

(No Model.)

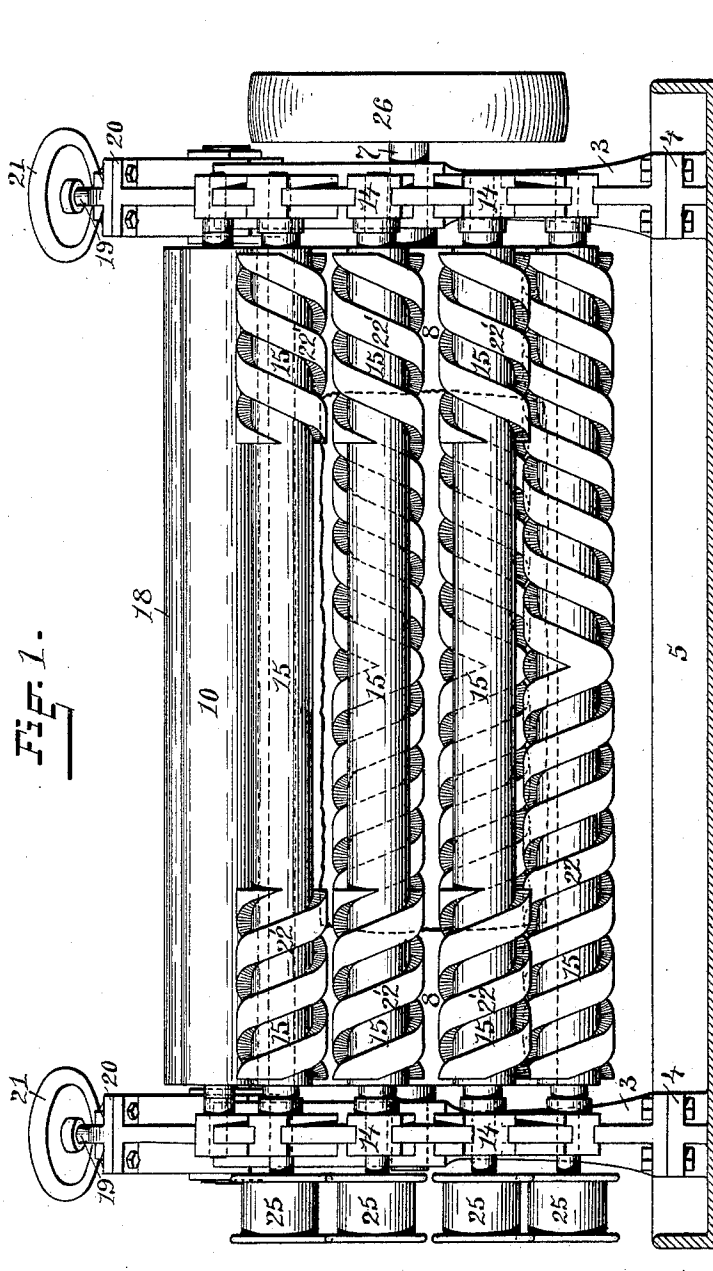
2 Sheets—Sheet 1.

E. A. RUSDEN.

BLANKET WASHING AND CLEANING MACHINE FOR CALICO PRINTING.

No. 460,353.

Patented Sept. 29, 1891.



WITNESSES:

Chas. H. Luther Jr.
Henry J. Miller

INVENTOR:

Ethelbert A. Rusden
by Joseph A. Miller & Co.
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2 Sheets—Sheet 2.

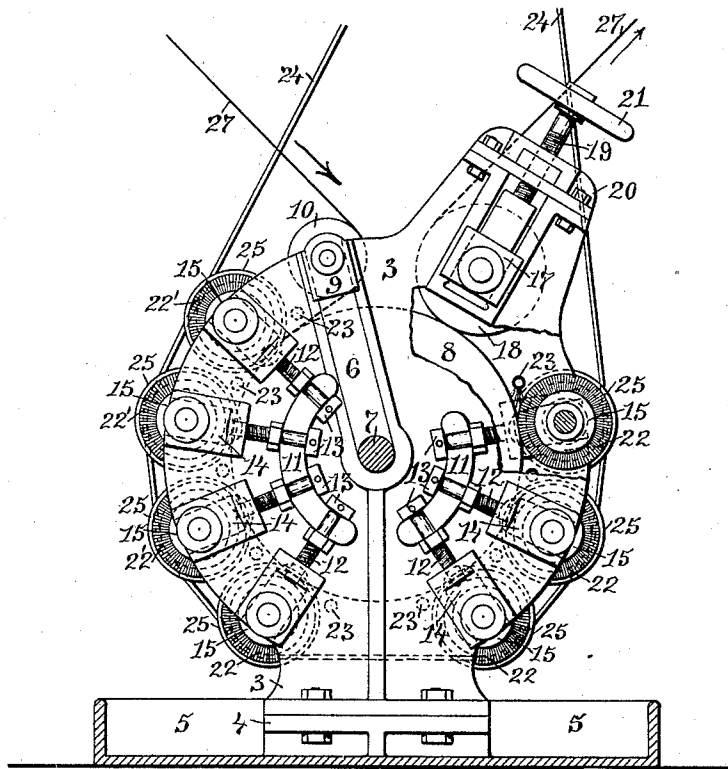
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Fig. 2.



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UNITED STATES PATENT OFFICE.

ETHELBERT A. RUSDEN, OF PROVIDENCE, RHODE ISLAND.

BLANKET WASHING AND CLEANING MACHINE FOR CALICO-PRINTING.

SPECIFICATION forming part of Letters Patent No. 460,353, dated September 29, 1891.

Application filed December 17, 1890. Serial No. 375,011. (No model.)

To all whom it may concern:

Be it known that I, ETHELBERT A. RUSDEN, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Blanket Washing and Cleaning Machines for Calico-Printing; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in apparatus for washing and cleaning blankets used in printing patterns or colors on textile or other materials.

The object of the invention is to produce a machine for washing and cleaning blankets in a more thorough manner than has heretofore been done, while reducing the amount of wear and strain on the blanket during the process.

To this end my invention consists in certain novel features of construction and peculiar combination of parts, which will be more fully described hereinafter, and pointed out in the claims.

Figure 1 is a side view of the improved washing-machine with a portion of the drum broken away. Fig. 2 is an end view of the washing-machine, showing the method of adjustably securing the brush-rolls around the drum, a portion of the end frame being shown as broken away to indicate the relative positions of the brushes and nip-roll to the surface of the drum.

Similar numbers of reference indicate corresponding parts in both figures.

In the drawings, the numbers 3 3 indicate the end frames of the washing-machine. These end frames are bolted to a suitable base 4, which is surrounded by the drip-tank 5. The slides 6 6 extend from the upper portion of the circumference of the frames 3 3 toward the center of the same, where the shaft 7, carrying the drum 8, is journaled. Two blocks 9 9 are shaped to fit into the upper end of the slides 6 6, and have a shaft carrying the guide-roll 10, journaled in them. These blocks 9 9 may extend the length of the slides 6 6 to serve as followers for the shaft 7. The yokes 11 11 are secured to the outer sides of the frames 3 3, and are provided with bearings

for the screw-bolts 12 12, which may be turned by a small rod fitting the holes in the heads 13 13, to screw the thread of the bolts into and adjust the sliding blocks 14 14, into which the shafts of the brush-rolls 15 15 are journaled, and which fit into slides arranged around the periphery of the end frames 3 3.

The upper portions of the end frames 3 3 are extended in a direction somewhat off the center and toward the front of the machine, to form arms which serve as guides for the sliding blocks 17 17, carrying the ends of a shaft supporting the nip-roll 18. These blocks 17 17 are adjusted by the screws 19 19, working in a threaded hole in the cross-pieces 20 20 and operated by the hand-wheels 21 21.

The brushes 22 22 are arranged spirally around the brush-rolls 15 15 from the ends to the center, where the spirals meet in a rounded point. The brushes 22' 22' are arranged spirally on the rolls 15' 15', similarly to brushes 22 22, but extend from the ends of the rolls only a portion of the distance to the center of the same. Near each brush-roll a spurt-pipe 23 is placed, and extends from one side frame to the other, being parallel to and at a short distance from the surface of the drum 8. These spurt-pipes 23 have slits cut in one side, through which water is forced against the blanket at or near the point of contact with the brushes 22 22, the flow of water being regulated by suitable valves.

The brush-roll 15 may be driven in either direction by a belt 24, which passes over the pulleys 25 25, secured to the ends of the shafts carrying the brush-rolls, while the drum 8 is revolved in the direction of the travel of the blanket by a belt working on the large pulley 26, secured to the drum-shaft 7.

The surfaces of drum 8 and the nip-roll 18 are preferably covered with a rubber or other water-proof composition which will not be affected by the coloring-matter washed from the blanket.

The operation of the improved washing and cleaning machine is as follows: The blanket 27 is guided into the washing-machine by the roll 10 and passes around the drum 8, which is driven at the same surface speed as that of the printing-machine. As the blanket passes under the brushes 22 22 it is saturated with water thrown from the

spurt-pipes 23 23, while the brushes scour the surface of the blanket as it moves along over the drum 8. A sufficient number of the brushes 22 22 are supplied to thoroughly
 5 cleanse the center of the blanket 27, and a number of auxiliary brushes 22' 22' are used to more perfectly clean the edges of the blanket, which receive more of the color from the printing-rolls than the center of the blan-
 10 ket, as they are not protected by the strip of cloth, paper, or other material which is being printed. The blanket, having been subjected to the action of the water and the scouring of the brushes, now passes under
 15 the nip-roll 18, which presses the blanket against the drum 8 and forces out the greater portion of the water, which falls into the drip-tank 5, while the blanket moves along over suitable rolls to any ordinary system of
 20 drying-cans, over which it passes, and is then returned to the printing-machine.

The surfaces of blankets adapted to be used on printing-machines being impervious to water and the backing of the same being of material injured by the constant application of
 25 water, especially when mixed with dye-stuffs, I have arranged my blanket-washing machine to bring the nip-roll off the center of the central drum and side frames in order to force
 30 the surplus water down over the face of the blanket.

Another object in placing the nip-roll off the center of the machine is to avoid the creeping of the color and water under the roll,
 35 as is the case when the nip-roll is placed above the center of the central drum, the position off the center of the drum-surface allowing the force of gravity to carry the water and color away from the point of contact between
 40 the blanket and the nip-roll.

As the center drum 8 is driven at the same surface speed as the surface speed of the printing-rolls, it is evident that the pressure of the brushes 22 22 on the blanket 27 will
 45 not cause any undue strain or tension on the blanket, whether the brushes revolve with or against the direction in which the blanket moves.

By the construction above described I produce a very compact washing and cleaning
 50 machine, from which either of the brush-rolls can be removed without disturbing the others, while the central drum may be easily removed from the end frames.

Shields may be placed around the machine
 55 to catch any water thrown outward by the brushes and to convey the same to the drip-tank.

Having thus described my invention, I claim as new and desire to secure by Letters
 60 Patent—

1. In a blanket-washing machine, the combination, with the removable blocks 14 14, carrying brush-roll shafts and fitting into slots or slides provided in the peripheries of the
 65 end frames 3 3, of the yokes 11 11 and bolts 12 12, by which the blocks 14 14 are adjusted in the slides, as described.

2. In a blanket-washing machine, the combination, with the end frames 3 3, having the
 70 slots or slides 6 6, of the shaft 7, follower-blocks 9 9, and guide-roll 10, as described.

3. In a blanket-washing machine having a central drum, the combination, with a number of brush-rolls arranged around said drum
 75 and having spiral brushes extending over the whole length thereof, of other brush-rolls also arranged around said drum and having spiral brushes arranged around the end portions thereof, as and for the purpose described.
 80

4. In a blanket-washing machine having a central drum carried on a shaft journaled in slides provided in the end frames, the combination, with adjustable brush-rolls surrounding
 85 said drum and driven by a belt passing over pulleys provided on the ends of the brush-roll shafts, of a nip-roll journaled in blocks sliding in guides provided on the end frames at a position off the perpendicular of the same to force the water squeezed from the blanket
 90 down over the face of the same, as described.

ETHELBERT A. RUSDEN.

Witnesses:

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