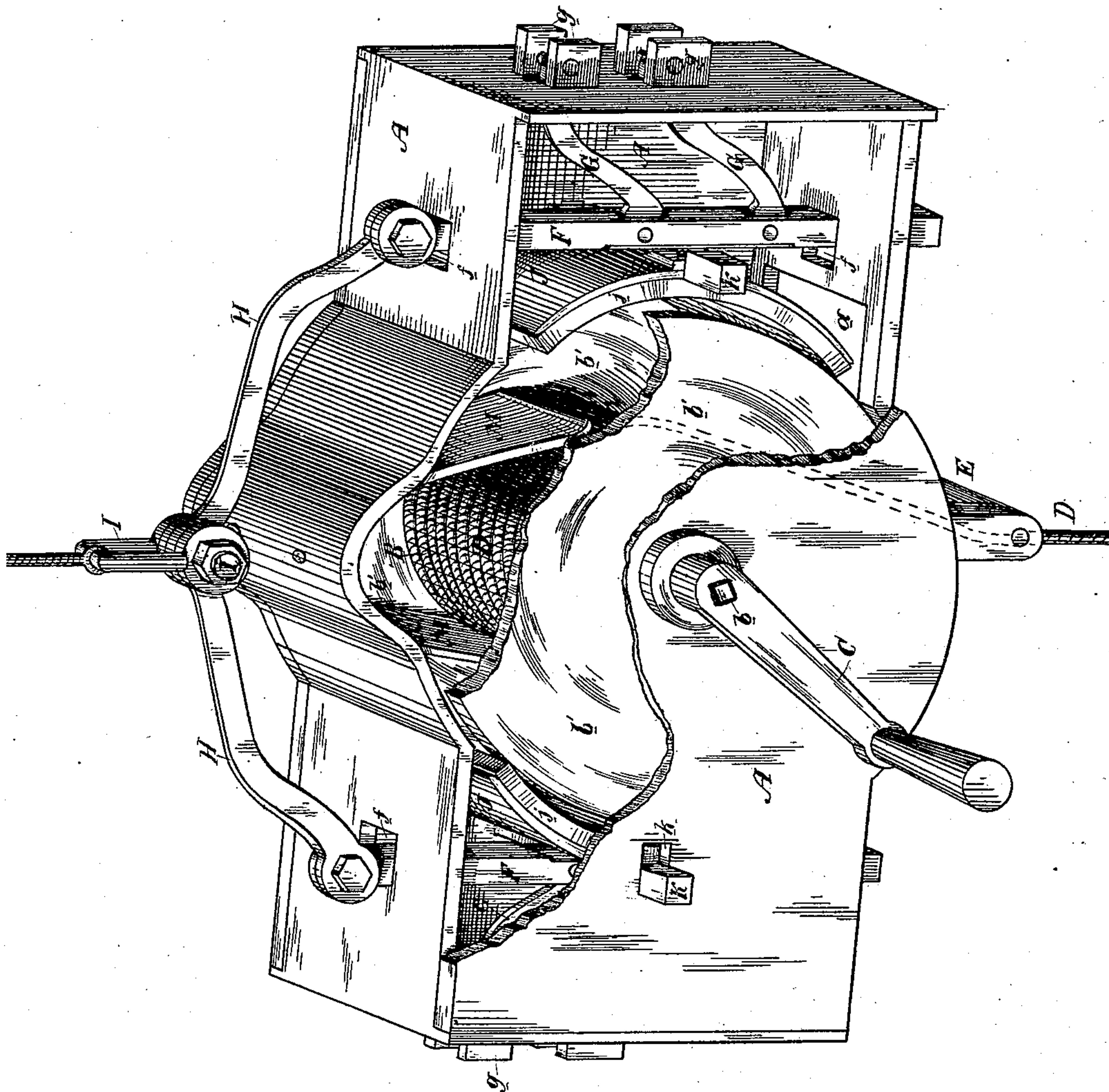


(No Model.)

J. BIEN.
FIRE ESCAPE.

No. 336,887.

Patented Mar. 2, 1886.



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UNITED STATES PATENT OFFICE.

JOSEPH BIEN, OF SAN FRANCISCO, CALIFORNIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 336,887, dated March 2, 1886.

Application filed January 5, 1885. Renewed July 30, 1885. Serial No. 173,103. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BIEN, of the city and county of San Francisco, State of California, have invented an Improvement in Fire-
Escapes; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a new and useful fire-escape; and it consists, broadly, of a wire rope, cord, or cable, a drum or reel on which it is wound and from which it is paid out, and a brake mechanism acting against the drum or reel and operated by the suspended weight to reduce and regulate the rotation of the drum or reel.

It further consists in a suitable casing in which the drum or reel is mounted, provided with a bottom opening, and a roller for the emergence and guidance of the wire rope, cord, or cable, oppositely-moving bars passing loosely through and pivoted to the casing, whereby the brakes are operated, pivoted levers and link by which the bars are suspended, and in details of construction relating to the brakes and the guidance and operation of the several parts, all of which I shall herein-after fully explain.

The object of my invention is to provide a simple and safe fire-escape.

Referring to the accompanying drawing, A is a casing in the center of which is mounted the drum or reel B upon an axle or shaft, *b*, one end of which projects outside of the casing, and is adapted to receive a crank, C, by which the drum may be rotated. This drum consists of a central core or shaft and end flanges, *b'*, of a diameter to just fit and rotate within the casing, whereby the drum is adapted to receive and carry a suitable length of wire rope, D, or other suspending-cord. The end of the wire rope emerges through an opening, *a*, in the bottom of the casing, and is guided by a roller, E, mounted on the bottom of said casing. Passing vertically through each end of the casing about on its longitudinal horizontal center are the bars F—one at each end. These are guided through the top and bottom walls of the casing by elongated slots *f* therein, which permit the bars to have the necessary play to or from the drum, as I shall explain. Pivoted to the bars within the casing are links G, the outer ends of which are pivoted to the

end walls of the casing, preferably to ears *g* on the outside, the links passing through vertical elongated slots in the walls. To the upper ends of the bars are pivoted levers H, the other ends of which are pivoted on a bolt or shaft, *i*, in the lower end or base of the suspended link I.

J are brakes—one on each side. These consist of concavo-convex strips of spring metal having a suitable rubbing-surface, *j*, on their concave faces. These rubbers may be made of leather, hard rubber, or any other proper material, and they find a bearing or seat against the rims of the said flanges or plates *b'* of the drum. The backs of the brakes rest against the bars F, and they are guided and held in position by means of lugs K, secured to their backs and passing through slots *k* in the side walls of the casing. Secured in the top of the casing is a light spring, M, the arms of which rest between the flanges *b'* of the drum and bear upon the body or coils of the wire rope, whereby it is prevented from spreading out, and is kept to its position on the drum. It is thereby made to wind up evenly and to pay out or unwind without kinking or interference by reason of spreading.

The operation of the device is as follows: It is suspended from its top link, I, by means of any suitable rope, wire, cable, or cord, and hangs in a proper position for the operator to grasp or otherwise secure the wire rope D to himself. When this is done, he swings clear of support and is lowered as the wire rope pays out from the drum or reel. His weight thus brought on the indirectly-suspended casing drags down said casing, whereupon the directly-suspended bars F, moving inwardly on their pivoted links, force the spring-brakes against the flanges of the drum, the rotation of which is thus regulated. The heavier the weight the greater the pressure with which they are forced against the drum, and consequently its rotation is regulated and the unwinding of the wire rope checked sufficiently for safety. The springy character of the brakes prevents any sudden or complete check.

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

1. In a fire-escape, the casing A, drum or reel B, mounted therein, and the wire rope,

cord, or cable D in said drum or reel, in combination with the bars F, loosely passing through the casing, the links G, pivoted to said bars and to the casing A, a connection 5 by which the bars are suspended, and the spring-brakes J, lying within the casing and adapted to be forced by the bars against the drum or reel, substantially as and for the purpose herein described.

10 2. In a fire-escape, the casing A, drum or reel B, mounted therein, and the wire rope, cord, or cable D on said drum or reel, in combination with the bars F, loosely passing through the casing, the pivoted links G, by 15 which the bars and casing are joined, the pivoted levers H, joining the tops of the bars, the suspension-link I, and the spring-brakes J within the casing and adapted to be forced by the bars against the drum or reel, substantially as and for the purpose herein described. 20

3. In a fire-escape, the casing A, drum or reel B, having end flanges, *b'*, and adapted to receive a wire rope, cord, or cable between said flanges, in combination with the bars F, 25 pivoted to the casing and adapted to move toward each other, and the spring-brakes J, having rubbers *j'*, adapted to be forced against the rims of the drum-flanges by the movement of the bars F, substantially as and for the purpose herein described. 30

4. In a fire-escape, the casing A, having bottom opening, *a*, and roller E, and the drum or reel B, mounted therein and adapted to receive a wire rope, cord, or cable, one end of 35 which emerges through the bottom opening of the casing, in combination with the bars F, passing through the casing in elongated slots

f, the pivoted links G, joining the casing and bars, the pivoted levers H, and link I, by which they are suspended, and the spring-brakes J, 40 having lugs K on their backs projecting through slots in the casing and guided thereby, said brakes being adapted to bear against the drum when forced by the movement of the bars F, substantially as and for the purpose 45 herein described.

5. In a fire-escape, the casing A and drum or reel B, adapted to receive a wire rope, cord, or cable, in combination with the light spring M in the top of the casing, and adapted to 50 bear upon and hold the rope, cord, or cable in place, substantially as and for the purpose herein described.

6. A fire-escape consisting of the combination of the casing A, having bottom opening, 55 *a*, and roller E, slots *f* in its bottom and top walls, slots *k* in its side walls, the drum or reel B, having shaft *b*, with crank C, the wire rope, cord, or cable D on the drum, the spring M to hold the rope, cord, or cable to place, the bars 60 F, passing through the slots *f* of the casing, the links G, pivoting the bars to the casing, the pivoted levers H, and link I, by which the bars are suspended, and the spring-brakes J, having lugs K projecting through slots *k* in 65 the casing, all arranged and adapted to operate substantially as and for the purpose herein described.

In witness whereof I have hereunto set my hand.

JOSEPH BIEN.

Witnesses:

S. H. NOURSE,
WM. F. BOOTH.