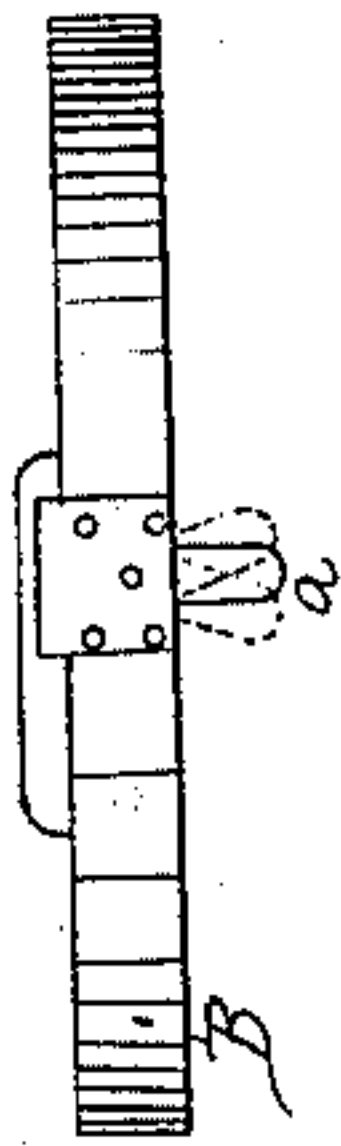


*E. Gore,*

*Washing Machine,*

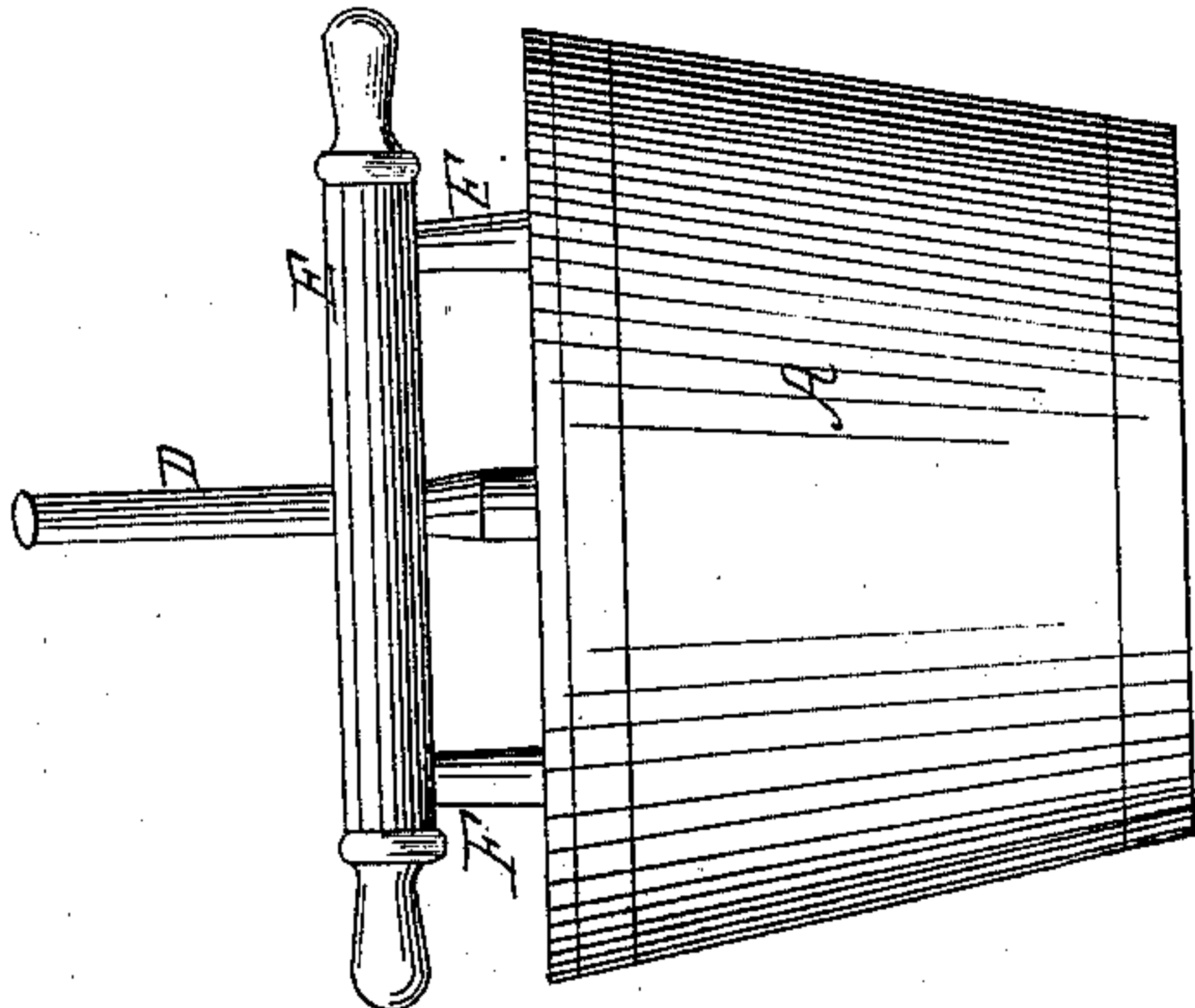
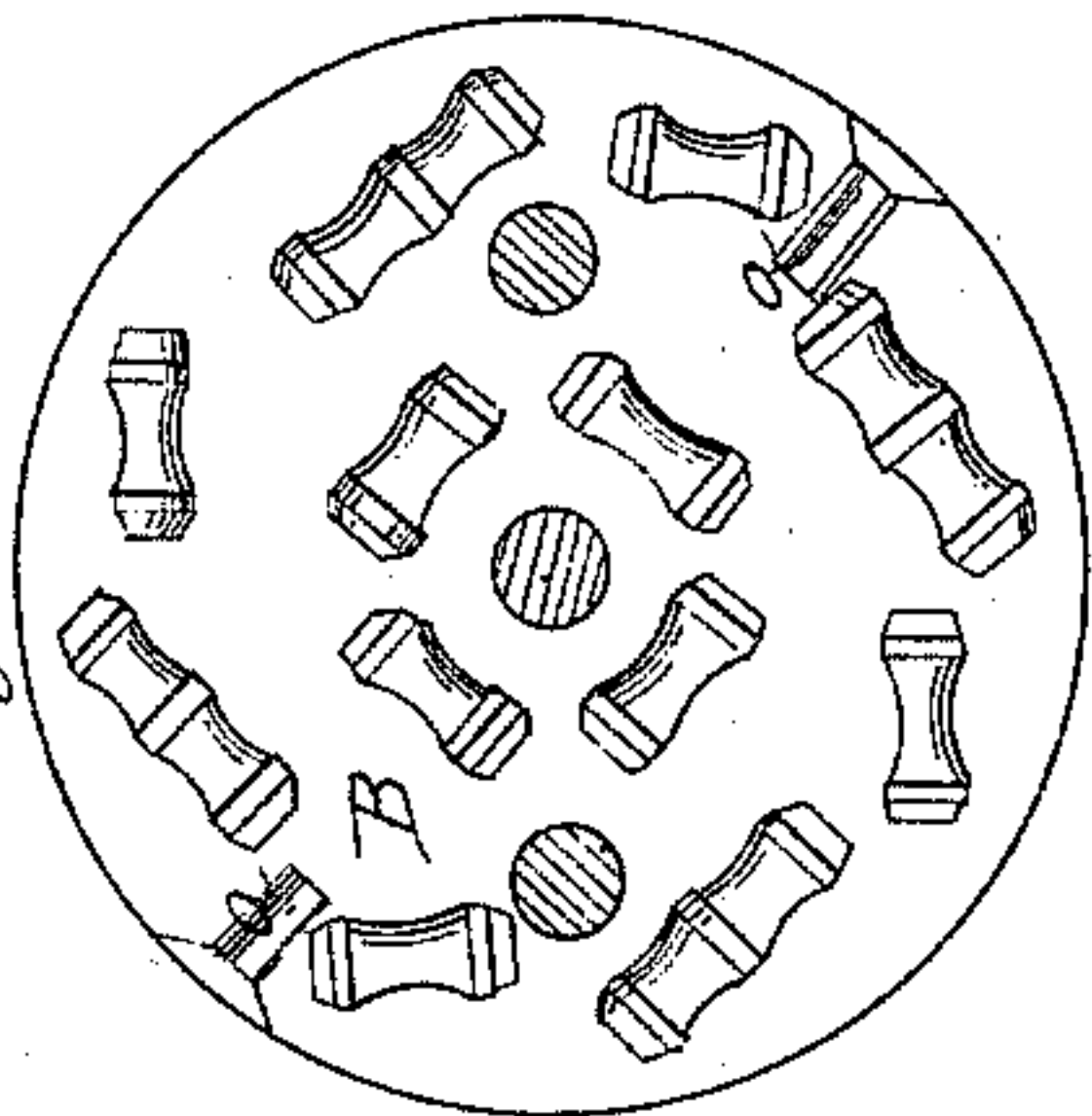
*N<sup>o</sup> 32,474.*

*Patented June 4, 1861.*

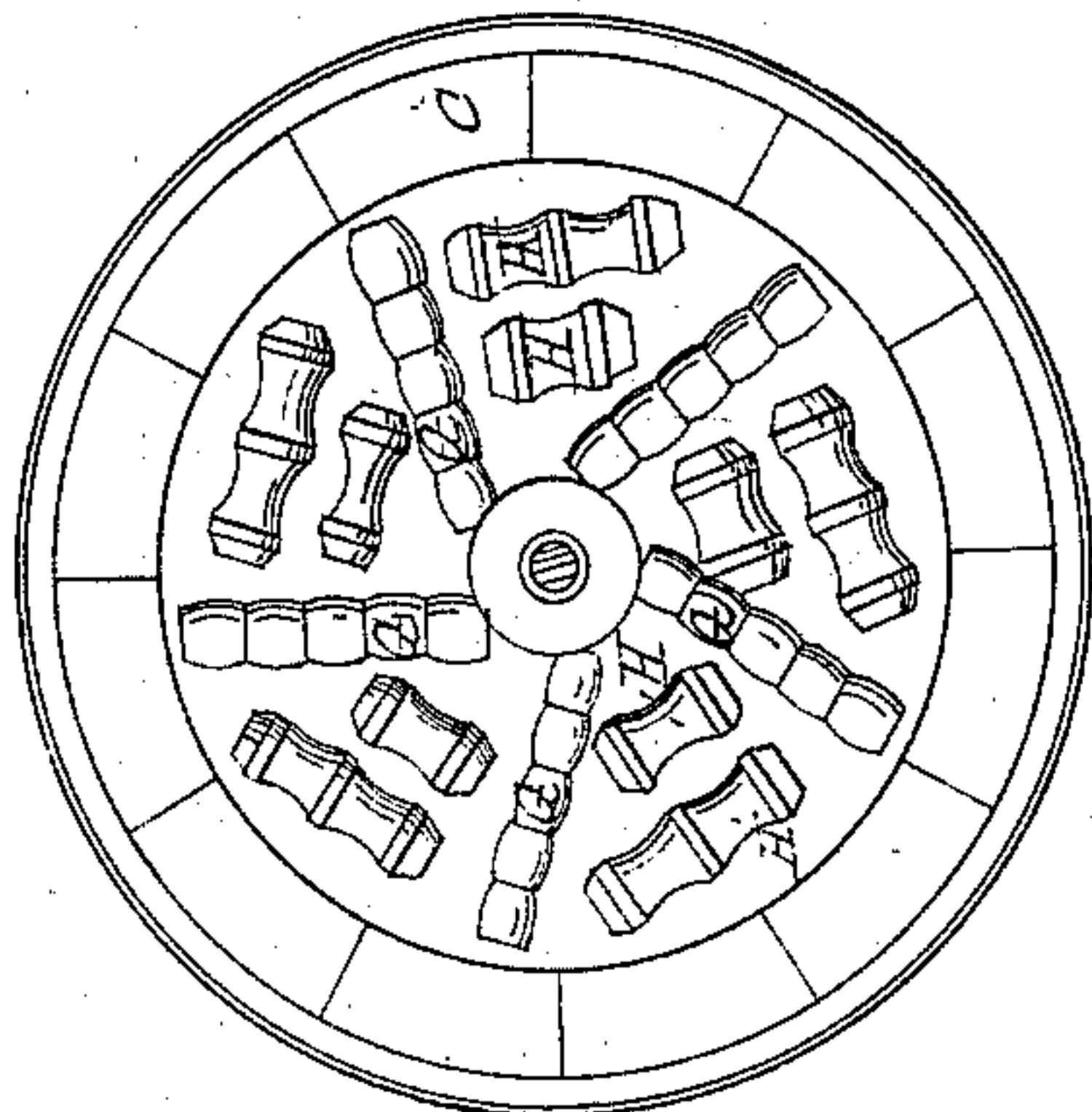


*Fig. 2.*

*Fig. 3.*



*Fig. 1.*



*Witnesses:*

*Wm. M. Alexander*

*A. A. Yechman.*

*Inventor*  
*E. Gore*



# UNITED STATES PATENT OFFICE.

EZEKIEL GORE, OF BELVIDERE, ILLINOIS.

## WASHING-MACHINE.

Specification of Letters Patent No. 32,474, dated June 4, 1861.

*To all whom it may concern:*

Be it known that I, EZEKIEL GORE, of Belvidere, in the county of Boone and State of Illinois, have invented a new and useful Improvement on Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

A represents the tub; C the bottom of said tub provided with rubbers.

B represents the follower.

D is the standard in the tub and E is the handle.

F F are standards connecting the follower to handle.

a a are the adjustable rubbers which are pivoted in mortises in the follower, so that they will vibrate or oscillate as the said follower is partially rotated backward and forward.

H H are the angular rubbers.

G G are the oval rubbers.

In regard to the construction of my machine, I use the common size wash tub, resting the same on a square bottom supported on four legs. I lay out or divide the bottom of the tub into lands or sections, by so placing the long oval rubbers, that they will run from right to left, then a line drawn through their centers lengthwise, will coincide with a line drawn at right angles with the outside of the hub, which is situated in the center of the tub. I use five of these rubbers. The sections are of equal area each. I also use two angular rubbers. The longest of these angular rubbers is about four and one half inches. The breadth of each rubber is about one inch and a half. The short angular rubber is two thirds of the length of the other. The length of the long oval rubber is ten inches. I place the short angular rubber about four inches from the hub, and so that a line drawn through the center of this rubber, will cut at right angles, the said line drawn through the center of the left hand adjacent oval rubber. I set the longest of these angular rubbers, about seven inches and a half from the hub, and on a line parallel with said short rubber. I use two of these rubbers in each section, in the same manner. There are five sections. From the center of the tub I erect a standard, whose diameter varies as follows: From the foot of the same to about one and three

quarter inches in height, the diameter is three inches, forming a shoulder or hub, which supports the standard, and prevents leakage; from the hub, to the working bar above, a distance of twelve inches, the diameter is one and three quarter inches; from this last point the standard tapers to the top in a diameter of seven-eighths inches. The entire length of the same is twenty two inches. It is tenoned by a two inch tenon into the tub and bottom on which it rests and keyed below.

The diameter of the follower should be from  $\frac{3}{8}$  to  $\frac{1}{2}$  inch less than the inside diameter of the tub, to prevent it from binding. I divide the follower into sections four in number, by describing four straight lines, running from a point on the circle in the center of the follower to a point on the circumference of the same, each respectively, so that each of said lines shall be parallel with an adjacent line representing the diameter of the follower, there being two such lines intersecting each other at right angles in the center of the follower. On each of the said four straight lines I place three angular rubbers, of different lengths, parallel with each other, and two inches apart, each end of said rubbers being at equal distances from the line respectively on which it is placed. The shortest rubber is nearest the center, and longest rubber farthest from it. These rubbers are also set at an angle of  $22\frac{1}{2}$  degrees from a straight line, touching the circumference of the follower at right angles with the sectional lines. One of these rubbers has three angles and the others on the line have two only. Their length is respectively  $4\frac{1}{2}$  and 3 inches. In each section I also use two more angular rubbers, same length as above, situated about two inches apart, and occupying the same relative position to the sectional lines on the follower, as the same do to the oval rubbers on the tub. I also use two oscillating rubbers, set into a mortise opposite to each other on the follower, of about 2 inches in breadth and three inches long, or long enough to hang  $\frac{1}{2}$  inch below the surface of the other rubbers on the follower. They are hung in the mortise near the circumference of the follower by an iron or wire pin, passing through their upper ends, and play back and forth over a surface of about 2 inches. Four of these rubbers may be used with equal or better effect. All the angular and oval rubbers on the tub and



follower may be changed or their present general arrangement be reversed, so that they shall run from left to right, that is their right ends inclining toward the hub or center of follower, and their left ends inclining from it, with an equally good effect, but one must not be changed without the other. The rubbers may be fastened in their place by  $1\frac{1}{4}$  inch finishing nails. In the center of the follower I bore a two inch hole through which the standard passes. About seven inches from this center I fit side arms  $1\frac{1}{4}$  diameter, into the follower, at right angles with its surface, and connect their upper ends by mortise and tenon with the working bar. These arms are ten inches between shoulders. The working bar is 27 inches long, and turned at either end to fit the hand, having a hole in the center to receive the standard. For a larger or smaller size tub the various parts must be proportional.

In regard to the operation of my machine, I place the follower in the tub, passing the standard through the hole in the center of the same and the working bar. It will then rest on the lower shoulder of the standard and be kept in its place by the same where it connects with the working bar. The peculiar arrangement of the oval and angular rubbers on the follower and tub will give a shearing motion to the same, when the machine is in operation, which is a very efficient movement in cleaning the clothes. The use of the angular rubbers is of great advantage for the reason, that they take a rank hold upon the clothes and keep them in constant motion, exposing a new surface to the action of the rubbers with every vibration of the follower. The oscillating rubber is also of great effect, as it reaches below the other rubbers, and gradually turns the clothes on the bed of the tub, changes them about, and

thus renders all parts of them subject to the friction of the oval and angular rubbers. These adjustable rubbers stand at right angles (when hanging free) to the follower and are secured at one end in mortises in the under side of the follower by means of pivots or otherwise so that as said follower is partially rotated backward and forward they will oscillate and change the clothes as has been mentioned. When ready for use, I put into the tub from fifteen to twenty yards of clothes. I do not pile one piece upon another according to the old way, but lay one piece in the tub, pushing it to one side by itself, and the other pieces in the same manner, until the bottom of the tub is covered about three or four inches deep. I then put in the follower and scalding water enough to just cover the clothes and follower. I use  $\frac{1}{2}$  lb. soap to this quantity of water, less may be used with good effect, and by means of the working bar, I turn the follower backward and forward with an oscillating or vibrating movement of about 4 inches each way from the line described by the working bar when stationary, until the clothes are cleaned, which takes from three to five minutes, according to the kind and condition of the clothes.

One suds will do for two or three tubs of clothes.

The wear of the clothes by my machine is comparatively nothing.

Having thus fully described the nature of my invention, what I claim and desire to secure by Letters Patent is—

The oscillating rubbers substantially and for the purposes set forth.

EZEKIEL GORE.

Witnesses:

J. S. HILDRUP,  
H. J. DOOLITTLE.