

(No Model.)

2 Sheets—Sheet 1.

A. M. WAITT.
CAR BUFFER.

No. 604,442.

Patented May 24, 1898.

Fig. 1.

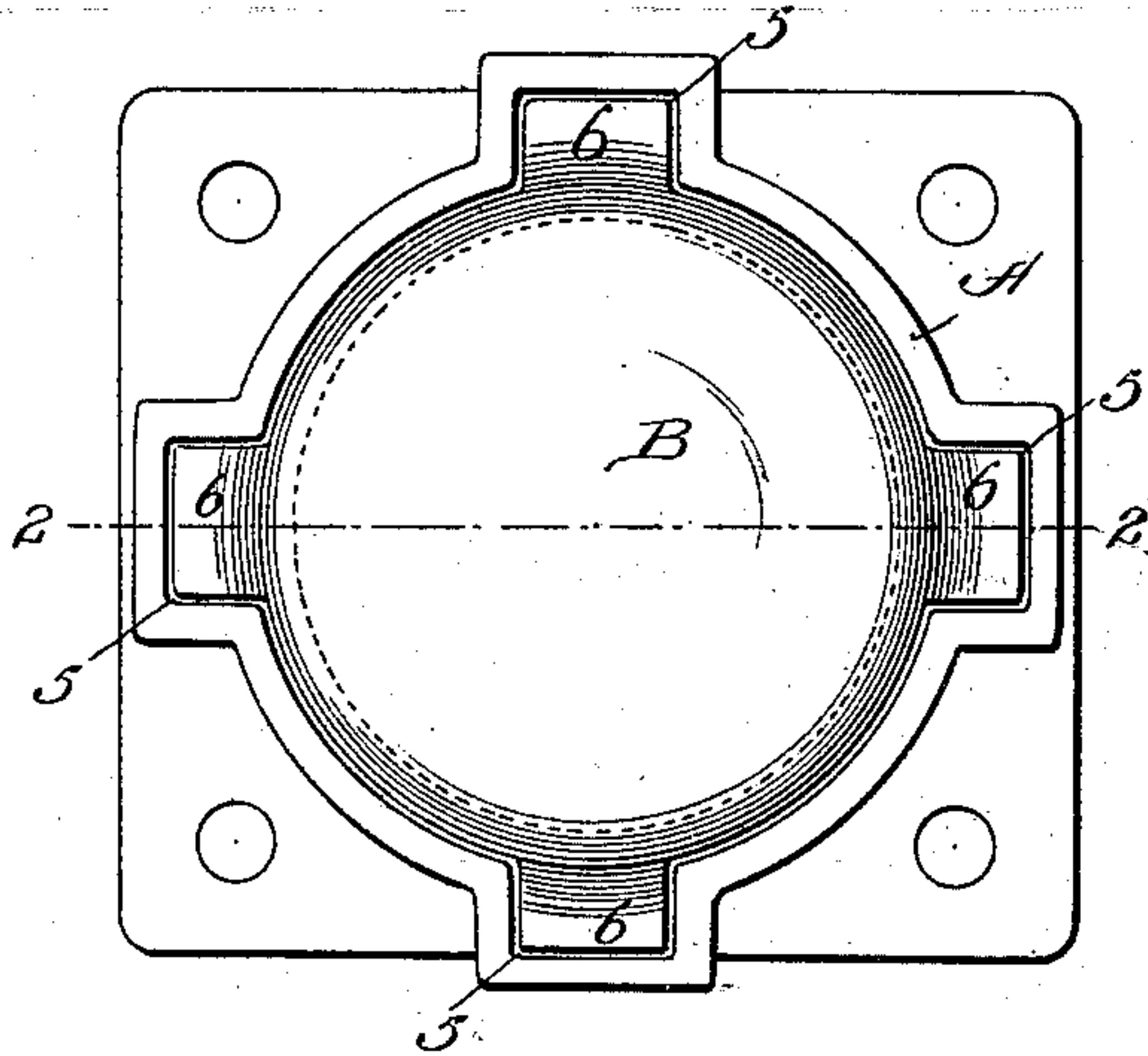


Fig. 2.

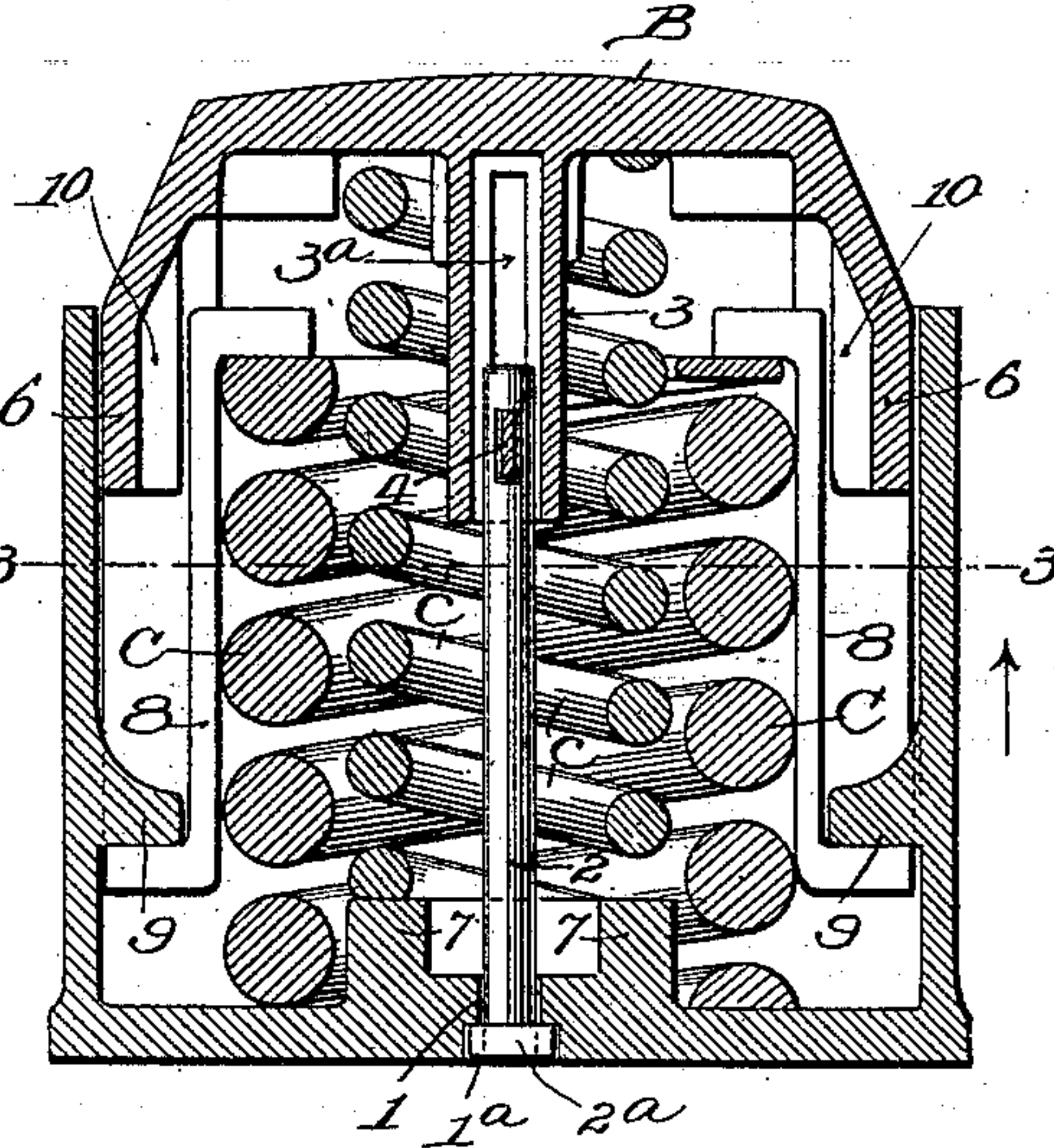


Fig. 3.

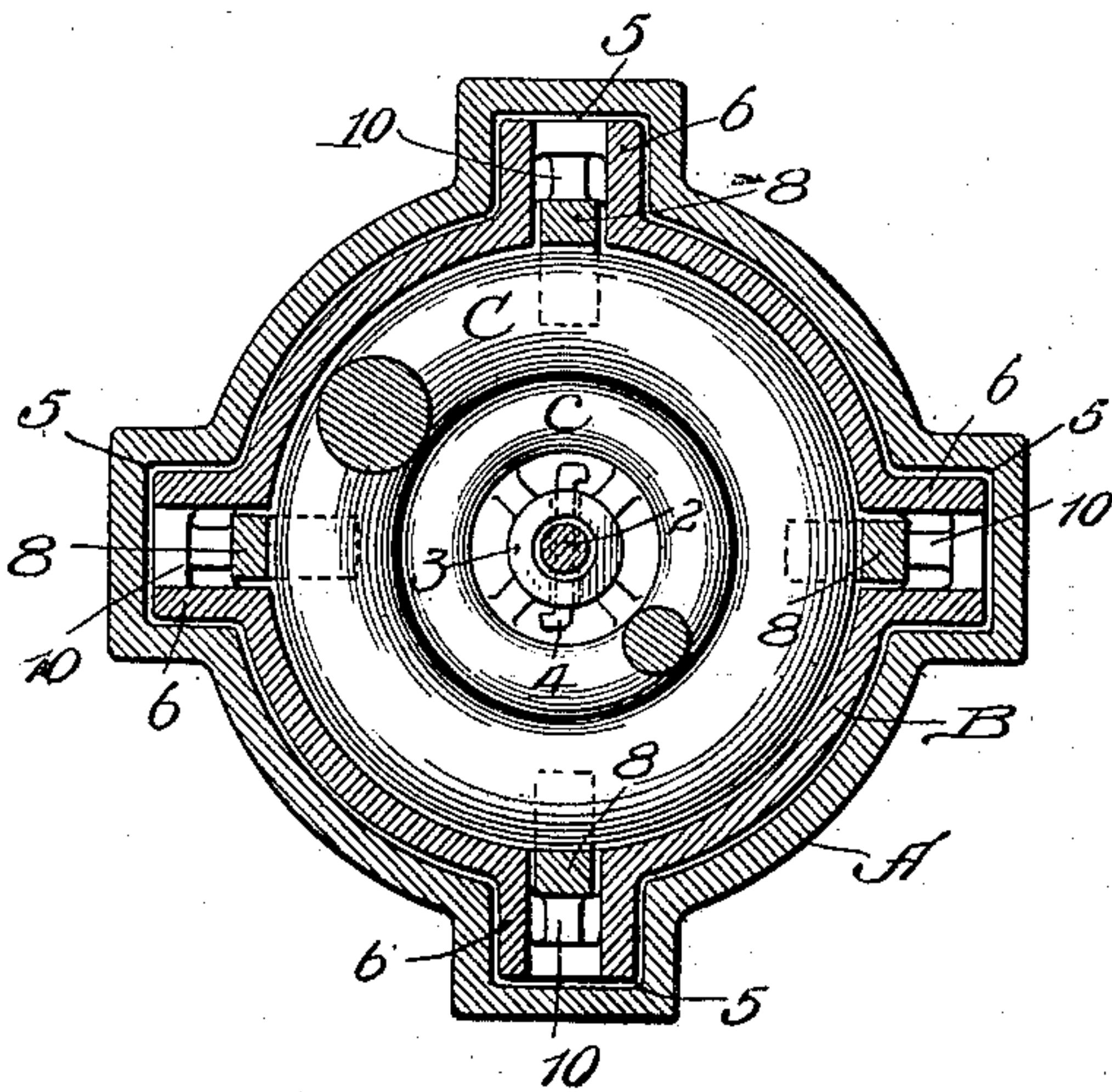
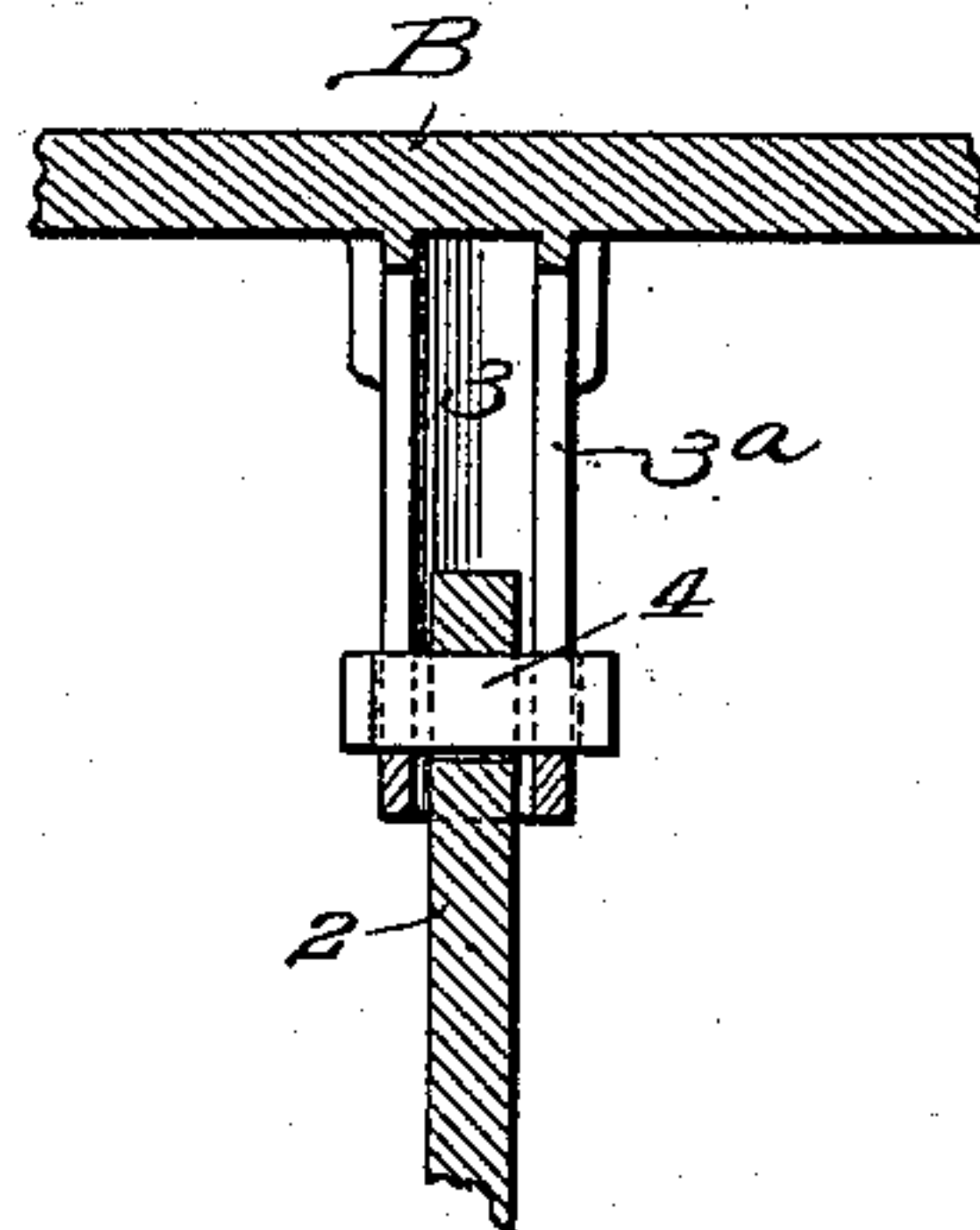


Fig. 4.



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(No Model.)

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Fig. 5.

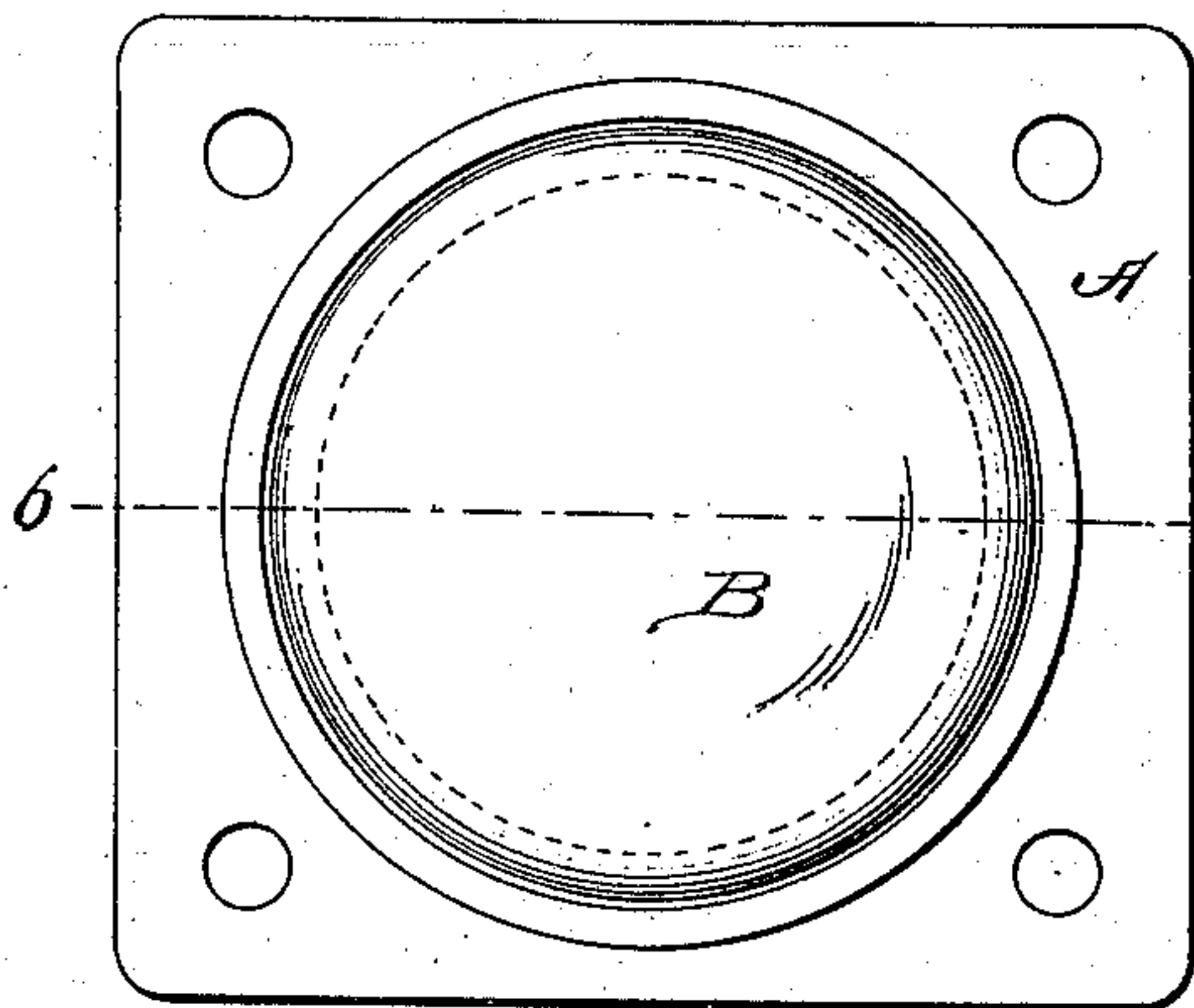


Fig. 6.

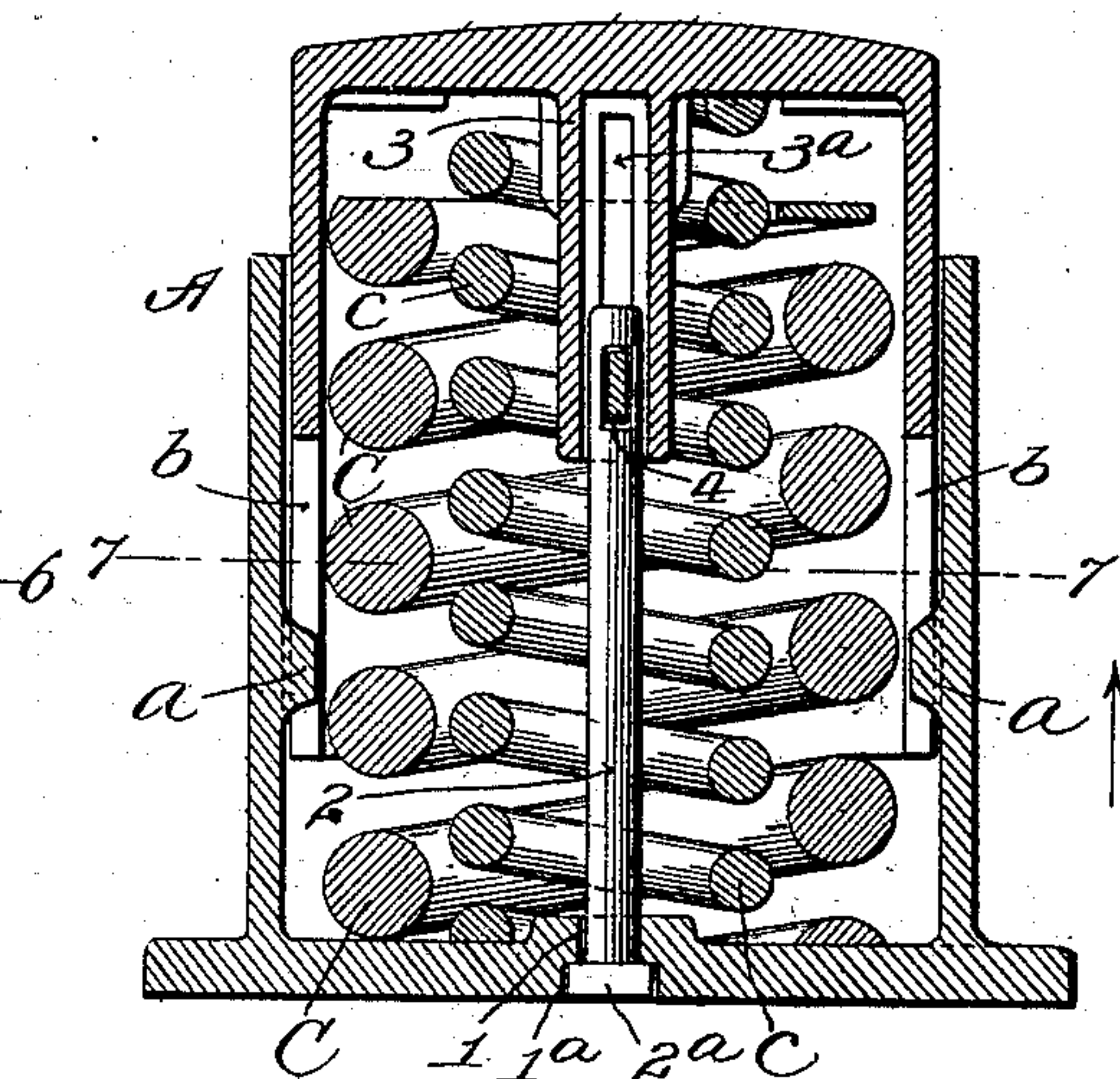
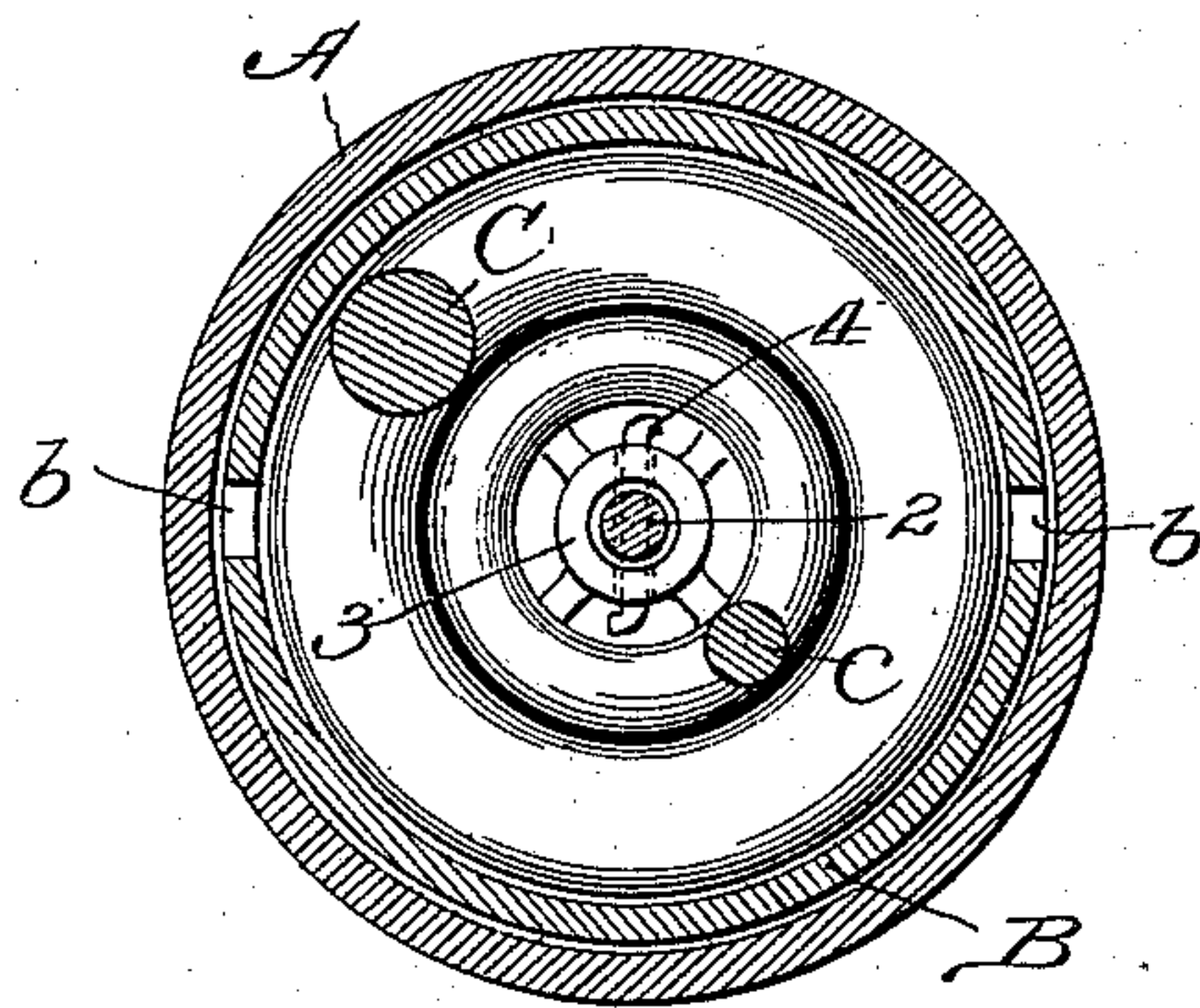


Fig. 7.



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UNITED STATES PATENT OFFICE.

ARTHUR M. WAITT, OF CLEVELAND, OHIO.

CAR-BUFFER.

SPECIFICATION forming part of Letters Patent No. 604,442, dated May 24, 1898.

Application filed September 21, 1897. Serial No. 652,448. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR M. WAITT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Car-Buffers; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a buffer embodying my invention. Fig. 2 is a longitudinal central section on the line 2 2, Fig. 1. Fig. 3 is a transverse section on the line 3 3, Fig. 2. Fig. 4 is a detail sectional view of portions of the means employed for locking together the friction-plate socket and the friction-plate of the buffer. Fig. 5 is a plan view of a modification. Fig. 6 is a longitudinal central section of the modified devices on the line 6 6, Fig. 5; and Fig. 7 is a transverse section of the modified devices on the line 7 7, Fig. 6.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of car-buffers wherein are combined a friction-plate socket, a telescoping friction-plate, and an interposed spring or springs, and has for its objects the simplification of the means for securing the friction-plate to the friction-plate socket, so that the same cannot be tampered with or become separated while attached to the car, and the provision of means for augmenting the efficiency of the buffer-springs.

In carrying out my invention I combine the cup-shaped friction-plate and the friction-plate socket by means of a telescoping sleeve and bolt and means for preventing the rotation of the plate, and such a construction or its equivalent embodies one feature of my invention.

In order to augment the efficiency of the buffer-spring, I combine therewith and with the friction-plate socket means for independently maintaining the spring under partial compression, and such a construction embodies a second feature of my invention.

There are other minor features of the invention, all as will hereinafter more fully appear.

I will now proceed to describe my inven-

tion more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the socket-casting, B the friction-plate, and C c the interposed springs.

The socket-casting A is provided at its center and bottom or at other suitable point with a bolt-hole 1 for the passage of a bolt 2, the same being countersunk, as at 1^a, for the reception and concealment of the nut 2^a of bolt 2, and the cup-shaped friction-plate B is provided on its inner face with a cylindrical socket or sleeve 3, into which the bolt 2 telescopes, the parts being prevented from separating by means of a key 4, which passes through the bolt 2 and slots 3^a of the sleeve 3, or by other suitable means.

In order to prevent any displacement or removal of the friction-plate B from the socket-casting A while the buffer is attached to the car, the bolt-socket 3 is preferably formed as a blind pocket—that is to say, does not open outward through the friction-plate—and other means, such as the slots 3^a and key 4 or their equivalents, are provided for movably securing the bolt 2 in said socket 3.

In order to prevent the rotation of the cup friction-plate B with relation to the socket A, any suitable means may be provided—as, for instance, lugs *a* on the interior of the sockets and corresponding slots *b* in the telescoping portion of the cup friction-plate B—as illustrated in the modification, Fig. 6; but for the purposes of the further invention hereinafter set forth I preferably prevent the rotation of the friction-plate B on the friction-plate socket-casting A by forming the latter with recessed projections 5, adapted to receive corresponding projections 6 on the periphery of the cup friction-plate B.

It will be noted that the means which is provided, primarily, to prevent the rotation of the friction-plate B on the socket A serves, secondarily, to prevent the tampering with or disconnection of the friction-plate by rotation when bolts and nuts are the means employed for connecting the parts.

In buffers of this class there are commonly combined with the friction-plate nested spiral springs, the inner and lighter of which, *c*, exceeds the standard length and takes up the

initial shock, while the heavier or main standard-length spring assumes the load when the lighter spring has yielded sufficiently for that purpose. As is well understood, the resistance of a spring is least effective during the first stages of its compression. In order, therefore, to be able to employ a standard length for the lighter spring *c*, I provide the friction-plate socket-casting A with a projecting seat or bearing 7, the equivalent of which would be a like bearing on the under face of the friction-plate B, though said projecting seat is preferably located in the bottom of the socket A, as thereby it serves also to center the heavier or main spring C.

In order to partially compress and confine the heavier or main spring C, or that spring which ultimately assumes the load, I provide a series of anchors 8, preferably Z-shaped and of forged steel, adapted to take by one hooked end under lugs 9 on the interior of the friction-plate socket-casting A and by the other over the exposed end of the main spring C, and thus confine and partially compress said spring. By reason of the recessed projection 5, which also serves, in conjunction with projection 6, to prevent the rotation of friction-plate B, the anchor 8 can be tilted outward for insertion and inward to take over main spring C, and when in final position and the friction-plate B has been applied is held from further outward movement by the projections or lugs 10 on the inner face of the cup friction-plate B.

The construction of the devices being substantially of the character hereinbefore set forth, they may be combined or the buffer set up as follows:

The anchors 8 are placed in the socket-casting A, their lower hook ends under the lugs 9, with the anchors tilted outward to permit the insertion of the main spring C. The main spring C is next inserted and compressed the desired amount, and the anchors 8 are then tilted inward until the upper hooks take over the spring C, when the spring may be released and will be thereafter maintained in partial compression by the anchors. The end of the bolt 2 is inserted in the cylindrical socket or sleeve 3 on the under side of the cup friction-plate B and secured by passing the key 4 through the slots 3^a in the sleeve and the slot in the end of the bolt 2. The lighter spring *c* is placed in position in the friction-plate socket A and the cup friction-plate B is finally placed in position in the friction-plate socket A and spring *c* compressed thereby until the free end of bolt 2 passes through the bolt-hole 1 in the bottom of socket A sufficiently to permit the application thereto of nut 2^a, after which, the compression of spring *c* being withdrawn, the nut 2^a is drawn into the recess or countersink 1^a, and when the friction-plate socket A is thereafter secured to the car by the usual bolts there can be no tampering with the parts or removal of the cup friction-

plate B and springs C *c* without first removing the buffer from the car.

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

1. In a car-buffer, the combination with a friction-plate socket, of a telescoping friction-plate having a blind pocket inaccessible from the exterior or bolt-socket on its interior face, a bolt for securing the friction-plate to the friction-plate socket, means for movably securing the bolt in the bolt-socket on the interior face of the friction-plate, a nut for the bolt, and a nut-recess in the friction-plate socket, substantially as and for the purposes specified.

2. In a car-buffer, the combination with a friction-plate socket having a countersunk bolt-hole in its bottom, of a telescoping friction-plate having a slotted bolt-socket on its interior face, a slotted bolt, and a key for connecting the friction-plate and friction-plate socket, substantially as and for the purposes specified.

3. In a car-buffer, the combination with a friction-plate socket or base and a friction-plate or movable section, of a plurality of buffer-springs and means for maintaining one or more of said springs under partial compression independently of the friction-plate or movable section of the buffer, substantially as and for the purposes specified.

4. In a car-buffer, the combination with a friction-plate socket, a telescoping friction-plate, and a plurality of buffer-springs interposed between the socket and friction-plate, of anchors for maintaining one or more of said springs under partial compression within the friction-plate socket and independently of the movable friction-plate, substantially as and for the purposes specified.

5. In a car-buffer, the combination with a friction-plate, and a friction-plate socket having lugs on its interior, of interposed buffer-springs, and Z-shaped anchors for holding part of said springs under compression, substantially as and for the purposes specified.

6. In a car-buffer, the combination of a cup friction-plate, and a friction-plate socket, one of said parts having a raised spring-seat for the inner or lighter buffer-spring, a plurality of buffer-springs of equal length, and means for maintaining part of said springs under partial compression independently of the friction-plate, substantially as and for the purposes specified.

7. In a car-buffer, the combination with a socket having recessed offsets and anchor-lugs on its interior, of a cup friction-plate having lugs on its exterior which engage in the recesses of the socket and interior lugs which engage the spring-anchors, interposed buffer-springs, and anchors which maintain one or more of said buffer-springs under partial compression, substantially as and for the purposes specified.

8. In a car-buffer, the combination of a
socket, a telescoping friction-plate, an inter-
posed buffer-spring, and means for maintain-
ing the buffer-spring under partial compres-
5 sion independently of the telescoping fric-
tion-plate, substantially as and for the pur-
poses specified.

In testimony whereof I affix my signature,
in presence of two witnesses, this 18th day
of September, 1897.

ARTHUR M. WAITT.

Witnesses:

HARVEY J. WILSON,
J. H. MERRILL.