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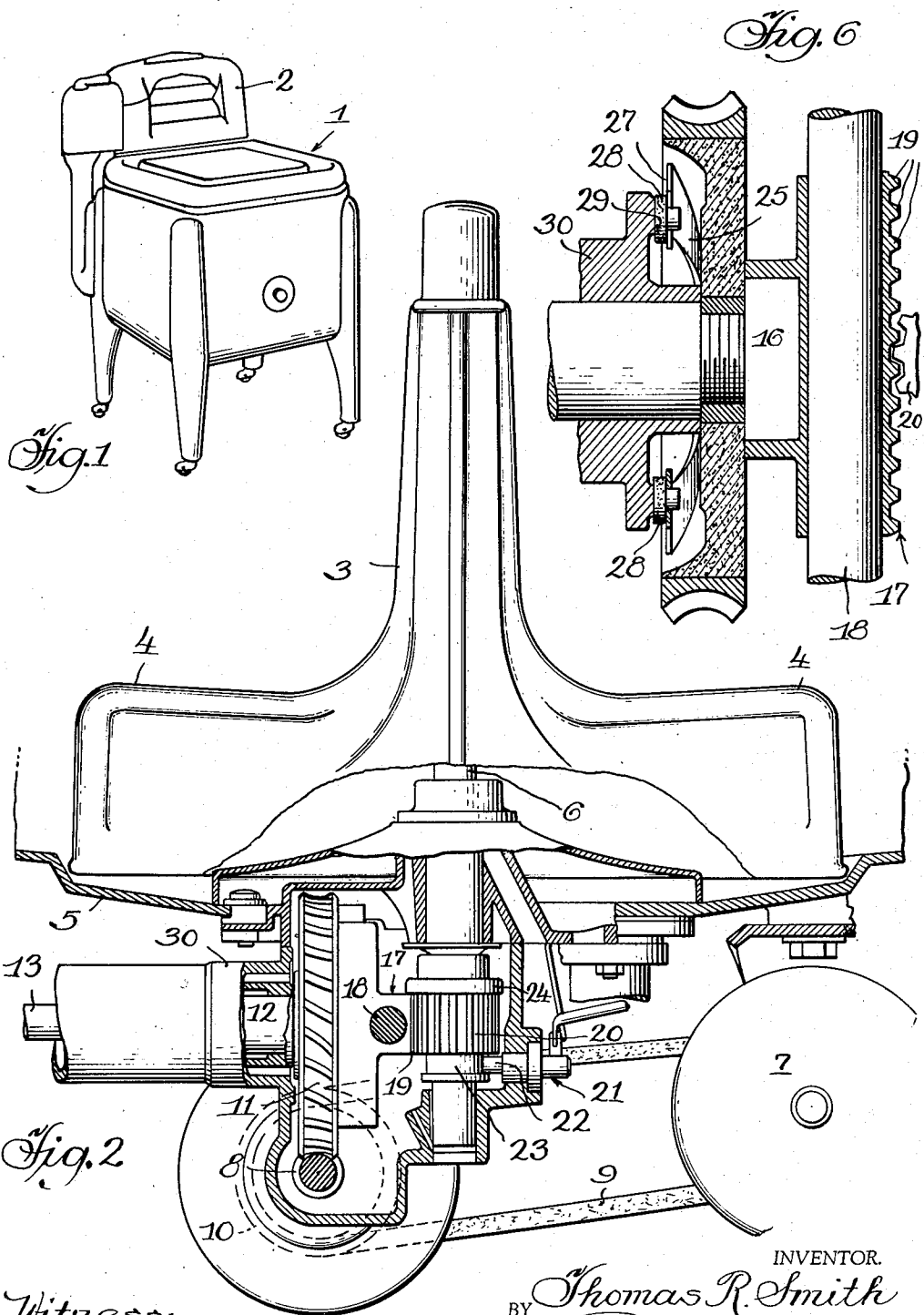
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2,294,516

SILENCER BRAKE FOR WASHING MACHINE DRIVES

Filed July 29, 1940

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

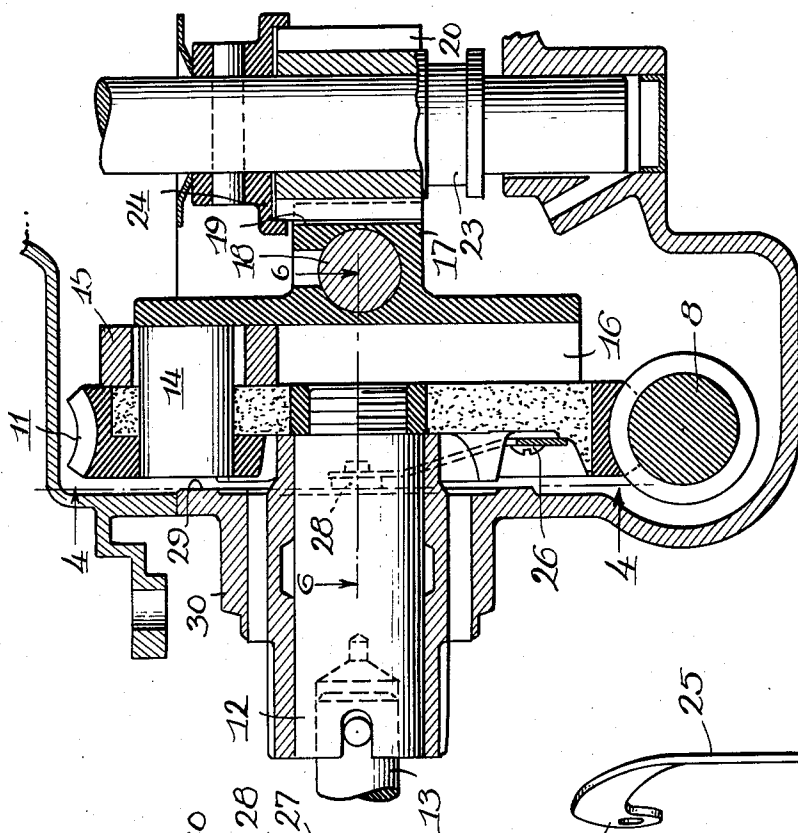


Fig. 3

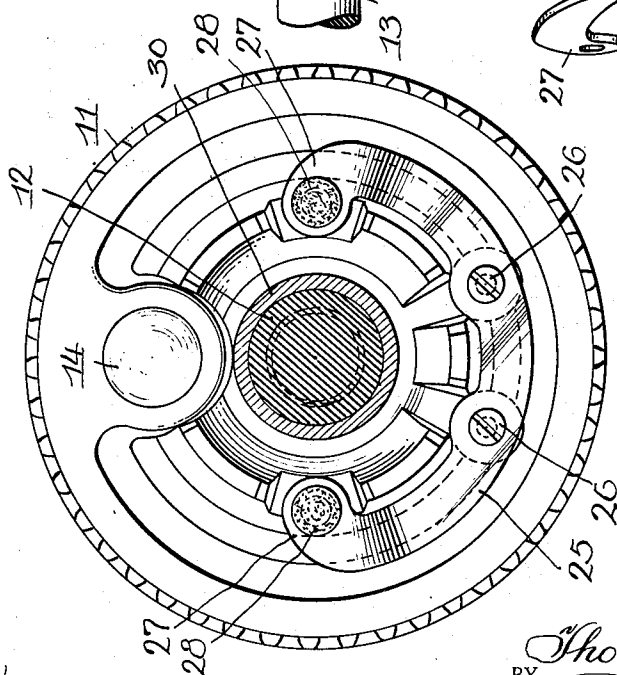


Fig. 4

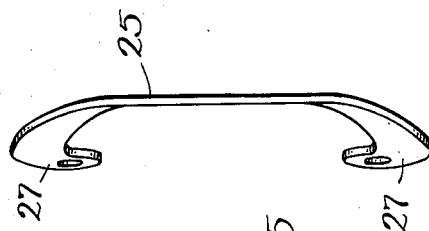


Fig. 5

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UNITED STATES PATENT OFFICE

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SILENCER BRAKE FOR WASHING MACHINE DRIVES

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2 Claims. (Cl. 74-78)

The present invention relates to a silencer construction and more particularly to a novel silencer brake for a washing machine drive. Washing machines, particularly of the agitator type having an oscillating shaft for operating the agitator, have or quickly develop a click or knock due to backlash when the agitator overruns, caused by the inertia of the clothes and/or water. In an endeavor to eliminate this condition, various forms of braking or damping devices have been proposed. However, these prior devices have proven unsuccessful and ineffective to produce the results desired.

The novel invention disclosed in the present application provides a most effective stabilizing and silencing brake associated with a worm and worm wheel drive in such manner as to eliminate knock between these members due to backlash. In the novel illustrative embodiment, the silencer brake is in the form of a leaf spring carried by the worm wheel or gear and provided with shoes creating a resistance to rotation by having a frictional, wiping contact with the adjacent housing or gear case. In the disclosed embodiment, the spring also exerts pressure between the worm wheel and rack so as to prevent this worm wheel from over-running.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

The invention further resides in the construction, combination and arrangement of parts illustrated in the accompanying drawings, and while I have shown therein a preferred embodiment, it is to be understood that the same is susceptible of modification and change, and comprehends other details, arrangements of parts, features and constructions without departing from the spirit of the invention.

In the drawings:

Fig. 1 is a view in perspective of a washing machine of the agitator type.

Fig. 2 is an enlarged fragmentary view of the agitator and drive mechanism therefor.

Fig. 3 is a view in vertical cross section through the drive mechanism.

Fig. 4 is a view in vertical cross section taken on the line 4-4 of Fig. 3.

Fig. 5 is a view in end elevation of the leaf spring.

Fig. 6 is a view in horizontal cross section taken on the line 6-6 of Fig. 3.

Referring more particularly to the novel illustrative embodiment shown in the drawings, Fig. 1 discloses a washing machine 1 of the agitator type having a wringer 2. An agitator 3 of any desired shape and construction is provided with a plurality of spaced blades or water impelling vanes 4 for vigorously impelling the washing fluid and clothes carried thereby around the interior of the tub 5. In order to oscillate or alternately rotate the agitator through a desired arc and at a speed sufficient to carry the clothes around in the washing fluid, the agitator shaft 6 is connected to a suitable drive mechanism. This drive mechanism is more particularly shown in Figs. 2, 3 and 6 and comprises a motor 7 or other source of motive power for rotating a worm 8 through a belt or the like 9 and pulley 10 keyed to the worm shaft. The worm is maintained in meshing relation with a worm wheel 11 secured or threaded upon a stud shaft 12 which continuously rotates a shaft 13 coupled thereto for driving the wringer rolls.

In order to oscillate the agitator shaft 6, the worm wheel or gear 11 is provided with an eccentric pin 14 over which is slipped a needle bearing and roller 15 operating in a vertical slot 16 in the rear of a rack 17 adapted to be driven back and forth or reciprocated upon a fixed rod 18. The rack teeth 19 are in meshing engagement with and drive the agitator pinion 20 mounted upon the agitator shaft. This pinion is mounted in such manner that it is free to turn or slide, independent of the movement of the agitator shaft. A shifter 21 is provided with an eccentric pin or cam 22 seating in an annular slot 23 in the lower end of the pinion 20 so that this pinion may be readily raised or lowered by the operator, and when raised, moves into clutching engagement with a clutch 24 pinned to the agitator shaft.

The novel silencer brake comprises a leaf spring 25 bolted or otherwise attached at 26 to the worm wheel 6. At its outer and rearwardly projecting ends 27, the substantially U-shaped spring carries friction shoes 28 bearing against a relatively smooth or machined annular surface 29 on the gear case 30 and thereby forcing the worm wheel against the rack 17 and slot 16.

It will be appreciated from the above description and the disclosure in the drawings that the invention comprehends a most efficient silencer brake in which the frictional resistance to rotation created by the brake shoes with their wiping contact on the gear case, as well as the pressure this spring exerts between the worm wheel and

rack, prevents the worm gear from over-running.

Having thus disclosed the invention, I claim:

1. In a drive mechanism for oscillating a driven shaft and including a continuously rotating member and a rack associated with said driven shaft and eccentrically connected to said member for transforming the continuous rotation of said member into a reciprocating motion, the combination of a housing for said drive mechanism and a silencer brake comprising a U-shaped leaf spring mounted on and rotatable with said member, and friction shoes carried by the ends of said spring and bearing against an end wall of the housing for resisting rotation of said member and preventing it from over-running.

2. In a washing machine drive mechanism including a gear case enclosing a rotating member, a rack eccentrically connected to said member for transforming the rotation of said member into a reciprocating motion and an oscillating shaft driven by said rack, the combination with said rotating member of a silencer brake comprising a U-shaped leaf spring mounted on said rotating member and provided with spaced friction shoes in continuous frictional contact with the gear case to resist rotation of said rotating member to prevent it from over-running.

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