

W. Burnham, Washing Machine

N^o 56,001.

Patented July 3, 1866.

Fig 1.

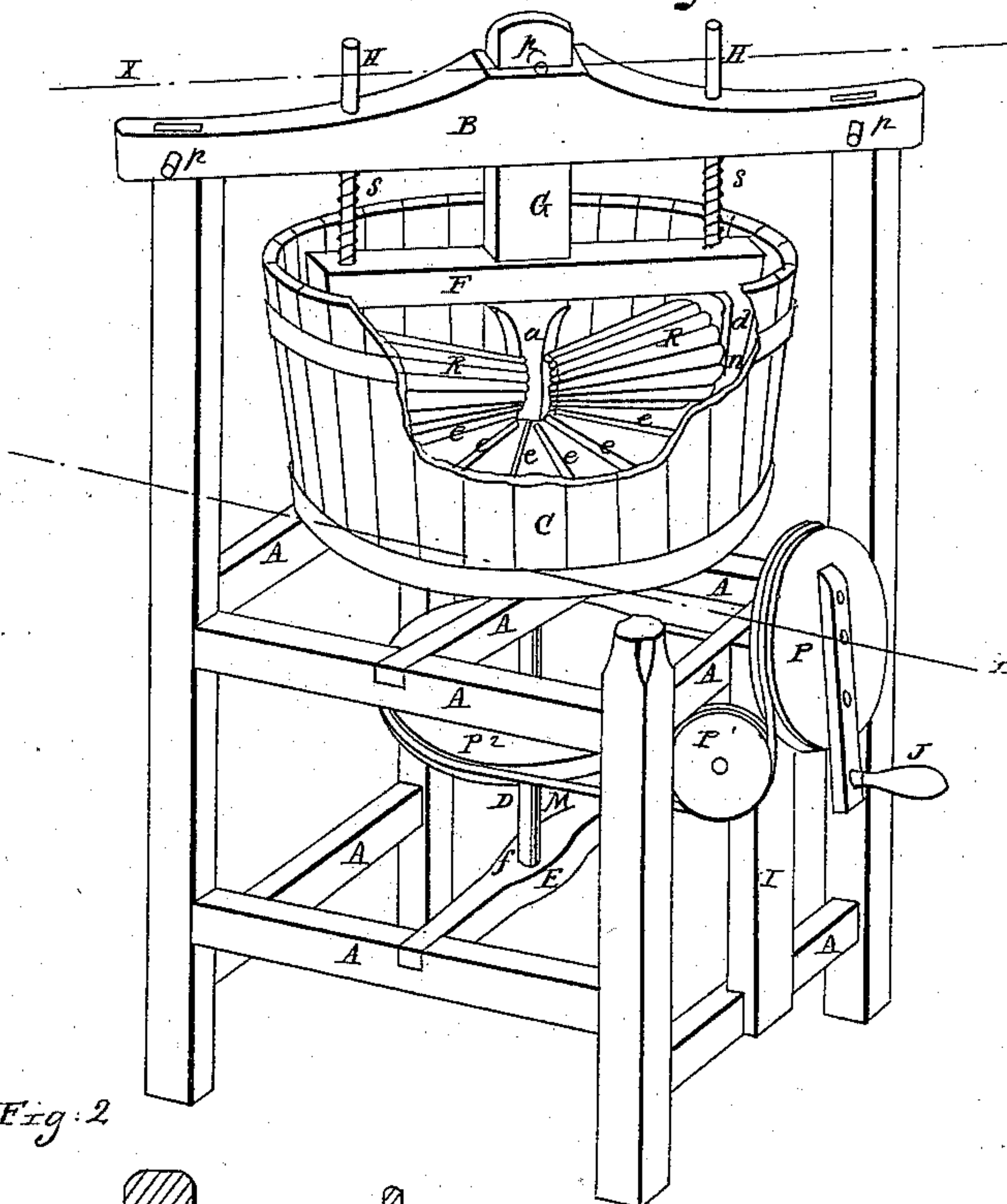
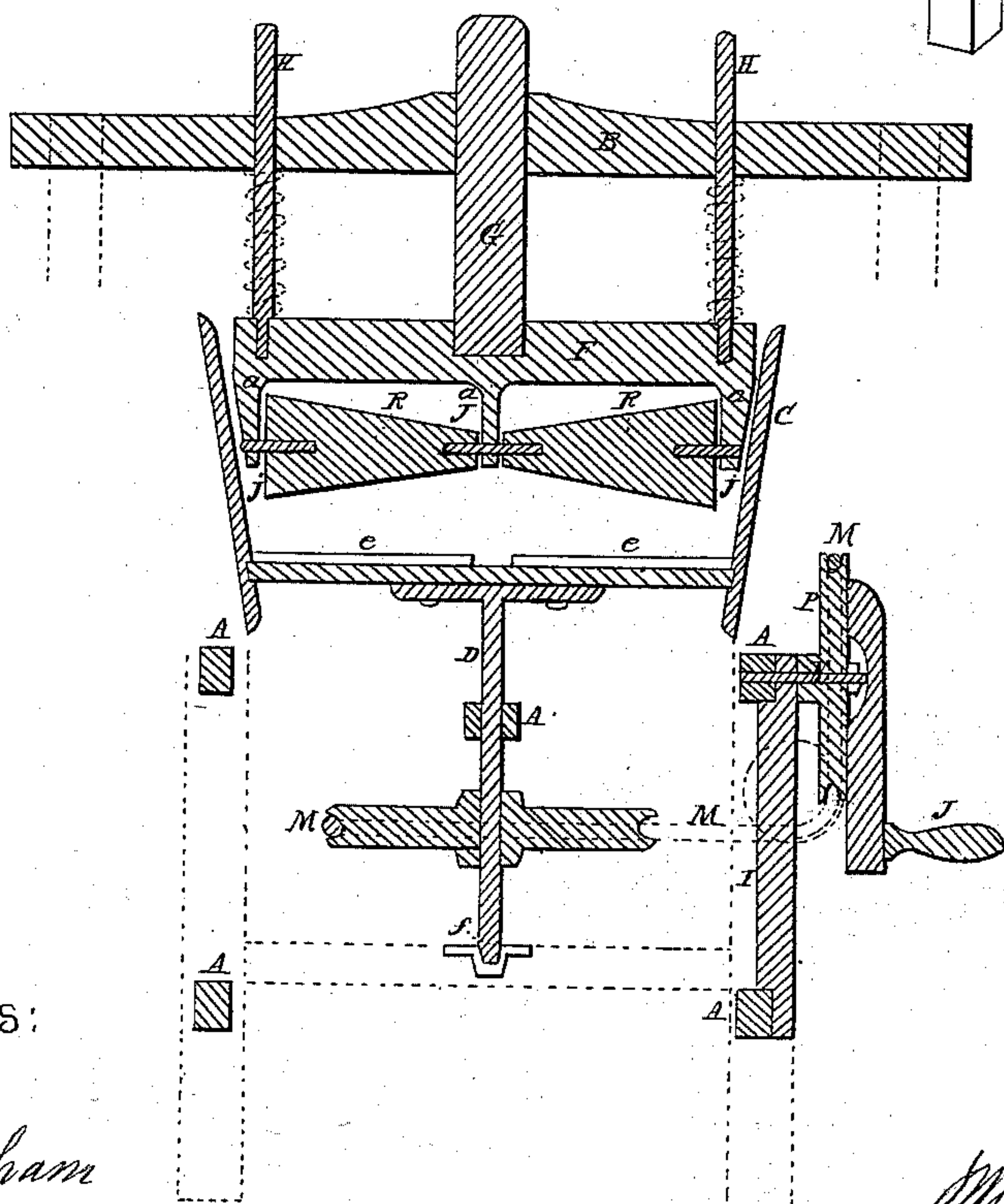


Fig 2.



Witnesses:

E. Perry
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Inventor.

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UNITED STATES PATENT OFFICE.

WILLIAM BURNHAM, OF UNION CITY, MICHIGAN.

IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. 56,001, dated July 3, 1866.

To all whom it may concern:

Be it known that I, WILLIAM BURNHAM, of Union City, in the county of Branch and State of Michigan, have invented a new and useful Improvement in 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, in which—

Figure 1 is a perspective view. Fig. 2 is a vertical section, the upper half taken in the line x and the lower in the line x' .

Similar letters of reference indicate corresponding parts in both figures.

My invention consists in the use of a revolving tub to contain the clothes, which are subjected to a spring-pressure against conical fluted rollers, the bearings of said rollers being formed in sliding hangers connected to a portion of the frame of the machine.

It relates, also, to an improved arrangement of pulleys, by the use of which the tub may be conveniently and noiselessly actuated by a band.

And the better to enable others skilled in the art to construct my invention, I will now proceed to describe it.

The frame of my machine consists of four posts and two series of girts, indicated by A, framed together in the form of a square. Two of these posts, which stand diagonally opposite to each other, are made higher than the other two to receive a cross-beam, B, which is framed into them with mortise and tenon, and secured from lifting by the check-pins p , as exhibited in the drawings, or connected otherwise in such manner that the cross-beam with its appurtenances may be quickly and easily removed whenever necessary during the operation of washing or at other times.

I generally use an ordinary wash-tub to contain the clothes, which tub is exhibited at C, with a portion of one side broken away to exhibit the interior. It is mounted on a central upright shaft, D, of iron or wood, so as to revolve between the upper girts and cross-beam, the shaft being steadied in its rotation by a bearing in the middle girt, A', at its upper end, the lower being inserted in a foot-step at f in the bridge-tree E.

R R represent two rollers, of the form of con-

ical frustrums, deeply fluted, which revolve in bearings n in the hanger-frame, which is stationed radially inside the tub. This frame, as I usually construct it, consists of a cross-bar, F, provided with hanger-arms a , a central guide-stem, G, and end guide-rods, H, which guides are caused to slide respectively in a mortise and holes in the diagonal cross-beam above.

A spiral-wire spring, S, is placed round each end guide, between the bar and beam, to cause the rollers to act with a steady pressure upon the clothes below. I insert a check-pin, p' , in the stem, however, to prevent the said rollers from touching the bottom of the tub, (when empty,) to which bottom I usually fasten radial ribs c .

My improved mode of revolving the tub is as follows: A grooved driving-pulley, P, provided with a crank-arm and handle, J, carries a band, M, which is guided into a horizontal line over two guide-pulleys, one on each side, (see P',) which alone is visible, and from these pulleys the said band passes around a large pulley, P², on the tub-shaft. I usually hang the driving-pulley to an upright, I, which is connected to two of the girts, on a projecting stud, N, and hang the guide-pulley on studs (not seen) which project from the sides of the upright aforesaid. Should the driving-band be of a material liable to stretch, provision should be made for raising the stud on which the driver turns, so that the band may always be kept at a proper degree of tension.

The mode of operation is as follows: The cross-beam and its attachments being first removed from the frame of the machine, the clothes to be washed are spread out and immersed in the suds inside of the tub, and the beam, &c., is replaced and secured. The operator, then grasping the handle of the driving-pulley crank, turns it continuously in one direction, and through the instrumentality of the band and pulleys, as aforesaid, revolves the tub and contents. As the tub revolves the clothes being subject to the spring-pressure of the conical rollers will be bedded into their flutes and cause their rotation. The effect upon the clothes is partly a squeezing and partly a rubbing one.

Were the rollers perfect cones it is evident they would act upon the clothes by simple pressure; but in such case the dirt would be

extracted much quicker from that portion around the sides of the tub than near the center, and the clothes would require to be frequently changed by hand. But in my arrangement there is a slipping or rubbing effect at the tapered ends near the center, which compensates for the loss of surface and speed, and as the rollers rotate in opposite directions the friction so produced acts moreover upon the clothes, so as to cause a continual change of position in the tub, and thereby clean them more quickly and uniformly.

I will say here that instead of the short fast journals *j*, driven into the rollers as an axis, I sometimes bore the rollers through and through and place them loosely upon a fast rod made of any suitable metal not subject to corrosion.

I disclaim the revolving tub, for that has been used in connection with rubbers, but not with such as produce a compound pressing

and rubbing effect upon the clothes as produced by my conical rollers. Therefore,

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

1. The employment of a revolving tub, C, in combination with the fluted conical rollers R R, which rollers operate against the clothes by spring-pressure, and are arranged relatively with and connected to the frame of the machine, substantially in the manner and for the purpose herein specified.

2. The combination of the band M and pulleys P, P', and P² with the machine-frame and tub-shaft D, substantially as and for the purpose set forth.

WILLIAM BURNHAM.

Witnesses:

E. PERRY,

J. BURNHAM.