

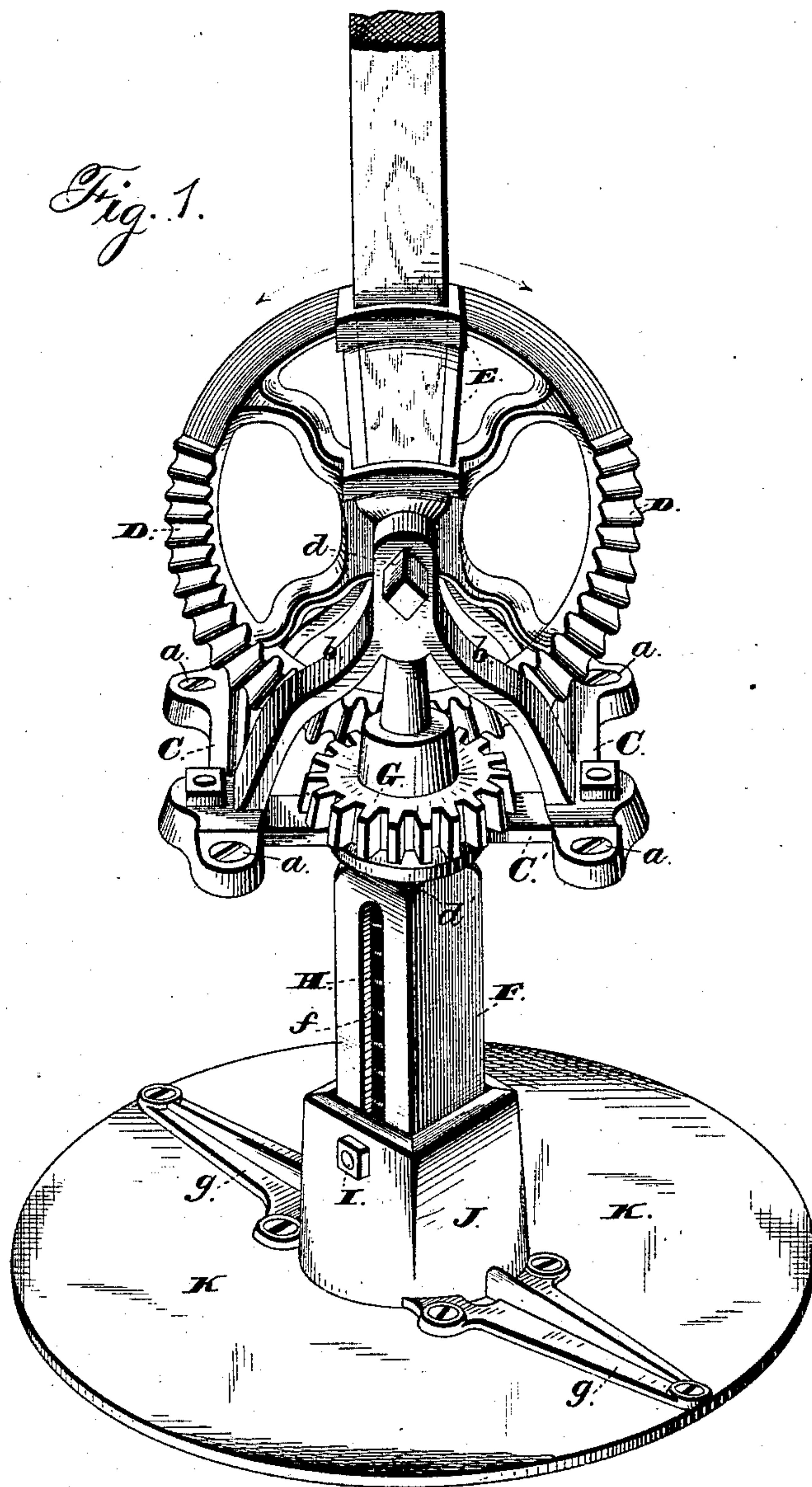
(No Model.)

2 Sheets—Sheet 1.

N. HOLMES.
WASHING MACHINE.

No. 285,411.

Patented Sept. 25, 1883.



Witnesses:

Jas. E. Hutchinson.
S. E. Nottingham

Inventor.

Nelson Holmes.
By H. A. Symmons,
Atty.

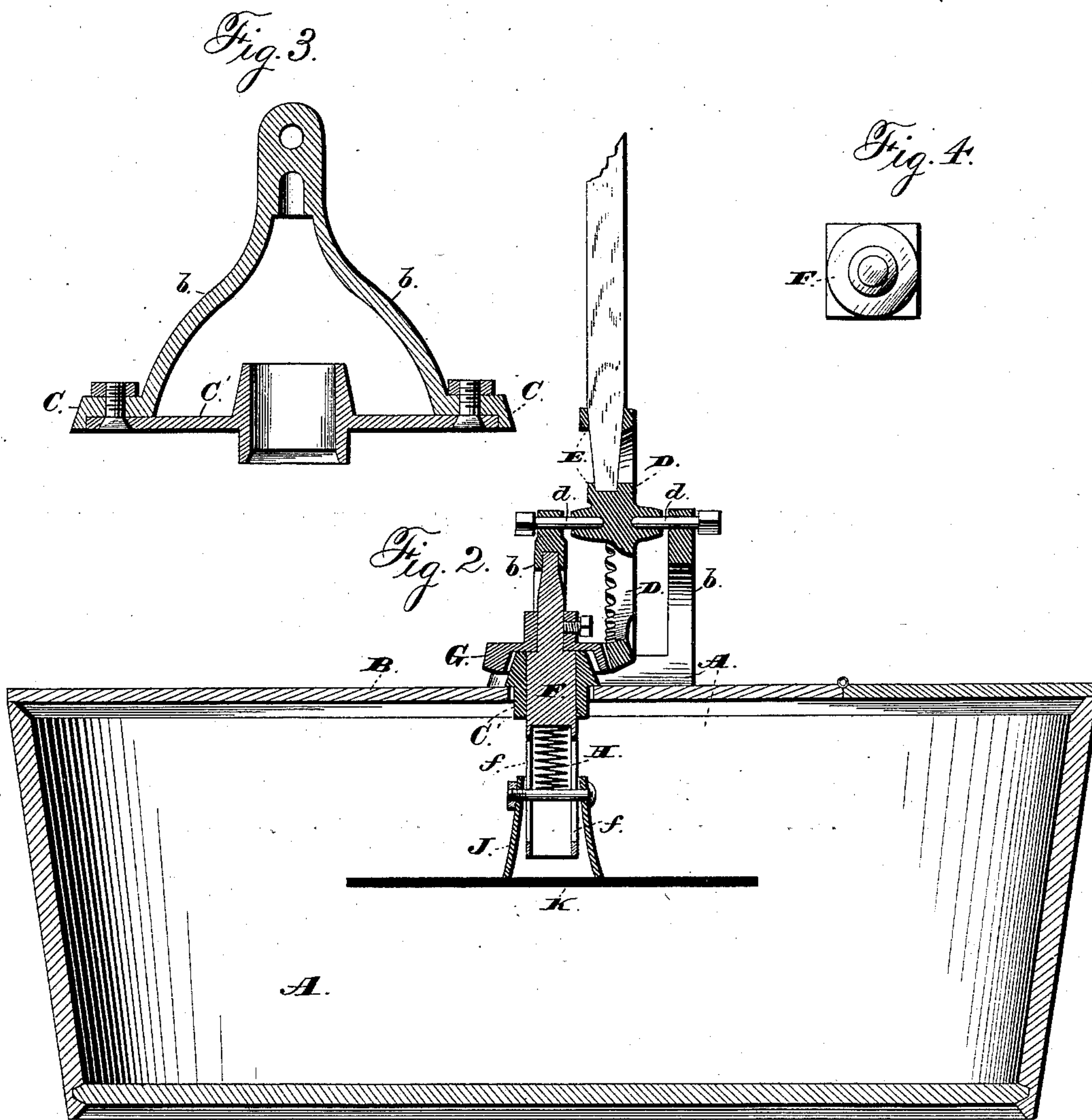
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UNITED STATES PATENT OFFICE.

NELSON HOLMES, OF YPSILANTI, MICHIGAN.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 285,411, dated September 25, 1883.

Application filed May 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, NELSON HOLMES, of Ypsilanti, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Washing-Machines; and I do hereby 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.

My invention relates to an improvement in washing-machines, the object of the same being to provide strong and substantial means for yieldingly connecting the rotary rubber to the driving-shaft, whereby the rubber is allowed to accommodate itself to the articles being washed; and with this end in view my invention consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of my improvement. Fig. 2 is a sectional view, showing the parts secured to a tub. Fig. 3 is a vertical sectional view through the shaft-supporting chair, and Fig. 4 is a plan view of the shaft.

A represents a tub, and B the cover thereof, to which my improvement is secured by the screws *a*. The metallic plates C are each provided with the upwardly-converging arms *b*, which form bearings for the pins *d*, on which latter the driving-gear D is journaled. This gear D is provided with teeth throughout a portion of its circumference, and is also provided with a socket, E, for the introduction of one end of a handle, by which the device is operated.

The two plates C are rigidly connected together by the arms *b*, and also by the detachable plate C', the opposite ends of which latter are secured in suitable sockets formed in the lower face of the plate C, immediately below one set of arms, *b*. This plate is enlarged centrally to form a bearing for the vertical shaft F, to the lower end of which the rubber is secured. The extreme upper end of the shaft F, which is considerably reduced in size, rests in a socket or bearing, *e*, formed on the under side of the arms *b*, immediately below one of the pins *d*, which supports the main driving-gear.

G is a small bevel-wheel, rigidly secured to the shaft F above the plate C'. This wheel meshes with the driving-gear D and oscillates the shaft F, and at the same time holds the said shaft in position in its bearings by resting on the upper face of the plate C'. That portion of the shaft F below the shoulder *d'* is made angular in cross-section, and is hollowed out for the reception of the spiral spring H, the lower end of which rests on the bolt I. This bolt is secured to the sleeve J, and passes through the oblong slots *f*, formed on opposite sides of the shaft F. The sleeve J is provided at its lower end with the laterally-extending arms *g*, by means of which it is secured to the rubber K. This sleeve at its upper end conforms in shape to the shaft F, and is adapted to receive all the strain therefrom, while the bolt I merely serves to hold the parts together and form a seat for the spring. The lower end of the sleeve is considerably enlarged, which allows the rotary or reciprocating rubber to wobble or incline, and consequently accommodate itself to the articles being washed, when the latter are placed unevenly in the tub. This sleeve J is of sufficient length to enable it to inclose a greater portion of the shaft F below the shoulder *d*, and is secured to the upper face of the rotary or oscillating rubber, which latter is adapted to bear on the clothes in the ordinary manner. This rubber limits the upward movement of the sleeve on the shaft and prevents the said shaft from coming in contact with the clothes, as is the case with the majority of rotary machines of this class.

The plates and arms, or the chair formed by the combined plates and arms, are secured to the cover of the tub by suitable screws, and when the said cover is locked in a closed position the rotary rubber bears on the clothes therein. By moving the hand-lever the rubber is oscillated, and the universal joint formed by the gradual enlargement of the sleeve allows the rubber to accommodate itself to inequalities in the distribution of the articles over the bottom of the tub.

To apply my device to a tub it is simply necessary to form an opening through the cover thereof large enough to admit the shaft. The chair is then screwed thereon and the

rubber secured to the shaft by passing the bolt through the sleeve and oblong slots in the shaft and under the spring. When the tub has been partly filled with the articles to be washed, the cover is locked in position. The yielding connection between the rubber and shaft enables the former to give to accommodate itself to the articles, while the spring which actuates the same holds it in close contact with the said articles.

It is preferred to make the several parts of my device, and particularly those which are submerged in water, of galvanized iron, to prevent them from rusting.

This improvement is exceedingly simple in construction, is durable and effective in use, and can be manufactured at a small initial cost.

I am aware that it is not new to secure an angular shaft within a hollow sleeve and interpose a spring between the lower end of the shaft and the rubber, and hence I make no claim thereto.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a hollow angular shaft provided on opposite faces with oblong

slots, of a rubber, a sleeve rigidly secured to the same, the upper end of the said sleeve closely embracing the shaft and connected thereto, as set forth, the lower end of said shaft being considerably enlarged to enable the rubber to tilt or wobble, and consequently accommodate itself to inequalities in the thickness of the articles being washed, and a spring located between the shaft and the rubber, for holding the rubber in contact with the articles, substantially as set forth.

2. The combination, with the hollow angular shaft, having oblong slots in opposite faces, driving mechanism connected therewith, and a spring situated therein, of a rubber, the sleeve constructed substantially as described and secured to a rubber, and a bolt passing through the sleeve and the oblong openings in the shaft and forming a seat for the spring, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

NELSON HOLMES.

Witnesses:

THOMAS NINDE,
ALBERT R. GRAVES.