T. M. MOON & G. W. HALLSTROM.

OPERATING MEANS FOR REVERSE GEARS.

APPLICATION FILED AUG. 26, 1915.

1,172,547.

Patented Feb. 22, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

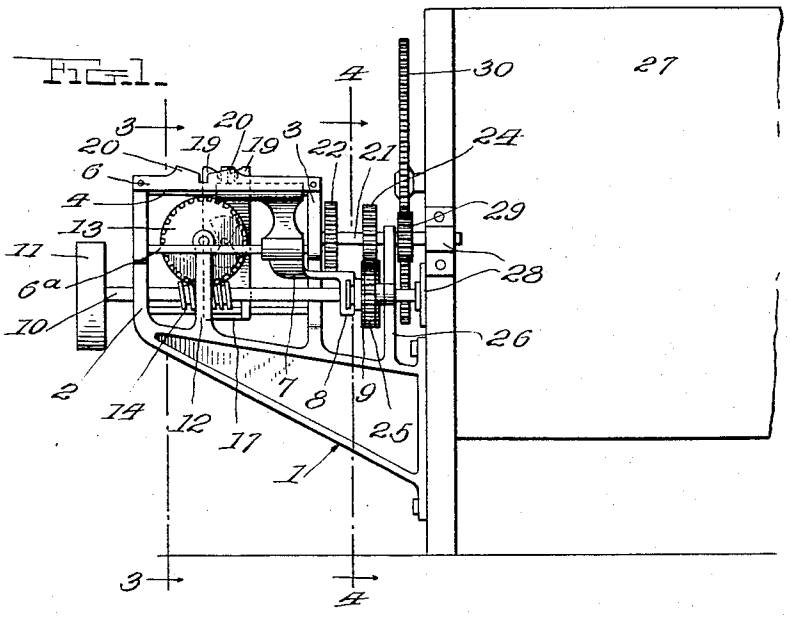
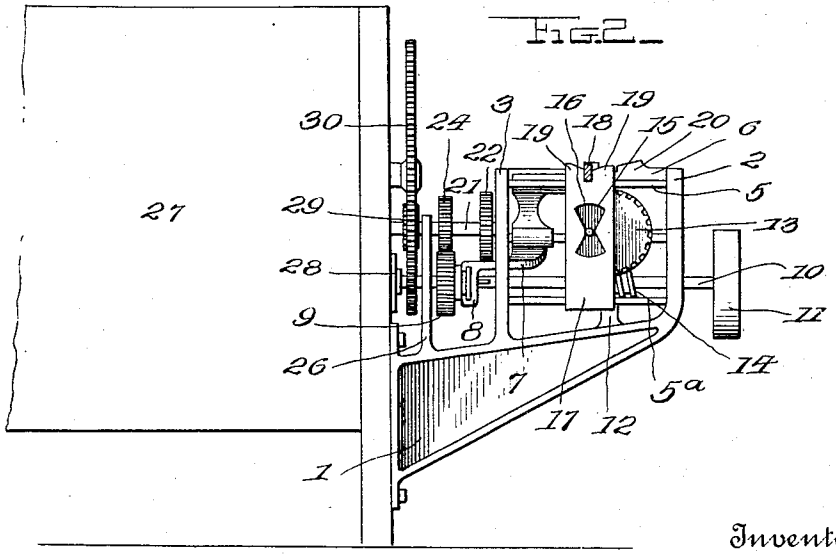


Fig. 2.



Inventors

T. M. Moon

and

G. W. Hallstrom.

By A. B. Wilson & Co.

Attorneys

Witnesses

J. R. Pierce

E. [illegible]

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

FIG. 3.

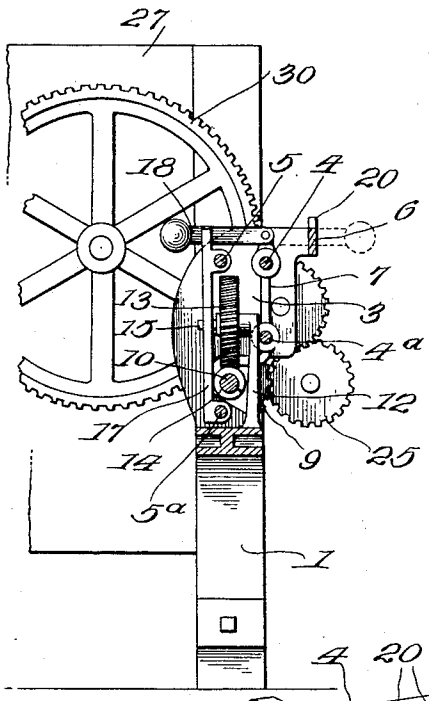
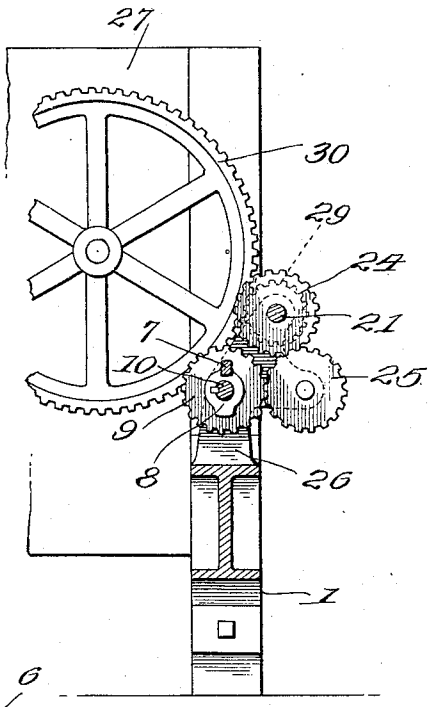


FIG. 4.



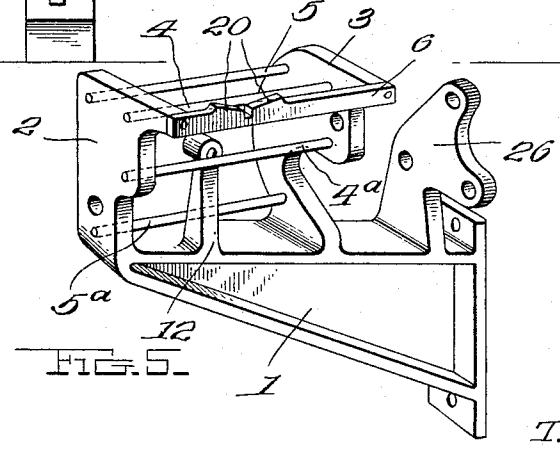


FIG. 5.

Witnesses
I. R. Pierce

Inventors
T. M. Moon
and
G. W. Hallstrom
By H. B. Wilson & Co.
Attorneys

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS M. MOON AND GEORGE W. HALLSTROM, OF FORT WORTH, TEXAS.

OPERATING MEANS FOR REVERSE-GEARS.

1,172,547. Specification of Letters Patent. Patented Feb. 22, 1916.

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To all whom it may concern:

Be it known that we, THOMAS M. MOON and GEORGE W. HALLSTROM, citizens of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Operating Means for Reverse-Gears; and we do 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.

Our invention relates broadly to improvements in reverse gears, and more particularly to operating mechanism therefor designed to actuate the gears at intervals.

The object of the invention is to provide mechanism of the class specified which although being comparatively simple and inexpensive, will be highly efficient and durable and will possess a number of advantageous characteristics.

To this end, the invention resides in certain novel features of construction and in unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings wherein:—

Figures 1 and 2 are side elevations showing opposite sides of the invention; Figs. 3 and 4 are vertical transverse sections as viewed on the planes designated by the lines 3—3 and 4—4 of Fig. 1, and Fig. 5 is a perspective view of the attaching bracket and the stationary parts carried thereby.

In these drawings which constitute a part of the application and in which like reference characters designate corresponding parts throughout the several views, the numeral 1 indicates a substantially horizontal attaching bracket having at one end an upstanding standard 2, and at its intermediate portion a second standard 3, the upper ends of said standards being connected by a central horizontal bar 4, a second horizontal bar 5 spaced laterally therefrom in one direction, and a third horizontal bar 6 spaced laterally in the opposite direction from the bar 4. Disposed respectively beneath the bars 4 and 5 are additional horizontal bars 4^a and 5^a.

Having appropriate guides mounted slidably upon the bars 4 and 4^a is a reverse gear control member 7 in the form of an L-shaped bracket whose horizontal arm is provided with a fork 8 having a loose connection with a gear 9 which is to be shifted axially first in one direction and then in the other, to effect the desired operation of the machine in a manner yet to be described.

The gear 9 is keyed slidably upon a horizontal shaft 10 which is rotatably mounted in bearings carried by the posts 2 and 3, said shaft being driven by any preferred means such for instance as a belt passing over the pulley 11. Between the posts 2 and 3, a third post 12 rises to one side of the shaft 10 and rotatably supports a worm gear 13 with which a driven worm 14 keyed on the shaft 10 meshes, the gear 13 being provided with a wrist pin 15 received by a suitably shaped opening 16 in an operating member 17. The member 17 is preferably in the form of an upright plate having upper and lower guides slidable respectively on the bars 5 and 5^a.

By the construction of the parts just described, when the shaft 10 is rotated, the worm gear 13 will cause its wrist pin 15 to shift the operating member 17 intermittently in opposite directions. Thus it will be evident that if a suitable connection be provided between the members 17 and 7, shifting of the former will move the latter in a similar manner to move the gear 9 axially upon the shaft 10.

In the present embodiment of the invention, the aforesaid connection between the members 7 and 17 is constituted by a weighted laterally swinging coupling member 18 which is in the form of an arm pivoted to the member 7. When swung laterally in one direction, the coupling member 18 is received between a pair of stops 19 on the upper edge of the operating member 17, whereby a releasable connection is established between said member and the control member 7, but when swung laterally in the opposite direction, the aforesaid member 18 will be received between a pair of stops 20 on the bar 6, thereby locking the control member 7 against movement.

Rotatably mounted above the portion of the shaft 10 having thereon the gear 9, is an additional horizontal shaft 21 carrying a gear 22 with which the gear 9 is meshed at intervals to rotate the shaft 21 in one direction, while also keyed to said shaft 21 is an additional gear 24 which meshes constantly with a gear 25 rotatably supported upon a fourth post 26 which rises from the bracket 1, the gear 25 being so positioned

as to allow the gear 9 to be meshed therewith when shifted in the proper direction, whereupon the shaft 21 will be rotated in the reverse direction from that in which it is driven when the gears 9 and 22 are in mesh.

The shaft 21 may be used to operate any style of machine in which movement intermittently in reverse directions is required, but we have primarily designed the entire invention for use upon the washing machines used in laundries. If the improved mechanism be employed for this purpose, the bracket 1 will be bolted to the washing machine 27, the shafts 10 and 21 will be provided with bearings 28 secured to said machine, and the shaft 21 will be equipped with a pinion 29 meshing with the driving gear 30 which operates the interior mechanism of the aforesaid washing machine.

When applied as above set forth, the invention will be efficient and durable and will readily perform the functions for which it is designed, it being obvious that when operation of the machine is not desired, the coupling member 18 may be disengaged from the stops 19, whereupon the control member 7 may be shifted to a neutral point, at which point it is locked by engagement of the aforesaid member 18 with the stops 20. If desired, the entire mechanism may be provided with an appropriate casing for preventing injury to the operators, but obviously the provision of such a casing does not amount to invention and need not therefore be illustrated or further described.

In the drawings, we have shown certain specific details of construction for accomplishing probably the best results, and in the foregoing, we have described such details, but it is obvious that we need not be limited thereto otherwise than to the extent to which the appended claims restrict us.

We claim:—

1. In an operating mechanism for reverse gears, the combination of a pair of spaced upright standards, a trio of horizontally spaced horizontal bars extending from one standard to the other, a reverse gear control member having a guide slidable on the central bar, an operating member shifted intermittently in reverse directions and having a guide slidable on one of the other bars, a stop on the operating member, a second stop on the third bar, and a laterally shiftable coupling device carried by the control member for engagement with either stop.

2. In an operating mechanism for reverse gears, the combination of a pair of spaced upright standards, a trio of horizontally spaced horizontal bars extending from one standard to the other, a reverse gear control member having a guide slidable on the central bar, an operating member shifted intermittently in reverse directions and having a guide slidable on one of the other bars, a stop on the operating member, a second stop on the third bar, and a vertically swinging weighted coupling device pivoted to the control member for engagement with either stop.

3. In combination, a reverse gear having a control member to be shifted alternately in opposite directions, a coupling device carried by said member and shiftable laterally in opposite directions therefrom at right angles to its path of movement, a flat operating plate spaced laterally in one direction from said control member and having a pair of opposed cams, a driven wheel having an eccentric projection for engagement with said cams to shift the plate alternately in opposite directions in parallelism to the directions of movement of the control member, a keeper carried by said plate and adapted for engagement by the coupling device, whereby shifting of the operating plate will correspondingly move the control member, a fixed member spaced laterally in the opposite direction from the control member, and an additional keeper on said fixed member for coöperation with the coulping device when disengaged from the operating plate.

4. In combination, a trio of horizontal rigidly supported bars, one of said bars being disposed in a plane interposed between the others, a reverse gear control member mounted slidably on the central bar, a coupling device carried by said member and shiftable in opposite directions therefrom toward either of the other bars, an operating member slidably mounted on one of the latter and having a keeper adapted to be engaged by the coulping device when moved in one direction, and an additional keeper carried by the remaining bar for coöperation with said coupling device when shifted in the opposite direction.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

THOMAS M. MOON.
GEORGE W. HALLSTROM.

Witnesses:
W. A. MUNDY,
S. H. GRAY.

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