To all whom it may concern:

Be it known that I, GEORGE L. HEDGES, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Mechanism for Washing-Machines, of which the following is a specification.

The invention relates to clothes washing machines, and the principal object of the invention is to provide a mechanism for such a machine which may be driven by a motor, and which may be detachably secured to the side of an ordinary stationary tub.

A further object of the invention is to provide a mechanism which will actuate a working member moving this member up and down and maintaining it at all times in a practically vertical position, this being accomplished by the use of two parallel rods which are hereinafter called the guiding and actuating rods, respectively.

A further object of the invention is to so construct the mechanism that no auxiliary supports are necessary, the working member being wholly supported and guided by said rods.

A further object is to provide such a mechanism in which the pounder element can be readily removed and in which the pounder can be held in the upper position when not in use thus giving ready access to the tub. Further objects and advantages will appear hereinafter.

While I show in the drawing and describe in the specification a certain type of pounder or washing element it is to be understood that such a pounder forms no part of the present invention, and that any sort of a device suited to wash clothes may be substituted therefore without departing from the spirit of my invention, all such devices being designated broadly in the claims under the term "working member." I have also shown and described a certain type of mechanism for driving the actuating rod from the motor. These parts, as well as any other parts suited to accomplish the same result, are described and included broadly in the claims as "mechanism."

I have also shown the washing machine in association with a wringer, this being a convenient and desirable assembly of parts for the purpose intended. It is to be understood, however, that the wringer forms no part of my present invention, the wringer forming a convenient means by which the support 11 may be secured to a stationary tub. Obviously any convenient means of securing the support 11 to the tub 68 may be substituted for the wringer, and thereby reduce the cost of the apparatus, and it is further obvious that this omission of the wringer would in no way affect the scope of the invention.

Broadly described the machine consists of a motor which is mounted on a support to which the various mechanism is attached and which is itself attached to the side of an ordinary wringer. The driving mechanism of this wringer is so modified that the motor may drive the pounder and the wringer together or either alone, at the will of the operator.

In the drawings which are for illustrative purposes only:

Figure 1 is an end elevation.
Fig. 2 is a side elevation showing a portion of a wringer to which the mechanism is attached.
Fig. 3 is a partial section on the line x--x of Fig. 1.
Fig. 4 is a partial section on the line y--y of Fig. 1.
Fig. 5 is a sectional detail.
Fig. 6 is an elevation, partly in section, of the pounder element.
Fig. 7 is a view of the invention applied to a wringer, the wringer being mounted on a tub which is shown in section.

The principal elements of the invention are a pounder 10, a support 11 which may be secured to a wringer 12, and an electric motor 13. The motor is mounted on top of the support 11 and drives a pulley 14 through a belt 15 and a pulley 16. The pulley 14 drives a shaft 17 upon which is cut a worm 18. The worm 18 meshes with a worm gear 19 which is rigidly secured to a shaft 20 which is carried in suitable bearings in the support 11. The shaft 20 extends through the side of the support 11 and an eccentric 21 is mounted to turn freely thereon. The eccentric 21 is surrounded by an eccentric strap 22 which has an upwardly projecting ear 23. Parallel rods 24 and 25 are provided being secured in castings 26 and 27, these castings being pivoted upon pins 28 and 29 secured in the support 11. The casting 26 is provided with a project-
ing end 30 which is pivoted to a pin 31 carried upon the ear 23 of the eccentric strap 22. The parallel rods 24 and 25 are secured to a casting 32 which is provided with a thumb nut 33 for the purpose of securing a pipe 34 of the pounder 10.

The construction of the pounder 10 is plainly shown in Fig. 6. A rod 35 slides in the pipe 34 being provided with an extension 36 which extends through a small bushing 37 in the pipe 34 and is prevented from passing entirely therethrough by means of a nut 38. A spring 39 tends to hold the rod 35 in the position shown in Fig. 6. The lower end of the rod 35 is secured to a washing cone 40 which is provided with an intermediate diaphragm 41 for the purpose of giving greater strength to this member.

A clutch member 42 is slidabley keyed on the shaft 20 and is provided with an opening 43 adapted to be engaged by projections 45 on the eccentric 21.

The wringer 12 is of any of the well known forms being provided with two rollers, the shaft of the lower one being shown at 46 in Figs. 2 and 4. A clutch member 47 is rigidly secured to the shaft 46 and has projections 48 thereon which are engaged by openings 44 in the clutch member 42. The openings 43 and 44 in the clutch 42 are of such depth that either or both the projections 45 and 48 may be engaged.

A yoke casting 49 is rigidly secured to a shaft 50 which slides in the support 11, as plainly shown in Fig. 4, being moved by a knob 51. This yoke extends outwardly and engages an annular groove 52 in the clutches 42 and serves to throw the clutch either into engagement with the eccentric 21 or with the clutch member 47 on the lower shaft 46 of the wringer, or both the eccentric and the clutch member simultaneously. The yoke 49 also extends upwardly as shown at 53 and engages a small boss 54 on the parallel rod 45 casting 26 when the clutch is thrown in such a manner as to actuate the wringer.

The shaft 50 is provided with a series of grooves 55 and the support 11 is provided with a hole 56 in which is placed a ball 57 and a spring 58, the purpose of this ball and spring being to retain the shaft 50 in any one of three positions and to require the exertion of considerable force to pull it from these positions. The motor 13 is provided with a terminal block 60 upon which are terminals to which may be attached suitable electric conductors for supplying current to the motor.

As illustrated the support 11 is made symmetrical so that the relation of the parts may be readily reversed.

The method of operation of the invention is as follows: The support 11 is secured to the wringer 12 by means of the screws 62 and the wringer is secured to a tub 63 by any of the well known means. Water and the clothes to be washed are placed in the tub and the clutch 42 is thrown to connect the eccentric 21 to the shaft 20. Current is then passed through the motor turning the pulley 70 and driving the pulley 14 through the belt 15. The pulley 14 drives the shaft 17 and actuates the eccentric 21 through the worm gear 19, the shaft 20, and the clutch 42. The eccentric 21 rotates and swings the parallel rod 24 about the pin 33 thus raising and lowering the pounder 10. The action of conical pounders is old in the art and will not be described. The spring 39 forms a resilient member and permits of the pounder 10 yielding when it strikes upon a mass of clothes or other hard substances thus preventing breaking or straining the mechanism. The pounder is allowed to run until the clothes are sufficiently acted upon at 85 which time the clutch is thrown into a position where the shaft 20 drives the shaft 46. The projection 53 is allowed to pass under the boss 64, the pounder 10 being raised by hand for this purpose. If desired the pipe 34 may be entirely removed from the casting 32 by loosening the thumb nut 33. The shaft 20 is now actuated as before through the worm gear 19, the worm 18, the shaft 17, the pulley 14, the belt 15, and the pulley 16. The clutch 42 is in such a position that the openings 44 are engaged by the projections 48 on the shaft 46. Since the clutch 42 is keyed to the shaft 20 the shaft 20 drives the shaft 46 which is the lower shaft of the 100 wringer. The clothes in the tub may now be wrung out.

By placing the shaft 50 in the central position the projections 45 and 48 are all engaged and the wringer and pounder are both actuated.

A particular utility of this invention resides in the fact that the wringer, with the washing machine mechanism attached, may be applied to any of the common forms of 110 tubs, either stationary or portable, without modification of such tubs, and that they may be readily removed from such tubs, and when removed require but a small space for storage, and may be, if desired, stored in the tub itself.

I claim as my invention:
1. A mechanism for actuating a clothes pounder or the like, comprising a support, a movable member, parallel rods pivoted at one end to the support and pivoted at the other end to the movable member, mechanism for actuating said parallel rods, a motor, a clutch for connecting said motor to said mechanism, and means associated with the clutch for retaining said parallel arms in their elevated position when said clutch is thrown out of engagement.
2. A mechanism for actuating a clothes pounder or the like, comprising a movable
member, a support, parallel rods pivoted at one end to the support and pivoted at the other end to the movable member mechanism for actuating said parallel rods, a motor, a clutch for connecting said motor to said mechanism, a shaft sliding in said support, means for connecting said shaft to said clutch, and an arm so placed on said shaft that it may support said rods in their upper position when the clutch is engaged.

3. A mechanism for actuating a clothes pounder or the like, comprising a movable member, a support, parallel rods pivoted at one end to the support and pivoted at the other end to the movable member mechanism for actuating said parallel rods, a motor, a clutch for connecting said motor to said mechanism, a shaft sliding in said support, means for frictionally holding said shaft in any one of several axial positions, means for connecting said shaft to said clutch, and an arm so placed on said shaft that it may support said rods in their upper position when the clutch is engaged.

4. A mechanism for raising and lowering a working member, comprising a working member, a support, a rod pivoted to said support and attached to the working member, a motor, a speed reducing mechanism connected to said motor, crank means for actuating said rod, a clutch adapted to connect and disconnect said crank means from said speed reducing mechanism, and means connected to said clutch for supporting said rod when said clutch is disconnected.

5. A mechanism for raising and lowering a working member comprising a working member, a support, a rod pivoted to said support and attached to the working member, a motor, a speed reducing mechanism connected to said motor, crank means for actuating said rod, a clutch adapted to connect and disconnect said crank means from said speed reducing mechanism, means for frictionally restraining said clutch in any one of several positions, and means connected to said clutch for supporting said rod when said clutch is disconnected.

6. A mechanism for raising and lowering a working member comprising a working member, a support, a rod pivoted to said support and attached to the working member, a motor, a speed reducing mechanism connected to said motor, crank means for actuating said rod, a clutch adapted to connect and disconnect said crank means from said speed reducing mechanism, a shaft sliding in said support, means on said shaft for connecting and disconnecting said clutch, and means on said shaft for supporting said rod in its upper position when the clutch is disconnected.

7. A mechanism for raising and lowering a working member comprising a working member, a support, a rod pivoted to said support and attached to the working member, means for guiding the working member, a motor, a speed reducing mechanism connected to said motor, crank means for actuating said rod, a clutch adapted to connect and disconnect said crank means from said speed reducing mechanism, and means connected to said clutch for supporting said rod when said clutch is disconnected.

8. A mechanism for raising and lowering a working member comprising a working member, a support, a rod pivoted to said support and attached to the working member, means for guiding the working member, a motor, a speed reducing mechanism connected to said motor, crank means for actuating said rod, a clutch adapted to connect and disconnect said crank means from said speed reducing mechanism, means for frictionally restraining said clutch in any one of several positions, and means connected to said clutch for supporting said rod when said clutch is disconnected.

9. A mechanism for raising and lowering a working member comprising a working member, a support, a rod pivoted to said support and attached to the working member, means for guiding the working member, a motor, a speed reducing mechanism connected to said motor, crank means for actuating said rod, a clutch adapted to connect and disconnect said crank means from said speed reducing mechanism, a shaft sliding in said support, means on said shaft for connecting and disconnecting said clutch, and means on said shaft for supporting said rod in its upper position when the clutch is disconnected.

10. A mechanism for actuating a clothes pounder comprising a working member, a support adapted to be secured to the side of a stationary tub, a motor, an actuating rod pivoted on said support and pivoted on said working member, a guiding rod pivoted on said support and pivoted on said working member in parallel relation to said actuating rod, and means whereby said motor actuates said actuating rod, said guiding rod and actuating rod being so constructed and arranged that the working member is wholly supported and guided thereby.

11. A mechanism for actuating a clothes pounder comprising a working member, a support, means for detachably securing said support to the side of a stationary tub, an actuating rod pivoted at one end on said support and pivoted at the other end on said working member, a guiding rod pivoted at one end on said support and at the other end on said working member, said guiding rod and said actuating rod being in parallel relation with each other and being so arranged that the working member is wholly supported by said actuating rod and said guiding rod, said rods being also so ar-
ranged that said working member is con-
strained to move wholly in a single definite
path, a motor carried by said support, and
mechanism by which said motor actuates
said working member through said actuating
rod.

12. A detachable mechanism for actuat-
ing a clothes pounder of a washing machine,
comprising a support, means for clamping
said support to the side of a stationary tub,
a motor secured to said support, a working
member, pivoted mechanism for supporting
and guiding said working member from said
support, and means including a connecting
clutch-device and gearing by which said mo-
tor may actuate said pivoted mechanism to
reciprocate the working member, substan-
tially as set forth.

In testimony whereof, I have hereunto set
my hand at Los Angeles, California, this 20
24th day of January, 1914.

GEORGE L. HEDGES.

In presence of—
F. W. HARRIS,
E. HARDESTY.