

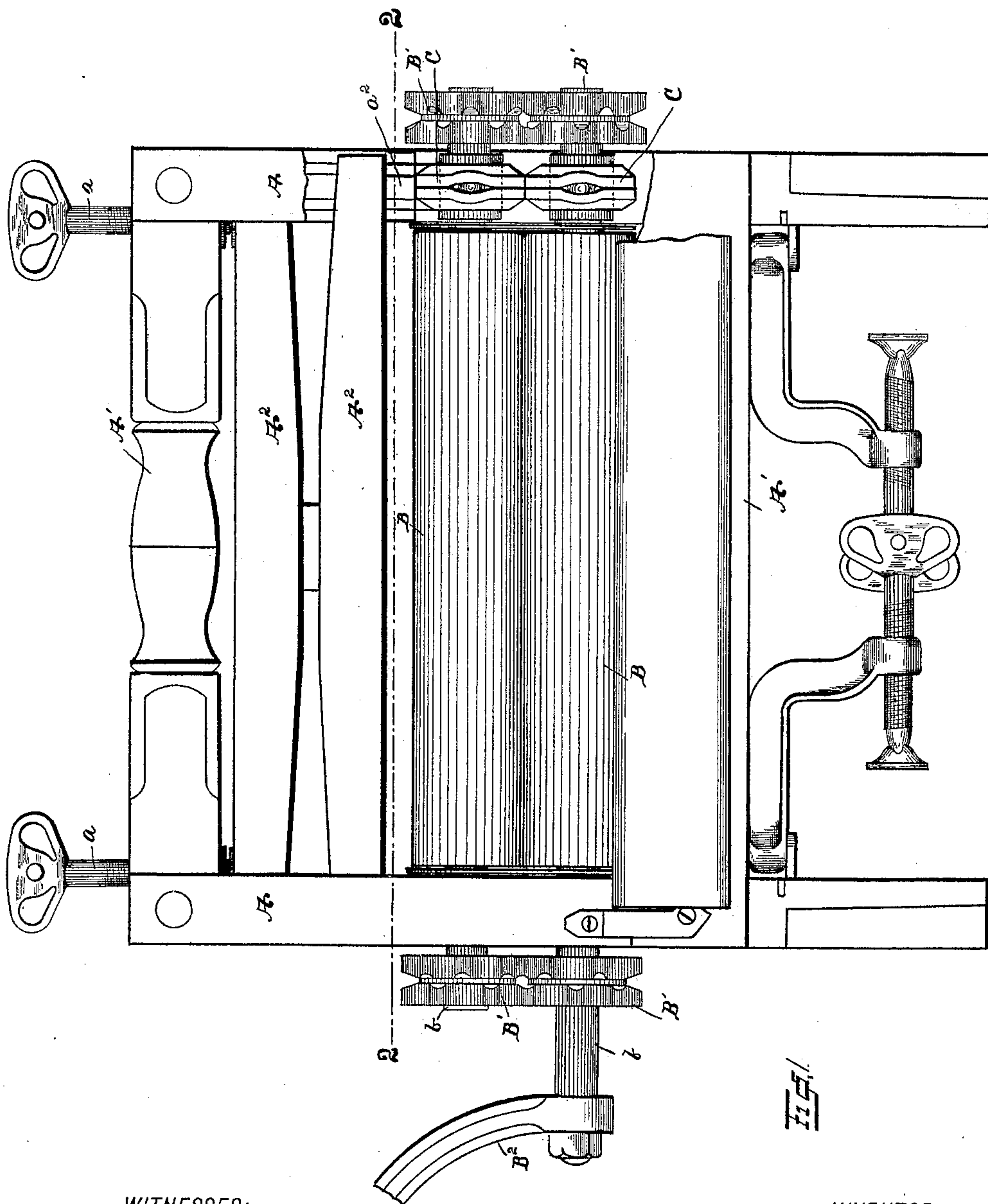
(Model.)

2 Sheets—Sheet 1.

B. A. WALKER.  
BEARING.

No. 605,940.

Patented June 21, 1898.



WITNESSES:

*W. Walker, Jr.*  
*J. Keese Hallack Jr.*

INVENTOR

*Byron A. Walker*  
BY *Hallack & Bond*

ATTORNEY

(Model.)

2 Sheets—Sheet 2.

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Fig. 2.

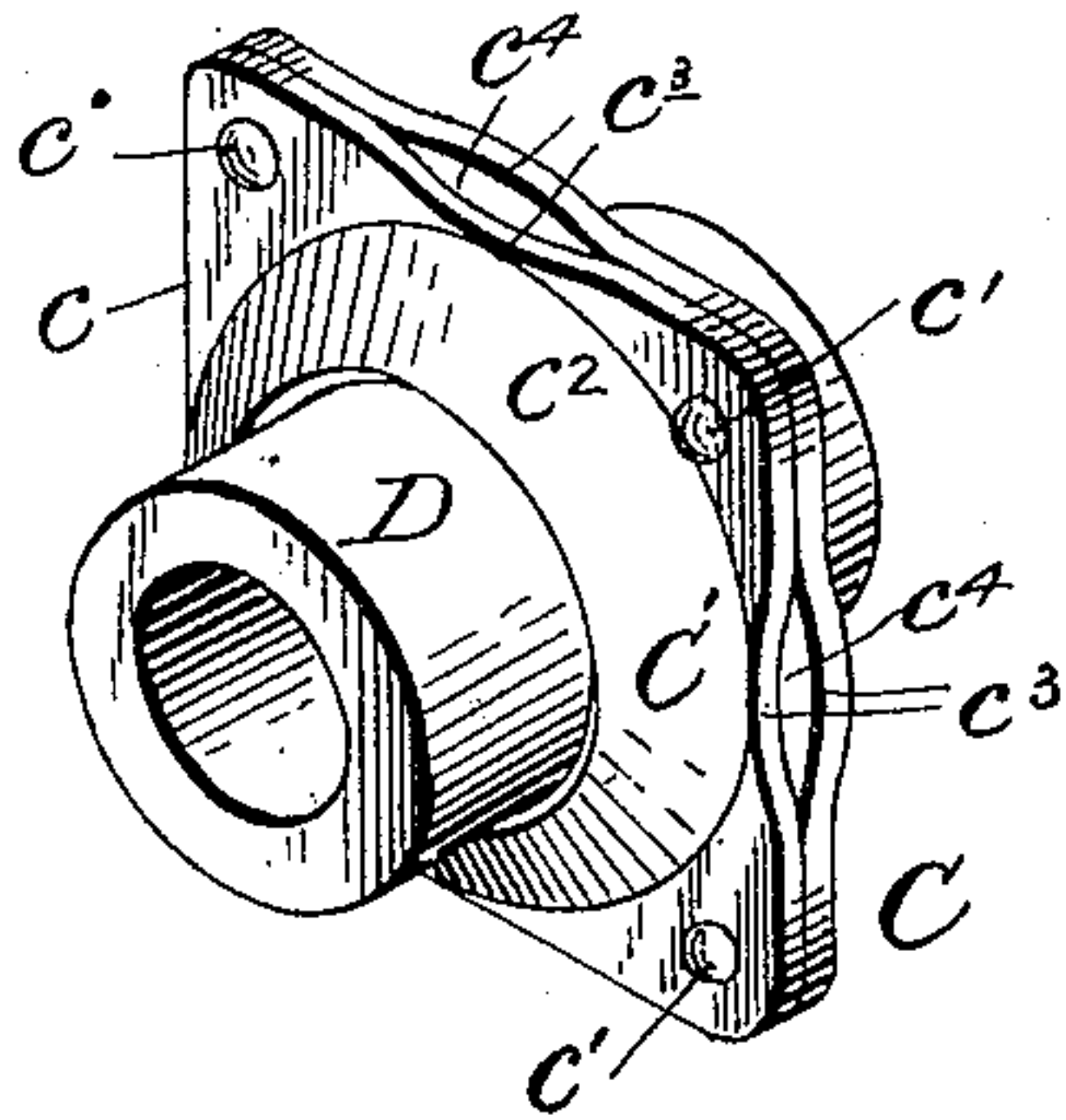


Fig. 3.

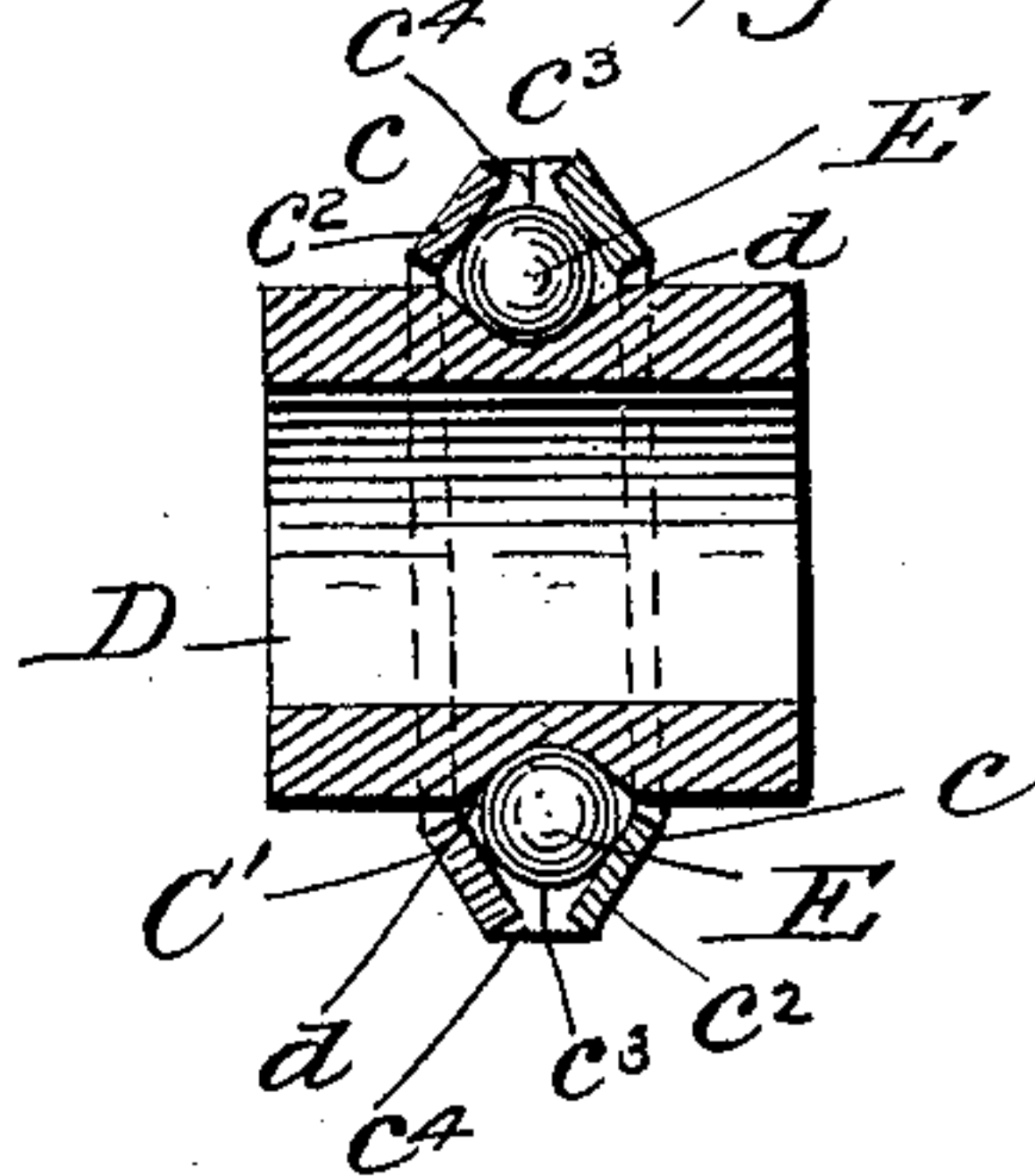


Fig. 4.

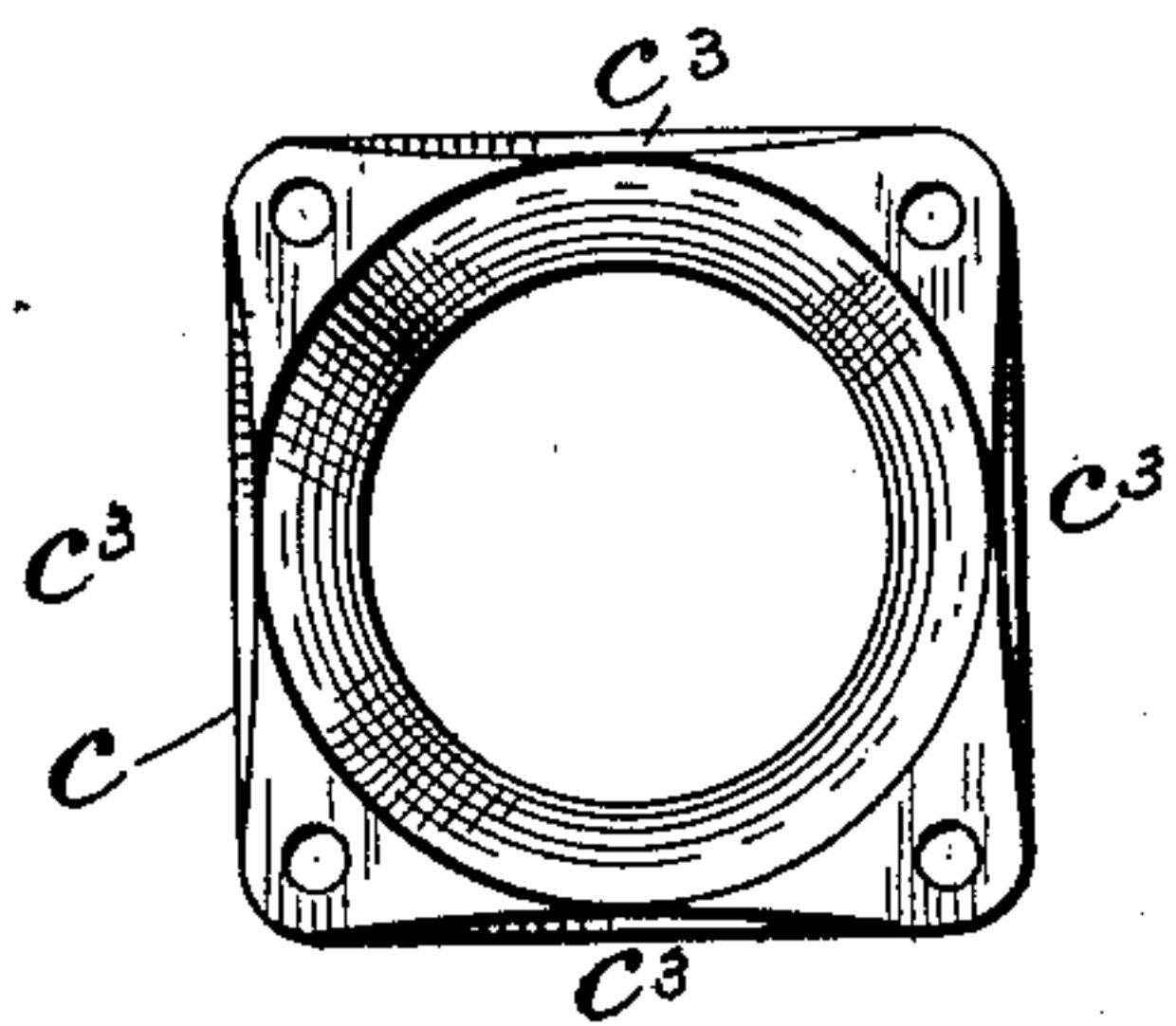


Fig. 5.

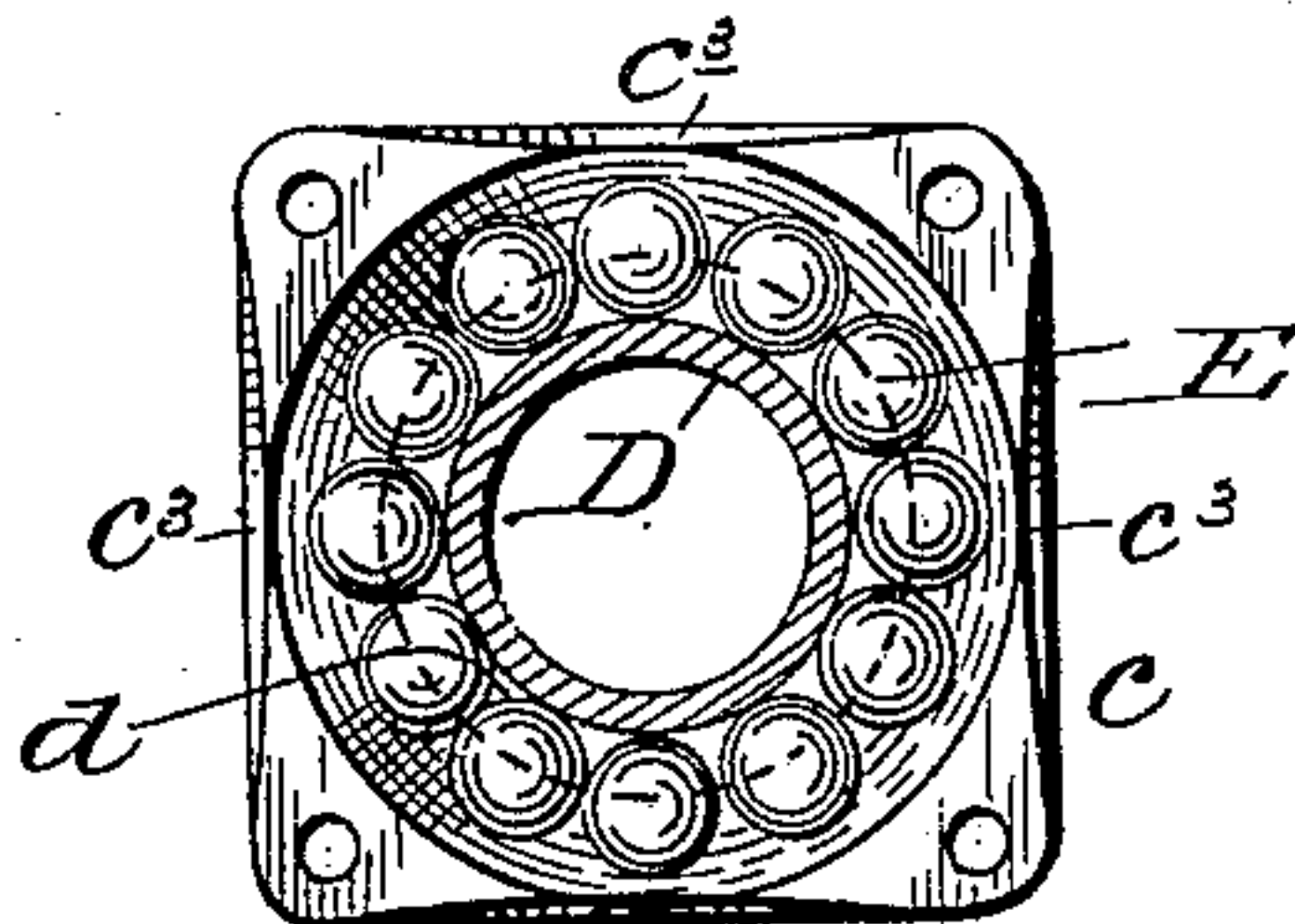


Fig. 6.

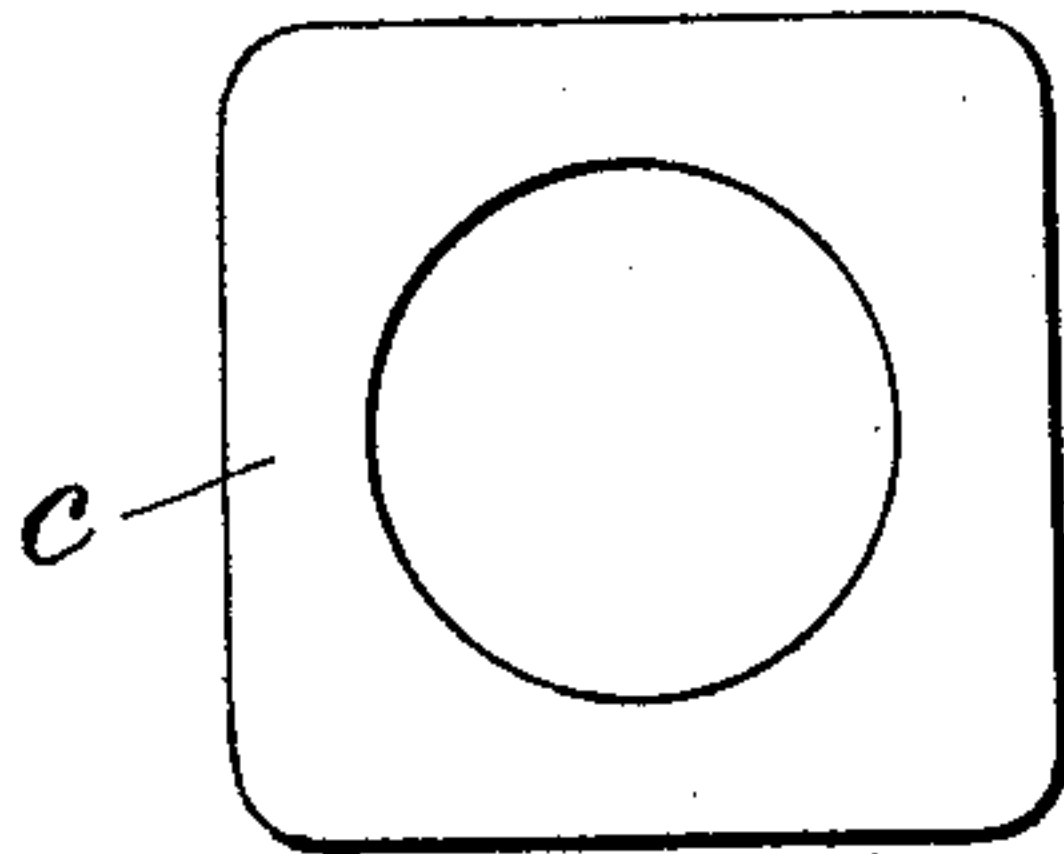


Fig. 7.

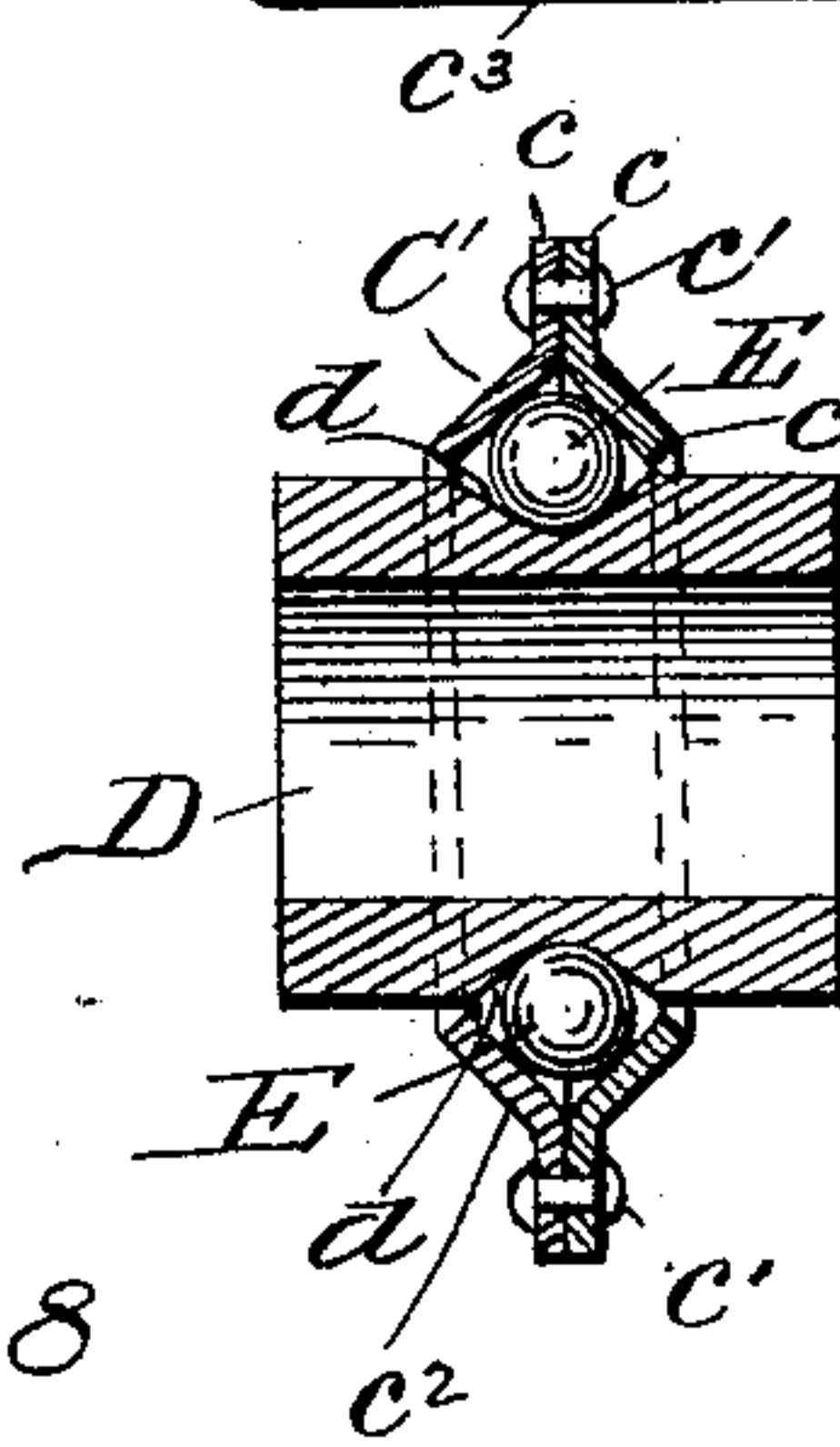
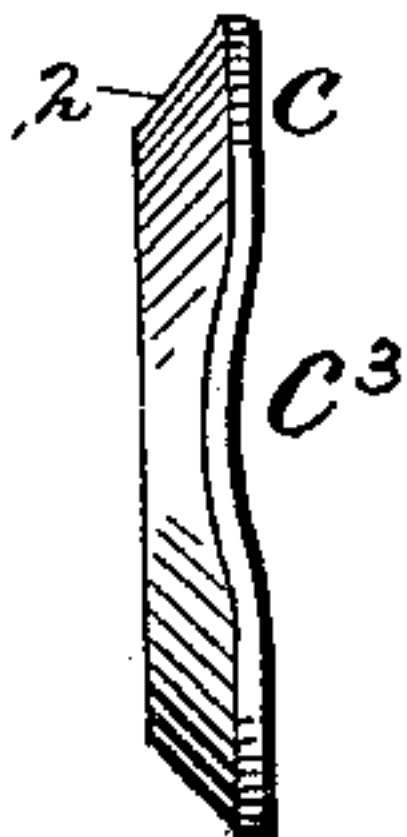


Fig. 8.



Witnesses  
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Inventor  
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# UNITED STATES PATENT OFFICE.

BYRON A. WALKER, OF ERIE, PENNSYLVANIA.

## BEARING.

SPECIFICATION forming part of Letters Patent No. 605,940, dated June 21, 1898.

Application filed January 4, 1896. Serial No. 574,372. (Model.)

*To all whom it may concern:*

Be it known that I, BYRON A. WALKER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Bearings; 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 appertains to make and use the same.

This invention relates to bearings for wringer-rolls; and it consists in certain improvements therein, as will be hereinafter fully described, and pointed out in the claims.

Ball-bearings have been provided for wringer-rolls with varying degrees of success. As heretofore constructed they have been objectionable for several reasons, among which may be stated the tendency of such a bearing thus applied to become fixed on account of rust or dirt and also the tendency to bind by reason of the uneven lateral movement of the ends of the rolls when in use. The object of my invention is to overcome as much as possible these objectionable features in a manner at once simple and effective.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 is a front elevation of a wringer having one of its standards broken away to show my improved bearings. Fig. 2 is a perspective of one of the improved bearings. Fig. 3 is a central longitudinal section thereof. Fig. 4 is a side elevation from the inner side of one of the bearing-box sections. Fig. 5 is a side elevation of one of the bearings with one-half of the box removed and the sleeve in section. Fig. 6 shows a blank form from which the box members are struck up. Fig. 7 is a section taken through the bearing from diagonally-opposite corners, and Fig. 8 is an edge view of one box-section.

C represents the bearings as a whole, and these bearings are located in the usual guideways  $a'$ , formed in the vertical sides or standards A. Between the ends of the tension-bar  $A^2$  and the upper bearings are placed blocks  $a^2$ , which also slide in said guideways.

Each bearing C comprises a sleeve or tube D, in which the roll-shaft is loosely journaled, so as to turn and slide. This sleeve D is provided between its ends with an annular V-

shaped groove  $d$ , which forms one-half of the raceway for the balls E, the other half of the raceway being formed by the annular groove within the bearing-box C'. These boxes C' are each formed in two halves or sections  $c c$ , placed face to face and secured together by rivets or screws  $c'$  at their four corners. Each half-box is formed from the square centrally-apertured blank shown in Fig. 6, which blank is struck up by suitable mechanism so that its inner face will be inclined outwardly, as shown at  $c^2$ , to form one-half of the raceway or annular groove within the box when the two box-sections are secured together. This striking up of the blank will leave the four apertured corners flat and in the same plane, so that when the two box-sections are placed together these corner portions will lie flat against each other. As the concave portion  $c^2$  extends from the central opening in the blank to the middle portions of outer edges of the four sides thereof said portions of the outer edges will also be slightly concaved, as at  $c^3$ , so that when the two box-sections are secured together these concavities  $c^3$  will form openings  $c^4$  in the four marginal edges of the bearing-box. In other words, each box may be said to be formed of two oppositely-flared flat rings having four triangular connecting-ears lying face to face with each pair at diagonally opposite points, the inner faces of the said ears lying in a plane perpendicular to the bore of the rings and beyond the periphery of the rings to prevent them from contacting at points intermediate of said ears, and thus form the openings  $c^4$ .

In the ordinary use of the wringer the axial movement of the roll is effected through the ball-bearing; but should this become foul or ineffective by reason of the peculiar use to which it is put or from other causes the roll will have an operative and effective journal by means of the supplemental bearing formed by the sleeve D.

In the ordinary use of a wringer the upper or loose roll is being constantly tilted by reason of the uneven thicknesses of the material being passed through it. The increased distance between the sides of the frame on a line with the roll in its tilted position necessitates an allowance for end movement either



by the bearing in the guide or by the shaft in the bearing, and while it is desirable that the bearing should move freely in the guide it is preferable to have it so nearly fit the guide as to be supported by it. For this reason it is deemed advisable to accomplish this end movement by a movement of the shaft in its bearing. This cannot be accomplished with the best forms of ball-bearings within themselves. It is, however, accomplished by means of the supplemental bearing shown in combination with one of the desirable forms of ball-bearings.

It has been found very difficult with the peculiar use to which wringers are subjected to form the ball-joint so tight as to exclude the dirt and water. In my construction the bearings are formed with openings  $c^1$ , which while they allow water and dirt to enter also allow a free egress for the substances which find their way in, and so effect the desired result.

What I claim as new is—

1. In a ball-bearing, a bearing-box comprising two centrally-apertured halves secured together face to face and each flared outwardly around its central opening, thereby forming the annular space or raceway for the balls; substantially as described.

2. In a ball-bearing, a bearing-box comprising two centrally-apertured rectangular plates secured together face to face and each

having its central portion flared outwardly concentric with its aperture to form the annular raceway; openings being formed in the marginal edges of the box and leading into said raceway; substantially as described.

3. A bearing comprising a sleeve provided with an annular groove, a box having an internal annular groove coinciding with the sleeve-groove, and balls in the raceway thus formed; the said box being formed of two halves secured together face to face and flared outwardly around their central sleeve-opening; substantially as described.

4. A bearing consisting of an annularly-grooved sleeve, a box having an internal annular groove coinciding with the sleeve-groove, and balls in the raceway thus formed; the said box being formed of two centrally-apertured halves secured together face to face at diagonally opposite points, flared outwardly around their sleeve-openings and spaced apart between their connecting portions to form openings leading into the internal groove or raceway; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BYRON A. WALKER.

Witnesses:

FRANK E. LOWRY,  
A. M. DOLL.