

(No Model.)

E. P. WRIGHT.
LADDER.

No. 308,334.

Patented Nov. 18, 1884.

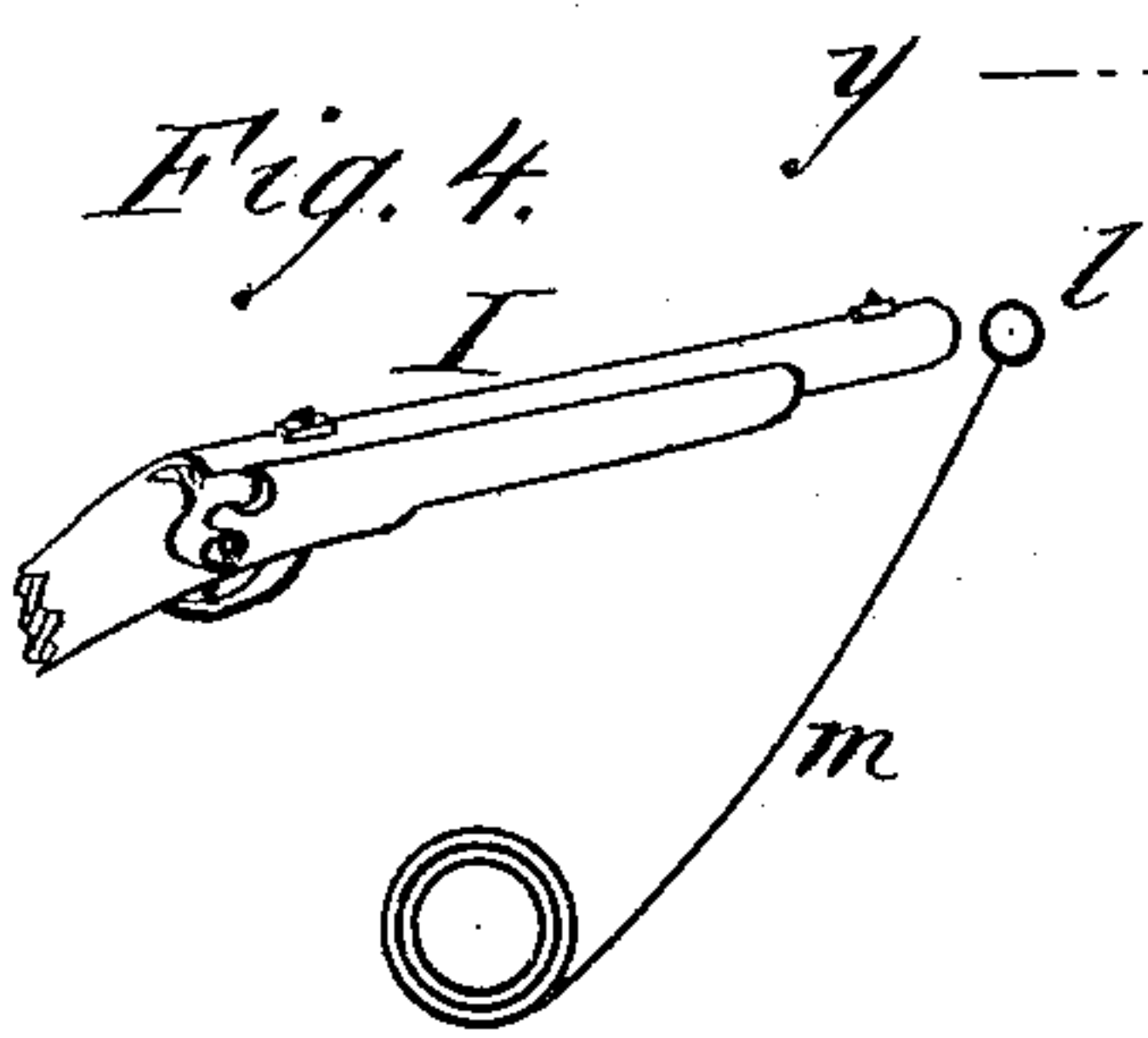
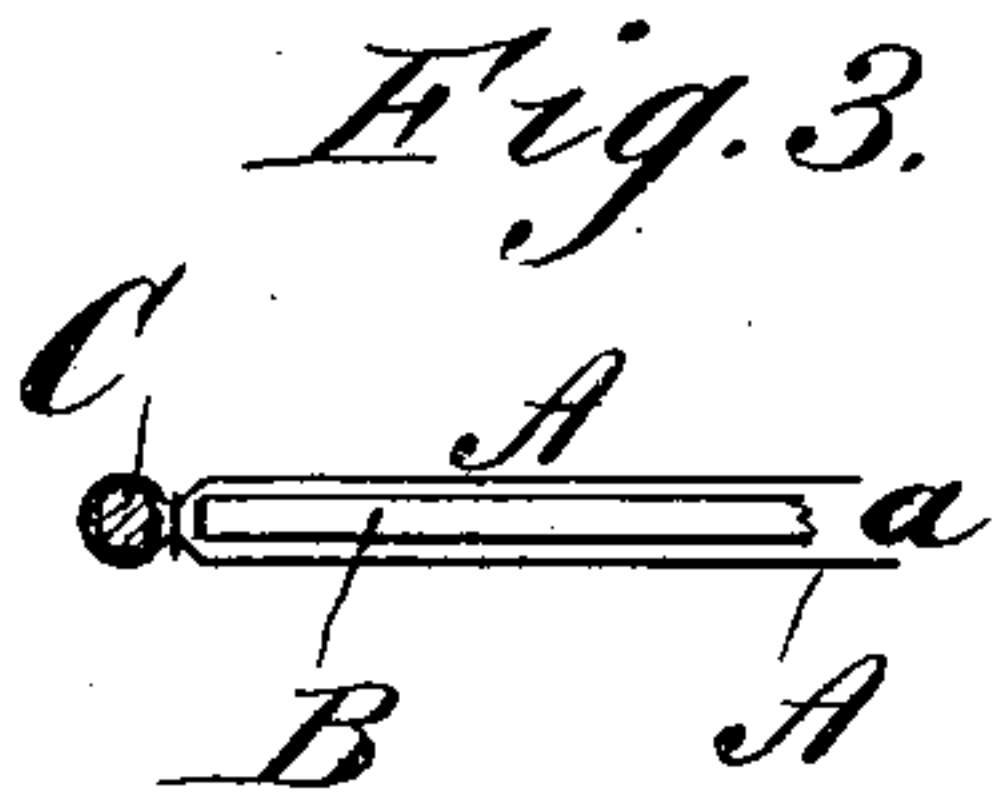
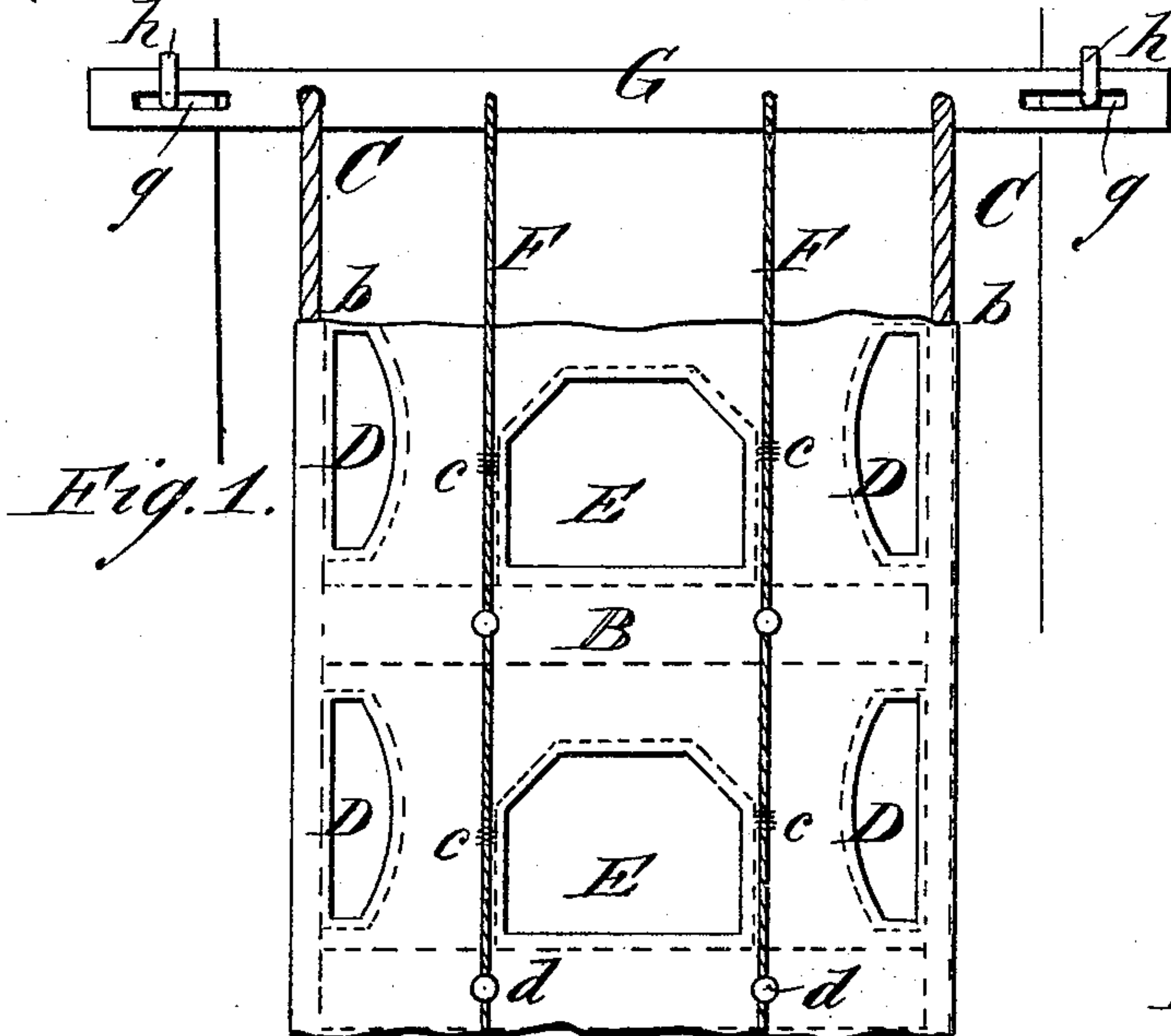
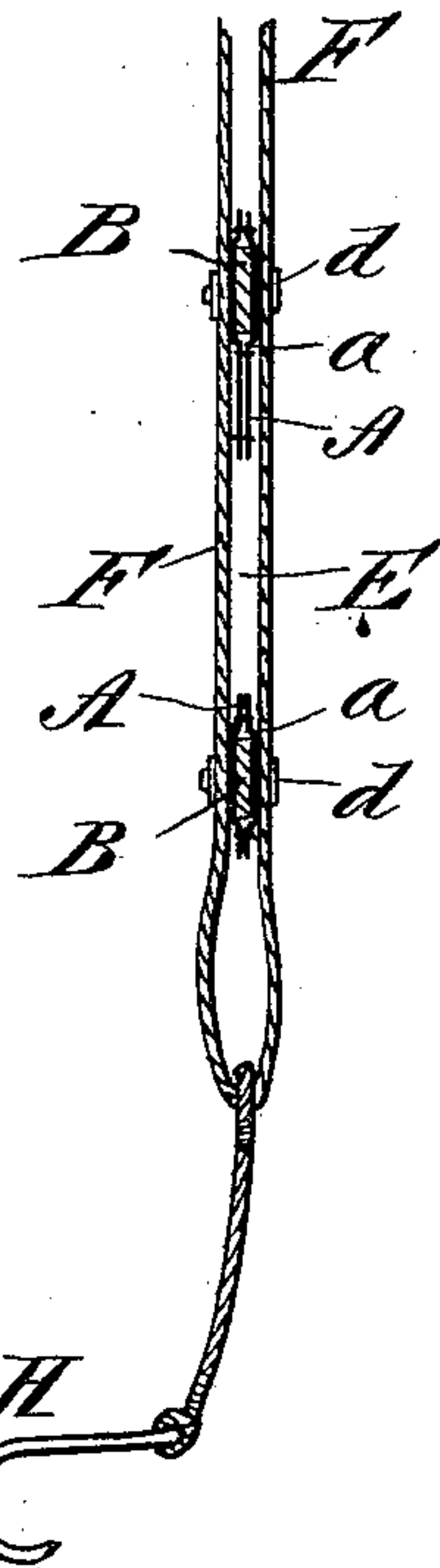


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD P. WRIGHT, OF PORTLAND, OREGON.

LADDER.

SPECIFICATION forming part of Letters Patent No. 308,334, dated November 18, 1884.

Application filed August 16, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWARD P. WRIGHT, of Portland, in the county of Multnomah and State of Oregon, have invented a new and Improved Ladder, of which the following is a full, clear, and exact description.

The invention relates to a flexible ladder, more especially designed for use as a fire-escape; and the invention consists of a ladder made of canvas and rope, with suitable cross-bars forming the steps of the ladder.

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

Figure 1 is a broken front elevation of a ladder made in accordance with my invention. Fig. 2 is a sectional elevation taken on the line *xx* of Fig. 1. Fig. 3 is a detail sectional plan view taken on the line *yy* of Fig. 1, and Fig. 4 shows the gun, cord, and ball for elevating the ladder.

In making my new and improved ladder I take two pieces of strong canvas, *A A*, of suitable length and width, or a single piece folded, and stitch the canvas transversely to form the pockets *a a*, to receive the cross bars or slats *B B*, which I then put in place. I then stitch the canvas along its side edges to form the passages *b b*, to receive the main side ropes, *C C*, which I then put in place. Then I form in the canvas, near the side ropes, *C C*, the hand-openings *D D*, and just over the slats *B B* in the center of the canvas the foot-openings *E E*, which openings *D E* I stitch around, as indicated in dotted lines in Fig. 1. I then place along both sides of the ladder the ropes *F F*, which I secure to the canvas by stitching at *c c*, and to the slats *B* by rivets *d d*, which pass through the ropes, canvas, and slats *B*, and are headed, as shown clearly in Figs. 1 and 2.

Instead of the rivets *d*, suitable staples may be used for securing the ropes *F*.

When the ladder is to be used as a fire-escape, I shall attach to one end of it the cross-bar *G*, of wood or iron, having the slots *g g* made in it to receive the hooks *h h*, or other suitable pins or screws, driven or screwed into the frame or casing of the window of a building, so that persons may easily get upon

the ladder and descend. The bar *G* may be attached to doors, and for further security I attach to the ends of the ladder the hooks or grapnels *H*, for anchoring the lower end of the ladder in the ground or pavement, and for attaching the upper end of the ladder to any convenient object within a room.

I design to employ a spring or other gun, *I*, with a ball, *l*, and cord *m* for throwing the ball into a window when assistance is needed, so that the endangered person or persons may draw up the ladder with the cord and put the ladder in place for descent.

The ladder can be made in sections, and so that the sections can be attached to each other for ladder of any desired length, and fenders may be attached to the steps to keep the ladder away from the face of the wall.

It is intended that the ladder shall be secured on the inside of a window at the top of the lower sash by the bar *G*, and so that when the ladder is adjusted persons can step from the window-sill upon the ladder, and descend on the inner side of the ladder to the ground.

Constructed in the manner described the ladder is made very strong and cheap, and, being flexible, it may be rolled up so as to occupy small space, so that it may be conveniently kept about a building to serve as a safe and easy means of escape from the building in case of fire when all means of escape save the windows are cut off by the fire.

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

1. An improved flexible ladder, consisting of canvas, having transverse bars secured to it, and provided with foot-openings above the bars, substantially as herein shown and described.

2. In a ladder, the combination, with the canvas *A*, provided with the cross-bars *B* and the openings *E*, of the cords *C* along its longitudinal edges, substantially as herein shown and described.

3. The ladder composed of the canvas *A*, ropes *C F*, and cross-bars *B*, the canvas having hand and foot openings *D E* made through it, substantially as described.

4. In a ladder, the combination, with the

canvas A, provided with the cross-bars B and the apertures E, of the ropes F, secured to said canvas and cross-bars, substantially as herein shown and described.

- 5 5. In a ladder, the combination, with the cross-bar G, provided with the slots *g* in its ends, of the canvas A, provided with the

cross-bars B and openings E, and the cords C F, substantially as herein shown and described.

EDWARD P. WRIGHT.

Witnesses:

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W. L. CHITTENDEN.