H. Warner,

Washing Machine.

No. 71,090. Patented Nov. 19, 1867.

Fig. 3.

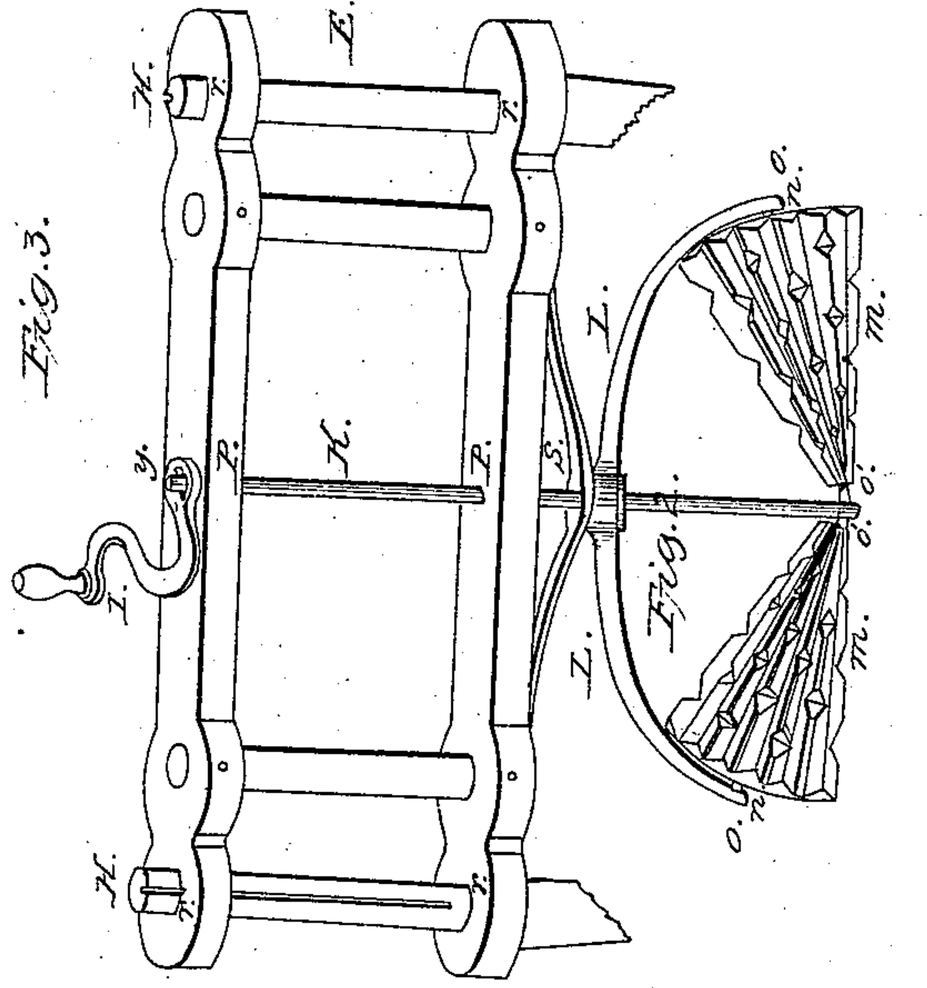


Fig. 4.

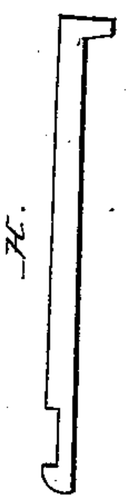
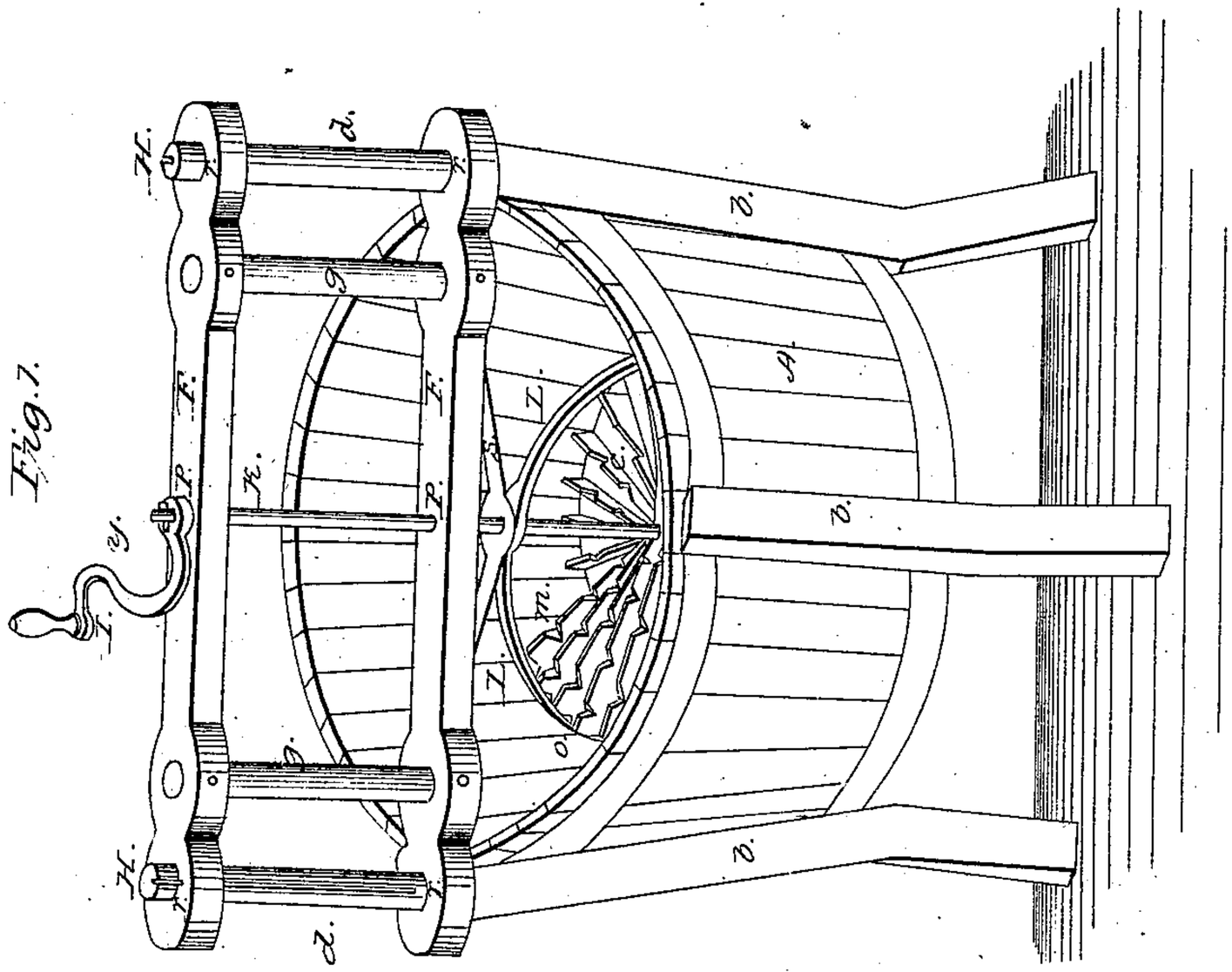


Fig. 7.



Witnesses.

C. Wadackett

R. L. Woodman

Inventor.

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United States Patent Office.

HORACE WARNER, OF LAKE CITY, MINNESOTA.

Letters Patent No. 71,090, *dated November* 19, 1867.

IMPROVED WASHING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, HORACE WARNER, of Lake City, in the county of Wabasha, and State of Minnesota, 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 the specification, in which—

Figure 1 is a perspective view.

Figure 2 is a transverse section, showing driving-shaft, with crank-arm and handle, and rollers attached, upheld by

Figure 3, a detached portion of framework, for supporting and guiding driving-shaft and attachments.

My invention consists in the use of a hanger driving-shaft, with arms affixed to it, near its lower extremity, in such a manner that the shaft and arms combined shall support the inner and outer axis of two conical, checked rollers, designed to be hung radially, and rotated within a circular tub for containing the clothes, which are subjected to a spring-pressure between the rollers and the bottom of the tub, by means of a metallic spring operating upon the driving-shaft above.

It also embraces a system of framework designed to support and steady the driving-shaft whilst operating the machine; and the more perfectly to attain this object, I have introduced certain metallic springs and catches.

The better to enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In constructing my machine, I generally use the ordinary wash-tub to contain the clothes, affixing radial ribs, *c*, across the bottom of the same, with notches cut in the upper side of the ribs at intervals of about two inches, which tub is exhibited at *a* with a partial view of the interior. I frequently attach four legs or posts to this tub, as seen at *b*, making shoulders upon one side of the leg or post for the lower edge of the tub to rest upon, and allowing the post to extend up along the outside of the tub, so that it may be fastened thereto by means of screws extending through the tub from the inside. When I attach legs in this manner, I make two of them longer than the other two, so that they may extend perpendicularly above the top of the tub for a distance of about one foot. This extension, as seen at *d*, is made round, and of equal size its entire length, and is designed to receive and support the sliding quadrangular framework E, consisting of the two cross-bars *f*, connected by the two post-rods *g*. The long posts or legs are set diagonally opposite to each other, and when legs are omitted, I fasten two posts or rods against opposite sides of the tub, which extend upwards for the purpose above stated. The sliding-frame E has holes, *r*, bored through its cross-bars *f*, near the ends of the same, so as to permit it to slip down over the extension *d* of posts *b* until it rests upright upon the top of the tub *a*, where it is held securely in its place by spring-catches H, inserted near the top of the post-extension *d*. K represents hanger driving-shaft, with crank-arm and handle *i* secured to the top of the shaft by check-pin *j*, together with arms L, near its lower extremity, and curving downward in such a manner as to afford bearings, *o*, for the outer axis of the conical rollers *m*, the inner axis of the same being supported by the bearings *o'* at the lower extremity and upon opposite sides of the driving-shaft proper. The driving-shaft, crank, and arms are made of iron, also the short journals *n* driven into the rollers as an axis. The rollers *m* are made of wood, of the form of frusta of a cone, deeply grooved, with notches cut across the ridges thus formed, so as to make the surface of the rollers checkered instead of fluted, the object of this being to prevent the clothes from sliding towards the centre of the tub in the operation of washing (as is the tendency when the rollers are only fluted.) I also have the same object in view in notching the ribs placed in the bottom of the tub. The framework E for supporting the driving-shaft has a hole bored through the middle of the cross-bars *f*, as seen at *p*, through which the driving-shaft K is introduced from the bottom and forced upwards until the crank-arm *i* can be fastened upon it above the upper bar, when, if the whole be placed upon the machine as designed, the driving-shaft will hang perpendicularly in the centre of the tub, supporting the conical rollers just above, but not quite touching the ribs in the bottom of the tub. The driving-shaft and rollers attached are forced downward upon the clothes by means of a curved metallic spring S, perforated at its middle so as to encircle the driving-shaft, and having its convex surface resting upon the shoulder formed by the junction of the arms L with the shaft K. The action of the spring is secured by placing it longitudinally with the cross-bar *f* at the lower side of the framework E, and letting its ends rest in grooves cut for that purpose in the lower side of the cross-bar. This will allow the driving-shaft K to slide

up and down through the holes *p* in the cross-bars *f*, and thus adjust itself to the thickness of the clothes in the tub.

Operation: Press in the spring-catches H, raise the framework E until the lower cross-bar is caught where the upper one previously rested, or (if preferred) remove the framework and attachments entirely from the tub. The clothes are then spread in the bottom of the tub and immersed in suds. Being well pressed down, the framework is replaced. The operator then grasps the handle and turns the crank in either direction with equal facility and effect. The rollers being pressed down upon the clothes by the action of the spring *s*, their projections become deeply embedded therein, and whenever the driving-shaft is rotated in either direction, the rollers are caused to revolve upon their axes, thus subjecting the clothes to a squeezing and slightly rubbing process. I sometimes omit the spring *s*, as sufficient pressure may be given by the hand in the operation of turning the crank.

What I claim as my improvement, and desire to secure by Letters Patent, is—

The hanger driving-shaft K, with arms L attached, the quadrangular, sliding framework E, with the spring-catches H and pressure-spring S, the improved manner of constructing ribs *c* and rollers *m*, by cutting transverse notches upon their elevations, and the combination and arrangement of the whole for the uses and purposes herein specified.

HORACE WARNER.

Witnesses:

C. W. HACKETT,

J. D. WONEMAN.