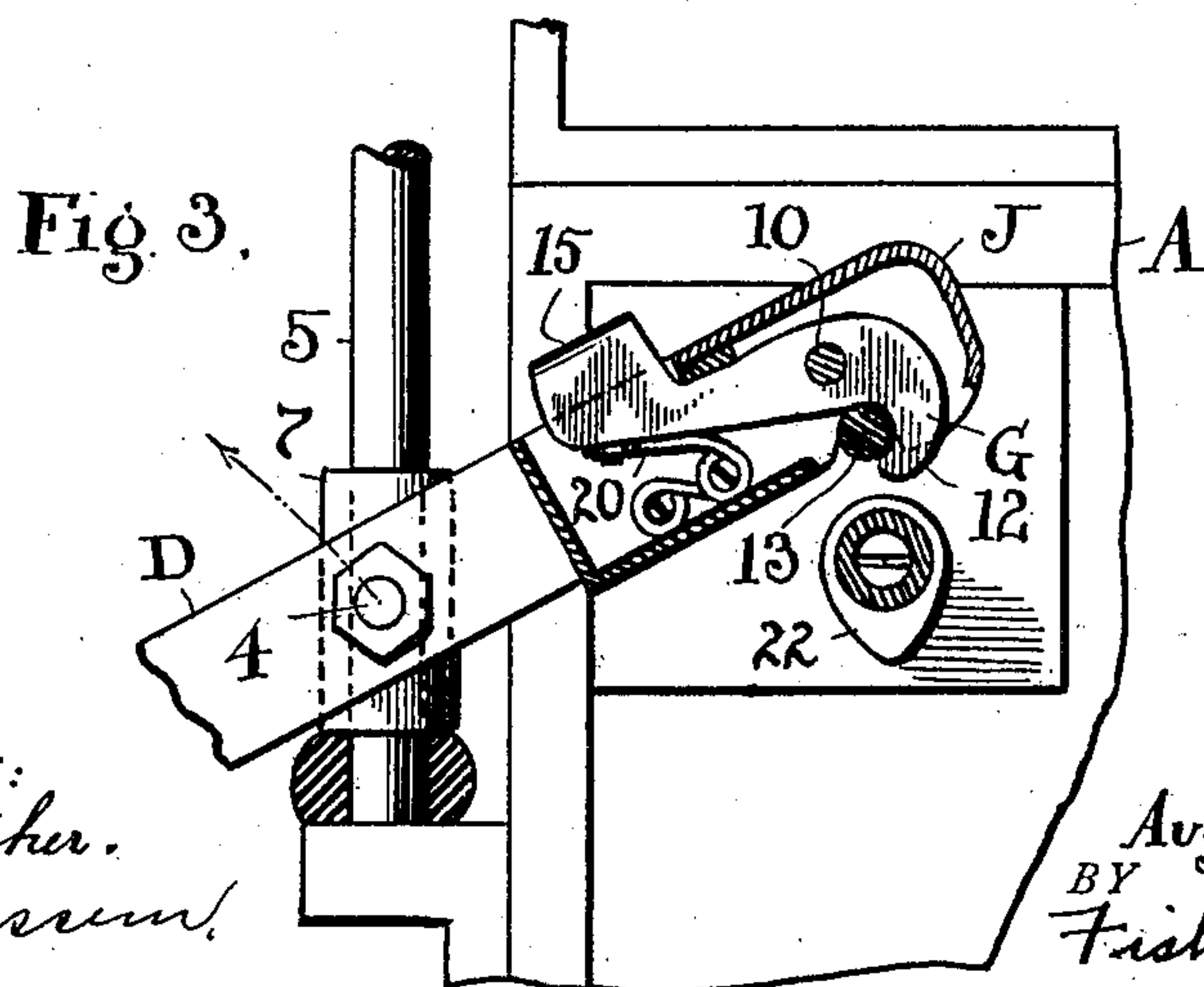
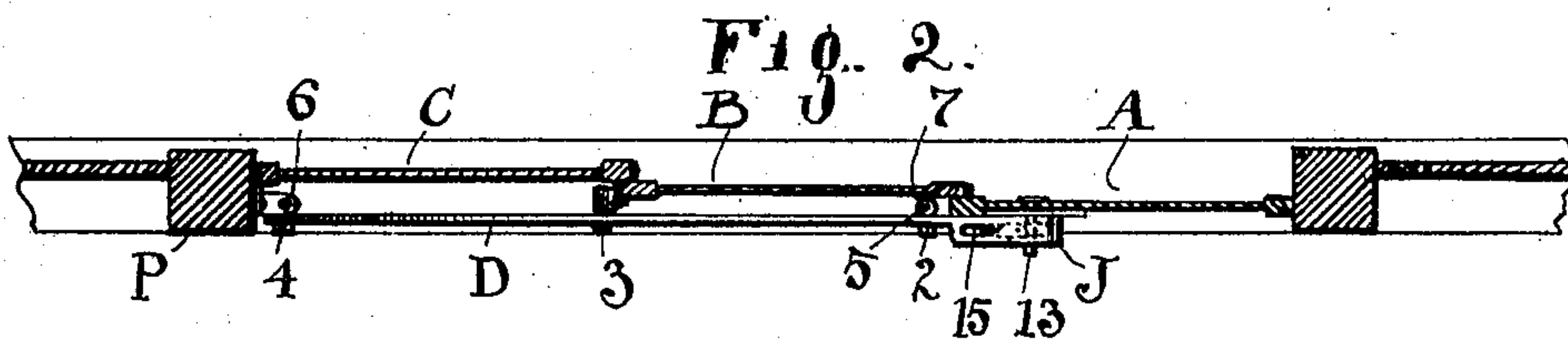
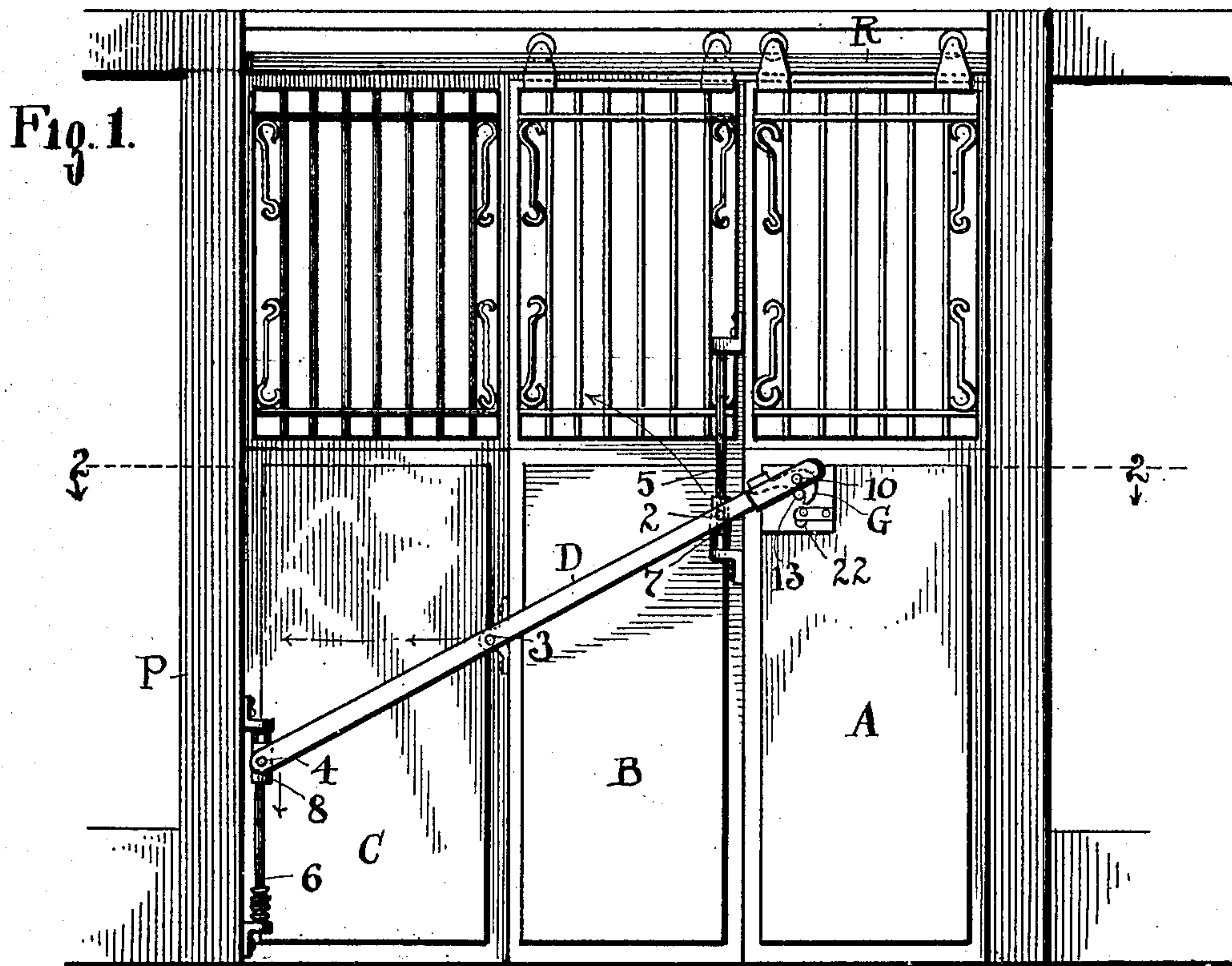


ELEVATOR DOOR.

913,181.

Patented Feb. 23, 1909.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

AUGUST J. ZITZMANN, OF CLEVELAND, OHIO, ASSIGNOR TO THE CLEVELAND ART METAL COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

## ELEVATOR-DOOR.

No. 913,181.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed May 22, 1907. Serial No. 375,050.

*To all whom it may concern:*

Be it known that I, AUGUST J. ZITZMANN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Elevator-Doors, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in elevator doors, and the invention consists in the construction and combination of parts substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an inside elevation of the elevator doors and the operating mechanism connected therewith. Fig. 2 is a cross section and plan on line 2 2, Fig. 1. Fig. 3 is an enlarged elevation partly in section of one end of the operating lever and latch thereon for locking the doors.

The closure of the elevator shaft consists of three parts, A, B and C, which cover the entire elevator opening. The part or section C is stationary, but of substantially the same size as parts A and B, and behind this the elevator man finds room to stand and operate the doors proper. The said doors, A and B, are treated herein as separate and distinct members though together they constitute a single closure, like a door in two sections, and are operatively related and connected, so that one cannot be moved to either open or close without moving the other also and at a rate respectively proportioned to the distances they have to travel, the fact being that door A travels twice the distance of door B and twice as fast, necessarily. Both doors are alike supported on rollers or wheels from above running on rail or bar R, and said doors overlap more or less always, according to position, their closed position being seen in Fig. 2 and are adapted to run one behind the other behind fixed panel C, when fully open. It should be made clear in this connection that the main object of this arrangement of double doors or two doors or door sections adapted to close one opening is to get the largest possible ingress and egress at the entrance to the elevator in receiving and discharging a load of passengers. The pressing need of

such doors is especially emphasized in our large department stores, where great throngs are constantly crowding elevators and the best facilities for receiving and discharging a load are imperatively demanded and greatly taxed. Incident to this arrangement of doors is a convenient and practical operating mechanism, whereby both doors can be handled as one and with such despatch and ease that the mere mechanical opening and closing thereof throughout the day will not be burdensome to the operator nor noisy in operation. To these ends I have devised the special means shown, comprising a lever or bar D, which is both the connecting and the operating member and is united with both doors and is placed in an inclined position with a central rocking pivot 3 on door B and pivot connections at its ends as indicated by 2 and 4, respectively. These several pivot points are equidistant, and point 3 is the middle fulcrum of said lever and fixed on a bracket at the rear edge of door B. Points 2 and 4 are movable in opposite directions on guide rods 5 and 6, and sleeves 7 and 8, respectively, on said rods. When the doors are opened these points travel in opposite directions while the lever simply rotates on pivot 3, and when wide open the lever or bar D stands vertically next to post P and doors A and B are folded behind panel C.

Guide rod 5 is attached by brackets to the rear edge of door or gate A and rod 6 on brackets on post P, and there may be spring metal or rubber buffers on said rods for the sleeves 7 and 8.

A latch or catch G is pivoted at 10 in the front free end of lever D in a suitable metallic box or shell J, and has a hook 12 adapted to engage over a pin or projection 13 on the door. At its opposite end said latch has a projection 15 extending out beyond shell or box J sufficiently to enable the operator to depress that end of the latch and release it from pin 10, when an upward swing of this end of the lever serves to carry both doors rearward. A double motion of lever D occurs at this time as the ends thereof move in the opposite directions with point 3 at the pivot center and fulcrum for door A as appears, and point 4 as a fulcrum for both doors, which brings both doors to a full open position at the same time. This movement also seems to be an entirely natural one, or



within the law of good mechanics, because it is an exceedingly easy, harmonious and noiseless movement, and there is nothing in the labor to unduly tire an operator who runs the elevator day after day. A spring 20 holds latch D in locking position on pin 13, and a rotatable cam 22, adapted to be turned by means of a key from the outside, serves to disengage said latch at any time 10 from the outside, when the doors can be pushed open. Of course, only authorized persons are supposed to have such keys.

Lever D has a rest notch engaged over pin 13, and when in this notch the doors are 15 closed against the door jamb as in Fig. 1.

What I claim is:—

1. In elevators, a front comprising a stationary section and two doors adapted to run behind said section, in combination with a 20 lever having a fixed pivot at the rear edge of the inner door near its middle and provided with pivotally supported sleeves at its ends, and rods at the bottom and rear edge of said stationary section and on the rear edge of 25 the outer of said doors near its middle on which said sleeves are slidably engaged.

2. In elevator doors, an elevator front section and two independently mounted doors

arranged to run behind said section, an inclined lever connecting said doors and having 30 a fixed pivot on one door and sliding pivots on the other door and at its lower ends respectively, and a latch on its front end adapted to engage a catch on said front door in front of its pivot on said door, said latch 35 comprising a spring pressed engaging member G and a rotatable cam adapted to lift said member out of engagement.

3. A pair of elevator doors arranged to cover different portions of an elevator front 40 and independently mounted, and a lever having a fixed fulcrum on the inner door and a sliding pivot connection on the rear edge of the other door, and a latch mounted in the outer end of said lever and adapted to en- 45 gage on the outer door, said latch having a hook shaped engaging portion at one end and a projection 15 at the other end and means in the outer door adapted to be rotated and disengage said latch. 50

In testimony whereof I sign this specification in the presence of two witnesses.

AUGUST J. ZITZMANN.

Witnesses:

R. B. MOSER,  
F. C. MUSSUN.