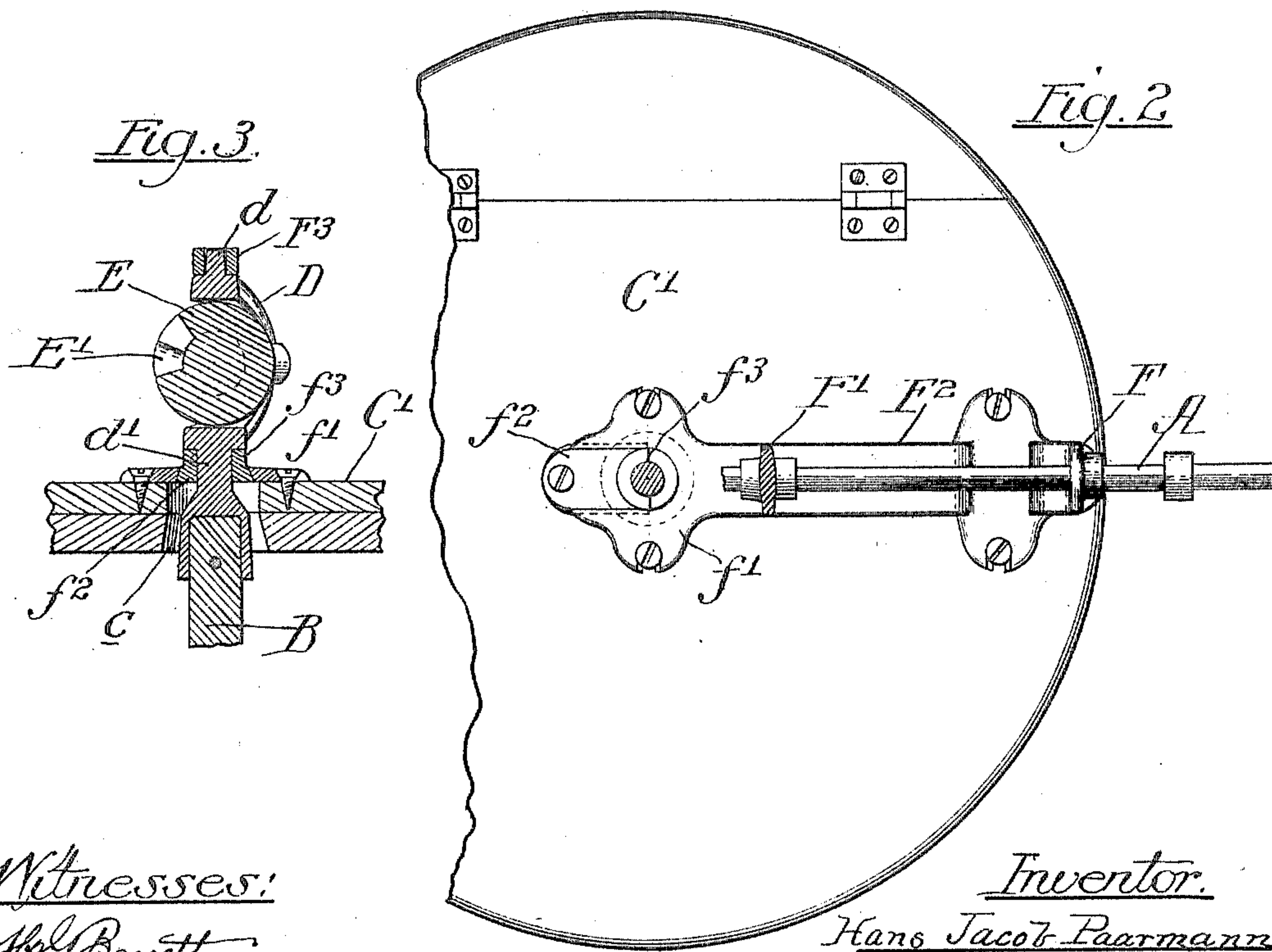
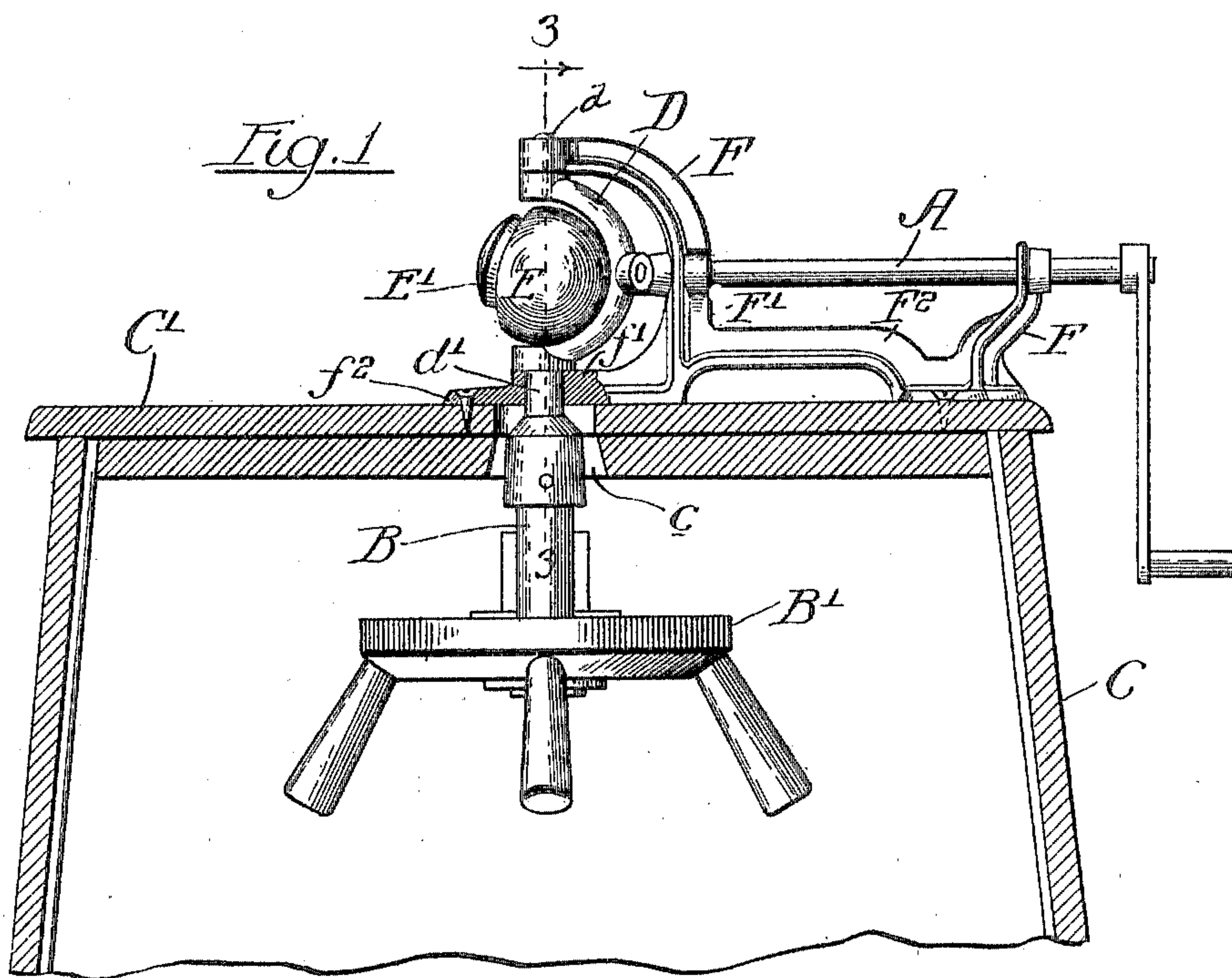


No. 811,868.

PATENTED FEB. 6, 1906.

H. J. PAARMANN.
MECHANICAL MOVEMENT.
APPLICATION FILED DEC. 21, 1903.

2 SHEETS—SHEET 1.



Witnesses:
H. A. Barnett
W. H. Hall

Inventor.
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2 SHEETS—SHEET 2.

Fig. 4.

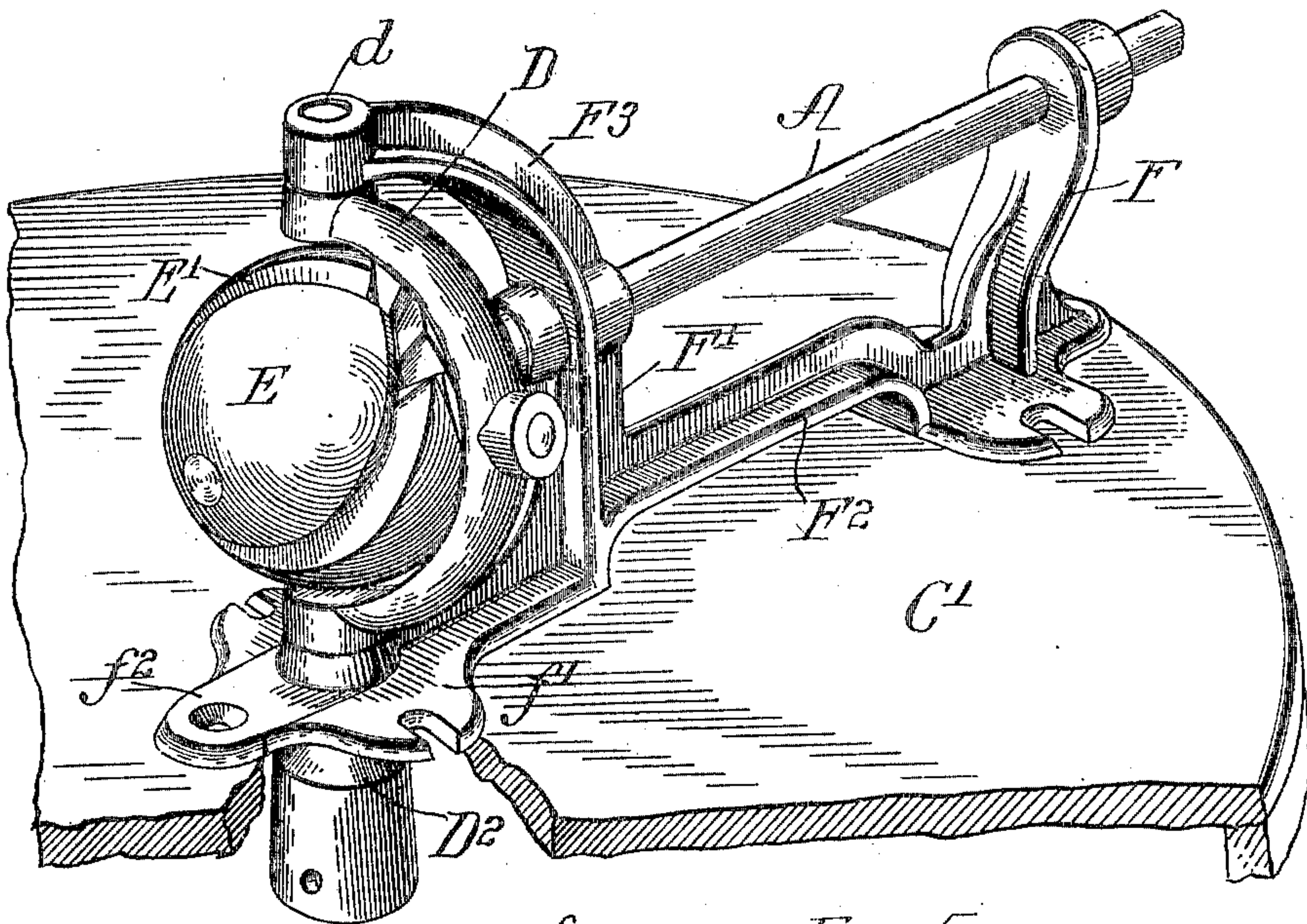
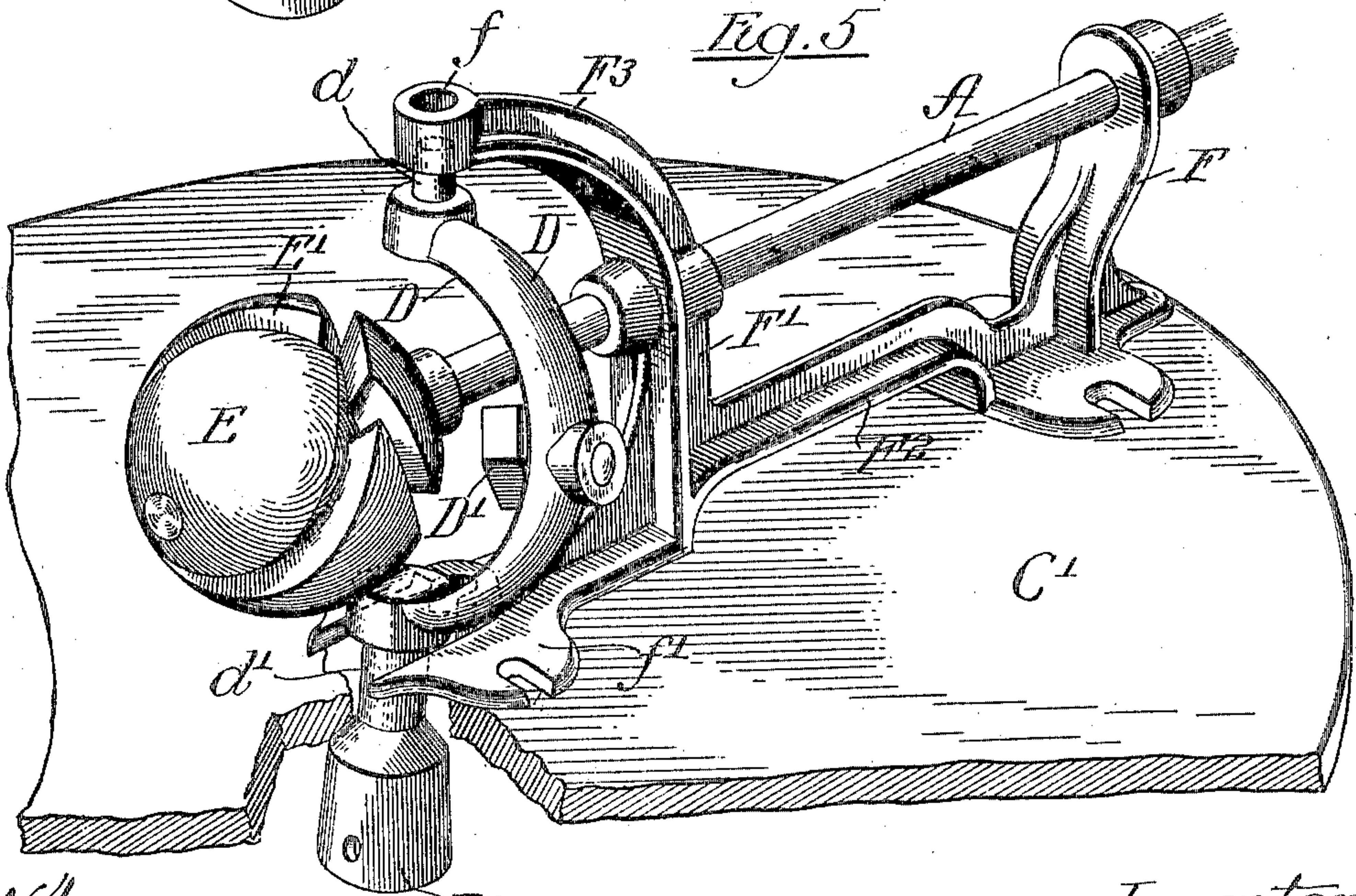


Fig. 5



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UNITED STATES PATENT OFFICE.

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MECHANICAL MOVEMENT.

No. 811,868.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed December 21, 1903. Serial No. 185,952.

To all whom it may concern:

Be it known that I, HANS JACOB PAARMANN, of Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Mechanical Movements; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in mechanical movements of the type shown and described in the prior United States Letters Patent, No. 703,825, dated July 1, 1902. The construction shown and described in said patent embraces an oscillatory shaft and a rotary shaft disposed at right angles to each other, a swinging yoke connected with the oscillatory shaft, and means for swinging said yoke from said rotary shaft embracing a ball or sphere fixed to said rotary shaft and having a peculiarly-shaped groove, which is traversed by a shoe swiveled on the yoke.

The improvements herein shown refer more particularly to the construction of the yoke and the manner of mounting the same in the mechanism and connecting it with the oscillatory shaft. Said improvements have been designed with a view to simplify said bearings and to enable the parts of the device to be readily assembled and dismantled.

The mechanical motion illustrated herein, as in the prior patent before referred to, constitutes the operating mechanism for the rubbing device of a washing-machine, whereby said rubbing device is given an alternate backward and forward partial rotation from a continuously-rotative shaft.

As shown in the drawings, Figure 1 is a vertical section taken through the upper part of a washing-machine, showing the operating mechanism in elevation. Fig. 2 is a view thereof, partly in top plan and partly in horizontal section. Fig. 3 is a vertical section taken on line 3 3 of Fig. 1. Fig. 4 is a perspective view of the operative parts of said mechanical movement, showing a portion of the support therefor. Fig. 5 is a similar view showing the parts in position to remove the swinging yoke.

The essential elements of the mechanical movement are the same as illustrated in the

aforesaid prior patent and consist of a horizontal rotary shaft A; a vertical oscillatory shaft B, disposed at right angles to the shaft A, (constituting in the present instance the shank of the rubber B' of the washing-machine C;) a yoke D, attached to the upper end of said shaft B; a ball E, affixed to the end of the rotary shaft A and provided with a groove E', and a shoe D', having loose connection with said yoke and adapted to traverse said groove. The shaft A is mounted in the vertical arms or standards F F' of a cast-metal frame F², which is carried by a support consisting in the present instance of the lid C' of the washing-machine. The improvements constituting the present invention relate to the construction of the yoke D and the manner of mounting the same in the machine. In the construction shown in the aforesaid prior patent said yoke is provided at its upper end with an aperture adapted to receive a bearing-stud on a supporting-frame of the mechanism and at its lower end with an aperture adapted to receive the upper end of the oscillatory shaft.

In the present instance the yoke D is provided at its upper end with an integral stud d, which engages a vertically-disposed bearing-aperture f in the upper end of a bracket F³, extending upwardly and forwardly from the supporting-frame. The lower end of said yoke is provided with an integral shank D², extending downwardly through an opening c in the lid of the machine and provided at its lower end with a downwardly-opening socket which receives the shaft B of the rubbing device B'. Said shank is provided above said socket-piece with an annular bearing portion d', which is mounted in a split or two-part bearing of the frame F², one part f' of which is shown as made integral with said frame F² and the other part f² of which is made removable. The fixed portion of said two-part bearing extends at both sides of the opening c in the lid or support C' beyond the center of said opening, and the removable part of said bearing has the form of a flat plate, which is slipped between the side parts of said bearing and is held in place by a screw extending therethrough into said lid or support. The side margins of said plate f² are beveled and fit the undercut or beveled inner margins of the side parts of the station-

any portion of the bearing. The inner end of said plate f^2 is provided with a semicylindric recess which opposes a like recess in the fixed part of said bearing, the two constituting a
 5 vertical bearing-aperture, in which is mounted the cylindrical bearing portion of the shank D^2 . The adjacent parts of the split bearing surrounding the bearing-aperture are thickened or provided with flanges f^3 to increase
 10 the vertical length of the bearing, and the shank is provided with an enlargement which rests on said two-part flange f^2 .

The parts are assembled by attaching the bearing-frame for the various parts of the
 15 mechanism, with the shaft A mounted therein, to the lid C' or other support, and the yoke is thereafter mounted in place, being inserted into place from below through the opening into the lid or support C' and between the arms or side parts of the stationary
 20 part of the lower bearing.

Preparatory to the insertion of the yoke in place the ball E is shifted forwardly of its operative position, as shown in Fig. 5, to afford
 25 room to pass the upper end of the yoke past the same. The shoe D' is adjusted in the groove E' of the ball E before the yoke has been shifted into its final position. Thereafter the yoke is forced into its final position
 30 with the stud d engaging its bearing-aperture and the shank-bearing d' engaging the lower split bearing, after which the removable part f^2 of the divided bearing is inserted and fastened in place.

Among the advantages of the construction 35 herein shown are that the mechanism consists of fewer parts and for this reason may be more economically manufactured and more readily assembled, and the construction as a whole is more durable and less likely to be- 40 come out of order than when made of a greater number of parts.

I claim as my invention—

The combination with a rotative shaft provided at its end with a spherical head having 45 on its surface an irregular groove, and a frame in which said shaft has bearing, of an oscillatory yoke which oscillates about an axis at right angles to the axis of said rotative shaft and provided between its ends with a rota- 50 tively-mounted shoe which traverses said groove of the head, said yoke being provided at its upper end with an integral stud, and the frame being provided with a socket engaged by said stud, and the lower end of the 55 yoke being provided with a cylindric bearing adapted to engage a bearing in said frame and provided below said bearing portion with a downwardly-opening socket.

In testimony that I claim the foregoing as 60 my invention I affix my signature, in presence of two witnesses, this 14th day of December, A. D. 1903.

HANS JACOB PAARMANN.

Witnesses:

JNO. BROCKMAN,
 H. G. BRAUNLICH.