

N. HARDIN.
 WASHING MACHINE GEARING.
 APPLICATION FILED JULY 28, 1910.

986,283.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.

FIG. 2

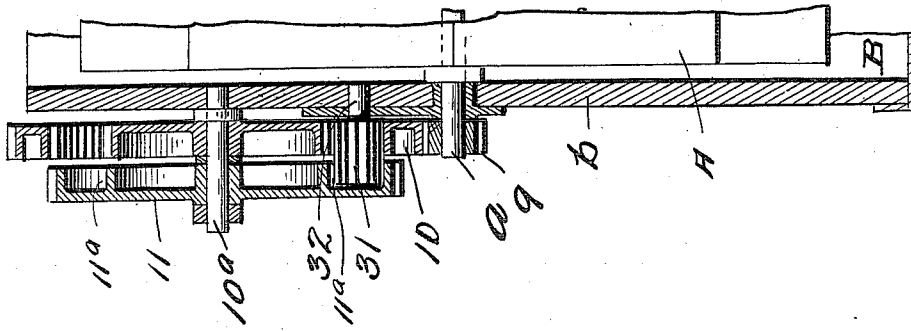
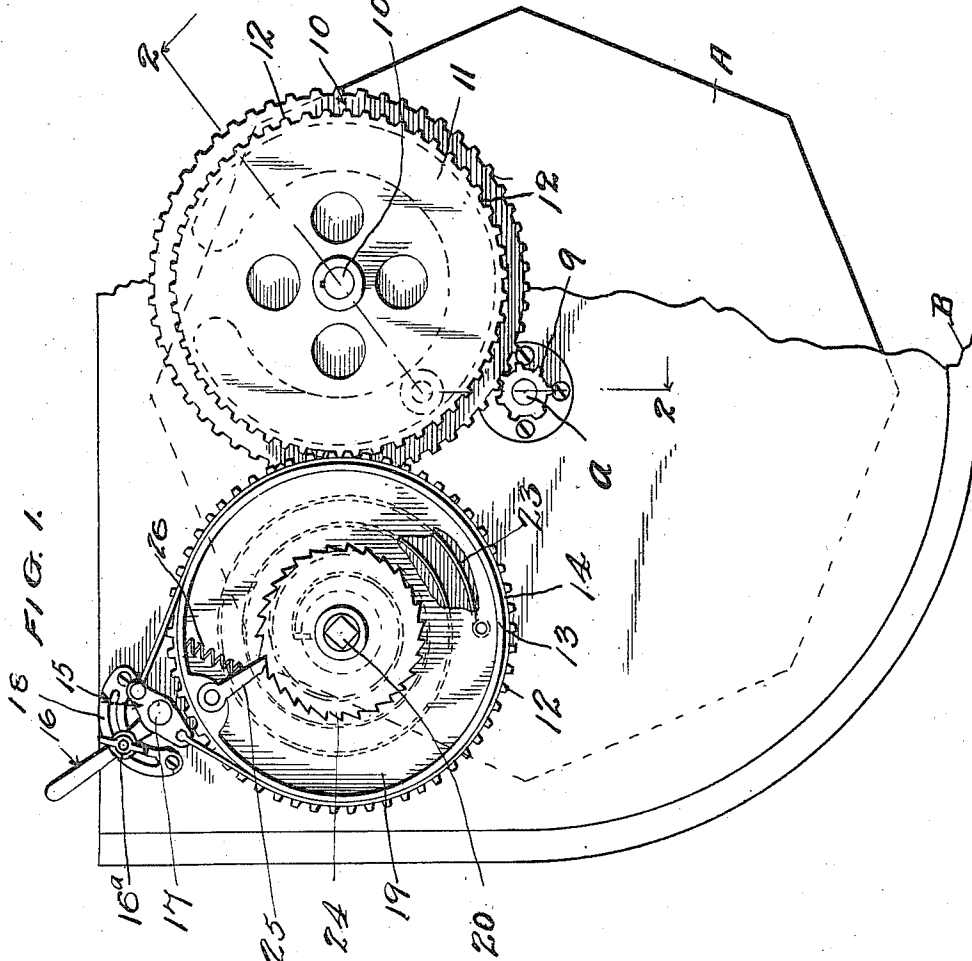


FIG. 1



WITNESSES
 Chas. K. Davis
 M. R. Wilson

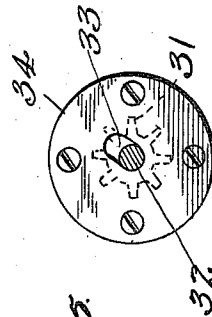
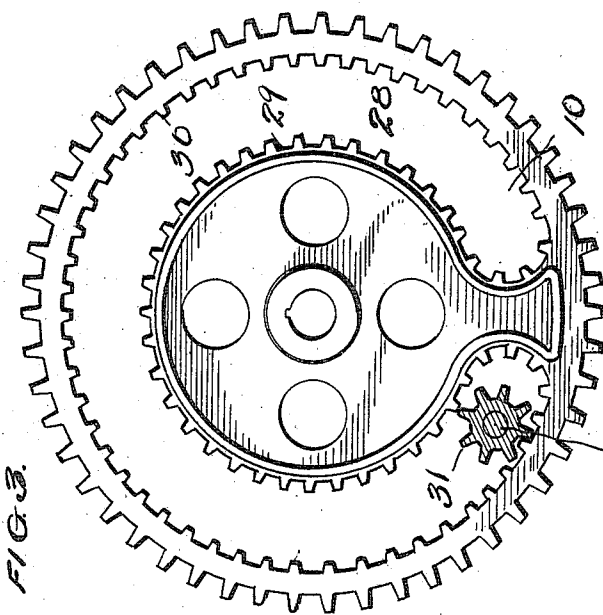
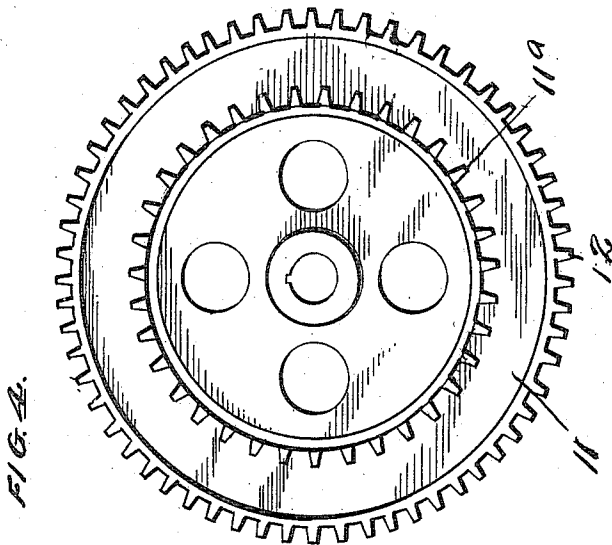
INVENTOR
 Neal Hardin
 by Milo R. Thomas, Jr.
 Attorney

986,283.

N. HARDIN.
WASHING MACHINE GEARING.
APPLICATION FILED JULY 26, 1910.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 2.



WITNESSES

Chas. H. Davies.
M. R. Wilson.

INVENTOR

Neal Hardin
by Milo B. Thomas, Jr.
Attorneys

UNITED STATES PATENT OFFICE.

NEAL HARDIN, OF MILES CITY, MONTANA, ASSIGNOR OF ONE-FOURTH TO LEWIS W. HAMEL, OF MILES CITY, MONTANA.

WASHING-MACHINE GEARING.

986,283.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed July 26, 1910. Serial No. 573,828.

To all whom it may concern:

Be it known that I, NEAL HARDIN, a citizen of the United States, residing at Miles City, in the county of Custer and State of Montana, have invented certain new and useful Improvements in Washing-Machine Gearing, of which the following is a specification.

My present invention relates to, gearing for that character of washing machines known as "cylinder machines", in which a rotary cylinder holding the clothes, is mounted within a casing adapted to contain the washing fluid, my object being to provide a spring gearing therefor which will effect an intermittent reversal of the rotation or create oscillatory motion of the cylinder instead of rotatory motion.

To this end my invention specifically resides in the following features of construction, arrangement and operation to be hereinafter described with reference to the accompanying drawings, in which—

Figure 1 is an end elevation of a washing machine, partly broken away, to which my improved gearing is applied. Fig. 2 is a fragmentary vertical section therethrough, taken on line 2—2 of Fig. 1. Fig. 3 is a detail view of the reversing disk or gear, removed. Fig. 4 is a similar view of the driven gear. Fig. 5 is a similar view of the reversing pinion.

Referring to these figures, the clothes cylinder A has at one end a short shaft *a*, journaled through and projecting beyond the adjacent end *b* of the washing machine casing B. Secured upon the outer portion of the cylinder shaft *a*, adjacent the casing end *b*, is a gear 9 which meshes with the toothed periphery of a reversing gear 10, mounted loosely upon a shaft 10^a on which is a second loose gear 11 having a toothed peripheral edge 12. The toothed peripheral edge 12 of gear 11 is engaged by a gear 19 loosely mounted upon the main shaft 20, coiled about which shaft is a driving spring 23, one end being attached to said shaft and the other end being secured to a portion of gear wheel 19. The main shaft 20 also carries a ratchet wheel 24 engaged by a pawl 25 on gear 19, the latter being spring-pressed by a spring 26, whereby the spring 23 may be wound by rotating shaft 20 in one direction independent of gear 19. The gear 19 also has a circular outstanding flange 13,

about which is looped a brake band 14, having its ends secured to portions 15 of a lever 16 upon opposite sides of its pivot 17, said lever having a clamping bolt and nut 16^a working in a curved slotted guide plate 18, whereby the lever and brake band may be secured in selected adjustment.

The reversing gear 10 has a curved concentric slot 28 and is provided with inner and outer series of teeth 29 and 30 upon the inner and outer walls of said slot, respectively, which extend unbroken along the rounded ends of said slot. Through this slot 28 extends a pinion 31, the diameter of which is less than the width of said slot, said pinion being loosely mounted upon a stud shaft 32 working through an arcuate slot 33 in a plate 34 secured on the casing end *b* whereby it may move to engage either the inner or outer series of teeth 29 and 30 when it reaches the ends of slot 28, which movement is, however, very slight. This pinion 31 is of sufficient length to extend beyond the gear 10 and into the gear 11 to engage its inner circular series of teeth 11^a, said teeth 11^a and those of said pinion 31 being of sufficient depth to remain in engagement when the said pinion engages either the inner or outer series of teeth 29 and 30 of the reversing gear 10. Thus, as gear 11 is rotated by the means described, pinion 31 will be rotated constantly in one direction by engaging its outer series of teeth 30, until the end of slot 28 is reached, when pinion 31 will rotate around this end of said slot, and will move into engagement with the inner series of teeth 29 of the reversing gear, by the sliding movement of its shaft 32 in slot 33. In this latter position pinion 31 will cause movement of the reversing gear in the opposite direction.

I claim:

1. The combination with a shaft, of a reversing wheel geared to the shaft, a combined driving and brake wheel, an adjustable brake in connection therewith to regulate the speed of the same, a motor for driving said brake wheel constantly in one direction, and connections between said driving wheel and said reversing wheel for rotating the latter first in one direction and then the other.

2. The combination with a shaft, of a reversing wheel geared to the shaft, and provided with a curved slotted opening extend-

ing partially therearound and having inner
and outer toothed walls and rounded toothed
ends, a driven gear having an inner circular
series of teeth, means for rotating said
5 driven gear constantly in one direction, and
a reversing pinion extending through said
reversing gear slot and movable to and from
its said inner and outer series of teeth, and

in constant engagement with said driven
gear teeth.

In testimony whereof I affix my signature
in presence of two witnesses.

NEAL HARDIN.

Witnesses:

F. D. SCOTT,

G. W. GERHART.

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