

No. 697,947.

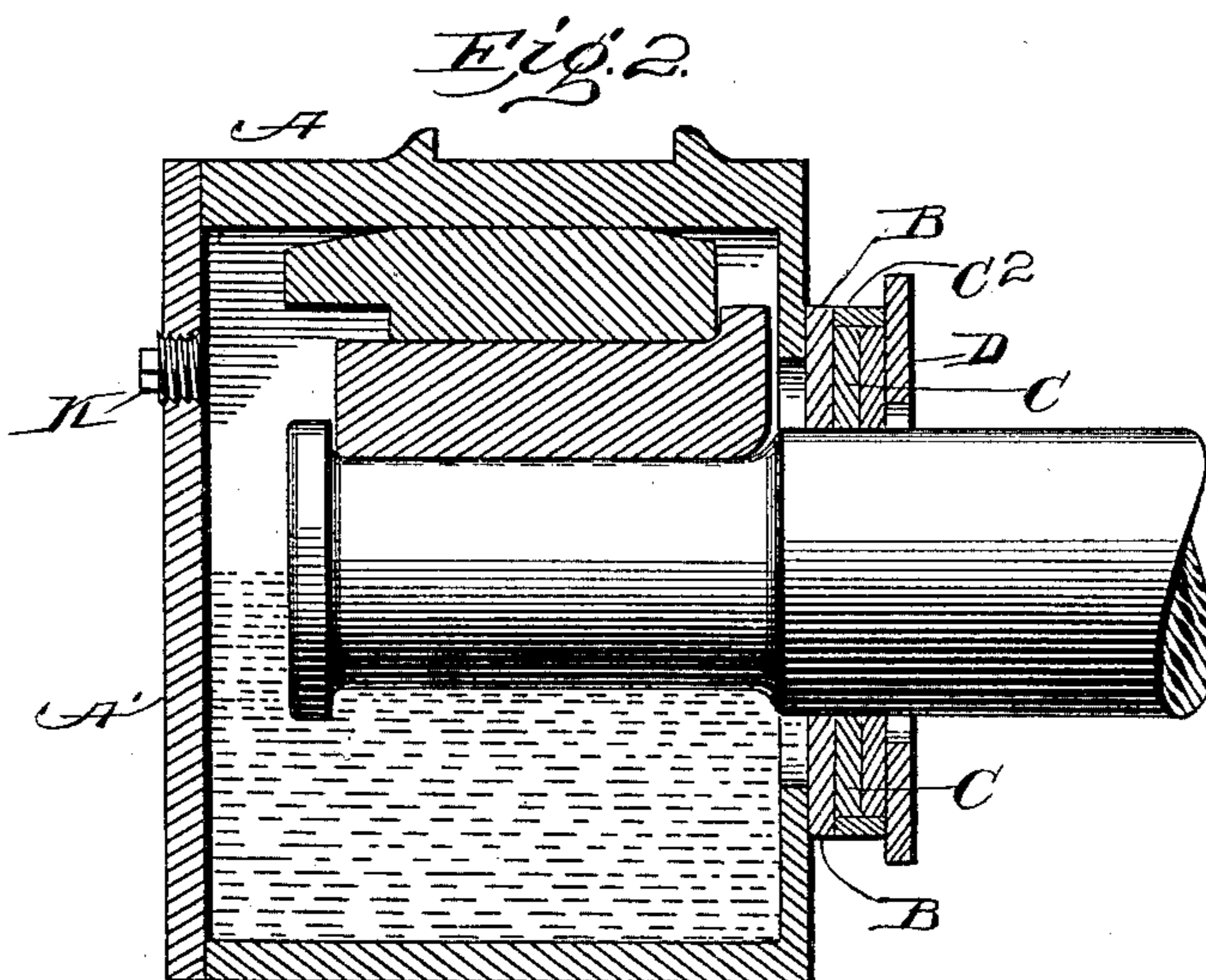
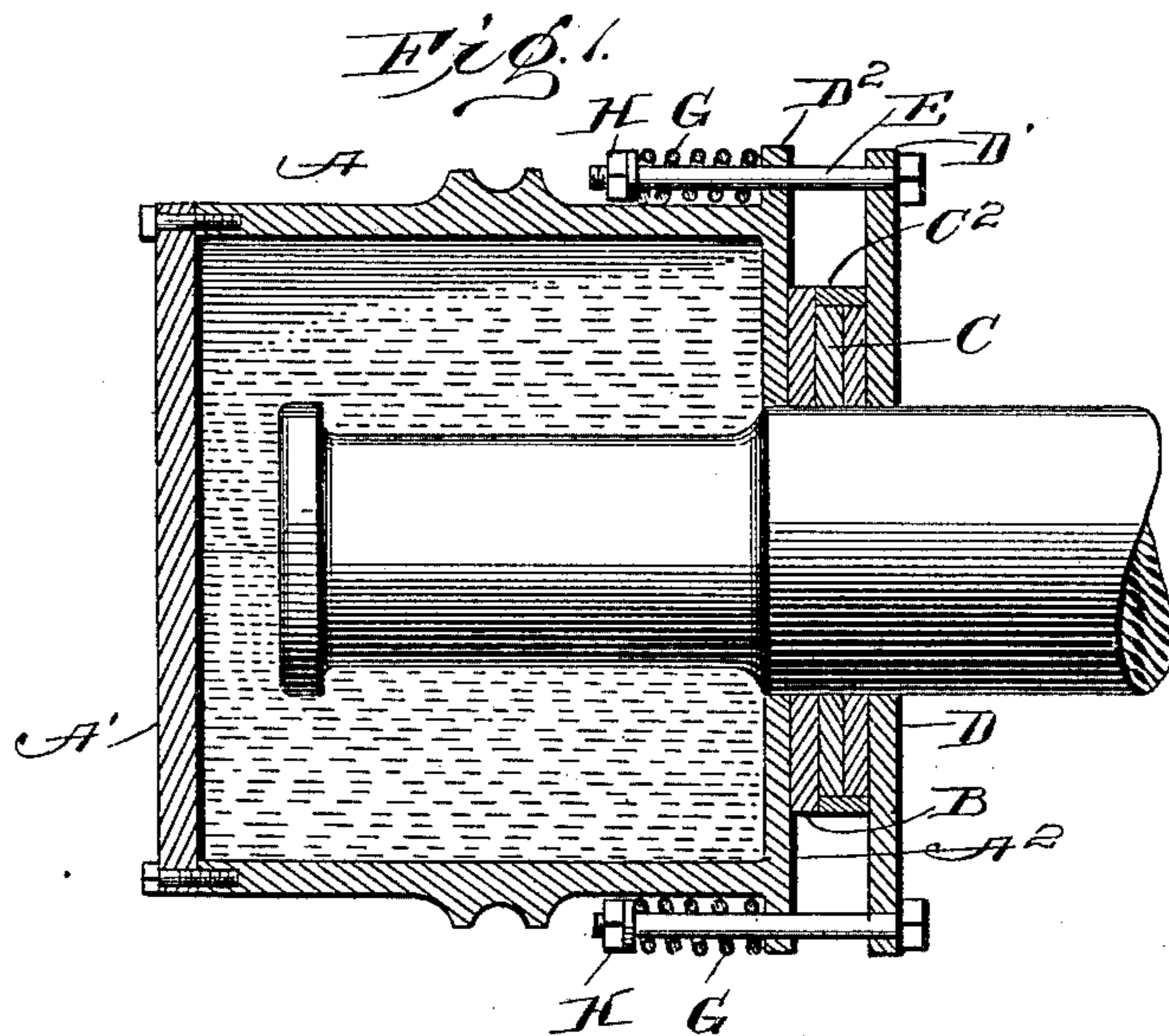
Patented Apr. 15, 1902.

T. W. MITCHELL.  
CAR JOURNAL BOX.

(Application filed Sept. 9, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
J. M. Fowler Jr.  
Elizabeth Griffith

Inventor:  
Thomas W. Mitchell  
by Church & Church  
his Attys

No. 697,947.

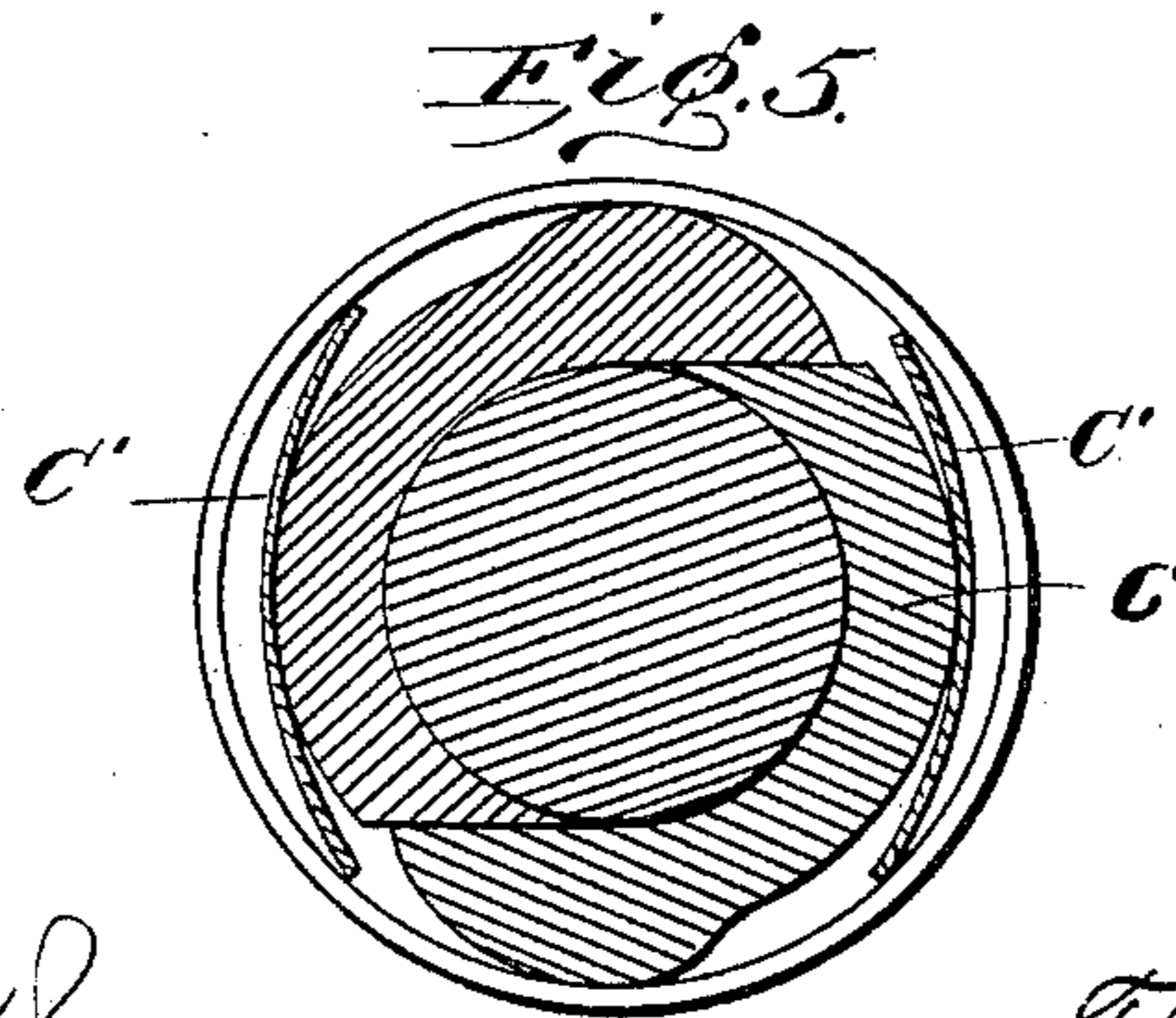
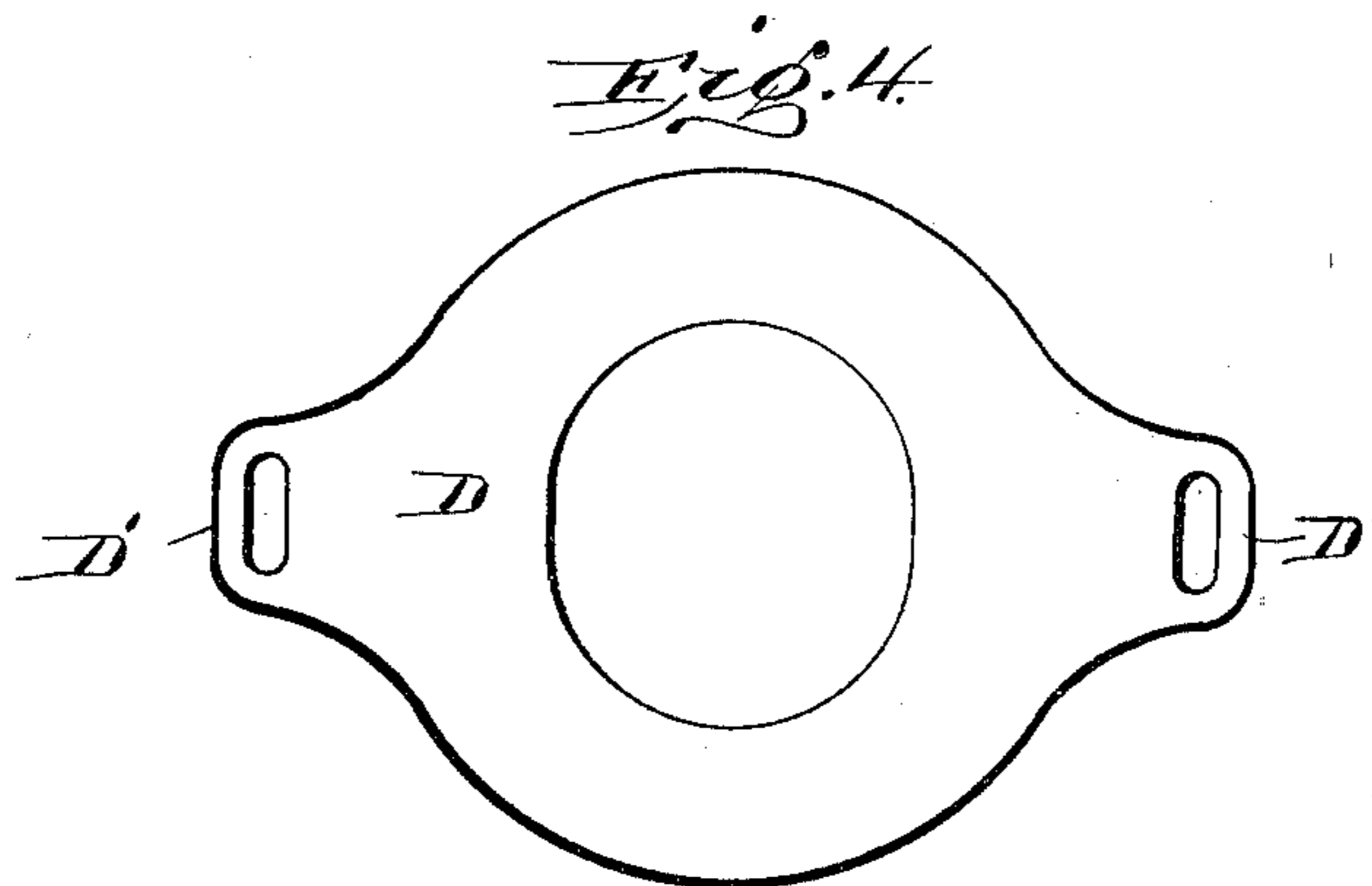
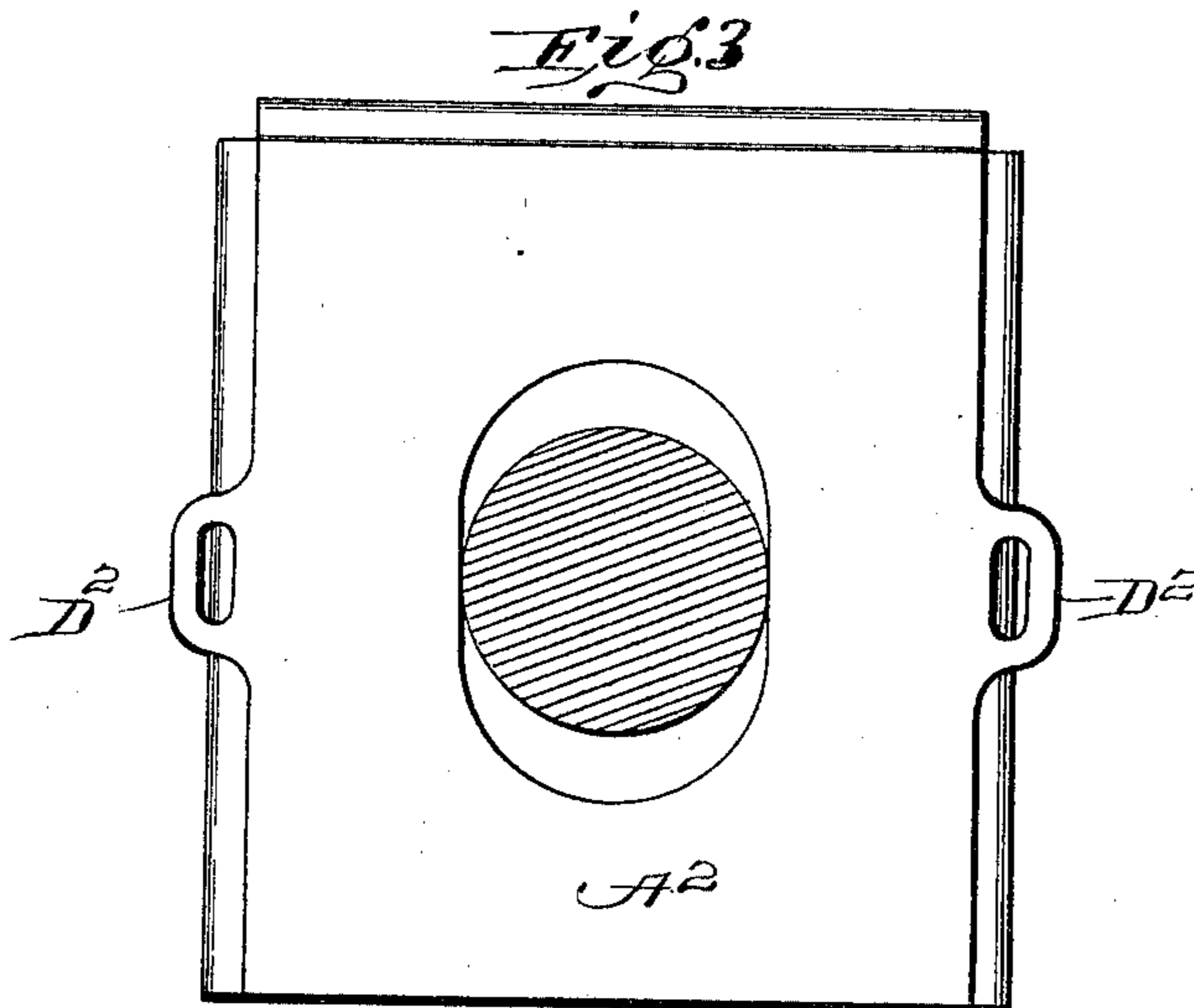
Patented Apr. 15, 1902.

T. W. MITCHELL.  
CAR JOURNAL BOX.

(Application filed Sept. 9, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:

J. M. Fowler  
Elizabeth Duffin

Inventor:

Thomas W. Mitchell  
by Church & Church  
his Atty.

# UNITED STATES PATENT OFFICE.

THOMAS W. MITCHELL, OF OMAHA, NEBRASKA.

## CAR-JOURNAL BOX.

SPECIFICATION forming part of Letters Patent No. 697,947, dated April 15, 1902.

Application filed September 9, 1901. Serial No. 74,768. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS W. MITCHELL, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Car-Journal Boxes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in journal-boxes such as are particularly designed for use on railway-cars and similar vehicles, the object of the invention being to provide a box which will retain the lubricant without becoming impaired by nor interfere with the movements of the journal and box with respect to each other.

The invention further consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a horizontal section through a journal-box embodying the present improvements, the journal being shown in elevation. Fig. 2 is a section taken in a vertical plane. Fig. 3 is a view looking at the rear face of the box. Fig. 4 is a view of the packing-follower. Fig. 5 is a view of the packing.

Similar letters of reference in the several figures indicate the same parts.

The general lines of the journal-box A conform to the Master Car-Builders' standard, only its front is adapted to be closed by a tight-fitting cover-plate A', preferably held in place by screws or similar fastenings, which will permit of the formation of oil-tight joints about the cover-plate. The rear face A<sup>2</sup> of the box is, as usual, provided with an elongated or oval-shaped opening through which the end of the axle or journal projects into the box, said opening being elongated to allow for the relative movements of the journal and box as the brass or bearing wears down or due to car movements. The necessity for providing for such relative movements of these parts has heretofore rendered it exceedingly difficult to provide a means for retaining the lubricant in the box and ex-

cluding water, dust, &c., from the same, for it is obvious that a packing requiring that the shaft have a fixed position will not answer, and if metal packing be employed and applied directly against the face of the box the soft metal of the packing would become shouldered to the contour of the axle-orifice and either throw the parts of the bearing out of position or when the parts move with relation to each other open cracks through which the lubricant may escape and dust and water enter. To overcome these difficulties, I provide a flat face on the rear of the box and against this face locate a disk having an aperture therein, but slightly larger than the portion of the axle adjacent the journal. This disk (lettered B in the drawings) permits the axle to rotate freely, but partakes of its lateral movements, while its smooth and extended bearing on the rear face of the box forms an oil-tight joint. Outside of and bearing against the disk B is the packing-ring proper, preferably formed as in my prior patent, No. 647,313, dated April 10, 1900—that is to say, with soft-metal segments C, having at each end coöperating flat bearing-surfaces and on opposite ends external rounded surfaces, said segments contained within a retainer-ring C<sup>2</sup> and adapted to be advanced against the axle by springs C'. A yielding follower D, also surrounding the axle, serves to move the packing-ring up tightly against the disk and the disk against the box. In the preferred construction the follower is connected with the box by bolts E, passing through slotted ears D' D<sup>2</sup> on the follower and box, respectively, and having springs G on their outer ends and interposed between the nuts H and ears D<sup>2</sup>, whereby the pressure with which the follower is advanced may be regulated.

The box may be filled with lubricant through an opening closed by a screw-plug K, or the cover-plate may be removed for this purpose. Thus while the box is adapted for the use of a fluid or viscous lubricant without the use of waste, should the packing become worn out or broken the box may be filled with waste and the ordinary lubricant, when the box will operate as do the ordinary journal-boxes now in common use.

It will be observed that the only side wear

occurs between the metal disk B and the rear face of the box, and as these parts are hardened wear at this point is negligible, while wear around the axle only takes place when the packing-segments contact therewith, and such segments may be renewed by simply backing off the follower to expose the packing-ring for the insertion of new segments.

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

The combination with the box having the tight but removable cover and elongated opening in its rear face for the entry of the journal whereby the box and journal may move laterally with respect to each other, of a hard-metal disk working against the face of the box and movable transversely with the jour-

nal, a packing-ring resting against the disk and having inwardly-movable soft-metal flat-faced segments, a follower bearing against the packing-ring to advance said ring and disk toward the box, whereby side wear will occur only between the hard-metal disk and rear face of the box, bolts passing loosely through eyes on the follower and box whereby the follower and ring may partake of the transverse movements of the disk and journal and springs surrounding the bolts for advancing the follower; substantially as described.

THOMAS W. MITCHELL.

Witnesses:

GEO. W. POYNTON,  
D. B. WELPTON.