No. 622,173. Patented Mar. 28, 1899.

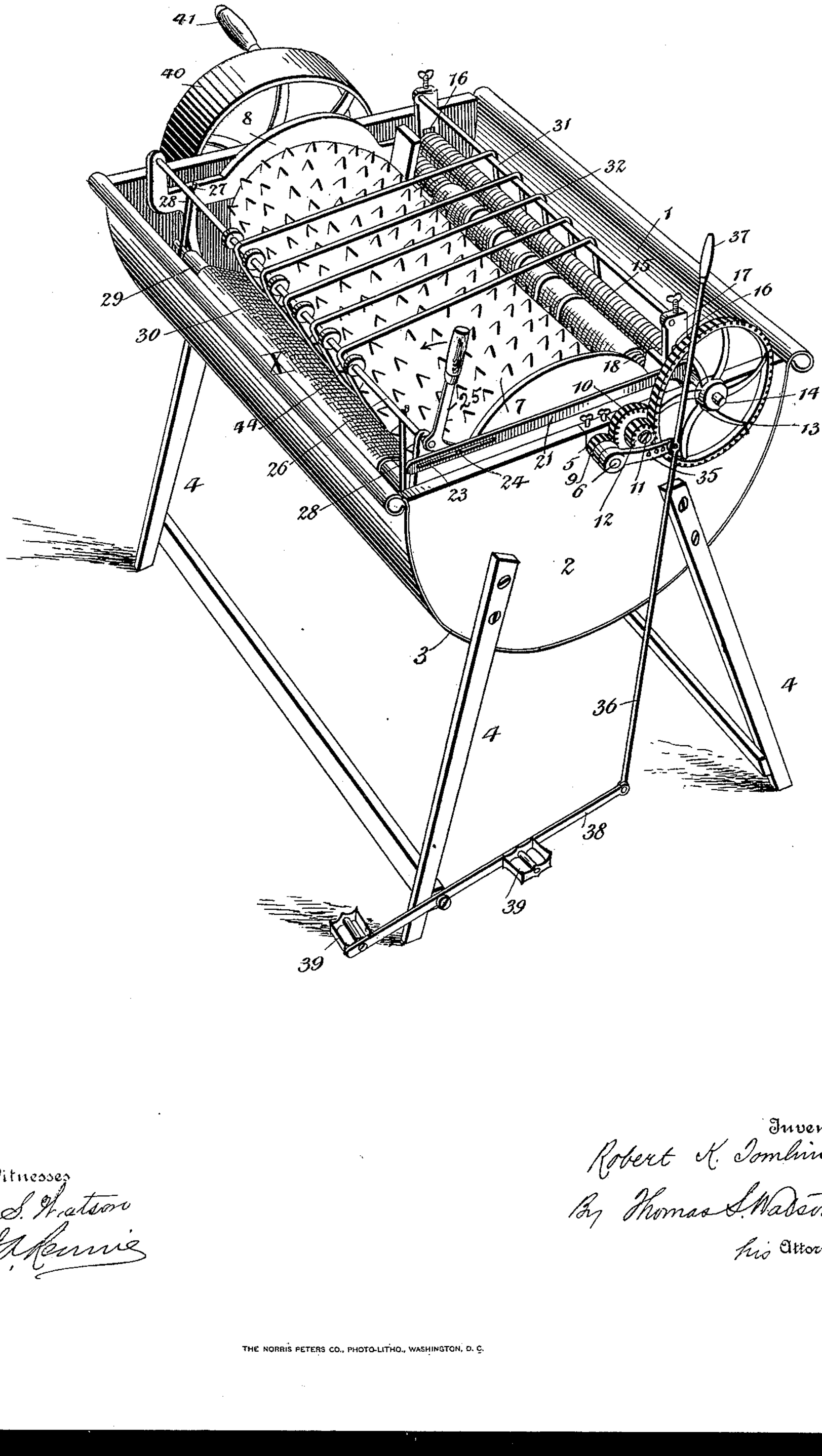
R. K. TOMLINSON.

COMBINED WASHER AND WRINGER.

(Application filed Nov. 1, 1898.)

(No Model.) 3 Sheets—Sheet 1.

Fig: 1.



Witnesses
W. S. Watson
A. D. Harris

Inventor
Robert K. Tomlinson
By Thomas L. Watson
his Attorneys

No. 622,173. Patented Mar. 28, 1899.

R. K. TOMLINSON.

COMBINED WASHER AND WRINGER.

(Application filed Nov. 1, 1898.)

(No Model.) 3 Sheets—Sheet 2.

Fig: 2.

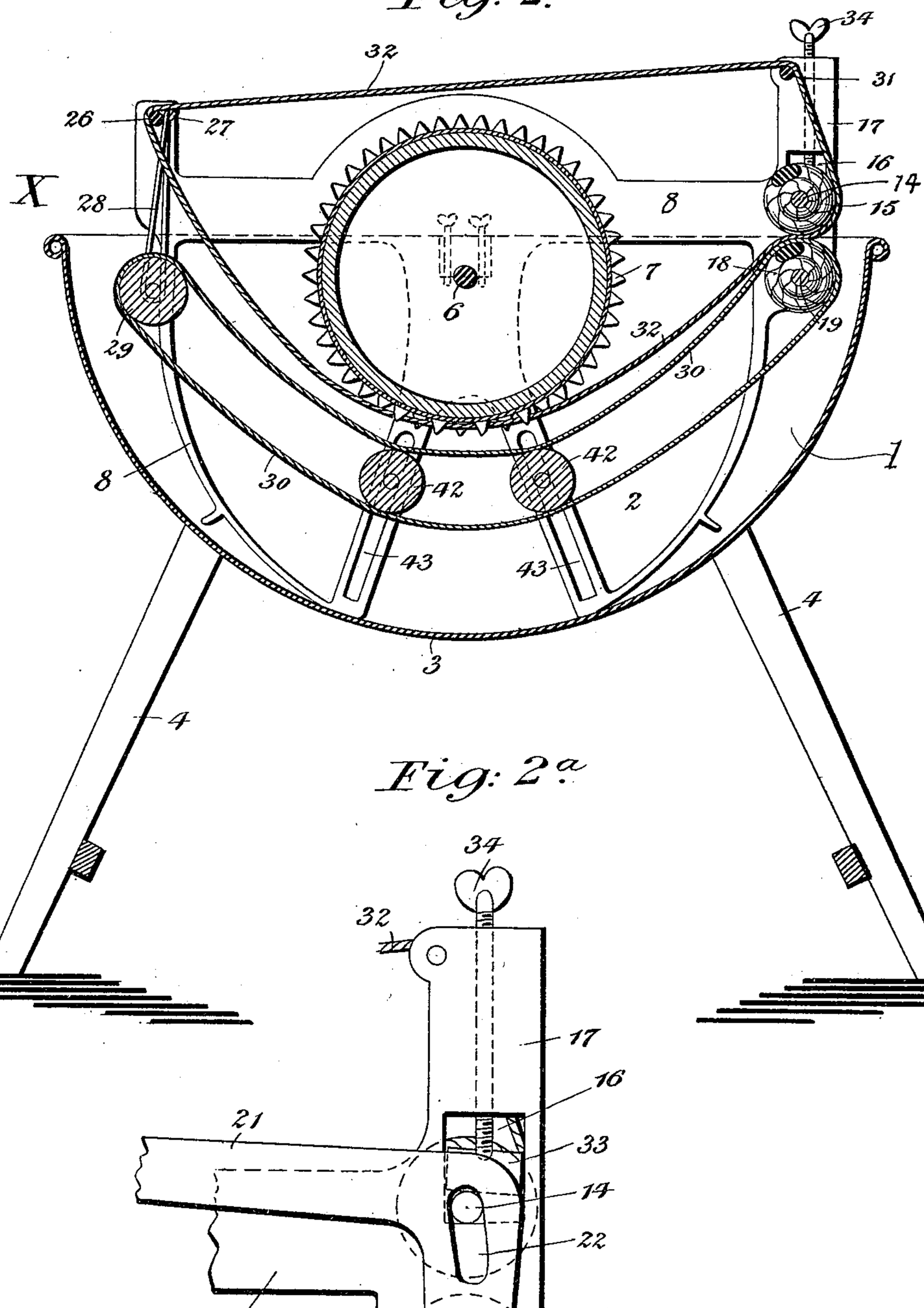
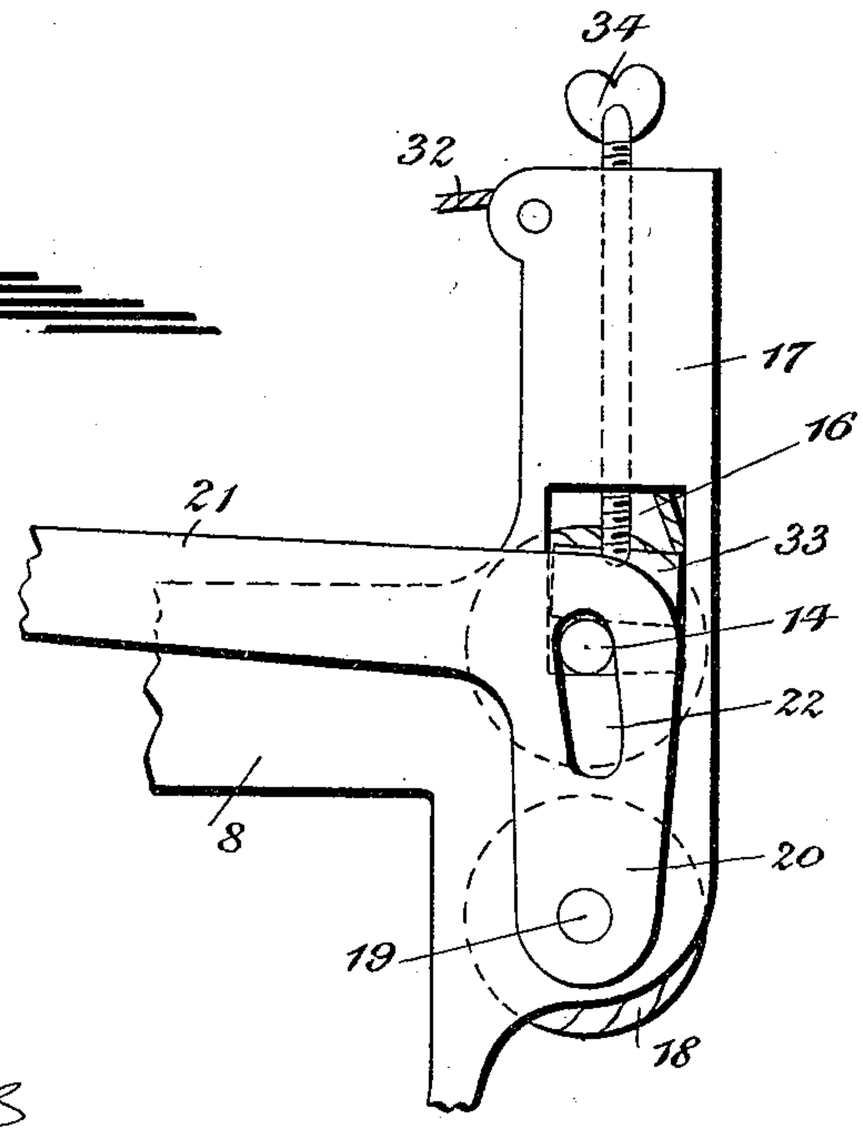


Fig: 2a.



Witnesses
H. S. Watson
D. A. Rennie

Inventor
Robert K. Tomlinson
By Thomas S. Walson
his Attorneys

No. 622,173. Patented Mar. 28, 1899.

R. K. TOMLINSON.

COMBINED WASHER AND WRINGER.

(Application filed Nov. 1, 1898.)

(No Model.) 3 Sheets—Sheet 3.

Fig: 3.

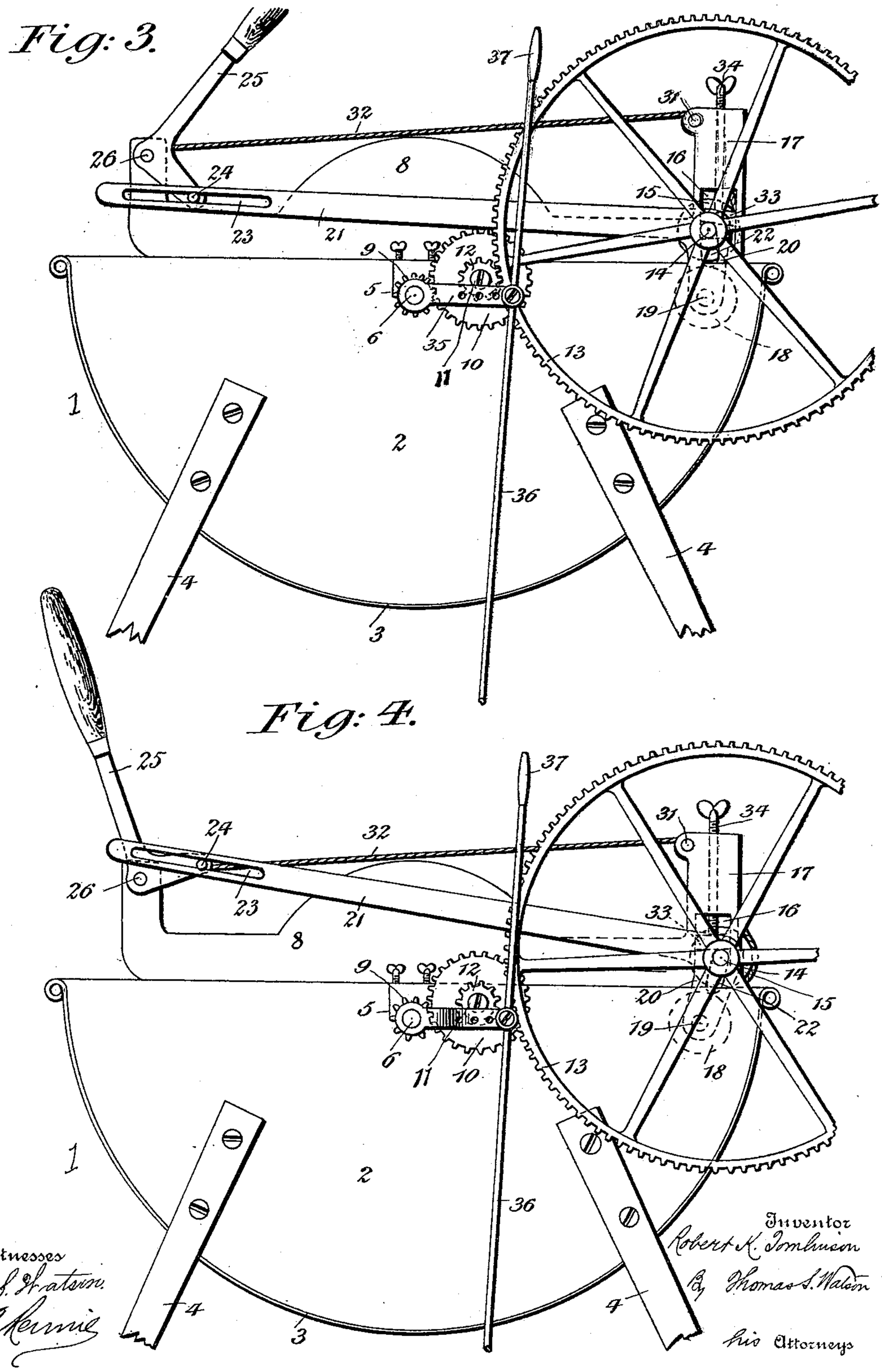


Fig: 4.

Witnesses
H. S. Watson.
J. A. Kennie

Inventor
Robert K. Tomlinson
By Thomas S. Watson
His Attorneys

UNITED STATES PATENT OFFICE.

ROBERT K. TOMLINSON, OF BROWNSBURG, PENNSYLVANIA.

COMBINED WASHER AND WRINGER.

SPECIFICATION forming part of Letters Patent No. 622,173, dated March 28, 1899.

Application filed November 1, 1898. Serial No. 695,226. (No model.)

To all whom it may concern:

Be it known that I, ROBERT K. TOMLINSON, of Brownsburg, in the county of Bucks, State of Pennsylvania, have invented a new and Improved Combined Washer and Wringer, of which the following is a specification.

My invention relates to that class of washers wherein clothes destined to be cleaned are fed to the action of a revolving drum or cylinder whose periphery is covered with projections, preferably pyramidal in form, being thereafter passed to the action of the wringer.

The object of my invention is to produce in a simple and inexpensive manner a washer and wringer of this character which shall be easy to operate either by hand or foot or by power and an improved arrangement of the parts, so that the cleansing operation may at times be prolonged at the will of the operator and a greater or less pressure given to the clothes during such prolonged operation.

My invention further contemplates the use, in connection with said revolving cylinder or drum, of an improved feeding mechanism, preferably made of canvas or similar material, and an auxiliary feeding device, whereby the clothes are properly guided and fed to the action of the revolving drum or cylinder and to and through the wringer.

My invention consists of a combined washer and wringer comprising a revolving drum or cylinder having formed upon its periphery a plurality of projections, preferably pyramidal in form, a wringer adjacent said drum or cylinder, a feeding mechanism whereby the clothes are conveyed to the action of the said drum or cylinder and fed to and through the wringer, means for giving rotation to said drum, wringer, and feeding mechanism and also for tightening said mechanism and arresting the movement thereof.

My invention further consists in the novel feature of construction and arrangements of parts, all of which will be hereinafter fully described, and particularly pointed out in the appended claims.

Figure 1 represents a perspective view of a combined washer and wringer constructed in accordance with my invention. Fig. 2 represents a sectional view of said washer and wringer. Fig. 2^{A} represents a detail view of the wringer, to be referred to. Fig. 3 represents an end elevation showing the parts in proper position to operate the cylinder, feeding mechanism, and wringer. Fig. 4 represents a similar view, but showing the parts in the position they will assume when the feeding mechanism has been arrested and a greater tension exerted thereon.

Similar reference-numerals indicate corresponding parts in all the figures of the drawings.

In said drawings, 1 designates any suitable tub or box, shown in this instance as formed of the vertical ends 2, preferably made of wood, and the semicircular bottom 3, the latter being secured to the ends 2 in any desired or convenient manner. The tub or box is supported upon the legs 4, as shown, and the ends 2 are recessed, as indicated at 5, to receive the ends of the shaft 6 of a cylinder or drum 7, the latter being supported in a suitable framework 8, which fits within the tub or box 1, as clearly shown in Fig. 1.

9 designates a pinion secured to the shaft which carries the drum, said pinion intermeshing with an intermediate gear-wheel 10, carried upon a stud 11, secured to the frame 8. The stud also carries a pinion 12, the teeth of which intermesh with the teeth of a gear-wheel 13, secured to one end of the shaft 14 of one of the wringer-rolls 15, said shaft being guided and held within slots 16, formed in extensions 17 of the frame 8.

18 designates the lower roll of the wringer, the same being supported on a stationary shaft 19, the shaft of said roll at one end receiving thereon the extension 20 of the lever 21, the latter being slotted, as indicated at 22, to receive therein the shaft 14 of the roll 15, so that by a movement of said lever 21, as will be presently described, the gear-wheel 13 may be brought into or out of engagement with the pinion 12. The lever 21 is provided at its opposite extremity with a slot 23, adapted to receive therein a pin or stud 24, which projects from the arm of bell-crank lever 25, pivotally held upon a rod or shaft 26, supported in the frame 8.

The shaft 26 is provided with pins 27, to which are secured the ends of yielding or elastic bands 28, which support the shafts of a roller 29, which in turn supports an endless belt 30, the latter passing under the cylinder

or drum 7 and around the lower roll 18 of the wringer.

31 designates a rod or shaft similar to that 26 just described, the same being supported in the frame 8, and serves, with the said shaft 26, as a guide for a plurality of endless bands 32, preferably cords or similar material, said bands passing between the wringer-rolls 15 and 18 and under the cylinder or drum 7, above the belt 30, and acting as an auxiliary feeding mechanism.

The shaft of the wringer-rolls are preferably made of material capable of springing under pressure and are covered with hemp rope or similar material by winding the same thereon, and the wringer-roll 15 is held in its proper relation with the lower roll 18 by means of blocks 33, which fit within slots 16 and each bearing upon the ends of the shaft 14, a sufficient space being left in the slot 16 to permit of lateral movement being given to said shaft 14. Thus if the bell-crank lever 25 is moved upward by the operator in the direction of the arrow shown in Fig. 1 the pin 24 will move in the slot 23 and cause the end of the lever 21 to rise, as shown in Fig. 4, and thereby move the teeth of the gear-wheel 13 out of engagement with the teeth of the pinion 12, thus arresting the movement of the belt, but in no way interfering with the rotation of the drum or cylinder 7. The movement of the bell-crank lever serves to rotate the shaft 26 and causes it to wind the flexible elastic bands around the shaft 26, thus lifting the roller 29, and so causing the belt 30 to be drawn closer to the drum or cylinder, and simultaneously with this operation the shaft 14 is also moved under the block 33, which latter is held down by the set-screw 34, thus effectively locking the parts against a reverse movement until positively moved by the operation of the bell-crank lever 25, as will be described.

Referring to Figs. 2, 2[A], and 3 on the drawings, it will be observed that when the machine is in the position therein shown the shaft 14 of the wringer-roll 15 is to the extreme left of the slot 16 in the frame 8, the block 33 being inclined downward to the right thereof, so that a lateral movement of said shaft is prevented. Thus the parts are located in position to feed clothes to the action of the cylinder or drum and to and through the wringer.

When the parts are in position shown in Fig. 4, the shaft 14 will be moved to the opposite side of the slot 16, the block 33 in this instance inclining downward to the left and preventing a lateral movement of said shaft in the opposite direction and so locking the parts in position, wherein the drum or cylinder alone revolves, while the movement of the feeding mechanism will be arrested.

It is obvious that the drum or cylinder 7 may be rotated in many different ways; but I have shown in the drawings the manner in which I prefer to operate it and the other parts.

35 designates a crank-arm secured to one end of the cylinder-shaft, and 36 indicates a pitman removably secured to said crank-arm, said pitman provided with an extension 37, which may at times be grasped by the hand of the operator to assist in moving the drum, and the lower end of said pitman is pivotally secured to a treadle-arm 38, by means of which the crank-arm is rotated. This treadle-arm is provided, as shown, with laterally-projecting pedals 39 to receive the feet of the operator, as will be understood. The opposite end of the cylinder-shaft is provided with a balance-wheel 40, from which projects a handle 41, to be used when the washer is operated by hand; but it is obvious that this balance-wheel may be utilized to receive a belt when it is desired to move the parts by power.

42 designates rollers located between the belt 30, the shafts of which move in slots 43, formed in the frame 8 beneath the drum or cylinder 7, the function of these rollers being to keep the belt in its proper relation with the said drum or cylinder 7 and to prevent it from touching or rubbing together at that or any other point of its length and also to cause the belt to bear with an even and uniform pressure upon the clothes while being washed and while being fed to the wringer. These rollers 42 will of course rise when the bell-crank lever 25 is operated to tighten the belt, as presently described, so that the pressure of the latter will be thereby increased and the clothes subjected to a somewhat more severe rubbing, as will be apparent.

Disks 44 are interposed between the bands 32 in order that they may be properly separated from each other, and by preference these disks are some distance apart, so that the bands 32 while moving to assist in feeding the clothes may have lateral play, as it is obvious that those portions of the bands which contact with the cylinder or drum 7 will pass between the projections thereon, and thus cause the said bands to move laterally.

The operation of my invention is as follows: The bands being in the position shown in Figs. 1, 2, and 3 of the drawings, the operator feeding the clothes to the washer at X causes the drum or cylinder to revolve either by moving the handle 41 or by working the treadle 38, which movement causes the gear 13 through the pinion 6 and gear 12 to give movement to the wringer-roll 15, the frictional contact between which and the lower roll 18 serving to cause the belt 30 and bands 32 to travel and feed the clothes to the action of the drum or cylinder, after which they are fed by said belt 30 and bands 32 to and through the wringer-rolls 15 and 18, from whence they may be passed to any conveniently-located receptacle. During this operation the belt 30 will exert a uniform pressure upon the clothes, and thus a thorough cleansing of the clothes

is the result. Should it be desired to prolong the rubbing operation, the bell-crank lever 25 is operated, as previously described, to throw the gear 13 out of engagement with the pinion 12. Thus the rotation of the roller 15 is stopped, and in consequence the belt 30 and bands 32 will be arrested in their movement for any desired length of time. The parts may be then brought into the proper position to give movement to the belt 30 and bands 32 by reversing the movement of the bell-crank lever 25, and so cause the clothes to be brought to and through the wringer, as will be understood.

It will thus be seen that my invention provides in every way a simple and inexpensive washer and wringer combined which is particularly well adapted for the purpose intended, the parts being simple in construction, effective in operation, and so arranged as to not easily get out of order. It is also apparent that by simply having to operate a single lever to throw into and out of operation the several parts whereby the prolongation and shortening of the rubbing process may be accomplished at the will of the operator the device is a useful one for the household and other purposes.

Having thus described my invention, what I claim, and desire to secure by Letters Patend, is as follows:

1. A combined washer and wringer, comprising a revoluble drum or cylinder mounted in a suitable tub or box, said cylinder being provided on its periphery with projections, a feeding mechanism adjacent said drum or cylinder and adapted to feed the clothes to the action of the said cylinder, and to and through the wringer, and means for throwing said feeding mechanism into or out of operation and giving increased tension.

2. A combined washer and wringer comprising a revoluble drum or cylinder mounted in a suitable tub, a feeding mechanism adjacent said drum or cylinder and adapted to feed the clothes thereto, and to and through the wringer, an auxiliary feeding mechanism adapted to assist in feeding the clothes, and means whereby said feeding mechanisms are brought into and out of operation and locked in such position.

3. A combined washer and wringer comprising a revoluble drum mounted in a suitable tub or box, a pinion secured to the shaft of said cylinder, wringer-rolls adjacent said cylinder, a gear-wheel on the shaft of one of said wringer-rolls, intermediate gears meshing therewith and with the pinion on the drum-shaft, a lever provided with a slot adapted to receive the shaft of one of the wringer-rolls, a belt passing under the cylinder and between said wringer-rolls, and over a roll at the opposite side of said drum, said roll being supported by yielding or elastic bands, whose opposite ends are secured to a shaft, a bell-crank lever engaging the slotted lever referred to, whereby the latter is moved to throw the gear on the wringer-shaft out of operation with the intermediate gear or pinions, and thereby arresting the movement of the endless feed-band, and simultaneously giving greater tension thereto.

4. A combined washer and wringer comprising a revoluble drum or cylinder, supported in a suitable frame, wringer-rolls adjacent to said drum, the ends of shaft of one of the said rolls loosely mounted and adapted to move in slots provided in the frame, a block in each said slot and set-screws, the end of shaft being held thereby, a gear-wheel mounted on said wringer-shaft and intermediate gear meshing therewith, a lever provided with a slot adapted to receive one end of the loosely-mounted wringer-shaft, said lever having a slot at its opposite end, a bell-crank lever having a pin adapted to enter said last-named slot, a feed-belt passing over the lower wringer-roll under the drum or cylinder and over a roll at the opposite side thereof, said roll being supported by yielding or elastic bands, whose opposite ends are secured to a shaft journaled in the aforesaid frame, an auxiliary mechanism composed of a plurality of endless bands and which pass around said last-named shaft, disks on shaft adapted to guide said bands, the said bell-crank lever mounted on said shaft.

5. A combined washer and wringer comprising a revoluble drum or cylinder, supported in a suitable frame, the periphery of said drum provided with pyramidal projections, a wringer adjacent said drum, one of the rolls of which having its shaft loosely held in slots blocks arranged in said slots and adapted to bear upon the shaft of said roll, a pivoted lever provided with a slot adapted to receive one end of said shaft, said lever being provided with a slot at its other extremity, a pivoted lever provided with a pin adapted to enter said last-named slot, a pinion mounted on said drum-shaft and a gear-wheel mounted upon the shaft of the said loose wringer-roll, intermediate pinions adapted to engage therewith, and with the pinion on the drum-shaft, an endless feed-band supported by the lower wringer-roll and adapted to pass beneath the drum or cylinder and over a roll at the opposite side thereof, said roll being supported by yielding or elastic bands the other ends of which are secured to a shaft secured in the aforesaid frame, rolls arranged beneath said drum or cylinder adapted to pass between the endless feed-band, whereby the latter is held in proper relative position with the drum or cylinder and is prevented from rubbing upon itself, an auxiliary feeding device composed of separate bands passing over a shaft having disks separating the said bands, said bands passing thence under the drum and between the wringer-rolls.

ROBT. K. TOMLINSON.

Witnesses:
C. C. BURLEIGH JOHN,
SAMUEL H. MATTHEWS.