No. 712,276. Patented Oct. 28, 1902.

H. EDMONDS.

MECHANICAL MOVEMENT.

(Application filed June 30, 1902.)

(No Model.)

Fig. 1.

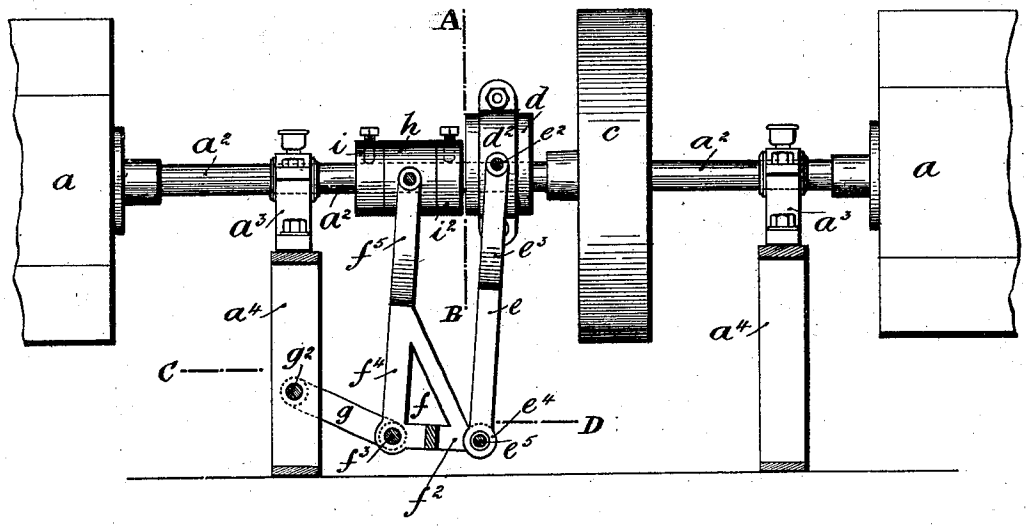


Fig. 2.

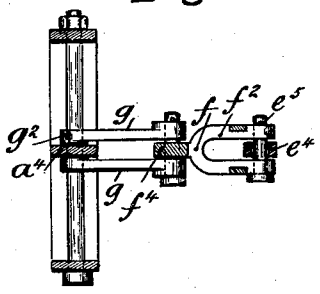


Fig. 3.

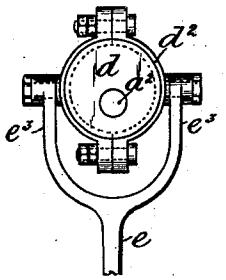
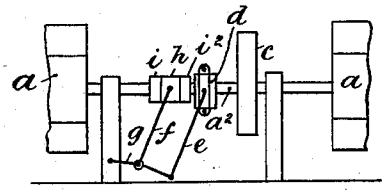


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY EDMONDS, OF BIRMINGHAM, ENGLAND.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 712,276, dated October 28, 1902.

Application filed June 30, 1902. Serial No. 113,879. (No model.)

To all whom it may concern:

Be it known that I, HENRY EDMONDS, manufacturer, a subject of the King of Great Britain, residing at 60 Tenby street, north, in the city of Birmingham, England, have invented certain new and useful Improvements in Mechanical Movements, of which the following is a specification.

This invention consists of the hereinafter-described improved mechanism for imparting reciprocating or sliding movements to rotating shafts, spindles, and such like from their own rotation, such mechanism being particularly applicable to the shafts of shaking or rumbling barrels and butter-making churns.

In the accompanying sheet of drawings the invention is illustrated as applied to a shaking-barrel shaft, and the mechanism and its working will be hereinafter clearly described in connection therewith.

Figure 1 of the drawings is a side elevation showing an arrangement of the improved mechanism for two shaking-barrels worked off one shaft, the mechanism being particularly suitable for heavy work. Figs. 2 and 3 are detail sections of parts of the mechanism, Fig. 1, upon the lines A B and C D. A diagram is shown in Fig. 4 of the mechanism, Fig. 1, in another position during working.

In Figs. 1 to 4, a a are the shaking or rumbling barrels, and a^2 the shaft carrying them, the said shaft being suitably supported in bearings to rotate and slide. Parts of the bearings are represented by the plumber-blocks a^3 a^3 on fixed frames a^4 a^4, the other bearing parts not being shown in the drawings. The shaft a^2 is rotated by the belt-pulley c or other device rigidly fixed upon it. Fixed upon the shaft a^2, between the blocks a^3 a^3, is an eccentric or an eccentrically-mounted disk d, over or around which a detachable strap d^2 freely works. To this strap, at e^2, is jointedly connected the forked ends e^3 e^3 of a connecting-link e, whose other end e^4 is coupled to the one arm f^2 of a bell-crank lever f, hereinafter defined, in such a manner that the said other end can, in addition to turning upon its center pin e^5, wabble or have an amount of free play laterally. The bell-crank lever f, which is practically a strongly-built rocking frame, is jointedly connected at f^3 to a pair of parallel-swinging links g, fulcrumed at g^2 to one of the stationary frames a^4, the said swinging links giving to the bell-crank lever or frame f a shifting fulcrum or joint for the purpose hereinafter defined. The one arm f^2, hereinbefore mentioned, of the rocking frame f is forked, as shown in Fig. 2, and serves to effectively couple the link e to the said frame, while the other arm f^4, which is also forked at its end f^5, jointedly and effectively connects the said swinging frame f with a sleeve-like piece or bush h, freely encircling the shaft a^2 between two thrust or abutment collars i i^2, fixed immovable upon the said shaft, the said collars rotating and moving with the shaft at all times, while the bush or sleeve-like piece h remains stationary in respect of rotation.

It will be clearly understood by a thoughtful glance of the mechanism described with reference to Figs. 1 to 4 that the eccentric or eccentrically-mounted disk d simply gives to the link e an up-and-down movement and that the said link imparts this movement to the rocking frame f to oscillate or rock the said frame, this rocking or oscillation having the effect of sliding the shaft a^2, with the parts it carries, to and fro within the plumber-blocks a^3 a^3 and other bearings, (not shown,) it being understood that the belt-pulleys or other part c, from which the whole movement of the shaft a^2 is obtained, slides along with the said shaft. A comparison of the position of the parts in Fig. 1 and in the diagram Fig. 4 will show that in the first case the shaft, with the shaking-barrels upon it, has been slid from right to left and in the second case from left to right. The swinging links g in the rocking movement of the frame f compensate for the arc through which the frame moves; but this compensation could be otherwise obtained and the fulcrum of the link made on a part of the stationary frame of the shaking-machine. The throw or amount of to-and-fro reciprocation of the shaft a^2 can be increased or decreased by making the joint e^5 of the link e adjustable along the arm f^2 of the frame f, the length of the said arm being longer than shown in Fig. 1 to admit of this.

The improved mechanism can be applied with little modification in the fitting to all

shafts and spindles which are themselves the parts rotated and requiring reciprocation—as, for instance, the shafts or spindles of churns for butter-making—the essential features of the movement being the simple up-and-down movement of the link *e* from the eccentric crank or the like to rock the swinging frame *f*.

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

1. In a mechanism of the character specified, the combination of a shaft, means for rotating said shaft, a link, means operated by said shaft for imparting a reciprocating movement to said link, a rocking frame connected to said link, a movable fulcrum for said rocking frame, and means for imparting the movement of said rocking frame to said shaft.

2. In a mechanism of the character specified, the combination of a slidably-mounted shaft, means for rotating said shaft, an eccentric on said shaft, a link operated by said eccentric, a rocking frame pivotally connected to said link, a movable fulcrum for said rocking frame, and means for imparting the movement of said rocking frame to said shaft.

3. In a mechanism of the character specified, the combination of a slidably-mounted shaft, a plurality of supports for said shafts, means for rotating said shaft, an eccentric on said shaft, a link operated by said eccentric, a rocking frame pivotally connected to said link, a link connected to one of said shaft-supports and serving as a movable fulcrum for said rocking frame, a loose sleeve on said shaft, means for preventing longitudinal movement of said sleeve on said shaft, and a connection between said rocking frame and said loose sleeve.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY EDMONDS.

Witnesses:
GEO. FUERY,
HARRY DAVIS.