

No. 636,556.

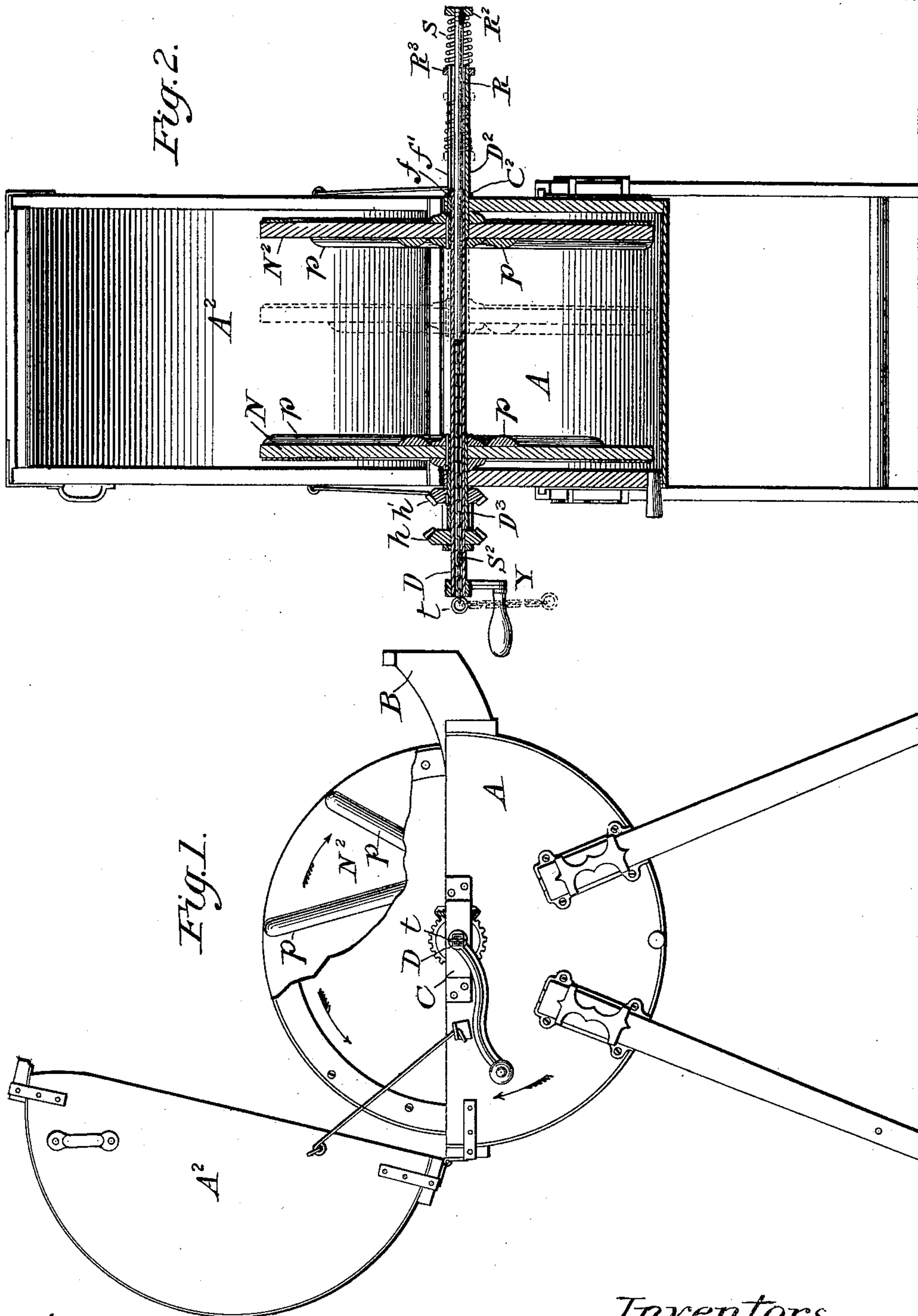
Patented Nov. 7, 1899.

Z. S. & M. C. RANDLEMAN.
WASHING MACHINE.

(Application filed May 23, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
H. D. Baldwin,
Wm. D. Orr

Inventors.
Zouave S. Randleman
Marion E. Randleman

No. 636,556.

Patented Nov. 7, 1899.

Z. S. & M. C. RANDLEMAN.

WASHING MACHINE.

(Application filed May 23, 1898.)

(No Model.)

2 Sheets—Sheet 2.

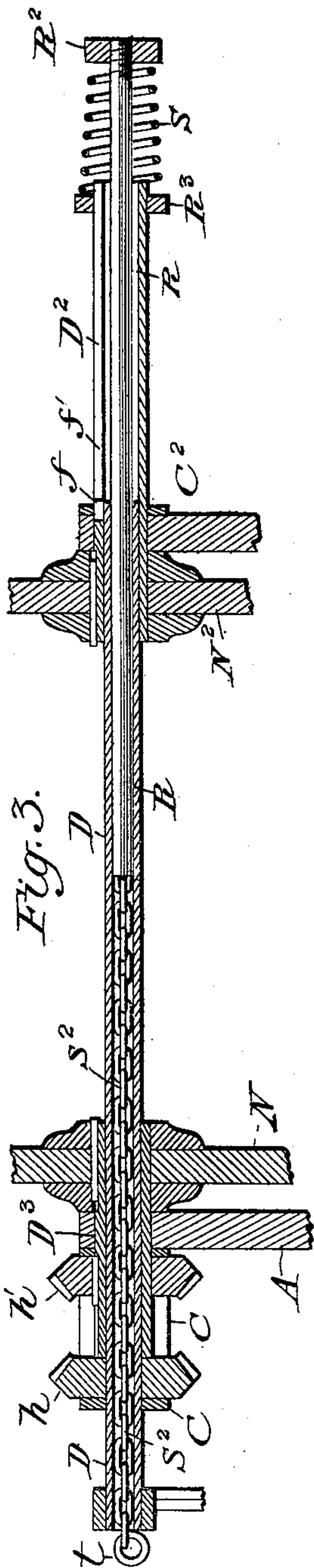


Fig. 3.

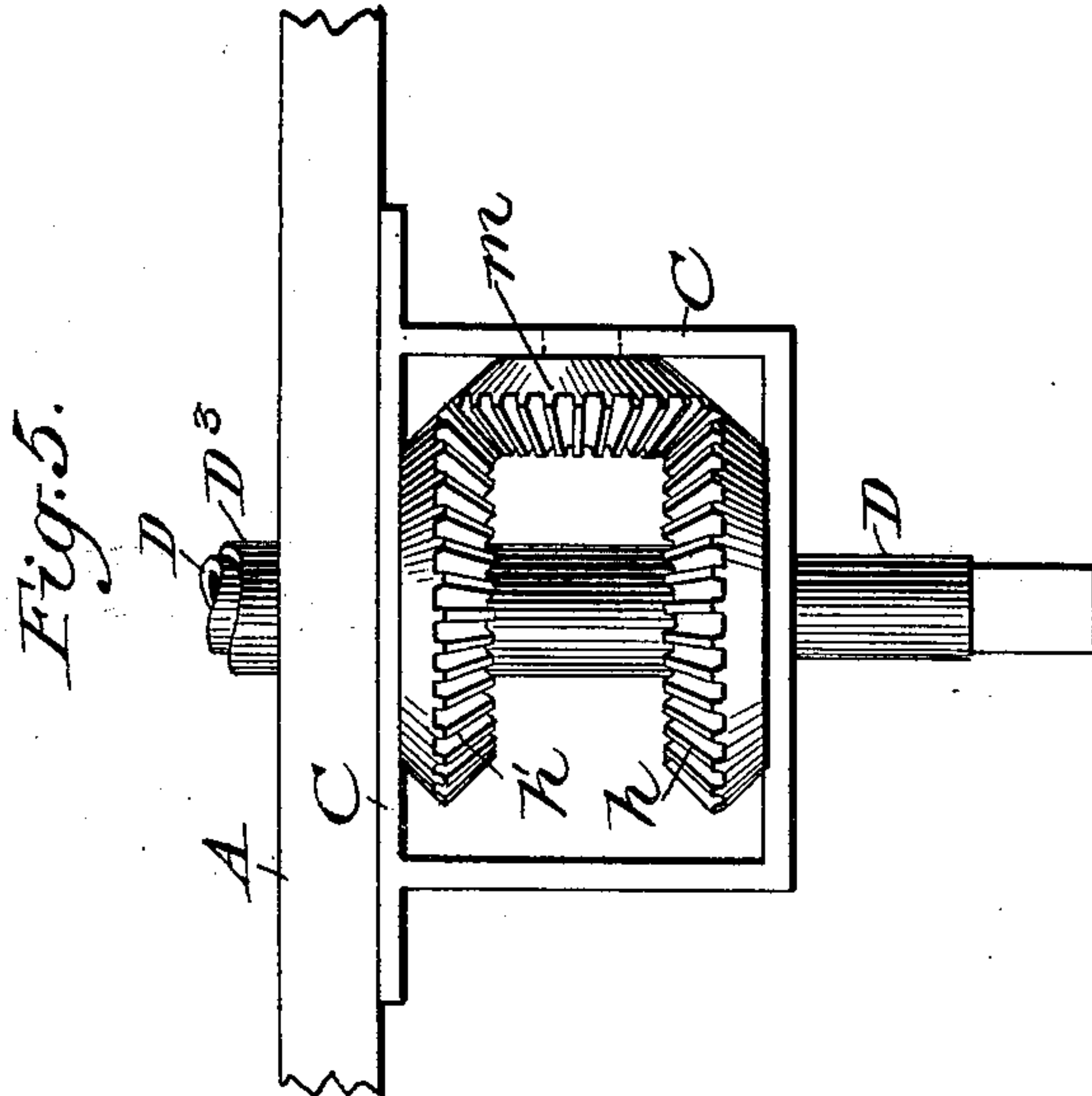


Fig. 5.

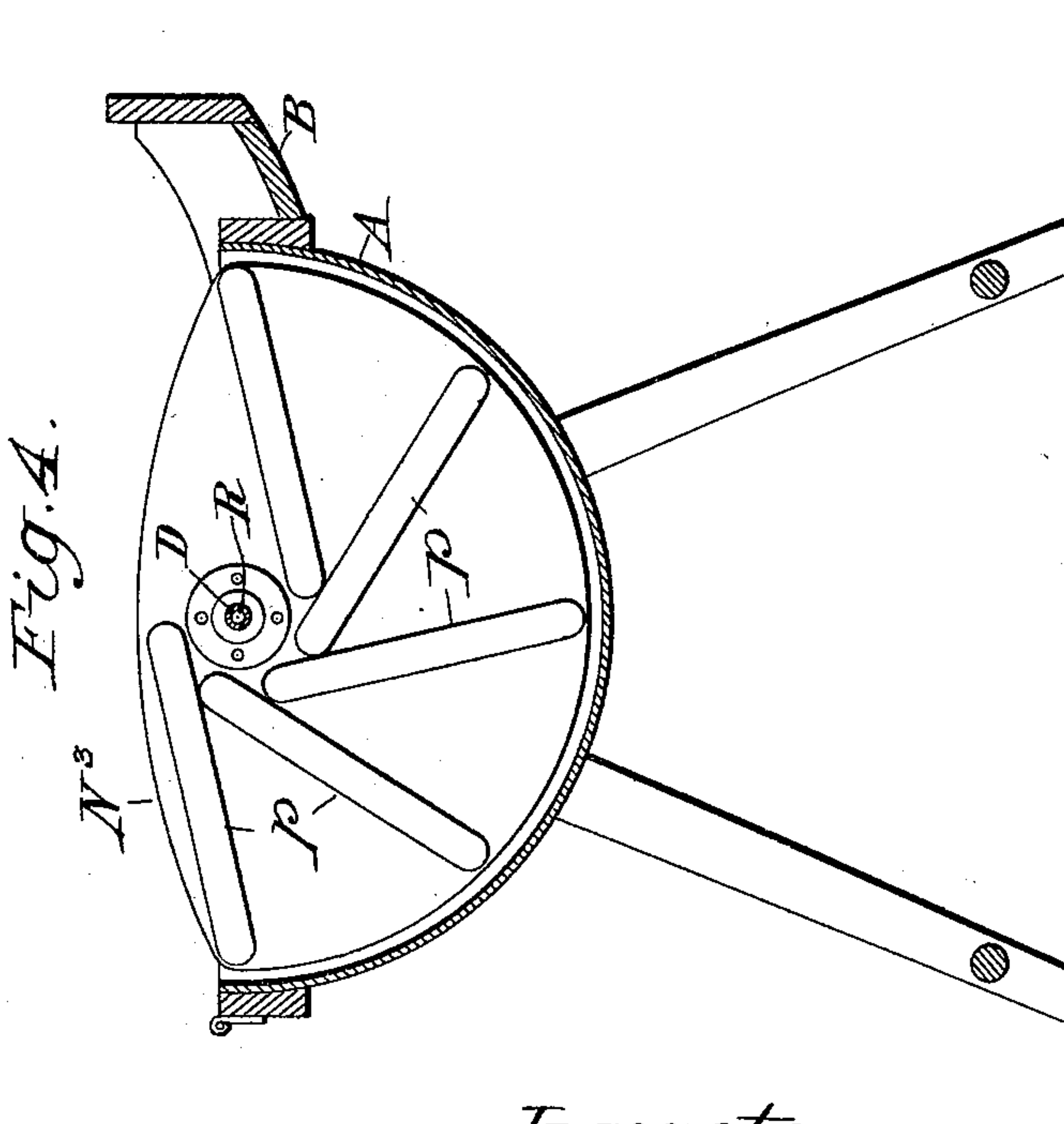


Fig. 4.

Witnesses:

W. D. Baldwin
J. D. Carr

Inventors:

Zouave S. Randleman
Martin C. Randleman

UNITED STATES PATENT OFFICE.

ZOUAVE S. RANDLEMAN AND MARTIN C. RANDLEMAN, OF CARLISLE, IOWA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 636,556, dated November 7, 1899.

Application filed May 23, 1898. Serial No. 681,536. (No model.)

To all whom it may concern:

Be it known that we, ZOUAVE S. RANDLEMAN and MARTIN C. RANDLEMAN, citizens of the United States, residing at Carlisle, in the county of Warren and State of Iowa, have invented a new and useful Washing-Machine, of which the following is a specification.

Our object is to facilitate washing wearing-apparel, bedclothes, and all kinds of woven textile fabrics, large and small, advantageously when submerged in water in a machine adapted to be operated by hand to press and rub articles as required to loosen and remove dirt therefrom.

Our invention consists in the arrangement and combination of rotary shafts, disks having rubbing-surfaces in parallel position and rotatable in reverse ways and one adjustable relative to the other for pressing and rubbing articles between them, and gearing for actuating the operative parts, as hereinafter set forth, pointed out in our claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation showing the hinged cover of the tub in an elevated position and a top portion of one of the parallel disks broken away. Fig. 2 is a sectional view on a vertical plane through the center of the machine toward the elevated hinged cover. Fig. 3 is an enlarged longitudinal sectional view of the rotatable shafts telescopically connected, means for sliding one of the shafts and adjusting one of the disks relative to the other, and gearing for rotating the shafts in reverse ways. Fig. 4 is a transverse sectional view of the tub, showing the rubbing-surface of a disk reduced to a semicircular shape. Fig. 5 is an enlarged plan view of the gearing in a frame and showing the frame fixed to a section of the tub as required to serve as a bearing for the rotatable shaft.

The letter A designates a tub of semicircular shape supported upon legs that are preferably detachably connected with the tub.

A² is a cover corresponding in size and shape hinged to one end of the tub. A rod pivotally connected with the lower portion and outside surface of the cover and terminating in a hook at its free end to enter the eye of a plate fixed to the outside and top portion of the tub serves to support the hinged cover in

an elevated position, as shown in Fig. 1, and as required to admit articles to be moved in and out of the tub.

B is a wringer-support and soap-receptacle fixed to the end of the tub.

C is a metal frame of quadrangular form fixed to the tub to serve as a bearing for a shaft and a support for gear-wheels, and C² is a metal bearing fixed to the other side of the tub in proper position to support the same shaft.

D is a tubular shaft fitted in the bearings in the frame C and telescopically connected with a tubular shaft D², of larger diameter, fitted in the bearing C². A lug *f*, fixed on the shaft D, is designed to traverse a slot *f'* in the shaft D² as required to allow the shaft D² to slide on the shaft D and at the same time rotate therewith.

D³ is a short tubular shaft fitted on the outer end portion of the shaft D.

h is a miter gear-wheel fixed on the outer end of the shaft D, and *h'* is a corresponding wheel fixed by means of a key on the shaft D³.

m is a miter gear-wheel journaled to the frame C to engage both the wheels *h* and *h'* as required to rotate the wheel *h'* and shaft D³, to which it is fixed, in a reverse direction from the motion of the wheel *h* and shaft D.

N² is a wooden disk fixed to the inner end of the shaft D² by means of metal collars and a key or in any suitable way to rotate with the shafts D and D², that are slidingly connected by means of the fixed lug *f* on the shaft D, extending into the slot *f'* in the shaft D².

N is a disk corresponding in shape and size with the disk N², fixed to the inner end of the shaft D³ by means of collars and a key or in any suitable way to rotate with that shaft and the miter-gear *h'* in an opposite direction from the shaft D² and the disk N². The inner faces of the disks N and N² are provided with ribs *p* to produce a washboard-surface adapted to rub articles that are to be washed as they come in contact therewith.

R is a solid rod extended through the shaft D² and into the shaft D. It has a fixed collar R² on its outer end and a coil-spring S interposed between that collar and a collar R³ on the end of the shaft D².

S² is a chain connected with the inner end

of the rod R and extends through the shaft D and has a ring *t* on its free end adapted to be seized by the fingers of a person to draw the rod R and the shaft D² inward relative to the tub A as required to bring the disk N² closer to the mating disk N.

Y is a crank-handle detachably connected with the angular outer end of the shaft D as required to rotate the shaft and operate the machine therewith.

In the practical operation of our invention when water is in the tub and articles to be washed placed therein between the two parallel disks that have washboard or rubbing surfaces power is applied to the shaft D by means of the handle Y and that shaft rotated in either direction desired or alternately in reverse ways, at the will of the operator, and the shaft D², slidingly connected therewith, will rotate therewith and carry the disk N², fixed thereto, in the same direction, and at the same time the shaft D³ and the disk N, fixed thereto, will rotate in a reverse direction, so that at all times when the machine is operated the two parallel rubbing-disks N and N², between which articles to be washed are placed, will rotate in reverse ways, and as the articles come in contact with the disks they will be rubbed and create agitation of the water that will be forced through the meshes of the fabrics as they are rolled together and whirled about. By reversing the motion of the shaft D the mass of articles will be rolled in a different direction and their positions relative to each other and the rotating rubbing-disks changed, so that by successive reverse motions of the machine all parts of the articles will successively come into contact with the rubbing-surfaces of the disks as required to be cleansed by the action of the water and the rubbing-disks, and at the same time that the articles between the parallel disks are subjected to the action of the water they are readily pressed by seizing the ring on the free end of the chain S and pulling the disk N² toward the disk N by means of the rod R and the shaft D², that carries the disk N² and is slidingly connected with the shaft D², as clearly shown in Fig. 3. It is also obvious that the disk N² can be thus readily adjusted relative to the disk N as required to adapt the machine for washing articles of different size or bulk or different numbers at different times.

By changing the shape of the disks, as shown in the form N³ in Fig. 4, the machine is adapted to be operated by imparting only half-revolutions to the shaft D and reciprocating motions in reverse ways to the parallel rubbing-disks.

We claim as our invention—

1. In a washing-machine, a tub having parallel sides, a frame fixed to the outside face of one of said sides, a main rotatable shaft mounted in bearings in said parallel sides and frame, a disk mounted on said shaft and the inner face of the disk provided with a rub-

bing-surface, a tubular shaft mounted on said main shaft, a disk having a rubbing-surface on its inside face fixed to the tubular shaft, means for sliding the tubular shaft on the main shaft and means for simultaneously rotating the two shafts in reverse ways connected with the main shaft and the frame fixed to the outside of the tub, arranged and combined to operate in the manner set forth for the purposes stated.

2. In a washing-machine, the combination of a tubular rotatable shaft, a second tubular shaft telescopically connected with one end portion of the first shaft, a disk having a rubbing-surface fixed to the said second shaft, a third tubular shaft on the said first shaft and a disk having a rubbing-surface fixed to the said third shaft and means for rotating the said second and third shafts and the disks fixed thereto in parallel positions and in reverse ways for rubbing articles between the two parallel disks, as and for the purposes stated.

3. In a washing-machine, the combination of a tubular rotatable shaft, a second tubular shaft telescopically connected with one end portion of the first shaft, a disk having a rubbing-surface fixed to the said second shaft, a third tubular shaft on the said first shaft and a disk having a rubbing-surface fixed to the said third shaft, and means for rotating the said second and third shafts and the disks fixed thereto in parallel positions and in reverse ways for rubbing articles between the two parallel disks and means for moving the said second shaft and disk fixed thereon toward the said third shaft and disk thereon, as and for the purposes stated.

4. In a washing-machine, a tub having parallel sides, bearings in said sides, a tubular rotatable shaft in said bearings, a lug on the end of said shaft, a second tubular shaft telescopically connected with one end of the said first shaft and provided with a slot to admit the said lug to slide therein, a rod extended through the said second shaft and into the said first shaft and provided with a collar on its outer end, a coil-spring on the end of the rod and in engagement with said collar, a chain connected with the inner end of the rod and extended through said first shaft, a third shaft rotatably mounted on the said first shaft at the end portion opposite to the end on which the second shaft is telescopically connected therewith, a disk having a rubbing-surface fixed to the said second shaft, a corresponding mating disk fixed on the said third shaft and means for rotating the said first shaft, all arranged and combined to operate in the manner set forth for the purposes stated.

5. A washing-machine comprising a semi-circular tub, a cover for said tub, a frame fixed to the tub to support gearing and serve as a shaft-bearing, a tubular shaft extended through said frame and the parallel sides of the tub, a second shaft telescopically con-

5 nected with one end portion of the said first shaft and provided with a longitudinal slot, a lug on the end of the said first shaft to enter and traverse said slot, a disk having a rubbing-surface fixed to the said second shaft, a third tubular shaft mounted on the other end portion of said first shaft, a disk having a rubbing-surface fixed to said third shaft, a miter gear-wheel fixed on the end of the said first shaft, a mating wheel fixed to the outer end of the said third shaft, a miter gear-wheel journaled to said frame and shaft-bearing on the outside of the tub to engage the said two mating miter gear-wheels, a rod extended 15 through the said second shaft into the said

first shaft, a collar fixed to the outer end of the rod and a chain to the inner end and said chain extended through the said first shaft, a collar on the outer end of said second shaft, a coil-spring on the rod and in engagement 20 with the said two collars and means for rotating the said first shaft, all arranged and combined to operate in the manner set forth for the purposes stated.

ZOUAVE S. RANDLEMAN.
MARTIN C. RANDLEMAN.

Witnesses:

FRANK PIERCE,
THOMAS G. ORWIG.