W. C. KELLY.

MECHANICAL MOVEMENT.

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1,119,965. Patented Dec. 8, 1914.

Fig. 1.

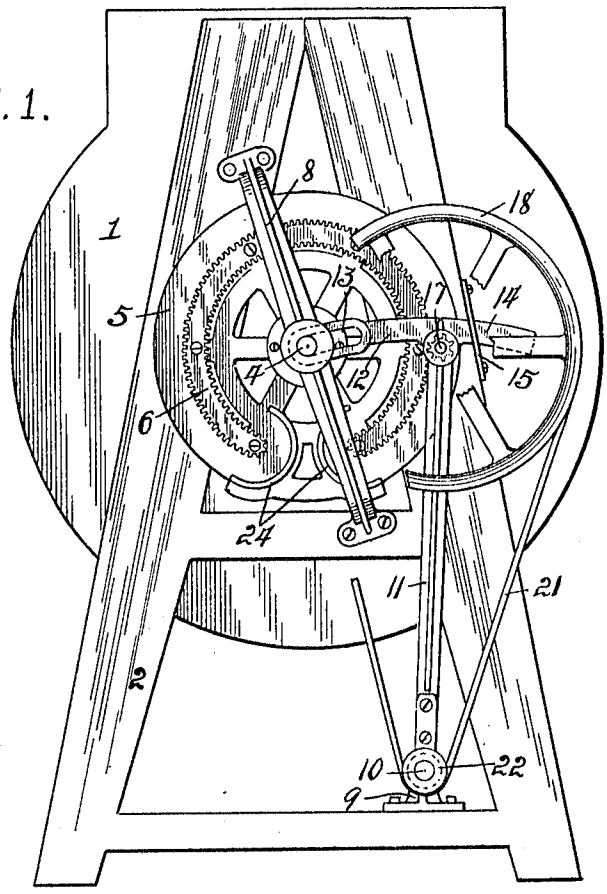


Fig. 2.

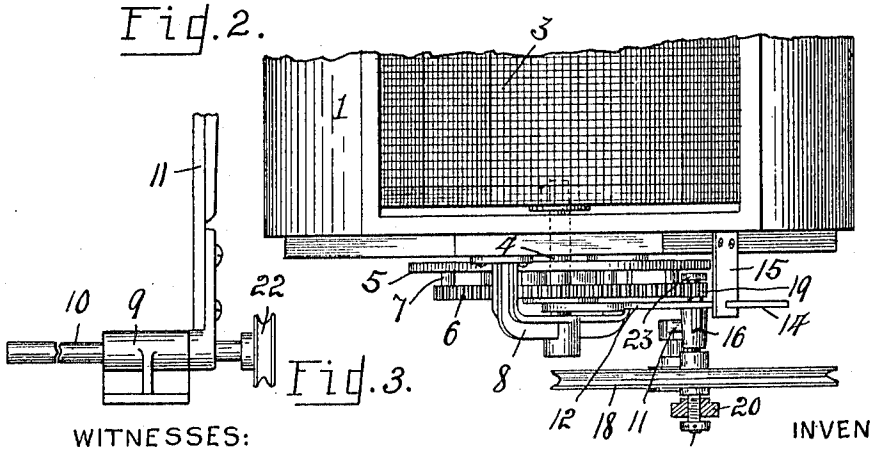


Fig. 3.

WITNESSES:

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MECHANICAL MOVEMENT.

1,119,965. Specification of Letters Patent. Patented Dec. 8, 1914.

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To all whom it may concern:

Be it known that I, WALLACE C. KELLY, a citizen of the United States, and a resident of Hastings, in the county of Barry and State of Michigan, have invented a certain new and useful Mechanical Movement; 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to means for imparting rotary reciprocatory or alternating movements to an element from a continuously rotating element, and is particularly designed for use in connection with washing machines, but is not restricted to such use as it may be used in any connection for which it may be adapted or appropriate.

The object of my invention is the provision of an improved means of the character described, which is simple and efficient in its construction, and provided with a rocking belt-driven drive-member for the rotary reciprocatory element, the rocking arc of which member is struck from the axis of the belt-driving part, thus maintaining the tension of the belt uniform during the rocking movements of the member driven thereby.

Further objects and advantages of the invention will be apparent from the following detailed description.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is an end elevation of a washing machine embodying the invention with parts broken away. Fig. 2 is a top view of the end portion thereof embodying the invention, and Fig. 3 is a detail of a part of the invention.

Referring to the drawings, 1 designates the barrel or housing of a rotary washing machine, and 2 an end supporting standard thereof. An agitating element 3 is mounted for rotary movements in the barrel 1, being carried at its ends by trunnions or short shafts 4, only one being shown, which shafts are mounted in suitable bearings provided in the respective ends of the barrel.

One of the shafts 4 projects without the adjacent end of the barrel 1 and fixedly carries a wheel or disk member 5, and to the outer side of this wheel, in concentric relation to its axis, is fixed a mangle-rack 6, such rack, in the present instance, being spaced from the wheel by stud members 7 by which it is carried. The shaft 4 carrying the wheel 5 is journaled at its outer end without the wheel in a bearing-yoke 8, which is disposed diametrically of the wheel, and has its ends secured to the barrel end without the periphery of the wheel.

Mounted, in the present instance, in one or more suitable bearings 9 carried by one or both of the end standards is a drive-shaft 10, which extends in parallel relation to the shaft 4 and may constitute the motor shaft of the machine, or be connected in any suitable or convenient manner to a source of power, as desired. A standard 11, in the present instance of T-form, is loosely carried at its lower end by the shaft 10 and rises therefrom at the end of the machine at which the mangle-rack is disposed, but preferably without the plane of such rack. The arm 12 of the standard extends toward the shaft 4 and is provided with an arcuate slot 13 for loosely receiving such shaft between the yoke 8 and mangle-rack, the slot 13 being struck from the axis of the shaft 10 to permit the standard 11 to have free limited rocking movements transversely of the shaft 4. The other arm 14 of the standard is of arcuate form with the shaft 10 at its axis and works freely through a registering opening in a guide plate 15, which projects from the adjacent end of the barrel.

The standard 11 is provided adjacent to its upper end with a bearing 16 in which a shaft 17 is loosely mounted. This shaft is parallel to the shaft 4 and carries a loose belt-pulley 18 at the outer end of the bearing and a fixed pinion 19 at the inner end of the bearing, with the pinion in mesh with the mangle-rack 6. A clutch member 20 for the pulley 18 is threaded on the outer end of the shaft 17 to adapt it to be turned into or out of frictional clutch engagement with the adjacent end of the pulley, whereby the pulley may be permitted to turn loosely on the shaft or to be secured thereto for driving purposes. It will of course be

apparent that any other suitable form of clutch may be used if desired, the present form being preferably employed due to its simplicity of construction and action.

The pulley 18, which, in the present instance, is of the peripherally grooved type, is connected by a belt 21 to a small drive pulley 22 on the shaft 10. It will be understood that the term "belt" as used herein has reference broadly to any suitable flexible driving connection between the members 22 and 18, which members may be of pulley, sprocket, or other form as desired. It is evident that the belt connection 21 between the members 18 and 22 will remain at uniform tension during a rocking of the member 18 about the axis of the member 22. The rocking of the standard 11 takes place upon a transverse movement of the pinion 19 around the respective ends of the mangle-rack 6 as the pinion travels from the inner to the outer series of teeth thereon, and vice versa, and such movement is caused by a guide roll 23 on the inner end of the shaft 17 coacting with segmental guide plates 24 at the respective ends of the rack in a manner well understood in the art.

It is evident that in the operation of my improved mechanism the driving of the shaft 17 will cause the pinion 19 to drive the wheel through the medium of the mangle-rack 6 and to travel first around the outer and then the inner peripheral surfaces of such rack and that the standard 11 carrying the shaft 17 will be rocked as the pinion moves from one surface to the other of the rack.

I wish it understood that my invention is not limited to any particular construction or arrangement of the parts except in so far as such limitations are specified in the claims.

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

1. In combination, a driven element, a mangle-rack carried by said element, a drive shaft, a T-standard carried for rocking movements by said shaft, separate means coacting with the standard arms to guide the rocking movements of the standard, a shaft carried by the free end portion of the standard and having driving connection with said mangle-rack, and driving connection between said shafts.

2. In combination, a driven element, a mangle-rack carried thereby, a drive shaft, a standard carried by the shaft for rocking movements relative thereto, said standard having guide arms projecting therefrom, means coacting with said arms to limit and guide the rocking movements of the standard, a shaft carried by the standard for rocking movements therewith, a pinion carried by said latter shaft in mesh with the mangle-rack, means for controlling the movements of the standard to move the pinion from one surface to another of the mangle-rack, pulleys carried by the respective shafts, and a belt connecting said pulleys.

3. In combination, a driven element, a mangle-rack carried thereby, a drive shaft, a standard carried by the shaft for rocking movements relative thereto, said standard having guide arms projecting therefrom, means coacting with said arms to limit and guide the rocking movements of the standard, a shaft carried by the standard for rocking movements therewith, a pinion carried by said latter shaft in mesh with the mangle-rack, means for controlling the movements of the standard to move the pinion from one surface to another of the mangle-rack, a pulley loose on the rocking shaft, a clutch operable to engage and release said pulley and shaft, a pulley carried by the drive shaft, and a belt connecting said pulleys.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

WALLACE C. KELLY.

Witnesses:
S. T. KLOTZ,
F. E. AUL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."