

T. R. Markillie,

Washing Machine.

N^o 40,110.

Patented Sep. 29, 1863.
Fig: 1.

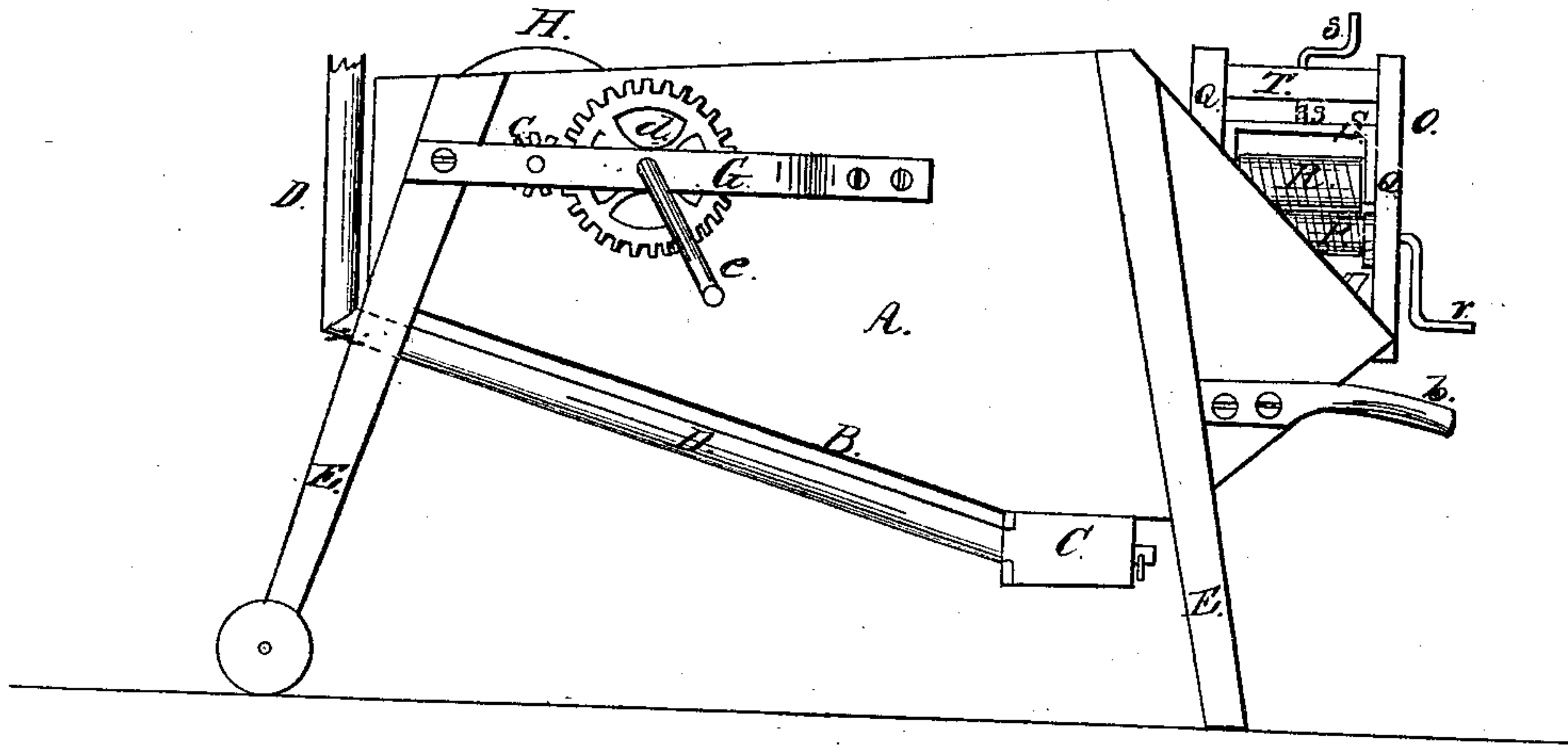
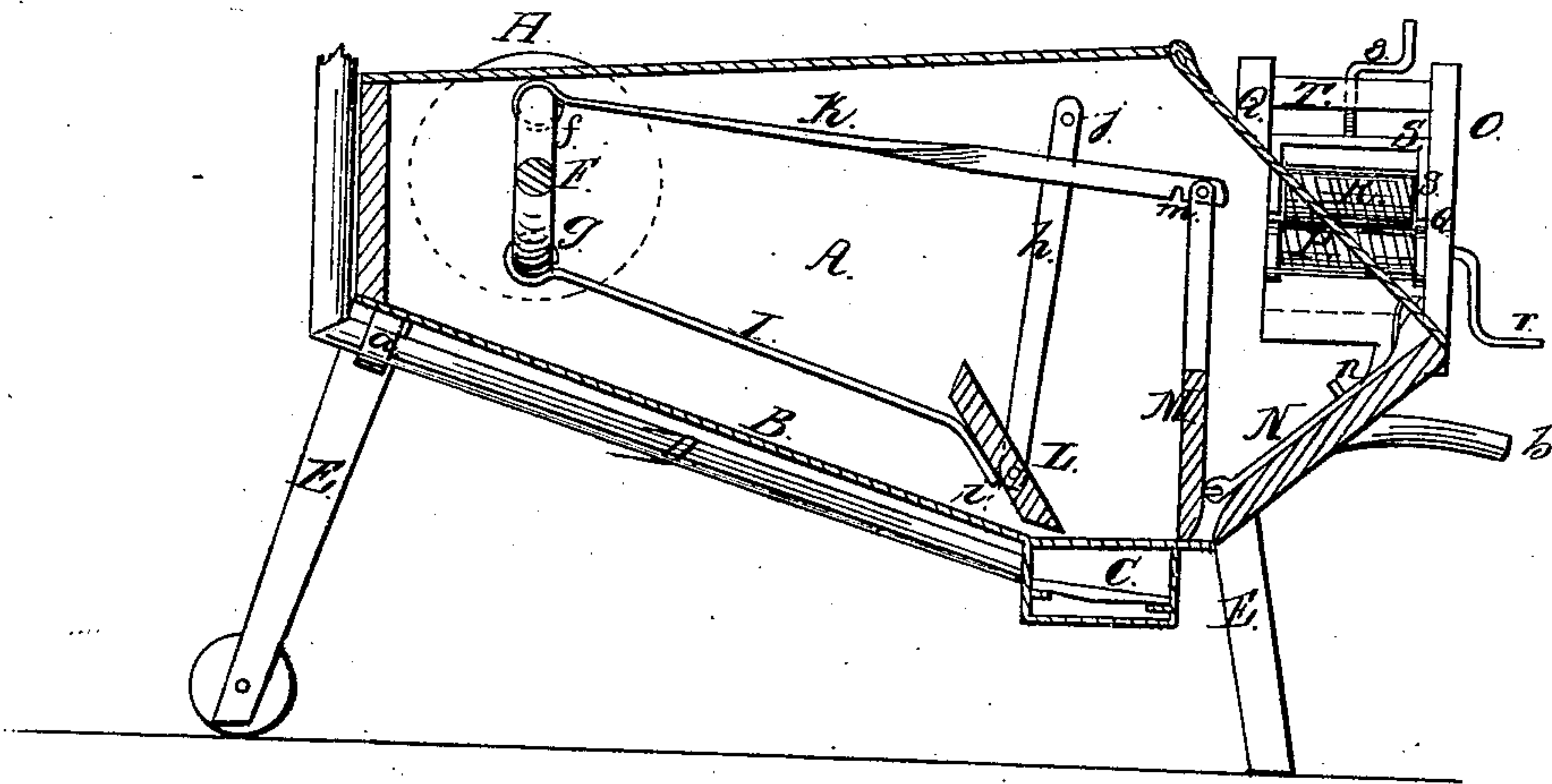


Fig: 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS R. MARKILLIE, OF WINCHESTER, ILLINOIS.

IMPROVED WASHING-MACHINE.

Specation forming part of Letters Patent No. 40,110, dated September 29, 1863.

To all whom it may concern:

Be it known that I, THOMAS R. MARKILLIE, of Winchester, in the county of Scott and State of Illinois, have invented a certain new and useful Improvement in Washing-Machines; of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a side elevation of my improved machine, and Fig. 2 a vertical longitudinal section of the same.

My present invention consists in an improvement on the washing-machine recently patented to me; and it consists, first, in combining with a washing-machine a furnace for heating the water during the operation of washing, and afterward of boiling the clothes should such be requisite—a combination which I have found of great practical importance; secondly, it consists in giving an inclined motion to the traveling squeezer, so as to operate it in a peculiar manner, whereby, as it recedes from the clothes it has just been pressing, it will slightly raise them and cause them to turn over so as to present a new surface for its action on its return stroke, and by which, in its advance, the squeezer will be so tilted up as to force back the water to saturate the clothes thoroughly, thus enabling the operator to wash with much less water than is usually employed, saving both fuel and labor; and lastly it consists in a certain improvement on the wringer, whereby the cost of repairing it and keeping in a thorough state of efficiency is greatly lessened.

In the accompanying drawings, A represents the tub or vat in which the washing-machine is arranged. By reference to Fig. 2 it will be perceived that the bottom plate of the tub is inclined to the horizon of from twenty to thirty degrees, more or less, for about five-sixths of its length. The remainder being horizontal, or nearly so, the whole of the bottom is made of sheet metal or thin cast-iron, and so, if desired, may the whole of it be made, although such is not absolutely necessary. To the under side of the horizontal part of the bottom plate, B, is secured in any suitable manner a furnace, C, for the purpose of heating the water while washing the clothes, and afterward of boiling them, if desired. To the rear of the furnace C is attached the smoke-

pipe D, which is made to pass along under the tub, and then up by its rear end, it being supported by a strap, *a*, secured to the tub. The tub as constructed is supported on four legs, E, the two rear ones of which rest on little wheels or rollers, by means of which and handles *b* on its forward end it may be moved about at pleasure. Through the sides of the tub is passed a double-crank shaft, F, having its bearings at one end in the side of the tub A, and at its other in a bracket, G, secured to the other side of the tub. On one end of this shaft F is secured a fly-wheel, H, and on the other a small pinion, *c*, which meshes into the teeth of a larger pinion, *d*, to the shaft of which is secured a crank-handle, *e*, by means of which motion is communicated to the washing machinery through the crank-shaft F. To the two crank-heads *f* and *g* of the crank-shaft F are attached, respectively, pitman rods I and K, the one, I, to the traveling squeezer L, and the other, K, to the vibrating squeezer M.

The traveling squeezer L is suspended by two arms, *h*, by means of pivotal pins *i* passing through the arms *h* into the ends of the squeezer, on which the latter is free to turn, or, rather, partially turn, as on an axis. The arms *h* are themselves free to oscillate on the rod *j*, and thus suffer the squeezer L to be swung back and forth by means of the pitman-rod I, attached to the crank-head *g* of the double-crank shaft F. Through the instrumentality of the pitman rod I as operated and the swinging arms *h* the motion of the squeezer is so governed as to cause it to operate in a peculiar manner, but only when driven in the right direction—that is to say, by imparting motion to the crank-shaft F in such manner as that it will cause the traveling squeezer to recede only from the clothes when the crank-head *g* is performing the lower half of its circuit, and not when performing its upper half, so that it shall cause the squeezer L, while traveling back in the arc of a circle, (because of the swing arms *h*,) to turn on its pivotal pins *i* as on an axis, and thus while receding raising and turning over the clothes so as to present a new surface to its action on its next advance.

The vibrating squeezer M is hinged at its lower edge and rear side to an adjustable bifurcated arm, N, provided at its upper end with a series of holes, which engage with a

pin, *n*, secured to the forward end of the tub on its inner face, by means of which the distance between the two squeezers is regulated to adapt them to a large or small quantity of clothes. The pitman-rod *K* of the squeezer *M* is also provided with notches *m*, for the purpose of allowing of this change of distance between the squeezers.

To the side of the machine, at its forward end, is secured in any suitable manner a frame, *o*, consisting of two strong upright and cross beams. In the uprights are mounted the bearings that support the shaft of the roll *P*, to whose shaft is secured a crank-handle, *r*, by which motion is imparted to the roll. Immediately over this roll is arranged a sliding frame, *S*, which travels in a slot cut in each of the uprights *Q*. In this frame is mounted another roll, *R*, in bearings formed in the sliding frame *S*. Between these two rolls the clothes when washed are passed, for the purpose of depriving them of their water by squeezing, the weight of the upper roll and its frame being sufficient for that purpose, when combined with the adjusting crank-screw *s*, which, passing through the upper cross-beam, *T*, bears against the upper beam of the sliding frame *S*, and prevents it from rising too far, the distance required for the quantity of clothes to be passed through at

one time between the two rolls being regulated by the crank-screw *s*. These rolls *P* and *R* are covered with vulcanized rubber, in the shape of a long strip wound spirally around them, which gives them a better hold of the clothes to draw them through and enables you to wind them to any thickness required without the necessity of cementing their edges, while it possesses many advantages over the sheet or tubular rubber, as it can be repaired when worn with much less trouble and cost.

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

1. The combination of the furnace *C*, with the bottom plate of a washing-machine, in the manner and for the purposes substantially as described.

2. The method of operating the traveling squeezer *L*, by means of the crank-shaft *F*, pitman-rod *I*, and swing-arms *h*, herein described, whereby the purposes set forth are effected in a simple and effectual manner.

In testimony whereof I have hereunto signed my name signed before two subscribing witnesses.

THOS. R. MARKILLIE.

Witnesses:

WILLIAM W. CHAPMAN,
R. B. DEDMAN.