D. C. HOF.

WASHING MACHINE.

APPLICATION FILED NOV. 17, 1910.

998,901.

Patented July 25, 1911.

2 SHEETS—SHEET 1.

FIG. 1

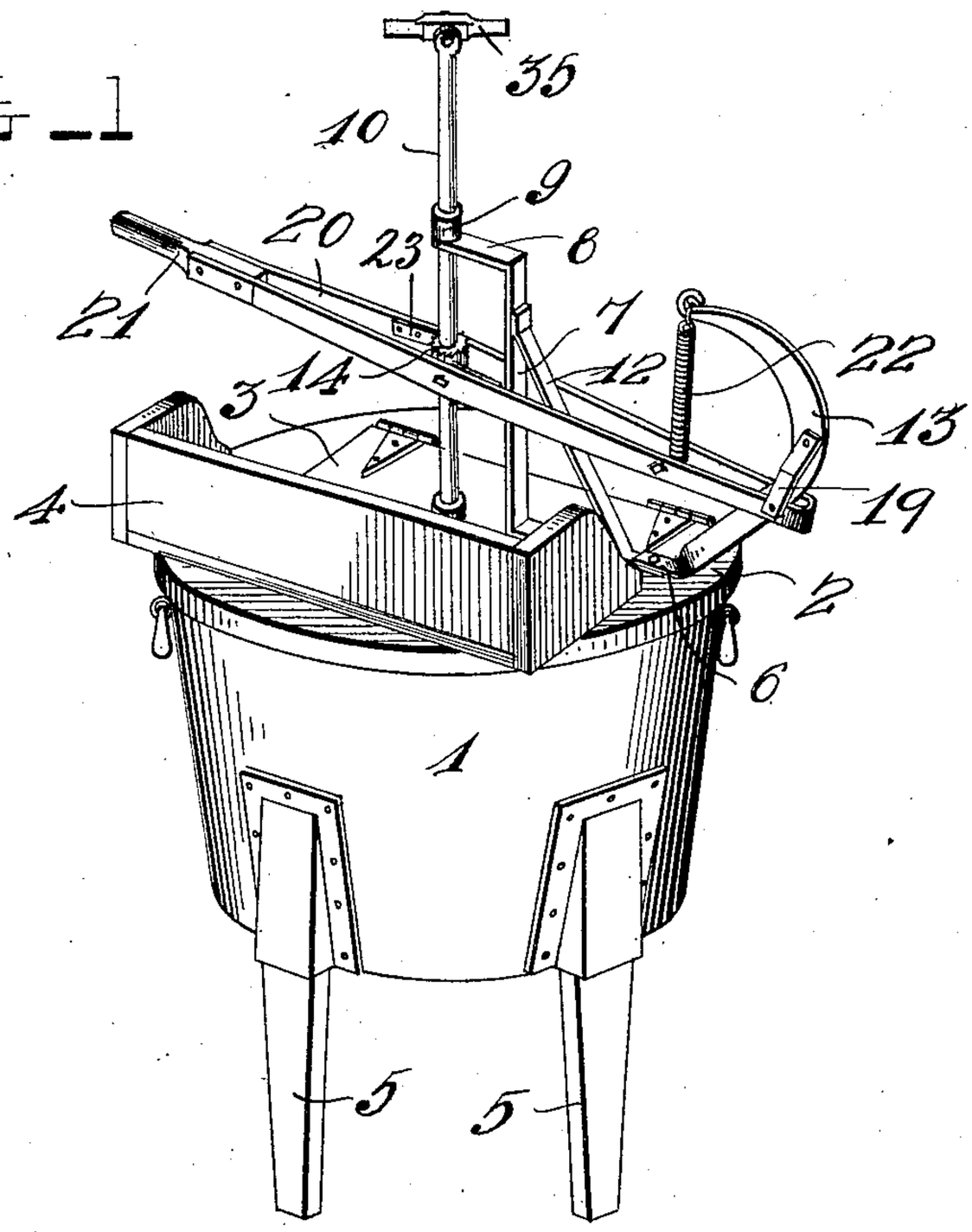
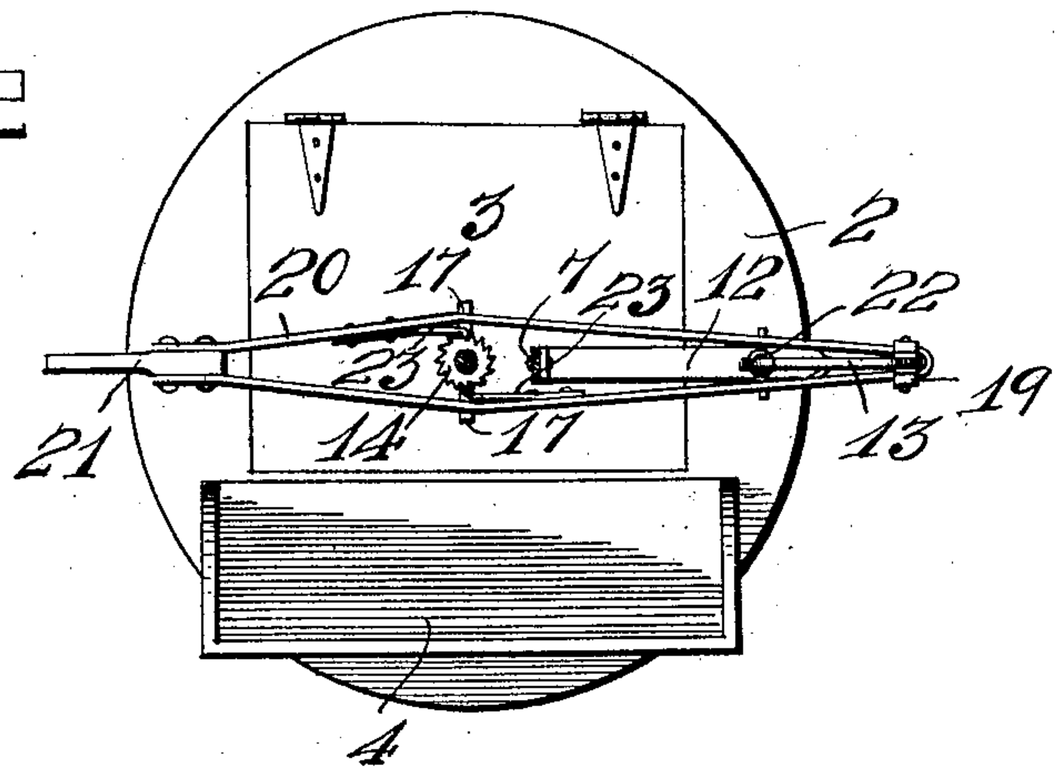


FIG. 2



Witnesses

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2 SHEETS—SHEET 2.

FIG. 3

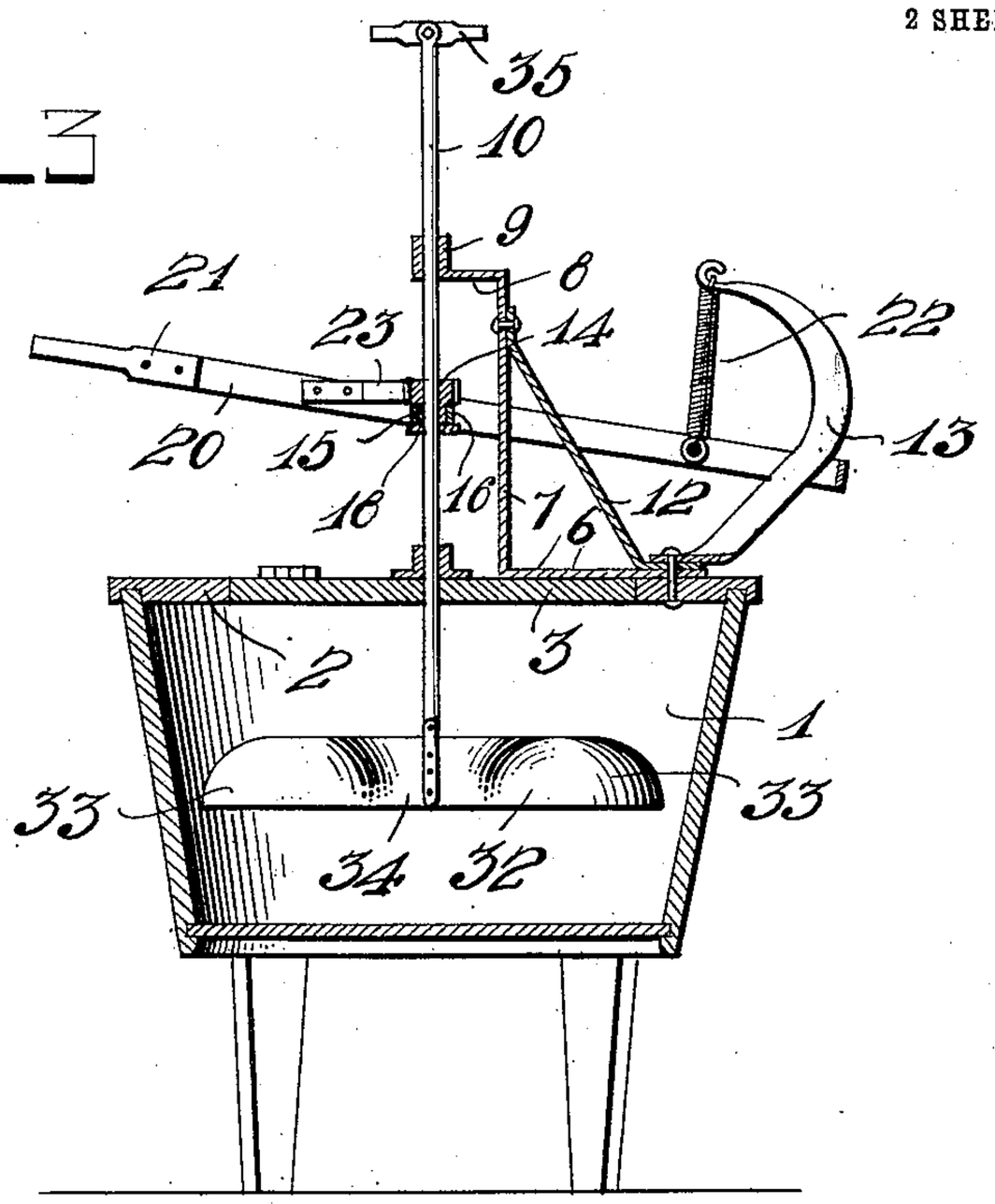

FIG. 4

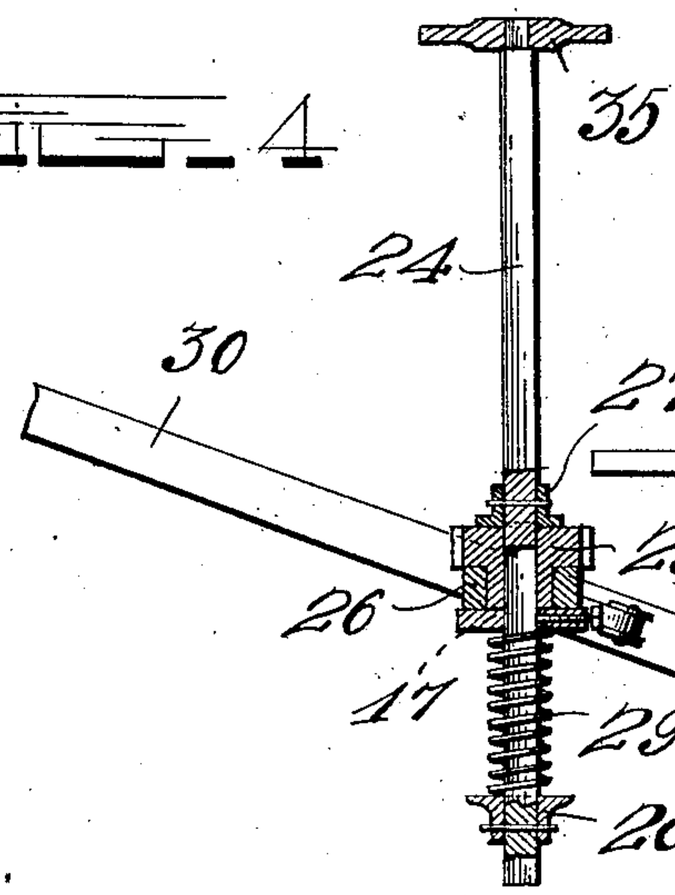

FIG. 5

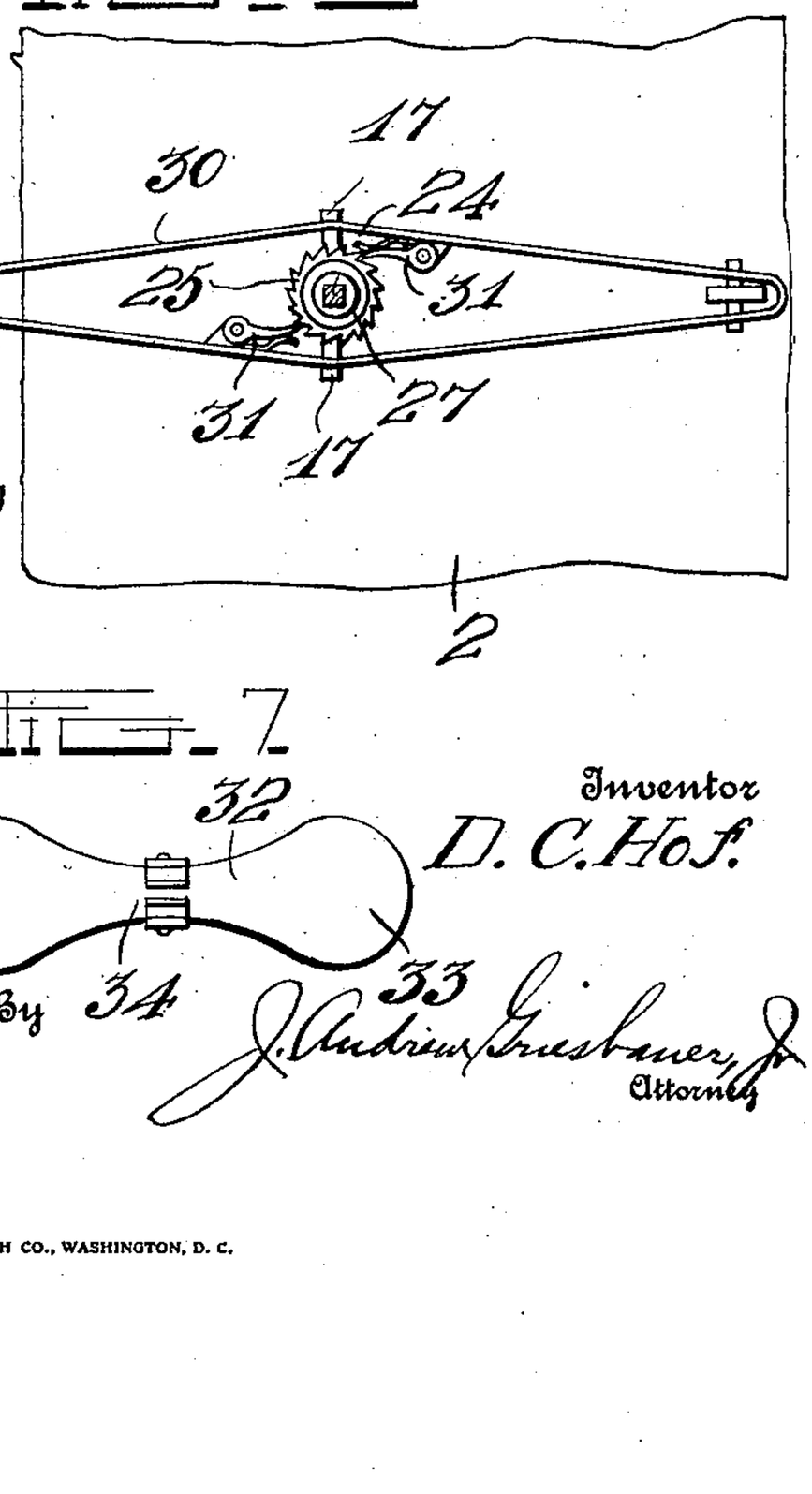

FIG. 6

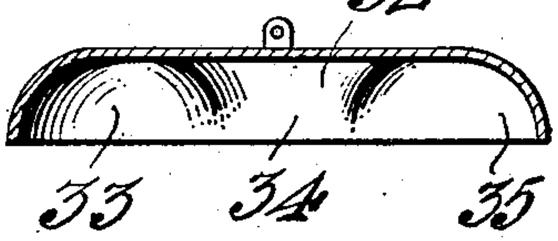

FIG. 7

Witnesses

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UNITED STATES PATENT OFFICE.

DAVID C. HOF, OF NORA SPRINGS, IOWA.

WASHING-MACHINE.

998,901. Specification of Letters Patent. Patented July 25, 1911.

Application filed November 17, 1910. Serial No. 592,890.

To all whom it may concern:

Be it known that I, DAVID C. HOF, citizen of the United States, residing at Nora Springs, in the county of Floyd and State of Iowa, have invented certain new and useful Improvements in Washing-Machines; and I 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.

This invention relates to improvements in washing machines.

One object of the invention is to provide a washing machine having an improved construction and arrangement of operating mechanism whereby the clothes pounder of the machine will be given a rotary movement simultaneously with the reciprocating movement thereof, thereby adding the function of rubbing to that of pounding the clothes.

A further object is to provide an improved machine of this character which will be simple, strong, durable and inexpensive in construction, efficient in operation and well adapted to the purposes for which it is designed.

In the accompanying drawings, Figure 1 is a perspective view of a washing machine constructed in accordance with the invention; Fig. 2 is a detail horizontal sectional view through the pounder shaft taken above the operating lever; Fig. 3 is a vertical sectional view through the same; Fig. 4 is a vertical sectional view showing a modified construction and arrangement of parts of the operating mechanism; Fig. 5 is a horizontal sectional view of the parts as shown in Fig. 4, taken above the operating lever; Fig. 6 is a longitudinal sectional view of the clothes pounder and rubber; Fig. 7 is a plan view of the same.

In the embodiment of the invention as shown in Figs. 1, 2 and 3 of the drawings, I provide a tub or receptacle 1 having a cover 2 in an opening in which is arranged a hinged door 3. The cover 2 may also be provided with a wringer supporting frame 4. The tub is supported at a suitable elevation upon any suitable legs 5 which in this instance are engaged in sockets arranged on the sides of the tub, or attached to the latter in any other suitable manner.

On the cover 2 is arranged the supporting frame of my improved pounder operating mechanism, said frame comprising a base plate 6 having on its inner end an upwardly projecting standard 7, the upper end of which is bent at a right angle forming a bracket 8 having a guide sleeve 9 to receive the operating rod or shaft 10 of the clothes pounder hereinafter described.

The standard 7 is firmly braced by an inclined brace bar 12 which is secured thereto at its upper end and at its lower end is secured to the base plate 6. On the outer end of the base plate is secured an upwardly and outwardly projecting bracket arm 13 having an inwardly curved upper end as shown.

Fixed on the rod 10 is a ratchet gear 14 having a reduced downwardly projecting hub 15, upon which is loosely engaged a collar 16 provided with laterally projecting trunnions 17 the collar 16 being held on the hub 15 by a collar 18 secured to the shaft or rod 10 by a set screw or in any other suitable manner.

Pivotally connected at its outer end to suitable hangers on the brackets 13 is a pounder operating lever 20, said lever being formed from a flat metal bar, bent midway its ends to provide oppositely disposed bars or arms which are spaced a suitable distance apart and are provided at their centers with transverse bearing passages which are engaged by the trunnions 17 on the collar 16 as shown. The outer ends of the arms or bars of the lever 20 are secured to the opposite sides of and are spaced apart by an operating handle 21 by means of which the lever is swung up and down, thus reciprocating the pounder rod and the pounder. In order to assist in lifting the lever and pounder, I provide a lever spring 22 which, in the first three figures of the drawings, is shown as being connected at its upper end to the inwardly curved upper end of the bracket 13 and at its lower end to the lever 20 near its pivotal connection with said bracket as shown.

In order to simultaneously turn the pounder operating rod or shaft and the pounder with the reciprocating motion thereof I provide suitable ratchet engaging elements carried by the lever 20, said elements being shown in the first three figures of the drawings as consisting of spring metal pawls 23 having their outer ends riveted or otherwise secured to the inner walls of the opposite sides of the lever on opposite sides of the ratchet gear 14. The inner

ends of the spring pawls 23 are bent inwardly in the form of teeth adapted to engage the teeth of the ratchet gear 14 whereby, when said lever and the gear and pounder rod are moved up and down, the teeth of the spring pawls will alternately push the teeth on opposite sides of the ratchet gear thereby rotating it constantly in one direction, the tooth of the pawl on one side acting on the gear to turn it when the lever is swung upwardly and the tooth of the pawl on the opposite side, when the lever is lowered.

In the form of the invention shown in Figs. 4 and 5 of the drawings, the pounder operating rod or shaft 24 is of rectangular form in cross section and has slidably mounted thereon a ratchet gear 25 provided with a reduced downwardly projecting hub on which is arranged a collar 26 constructed with trunnions 17 and engaged with the lever in the same manner as is the collar 16, shown in the first three figures of the drawings. On the rod 24 above the gear 25 is secured a stop collar 27 while on the shaft a suitable distance below the gear, is secured a stop collar 28. On the shaft between the gear 25 and the lower stop collar 28 is arranged a coil spring 29 which serves to assist in raising the lever after the same has been forced downwardly to revolve the pounder shaft.

In the form of the invention shown in Figs. 4 and 5 the pounder operating lever 30 is shown as being provided with pivoted pawls 31 which are arranged in the same manner as the spring pawls 23 of the first form of the invention and are held in operative engagement with the gear 25 by suitable springs whereby when the lever 30 is swung up and down, the engagement of the pawls with the ratchet gear will turn the latter and the pounder operated thereby. Secured to the lower end of the pounder rods 10 and 24 is a clothes pounder or rubber 32 which is in the form of a hollow sheet metal cup, which is preferably of elongated construction having enlarged substantially circular outer ends 33 and a contracted connecting portion 34 to which the lower end of the operating rod or shaft is connected in any suitable manner.

On the upper ends of the pounder rods 10 and 24 is arranged an arm 35 parallel with the elongated pounder, said arm thus indicating the position of the pounder in a tub.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention as defined in the appended claim.

What is claimed is:—

In a washing machine comprising a tub and a cover secured thereon, the combination of a bracket erected on the cover, a supporting frame secured on the cover bent at a right angle at its upper end and carrying a vertical sleeve, a pounder rod slidably journaled in the sleeve, a ratchet gear secured on the sleeve and provided with an extended hub, a collar on the hub, carrying trunnions, a lever pivoted on the bracket and comprising two bars straddling the collar and pivotally engaging the trunnions, a spring pawl on the inside of each bar of the lever, one engaging the gear when the lever is raised and the other when it is lowered, thereby rotating the gear and its connections in the same direction during both movements, a stop collar secured on the pounder rod below the trunnion collar, and an expansive spring coiled about the rod between the two collars for normally holding the lever in its raised position.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DAVID C. HOF.

Witnesses:
H. F. SCHNEDLER,
M. JEAN WILKINSON.