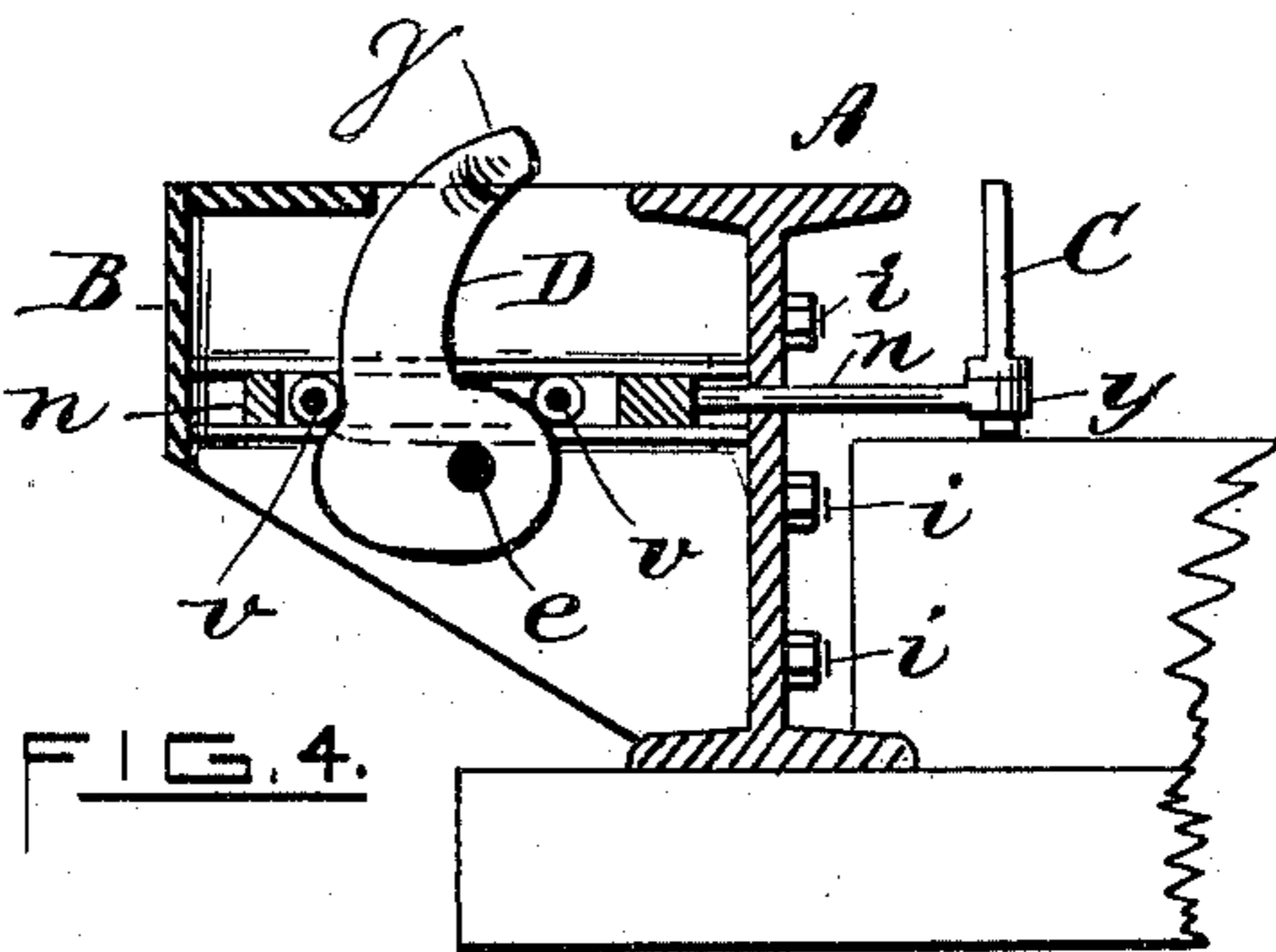
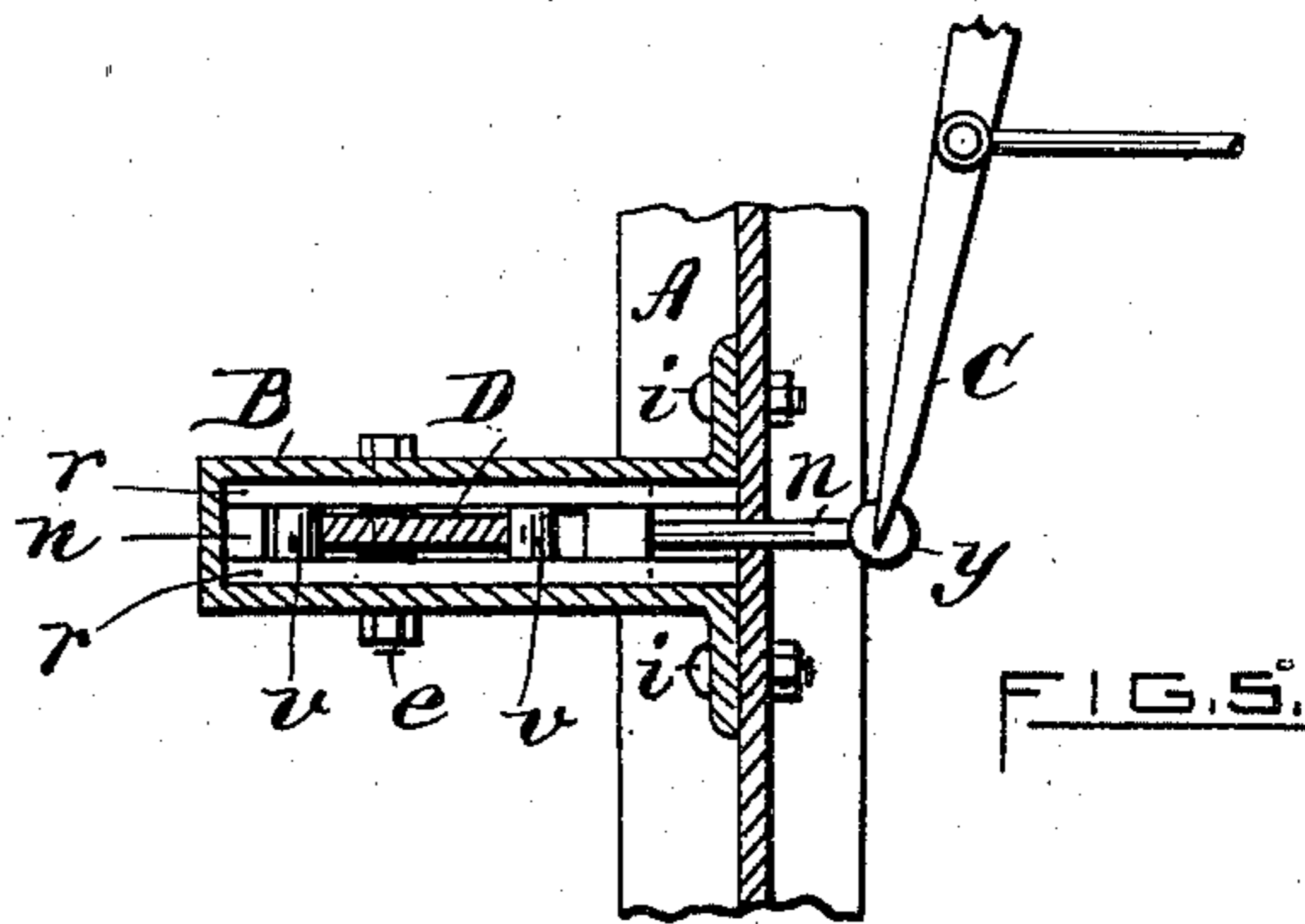
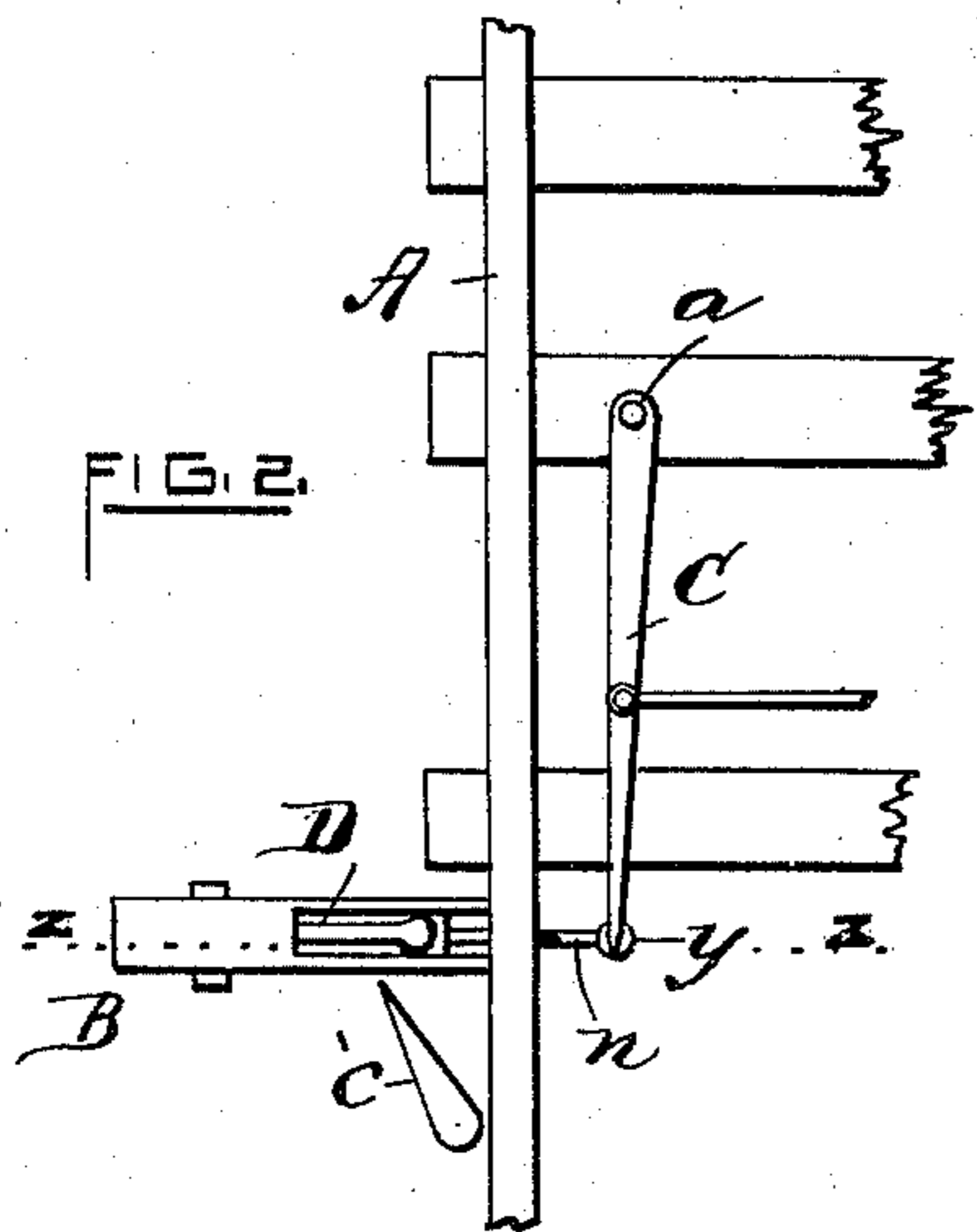
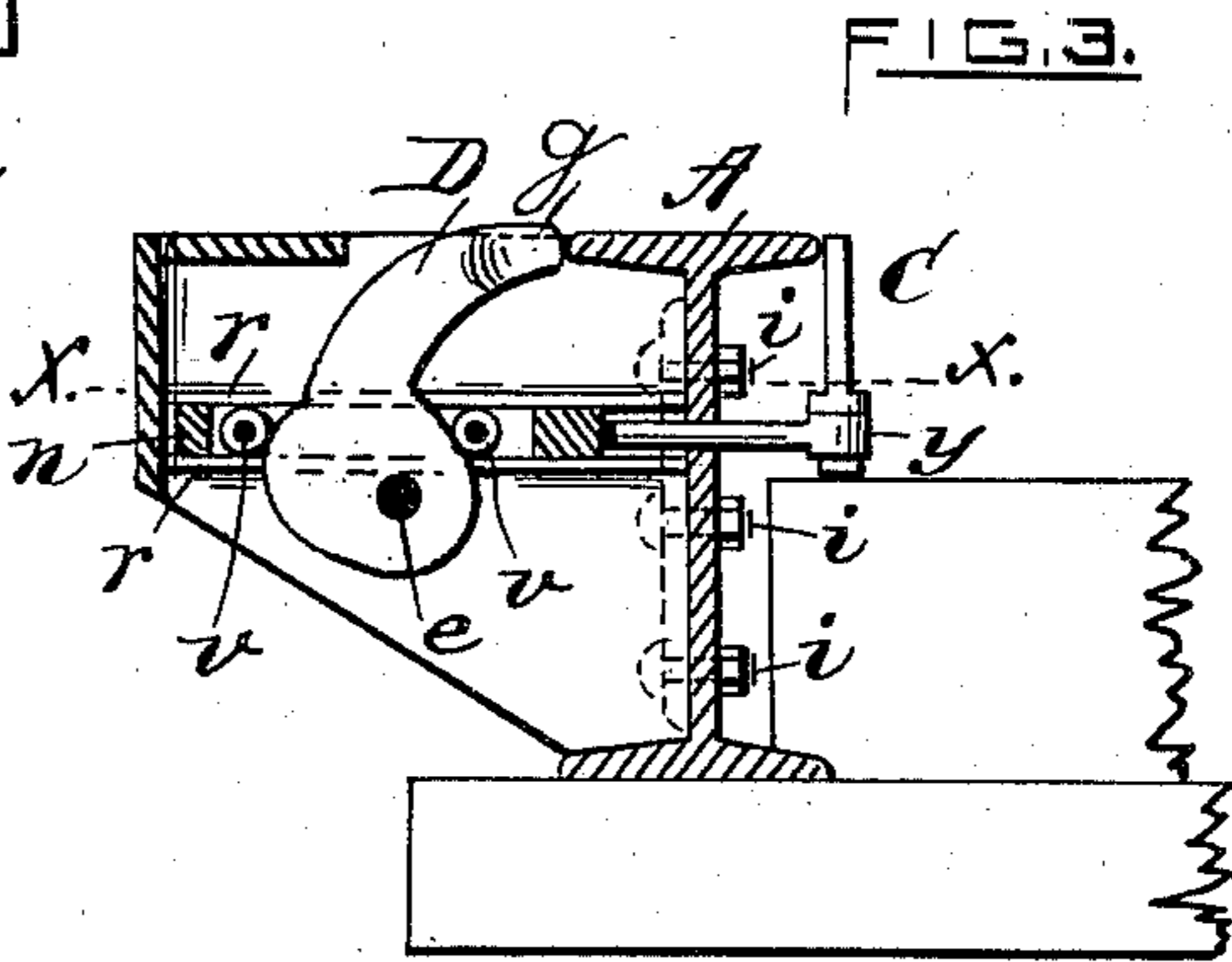
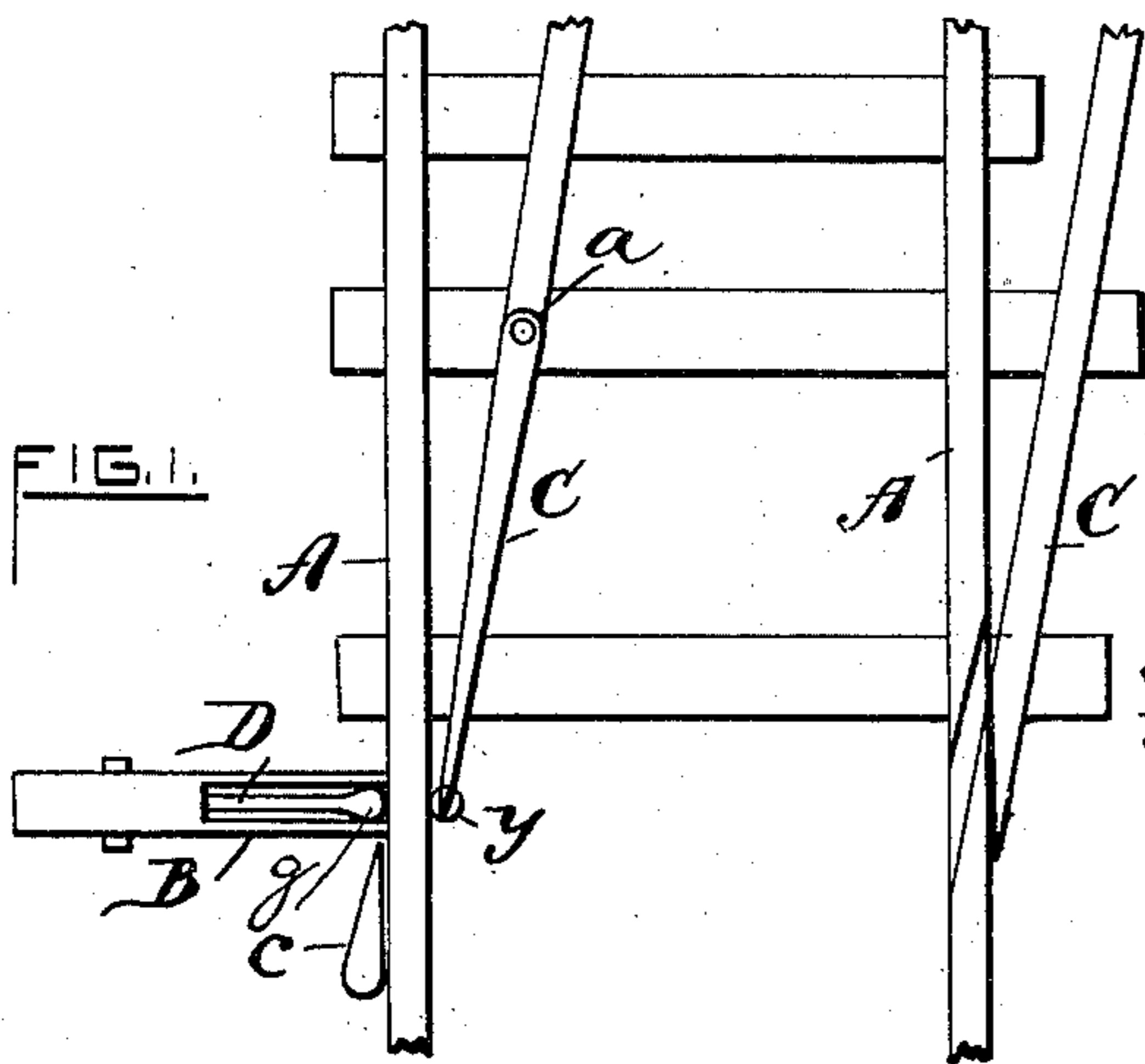


(No. Model.)

J. L. DODGE.
RAILWAY SWITCH.

No. 558,603.

Patented Apr. 21, 1896.



WITNESSES.

Charles T. Hamigan.
J. I. Buchanan.

INVENTOR.

Jasper L. Dodge.
By Benj Arnold
Atty.

UNITED STATES PATENT OFFICE.

JASPER L. DODGE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO PETER TRAINOR, OF SAME PLACE.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 558,603, dated April 21, 1896.

Application filed January 7, 1896. Serial No. 574,572. (No model.)

To all whom it may concern:

Be it known that I, JASPER L. DODGE, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Railway-Switches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of switches for street-railways called "automatic" switches, or those operated by devices attached to the car. It is fully described and illustrated in this specification and the accompanying drawings.

Figure 1 is a top view of a portion of the rails and the switch-operating device, showing the switch closed. Fig. 2 is a top view of the device for operating the switch and the rail to which it is attached. The switch is shown as being open. Fig. 3 shows a vertical cross-section of the changing device and the rail to which it is attached on line *z z*, Fig. 2. The switch is shown as being closed. Fig. 4 shows the same section as Fig. 3 with the switch open. Fig. 5 represents a horizontal section of the switch-changing device and rail on line *x x* in Fig. 3.

The object of this invention is to provide a switch-changing apparatus that can be operated from a car by some attachment secured thereto, and so arranged that when the switch is closed it will be locked, so that carriages, &c., passing over it will not change its position and open it.

In the drawings, *A A* are the rails; *C*, the switch-tongue, swinging horizontally on a pin *a*. A flat cam *D* is held in a vertical position on a pin or shaft *e*, passing through the sides of the case *B*, that contains the switch-changing devices. This case is secured to the outside of the rail *A* by screw-bolts *i i*, that pass through the rail and a flange on the case *B*. Two light flanges *r r* are cast on the inside of each side of the case *B* to form a groove or channel between them to receive the bar *n*, that slides in the groove. This bar extends through the rail *A* and is pivoted to the switch-tongue at *y*. The bar *n* is slotted to receive

the cam *D*, and friction-rolls *v v* are held in this slot in the bar, one on each side of the cam, on pins passing through the sides of the slot. These friction-rolls receive the pressure of the cam in moving the bar, rendering the motion of operating the switch easy and saving the wear of the cam and bar. The shape of the faces of the cam that work on the friction-rolls are two short evolute sections ending at their outer points in resting-places, so that when the switch is closed, as in Fig. 3, no amount of pressure on the switch-tongue *C* can be made to move the cam by the outer roll, as it is resting on a surface at that point concentric with the shaft of the cam. This prevents the switch from being opened except by the cam itself. The same condition operates against the closing of the switch by any pressure on it when open, as in Fig. 4, where the inner friction-roll rests on the concentric part of the face of that part of the cam.

In Fig. 1 is shown the shoe *c*, that operates the cam to open the switch, and in Fig. 2 is shown the shoe *c'*, that closes the switch, both of the shoes being attached to the car, the shoe *c* at the front end and the shoe *c'* at the rear end of the car, the object being to open the switch when the car approaches it (if necessary) and closing it again as the car leaves it, so that its normal condition is closed, as this makes it less liable to be obstructed by stones, &c., falling in between the tongue and the rail and preventing it from closing. The shoes *c c'* operate on the wing *g* of the cam to throw it in either direction. The shoes will keep the space between the cam and rail clear of ice or snow or other obstruction. This makes a very simple and efficient apparatus for operating the switch, one that can be constructed at a small cost, durable, and well protected from the elements by the case that incloses the operating parts.

Having thus described my improvement, I claim as my invention and desire to secure by Letters Patent—

1. In an automatic railway-switch arranged to be operated by a device attached to a car, the combination of a horizontal bar having one end attached to the switch-tongue, and having a slot in it near its other end, a cam held on a horizontal pin and swinging in said

slot and having a wing or arm arranged to be operated by a device on the cam, a friction-roll in each end of said slot arranged to bear on two evolute faces of the cam terminating in concentric faces, a rail and a switch-tongue, substantially as described.

5 2. In a railway-switch the combination of the case A, cam D, slotted bar *n*, friction-rolls *v, v*, pivoted in said slotted bar, rail A,

and switch-tongue C, all arranged and operating substantially as described.

In testimony whereof I have hereunto set my hand this 4th day of January, A. D. 1896.

JASPER L. DODGE.

In presence of—

PETER TRAINOR,
BENJ. ARNOLD.