A. W. ALTORFER.

DRIVING MECHANISM.

APPLICATION FILED SEPT. 21, 1912.

1,066,070.

Patented July 1, 1913.

3 SHEETS—SHEET 1.

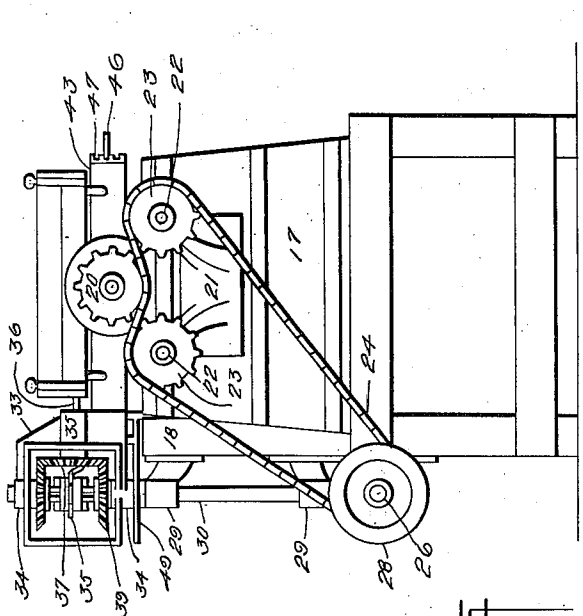


FIG 2

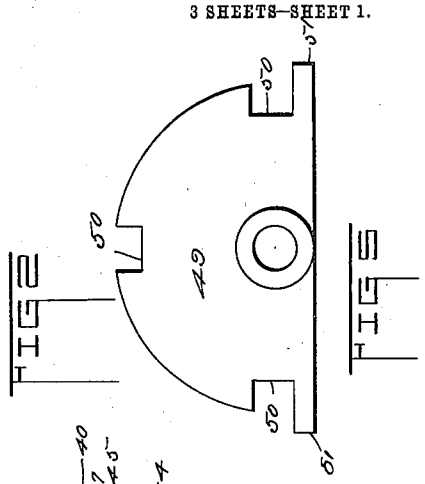


FIG 5

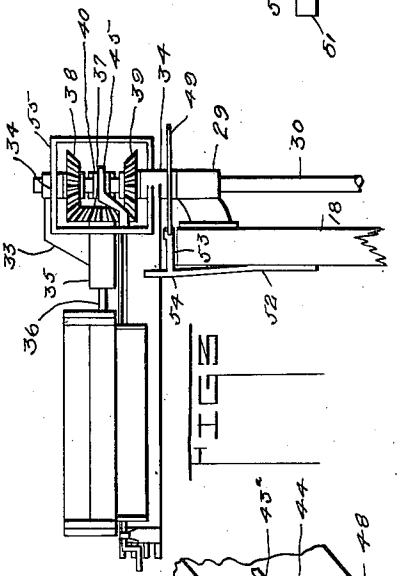


FIG 3

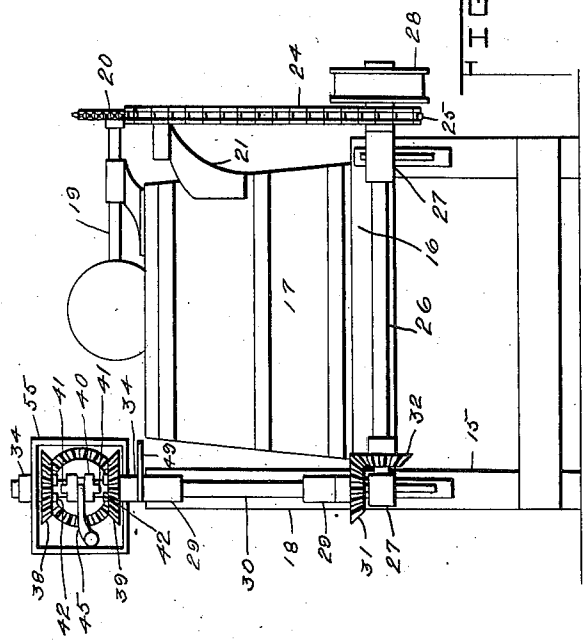


FIG 4

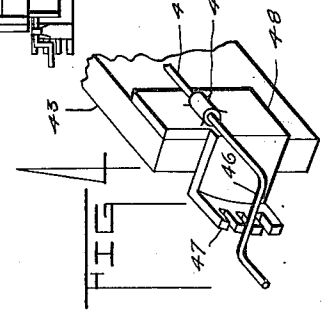


FIG 6

WITNESSES

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3 SHEETS—SHEET 2.

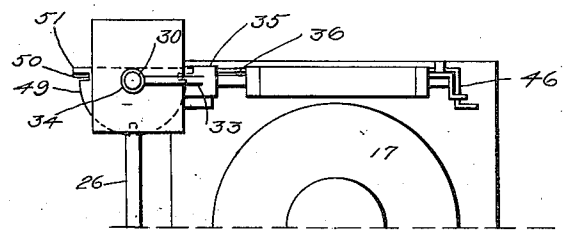


FIG 6

FIG 7

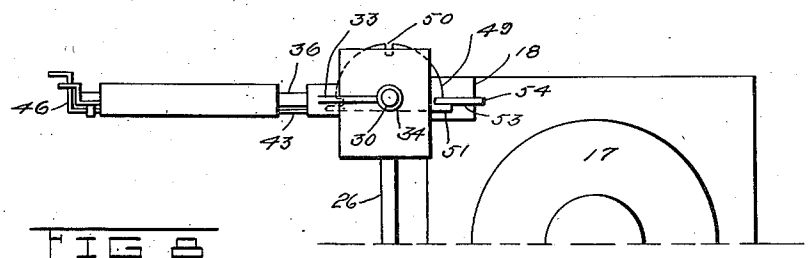


FIG 8

WITNESSES
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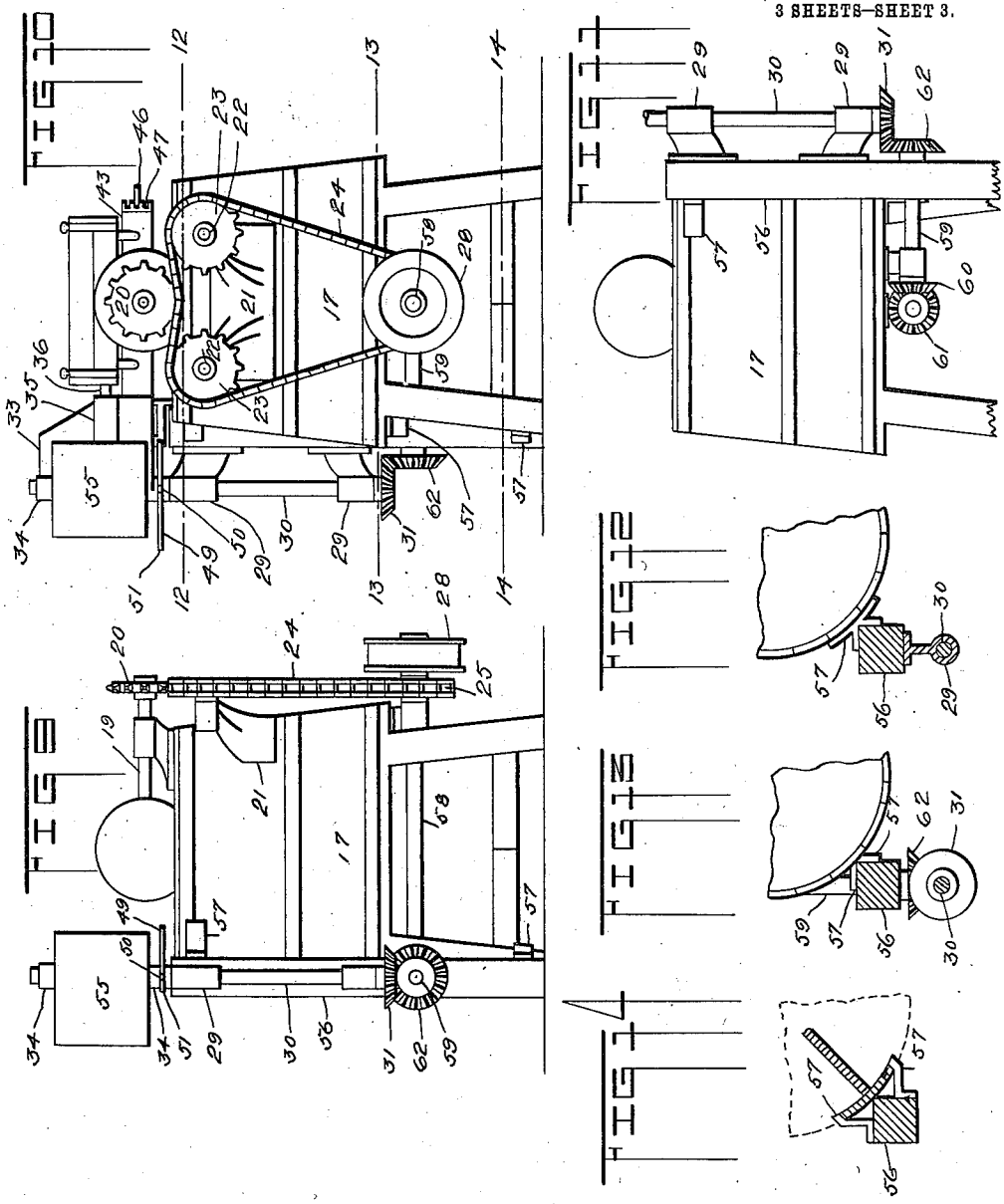
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3 SHEETS—SHEET 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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DRIVING MECHANISM.

1,066,070. Specification of Letters Patent. Patented July 1, 1913.

Original application filed January 21, 1911, Serial No. 603,968. Divided and this application filed September 21, 1912. Serial No. 721,545.

To all whom it may concern:

Be it known that I, ALPHEUS W. ALTORFER, citizen of the United States, residing at Roanoke, in the county of Woodford and State of Illinois, have invented certain new and useful Improvements in Driving Mechanism, of which the following is a specification.

This invention has reference to a combined driving device for washing machines and wringer mechanism.

One of the objects of the present invention is to employ with a washing machine, a wringer support having a swinging relation with the machine frame, and reversible wringer actuating means on said support, which will be operative to drive said wringer no matter in what position said support may be.

A further object of the invention is to provide for swinging or oscillating the wringer support and its mechanism, and locking means for fixing the wringer support in several different and adjusted positions.

A further object of the invention is to provide a reversible drive for the wringer mechanism, and means, capable of being locked in adjusted positions, for reversing said driving means.

In the drawings:—Figure 1 is a side elevation of a washing machine with my invention applied thereto; Fig. 2 is a view of the machine, as it would appear looking at the right hand side of Fig. 1; Fig. 3 is a view of the wringer mechanism and locking means therefor; Fig. 4 is a detail perspective, of the means for locking the rod, which is used to reverse the driving means for the wringer; Fig. 5 is an enlarged plan view of the locking plate associated with the wringer support; Fig. 6 is a plan view, showing the wringer mechanism locked in a position, when the wringer would be used to wring clothes, taken directly from the washing machine; Fig. 7 is a plan view, showing the wringer mechanism locked in a position, when the wringer would be used to wring clothes, after leaving the washing machine and taken directly from suds-water, where such clothes were placed after passing through the wringer in Fig. 6; Fig. 8 is a plan view, showing the wringer mechanism locked in a position, when the wringer would be used to wring clothes, after leaving the suds-water and taken directly from clean rinse-water, where such clothes were placed after passing through the wringer in Fig. 7; Figs. 9, 10 and 11 are views similar to Figs. 1, 2 and 3, but show the wringer support and driving mechanism associated with a modified construction of washing machine driving mechanism, and Figs. 12, 13 and 14 illustrate details of the structure in the modification illustrated in Figs. 9, 10 and 11.

Like characters of reference denote corresponding parts throughout the figures.

Reference is had to Figs. 1 to 8 both inclusive, as illustrating the preferred arrangement of my invention. A main frame or support for the machine, comprises legs or standards 15 supporting a head-piece 16 on which may rest a washing machine 17, and said machine may be unattached or fixed, but preferably hinged to the head-piece in a suitable manner so that it may be tipped at an angle to drain. One of the legs or standards 15 is preferably longer than the others, extending upwardly for a suitable distance, as shown at 18. This extension sustains the support and driving mechanism for the wringer. The washing machine 17 has the usual head shaft 19 for transmitting motion from the power to the interior mechanism of the machine and on one end has a sprocket wheel 20. A bracket 21 is secured to the machine 17 and is provided with bearings for the two short-shafts 22 carrying the idler-wheels 23. Power is transmitted to the shaft 20 by a sprocket-chain or belt 24 driven by a sprocket wheel 25 on a power shaft 26; said chain passing over the idler-wheels 23 and engaging the wheel 20, in manner shown in Fig. 2. The shaft 26 is journaled in bearings 27 secured to the legs of the main frame, and on one end, preferably carries a pulley wheel 28, which may be connected with a suitable

source of power, by belt or other means. To the extension 18 of the leg or standard referred to, are attached bearings or journal boxes 29, in which is journaled an upright shaft 30. On the lower end of this shaft is carried a bevel-gear wheel 31 in constant driving engagement with a bevel-gear wheel 32 on the power shaft 26; by this means, the shaft 30 is driven. This shaft constitutes a counter shaft driven from the main or power shaft. 33 designates a bracket having spaced bearings or journal boxes 34, in axial alinement with each other, through which the upper end of shaft 30 extends and has a bearing, as shown. Said bracket 33 is also provided with a bearing portion 35, extending at right angles to bearings 34, in which is journaled a wringer shaft 36. The shaft 36 carries a bevel-gear wheel 37 with which mesh the oppositely rotatable bevel-gear wheels 38 and 39 loosely carried on shaft 30 between the bearings 34 of the bracket 33. The shaft 30 for a portion of its length, preferably that portion between the gear-wheels 38 and 39, is grooved, and splined thereon is a clutch collar 40 having oppositely projected clutch engaging faces 41 adapted to have a clutch relation with clutch faces 42 on the gear wheels 38 and 39 for alternately clutching such wheels to the shaft 30, whereby the shaft 36 of the wringer may be reversed when desired. The support 43 for the wringer mechanism is secured to the bracket 33 and supports the wringer. The support 43, wringer rolls and the bracket 33 are swingable on the shaft 30, whereby the wringer mechanism may be placed in the different positions illustrated in Figs. 6, 7 and 8. The wringer is secured or clamped to said support by suitable means, said support being located in an elevated position as shown so as to be located conveniently to said washing machine. To operate or slide the collar 40 on the shaft 30, for placing in motion the wringer rolls, through either of the gear-wheels 38 or 39, a rocking operator's rod 43^a is provided, journaled in boxings 44 on the support 43. To one end of this rod is attached an arm 45 in operative connection with the clutch collar 40, and its opposite end has attached thereto a crank 46, whereby the rod 43^a may be rocked, and said crank is adapted to have a locking relation with the slots 47 in a bracket 48 secured or attached to the outer end of the support 43. Thus, it will be seen, that the rod 43 may be rocked to clutch either the gear-wheel 38 or the gear-wheel 39 to the shaft 30, whereby the wringer rolls may be operated in reverse directions, or the collar 40 shifted to a neutral position, such as shown in Figs. 1 and 2, when the wringer rolls will remain at rest, even though the shaft 30 is in operation. 49 designates a locking plate, which is preferably carried in a rotatable manner on the shaft 30 just below and secured to the bracket 33. This plate is preferably semi-circular in outline and formed with a plurality of notches 50 and opposite lugs 51, diametrically opposed. Attached to the extension 18 of the standard 15, referred to, is a spring arm 52 provided with a locking lug 53 and a handhold 54, see Fig. 3. The lug 53 is adapted to enter the respective notches 50 in the plate 49, when the wringer support 43, rolls, bracket 33 and plate 49 are rotated or oscillated on the shaft 30; the lugs 51 forming stops, against which the lug 53 will engage, whereby it is intended that the wringer support and mechanism may be swung only half way around in opposite directions. For instance, in Fig. 6, the wringer support is locked in position to enable the wringer to receive clothes from the washing machine. To shift the wringer to the position seen in Fig. 7, the lug 53 is released from its slot 50 in plate 49 and the wringer support swung around until it has made one quarter turn, when the lug 53 will enter into the intermediate slot 50 in plate 49; to shift the wringer into the position shown in Fig. 8, the lug 53 is again released from the plate 49, when the wringer support may be moved to the position in Fig. 8, the lug 53 entering a slot 50 in plate 49 and locking the wringer in position. To return the wringer to its original position, the operator will release the lug 53, holding it disengaged from the plate 49 and swing the wringer support backward, upon the lug 53 engaging the stop 51, the lug will be released, when it will be forced into slot 50. The gear-wheels 37, 38 and 39 are preferably shown housed in a housing 55, and in practice the gear-wheels 20 and 23 would be housed, as also all other exposed gears.

In Figs. 9 to 14 both inclusive, the structure is substantially the same as that shown in Figs. 1 to 5 both inclusive, except that the invention is shown applied to a standard form of washer, where the frame is different and where the power shaft is located directly beneath the washing machine. The support for the wringer in this instance, is an upright or standard 56 which is supported from the washer by brackets 57, see Figs. 9, 12, 13 and 14, and to this standard are secured the bearings 29 for the shaft 30. The power shaft is designated 58 and instead of being geared directly to the shaft 30, is provided with a counter shaft 59, journaled in suitable bearings, and on said shaft is a gear-wheel 60 in mesh with a gear-wheel 61 on the power shaft, and on the outer end of the shaft 59 is carried a gear-wheel 62 in mesh with the gear-wheel 31 on the lower end of shaft 30.

From the foregoing it is obvious that va-

rious changes may be made without departing from the spirit and scope of the invention and that, in a practical way, the invention is applicable to machines in use at the present time.

This application is a division of the application for Letters Patent filed by me on January 21st, 1911, bearing Serial Number 603,968 for improvements in driving devices for washing machines and wringers.

What I claim is:—

1. In a device of the character described, in combination, a frame, a driving shaft, means for operating said shaft, a support swingable on said shaft, reversible actuating gears loosely mounted on said shaft, means for alternately clutching said gears to said shaft, and a mechanism on said swingable support adapted to be operated by said gears.

2. In a device of the class described, a suitable support, an operating means mounted on said support and adapted to be swung to different positions relative to said support, means to lock the operating means in different positions on said support, a drive shaft, connections including a clutch between the shaft and said operating means, and a rocking rod controlling said clutch, said rocking rod swingable with said operating means.

3. In a device of the class described, a suitable support, an operating means mounted on said support and adapted to be swung to different positions relative to said support, said operating means including a shaft extension and a bevel gear thereon, means to lock the operating means in different positions on said support, a drive shaft geared to the bevel gear on the shaft of the operating means, a clutch arranged to control the direction of rotation of said operating means, and a rocking rod controlling said clutch, said rocking rod swingable with said operating means.

4. In a device of the class described, a suitable support, an operating means mounted on said support and adapted to be swung to different positions relative to said support, means to lock the operating means in different positions on said support, a drive shaft, gearing between the drive shaft and said operating means, said gearing including a shiftable element for transmitting motion in either direction to said operating means, as desired, and a rocking rod controlling said shiftable element, said rod extending alongside and longitudinally of said operating means, and swingable with said operating means.

5. In a device of the class described, a suitable support, a driving shaft disposed horizontally on the support, an upright shaft adapted to be driven from said driving shaft, a frame member extending radially from the upper end of said upright shaft and swingable in an arc of a circle about said shaft, mechanism on said frame member adapted to receive power from said upright shaft, clutch driving connections for controlling the operation of said mechanism, and means for controlling said clutch.

6. In a device of the class described, a suitable support, a driving shaft disposed horizontally on the support, an upright shaft adapted to be driven from said driving shaft, a frame member extending radially from the upper end of said upright shaft and swingable in an arc of a circle about said shaft, mechanism on said frame member adapted to receive power from said upright shaft, means to lock the frame member in different positions, clutch driving connections for controlling the operation of said mechanism, and a rod disposed longitudinally of said frame member controlling said clutch, said rod arranged to be operated from the free end of said frame member.

7. In a device of the class described, a suitable support, a driving shaft disposed horizontally on the support, an upright shaft adapted to be driven from said driving shaft, a frame member extending radially from the upper end of said upright shaft, said shaft being the pivotal point about which said frame member is swingable, means for locking the frame member in positions at right angles to each other, as desired, mechanism on said frame member including a shaft, gearing between said last mentioned shaft and said upright shaft, a clutch controlling the transmission of power between said gearing, and an operator's rod controlling said clutch.

8. In a device of the class described, a suitable support, a horizontally disposed driving shaft, a vertically disposed counter-shaft, bearings from said support for said vertical shaft, means for operating the counter-shaft from the driving shaft, a horizontally disposed frame member, a bearing for said frame member on said counter-shaft, to adapt said frame member to be swung in an arc of a circle about said counter-shaft, means for locking the frame member in one or more adjusted positions, mechanism on the frame member including a shaft, and gearing for operating said last mentioned shaft from said counter-shaft.

9. In a device of the character described, in combination, a frame having a standard extending upward therefrom, a driving shaft mounted along said standard, a bracket having spaced bearings through which the upper end of said shaft extends, oppositely disposed gear wheels loosely mounted on said shaft between said spaced bearings, a mechanism supported from said bracket

having a driving shaft which is journaled in said bracket, a gear wheel mounted at the end of said driving shaft meshing with said loosely mounted gear wheels on the first mentioned driving shaft, a clutch member disposed between said first mentioned gear wheels adapted to clutch either one to said first mentioned driving shaft and means for operating said clutch member, said bracket and said mechanism being adapted to be rotated relative to said shaft so as to support said mechanism in various positions relative to said frame.

10. In a device of the character described, in combination, a frame having a standard extending upward therefrom, a driving shaft mounted along said standard, a bracket having spaced bearings through which the upper end of said shaft extends, oppositely disposed gear wheels loosely mounted on said shaft between said spaced bearings, a mechanism supported from said bracket having a driving shaft which is journaled in said bracket, a gear wheel mounted at the end of said driving shaft meshing with said loosely mounted gear wheels on the first mentioned driving shaft, a clutch member disposed between said first mentioned gear wheels adapted to clutch either one to said first mentioned driving shaft and means for operating said clutch member, said bracket and said mechanism being adapted to be rotated relative to said shaft so as to support said mechanism in various positions relative to said frame, a locking plate connected to said bracket so as to move therewith, and means on said standard adapted to engage said locking plate to lock said bracket and mechanism in their adjusted positions.

11. In an apparatus of the character described, a main frame, a driving shaft journaled on said frame and adapted to be driven from a suitable source of power, a mechanism support arranged in an elevated position above said main frame, a vertically disposed shaft adapted to be driven from said driving shaft, means for supporting the mechanism support so as to swing the mechanism support about said vertical shaft, a mechanism mounted on said mechanism support, driving connections between said mechanism and said vertical shaft, and clutch devices for reversing the operation of said mechanism.

12. In an apparatus of the character described, a main frame, a driving shaft journaled on said main frame and adapted to be driven from a suitable source of power, a mechanism support arranged in an elevated position above said main frame, a vertically disposed shaft adapted to be driven from said driving shaft, means for supporting the mechanism support so as to swing the mechanism support about said vertical shaft, a mechanism mounted on said mechanism support, driving connections between said mechanism and said vertical shaft, clutch devices for reversing the operation of said mechanism, and means for locking the mechanism support in adjusted positions on said main frame.

13. In an apparatus of the character described, a main frame, a driving shaft journaled on said frame, and adapted to be driven from a suitable source of power, a horizontally disposed mechanism support arranged in an elevated position above said main frame, a vertically disposed shaft adapted to be driven from said driving shaft, supporting connections between said mechanism support and said vertical shaft to adapt said mechanism support to swing about said vertical shaft, a mechanism mounted on said mechanism support, clutch controlled gearing at the upper end of the vertical shaft and connected to drive said mechanism on the mechanism support, and an operator's rod connected with said clutch mechanism for reversing the direction of movement of said mechanism.

14. In an apparatus of the character described, a main frame, a horizontally disposed driving shaft journaled on said frame and adapted to be driven from a suitable source of power, a vertically disposed countershaft, gearing between said driving shaft and said counter shaft, a mechanism support connected at one end to swing about the upper end of said counter shaft, a mechanism carried on said mechanism support, gearing at the upper end of the counter shaft for driving said mechanism from said counter shaft, a clutch mechanism in said gearing for reversing the operation of the mechanism, and an operator's rod for actuating said clutch mechanism.

15. The combination of a pivotally supported member adapted to swing, a mechanism supported thereon, a driving gearing adapted for operating the mechanism including a part for imparting opposite directions of rotation to the mechanism elements, part of said gearing being mounted on said member to swing therewith, and manually operated means in control of said gearing.

16. In a machine of the character described, a main frame, a supplemental frame pivotally mounted thereon and adapted to be swung to different angular positions relative to said main frame, an operating means mounted on said supplemental frame, a power driven element, and connections between said power driven element and said operating means to actuate said operating means, as desired, in its different positions relative to said main frame, said connections

including reversing means for actuating the operating means in either direction, as desired.

17. In a machine of the character described, a main frame, a supplemental frame pivotally mounted thereon and adapted to be swung to different angular positions relative to said main frame, an operating means mounted on said supplemental frame, actuating means for said operating means, including a power driven element, said power driven element being adapted to be thrown into and out of operative relation with parts of said actuating means for driving said operating means in either direction, as desired.

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

ALPHEUS W. ALTORFER.

Witnesses:

G. G. HASLER,

S. H. ALTORFER.