A. Hildebrand,

Washing Machine,

No. 53,978. Patented Apr. 17, 1866.

Fig. 2.

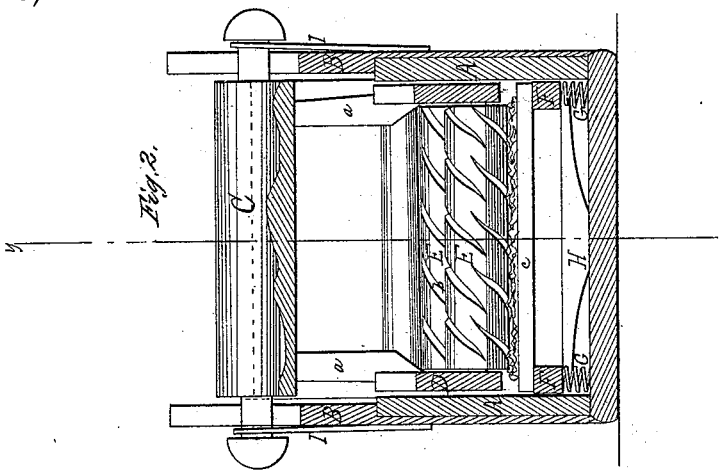
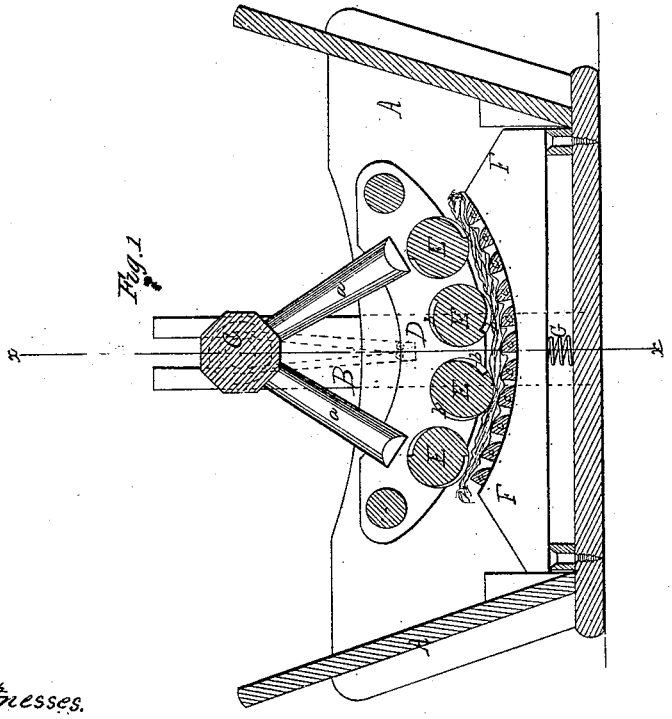


Fig. 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALLEN HILDEBRAND, OF DUBUQUE, IOWA.

WASHING-MACHINE.

Specification forming part of Letters Patent No. **53,978**, dated April 17, 1866.

To all whom it may concern:

Be it known that I, ALLEN HILDEBRAND, of Dubuque, in the county of Dubuque and State of Iowa, have invented a new and Improved Washing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of my washing-machine, taken in the plane of the line *x x*, Fig. 1. Fig. 2 is a transverse vertical section taken in the plane of the line *y y*, Fig. 1.

Similar letters of reference indicate like parts.

The invention relates to that class of washing-machines where a series of rollers arranged in the line of the arc of a circle are worked over a ribbed surface of corresponding form.

My invention consists in the employment of a series of rollers having on their surface grooves running in tangential directions partially round the rollers; also, in a series of quadrangular-shaped slats for the bed or concave on which the clothes are to rest while undergoing the rubbing operation; also, in providing one or more spiral springs on each side of the machine for the slat-carriage to rest upon to give it a springing motion; and, also, providing it with two rocking beams for the ends of the carriage to rest upon, for giving the carriage a lateral springing motion, the said spring and rocking bars being a provision for preventing the tearing of the clothes by the rollers pressing on a number of thicknesses thereof; also, in the employment or use of elastic bands for holding down the rollers upon the clothes.

To enable others to understand my invention, I will proceed to describe it.

A represents the box or tank of the machine, and B B the standards projecting up from its sides, in which the rock-shaft is arranged.

C is the rock-shaft, and *a a* its spokes, to which latter is attached the frame D, carrying the rollers E E in the usual manner. The peculiarity of these rollers is in their rubbing-surface, which is made sufficiently rough for the purpose for which they are intended by cutting grooves *b b* in their faces. These grooves extend part way round the rollers in a tangential direction, as shown clearly in Fig. 2, so that when the frame is rocked to and fro their rotation will cause the raised portions of the rollers to strike the clothes in such manner that a better rubbing thereof will be produced, as I have found by practice.

F is the slat frame or carriage. It is arranged loosely in the box A, and rests upon two spiral springs, G, one being at each side of the box. These springs permit the carriage to have a slight up-and-down motion, which in a measure compensates for the inequalities in the thickness of the clothes and lessens the possibility of their being torn by the rollers operating upon them.

At each end of the machine I secure a rocking bar, H, (see Fig. 2,) so arranged that its ends will slightly tip should the slat-carriage receive a downward pressure on either side. The slat-frame carriage thus mounted will ride easily, and the finest goods can be washed without being damaged by tearing or in any other respect.

The slats are designated by the letter *c*. These slats are quadrangular in shape, as shown clearly in Fig. 1. They present a good rubbing-surface, far better than if rollers were used, as they tend to hold the clothes in contact with the rubbing-rollers and rub them themselves at the same time, and although they are rigid this rigidity is compensated for by the play of the carriage to which they are secured.

To hold the rollers down upon the clothes I place an elastic band, I, over the ends or journals of the rollers, and over a pin, or the like, on the standards B B. The strength of these bands can be regulated as desired, and their use causes the rollers to press sufficiently hard upon the clothes; but should more pressure be required at any particular time it can easily be obtained by bearing down upon the lever or other device taken hold of for operating the frame carrying the rollers.

By my invention I produce an efficient washing-machine, and one not likely to tear or injure the finest of goods.

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

1. The employment of spiral springs G and the rock-bars H, in combination with the slat-carriage F, substantially as and for the purpose specified.

2. The quadrangular slats *c c*, secured to the springing frame or carriage F, in combination with the rollers E, made substantially as and for the purpose specified.

ALLEN HILDEBRAND.

Witnesses:

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