

(No Model.)

A. J. CORNEAU.
MECHANICAL MOVEMENT.

No. 569,006.

Patented Oct. 6, 1896.

Fig. 1.

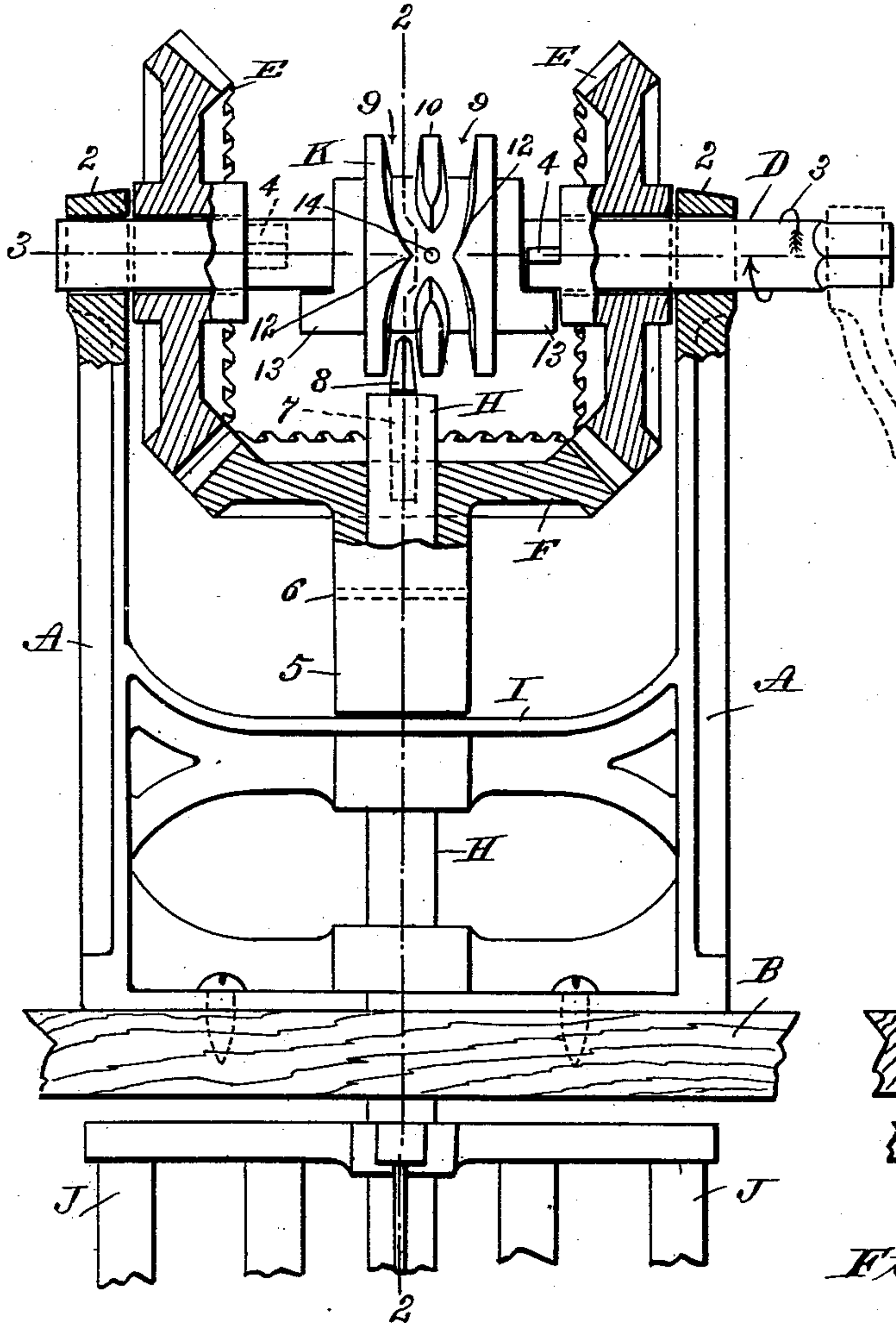


Fig. 2.

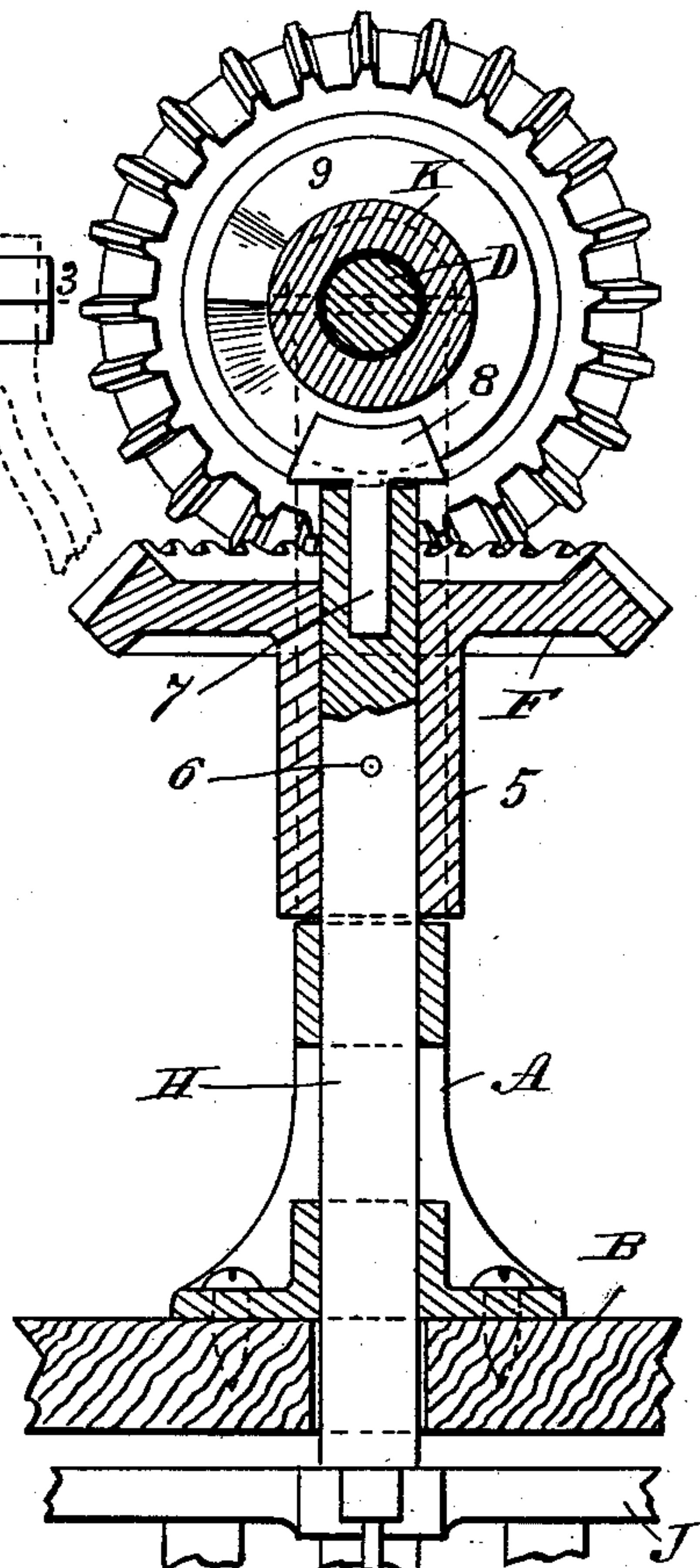


Fig. 3.

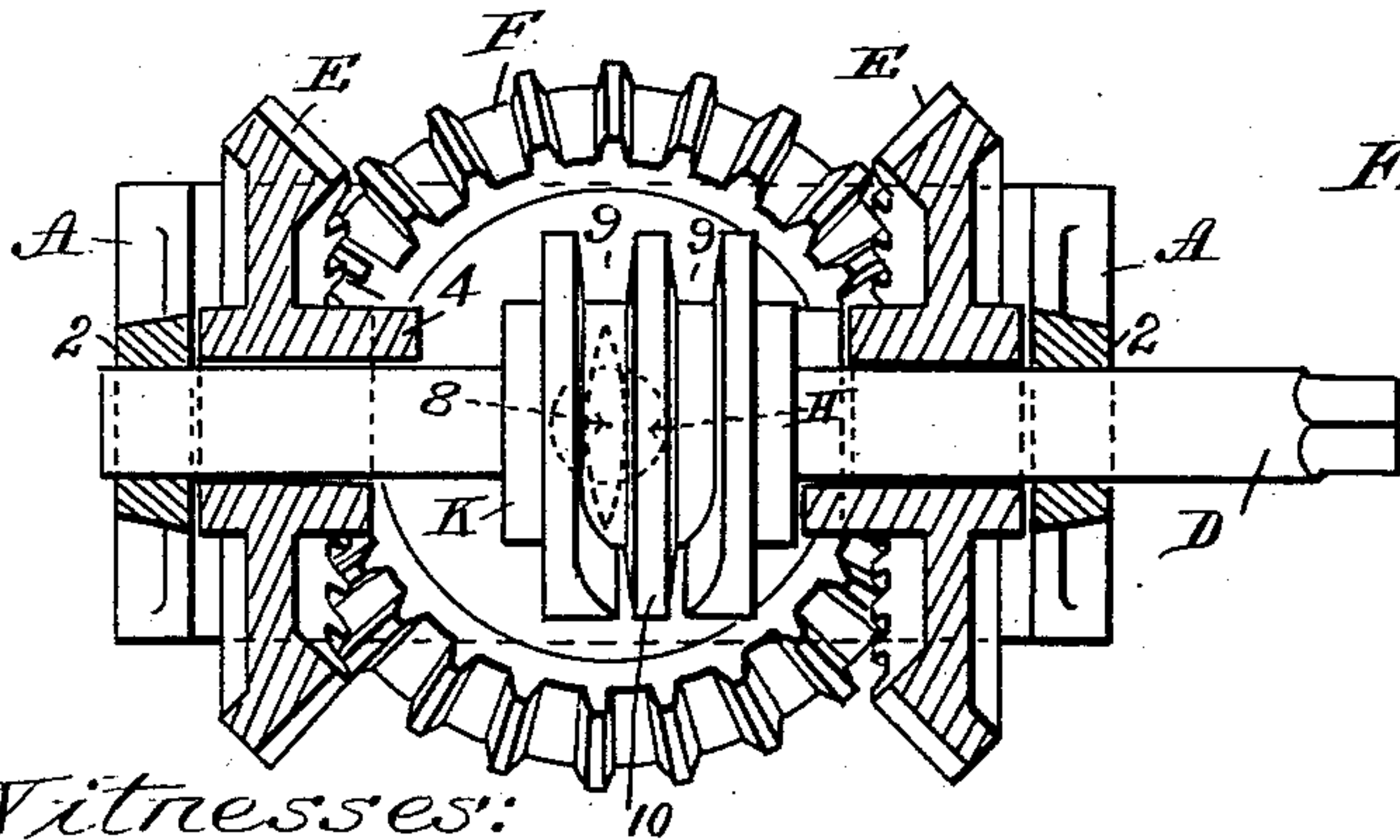


Fig. 4.

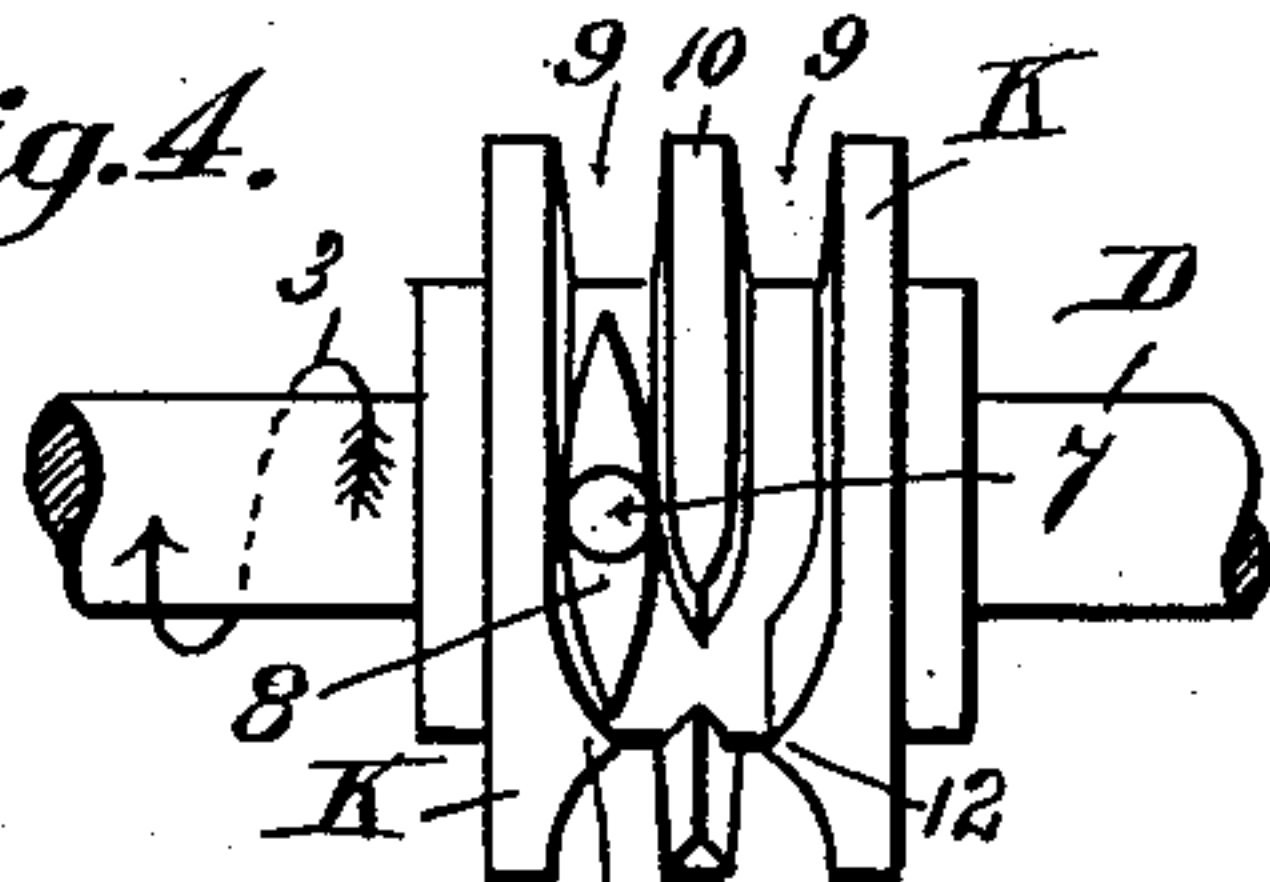
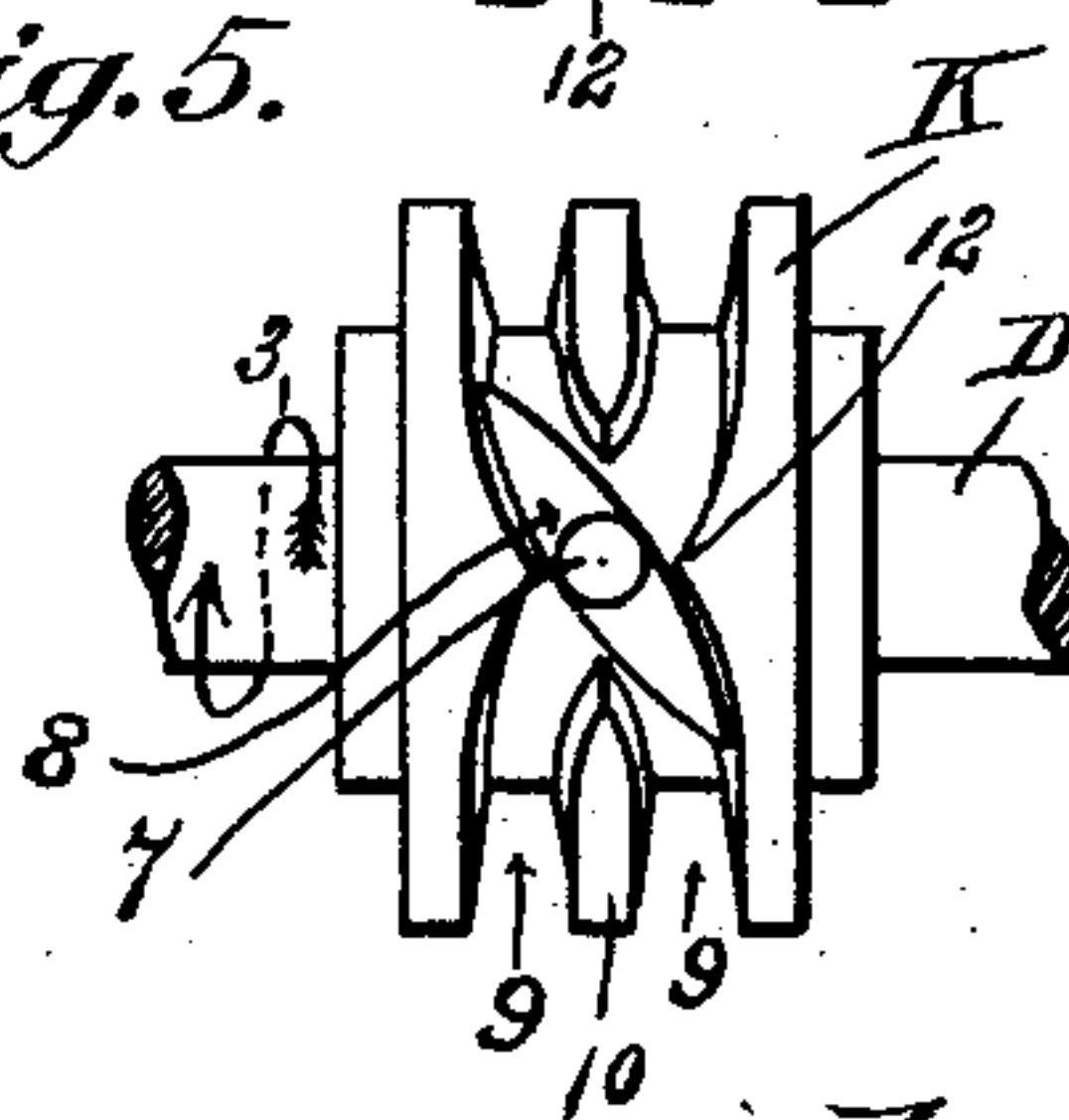


Fig. 5.



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UNITED STATES PATENT OFFICE.

ARMIDAS J. CORNEAU, OF WESTFIELD, MASSACHUSETTS, ASSIGNOR TO
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MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 569,006, dated October 6, 1896.

Application filed February 7, 1896. Serial No. 578,344. (No model.)

To all whom it may concern:

Be it known that I, ARMIDAS J. CORNEAU, a citizen of the United States of America, residing at Westfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Mechanical Movements, of which the following is a specification.

This invention relates to improvements in mechanical movements, and particularly to devices of this class adapted to be used in washing-machines, churns, and similar apparatus for reciprocally rotating the agitator element of such machines.

The object of this invention is to provide improved mechanism for the above-mentioned uses which is effective therefor and which can be constructed economically.

In the drawings forming part of this specification, Figure 1 is a side elevation, partly in section, illustrating the mechanism embodying a mechanical movement constructed in accordance with my invention. Fig. 2 is a vertical section on line 2 2, Fig. 1. Both of said figures illustrate a portion of a base on which the machine stands and a portion of an agitator attached to the reciprocally-rotating shaft of the machine. Fig. 3 is a section on line 3 3, Fig. 1. Figs. 4 and 5 illustrate detail parts which are hereinafter described.

In the drawings, A indicates the frame of the machine. B is the base upon which said frame stands.

D is the driving-shaft of the machine, which may be actuated in any convenient manner. A part of a crank is indicated in dotted lines in Fig. 1 as applied to said shaft D. The said shaft D is supported in suitable bearings 2 in the upper end of the frame A and has a certain degree of free longitudinal motion therein in addition to the rotary motion thereof, which is ordinarily in the direction of the arrow 3 around said shaft in Figs. 1, 4, and 5, but it is immaterial in which direction it is turned. Two beveled gears E E are hung loosely on said driving-shaft D, between the inner sides of said frame A, and on the inner opposite end of each of the hubs of said gears is a clutch projection 4.

A beveled gear F, having a sleeve 5, is fixed on the upper end of a shaft H by a pin 6, pass-

ing through said sleeve and shaft, or by other suitable means. The said shaft H and the gear F, which is secured thereon, are supported in a vertical position and in engagement with the said gears E E by the cross-bar I of the frame A or other suitable fixed part of the frame against which the lower end of said sleeve 5 rests. The said shaft H, when the machine is employed for rotating the agitator element J of a washing or similar machine, has the said element fixed to the lower end of said shaft under the base B thereof in substantially the positions shown in Figs. 1 and 2. The upper extremity of said shaft H is centrally perforated to receive the shank 7 of an oscillating clutch-shipper 8, which has tapering extremities, as shown, and has a freely-oscillating movement which is induced by the rotary movement of said clutch, as below described. Figs. 4 and 5 are plan views of the said clutch with which the said shipping-blade 8 engages, said views showing said blade in different positions in the groove or grooves of said clutch, as though one were looking from the end of the shaft H upwardly at the clutch when said blade is engaged therewith. The said clutch, which is indicated by K, is provided with two annular grooves 9 9, divided by an annular rib 10. Each of the said annular grooves 9 has a cam projection 12 thereon, which cams are located opposite each other, as clearly shown in Figs. 1 and 5, and the said rib 10 is partly broken away opposite said cams, and the extremities of said rib at that point are beveled off or pointed, as shown, for proper guiding engagement with the ends of said clutch-shipper 8. The said clutch K is rigidly fixed on the said driving-shaft D by a pin 14 passing through it and said shaft, as shown in Fig. 1, or by other suitable means, and each end of said clutch has a projection 13 thereon (see Fig. 1) for engagement with the said clutch projections 4 on the hub of each of said beveled gears E. The purpose, in said clutch K, of the said annular grooves with the cams 12 on the opposite sides thereof and of the said broken annular rib 10 is to provide a device for cooperation with the said clutch-shipper 8, whereby, by the engagement of the latter with the grooves and cams of said clutch K and the

said points of the rib 10, the said clutch and the driving-shaft D shall be, once in a revolution, moved longitudinally to the right and the left between the beveled gears E E, where-
 5 by the said projections 13 on the ends of said clutch K become engaged, alternately, with one of the clutch projections on said gears E, and thus actuate each of the latter to rotate, alternately, one revolution in opposite direc-
 10 tions, whereby, through said gear F, the agitator J, fixed to the lower end of said shaft H, is given a like reciprocatory motion through the said engagement of the gears E E and F.

Referring to Fig. 1 and the position therein
 15 illustrated of the clutch K with one of its projections 13 in engagement with the projection 4 on the hub of the gear E at the right in that figure and to the position of the shipper 8 in one of said annular grooves, if now
 20 the driving-shaft D be turned to rotate the clutch K so that one of its cams 12 approaches said blade the cam 12 at the left in said figure will strike the end of the shipper 8 and will turn the shipper in a direction which
 25 shall cause it to run into the opposite groove 9 in the manner indicated in Fig. 5, and such engagement of the clutch with said shipper causes said clutch and shaft D to slide in its bearing and engage the projection 13 thereon
 30 with a projection on the gear E at the left in said figure and to disengage the clutch K from the gear at the right, and so on every revolution of the driving-shaft and said clutch, whereby the above-mentioned alternate ac-
 35 tion of shaft H and the agitator J is produced.

If preferred, clutch K may be loosely splined on shaft D and slide thereon and the said shaft be arranged to rotate without endwise movement.

40 The above-described mechanism for effecting the said reciprocatory movement of the said shaft H and the agitator is of economical construction and effective for the above-named and other similar purposes for which
 45 it is constructed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a mechanical movement, the herein-described means for reciprocally rotating 50 the agitator element of washing-machines, churns, and similar apparatus, comprising a suitably-supported driving-shaft having a free longitudinal movement in its bearings, bevel-gears face to face, loose on said shaft 55 each of said gears having a clutch projection on the inner end of its hub, a shaft H, supported in the frame of the machine vertical to the axis of said driving-shaft, and having a cylindrical perforation in its end, a pinion 60 F, fixed on said shaft H, engaging with the gears on said driving-shaft, combined with an oscillating clutch-shipper supported on the extremity of said shaft H, and a clutch fixed on said driving-shaft having grooves with 65 which said oscillating shipper engages alternately, and means on said clutch for engagement with said shipper, whereby said clutch is alternately engaged with said face-to-face bevel-gears, substantially as set forth. 70

2. In a mechanical movement, the herein-described means for reciprocally rotating the agitator element of washing-machines, churns, and similar apparatus, comprising a 75 suitably-supported driving-shaft having a free longitudinal movement in its bearings, bevel-gears face to face, loose on said shaft, each of said gears having a clutch projection on the inner end of its hub, a shaft H, sup- 80 ported in the frame of the machine vertical to the axis of said driving-shaft, and having a cylindrical perforation in its end, a pinion F, fixed on said shaft H, engaging with the gears on said driving-shaft, combined with an oscillating clutch-shipper supported on the 85 extremity of said shaft H, the clutch K, fixed on said driving-shaft for engagement with said clutch-shipper, having two annular grooves, a cam 12, on one wall of each groove, and the rib 10, broken away opposite said 90 cams, substantially as set forth.

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