

(No Model.)

2 Sheets—Sheet 1.

E. K. WILCOX.

JOURNAL BOX.

No. 300,931.

Patented June 24, 1884.

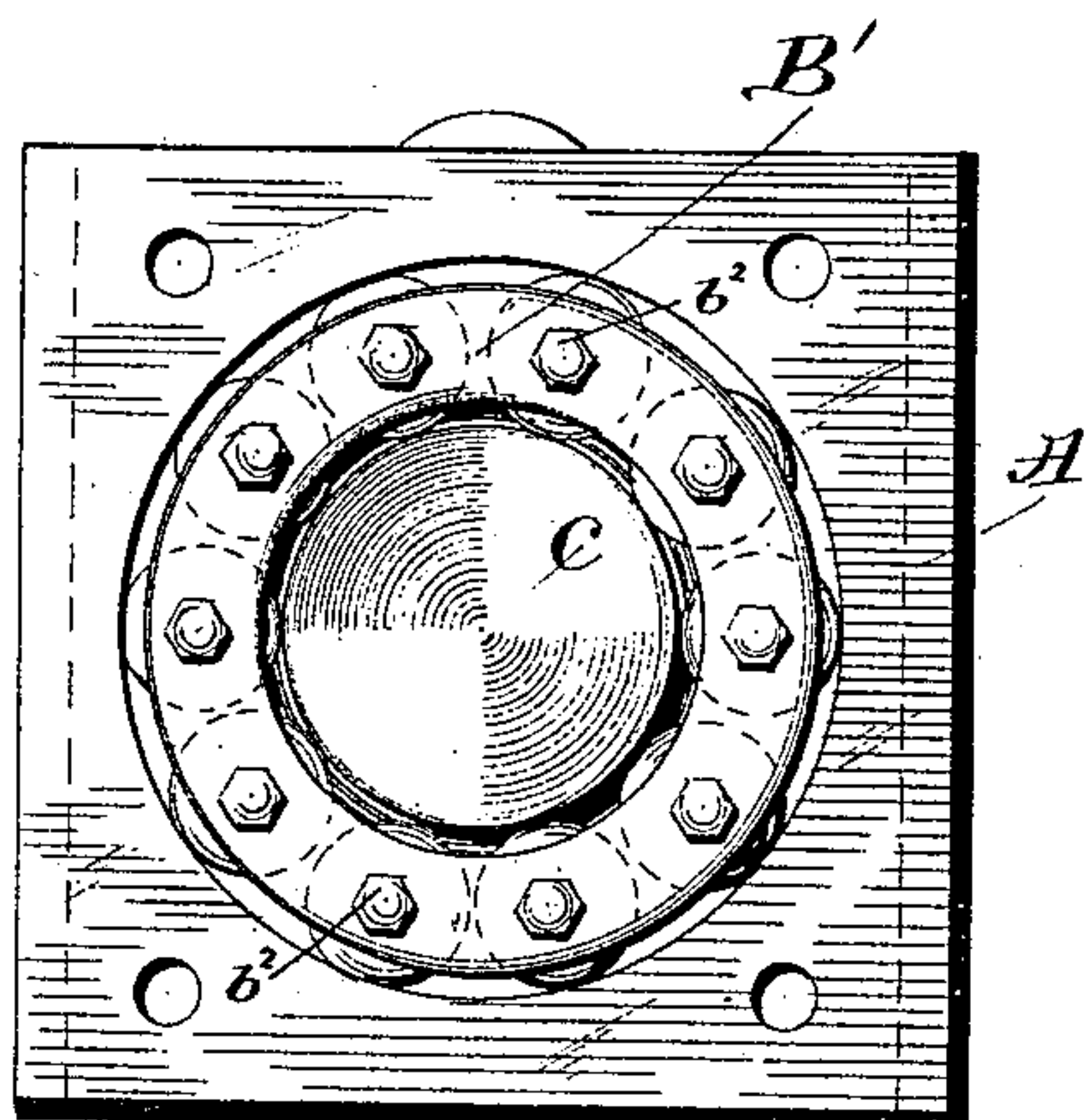


Fig. 1.

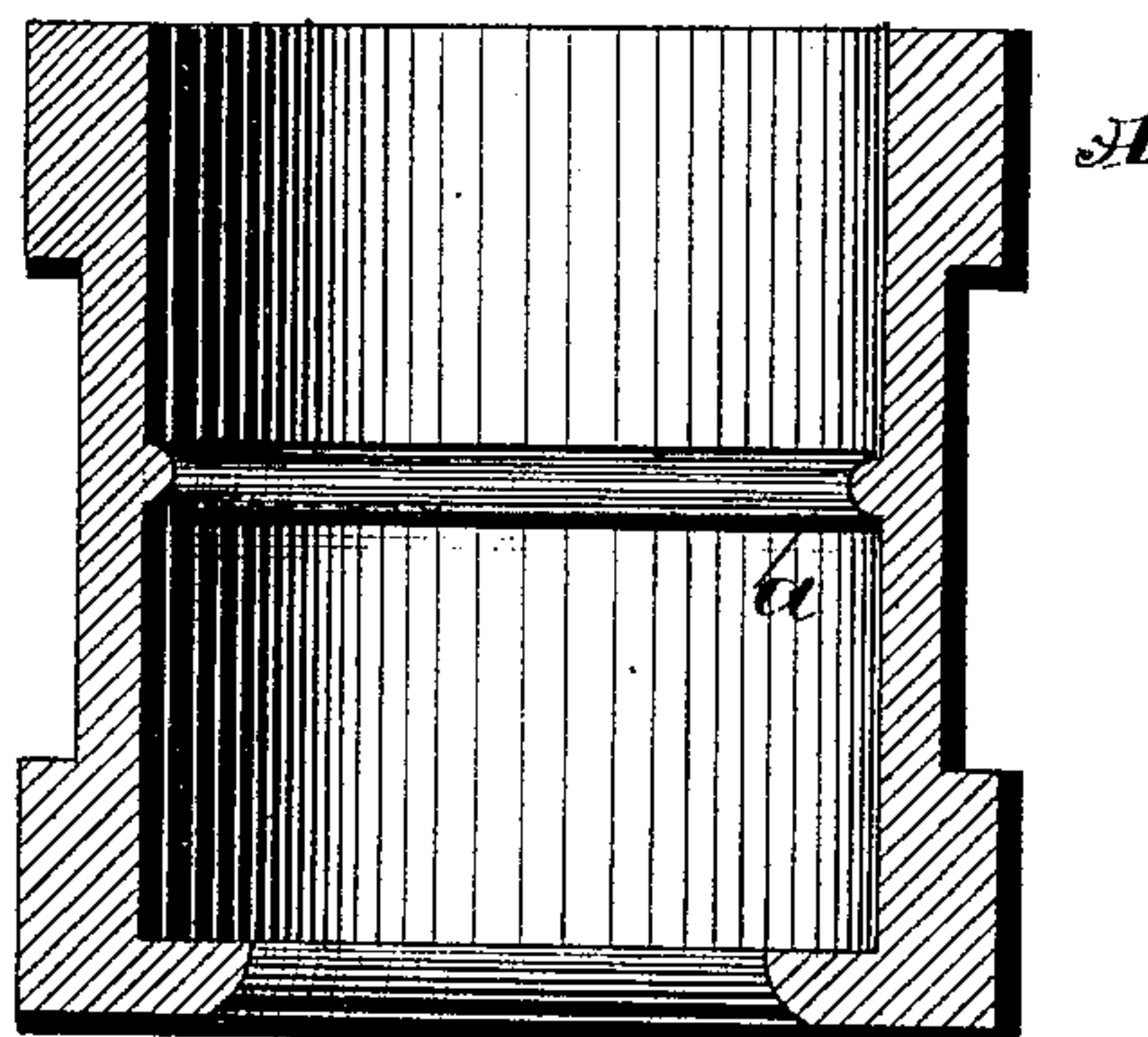


Fig. 2.

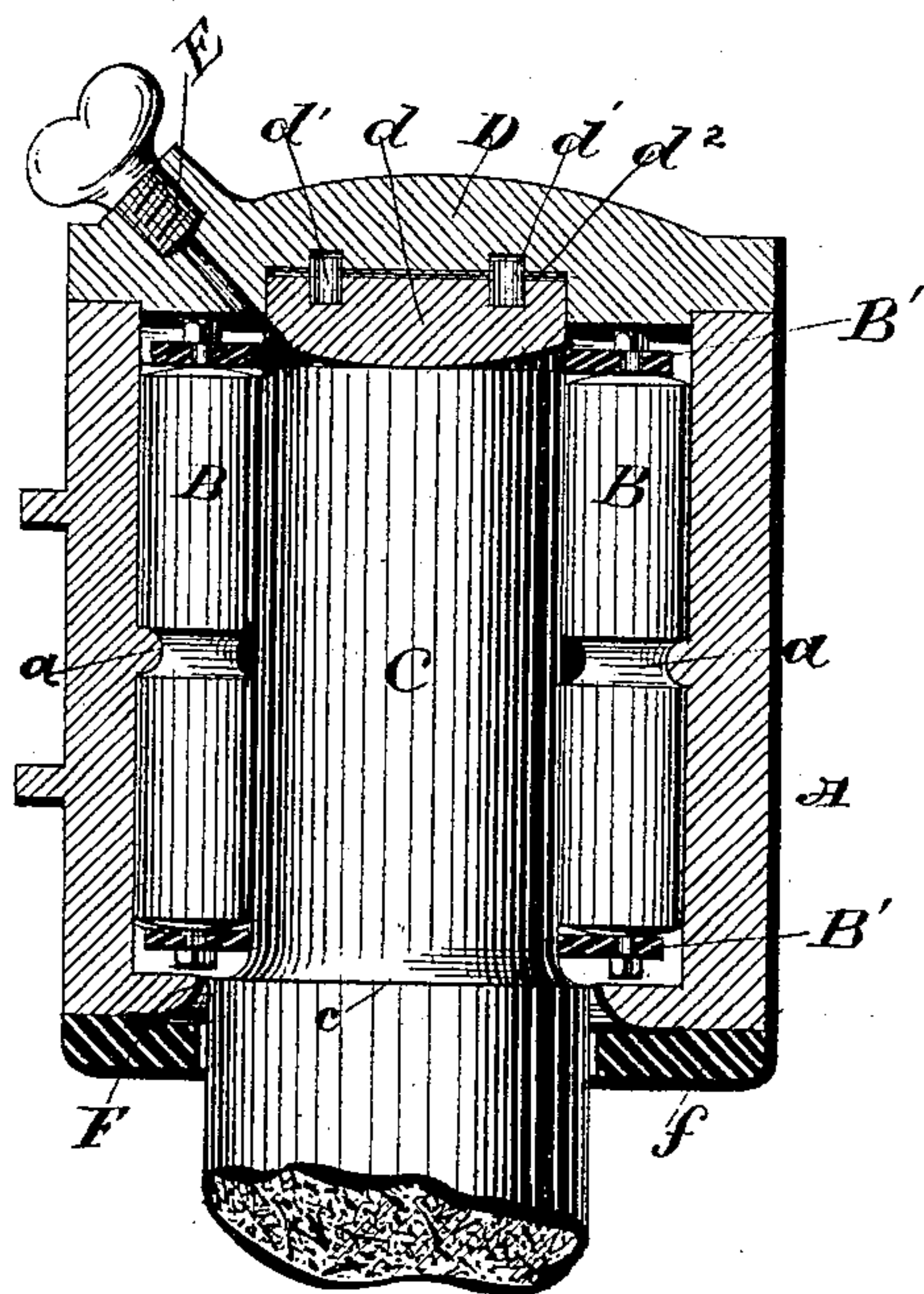


Fig. 3.

Fig. 4.

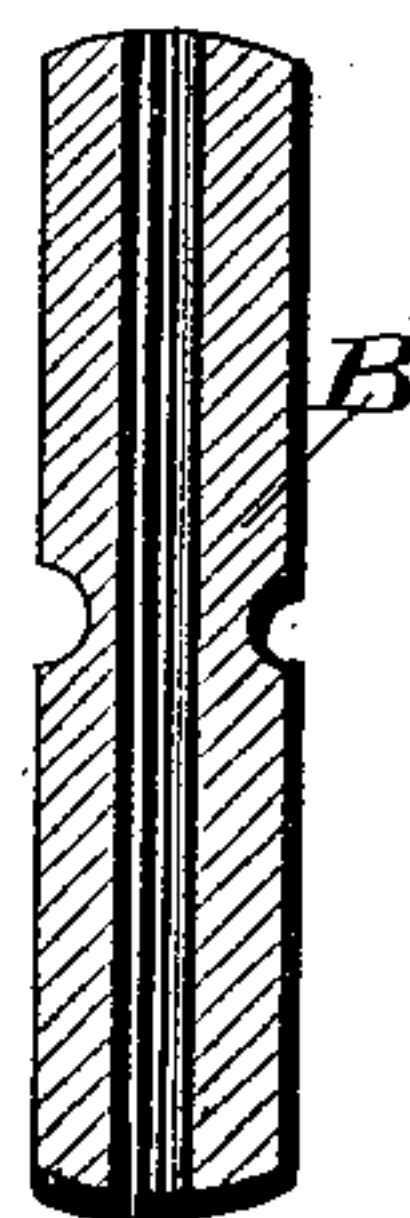


Fig. 5.



Fig. 6.

WITNESSES

Wm. Monroe.
Geo. W. King

Edwin K. Wilcox

INVENTOR.

by Leggett & Leggett.

ATTORNEYS

(No Model.)

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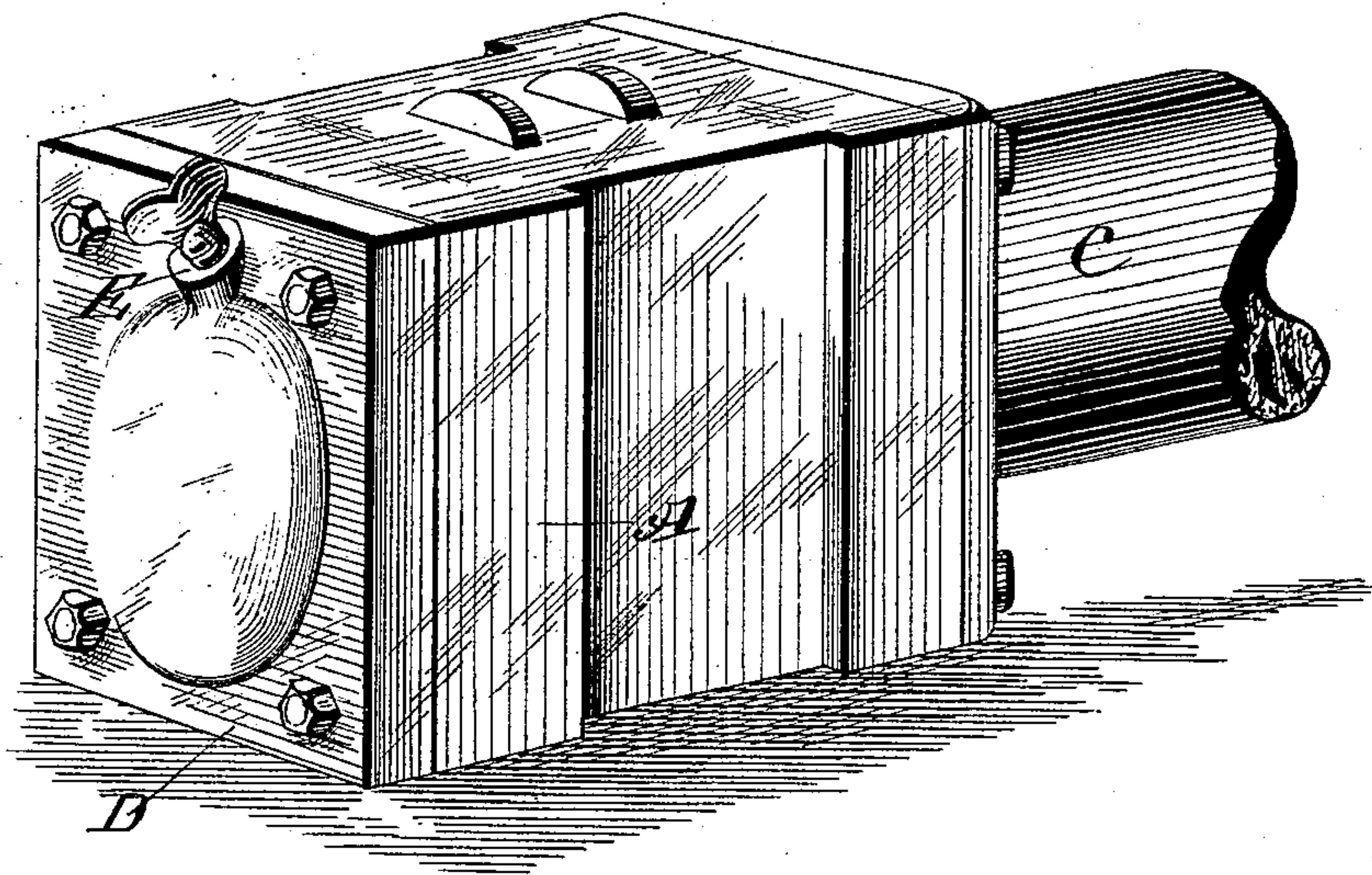


Fig. 7.

WITNESSES

John M. Monroe
Geo. W. King

Edwin K. Wilcox INVENTOR

by Leggett & Leggett ATTORNEYS

UNITED STATES PATENT OFFICE.

ELJEN K. WILCOX, OF CLEVELAND, OHIO.

JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 300,931, dated June 24, 1884.

Application filed November 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, ELJEN K. WILCOX, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Journal-Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in journal-boxes provided with anti-friction rollers.

The object of my invention is to provide a journal-box of the class aforesaid that will be more durable than those heretofore in use. A further object is so to construct and arrange the parts that the necessary wear will come on pieces that can easily be replaced and with little expense.

With these objects in view my invention consists in certain features of construction and in combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is an end elevation of the box, ring, and axle. Fig. 2 is a plan view of the inside of the box, with the edges of the box shown in horizontal section. Fig. 3 is a vertical section of the box, cap, and block, and in elevation the rollers and axle. Fig. 4 is a longitudinal section of a roller. Fig. 5 is an isometric view of a stud. Fig. 6 is a view in perspective of a packing-ring. Fig. 7 is a view in perspective of the box and a portion of the axle.

A represents a journal-box provided on the inside with the annular rib *a*, that engages annular grooves, respectively, on the rollers B, and holds them endwise. The rollers are arranged around the journal of the axle C, and intermediate between the said journal and box, and are further held in position by the rings B', that are secured by the studs *b*, that extend through a central longitudinal bore in each of the rollers, and thereby furnish the bearings on which the rollers revolve. These studs are provided at each end with a shoulder, *b'*, and a screw end and nut at *b''*, and between the shoulders and nuts the said rings are secured. These studs may be smaller in the central part, as shown in Fig. 5, so that the bearings of the rollers will be on the enlarged part of the stud next back of the shoulders. The rings B' are pro-

vided with holes equidistant apart, through which the screw ends of the studs pass, allowing the rings to butt against the said shoulders, and when pressed by the nuts from the outside the rings and studs form a rigid framework that holds the rollers in position. The ends of the rollers are slightly crowning, so that they only engage the rings near the studs, and the friction and wear between those two parts is nearly nominal. The ends of the axle are preferably straight across, but might be a trifle crowning, if so desired, and engage the cylindrical blocks *d*, that are convex on their faces, that butt against the end of the axle, and are designed to resist the lateral motion or pressure of the car or axle. These blocks are each set in an annular recess in their respective caps D, that cover the end of the journal-box A. The said blocks are provided with dowel-pins *d'*, that extend also into the cap and hold the block from revolving. Shims or thin pieces of metal *d''* may from time to time, as required, be inserted between the cap and block at the bottom of the recess, to keep the former against the end of the axle and to take up the wear. An oil cup or chamber, E, is provided on the upper portion of the cap, the outlet of which is so arranged as to discharge oil on the top at the union of the axle and block, thereby securing an adequate lubrication of these parts. From thence the oil is discharged into the bottom of the box, and by the action of the rollers is distributed to all parts of the journal and inside of the box.

F is a packing-ring, preferably of leather compressed or crimped into the proper form, as shown in Fig. 6, and is inserted at the rear end of the box, and held in the position shown in Fig. 3 by the plate *f*. The corner of the box, as shown, is rounded to conform to the shape of the packing-ring, and as a box is slipped onto the axle. The packing-ring encircles the axle, and the inner edge of the ring forms a tight joint with the axle, that prevents ingress of dust and dirt and the escape of the oil from the box. As this inner edge of the packing-ring that is in contact with the axle is always saturated with oil, the wear of the same is very slight, and when new packing-rings are required they may be supplied at a trifling cost. The box being so constructed there is no escape or loss of oil. The blocks

d are also inexpensive, and by renewing them occasionally this part of the device may be kept always in good order.

By the arrangement of parts aforesaid the frame-work that holds the rollers, consisting of the rings *B'* and the studs *b*, is always equally required, regardless of the wear of parts. As the rollers are hardened steel, the wear of those parts is confined almost entirely to the studs, which may be removed at any time; but the labor of the studs in merely guiding and holding the rollers in the proper relative position is so light that the studs are likely to last as long as the other parts of the structure.

What I claim is--

1. The combination, with a journal-box and an axle, of the anti-friction rollers *B*, the rods or studs *b*, each being provided at opposite ends with a shoulder, *b'*, the binding-rings *B'*, and nuts for securing the parts together.

2. The combination, with a journal-box pro-

vided with an annular rib and an axle, of the anti-friction rollers *B*, each provided with a peripheral groove, the rods or studs *b*, provided with the shoulders *b'*, the binding-rings *B'*, and nuts for securing the parts together, substantially as set forth.

3. The combination, with an axle-box provided at one end with a recess and with holes for dowel-pins, and an axle, of the block *d*, situated within the recess, and provided with a convex face against which the end of the axle bears, and with dowel-pins to prevent it from turning, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 23d day of November, 1883.

ELJEN K. WILCOX.

Witnesses:

CHAS. H. DORER,

W. E. DONNELLY.