

**No. 682,082.**

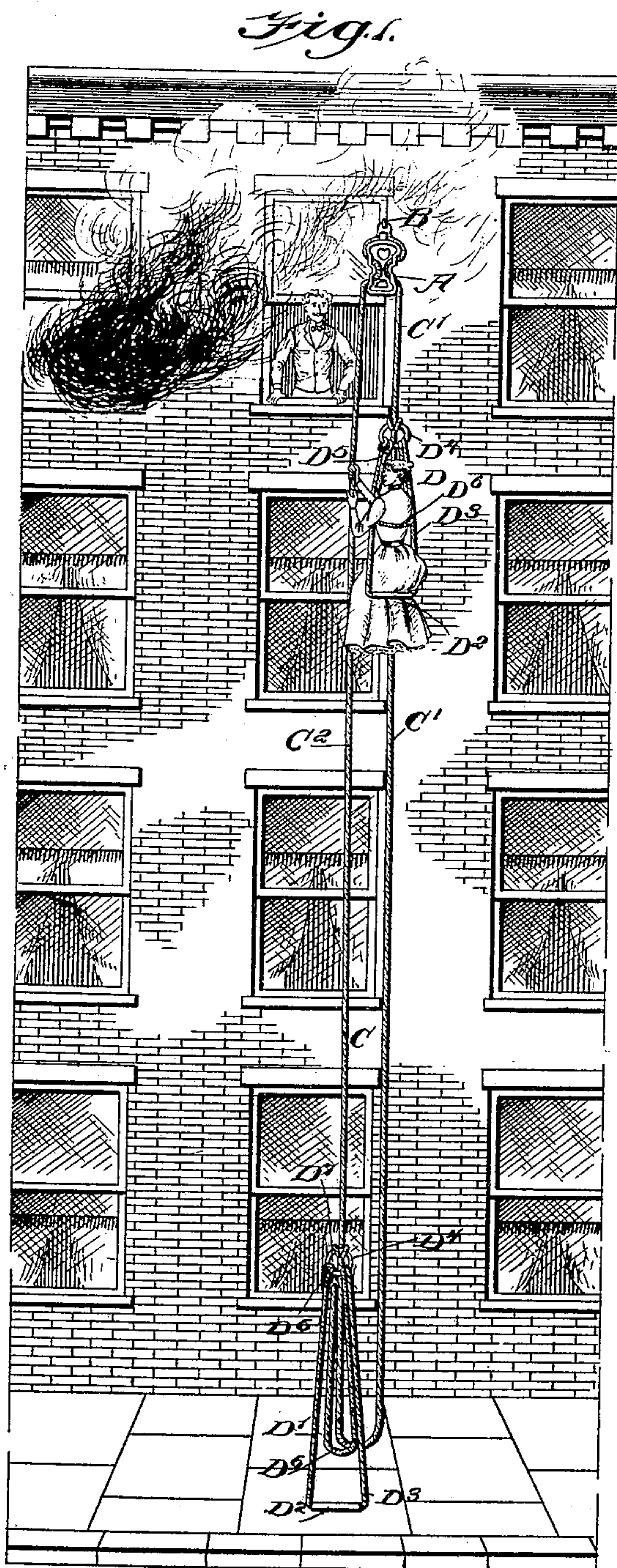
**Patented Sept. 3, 1901.**

**C. A. IVES.**

## FIRE ESCAPE.

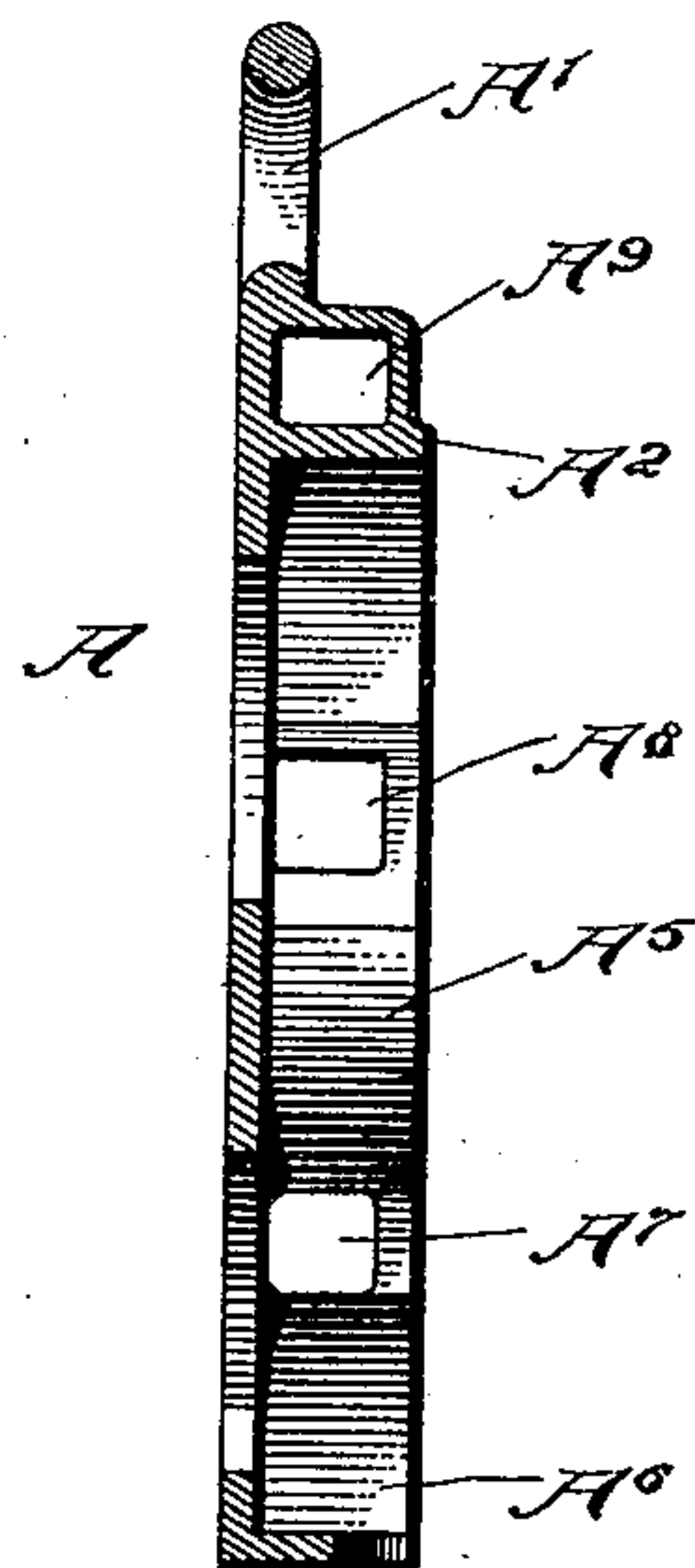
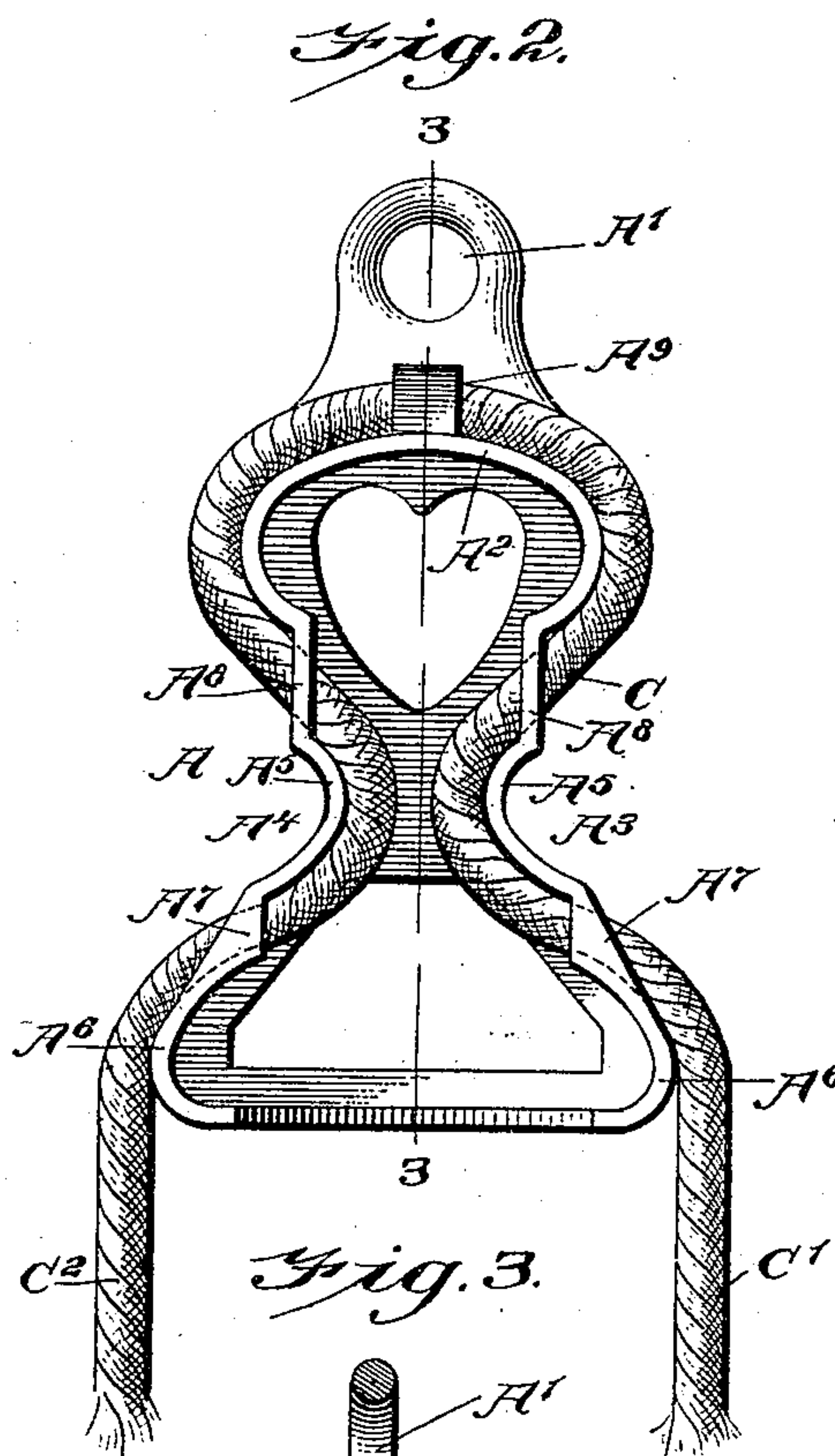
(Application filed Nov. 10, 1900.)

(No Model.)



**WITNESSES**

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# UNITED STATES PATENT OFFICE.

CHARLES A. IVES, OF NEW YORK, N. Y.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 682,082, dated September 3, 1901.

Application filed November 10, 1900. Serial No. 36,009. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. IVES, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved fire-escape which is simple and durable in construction, cheap to manufacture, ready at all times for immediate use to rescue a number of persons successively from a burning building, and arranged with simple devices for conveniently and safely supporting a person during the descent and allowing such person to regulate the speed of the descent.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement as applied. Fig. 2 is an enlarged side elevation of the improvement, and Fig. 3 is a transverse section of the same on the line 3-3 in Fig. 2.

The improved fire-escape consists, essentially, of a friction member A, having at its upper end an integral eye A' for engagement with a hook B, secured to the outside of a building, preferably at one side of a window-casing near the upper end thereof, as is plainly shown in Fig. 1, said member A having a support and friction devices for a rope or cable C, arranged with runs C' C<sup>2</sup>, depending from the sides of the member A, supporting or suspension devices D D' being secured to the runs in such a manner that when one of the devices is up near the member A the other device is at or near the ground, as is plainly indicated in Fig. 1. The member A is preferably made in the form of a single casting, comprising a backplate having enlarged ends and provided with a lateral flange, said flange being approximately of the

contour of the plate and having an arched top A<sup>2</sup>, over which passes the rope or cable C, the latter being preferably endless, as indicated in Fig. 1. The rounded-off sides of the top A<sup>2</sup> of the flange terminate in inwardly-curved surfaces A<sup>3</sup> A<sup>4</sup>, each having an inward bend A<sup>5</sup> and an outward bend A<sup>6</sup>, with openings A<sup>7</sup> A<sup>8</sup> for the passage of the rope or cable from one surface to the other. (See Fig. 2.) Thus, as shown, the lower outer surface A<sup>6</sup> connects by the opening A<sup>7</sup> with the lower end of the inwardly-curved surface A<sup>5</sup>, and the upper end of the latter connects by the opening A<sup>8</sup> with the rounded-off side of the top A<sup>2</sup>. By this arrangement the rope in its passage around the suspended friction member A is subjected to considerable friction, and when a person is suspended in one of the devices D or D' then the weight of the person will cause a downward movement of the corresponding run of the rope, the other run moving upward. Now the person suspended in the device going downward takes hold of the upwardly-moving run, so as to exert a pull on this run and check the speed, and thereby enable the person to descend at any desired speed. For instance, if the person is suspended in the device D, as shown in Fig. 1, and takes hold of the run C<sup>2</sup> then the slightest pull on this rope, of about eight per cent. of one's weight, increases the friction of the run C<sup>2</sup> on the side A<sup>4</sup> to such an extent that the descent of the person is checked to the desired degree without danger of the person injuring his hand by manipulating the said run C<sup>2</sup> during the descent. Thus the device operates equally well for light or heavy persons, as they have full control of their descent by manipulating the upwardly-moving run accordingly. It is understood that in case an invalid or child is to be rescued a person at the ground or at the window can readily manipulate the upwardly-moving run to give the desired friction, and thereby govern the proper descent of the invalid or child. In order to prevent the rope or cable C from leaving the member A, the top A<sup>2</sup> thereof is preferably provided with an eye or loop A<sup>9</sup>, through which passes the rope or cable. The suspension devices D D' are alike in construction,



and each consists, essentially, of a seat  $D^2$ , held on a rope or cable  $D^3$ , permanently secured at one end to a ring  $D^4$ , attached to the corresponding run  $C'$  or  $C^2$  of the rope or cable  $C$ . The other end of said rope or cable  $D^3$  is provided with a snap-hook  $D^5$ , adapted to be hooked into the ring  $D^4$  by the person making use of the device. A retaining-rope  $D^6$  is also permanently secured to one end of the ring  $D^4$  and is provided at the other end with a snap-hook  $D^7$ , adapted to be engaged with the ring  $D^4$  after the person has taken the seat  $D^2$  and passes the retaining-rope around the back and under the arms, as will be readily understood by reference to Fig. 1. The lower ends of the sides  $A^3$   $A^4$  of the member  $A$  are spread apart a distance sufficient to hold the runs  $C'$   $C^2$  the desired distance apart, so that the runs do not become entangled when the device is in use. Ordinarily the member  $A$ , with the cord or rope attached thereto, is kept in a room, and in case of an emergency the member is quickly hung onto the hook  $B$  and the rope is allowed to dangle down to the ground, with one of the supporting devices near the window, so that a person can readily engage the supporting device and then descend in the manner previously described. When the descending person reaches the ground, the other suspension device is up near the window to be made use of by a succeeding person. Thus the device will enable a number of persons to escape from a burning building.

35 Having thus fully described my invention,

I claim as new and desire to secure by Letters Patent—

1. In a fire-escape, a friction device, comprising a back plate having its ends enlarged and provided with an eye at one end, and with a lateral flange, said flange being approximately of the contour of the back plate and having an arched top, at the center of which is a guide-loop, inwardly-curved surfaces at about the middle of the sides, and openings at the upper and lower ends of each of the said curved surfaces, substantially as described.

2. A fire-escape, comprising a friction device formed of a back plate having its ends enlarged and provided with an eye at one end, and with a lateral flange, said flange being approximately of the contour of the back plate and having an arched top, at the center of which is a guide-loop, inwardly-curved surfaces at about the middle of the sides, and openings at the upper and lower ends of each of the said curved surfaces, a cable or rope passed over the top of the flange, and through the openings therein, and a suspension device attached to opposite ends of the runs of the cable or rope, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES A. IVES.

Witnesses:

THEO. G. HOSTER,

EVERARD BOLTON MARSHALL.