

G. M. Denison,

Washing Machine,

N^o 59,979.

Patented Nov. 27, 1866.

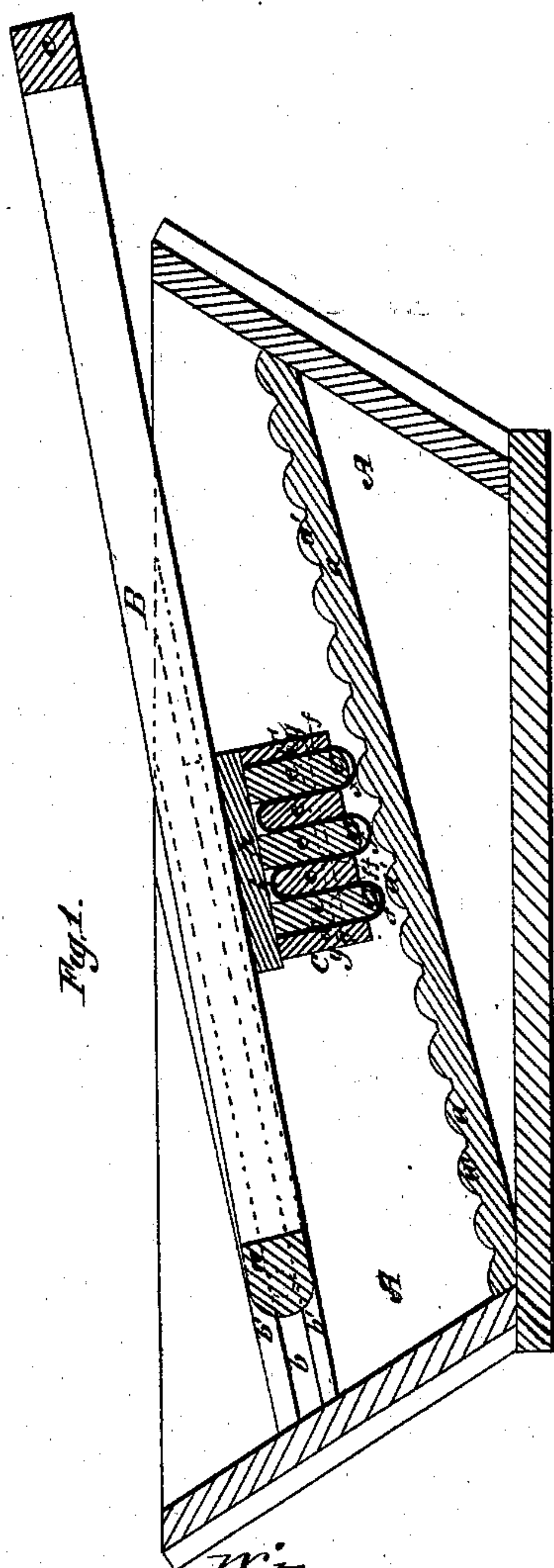


Fig. 1.

Witnesses.
A. S. Lellery
G. W. Reed.

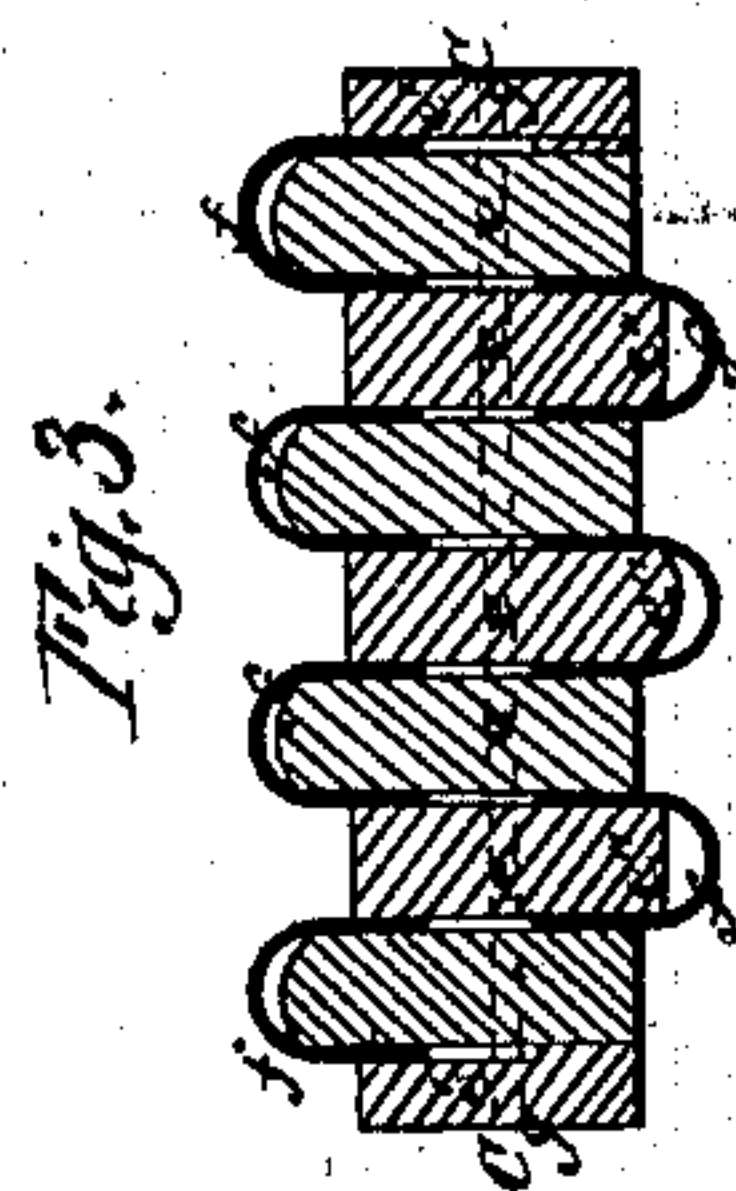


Fig. 3.

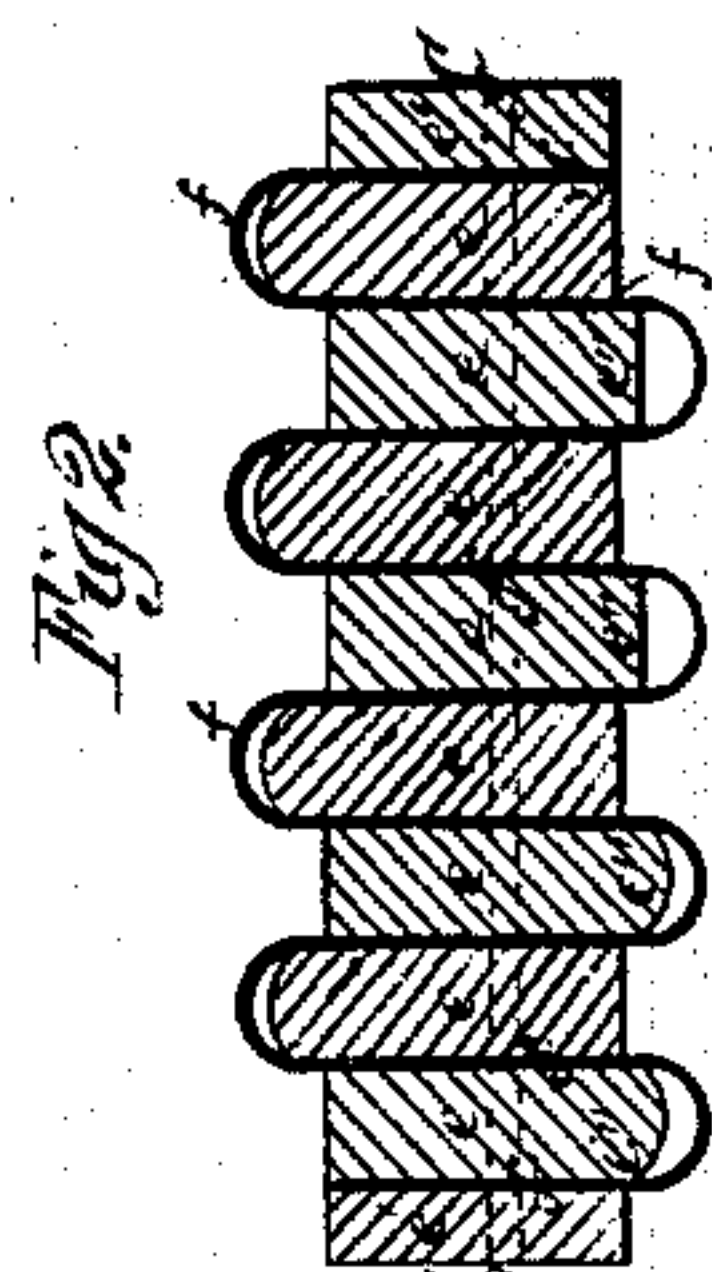


Fig. 2.

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United States Patent Office.

IMPROVED SURFACES FOR WASHING-MACHINES.

GEORGE M. DENISON, OF NEW LONDON, CONNECTICUT.

Letters Patent No. 59,979, dated November 27, 1866.

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE M. DENISON, of New London, in the county of New London, and State of Connecticut, have invented a new and useful improvement in Surfaces for Washing-Machines, &c.; and I do hereby declare that the following is a full, clear and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical longitudinal section of a washing-machine furnished with a rubber constructed according to my invention.

Figure 2 is a transverse section, on an enlarged scale, of such rubber.

Figure 3 is a transverse section showing a modification of the same.

Similar letters of reference indicate corresponding parts in all the figures.

This invention consists in the construction of the ribbed or corrugated rubbing surfaces of wash-boards, washing-machines, and the like, of sheet India rubber folded over and clamped between strips of wood or other hard material, in such manner that the ribs or corrugations formed upon such rubbing surfaces are rendered sufficiently yielding and elastic to prevent any injury to the cloth or fabric while washing the same, at the same time that the said washing surfaces are rendered capable of being manufactured at a much less cost than if the aforesaid ribs or corrugations were formed entirely of India rubber.

My invention is represented in fig. 1 as employed in a washing-machine, of which the tub or body is shown at A, and has secured in it an inclined false bottom, *a*, which is constructed with transverse ribs *a'* of any suitable construction and conformation, and which constitutes the fixed or stationary rubber of the machine. A guide, *b*, is formed upon the inner surface of each side of the tub, A, by means of two slats or cleats *b'*, secured to the said inner surface at a suitable distance apart, and in a position nearly or quite parallel with that of the inclined rubber, *a*. B indicates a sliding frame, the outermost end piece, *c*, of which constitutes a handle by which the said frame may be moved to and fro, and the innermost end piece, *d*, of which has its extremities extending laterally beyond the side pieces of the aforesaid frame; the said extremities being made of cylindrical form, as shown in dotted outline, and projecting into the guides *b* in such manner as to furnish a fulcrum upon which the said frame B may be turned up or down at pleasure, at the same time that a longitudinal vibrating movement is permitted thereto by the sliding of the extremities of the end piece *d* in the guides *b*. Attached to the under side of the frame B, at a suitable distance from the rearmost end thereof, is the movable rubber C, which is constructed as follows: any desired number of flat strips or blocks, *e*, of any suitable wood, and of any proper width and thickness, are placed side by side with a sheet, *f*, of India rubber folded alternately over the lower and upper edges of the said strips, and also passing between the same, as shown in figs. 1 and 2; a flat plate or piece, *e'*, either of wood or metal, is then placed upon the outermost ends of the rubber sheets, *f*, to hold the same in place; and bolts shown in dotted lines at *g* are passed transversely through the mass of wooden strips or blocks, *e*, and through the pieces, *e'*, in such manner as to securely hold the aforesaid strips, together with the sheet, *f*, firmly clamped through between them, as represented in the drawings. Instead of the bolts *g*, any other suitable means of confining the strips *e* in place may be employed. The lower edges of these strips, *e*, under which the sheet *f* is passed or folded, as just set forth, project below or beyond the lower edges of the remainder of the said strips, as shown at *e''*, and may be made of semicircular or rounded form. The sheet *f* should not be drawn tightly upon these downwardly projecting edges, but should be loose, or looped, as it were, upon them, so that a certain degree of flexibility may be allowed to the portion thus folded or looped upon the aforesaid lower edges of the said strips, as will be presently further set forth. The movable rubber C, as thus constructed, is attached to a top plate, *h*, which is in turn attached in any suitable manner to the frame B. The cloths or fabrics to be washed are placed upon the false bottom or stationary rubber, *a*, and a vibrating movement is communicated to the frame B, the movable rubber C being at the same time pressed down upon the clothes or fabrics, whereupon the ribs or corrugations formed by the downwardly projecting edges *e''* of the alternate strips *e*, and the elastic rubber covering *f* folded or looped over the said edges as hereinbefore explained, rub and press upon the fabric in such manner as to effectually expel the dirt and impurities therefrom, the covering or rubber portion of the said ribs being sufficiently yielding and elastic to prevent the aforesaid ribs or corrugations from tearing or abrading the fabrics, at the same time that, supported by the edges of the strips *e* upon which it is folded, it possesses sufficient stiffness to properly rub the fabric, as just hereinbefore explained. By these means the action of the ribs or corrugations of the movable rubber C, or in other words the rubbing or washing

surface thereof, is rendered quite as efficient in rubbing the cloth or fabric as if made wholly of India rubber at the same time that the cost of manufacturing the same is greatly reduced as compared with that which would be the case if the said ribs were formed entirely of rubber. If desired, the ribs or corrugations thus formed may be arranged obliquely or diagonally upon the rubber instead of transversely thereto. The rubber, C, as thus constructed, may not only be employed in washing-machines, as hereinbefore set forth, but may also be used as a wash-board or similar device, in which case it may be of any suitable size and with both of its sides or surfaces alike, as shown in fig. 2, the edges of the alternate strips *e* projecting from the opposite sides of the rubber and having the sheet India rubber *f* folded over or upon them in the same manner as hereinbefore set forth regarding the lower or rubbing surface of the rubber C as used in a washing-machine. Instead of being used in the form of a continuous sheet, as hereinbefore set forth, the sheet India rubber *f* may be formed in strips and folded upon and over the projecting edges of the wooden strips or blocks *e* in substantially the same manner as when a continuous sheet is employed, the edges of the rubber strips being clamped between the afore-said wooden strips in the same manner as the intermediate portion of the continuous sheet of rubber, as hereinbefore fully set forth. Furthermore, instead of making the strips *f* of wood, any other suitable hard material may be employed in place thereof.

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

The construction of a ribbed or corrugated washing surface of sheet India rubber folded over the edges of and clamped between strips *f*, substantially in the manner herein set forth.

G. M. DENISON.

Witnesses:

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G. W. REED.