No. 669,183. Patented Mar. 5, 1901.

A. D. ROGERS.

WASHING MACHINE.

(Application filed June 26, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

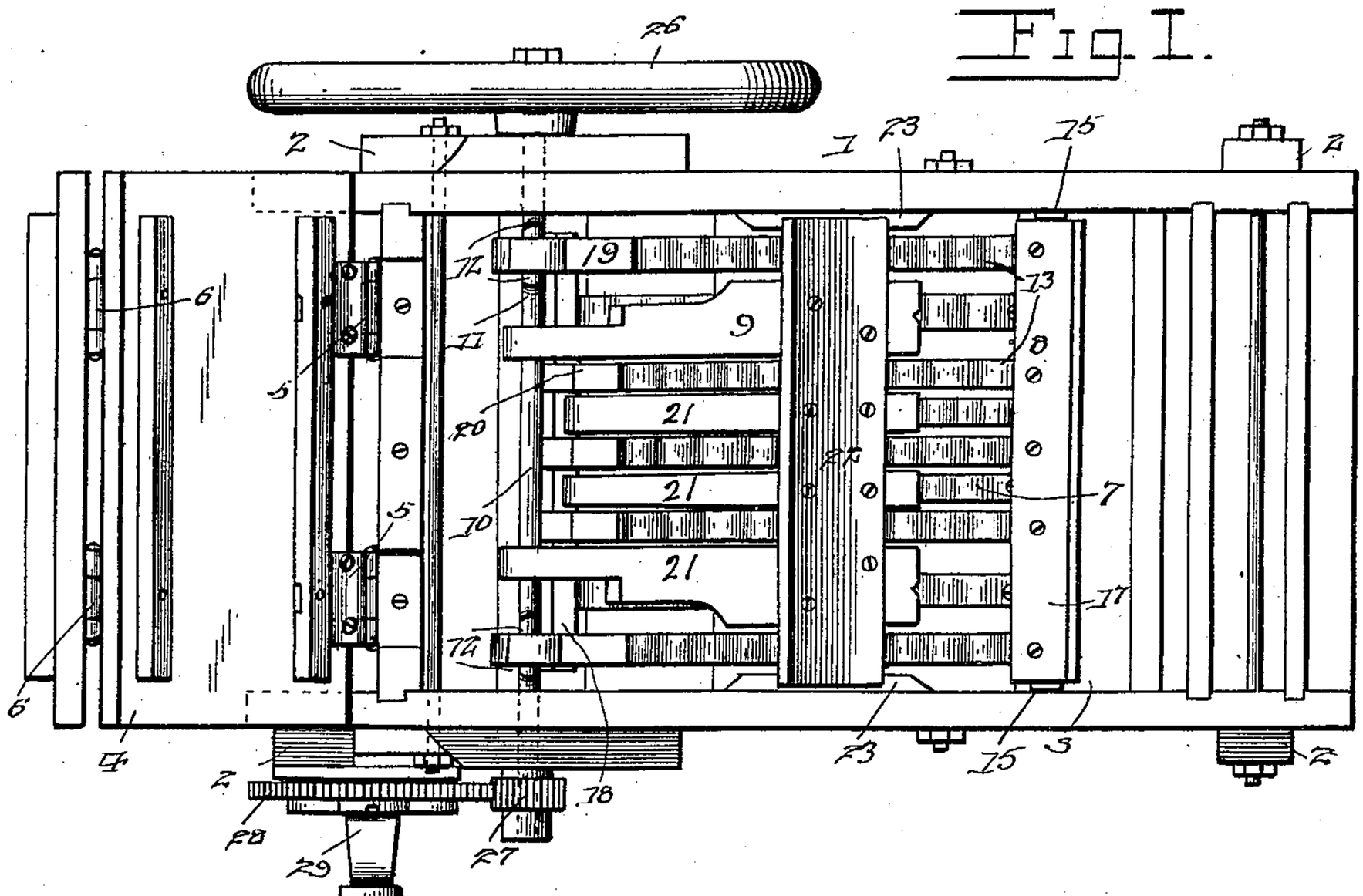
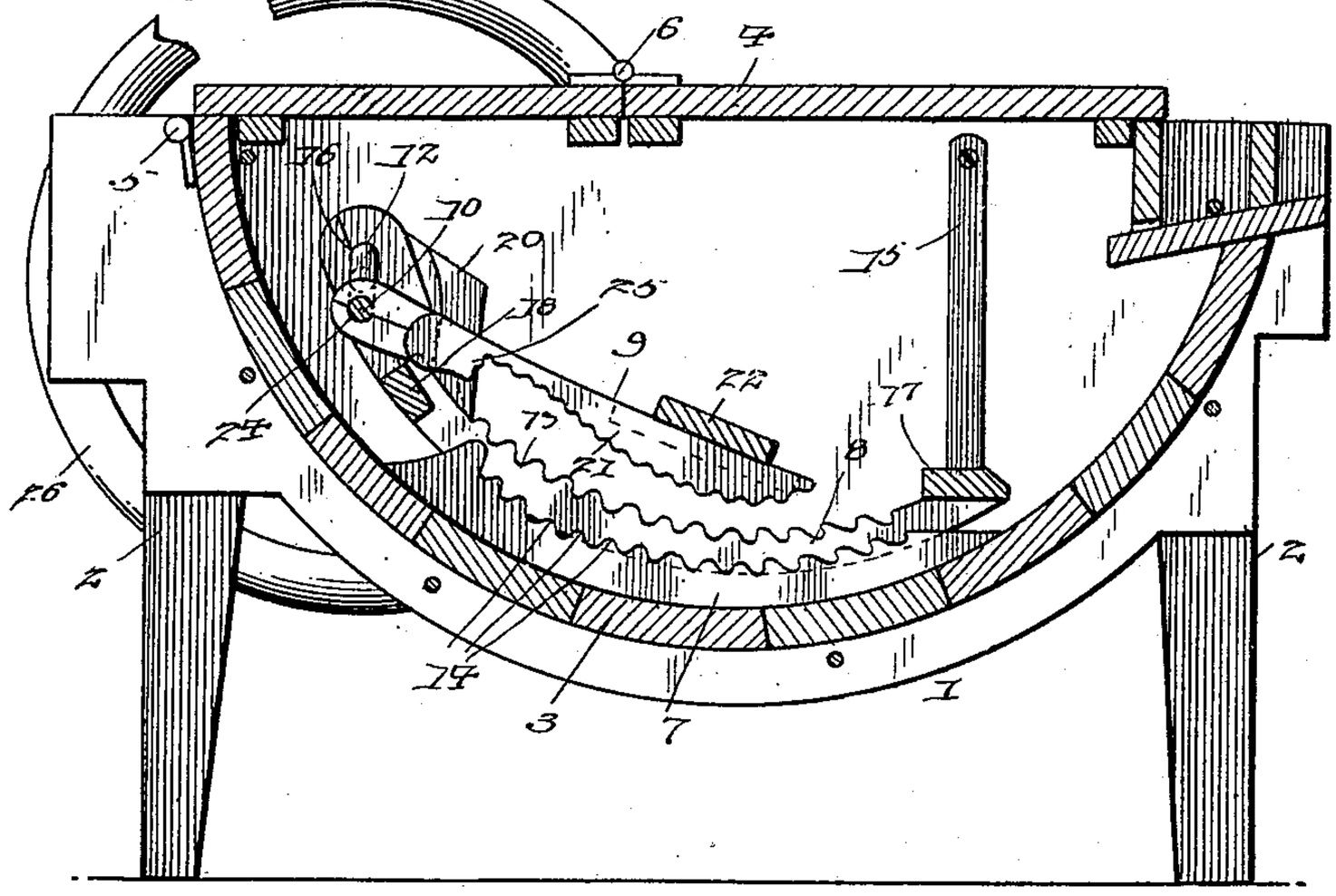


Fig. 2.



Witnesses.
F. E. Alden.
T. J. Riley

A. D. Rogers. Inventor
by Church & Church.
Attorneys

No. 669,183. Patented Mar. 5, 1901.

A. D. ROGERS.

WASHING MACHINE.

(Application filed June 28, 1900.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

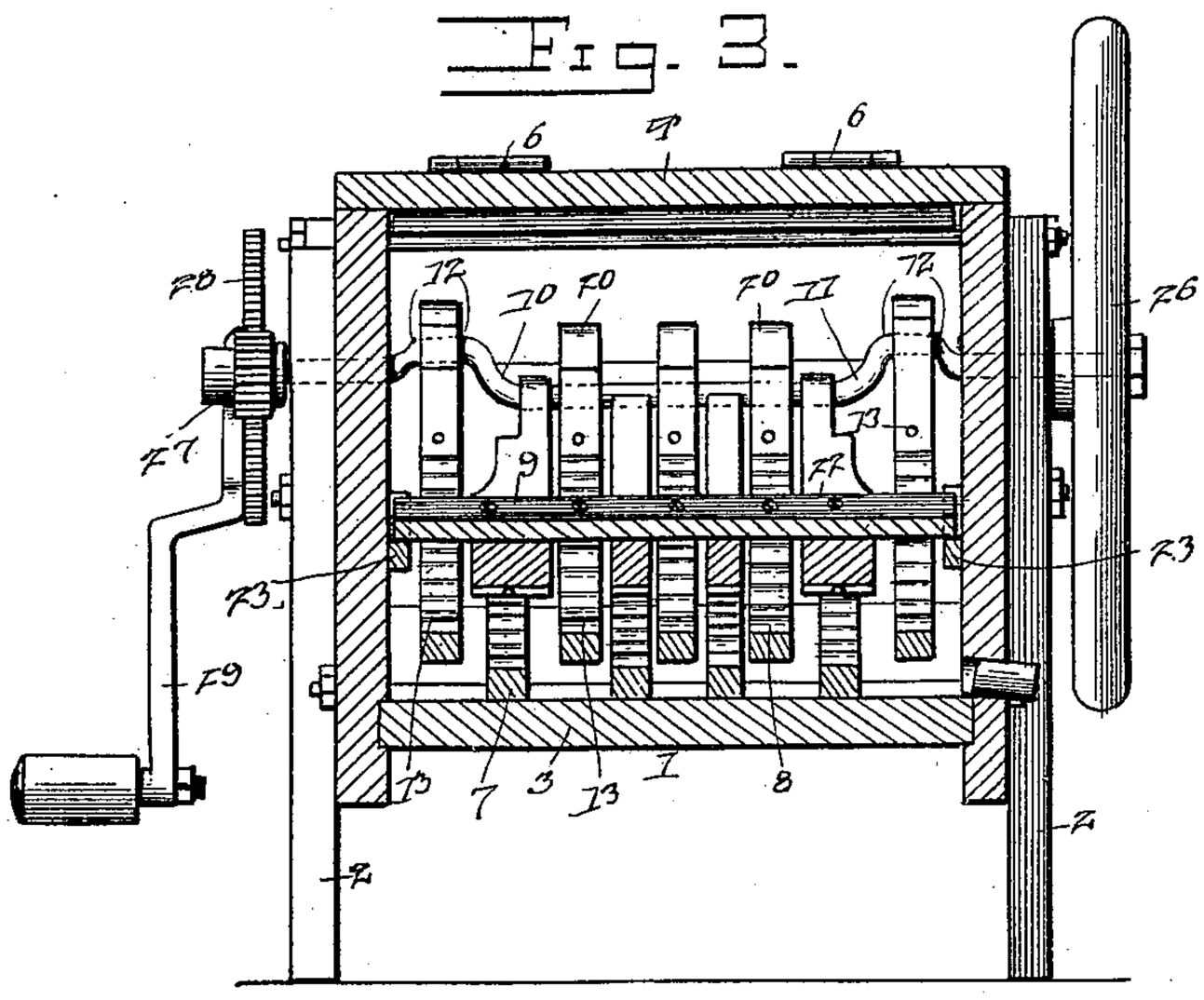
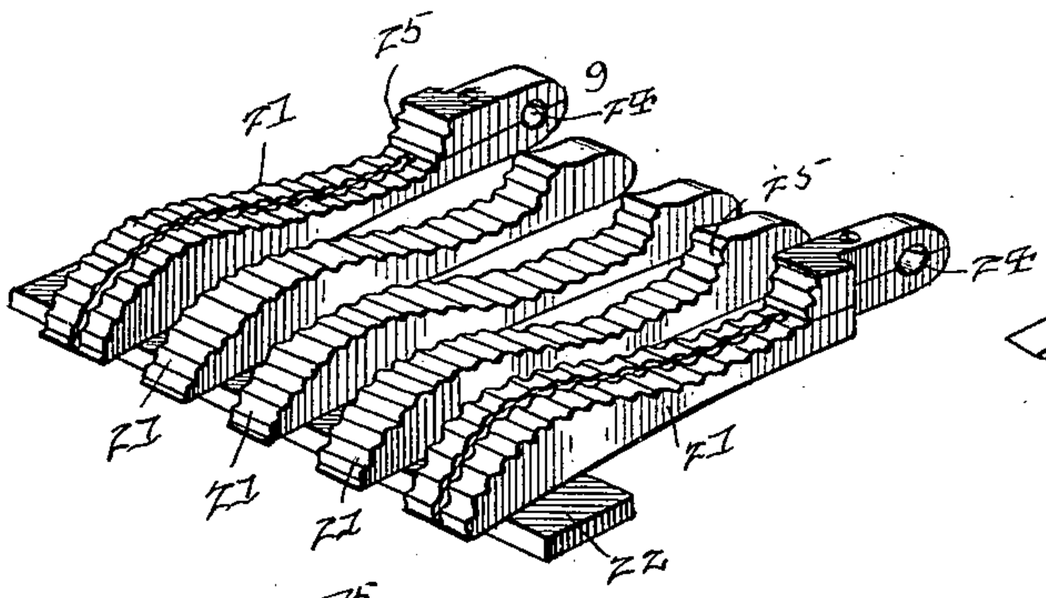
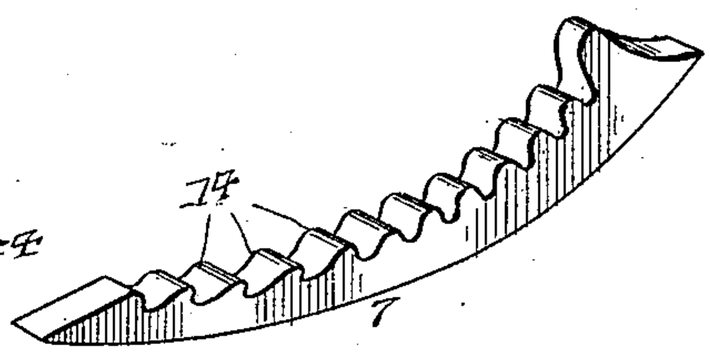


Fig. 4.

Fig. 6.





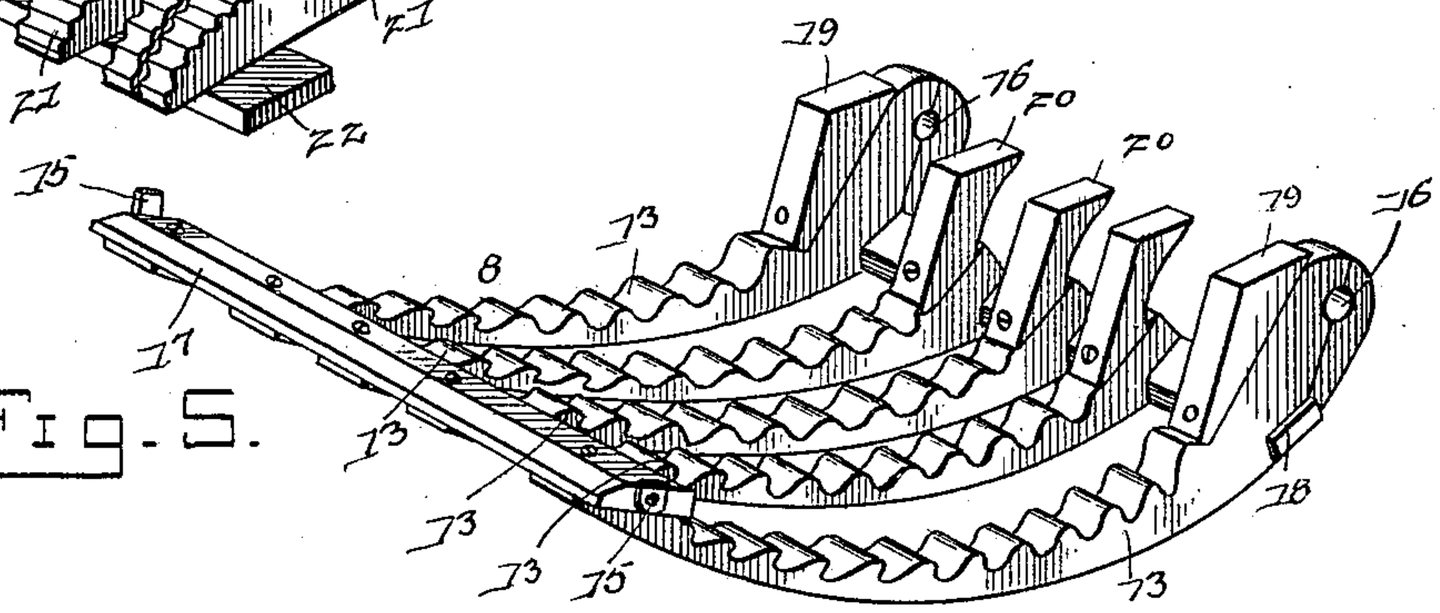


Fig. 5.

Witnesses
F. E. Alden.
H. C. Riley

A. D. Rogers Inventor
By C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

ALMA DENTON ROGERS, OF RICHMOND, UTAH.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 669,183, dated March 5, 1901.

Application filed June 26, 1900. Serial No. 21,658. (No model.)

To all whom it may concern:

Be it known that I, ALMA DENTON ROGERS, a citizen of the United States, residing at Richmond, in the county of Cache and State of Utah, have invented a new and useful Washing-Machine, of which the following is a specification.

The invention relates to improvements in washing-machines.

The object of the present invention is to improve the construction of washing-machines and to provide a simple and comparatively inexpensive one capable of rapidly and thoroughly washing clothes and adapted to rub the same from both the bottom and the top, whereby clothes and other fabrics will be operated on as effectively as when they are washed by hand.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a plan view of a washing-machine constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view. Fig. 4 is a detail perspective view of the upper rubber. Fig. 5 is a similar view of the movable lower rubber. Fig. 6 is a detail perspective view of one of the sections or bars of the stationary lower rubber.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a washing-machine body provided with suitable legs 2 and having a curved bottom 3 and provided also with a cover or lid 4, composed of hinged sections and adapted to be swung backward, as illustrated in Fig. 1 of the accompanying drawings. The cover or lid is hinged at the back at 5, and its sections are hinged together at their adjacent ends at 6, and as the washing mechanism is not connected with either of the sections and does not extend through the lid or cover the latter may be closed down tightly and will effectually prevent any liquid from escaping, and it is easily opened and closed, as the person using it does not have to lift any of the washing mechanism. The washing-machine body is provided with a suitable drain-opening, and it has a transversely-disposed wringer-supporting board at one end. The wringer-supporting board is preferably arranged as illustrated in Figs. 1 and 2 of the accompanying drawings, and the water expelled from the clothes is allowed to drain back into the washing-machine body.

The clothes or other fabrics to be washed are subjected to the action of a lower stationary rubber 7, a movable bottom rubber 8, and a movable top rubber 9, the movable rubbers being reciprocated in opposite directions by a double crank-shaft 10, having a central crank-bend 11 and side crank-bends 12, connected, respectively, with the upper and lower movable rubbers. The stationary bottom rubber consists of a series of curved bars secured at their ends to the bottom of the washing-machine body and arranged longitudinally thereof at intervals to provide longitudinal spaces for the longitudinal bars or sections 13 of the lower movable rubber. The bars or sections of the stationary rubber are slightly tapered from rear to front and have projections 14, forming corrugations and presenting rear shoulders to resist the downward and forward movement of the clothes. The corrugations form a rubbing-surface, and the bars or sections have inclined rear portions, and the tendency of the rubbing-surface is to hold the clothes against downward movement.

The movable lower rubber has its front end suspended within the washing-machine body by links 15, so that the front end oscillates, and the rear end, which is provided with bearings 16 for the side cranks 10, is carried by the said cranks in their rotation, whereby the movable lower rubber is oscillated longitudinally simultaneously with a vertical oscillation due to the movement of the cranks in a vertical plane. The rear ends of the bars of the stationary bottom rubber are slightly enlarged, and the ends of the bars or sections 13 of the movable lower rubber are connected by front and rear cross-bars 17 and 18. The front transverse bar 17 is beveled to facilitate the passage of clothes and other fabrics over it, and the rear cross-bar 18 is located at the lower edges of the bars or sections 13, being secured in recesses thereof. The movable bottom rubber is provided at its back with

upwardly-extending blocks 19 and 20, secured, respectively, to the side sections 13 and to the intermediate sections or bars, as clearly shown in Fig. 5, and located between and at the sides of bars or sections 21 of the movable upper rubber 9 and adapted to limit the backward movement of the clothes or other fabrics being washed and capable of engaging the said fabrics and of throwing the same forward or downward to cause the clothes to be changed about, so that they will be operated on uniformly. The bars or sections 13 are provided with rubbing-surfaces at their upper faces, and these rubbing-faces consist of grooves or corrugations.

The movable upper rubber, which is connected with the central crank-bend, is provided at its front portion with a transverse bar 22, connecting the bars or sections 21 and projecting therefrom to form lateral extensions, which are supported upon inclined cleats 23, which are secured to the inner faces of the sides of the washing-machine body. The side bars or sections of the movable upper rubber are enlarged and are provided at their rear ends with bearings 24 to receive the central crank-bend of the crank-shaft. The inclined supports formed by the cleats or bars 23 hold the upper rubber out of contact with the lower rubbers by limiting the downward movement of the front portion of the upper rubber; but when the machine is in operation the upper rubber rests upon the clothes or other fabrics which are interposed between the upper rubber and the lower rubbers. The front portions of the bars or sections of the upper rubber are enlarged and present convex corrugated faces, and the rear portions of the same present lower concave faces and are enlarged to form shoulders 25 for engaging and rotating the clothes, so that different portions of the same will be operated on by the rubbers.

The clothes or other fabrics to be washed are deposited in the washing-machine body at the front thereof, and the rotation of the crank-shaft to the left will operate to feed the clothes between the rubbers, and it is unnecessary to place the fabrics between the rubbers by hand, and the clothes are forced from between the rubbers automatically by reversing the crank-shaft. The crank-shaft is extended beyond both sides of the washing-machine body, and one end carries a balance-wheel 26, and its other end carries a removable pinion 27, which meshes with a gear-wheel 28, mounted on a suitable stub-shaft and provided with a crank-handle 29, which is rotated to the right or forwardly to feed the clothes between the rubbers.

In the accompanying drawings the washing-machine is arranged for operating by hand; but the gear-wheels may be removed, and the crank-shaft may be connected by a pulley and belt with any suitable motor for operating the machine.

The corrugated bars or members of the upper and lower rubbers are adapted to produce a soft and gentle friction on the clothes, which are continually rubbed and rotated, so that each piece being washed is thoroughly and uniformly operated on. The movable and stationary bottom rubbers form a double-acting washboard or rubbing-surface at the bottom of the washing-machine body, and the clothes are held against the same by the weight of the upper rubber.

It will be seen that the washing-machine is exceedingly simple and inexpensive in construction, that it is easily operated, and that it is capable of thoroughly rubbing the clothes and of rotating or turning the same over, so that they will be uniformly operated on. It will also be apparent that the washing mechanism is located wholly within the washing-machine body and that it is unnecessary to perforate the lid or cover for the same and that a portion of the operating mechanism is not lifted when the cover is opened. Furthermore, it will be clear that when the gearing is rotated in one direction the clothes will be automatically drawn inward between the rubbers and that when the machine is reversed the clothes will be forced outward from between the rubbers, so that it is unnecessary to place the clothes between the rubbers by hand.

What I claim is—

1. A washing-machine comprising a body, a lower stationary rubber fixed to the body at the bottom thereof, a lower movable rubber having one end supported within and connected with the body, a crank-shaft mounted on the body and connected with the other end of the lower movable rubber, and an upper rubber connected with the crank-shaft and having one end free, substantially as described.

2. A washing-machine comprising a body, a lower rubber fixed to the body and composed of longitudinal bars or sections spaced apart, the movable lower rubber provided with bars or sections spaced apart and located at the sides of the bars or sections of the fixed rubber, an upper rubber moving in the opposite direction to the lower movable rubber, and means for operating the movable rubbers, substantially as described.

3. A washing-machine comprising a body, a lower fixed rubber having bars or sections spaced apart, the lower movable rubber composed of bars or sections spaced apart and located at the sides of the bars or sections of the fixed rubber, and provided with upwardly-extending arms or projections, the movable rubber composed of bars or sections spaced apart and located above the said rubbers, a crank-shaft mounted on the body and connected with the rear ends of the movable rubbers, supports receiving the other end of the upper rubber, and links supporting the front end of the lower movable rubber; substantially as described.

4. A washing-machine comprising a body,

a double-crank shaft mounted on the body and provided with a central crank-bend 11 and having side crank-bends 12, the lower fixed rubber composed of longitudinal bars, the lower movable rubber provided with longitudinal rubbing-bars, the side bars of the lower movable rubber being connected with the side crank-bends 12, the movable upper rubber provided with longitudinal bars and connected with the central crank-bend 11, and links supporting the movable upper rubber, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALMA DENTON ROGERS.

Witnesses:
CHARLES W. ANDERSEN,
C. F. OLSEN.