S. KNIGHT.

Clothes Pounder.

No. 201,926. Patented April 2, 1878.

FIG. 1.

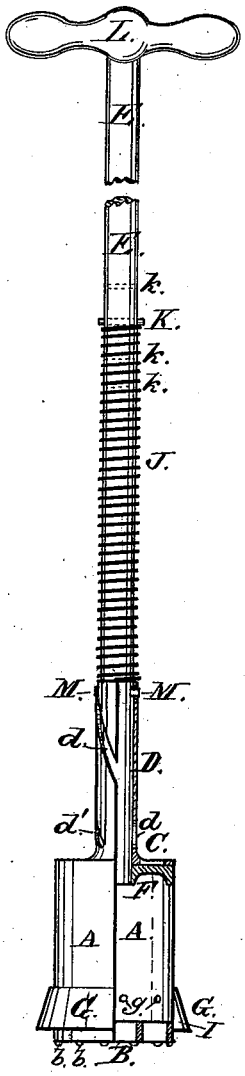

FIG. 2.

Witnesses:

Geo. H. Knight.

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UNITED STATES PATENT OFFICE.

SAMUEL KNIGHT, OF ST. LOUIS, MISSOURI, ASSIGNOR TO HENRY KIRKE WHITE, OF SAME PLACE.

IMPROVEMENT IN CLOTHES-POUNDERS.

Specification forming part of Letters Patent No. **201,926**, dated April 2, 1878; application filed January 2, 1878.

To all whom it may concern:

Be it known that I, SAMUEL KNIGHT, of the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Clothes-Washers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification.

My improvement relates to a staff, at whose lower end is a piston working in a cylinder, open at top and bottom, except a light frame-work, which prevents the entrance of clothes into the cylinder. The cylinder is forced downward upon the staff by a spiral spring, and the staff and piston descend in the cylinder by the pressure of the operator's hand when the cylinder is arrested by the clothes in its descent; and my improvement consists in forming in the guide-neck in which the piston-staff works spiral slots, which are traversed by side lugs of the rod or staff, to impart to the cylinder a rotary motion as it descends upon the clothes, and as it rises again. Radial ribs are inserted between the cylinder and a flange surrounding its lower end, to engage the clothes and cause them to turn with the cylinder as it descends and ascends.

In the drawings, Figure 1 is a side view of the washer, with the cylinder one half in section. Fig. 2 is a bottom view of the cylinder.

A is a cylinder, having at bottom an open frame-work, B, and at top an open frame-work, C, at whose center is a cylindrical guide-sleeve, D, in which the staff or rod E works. Attached to the bottom of the rod E is a piston, F, which works in the cylinder A, to cause the alternate entrance and expulsion of the water into and out of the ends of the cylinder. G is a flaring flange surrounding the lower end of the cylinder, forming open-bottomed chambers or recesses H, between which are radial division-plates I. *g g* are holes forming communication between the upper part of the chambers H and the interior of the cylinder, so that the movements of the piston shall cause an alternate upward and downward flow of the water in the chambers, the upward current having effect to draw the clothing into the chambers.

J is a spiral spring surrounding the staff. The lower end of this spring rests on the top of the neck or sleeve D, and its upper end bears against the projecting ends of the removable (and adjustable) cross-pin K, which passes diametrically through the staff. It will be seen that the position of the pin K may be changed by removal to another of the pin-holes, (shown in dotted lines at *k*,) so as to vary the tension of the spring. The spring J tends to depress the cylinder on the piston rod or staff, and thus to lift the piston relatively to the cylinder. L is a handle, which is grasped by one or both hands of the operator.

The guide-neck D has two spiral slots, *d d'*, which are traversed (as the piston descends and ascends in the cylinder) by the ends of cross-pin M, so as to impart to the cylinder a rotary motion as it moves upward and downward on the piston. *b b* are studs projecting from the bottom of frame B, to engage the clothes and cause them to turn with the cylinder A.

The operation is as follows: The clothes to be washed are placed in a wash-tub with suds, and the washer (being grasped by one or both hands) is forced down vertically upon the clothes. When the descent of the cylinder is arrested by the clothes, the contents of the cylinder beneath the piston are forcibly ejected, through the bottom of the cylinder for the most part, (a small quantity escaping through the holes *g* and chambers H,) said ejection being caused by the continued descent of the piston after the descent of the cylinder has been arrested. At the same time the cylinder is caused to turn by the projections M and slots *d d'*, to agitate the clothes and increase the action of the washer upon them. As the rod is lifted the piston causes a partial vacuum in the lower part of the cylinder, and the pressure of the air forces the clothes firmly against the frame B, and that portion of the clothes is drawn upward with the washer. At the same time the clothes are turned around with the rotation of the cylinder, as the entrance of water into the cylinder through the meshes and interstices of the clothes allows the piston to rise in the cylinder. When the piston reaches the upper end of the cylinder, the

suction ceases, and the clothes are released, and the instrument is again forced down upon the clothes.

A somewhat faster movement of the instrument will enable a constant hold to be had upon the clothes, as the descending movement may be made before the suction ceases, (and thus before the hold upon the clothes is released;) but even in this case there will be some movement of the piston in the cylinder, and consequent rotary reciprocation of the cylinder on the piston.

The radial bars of the frame B and the radial plates I, by their engagement with the clothes, insure the turning of the clothes with the cylinder. The studs *b b* also act in like manner to cause the clothes to turn with the cylinder.

I claim as my invention—

1. The combination, with the cylinder A, piston F, and spring J, of the spirally-slotted guide-neck D and rod E, the latter provided with the lugs M, substantially as and for the purposes set forth.

2. In combination with the cylinder A, provided with orifices *g*, the rod E, piston F, flaring flange G, having radial division-plates I, and the frame B, having radial bars, carrying studs *b b*, substantially as and for the purpose set forth.

SAML. KNIGHT.

In presence of—
GEO. H. KNIGHT,
C. W. H. BROWN.