

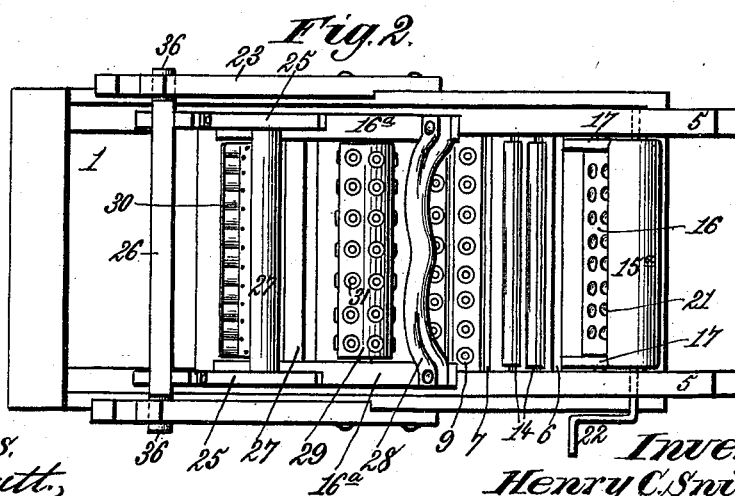
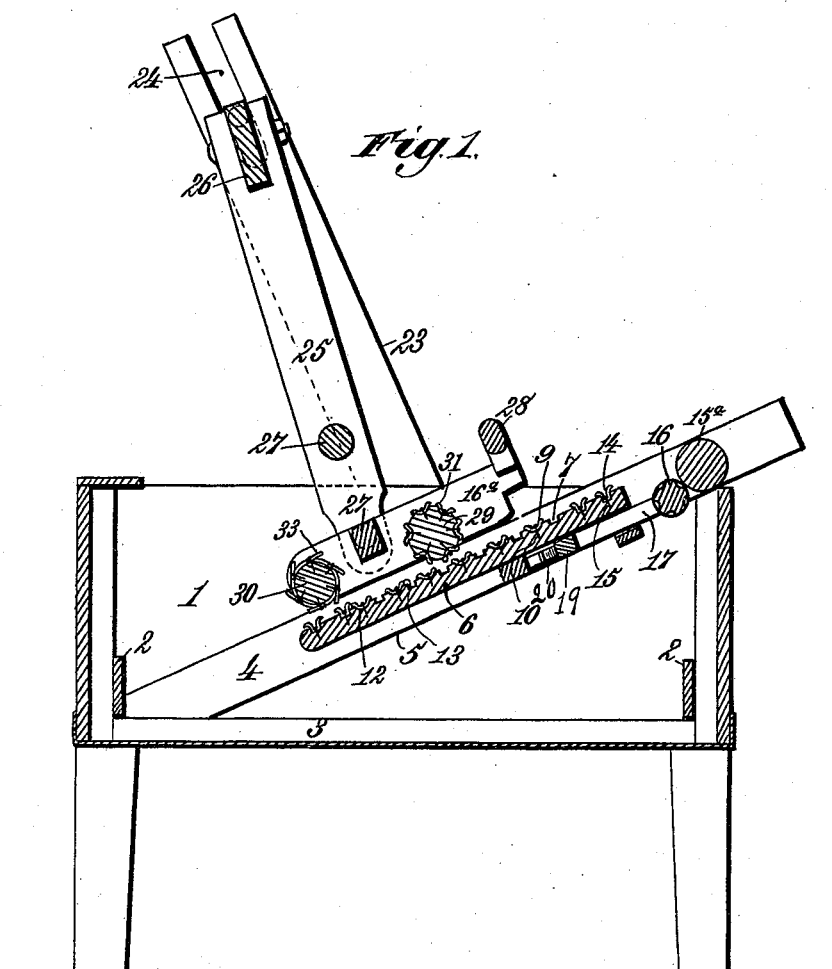
(No Model.)

2 Sheets—Sheet 1.

H. C. SNIDER.  
WASHING MACHINE.

No. 494,447.

Patented Mar. 28, 1893.



Witnesses:  
*Robert G. Smith,*  
*J. A. Rutherford.*

*Inventor:*  
*Henry C. Snider.*  
*By James L. Norris,*  
*Atty.*

(No Model.)

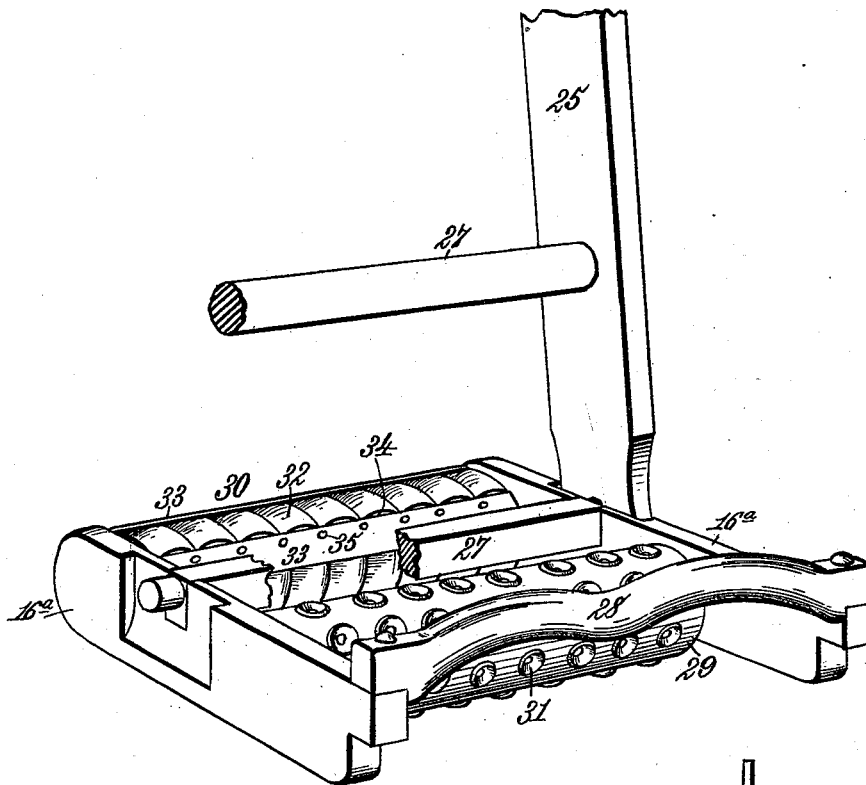
2 Sheets—Sheet 2.

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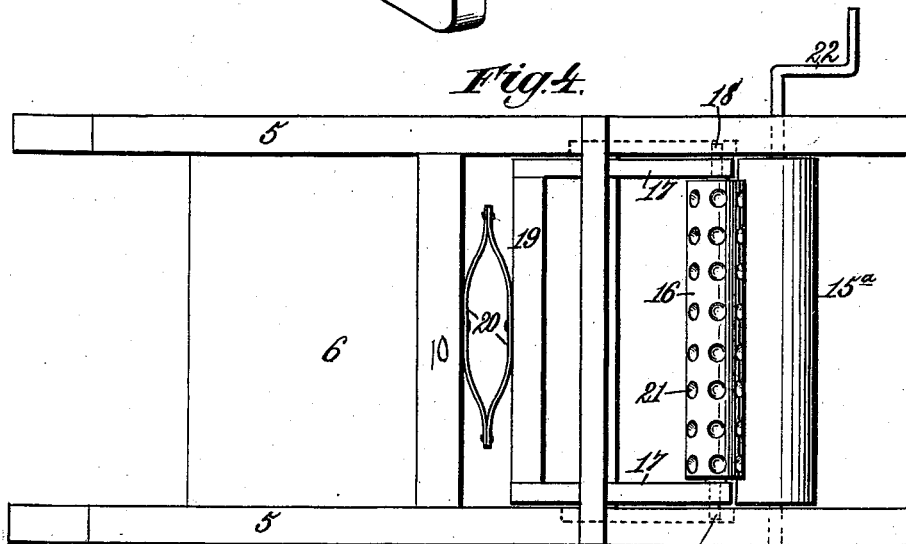
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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

HENRY C. SNIDER, OF JOSHUA, TEXAS.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 494,447, dated March 28, 1893.

Application filed October 29, 1892. Serial No. 450,361. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY C. SNIDER, a citizen of the United States, residing at Joshua, in the county of Johnson and State of Texas, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention relates to washing-machines, and the purpose thereof is to provide a practical, simple and efficient mechanism of this kind, by which soiled fabrics can be cleansed with the least possible labor, in the shortest possible time, and with the minimum wear and tear of said fabrics.

My invention consists, to these ends, in the several novel features of construction and new combinations of parts hereinafter fully described and then more particularly pointed out and defined in the claims which conclude this specification.

To enable others skilled in the art to which my said invention pertains to fully understand and to make, construct, and use the same, I will now proceed to describe said invention in detail, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of a machine embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail view of the reciprocating rubber, showing the construction of the same. Fig. 4 is a detail view showing the arrangement of the holding-rolls upon the end of the bed of the machine.

In the said drawings the reference-numeral 1 indicates the tub, or tank, of the machine, which may be of wood, or any other suitable material. I prefer to form this part of the machine of wood and of substantially rectangular form, for purposes of economy and to diminish the weight as far as possible, in order that the machine may be portable, but these features are subject to a considerable variation. The bottom, or floor, of the tub may be made of galvanized iron, and at, or near, each end thereof I place a transverse cleat, or brace, 2, rigidly attached to longitudinal bars 3, placed against the longer sides of the tub and in the angles formed by the bottom and the two longer parallel walls.

The numeral 4 indicates the bed, or washing-board of the machine. This bed is composed of two parallel side-bars 5, of such length that, when placed in the tub, with their ends against either one of the transverse cleats, or braces, 2, their other ends will project beyond the opposite extremity of the tub, the bed being supported in an inclined position by the end-wall of said tub. The washing-surface of the bed is formed of a board 6, usually made of wood, its edges being set in slots, or channels, in the side-bars 5. In the upper surface of this board are formed grooves, or depressions 7, at regular intervals, extending from side to side thereof. The parallel side-bars 5 being straight, the bed, or washing-surface 6, will necessarily be flat-surfaced, in contradistinction to those cases in which the surface is in the form of the arc of a circle, to correspond with the radius of swing of a rubber. Upon the flat parallel faces of the board 6 between the grooves, or depressions 7, I mount, or attach, disks 9, preferably made of rawhide, although I may use leather, rubber, or other suitable material. These disks are fastened in place by screws, nails, or similar fastenings, 10, inserted centrally through the disks and passing into the board 6, in which I form circular depressions 12 to provide seats for said disks, the latter being arranged concentrically with these seats, which are of somewhat less diameter than the disks. The single, central attachment of each disk, therefore, draws the body-portion of the same down into the circular depression, or seat, and causes a measurable elevation of its edge, above the surface of the board. In order to avoid the formation of abrupt salient angles, which might injure, or unduly wear the clothing, I preferably trim off the edges of said disks in such manner as to form circular faces 13, substantially parallel with the face of the board. By this construction, the slightly elevated marginal portions of said disks are diminished in thickness toward their outer edges, where the maximum elasticity resides, thereby enabling these edges, which are the most prominent points upon the bed, to yield readily, but with suitable resilience, to the passage and drag of the

fabrics operated upon. By this means, I avoid rupturing the said fabrics and provide a multitude of rubbing-points by which the necessary friction is imparted for the complete and speedy removal of the matter soiling said fabrics.

At one, or both, ends of the bed 6, I insert in the transverse grooves 7 strips of rawhide, leather, or other suitable material 14, secured in place by a central, longitudinal series of tacks, nails or screws, 15, by which the central part of the strip is drawn into the groove, its edges projecting above, and extending beyond, the parallel edges of said groove; said edges being trimmed in a manner substantially similar to that of the disks. These strips form a species of mop, which not only acts upon the fabrics, but aids in holding the same upon the bed while they are subjected to the action of the reciprocating rubber.

In the higher end of the bed-piece of the machine, and arranged between the two parallel side-bars 5, are two rolls 15<sup>a</sup> and 16. The former of these rolls has journal-support in the side-bars, while the second of the two rolls is journaled in a movable frame, the sides 17 of which lie within the side-bars 6 and have outwardly-projecting pins 18, which move in slots in the said side-bars 5. The two longer sides of the frame are composed of the roll 16, which has its journal-supports in one end of the sides 17, and a bar 19 rigidly connected to the other ends and receiving spring-pressure from one or more leaf-springs 20, or springs of other suitable form, whereby the roll 16 is pressed against the roll 15<sup>a</sup> with suitable force. I prefer to construct one of these rolls with a plain surface and to provide the other with a considerable number of cup-shaped, circular depressions, 21, but these features are evidently subject to a wide variation, without materially departing from my invention. The roll 15<sup>a</sup> I provide with a crank 22, to enable the operator to impart movement independently thereto, and draw the fabrics operated upon over the surface of the bed.

Upon the sides of the tank, or tub, are erected supports 23, preferably inclined at a suitable angle from the vertical, and provided, in their upper ends, with slots 24, which open at the upper extremities of said supports. The reciprocating-rubber consists of a frame composed of side-bars 25, connected by strong transverse bars 26 and 27, below the latter of which the ends of the side-bars 25 extend. To these extended ends is pivotally attached a frame composed of side-bars 16<sup>a</sup>, connected by a transverse brace 27 and a hand-hold 28. In said side-bars is journaled, upon one side of the transverse brace 27, a roll 29, and, upon the other side of said brace, an independent roll 30. The roll 29 is provided, over its entire surface, with disks 31 of raw hide, or other suitable material, having a form and fastening similar, in all substantial respects,

with that seen upon the bed-piece 6, the disks 31 being placed in seats in the cylindrical face of the roll, and trimmed off upon their edges in the manner described. The roll 30 is provided with a series of circumferential corrugations, or externally convex annuli, 32, and is provided with a series of longitudinal, elastic strips 33, of raw hide, leather, or other suitable material. These strips are set in longitudinal grooves, or channels 34, cut as deep, or nearly as deep, as the circumferential channels which separate the several corrugations, or convex annuli. In these longitudinal channels the edges of the strips 33 are laid and are fastened by tacks, nails, or screws 35, inserted in, or near, the lines of said circumferential channels. As these fastenings are inserted through one edge of each strip, while the other and parallel edge is left free, it will be seen that a series of pockets is formed, between the two edges, which are capable of containing, in the aggregate, a considerable volume of fluid. As the rubber is reciprocated over the bed-piece, 6, the revolution of the roll 30 carries up the suds and throws the same with considerable force upon the fabrics lying upon the bed-piece, which are, almost immediately, subjected to the compression of the rubber, whereby the suds are forced through the cloth, with the required friction and agitation.

The frame carrying the reciprocating rubber is supported in the slots 24 in the side supports 23. To render this support pivotal and to secure an adjustment of the reciprocating rubber toward and from the bed 6, I provide the upper transverse brace 26 with laterally projecting trunnion pins 36, which lie in the slots 24, from which they may be readily removed. A cleansing action is thus given of such efficacy that the clothes, or fabrics, are thoroughly cleansed in the shortest possible time and with the minimum of labor upon the part of the operative.

What I claim is—

1. In a washing-machine, the combination with a tub, or tank, of a stationary bed-piece having parallel side-bars resting at one end upon the bottom of said tub and projecting at the other end over the edge thereof, a fabric-holding and feeding-roll journaled in said side-bars, a second roll journaled in a movable, spring-pressed frame, the sides of which lie within the side-bars of the bed-piece and are provided with pins which project outwardly and move in slots in the said side-bars, means for rotating said rolls, and a reciprocating rubber pivotally attached to a frame hanging upon supports on the side of the tub, substantially as described.

2. In a washing-machine, the combination with a stationary bed-piece of a reciprocating rubber having two independent rolls, one provided with a series of disks, seated in circular depressions in the face of the said roll

and a second roll provided with circumferential corrugations, a series of rawhide strips running longitudinally of said roll and having one edge lying in channels in said roll  
5 and attached by screws, or nails, driven in the lines of the channels intermediate of the said circumferential corrugations, leaving the other edges free, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

HENRY C. SNIDER. [L. S.]

Witnesses:

P. P. STRINGER,  
S. G. GRAHAM.