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March 30, 1926. 1,578,655

F. J. GOGGINS

COIN CONTROLLED METERING DEVICE FOR WASHING MACHINES

Filed Sept. 15, 1924 2 Sheets-Sheet 1

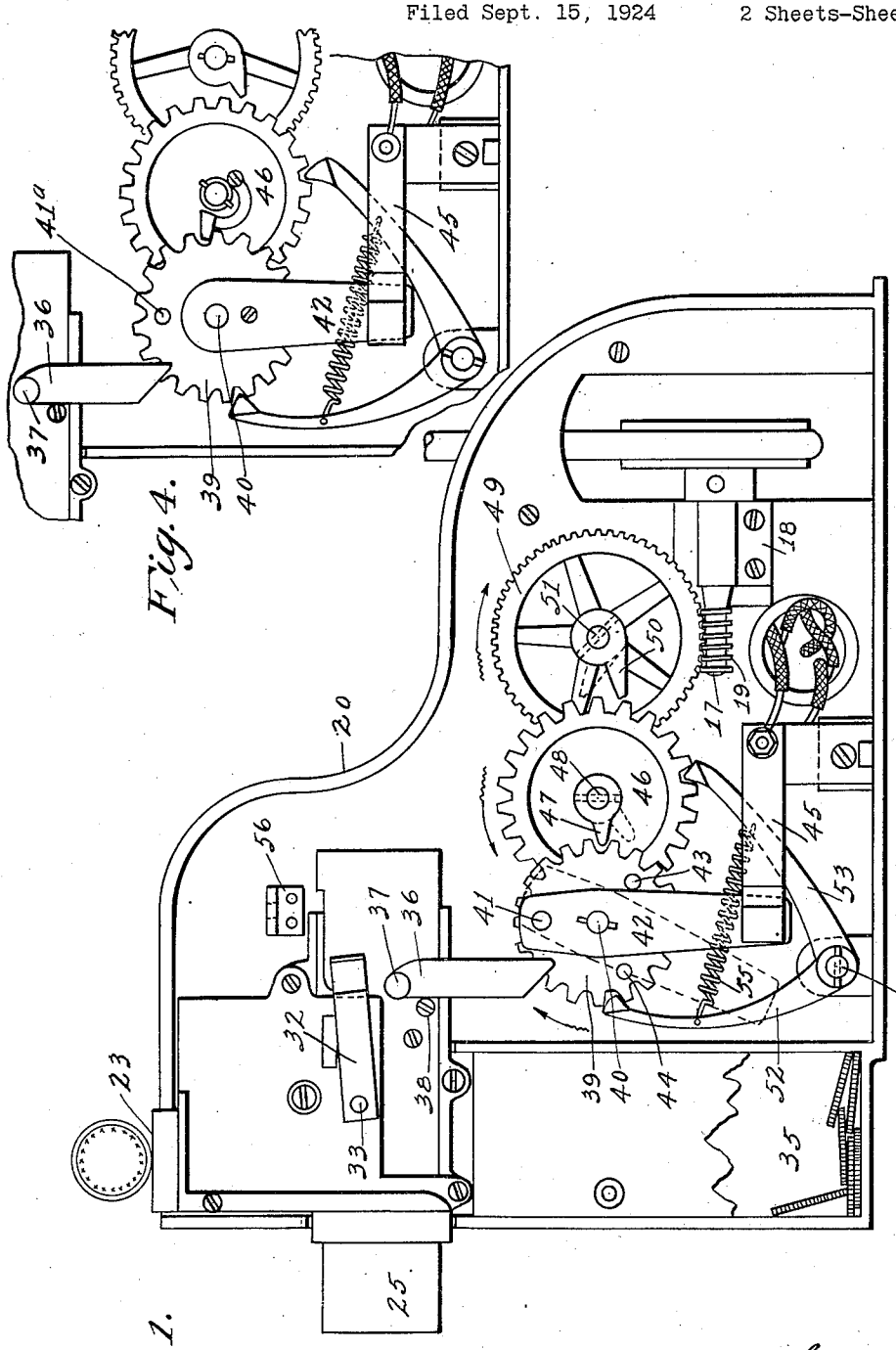


Fig. 4.

Fig. 1.

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Fig. 2.

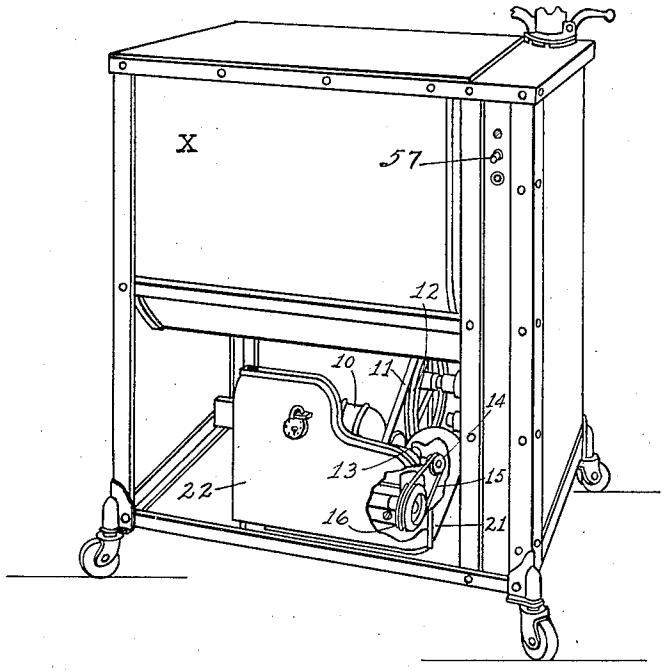
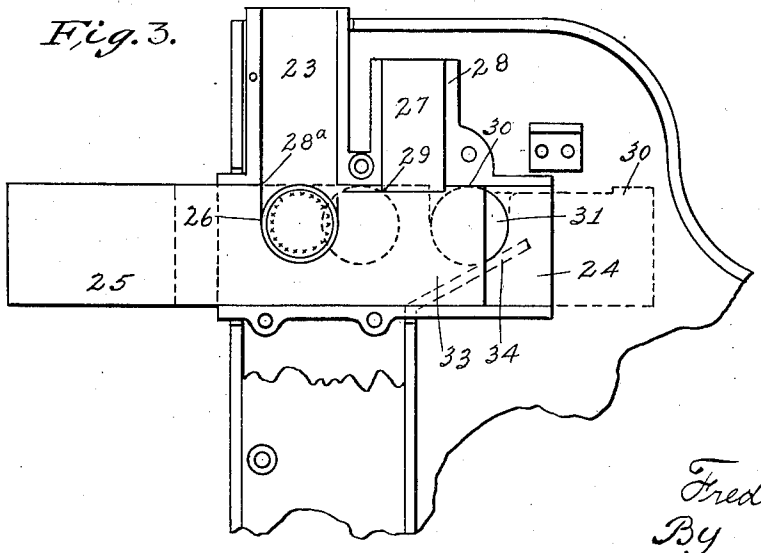


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRED J. GOGGINS, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO FRANK W. KINNEY, OF CHICAGO, ILLINOIS.

COIN-CONTROLLED METERING DEVICE FOR WASHING MACHINES.

Application filed September 15, 1924. Serial No. 737,640.

To all whom it may concern:

Be it known that FRED J. GOGGINS, a citizen of the United States of America, residing at Los Angeles, in the county of Los Angeles and State of California, has invented certain new and useful Improvements in Coin-Controlled Metering Devices for Washing Machines, of which the following is a specification.

My invention relates to washing machines having association therewith means adapted to automatically control the operation of the washer.

The object of my invention is in the provision of a controlling device in combination with a conventional washing machine, whereby, said washer has its movement controlled and its operation limited in a predetermined manner.

A further object of my invention resides in the novel organization of a washing machine and a controlling device, by means of which the period of operation of the machine may be automatically controlled in a predetermined manner, said controlling means being arranged to stop the operation of the machine after a predetermined period has elapsed.

Other objects of my invention will appear in the following specification, taken in connection with the annexed drawings, in which—

Fig. 1, is a front elevation, with the cover removed, of the metering device.

Fig. 2, is a perspective showing the mounting of the coin controlled metering device and driving connection with the electric motor of the washing machine.

Fig. 3, is an enlarged detail showing the coin insert and actuating means for initially energizing the metering device, and

Fig. 4, is a detail view showing modification of the actuating member for circuit control member.

Referring to the drawings, in Fig. 2, I have shown the coin controlled metering device, in combination with a washing machine, and the particular manner of mounting same.

The present device is adapted mainly for use in apartment houses, the revenue gained from the use of same, being intended to eventually pay for the machine, as well as permit a profit.

Generally, it might be said that the metering device is installed with relation to the washer to prohibit use of same unless the proper coin is inserted in the metering device.

Although the present disclosure illustrates a certain type of washing machine, namely cylinder, nevertheless, the present metering device is adapted to be used in connection with any of the well known and conventional types of washing machines. By washing machines, of course, is meant the power machines and especially the electric motor driven type.

Referring to the drawings, in Fig. 2, I have shown generally a power washer of the electric type, designated "X". No details of the particular gearing for the washing machine or drive mechanism other than the belt drive from the electric motor, has been shown, for the reason that the above structure is entirely formal and merely shown generally for the purpose of bringing out the association of the metering device with a washer.

With respect to the metering device, now to be described, it might be said that this metering device is adapted to control the electric current to the motor of the washing machine for a determined period, although the present structure is designed with respect to the timing element to permit the operation of the washer for a period of 30 minutes upon the insertion of a quarter. Nevertheless, it may well be seen that the device might be constructed to take any coin or be constructed to run any desired length of time, the changes that would be necessary being merely matters of degree.

An electric motor of conventional design is shown at 10, there being a belt drive 11, from said electric motor to the main drive wheel 12, that controls the operation of the washing element whether it be of the reciprocating, cylinder, dolly or any other type, as well as the wringer mechanism.

An extension of the motor shaft 13, carries at its outer end, a small pulley 14. A belt drive connection 15, connects said pulley 14, with the driving element or pulley 16, on the metering device. A stub shaft 17, suitably supported in bracket 18, provides the axis for the pulley 16, as well as the driving element for the series of gears in the metering device, this driving connection being made through the engagement of

the worm 19, with the teeth upon the sprocket which it engages.

The metering device itself is positively attached to the frame of the washing machine and in an immovable relation to the electric motor. Housing 21, covers the belt drive between the metering device and the electric motor. The housing referred to is made up of a plate 20, and a removable cover portion 22. As said before the plate 20, is positively attached to the frame of the machine. This plate 20, carries the working elements of the metering device which includes the following portions: A coin chute is shown at 23, the upper end of which is fashioned as to size just sufficient to receive a quarter. Details of the coin receiving portions are shown in Fig. 3, there being a slide-way 24, for a longitudinally shiftable member 25, said shiftable member having a coin receiving slot 26, therein, said slot normally or rather when the metering device is in its inoperative position, lying directly under the coin chute 23, and adapted to receive the coin dropped therethrough. As may be seen in Fig. 3, the shiftable member is adapted to be manually shifted to the right, whereby the coin carried in the receptacle 26, is adapted to abut the lower end of a weight 27, slidable in a guide-way 28, located directly above the member 25. It will be noticed that the weight 27, in its lowermost position slides upon the upper side of the member 25, but upon being struck by the upper and curved side of the coin during its passage thereunder, is adapted to be moved in position to release the slide. With respect to the fashioning of the shiftable member 25, it may be said that said member, upon one side, namely, the side to the left of the coin receptacle 26, is somewhat wider than the remaining portion, and as a matter of fact, this wider portion is fashioned to fit snugly, although slidable therein, the guide-way or slide portion 24.

With respect to the variance in width of this slidable member, it may be seen that unless a coin is carried in the receptacle 26, any sideward movement of the member 25, will result in a direct abutment of the corner 28^a, with the square corner 29, on the weight member 27. Obviously, this particular fashioning is to prevent the longitudinal and operative movement of the slide member unless the proper coin is contained therein.

Again to prevent the complete withdrawal of the member 25, from the metering device, the right hand end portion thereof, is similarly widened as at 30, to prevent withdrawal due to the abutment with the weight member when such movement is attempted.

The guide-way 24, has an opening through one side thereof, of sufficient size to permit passage of the coin member therethrough, when said coin has been forced to such a position, the movement of the coin through this opening 31, being assisted by the spring member 32, forcing it through the opening and into a coin passageway 33, the base portion of which is shown at 34, and the ultimate coin receptacle at 35. The manner of fashioning the spring member to accomplish the above result is effected by attaching the spring at 33^a, to a plate 34, that encases the coin receiving portion above described. This spring 32, does not actually touch the side of the coin but abuts the shiftable member 25, in a tensioned manner to force the coin through the opening 31, and down the passageway into the ultimate coin receptacle.

Referring now, to Fig. 1, it may be seen that a finger member 36, is pivoted at 37, upon the shiftable member, said finger member abutting a lug 38, upon the slidable member 25, in a manner to prevent its rearward movement. A gear wheel 39, is pivoted at 40, below the finger 36, and in such a position with relation thereto, to be moved slightly by the abutment of the finger member with a lug 41 on actuating bar 42, that has the following connection with the gear member. This actuating bar 42, is pivoted upon the same axis that supports the gear wheel but is not integrally or positively attached to said gear, there being lug members 43, and 44, upon the gear wheel which determine the limit of movement of said actuating member. It may be seen that movement of the shiftable member 25, will result in a similar movement of the finger 36, to eventually strike the lug 41 thereby, resulting in a movement of the actuating member 42, to the dotted line position shown in Fig. 1, as well as perhaps slight movement of the gear wheel 39.

It may also be noticed that movement of this actuating member 42, cannot be accomplished unless a coin or rather a quarter has been inserted in the receptacle 26, to permit longitudinal movement of the member 25, under the weight member 27, and to its innermost position, it being the final movement of the shiftable member 25, that actuates the actuating bar 42.

With respect to the movement of the actuating member 42, it might be said that this bar is the means for controlling the electrical circuit to the electric motor through the spring switch 45. This spring switch 45, is fashioned wtih two contact points adapted normally to abut and close the electric circuit to the motor, but when the metering device is not in operation, as shown in Fig. 1, these two contact portions, only one of which may be seen in Fig. 1, of the drawings, and described as 45, are held apart by the actuating bar 42, of fibre or some insulating material. This spring switch 45, is positioned with relation

to the actuating member, to have the electric current controlled thereby broken, or made by the engagement or disengagement of this actuating bar therewith. One sprocket wheel 39, has been described, and this sprocket wheel forms one of the elements in a series of timing gears now to be described. A second gear 46, has an inner tooth 47, integrally cast therewith and rotating upon the same pivot 48, said tooth adapted upon each rotation of the gear 46, to transmit a slight movement to the gear 39, in the direction shown by the arrow.

Another gear in the timing arrangement is shown at 49. This gear having also an inner tooth 50, cast in a rather similar manner as before to the axis 51, and said tooth 50, likewise upon each rotation actuating the gear 46, slightly in the direction of the arrow.

Now, it is clear that movement of this chain of gears is effected through the worm drive shown at 19, and the power being transmitted through the belt 15, and pulley 14, upon the electric motor.

Obviously, and as described, it is the shiftable movement of the member 25, which through the finger 36, throws the actuating bar 42, from between the lips of the spring switch 45, and hence closes the circuit to the electric motor and thus commences the operation of the washer. The commencement of operation of the electric motor as well as the operating portions of the washing machine also transmits movement to the metering device through the above noted connections and thereby starting the series of timing gears which results in the following movement.

The movement of the gears can be followed by noting the direction of the arrows which will show that the gear 39, is moved in a clockwise manner, carrying the actuating member 42 with it. It may be also seen that eventually the actuating member, after being thrown initially from engagement with the switch 45, will ultimately reengage said switch and break or rather open the electrical circuit to the electric motor.

As has been said before, in this particular structure, this timing of the operation of the electric motor has been for one half hour, although obviously merely degrees of structure would result in a different time arrangement. The arms 52, and 53, pivoted at 54, and spring tensioned as at 55, and engaging the respective gears 39, and 46, are merely for the purpose of resisting slightly their movements to regulate the distance of travel when actuated by the respective teeth 47, and 50.

In Fig. 4, I have shown a modification of the actuating bar 42, in this instance the actuating bar being fastened integrally with the gear 39, and its movement away from the spring switch 45 being effected by the abutment of the finger 36 with a lug 41^a, upon the gear 39. In other words, it is the slight movement of the gear wheel 39, that moves the actuating bar and starts into operation, the washing machine as well as the metering device.

As said before, every precaution has been taken to prevent tampering with the mechanism of the metering device, and the cover plate is padlocked to the plate 20, carrying the working elements of the metering device in the following manner. A projecting bar 56, passes through an aperture in the casing 22, and is positively held in such manner by means of the padlock above described.

Relative to the operation of the washer, it may be seen that the operator has 30 minutes actual use thereof, irrespective of stops, inasmuch as an electric switch 57, upon the washer controls the circuit to the electric motor and can be actuated at will, by the operator without effecting the metering device, other than to stop it temporarily.

What I claim is:

1. In combination a washing machine having a support, a tub on said support, a motor, driving connections between said motor and the washing machine, a source of electric power, a switch interposed between the source of power and the motor, a movable switch operating member operated by and in invariable timed relation with said motor for breaking said switch after a uniform predetermined period of operation of the motor, a closed casing surrounding said switch and switch-operating member, means for locking said casing against unauthorized entry therein, the said switch and switch operating member being completely inaccessible and protected when the casing is closed so as to prevent unauthorized movement of either the switch operating member or the switch, the said casing being provided with a restricted opening and a guideway extending in proximity to the switch operating member, and a member adapted to enter said casing through said restricted opening and move along said guideway into a position of cooperation with said switch operating member to control the operation of the switch.

2. In combination, a washing machine having a support, a tub mounted upon said support, a motor mounted upon said support, driving connections between said motor and the tub, a source of electric power, and means interposed between the source of power and the motor for arresting the motor and the tub after a predetermined period of operation, said means including a switch, means for breaking said switch to interrupt the connection between the source of power and the motor, means

for moving said switch breaking means into position to permit the connection between the source of power and the motor, means for locking said last mentioned means against unauthorized movement, a casing surrounding said locking means, and means for locking the casing against unauthorized entry therein.

3. In combination, a washing machine having a support, a tub on said support, a motor, driving connections between said motor and the tub, a source of power, and means interposed between the source of power and said motor for automatically arresting the motor and the tub after a predetermined period of operation, the said means including means for interrupting the connection between the source of power and the motor, connections between said interrupting means and said motor whereby the interrupting means is operated by and in timed relation with said motor, means for moving said interrupting means in position to connect the source of power with the motor, means for locking said last mentioned means against unauthorized movement, a casing enclosing all of said means, and means for locking said casing against unauthorized entry.

In testimony whereof I affix my signature.

FRED J. GOGGINS.