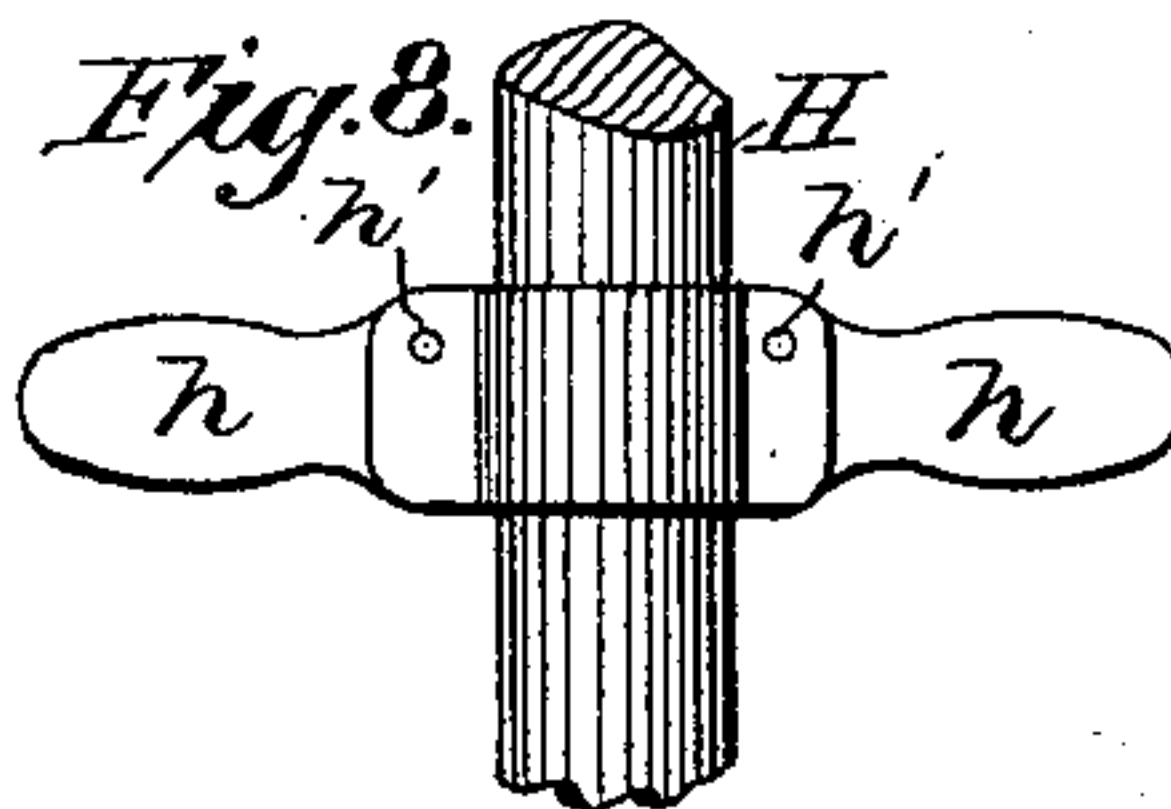
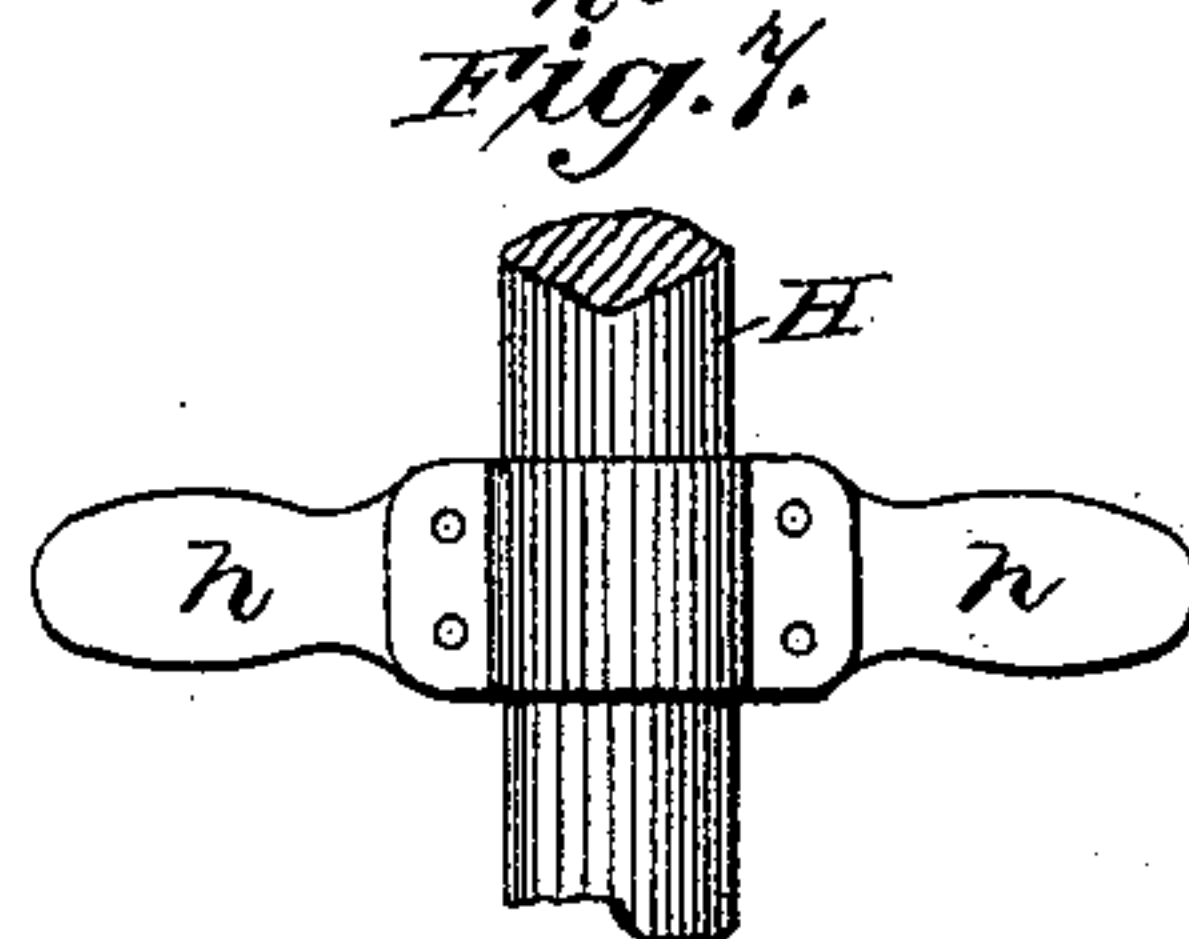
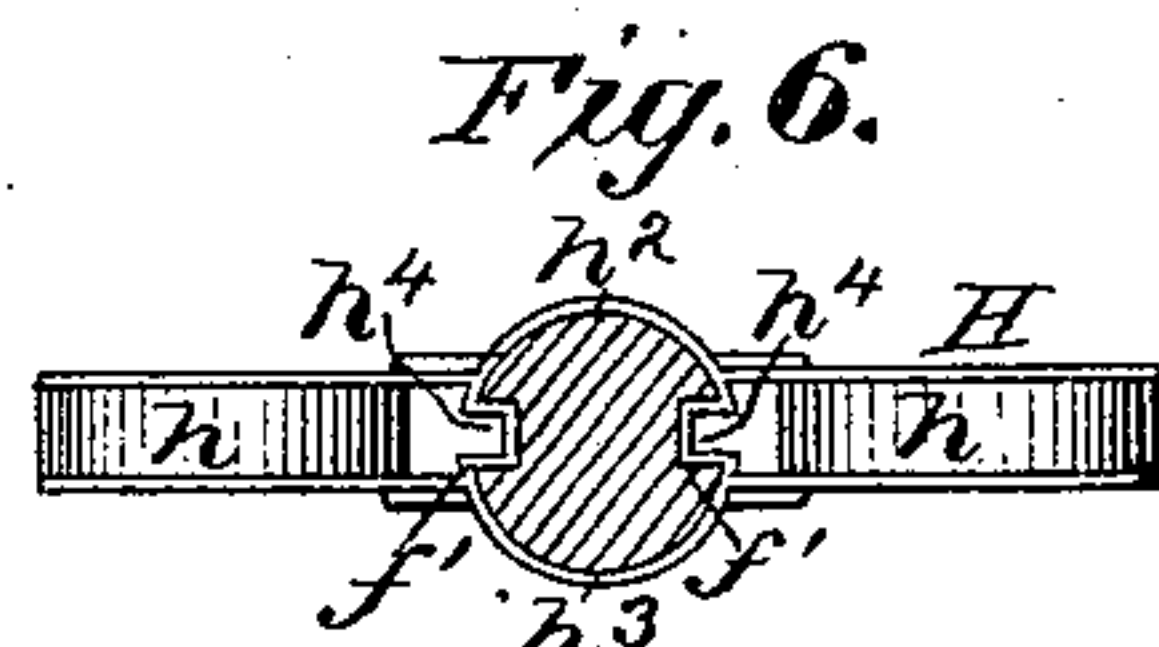
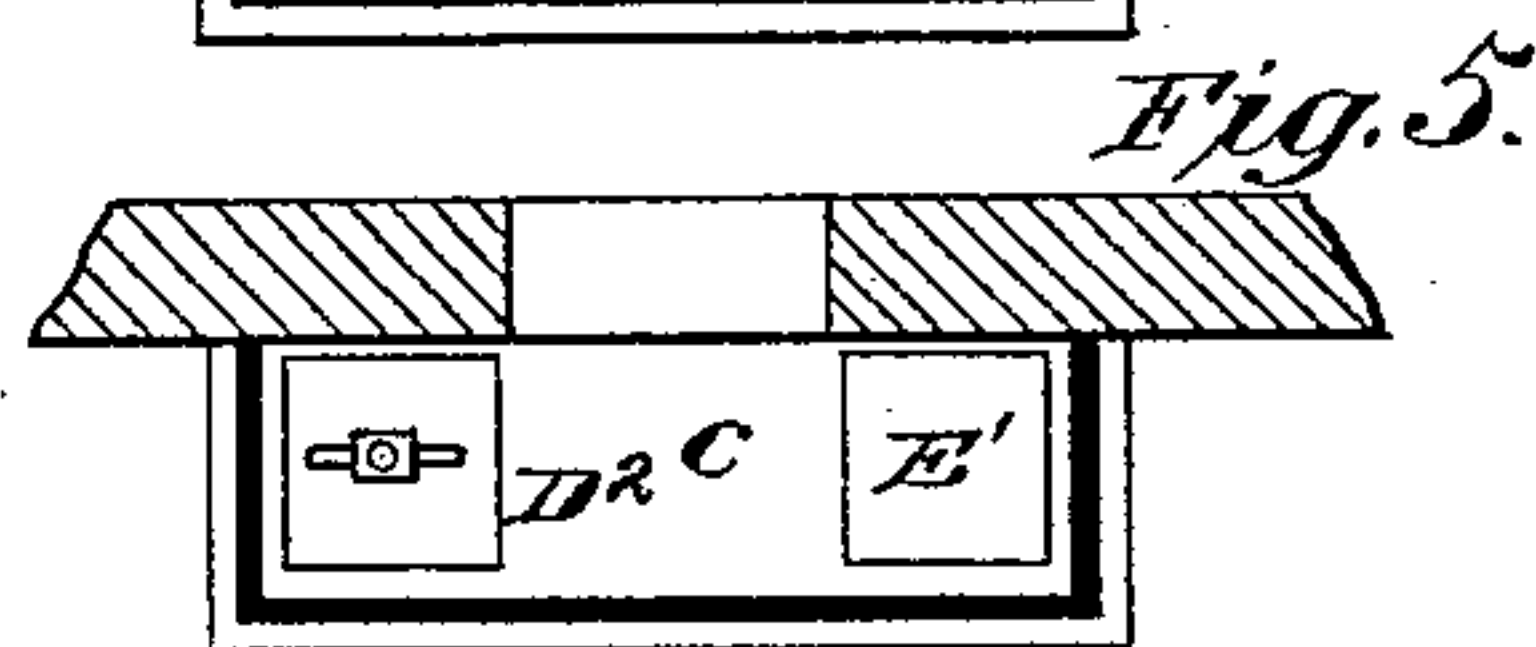
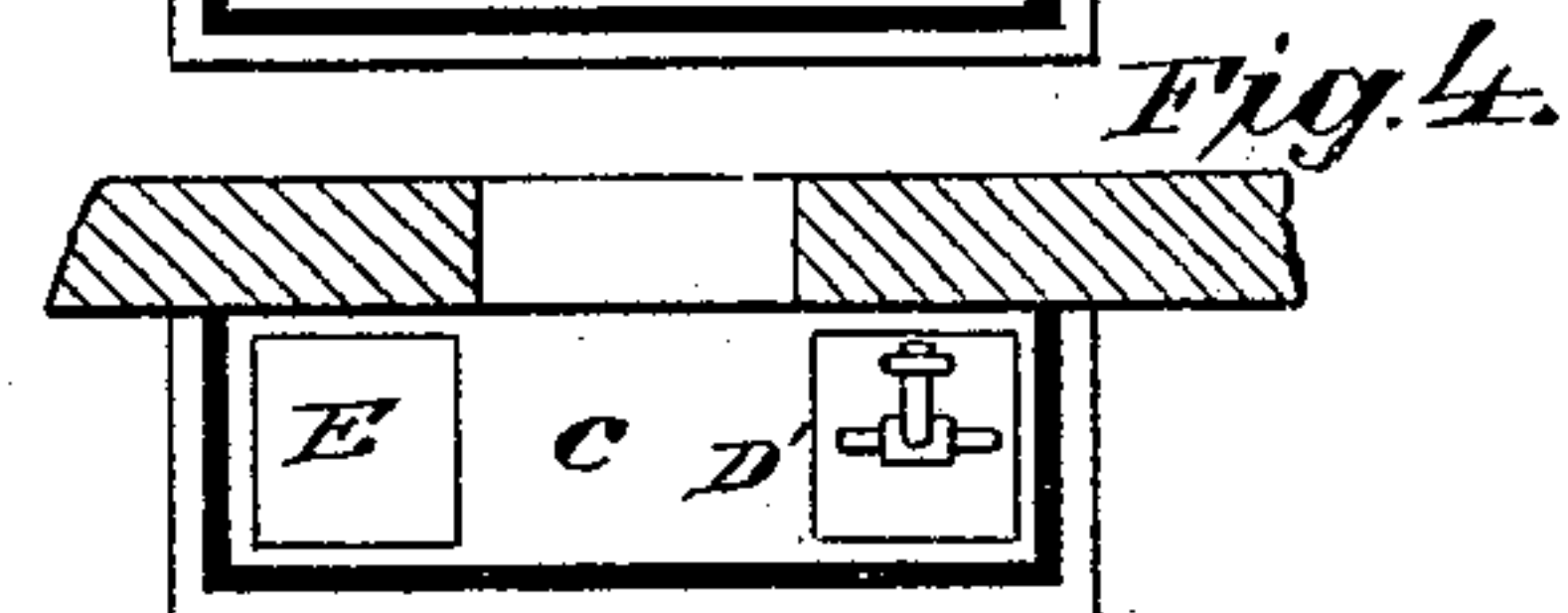
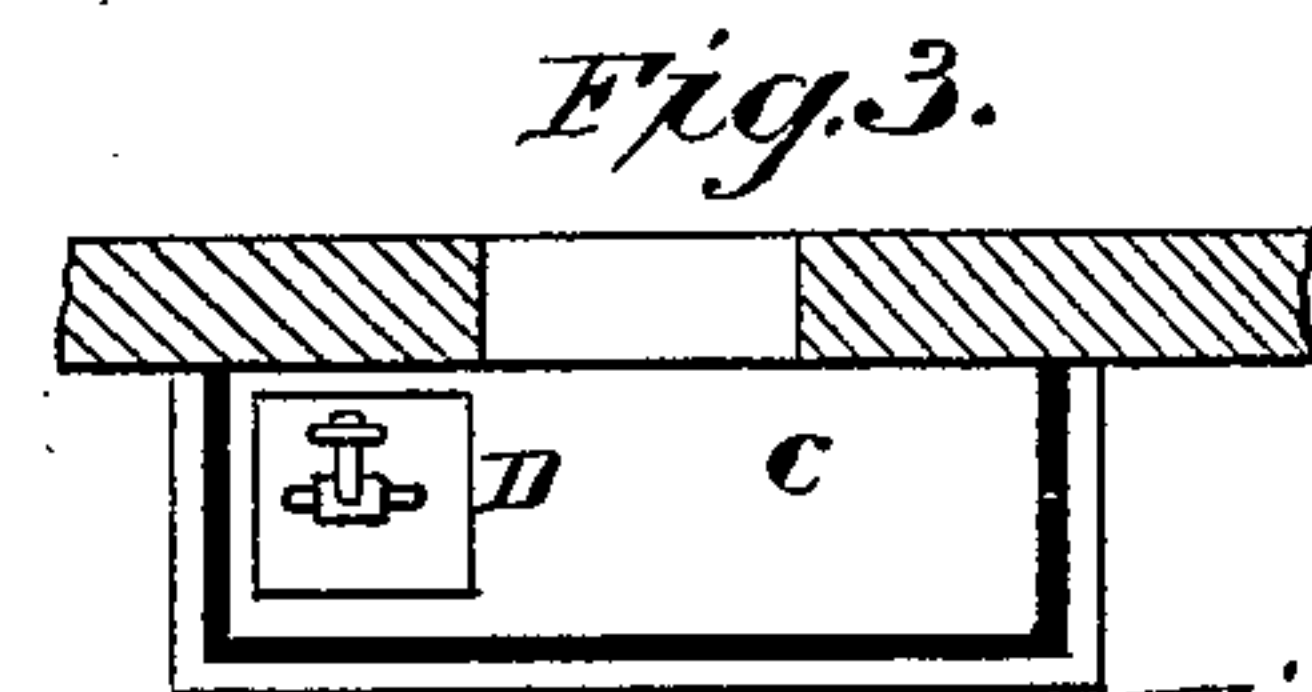
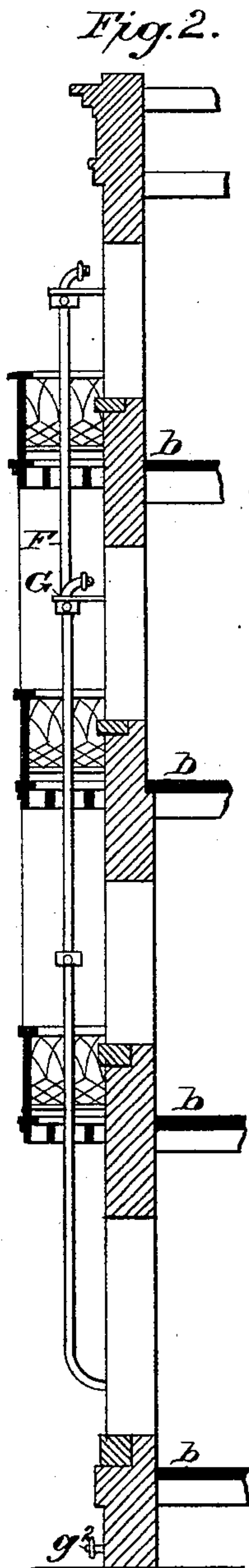
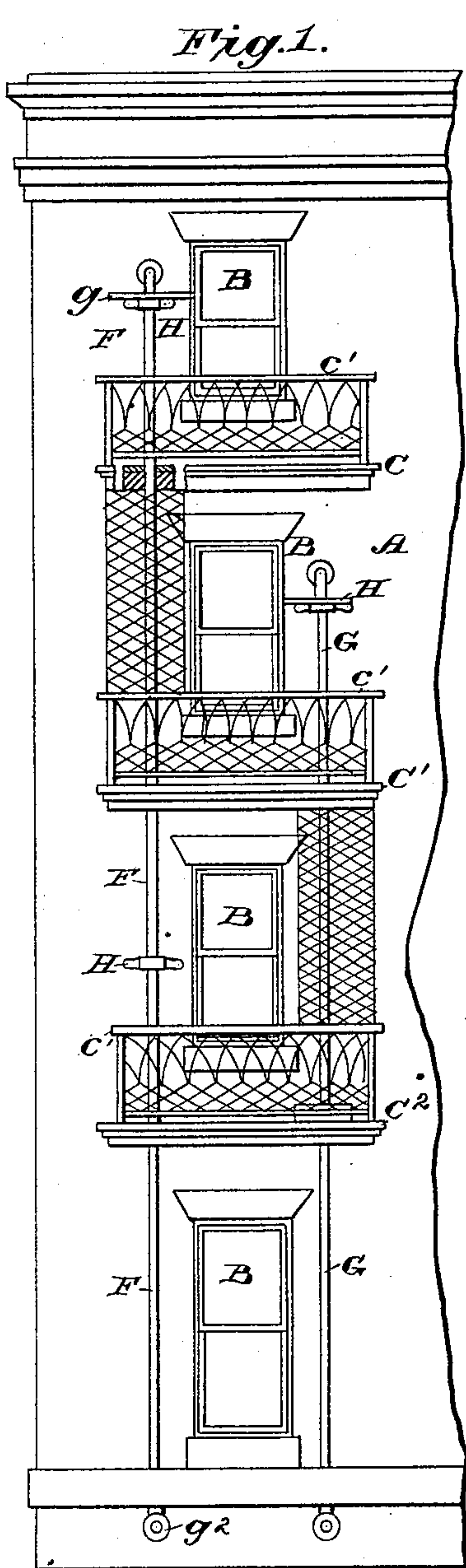


E. H. BROWN.

FIRE ESCAPE.

No. 284,808.

Patented Sept. 11, 1883.



Witnesses

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*Jos. L. Condro*

Inventor

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*per Brashear & Williams*  
*Attorneys*

(No Model.)

2 Sheets—Sheet 2.

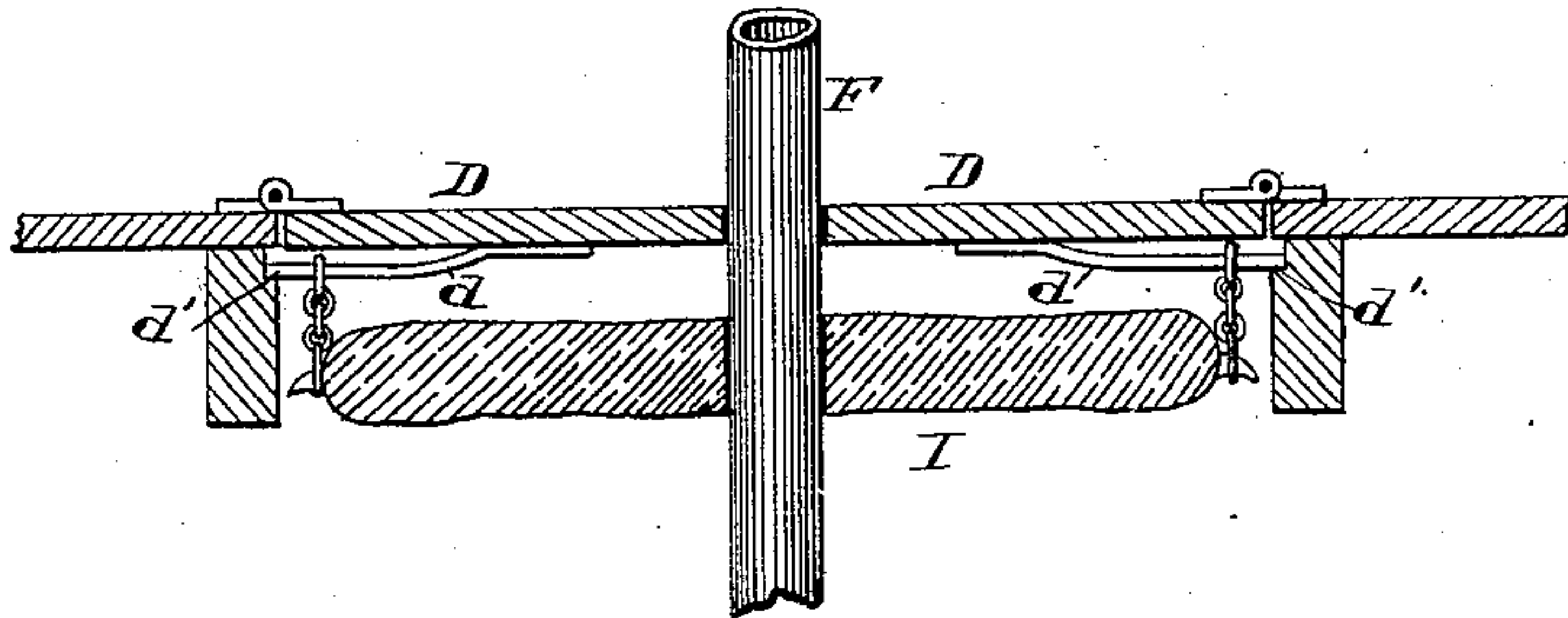
E. H. BROWN.

FIRE ESCAPE.

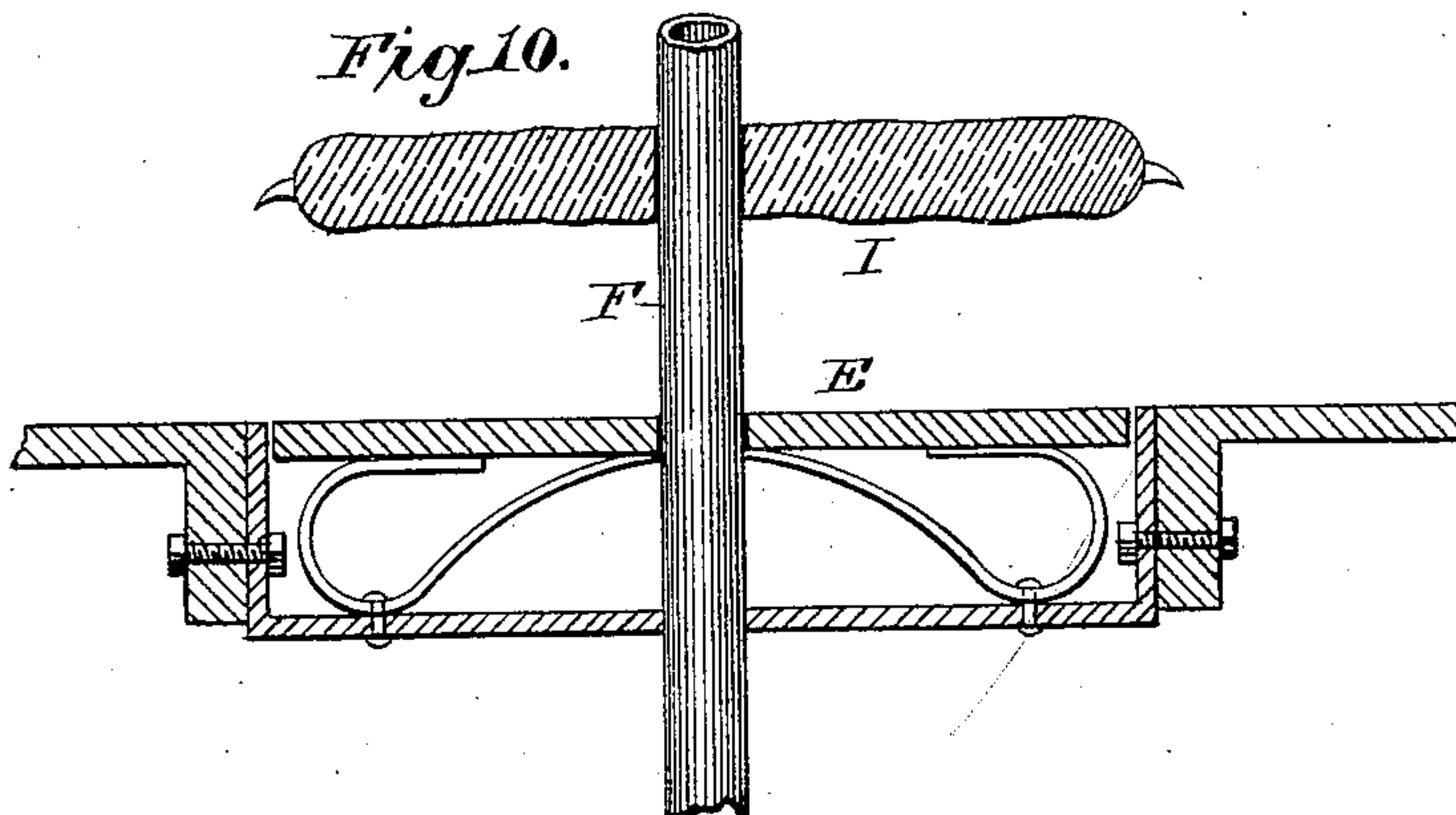
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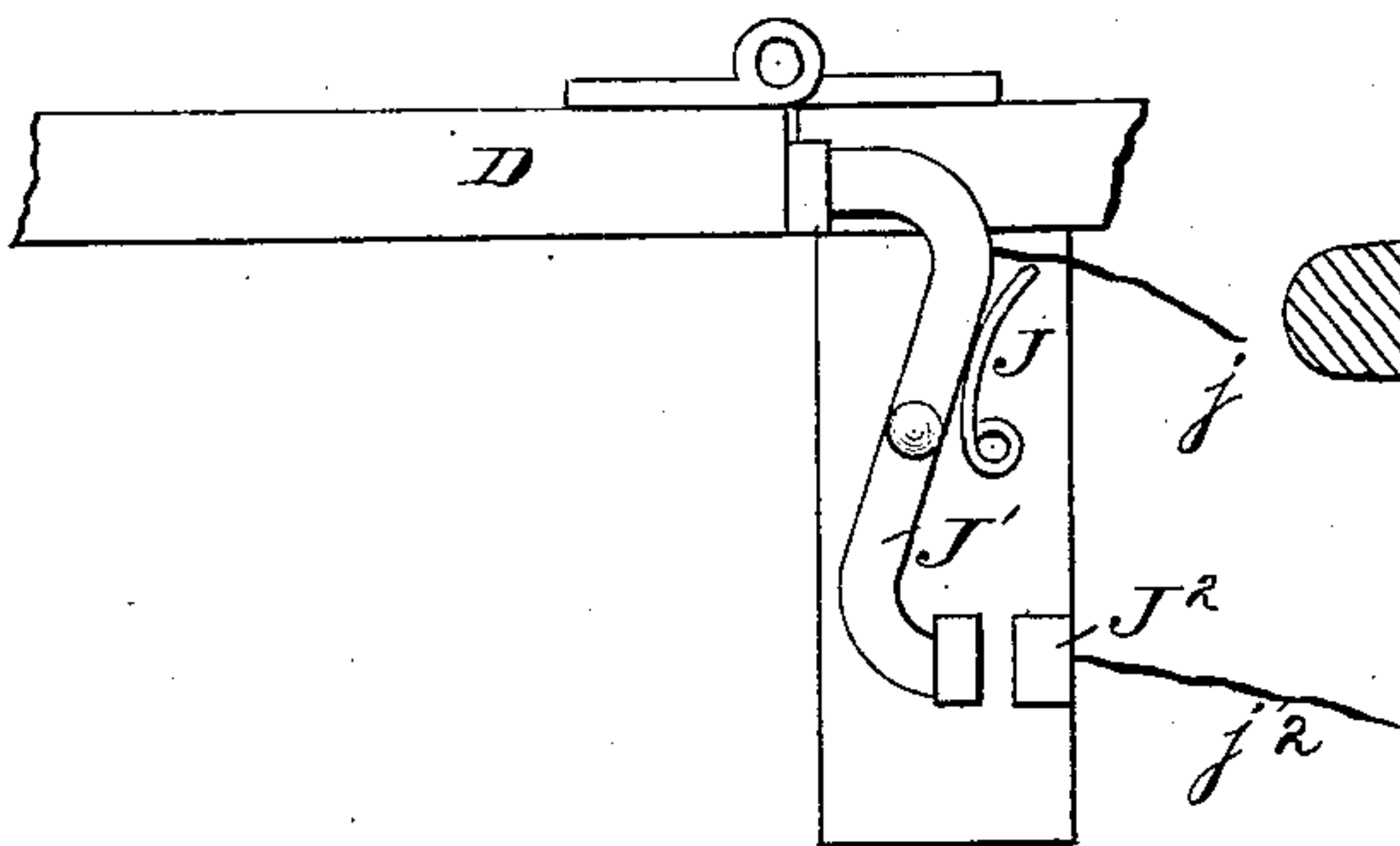
*Fig. 9.*



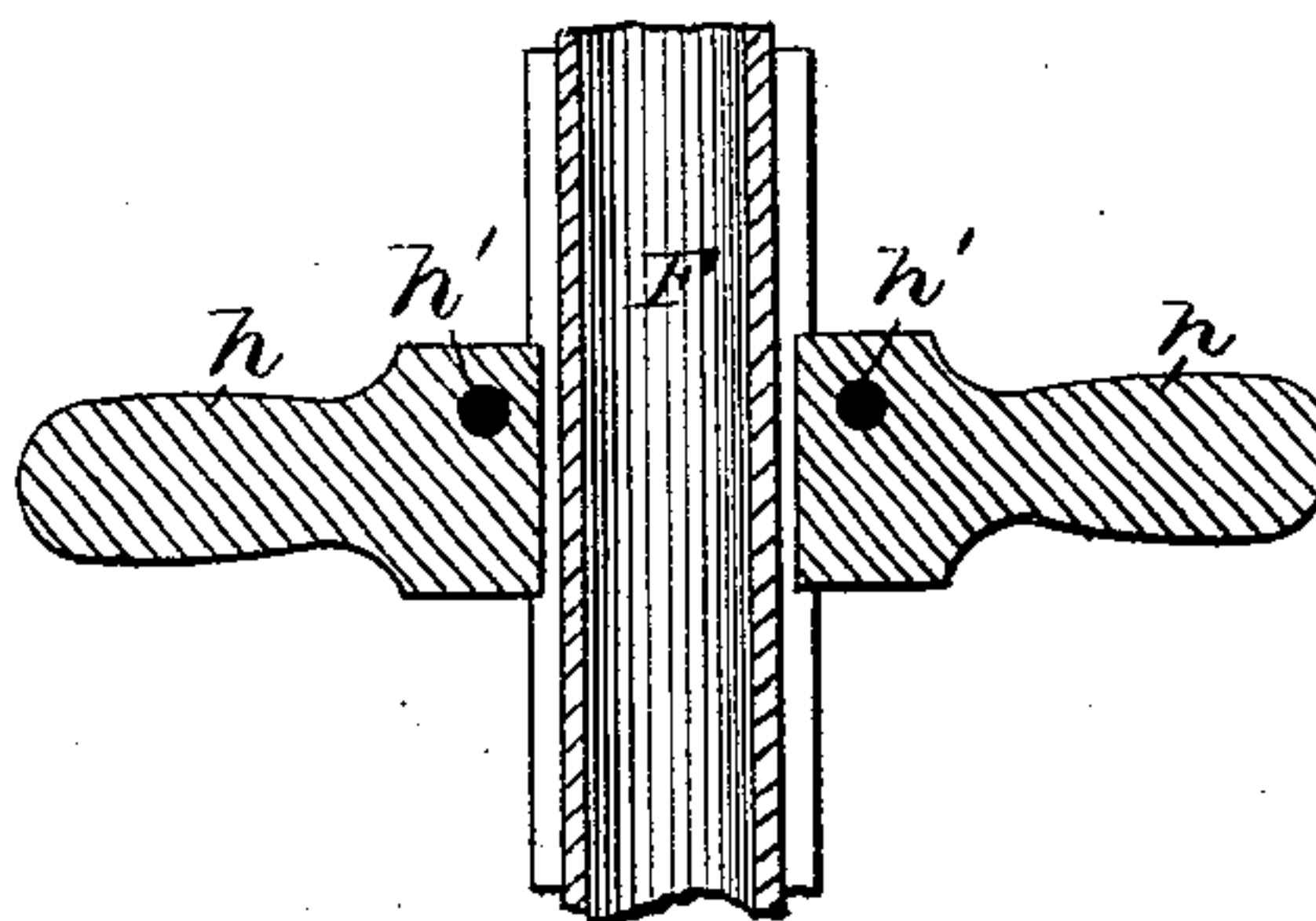
*Fig. 10.*



*Fig. 11.*



*Fig. 12.*



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# UNITED STATES PATENT OFFICE.

E. HERMAN BROWN, OF BALTIMORE, MARYLAND.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 284,808, dated September 11, 1883.

Application filed July 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, E. HERMAN BROWN, residing at Baltimore city, Maryland, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a front elevation of part of a building supplied with my fire-escape. Fig. 2 is a section thereof. Fig. 3 is a plan of the upper balcony. Fig. 4 is a plan of the second balcony. Fig. 5 is a plan of the lower balcony. Fig. 6 is a cross-section through the pole or pipe, showing the clutch or handle in plan view. Fig. 7 is an elevation of the clutch and part of the pole or pipe. Fig. 8 is a similar view with a modified form of clutch. Fig. 9 is a sectional view, showing a mattress suspended under a trap-door. Fig. 10 is a similar view, showing the mattress released and nearly down to the spring-platform. Fig. 11 is a view, showing the means for operating the electric signal, and Fig. 12 is a section of pipe and clutch.

Like letters of reference mark the same parts in all the figures.

My invention has relation to fire-escapes; and it consists in the construction, arrangement, and combinations of parts, which will first be described in connection with the drawings, and afterward specifically pointed out in the claims.

Referring to the drawings by letter, A represents the front of any building to which it is designed to apply my fire-escape. B B B B are windows or doors in the different floors. (Represented by *b b b b*.) In front of the windows are erected balconies C C' C<sup>2</sup>, each of which is provided with a floor, C, and suitable guards or railings, C'. There will be as many balconies as there are stories in the building above the first or lower story, and the upper and lower ones will be constructed as herein described, while all the intermediate ones will be alike. Consequently a description of the balcony C', as here shown, will answer for all such intermediate ones.

The upper balcony, C, is provided with a

hatchway, closed by two oppositely-hinged trap-doors, D. The second balcony is supplied with similar doors, D', located on the opposite end from those in balcony C, while immediately under the trap-door in the upper balcony the second balcony has a spring-platform, E. The lower balcony, C<sup>2</sup>, has similar doors, D<sup>2</sup>, and platform E', the positions being reversed from those of the second balcony, bringing platform E' under doors D' D'. A pole or pipe, F, is secured by suitable brackets, *f*, to the building above the upper balcony, and, passing downward through trap-doors D D<sup>2</sup>, and platform E', is again secured to the building below the lower balcony. At the other end of the balconies is a similar pipe or pole, G, secured below the upper balcony, which, passing down through trap-door D' and platform E', is again secured to the building below the lower balcony. The manner of securing the pole or pipe to the walls may be varied. In this instance I have shown it by brackets *g* near the top and extending into the wall at a point, *g*, near, say, six feet from the ground, and again emerging near the surface at *g*<sup>2</sup>, and, in case a pipe is used, formed at the point G<sup>2</sup> with means for connecting hose, thereby making a stand-pipe, through which water can be conducted and delivered at the top of the pipe. The pipe or pole is formed of metal or wood, as desired, and is provided on each side with a groove, *f'*, extending longitudinally, in which the clutch moves, and this serves to prevent the person using the escape from turning in descending.

H is a clutch or handle, which is to be grasped by the person descending, by which the speed of descent can be regulated in the following manner:

Referring specially to Figs. 6, 8, and 12, *h h* are handles extending laterally from the pole, to be grasped by the hands. These handles are secured by pivots *h'* to a belt or band of metal or leather extending around the poles, the two parts of said band—one on each side of the pole and handles—being marked, respectively, *h*<sup>2</sup> *h*<sup>3</sup>. The inner ends, *h*<sup>4</sup>, of the handles extend into the grooves *f'* in the pipe or pole. The friction on the pole may be in-



creased or diminished at will by bearing down or lifting up said handle, the bearing down causing the inner ends,  $k^4$ , to press against the poles, and the raising thereof causing the same to be released.

The trap-doors  $D D' D^2$  are double, and are hinged, respectively, at front and rear, and are each provided with a semicircular notch to fit over the pole when closed. There is also on each door a wire or rod,  $d$ , which rest upon ledges  $d'$  in the frame-work, and said rods in such position serve as supports upon which to suspend the mattress  $I$ , which is perforated and slides on the pole when released. The release is effected by the opening of the doors. The rods  $d$ , being not sufficiently stiff to support the weight of the mattress, allow it to fall as soon as it is removed from the support of the ledge. The mattress, when released, falls, sliding down on the pole and landing upon the spring-platform below, thus, with said spring-platform and mattress, forming a bed upon which the descending person lands, obviating all danger of injury by a too rapid descent. The opening of the door also closes the circuit of an electric alarm mechanism, of which  $J$  is the key, connected with one wire,  $j$ , normally kept in engagement with a metal knob connected with the other wire,  $j'$ , by the spring  $J'$ . The rear edge of the door, when closed, presses the upper end of the key against the action of the spring, forcing and maintaining the lower end out of contact with the knob, thus maintaining the circuit broken. The opening of the door allows the spring to act, closing the circuit and sounding the alarm. The bell may be located in any part of the building where it will be most likely to be heard, and, in case the building is a hotel or other public structure, may be connected with the annunciator in the office.

Fig. 7 shows the clutch with bands of leather, in which case there are two rivets instead of a pivot, and the elasticity of the leather causes the same biting action upon the pole when the handles are raised or lowered as before described.

The operation of my improved device is as follows: A person desiring to descend by means of my improved device, after emerging from the window or door, raises the trap-door in the balcony, and, seizing the handles of the clutch and clasping the legs around the pipe or pole, descends to the next lower balcony. From the point at which the hands will be when the feet are resting on the spring platform or mattress, the pole is decreased in size, so that the clutch, after being used, will drop down through the platform and mattress to the end of the smaller portion of the pole, where it will stop and be ready for use on the lower larger portion of the pole. The limits of the contracted portion of the pole are marked  $k' k$ . The person descending, having reached the middle balcony, as here shown, proceeds to the other end thereof, opens the

trap-door therein, and slides in the same manner down to the next balcony, the operation being repeated until the ground is reached.

By the description before given of the clutch it will be seen that the speed of the descent can be easily regulated, and if by reason of too great headway of the fire in the upper stories no ordinary alarm can be sounded, the automatic action of the doors will sound the alarm and notify any persons in the lower stories of the fact that the doors have been opened. This automatic alarm upon the opening of the doors will also effectually prevent the escape of absconding lodgers by way of the fire-escape. The person descending is protected by suitable nettings, as shown.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The fire-escape herein described, consisting of the series of balconies  $C C' C^2$ , the upper one having a hatchway and the two lower ones a hatchway and a spring-platform each, the hatchway in each being in line with the spring-platform of the next lower one, and the poles or pipes secured at top and bottom to the wall and passing through the hatchways and spring-platforms, in the manner set forth.

2. In a fire-escape, the combination of a balcony having a hatchway, trap-doors closing said hatchway and having semicircular notches in their edges, a pole passing through said hatchway, and means for securing the pole to the building above and below the hatchway, as set forth.

3. The combination, substantially as described, with a balcony provided with a hatchway, of doors hinged therein and provided with rods  $d$ , and a mattress suspended upon said rods, as shown, whereby the opening of the doors automatically releases the mattress, as set forth.

4. The combination, with the balcony, of the doors having rods  $d$ , the frame-work having ledges  $d'$ , the mattress, and the suspending chain, as set forth.

5. In combination with the balcony, the trap-doors and means, substantially as described, whereby the opening of the doors automatically sounds an alarm, as set forth.

6. In combination, the balcony, the pivoted key, the spring for holding it normally in contact with the knob, the wires, and the hinged trap-doors, whereby an alarm is automatically sounded upon opening the doors, as set forth.

7. In a fire-escape, a series of balconies having hatchways, a pole or pipe passing through the hatchways and secured to the building, and a clutch-handle, constructed and combined as set forth.

8. In combination with the balconies having hatchways, the pole passing through them and secured to the building, said pole being grooved longitudinally, as set forth.



9. The clutch-handle herein described, consisting of the band encircling the pole, and the grip-handles having projecting inner ends to press against the pole, for the purpose set forth.

10. The combination, in the clutch-handle, of the bands  $h^3$   $h^2$ , the handles, and the pivots or rivets for connecting them, for the purpose set forth.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

E. HERMAN BROWN.

Witnesses:

JNO. T. MADDOX,  
S. BRASHEARS.