

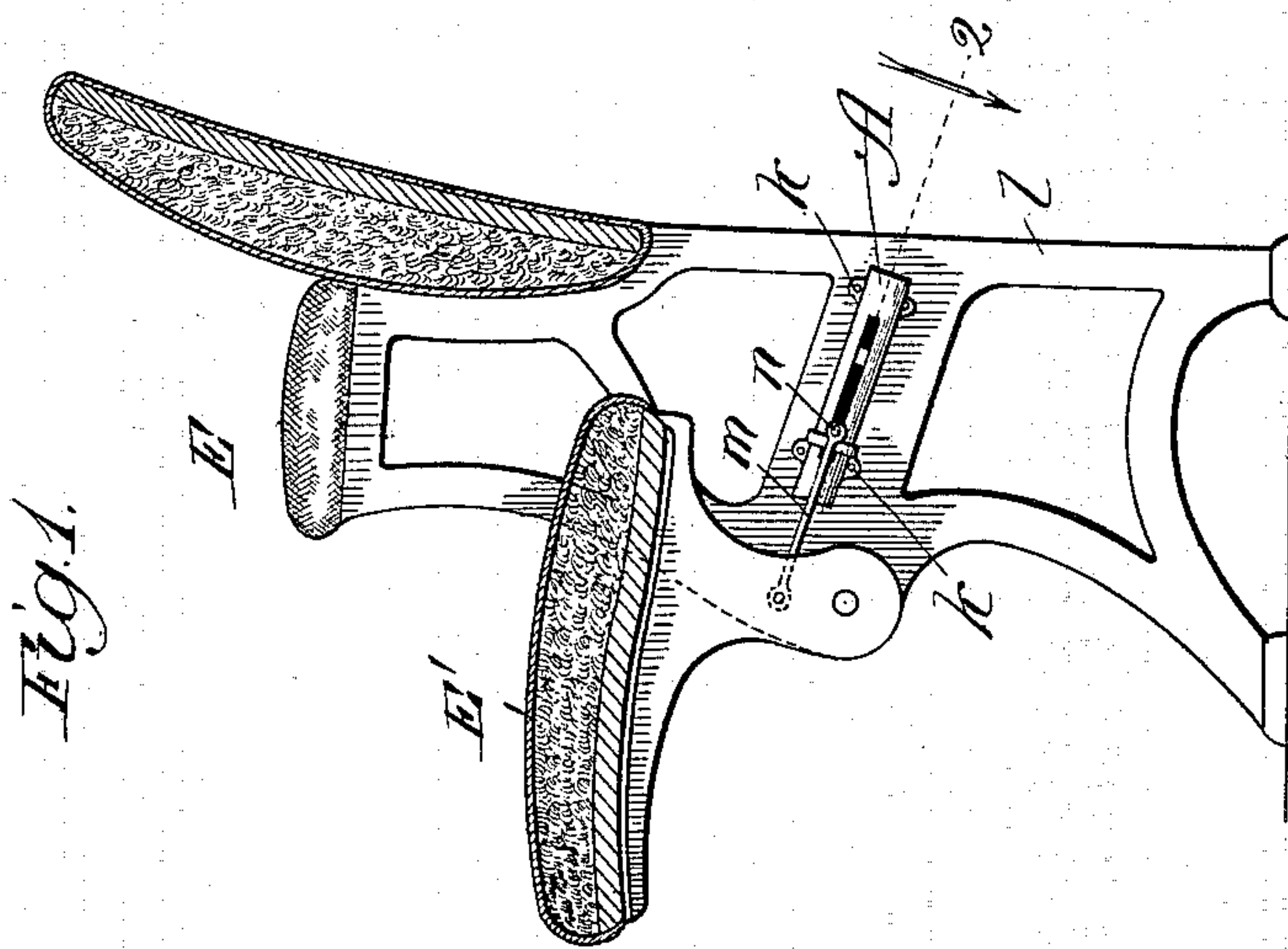
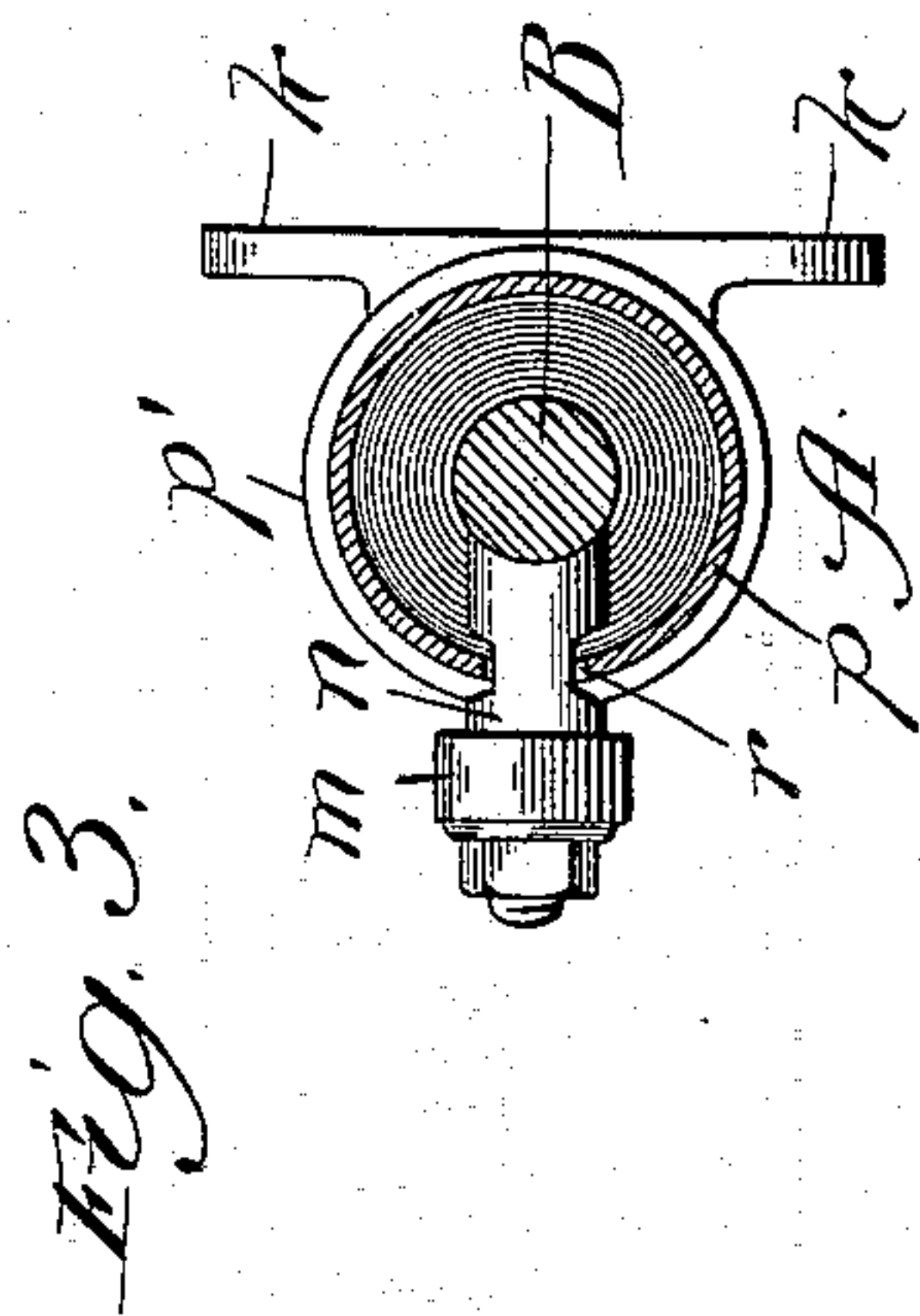
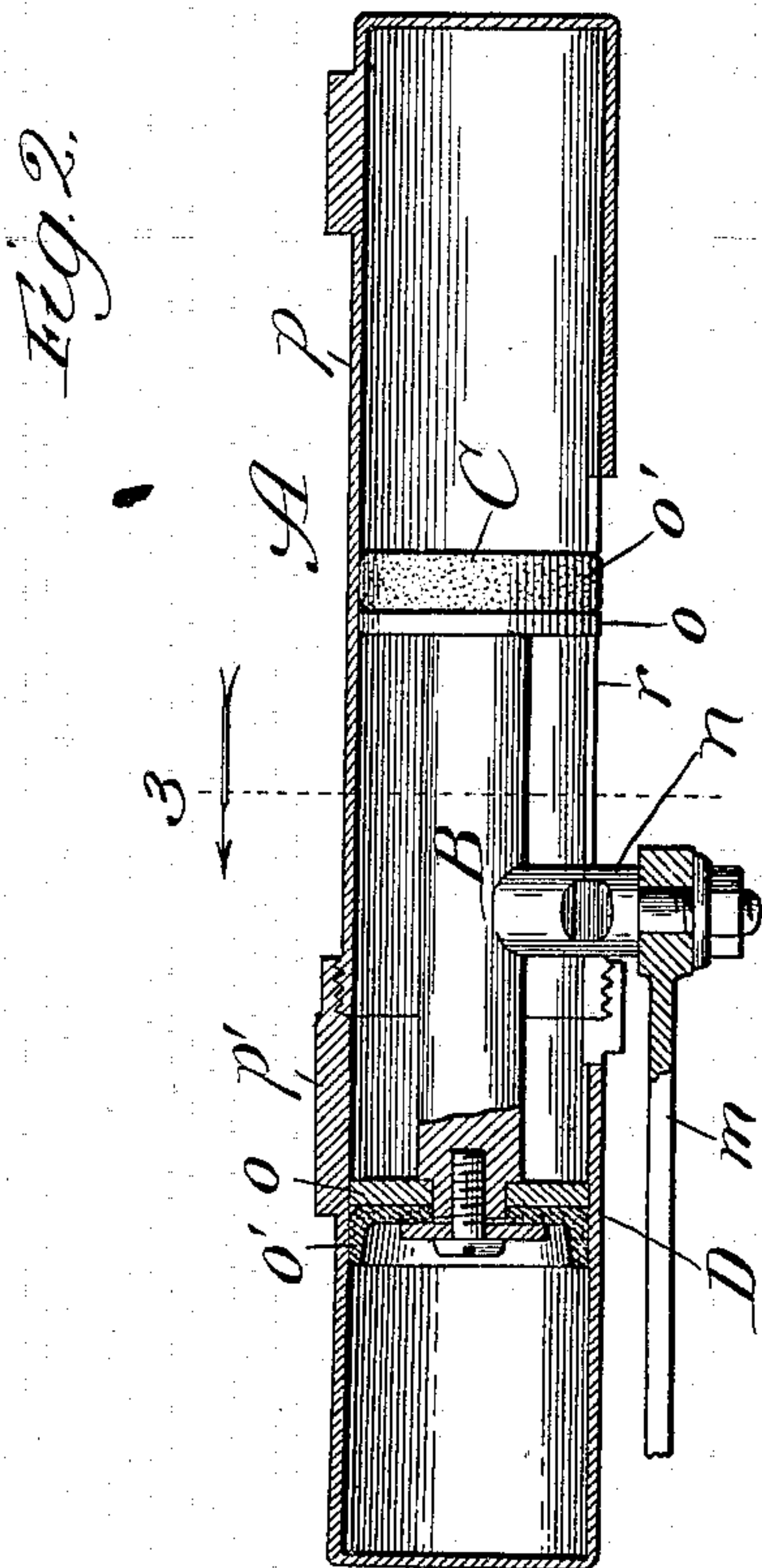
No. 612,156.

Patented Oct. 11, 1898.

H. G. CHAMBERLIN.
PNEUMATIC CHECK.

(Application filed Jan. 11, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

HARRY G. CHAMBERLIN, OF CHICAGO, ILLINOIS.

PNEUMATIC CHECK.

SPECIFICATION forming part of Letters Patent No. 612,156, dated October 11, 1898.

Application filed January 11, 1898. Serial No. 666,278. (No model.)

To all whom it may concern:

Be it known that I, HARRY G. CHAMBERLIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Pneumatic Checking Devices, of which the following is a specification.

My invention relates to an improvement in the class of pneumatic checking devices commonly applied to swinging doors and in which a piston is confined within a cylinder to compress air therein by opening the door, so that it shall be prevented from slamming in closing by the resistance of the confined air to the piston.

The primary object of my improvement is to adapt devices of this class to folding seats, hinged covers of boxes, and like connections wherein it is desirable to avoid sudden and noisy raising and lowering of the mobile member, as is the case with opera-chairs and school-desks, ice-boxes, and the like.

To this end I provide a pneumatic checking device comprising a slotted cylinder containing two pistons near its opposite ends on a common stem, adapted to be connected with the mobile member of a chair, desk, box, or the like to exert a checking effect in each direction of moving the pistons by the effect of the air compressed ahead of each.

Referring to the accompanying drawings, Figure 1 is a transverse vertical section of an opera-chair equipped with my improvement; Fig. 2, a section taken at the line 2 on Fig. 1, viewed in the direction of the arrow and enlarged; and Fig. 3, a section taken at the line 3 on Fig. 2 and viewed in the direction of the arrow.

A is a cylinder of any suitable size and material (preferably sheet metal) containing a longitudinal slot *r* and formed, by preference, of the section *p* and shorter cap-section *p'*, screwed together. B is a piston-stem in the cylinder, having a finger *n* extending at a right-angle from it through the slot and provided at its opposite ends with the pistons C and D, each comprising a head *o* and a leather cup *o'*. On the projecting end of the finger *n* is pivotally fastened a link *m*.

To apply my improved device to an opera-chair E, the cylinder may be fastened to the inner side of the chair-base *l*, as shown—

namely, through eyes in flanges *k*, provided near the opposite ends of the cylinder—and the free end of the link *m* is pivotally connected with the hinged seat E' of the chair to one side of the hinge.

The operation is as follows: In lowering the seat the piston D is forced forward to compress air in the cylinder ahead of it, thereby presenting sufficient resistance to the seat to prevent it from being slammed or suddenly and noisily lowered, and in raising the seat the piston C is forced backward to compress air in the cylinder ahead of it, with like effect as to noiselessness. My duplex pneumatic checking device may be readily applied in a similar manner to any of the other connections than opera-chairs hereinbefore referred to, and it may also be used, as the single pneumatic checking device hitherto employed has been used, on doors to prevent them from being opened, as well as closed, with undue violence.

Each piston C and D as it is moved past the adjacent end of the slot *r* from the position of the piston C in Fig. 1 to enter the adjacent air-confining chamber portion of the tube A encounters air therein confined by it. This confined air is compressed by the force which moves the piston against it, so that either piston is checked against moving far into the chamber by the progressively-increasing resistance of the air under compression in proportion to the force of the object to be checked. With my improvement there is no need for openings in the heads at the opposite ends of the cylinder for the escape of air in advance of a piston. Each compression section or chamber of the cylinder, however, communicates freely through the slot *r* with the outer air when a piston is withdrawn from it into the position shown of the piston C in Fig. 1.

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

1. A duplex pneumatic checking device comprising, in combination, a longitudinally-slotted cylinder adapted to be secured to a fixed object, and a stem in the cylinder for connection through its slot with a movable object to be controlled and carrying pistons at its opposite ends, each operating against and checked by the air confined ahead of it

in the cylinder beyond the adjacent end of said slot, substantially as described.

2. A duplex pneumatic checking device comprising, in combination, a longitudinally-slotted cylinder adapted to be secured to a fixed object, a piston-stem in said cylinder provided with a finger extending through the cylinder-slot and carrying on its projecting end a link for connecting the stem with a movable object to be controlled, and pistons at opposite ends of the stem, each operating against and checked by the air confined ahead of it in the cylinder beyond the adjacent end of the slot, substantially as described.

3. A duplex pneumatic checking device

comprising, in combination, a cylinder A formed of the separable sections p and p' and containing the slot r , a stem B in the cylinder carrying at its opposite ends the pistons C and D each formed of a head o and leather cup o' , a finger n extending from the stem through said slot, and a link m on the projecting end of the finger, the whole being constructed and arranged to operate substantially as described.

HARRY G. CHAMBERLIN.

In presence of—

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