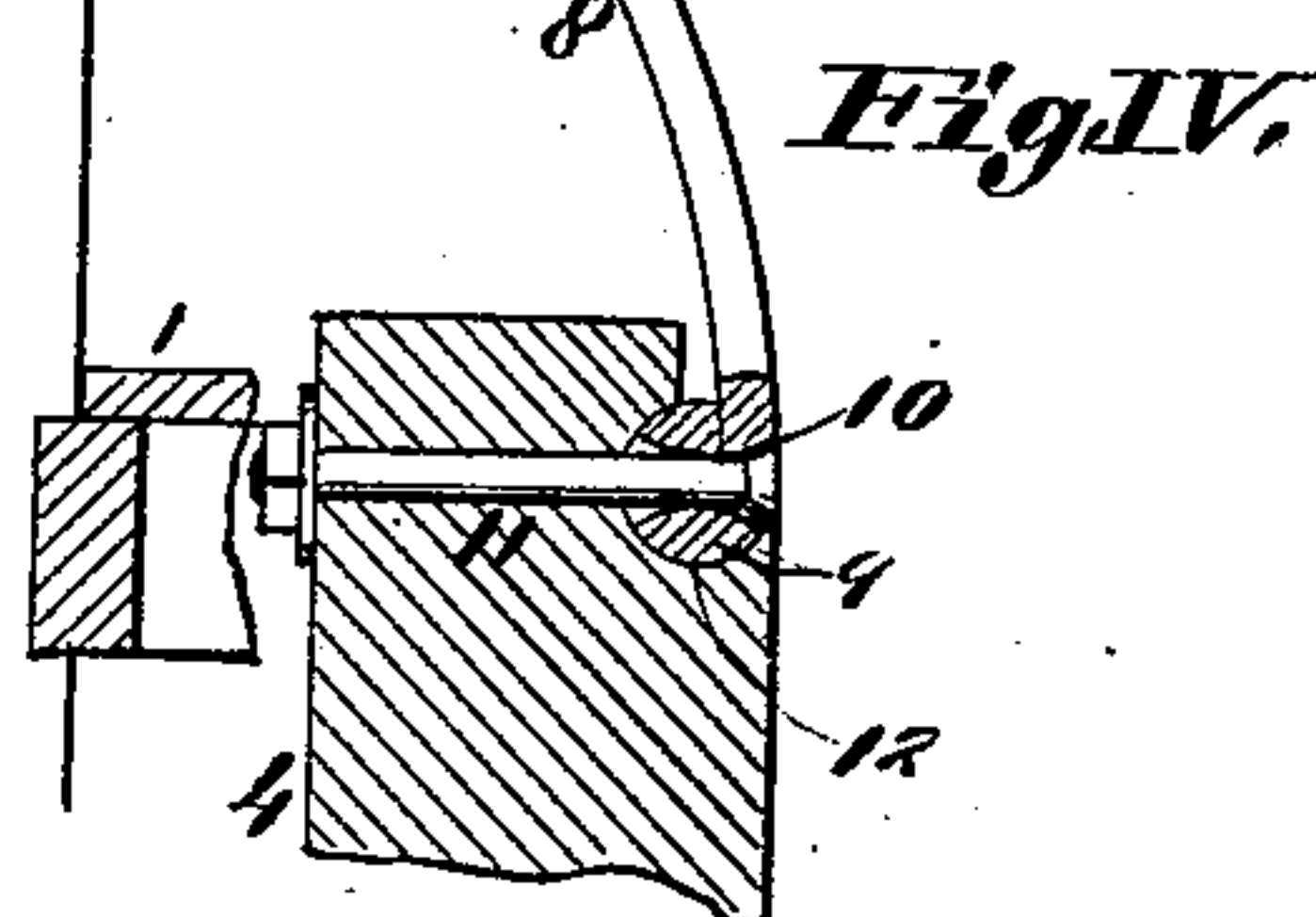
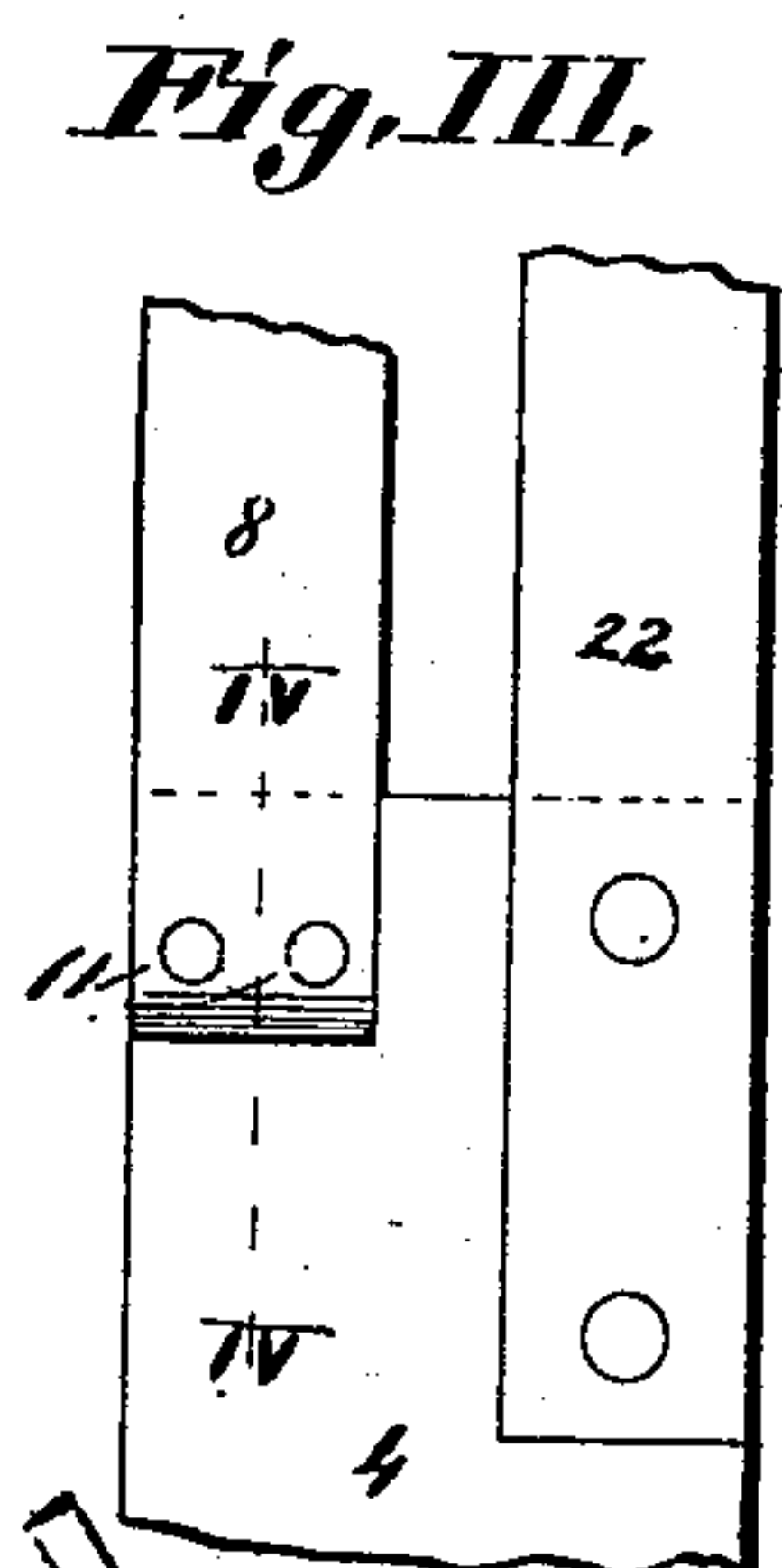
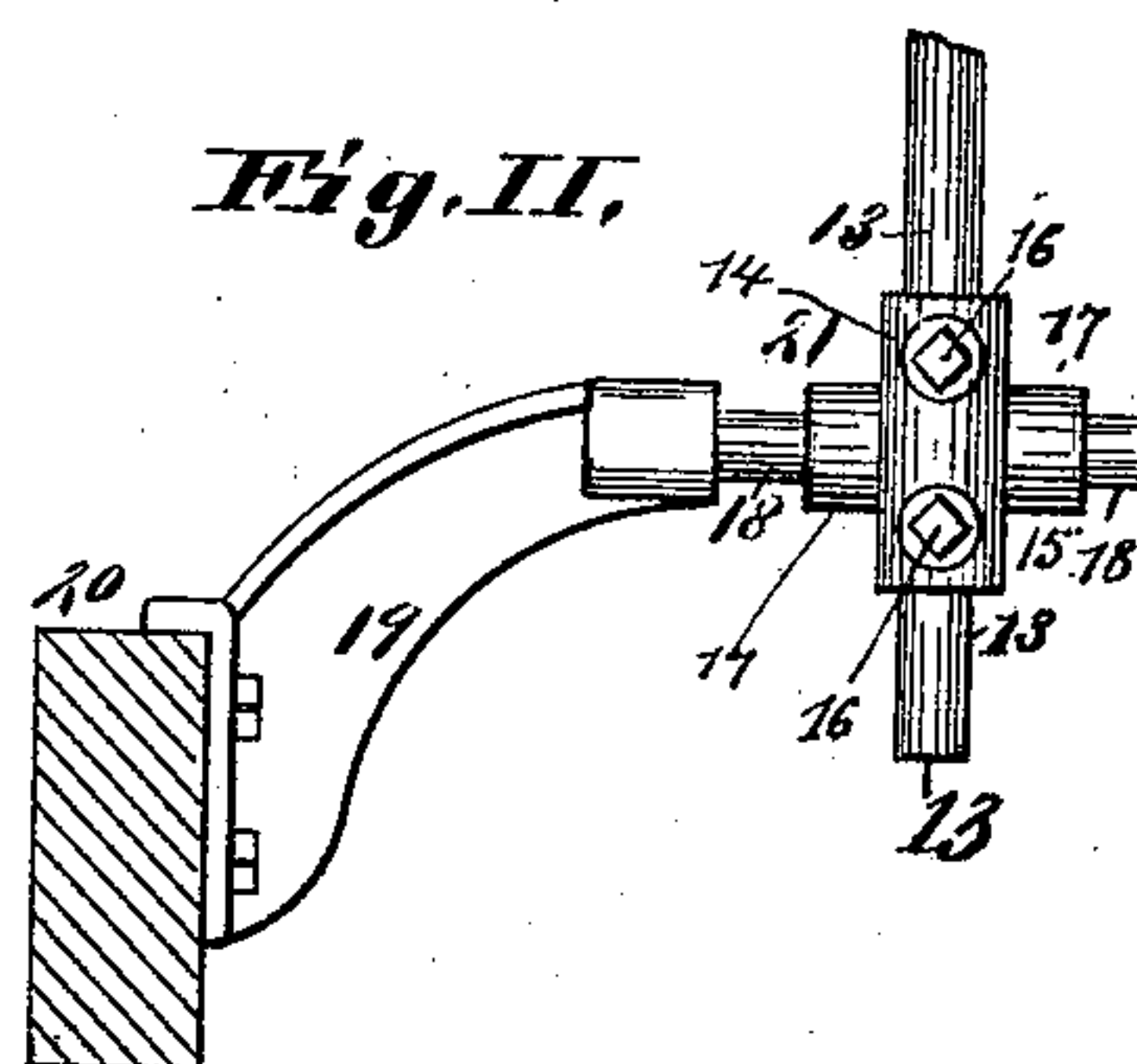
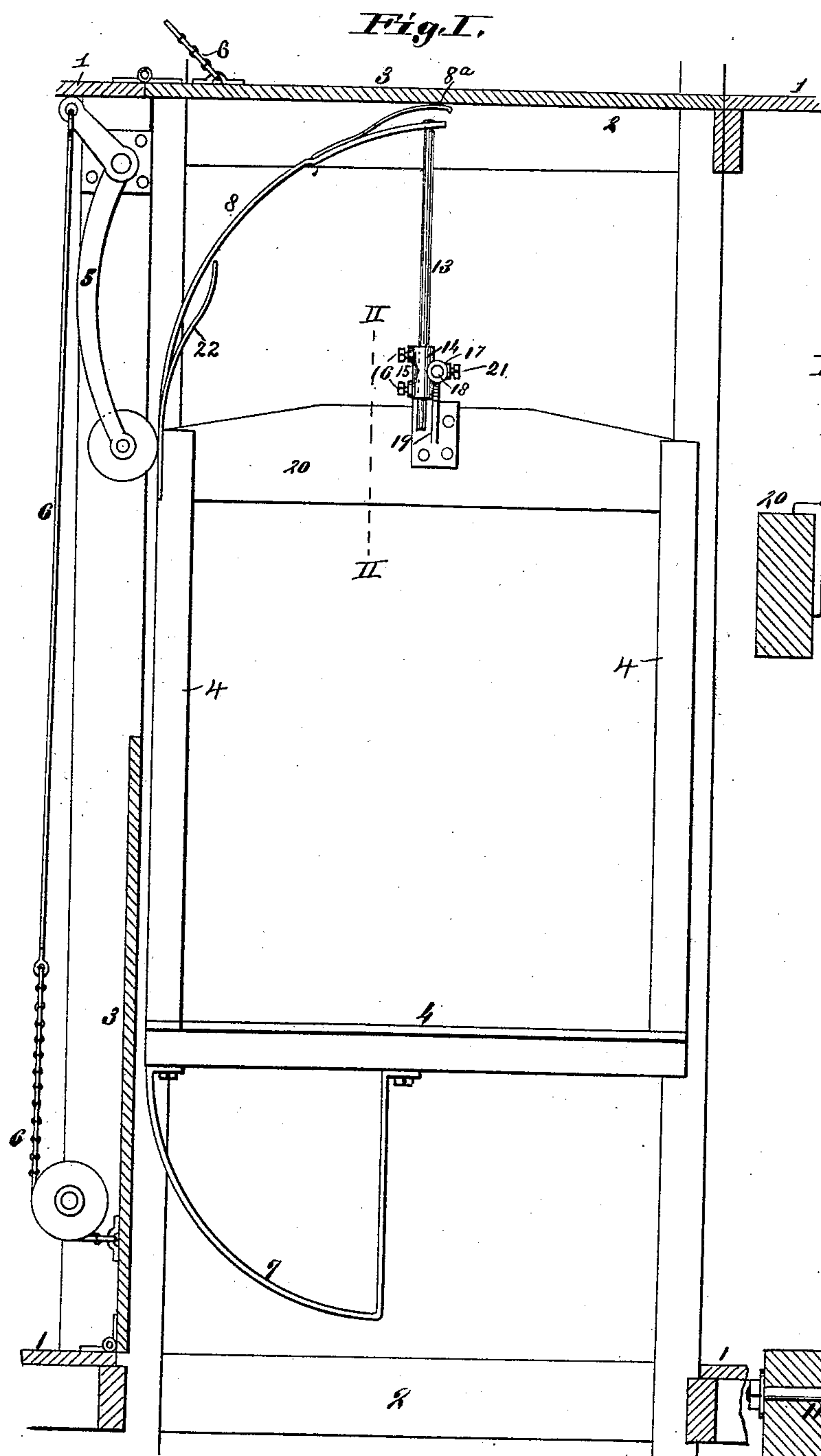


(No Model.)

E. J. HERMAN.
HATCHWAY.

No. 407,526.

Patented July 23, 1889.



Attest:
Wm E. Knight
Samuel H. Knight.

Inventor:
Emile J. Herman
By Knight Bros
attys

UNITED STATES PATENT OFFICE.

EMILE J. HERMAN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE SAFETY
HATCH DOOR COMPANY, OF SAME PLACE.

HATCHWAY.

SPECIFICATION forming part of Letters Patent No. 407,526, dated July 23, 1889.

Application filed September 1, 1888. Serial No. 284,332. (No model.)

To all whom it may concern:

Be it known that I, EMILE J. HERMAN, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Self-Closing Hatchways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is an elevation illustrative of my invention. Fig. II is an enlarged view of the adjusting-clip and a section through the top beam of the cage of an elevator-shaft, the section being taken on line II II, Fig. I. Fig. III is a detail view showing the upper end of an upright of the cage, and showing part of the lifting-cam and guide in elevation. Fig. IV is a section taken on line IV IV, Fig. III.

My present invention relates to an adjustable cam for self-closing hatchways; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents the floors of a building; 2, the hatchways; 3, the doors; 4, an elevator-cage; 5, a pivoted lever, and 6 a connection between the lever and the door beneath. 7 represents a cam on the bottom of the cage for coming in contact with the lever 5 and opening the door on the descent of the cage. My invention does not relate to any of these parts, though it might be applied to the cam 7, if desired, in the same manner as applied to the cam on top of the cage, to the adjustability of which my invention does relate.

8 represents the lifting-cam, located at the upper end of the cage, and which opens the doors 3 as the cage ascends by coming in contact with them, as shown in the upper part of Fig. I, and lifting them into the position shown in the lower part of Fig. I.

The manner of hinging the cam to the cage is best illustrated in Fig. IV. Its lower end is provided with an enlargement or head 9, and through this enlargement a perforation or perforations 10 are made to receive a connecting bolt or bolts 11. The perforation 10 is preferably made larger at its ends than at the center, so as to allow the cam to rock on the bolt. The head 9 of the cam fits in a

socket 12 of an upright of the cage, and it will be seen that this hinged connection will allow the upper end of the cam to be moved up or down at will. To the upper end of the cam is secured a cushioning-spring 8^a and a vertical rod 13. The latter passes through a sleeve or tube 14 of a clip 15, and which is held in the sleeve by means of a set-screw 16. The clip is provided with another sleeve 17, which receives a horizontal rod 18, secured by a bracket 19 (see Fig. II) to the cross piece or beam 20 of the cage. The rod 18 is held to any adjustment in the sleeve 17 by a set screw or screws 21. It will thus be seen that when it is desired to raise or lower the cam 8 it may be done by loosening the set-screw 16, and when the cam is thus adjusted it is held by tightening the screw 16.

For the purpose of having the point of connection between the cam and the beam 20 of the cage in a vertical line I provide the adjustable connection consisting of the sleeve 17, rod 18, and set screw or screws 21. 22 is the lever-guide.

With this improved device a cam for application to the cage of an elevator-shaft for opening the doors may be manufactured in a shop or a distance from the place where it is to be used, and can be cheaply, quickly, and accurately fitted to the cage, as it is capable of being adjusted in either direction (either up or down or laterally) with the greatest ease and nicety.

I claim as my invention—

1. The combination, with the cage and a cam secured to an upright of the cage, of the clip and the rod by which the cam is adjusted on the beam, substantially as and for the purpose set forth.

2. The combination, with the cage and a cam hinged to the cage at one end, of the adjustable rigid rod and clip by which the cam is connected to the cage at the other end, substantially as set forth.

3. The combination of a cage, a cam hinged to the cage at one end and adjustably connected to the cage at the other end by means of a vertical rod, a sleeve through which the rod passes, and a set-screw, substantially as set forth.

4. The combination of a cage, a cam secured

to the cage, and a horizontally-adjustable clip for securing the upper end of the cam to the cage, substantially as set forth.

- 5 The combination of the cage, a cam hinged to the cage, a vertical rod secured to the upper end of the cam, and a horizontally-adjustable clip provided with a set-screw for receiving said rod and holding the cam to any suitable adjustment, substantially as set forth.
- 10 6. The combination of the cage, a cam hinged to the cage, a vertical rod secured to the upper end of the cam, a clip having a sleeve provided with a set-screw for receiving said rod, a horizontal rod secured to the cage,
- 15 and a sleeve on said clip provided with a set-

screw for receiving said horizontal rod, substantially as and for the purpose set forth.

7. The combination of the cage, a cam secured to the cage, and device for adjusting the upper end of the cam, said cam being connected to the cage at its lower end by a hinged joint consisting of a perforated head fitting in a socket in the cage and a connecting-bolt, the perforation in the head being made larger at its ends than in the center, substantially as and for the purpose set forth.
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EMILE J. HERMAN.

In presence of—

BENJN. A. KNIGHT,
EDW. S. KNIGHT.