

(No Model.)

W. W. WORSWICK.

JOURNAL BOX.

No. 322,032.

Patented July 14, 1885.

Fig. 1

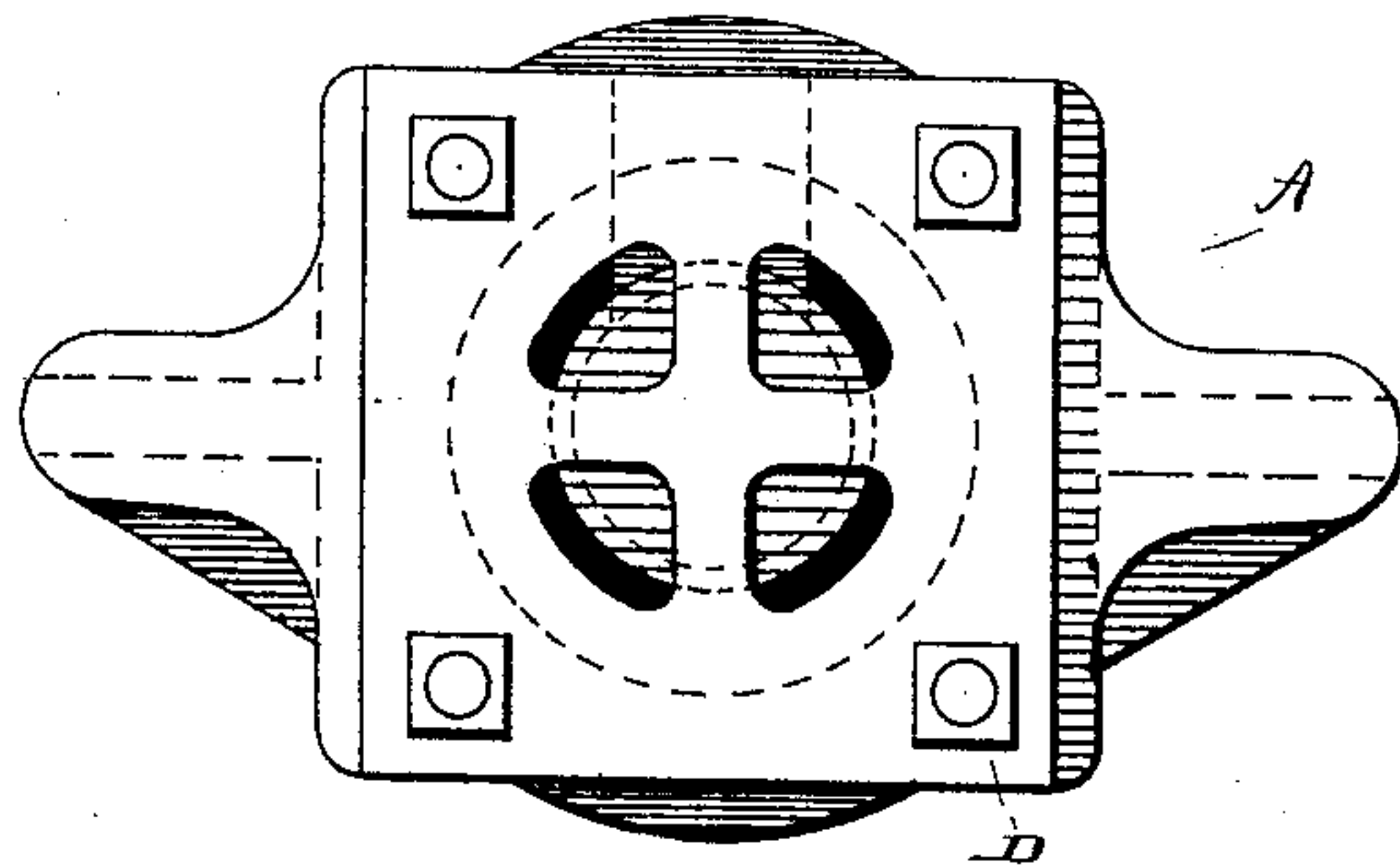


Fig. 2.

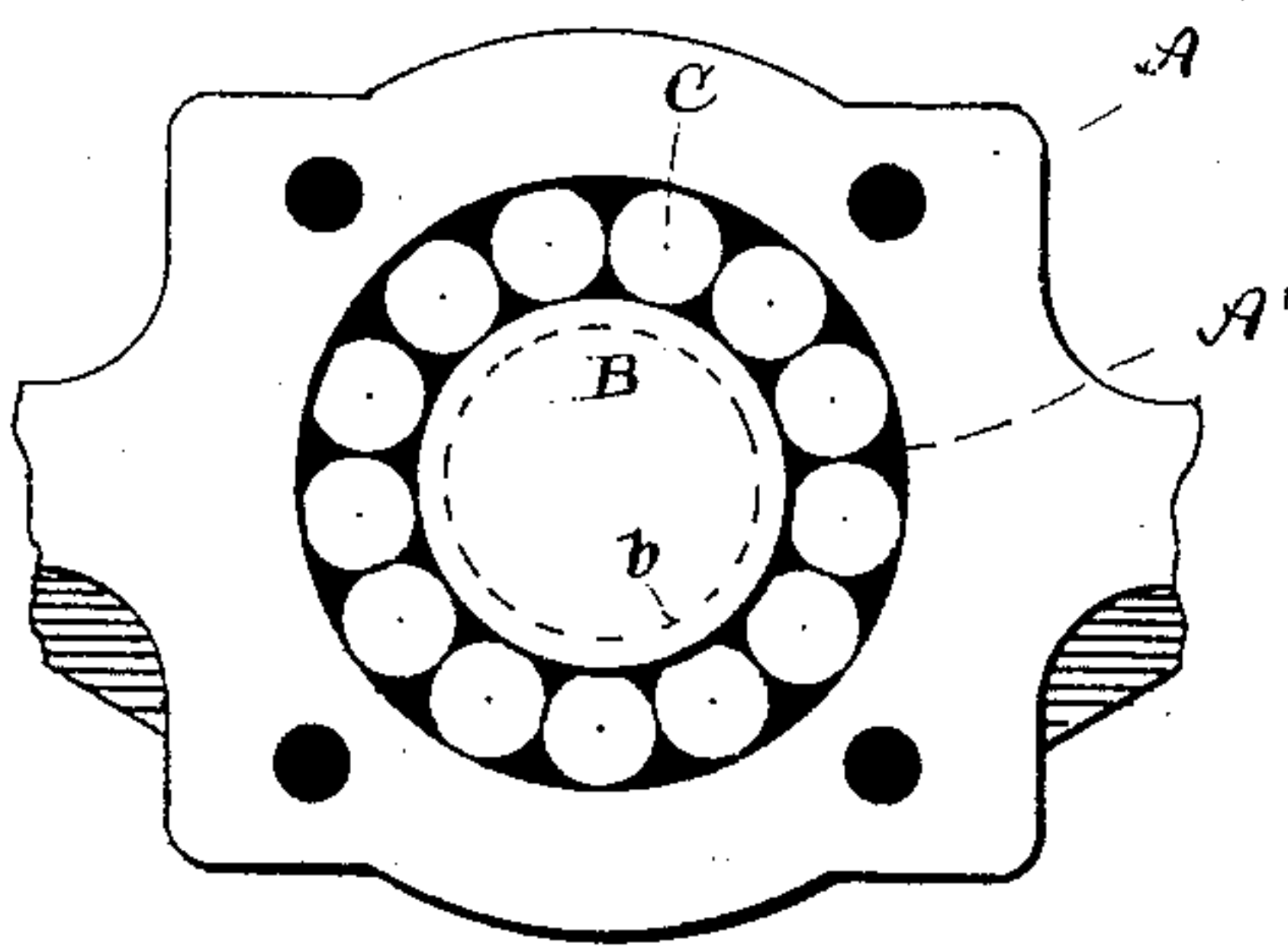


Fig. 3.

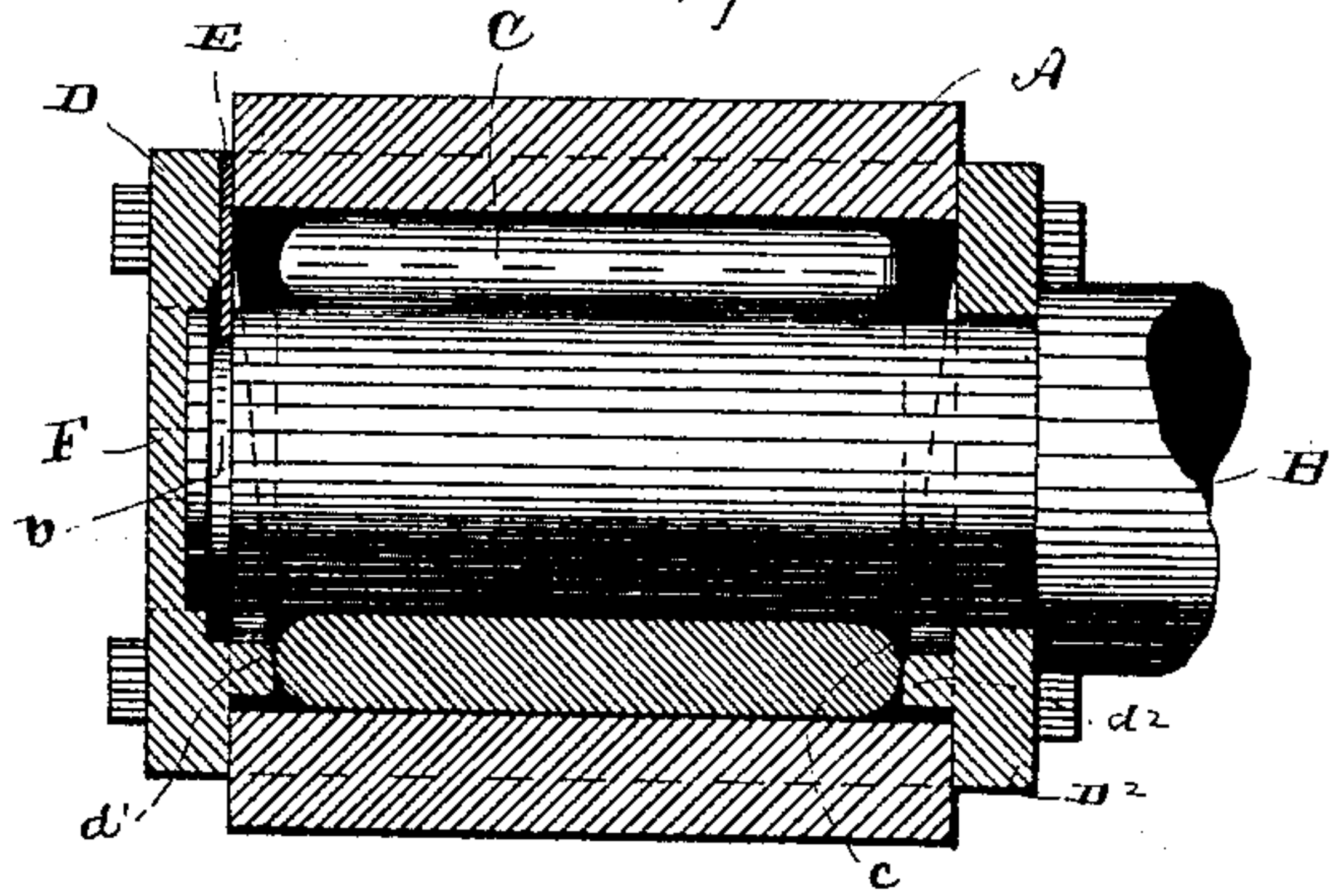


Fig. 4.

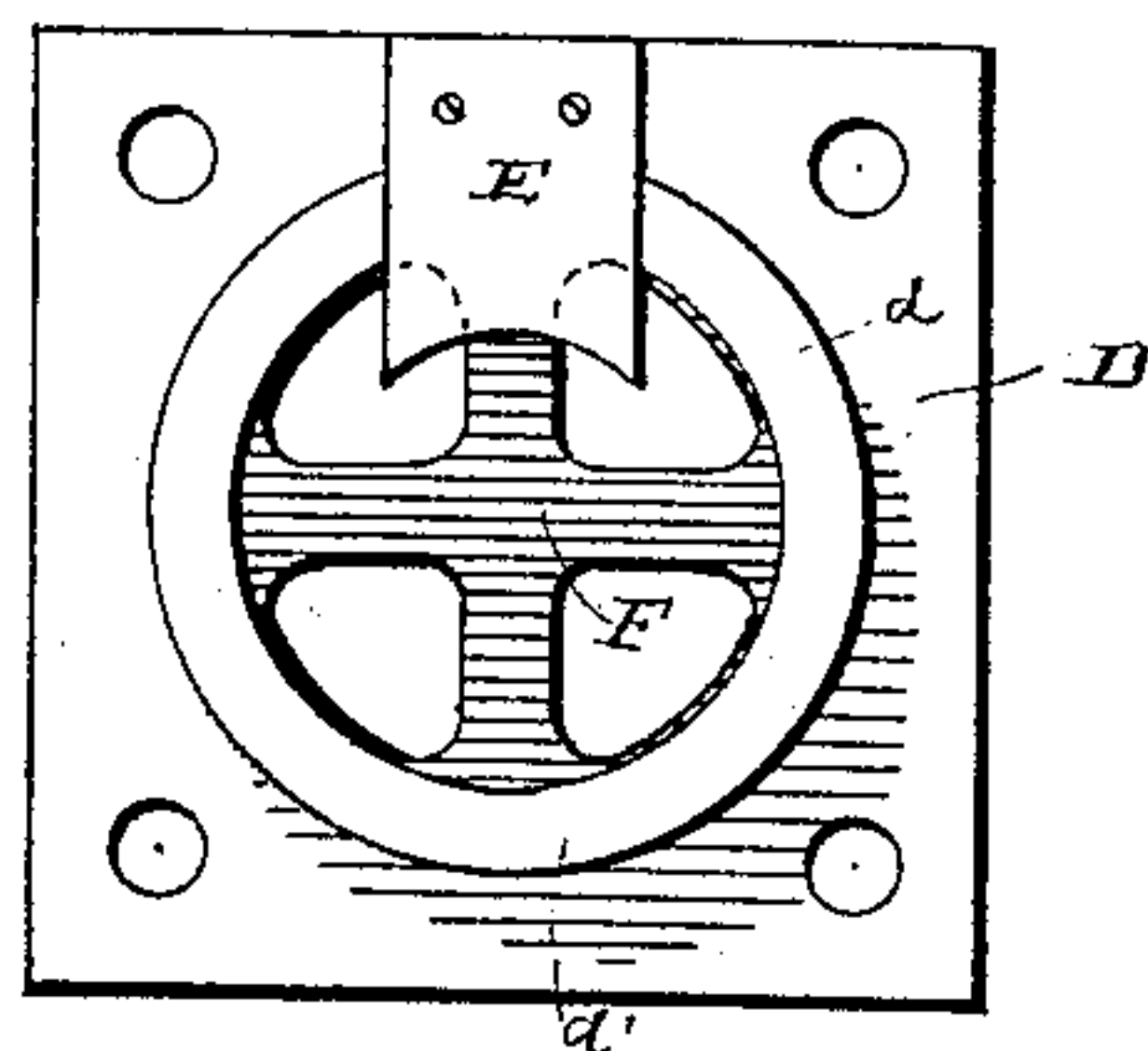
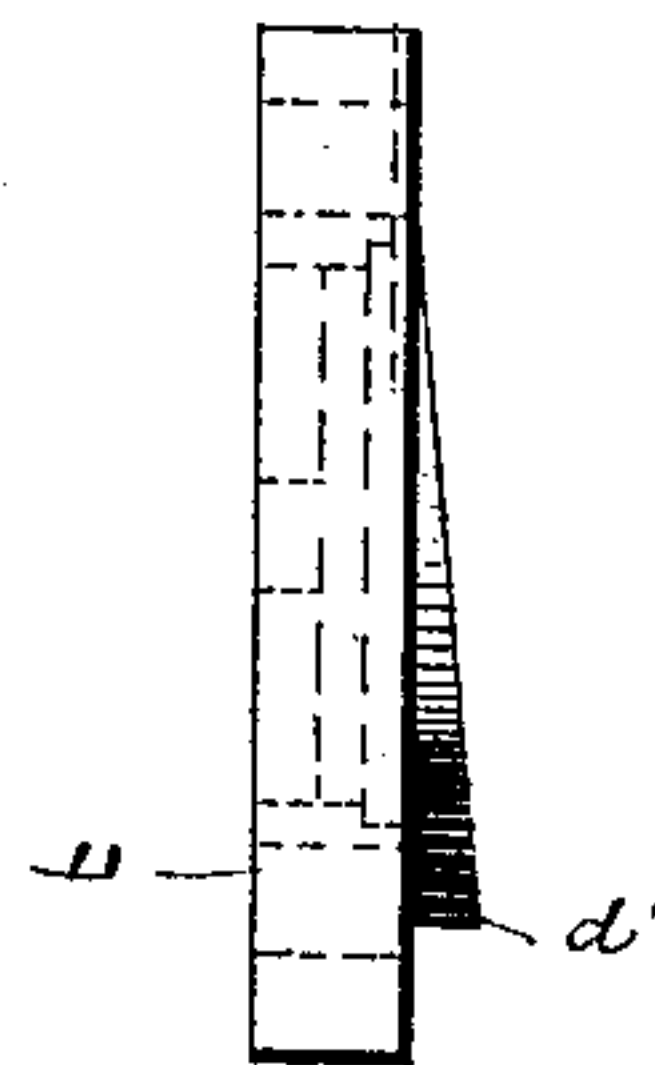


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM W. WORSWICK, OF CLEVELAND, OHIO.

JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 322,032, dated July 14, 1885.

Application filed June 5, 1885. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. WORSWICK, a citizen of the United States, residing at Cleveland, 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 description of the same and of the manner of constructing and using the invention in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it appertains to construct and use the same, reference being had to the accompanying drawings, forming a part of this specification, the principle of the invention being herein explained, and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to improvements in journal-boxes for axles on railway-cars; and it consists in certain new features of construction, hereinafter described, and embodied in the claims.

In the drawings, Figure 1 is a front elevation. Fig. 2 is a front elevation with front plate removed. Fig. 3 is a longitudinal vertical section. Fig. 4 is a reverse elevation of the front plate. Fig. 5 is a side view of said front plate.

A represents the box, with its cylindrical chamber A'. The exterior form of the box is changeable, more or less, according to its desired application in various uses.

B is the axle, surrounded by the anti-friction rollers C, said rollers being of sufficient number and size as to completely fill the annular space that exists between the axle and the inner face of chamber A' as the axle is passed centrally through the latter. No precise number of rollers is specified. Said rollers are somewhat shorter than the cylinder A', in which they are placed, so as to afford them a sufficiency of longitudinal slide along with the inward and outward thrusts of the axle. Such a limited sliding of the rollers loses the grinding and longitudinal wear of the associated parts and prevents their burning up, that might otherwise take place. Said rollers are of uniform diametrical size throughout their entire length, and have both ends round-

ed, as at c, to prevent any retarding catching at their end edges on the faces of the guiding-cams, hereinafter mentioned. Said rounding of the ends of the rollers, by preventing said catching upon the cams, keeps them from impinging angularly against each other, and so tends to straighten them out relatively to each other longitudinally at the bottom of chamber A'.

D is the outer end plate of the box, provided on its inner face with cam d, having its culminating swell d' at the bottom of the plate. The depending check-plate E is secured to said end plate at its top, where it is let into the said plate so as to be flush with the inner face of said end plate.

F is the hardened or chilled wall of the said end plate, against which the axle ends occasionally bear.

D² is a similar end plate of the box, perforated for the passage of the axle, and provided with a similar cam, d², but having no depending check-plate. As the rollers revolve with the revolutions of the axle, and travel from their bearing position at the top of the cylindrical chamber A' toward its bottom, where they are free from pressure, they are brought, by the gradual swell of the said cams, into a uniform longitudinal position between said cams, and are thus restored from any sidewise swing which they may have received from the thrusts of the axle. Depending plate E has its lower end concave, to fit the rounded surface of the axle, and projects far enough downward to set in the angular groove b of the axle. The object of said plate fitted in said groove of the axle is to pull the box back after an end-thrust of the axle, and so to keep the boxes in position. The size and thickness of said plate is at the judgment of the machinist. Suitable devices of any ordinary kind for supplying the box with oil are understood. The axle-chamber A' is plain and smooth from end to end. As the top inner surface of the axle-chamber, if composed only of cast-iron, would naturally wear rapidly away or become uneven under the constant heavy grinding of the axles, I intend to use the custom of lining this portion of the said chamber with steel or other hardened

metal, to counteract the wear just spoken of, said lining so let into the face of the chamber as to bring their faces flush with each other. Said linings may be inserted and held in place
5 by any practical means. In practice I may also line the whole interior surface of said axle-chamber with steel or other hardened metal as a protection against wear.

I do not limit myself to the use of these improved boxes to either steam-cars or to street-railroad cars, as they may be applied to either. Also, they may be possibly put to other uses. Also, I am not limited to rollers with rounded tips, as their tips, if preferred, may be left
15 unrounded.

What, therefore, I claim is—

1. The combination, with a journal-box having an end cam and an axle-journal, of loose anti-friction rollers surrounding said
20 journal within said box, said rollers being of uniform diametrical size throughout their entire length, and having rounded ends, substantially as set forth.

2. The combination, with a journal-box, a
25 journal, and anti-friction rollers surrounding

said journal in said box, of an end plate fitted to said box, said plate provided on its inner face with a cam, the maximum swell of which is at the bottom of said plate, said cam controlling the position of said rollers when they
30 are at the bottom of the journal-box, substantially as set forth.

3. The combination, with a journal-box, an axle-journal, and anti-friction rollers surrounding said journal, of an end plate on each
35 end of said box, said plates each provided with a cam on its inner face, substantially as set forth.

4. The combination, with a journal-box having an end cam, of an axle surrounded by
40 anti-friction rollers, said rollers adapted to have an end bearing upon said cam, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand
45 this 3d day of June, A. D. 1885.

WILLIAM W. WORSWICK.

Witnesses:

JNO. G. HALL,
THOS. B. HALL.