

(No Model.)

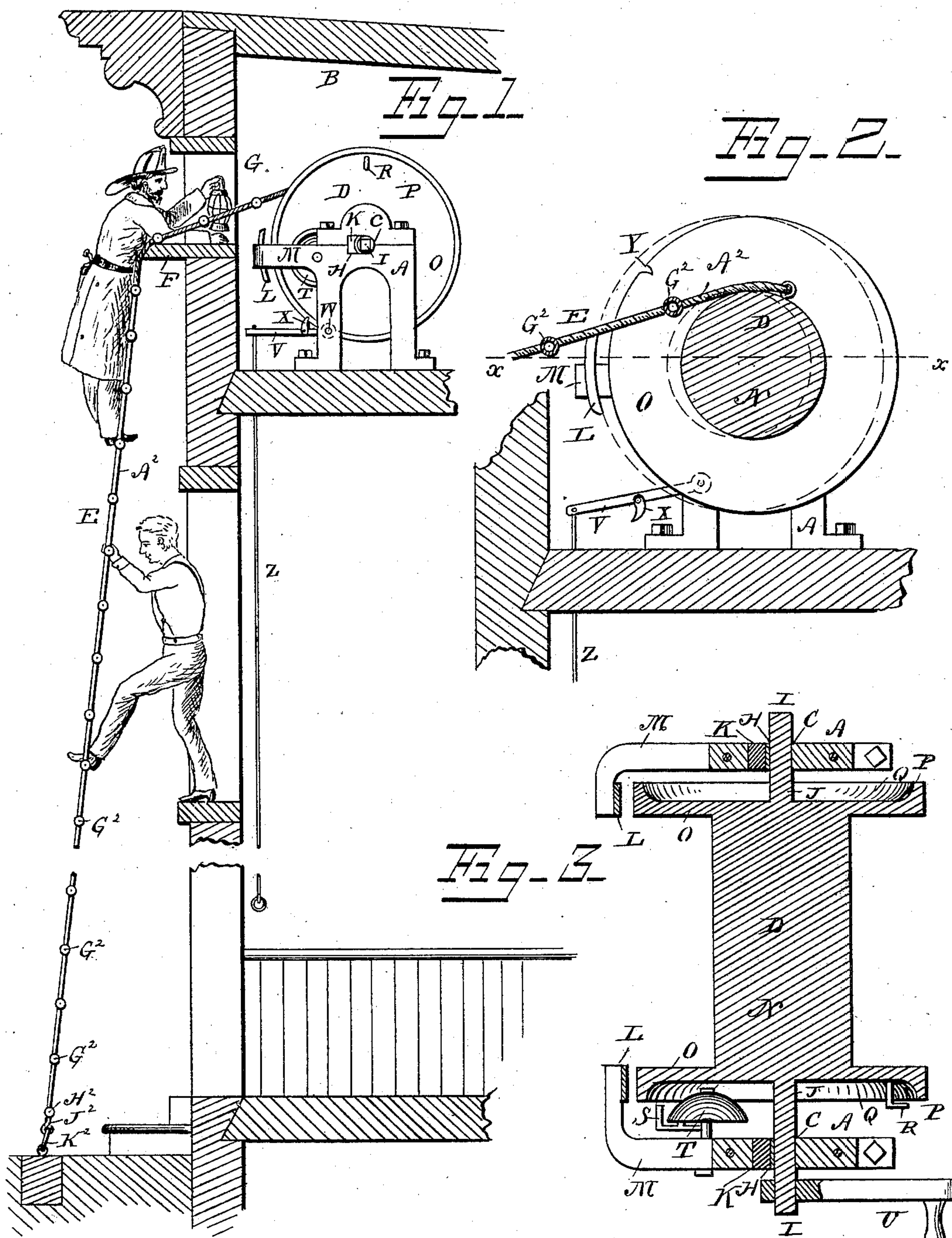
2 Sheets—Sheet 1.

F. NEWHOUSE & H. MOOERS.

FIRE ESCAPE.

No. 277,600.

Patented May 15, 1883.



WITNESSES

F. L. Ourand  
J. Reed Little

INVENTOR

F. Newhouse and H. Mooers,  
by C. S. Snow & Co. Attorneys.

(No Model.)

2 Sheets—Sheet 2.

F. NEWHOUSE & H. MOOERS.

FIRE ESCAPE.

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Fig-4-

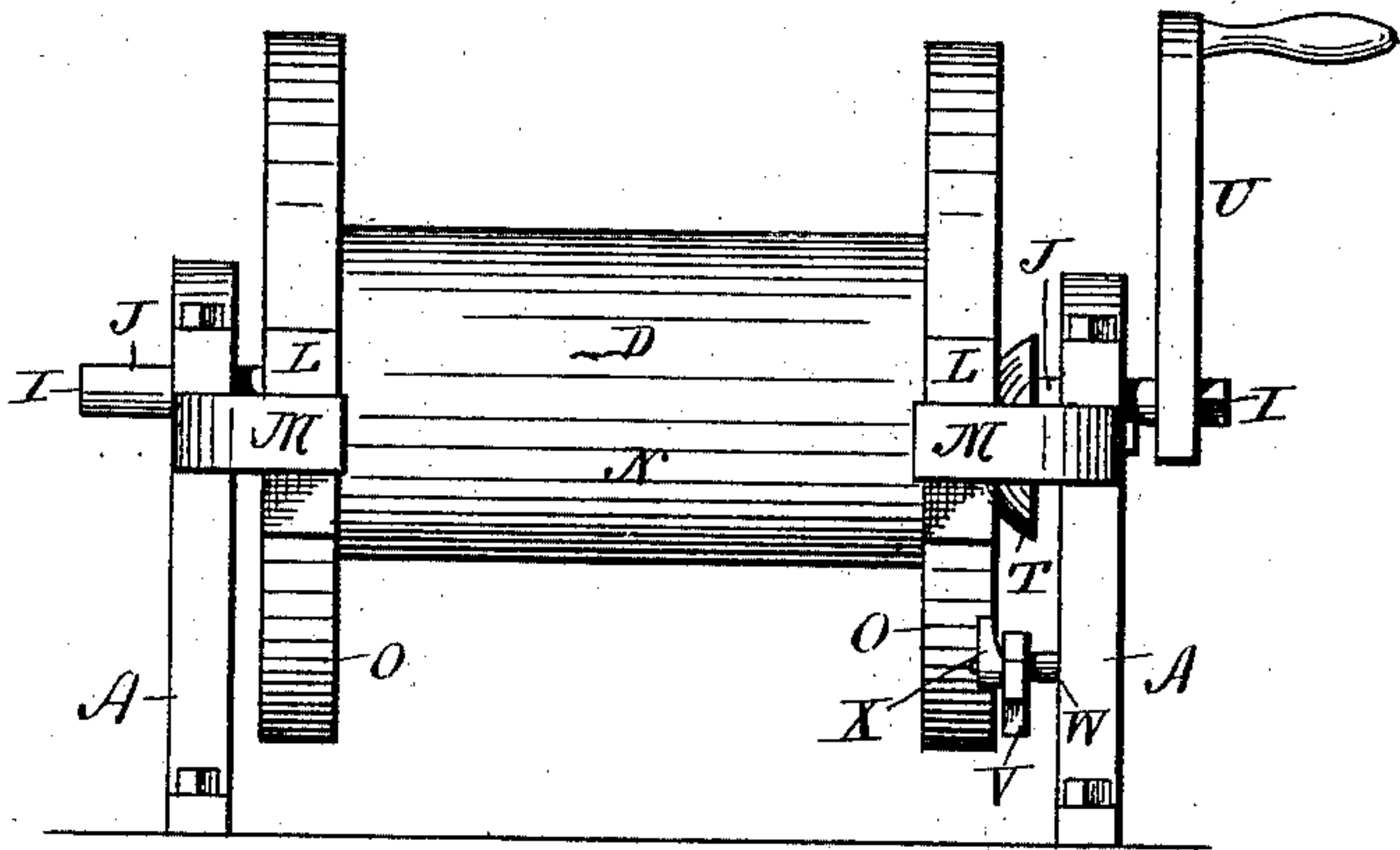


Fig-6-

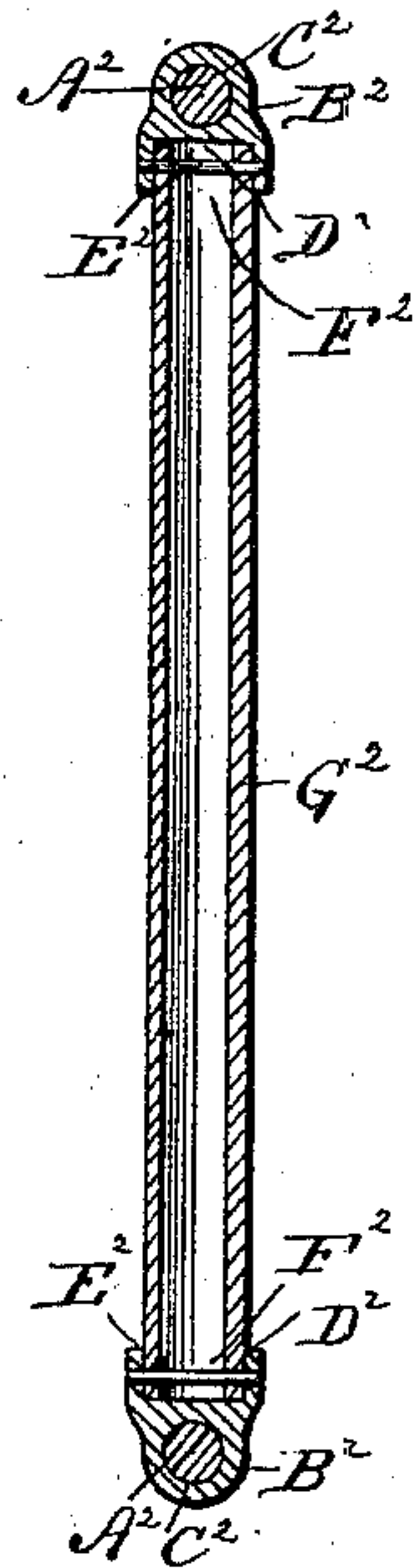


Fig-5-

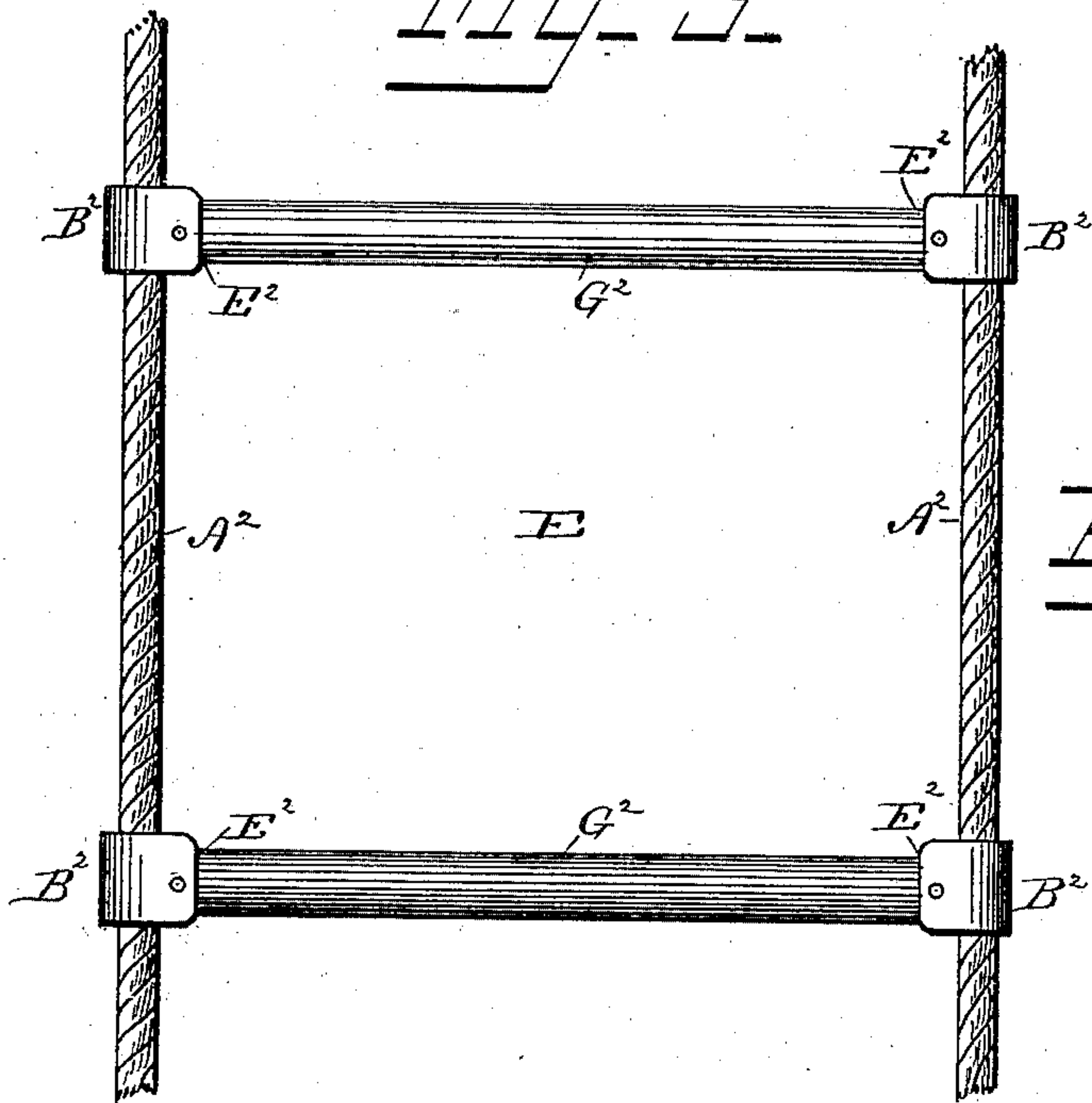
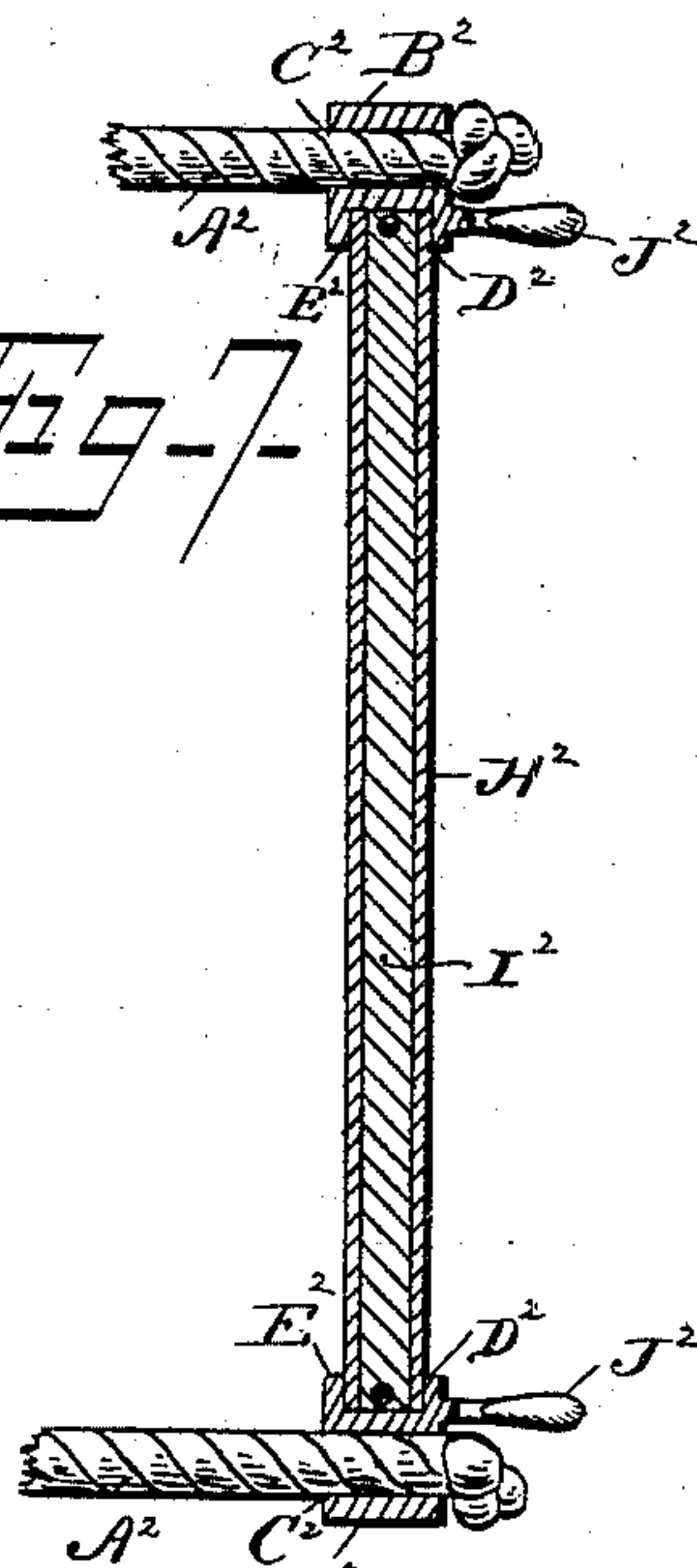


Fig-7-



WITNESSES

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# UNITED STATES PATENT OFFICE.

FREDERICK NEWHOUSE AND HENRY MOOERS, OF TOLEDO, OHIO.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 277,600, dated May 15, 1883.

Application filed February 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, FREDERICK NEWHOUSE and HENRY MOOERS, citizens of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Fire Escape and Alarm, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to fire-escapes, and has for its object to provide a simple and efficient device that can be conveniently thrown into operation at any instant and sound an alarm to the inmates of the building in which the device is located when it is thus operated.

15 In the drawings, Figure 1 is a vertical sectional view of a building provided with our improved escape and alarm mechanism, showing the said mechanism in side elevation. Fig. 2 is a vertical longitudinal sectional view of the fire-escape. Fig. 3 is a horizontal sectional view on the line *xx*, Fig. 2. Fig. 4 is a front elevation of the device. Fig. 5 is a detail view of a section of the flexible ladder. 25 Fig. 6 is a horizontal transverse sectional view of the said ladder in detail. Fig. 7 is a sectional view of the bottom rung of the ladder.

Referring to the drawings, A designates the frame of our device, which is to be secured at 30 some suitable place in the top of the building, preferably, as herein shown, just under the roof B. In the frame A are formed bearings C for a drum, D, to which is secured a flexible ladder, E, that is arranged to hang from the sill F of a window or opening, G, in the wall of the building. These bearings C C are 35 formed by slots H H in the frame A, which slots are arranged to receive the ends I I of the shaft J of the rotary drum. The front portion of these slots H H is filled with an elastic packing, K, for the following purpose: When the drum is released, in case of fire, the ladder will by its gravity turn the drum and descend to the ground, and the momentum 45 will of course increase as the descent is made. This increase of momentum causes a corresponding increase in the revolution of the drum, which might occasion damage to the escape; but by reason of the elastic packing 50 K the increasing weight of the ladder as it descends will draw the drum forward against

the tension of the said packing K and against suitably-disposed brakes, L L. These brakes L L are arranged on the ends of angular arms M M, that project from the sides of the frame 55 A, as shown. An automatic brake mechanism is thus provided that will regulate and equalize the speed at which the ladder descends.

The rotary drum D comprises a cylindrical portion, N, on which the flexible ladder is 60 wound, and end flanges, O O, to retain the latter on the central portion. These flanges O O preferably have their outside faces, P, formed with a recess, Q, for economy in space and in weight. From the face P of one or both of 65 the flanges O O projects a pin, R, that engages the hammer S of a bell or gong, T, secured on the frame A at each revolution of the drum. This gong will therefore sound an alarm as the ladder descends, and can be connected with 70 other bells or gongs to sound alarms simultaneously at different points in the building. The shaft J of the drum is provided with a crank or handle, U, for winding the ladder on the latter when this becomes necessary. The 75 drum is normally secured stationary by means of a lever, V, fulcrumed on the frame A, as at W, and carrying a pawl, X, that engages a notch, Y, in the periphery of the flange O. To the free end of this lever V is secured a trip 80 rope or cord, Z, that extends to any desired point in the building. By operating this rope the lever is drawn down until the pawl becomes disengaged from the notch, when the gravity of the ladder causes it to turn the drum 85 and descend to the ground.

In connection with our improved fire-escape, mechanism may be used by which an alarm can be given from different points in the building to the place where the trip-rope Z terminates—as, for instance, in the office of a hotel— 90 and suitable indicating mechanism can be employed to indicate the place in the building at which the alarm was given. The person in charge can then locate the fire, and by simply 95 pulling the trip-ropes Z all the escapes can be thrown into operation, and the drums will sound an alarm to all the inmates of the building as the ladders descend into position.

The flexible ladder consists of two strands, 100 A<sup>2</sup> A<sup>2</sup>, of wire cables or rope, on which are secured castings or blocks B<sup>2</sup>, by means of per-



forations  $C^2$  in the latter, in which the rope  $A^2$  is fitted. These blocks  $B^2$  are provided with recesses  $D^2$  in their inner faces,  $E^2$ , in which are secured the ends  $F^2$  of the rungs  $G^2$ , these latter being formed preferably by tubing, as shown. The bottom rung,  $H^2$ , of the ladder is loaded or weighted with lead,  $I^2$ , or other material, and the bottom blocks,  $B^2 B^2$ , are provided with hooks  $J^2$ , which are adapted to engage rings or hooks  $K^2$ , secured in the pavement. By means of these hooks and rings the ladder is secured in vertical position, so that descent on it can be accomplished both on the side next the building and on its outside.

The operation and advantages of our invention are obvious. It is very simple in construction, and can be conveniently and instantly operated in case of fire. When not in use it is almost hid from view, and will not in any way mar the appearance of the building.

We claim as our invention—

1. The combination of a rotary drum having bearings in which is arranged an elastic packing, against the tension of which the drum is arranged to be moved forward automatically, a flexible ladder or its equivalent arranged on the drum and adapted to descend by its own gravity, and brakes against which the drum is carried by the descent of the ladder, as set forth.

2. The combination of the frame having bearing-slots in which is arranged an elastic packing and carrying brakes, a rotary drum journaled in the said bearings and arranged to be drawn in contact with the brakes against the said packing, and the flexible ladder secured to the drum, and adapted to turn the latter and descend by its own gravity, as set forth.

3. The combination of the frame having the slots that provide bearings, elastic packing arranged in these slots, and the projecting angular arms carrying the brakes, the rotary drum journaled in the slots and having end flanges arranged to automatically engage the brakes, the flexible ladder secured to the drum and arranged to fall or descend by its own gravity, and a trip-lever carrying a pawl that engages a notch in the periphery of the drum, as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

FREDERICK NEWHOUSE.  
HENRY MOOERS.

Witnesses:

HENRY C. MOOERS,  
E. T. LEWIS.