

(No Model.)

2 Sheets—Sheet 1.

R. HYDE.
AXLE BOX.

No. 520,314.

Patented May 22, 1894.

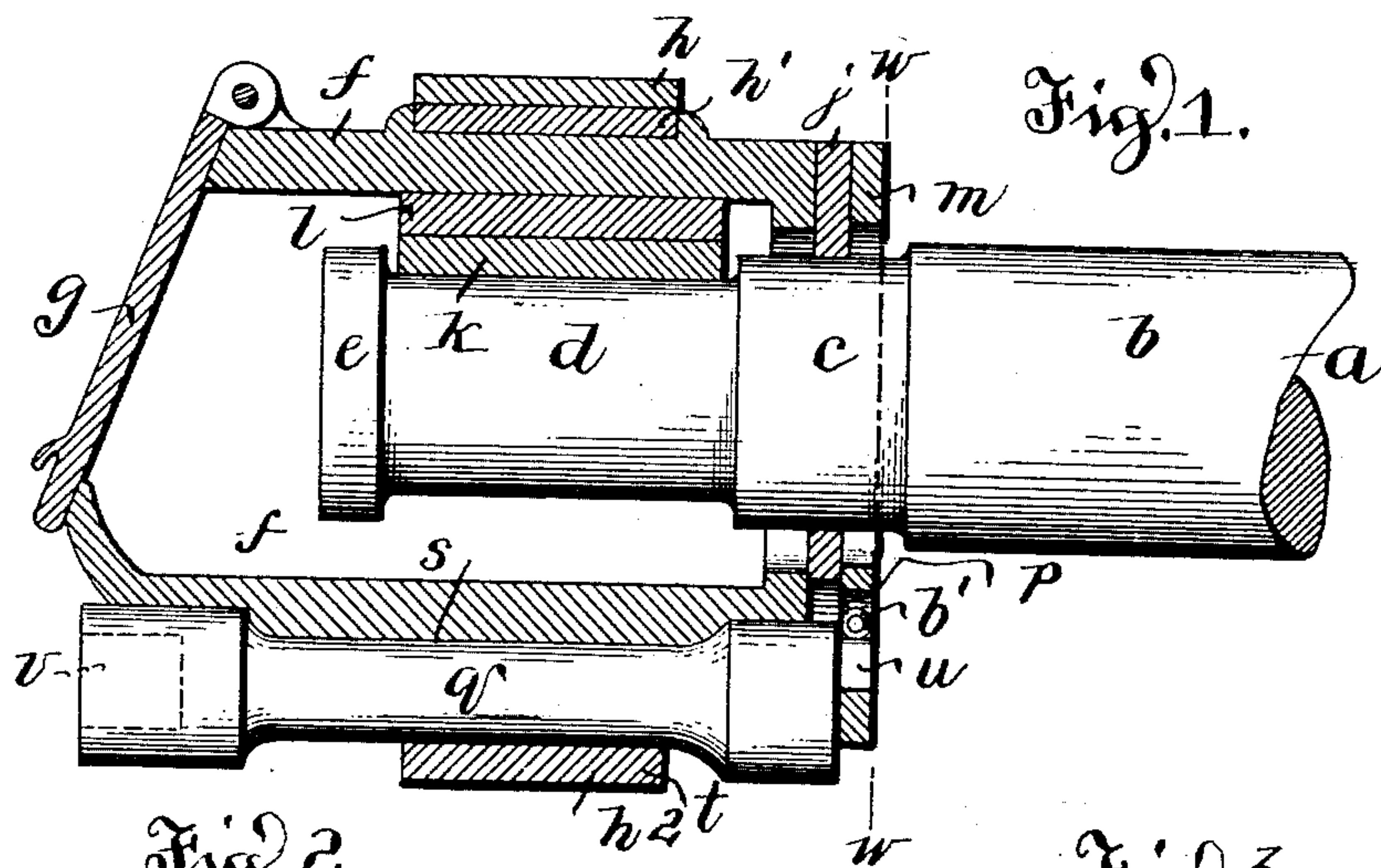


Fig. 2.

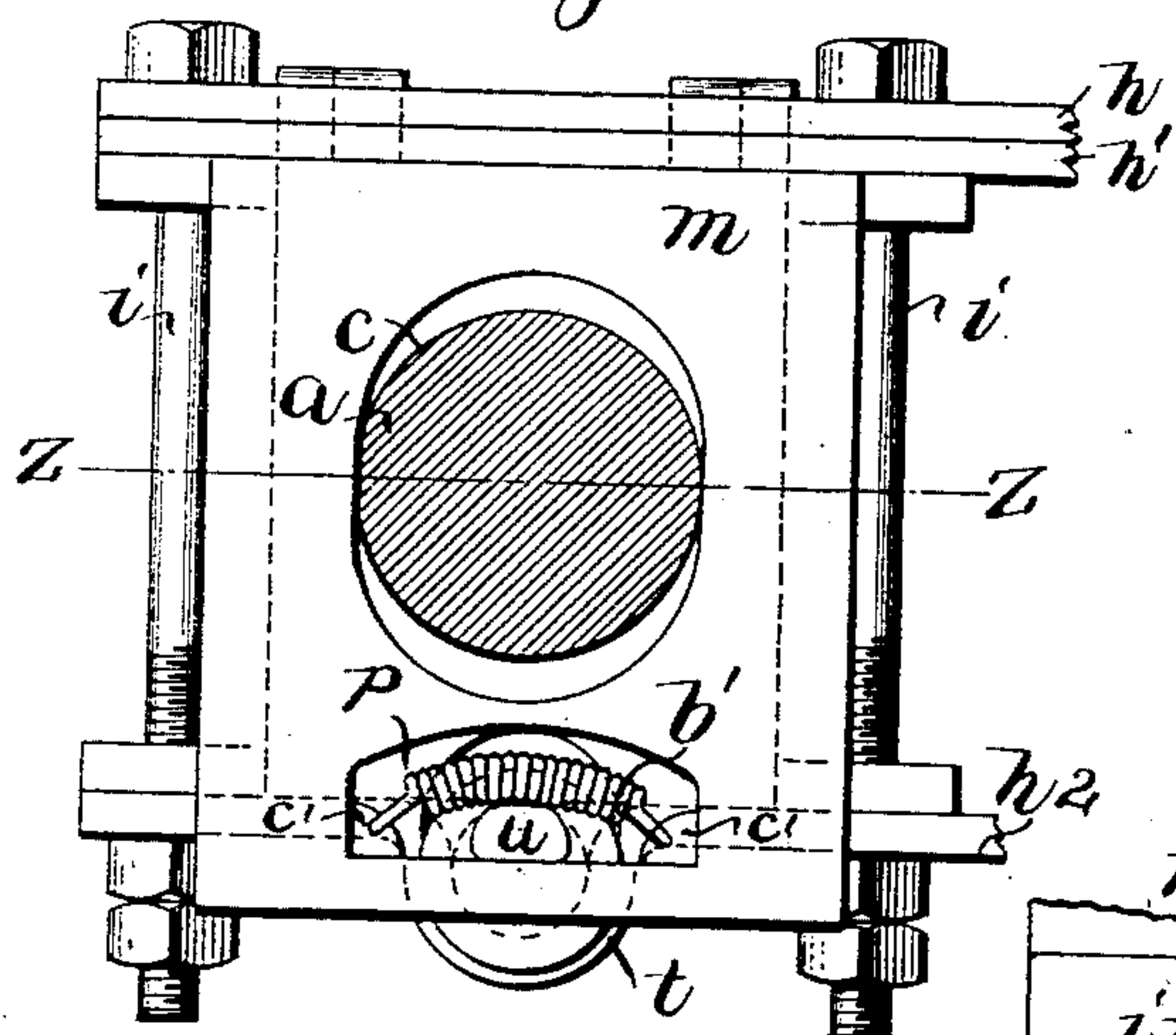


Fig. 3.

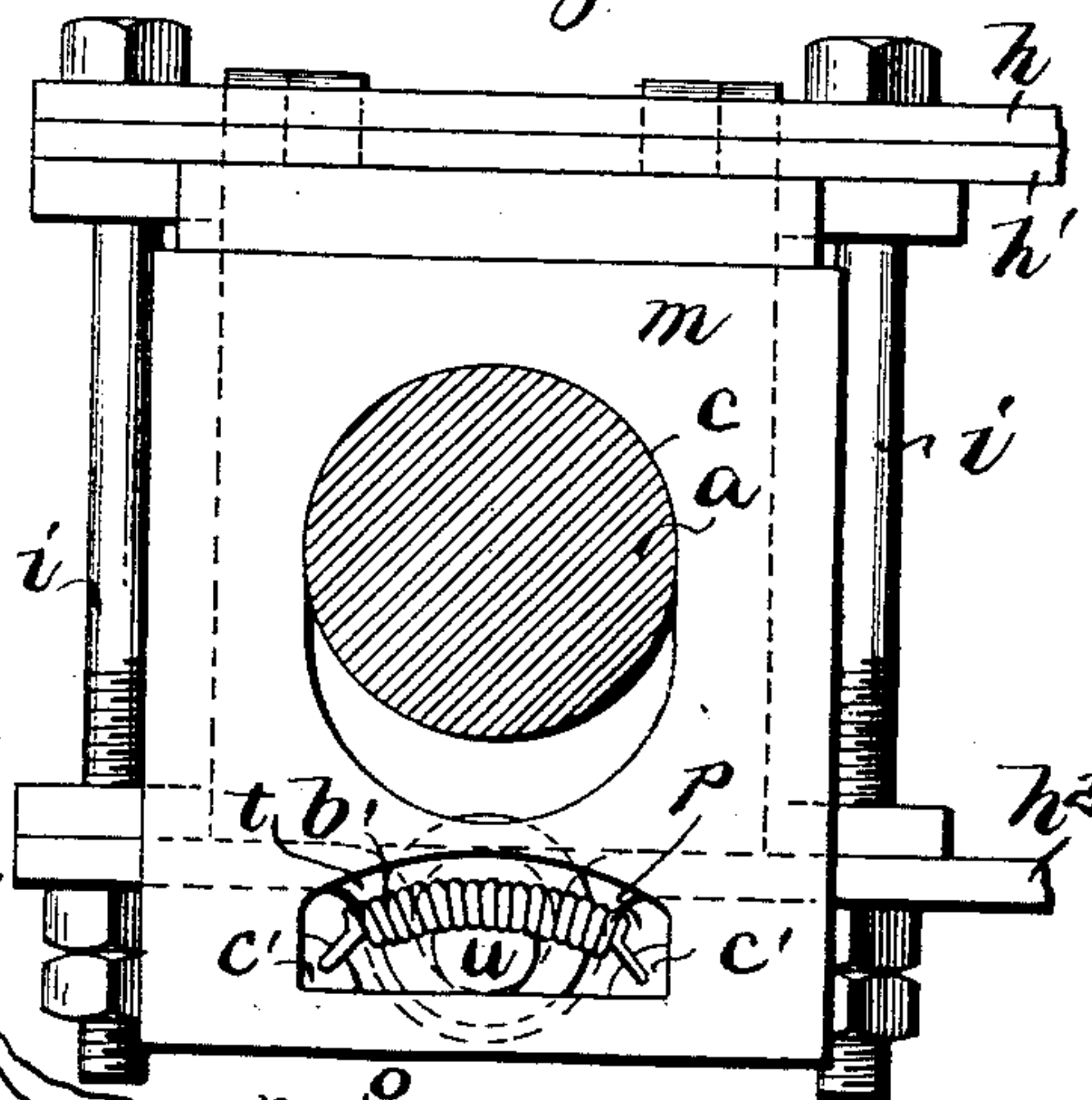
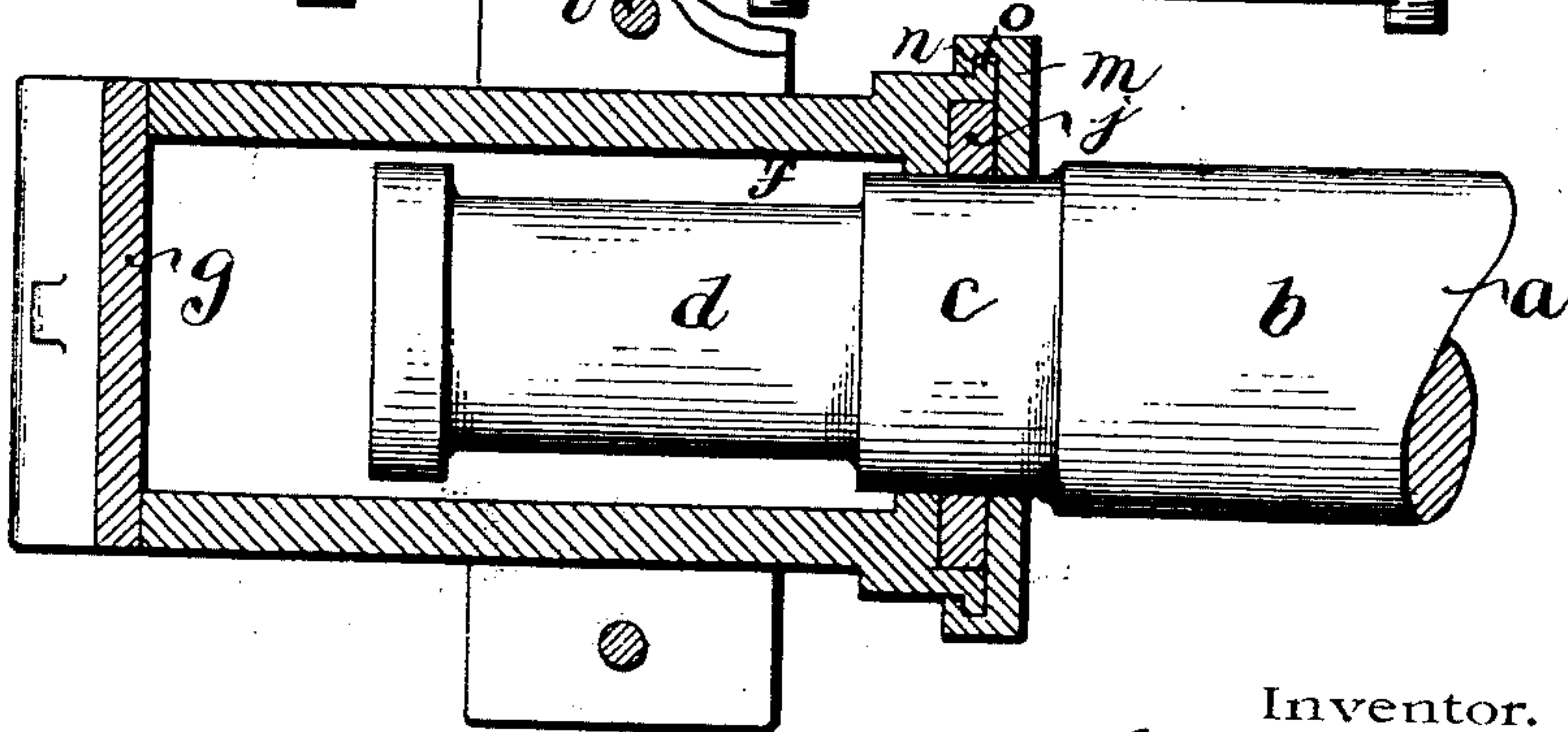


Fig. 4.



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(No Model.)

2 Sheets—Sheet 2.

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AXLE BOX.

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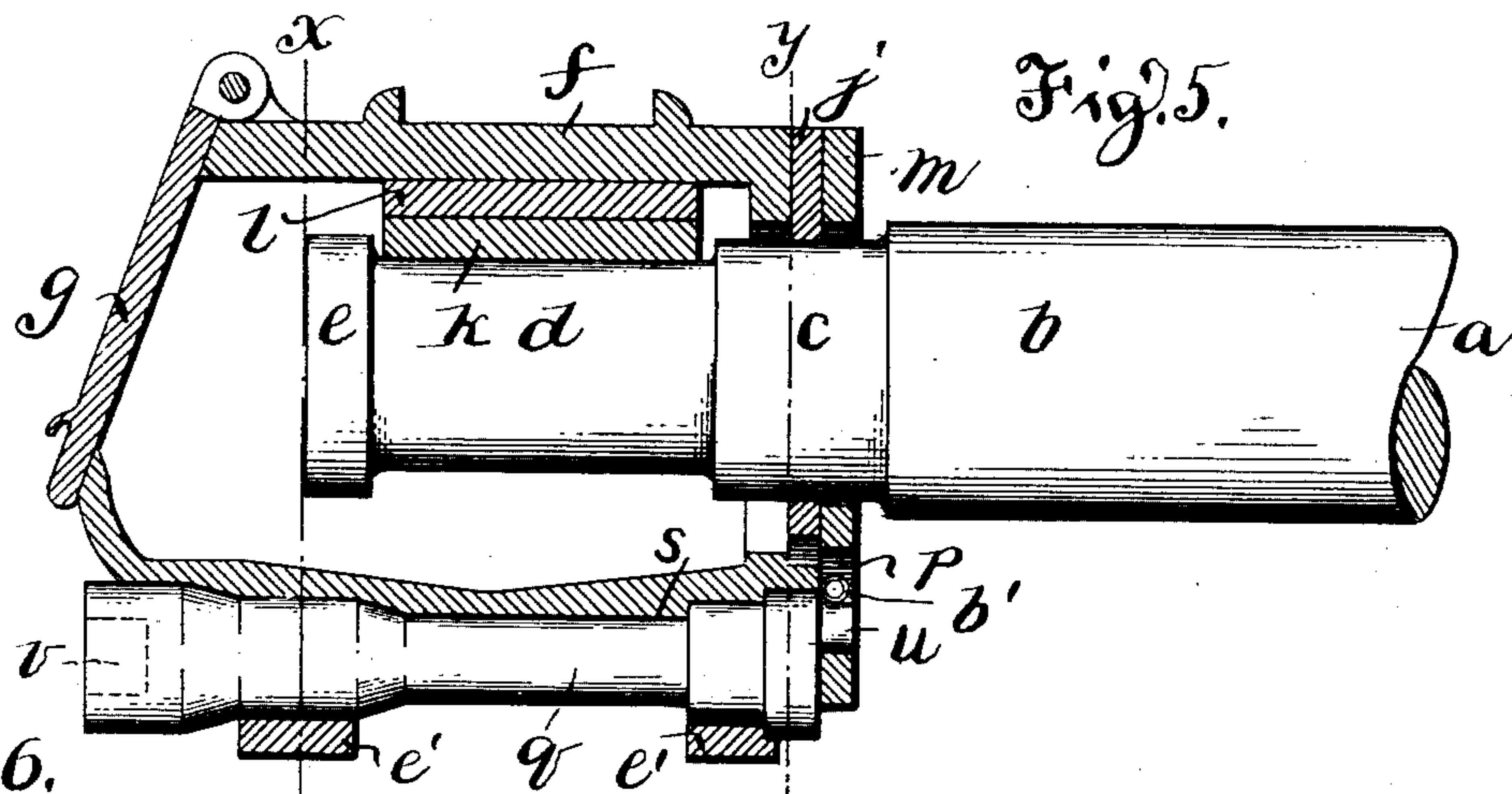


Fig. 6.

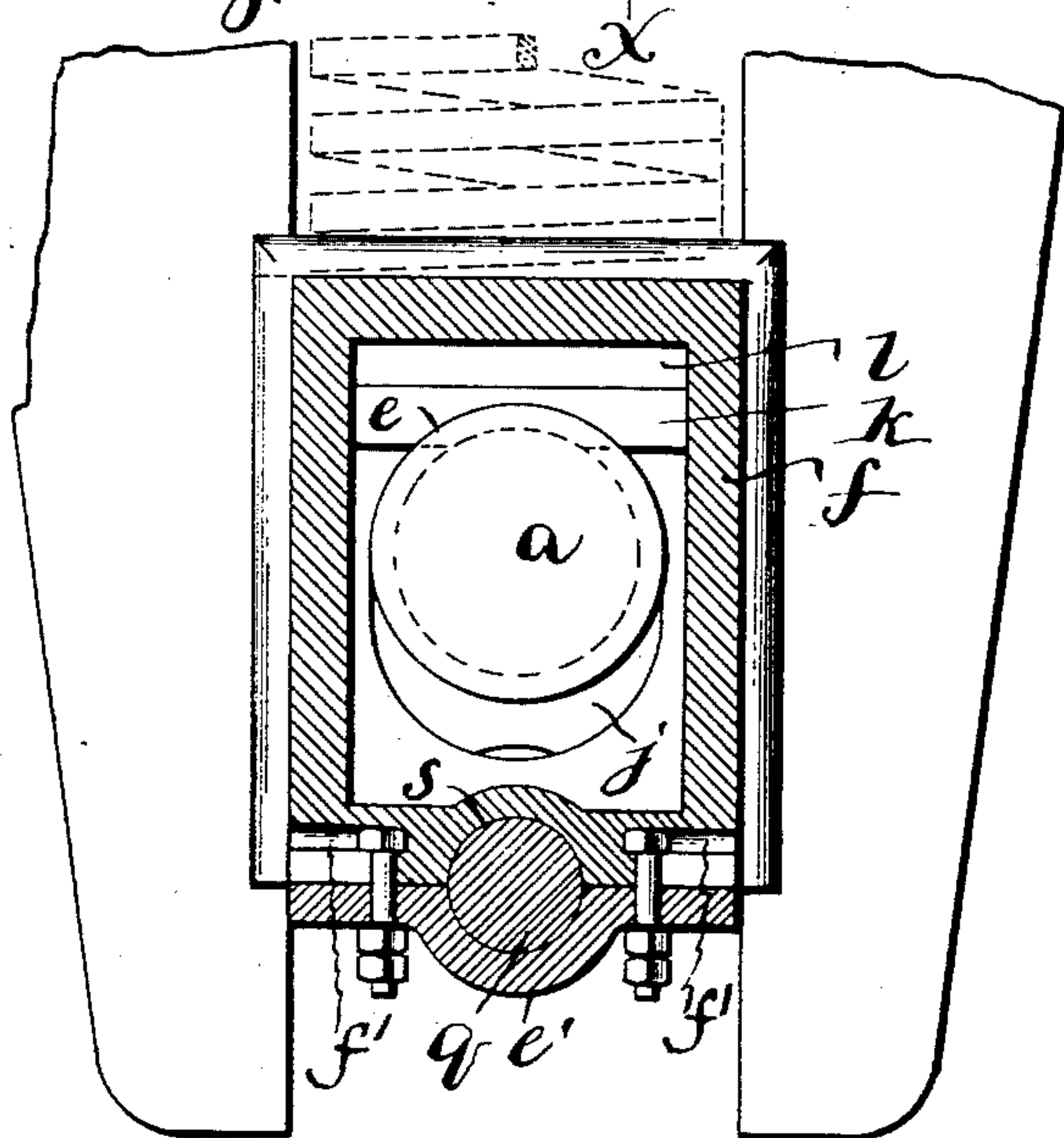
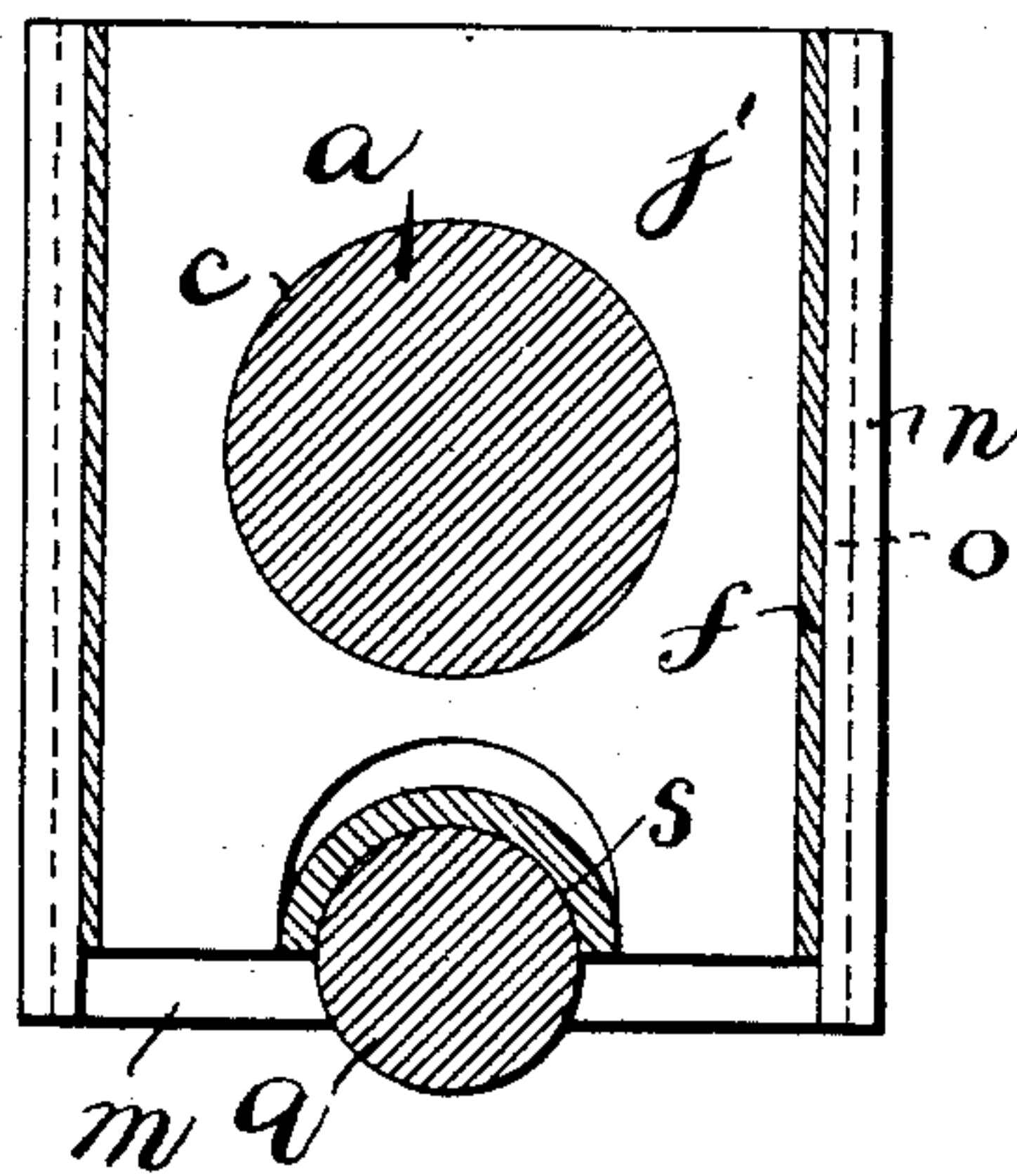


Fig. 7.



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UNITED STATES PATENT OFFICE.

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AXLE-BOX.

SPECIFICATION forming part of Letters Patent No. 520,314, dated May 22, 1894.

Application filed February 14, 1894. Serial No. 500,167. (No model.) Patented in England October 13, 1891, No. 17,411.

To all whom it may concern:

Be it known that I, ROBERT HYDE, a subject of the Queen of Great Britain, residing in Derbyshire House, Darnall, Sheffield, in the county of York, England, have invented a new and useful Improvement in Axle-Boxes, (for which I have obtained a patent in England, No. 17,411, dated October 13, 1891, of which invention the following is a specification.

My invention relates to axle boxes for railroad cars and other vehicles, and it has for its object to facilitate examination of the brasses or journal bearings in such boxes, also to save time and labor in changing said brasses or bearings, and to obviate the necessity of using a jack, crane, derrick, or other separate lifting device, for these purposes.

My invention forms an integral part of the axle box and consists of devices whereby, making use of the axle as a fulcrum, the box and its load are lifted clear of the journal sufficiently to admit of the easy removal of the brass or journal bearings.

In the annexed drawings, Sheet I shows my invention as applied to an ordinary freight car axle box; Figure 1 being a vertical longitudinal section through the middle of the box; Fig. 2 a section of the same on the line W. W. of Fig. 1 showing the link as it stands when not in use; Fig. 3, a similar view, showing the link as in use, that is, brought down to a bearing on the axle; Fig. 4, a section on line Z. Z. of Fig. 2 showing the engagement of the link lugs with corresponding lugs of the box. Sheet II shows my invention modified by extending the spindle recess farther into the bottom part of the box which as shown is an ordinary pedestal box; Fig. 5. being a vertical longitudinal section of the box; Fig. 6. a section of the same on the line X X of Fig. 5; Fig. 7. a section on line y y of Fig. 5.

Similar letters of reference denote similar parts in the several figures.

a represents a car-axle, whereof *b* is the wheel-seat, *c* the dust-guard-bearing, *d* the journal, and *e* the collar.

f represents the axle-box and *g* the hinged lid covering the front opening of the box.

h represents a portion of the arch-bar; *h'* a portion of the inverted arch-bar; *h²* a portion of the tie-bar; *i* bolts and nuts securing the axle-box between these bars; *j* the dust-

guard; *k* the journal-bearing or brass; *l* the key; all these several parts being in the usual form, except that the axle box is slightly modified, as shown, to accommodate my lifting attachments.

I attach to the rear end of the axle box a link or plate *m*, provided with lugs *n*, which engage corresponding lugs *o* on the axle box, as shown in Fig. 4; or, lugs may be dispensed with and the link or plate may be made to slide in grooves formed for this purpose in the sides of the box. An opening *p* is made in link *m* for the axle sufficient to admit of the necessary movement of the link up and down as required, and also so that the link may be clear of the axle, as shown in Fig. 2 when the link is not in use. I also attach to the axle box a spindle *q* which works in a recess *s* in the bottom of the box. The spindle *q* is supported by a cap *t*, Figs. 1 and 3, which may be conveniently formed by bending the tie-bar *h²*, as indicated by dotted lines in Figs. 2 and 3. The spindle *q* carries an eccentric or cam *u* at one end and is provided at the other end with a socket *v* to receive the head of a crank or lever; or, instead of having a socket *v*, this end of the spindle may be squared or otherwise adapted to engage a spanner, wrench or other lever for turning said spindle. In the opening *p* of the link, I locate the spiral spring *b'* the ends of which are secured to eyes or lugs *c'* in the link. The spring *b'* crosses the eccentric or cam *u*, the middle portion of the spring resting directly on the eccentric or cam, thus holding link *m* always in close contact with said eccentric or cam *u* and also holding the link up clear of the axle *a* when the link is not in use for lifting.

The link *m* can be made in various forms; it may be a part of the dust-guard; or, it may be made hollow and have the dust-guard inside of it. In all cases, the link must be made strong enough to lift the weight of the axle box with its load off the journal *d*.

In Plate II the spindle *q* occupies a recess *s* extending up into the bottom portion of the axle box, as shown in Fig. 6. In this case the spindle is supported by caps *e'*, which are secured to the box by bolts and nuts. For this purpose T shaped recesses opening out through the vertical sides of the axle-box are

formed in the bottom wall of the box, as shown in Fig. 6. The object of this modification is that I may be enabled to utilize for supporting the axle-box the straight tie-bars now in common use and thus avoid the necessity of bending the tie-bar as and for the purpose above mentioned.

When it is desired to remove the brass *k* from the axle box, the spindle *q* is rotated; thus, through the action of the eccentric or cam *u* on the link *m*, drawing down the link until it comes in contact with the axle *a*, as shown in Fig. 3; the axle being supported by the wheels which rest on the track, forming an unyielding bearing for link *m*. Then by continuing to turn spindle *q*, the axle box being free to move up when sufficient power to effect this result is applied to it, is lifted up together with its load sufficiently to allow the bearing or brass *k* (after the removal of the key *l*, when a key is used) to be easily taken out through the front opening of the box. If desired, the cam end of spindle *q* may be extended beyond the cam and provided with a socket similar to socket *v* to receive the head of a crank or lever, or it may be squared or otherwise adapted to receive a spanner or engage the eye of a wrench or other lever for the purpose of turning the spindle.

I claim—

1. An axle box provided with a plate or link located at the rear end of the box and capable of a downward and an upward movement,

viz: down to a bearing on the axle, or up clear of the axle, as required; a spindle carrying an eccentric or cam which engages said link causing it to move as aforesaid, said spindle being adapted to be rotated by the application thereto of one or more levers; and a spiral spring, the ends whereof are attached to said link while its middle portion bears directly on said eccentric or cam, said spring being adapted to support said link, and to hold it, when not in use, clear of the axle, substantially as set forth.

2. In combination with the axle of a railroad car or vehicle, an axle-box provided with the movable plate or link *m* which is capable of downward and upward movement, the spindle *q* adapted to be rotated by the application thereto of one or more levers and provided with the eccentric or cam *u* said cam *u* being arranged in engagement with said link causing it to move down to bear on the axle or up to be clear of the axle as required, and a spring *b'* bearing directly on said eccentric or cam, the ends of said spring being attached to said plate or link, which it supports, and which when the link is not in use it holds clear of the axle, substantially as set forth.

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Witnesses:

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