

(No Model.)

2 Sheets—Sheet 1.

F. G. & A. C. SARGENT. WOOL WASHING MACHINE.

No. 433,583.

Patented Aug. 5, 1890.

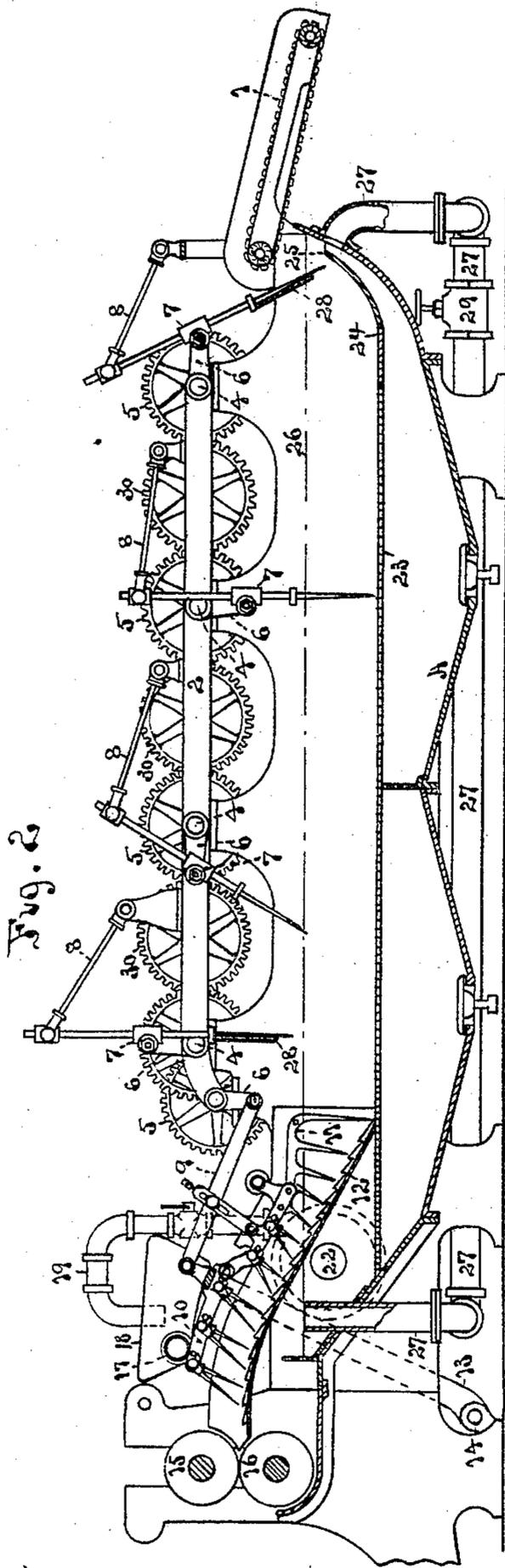


Fig. 2

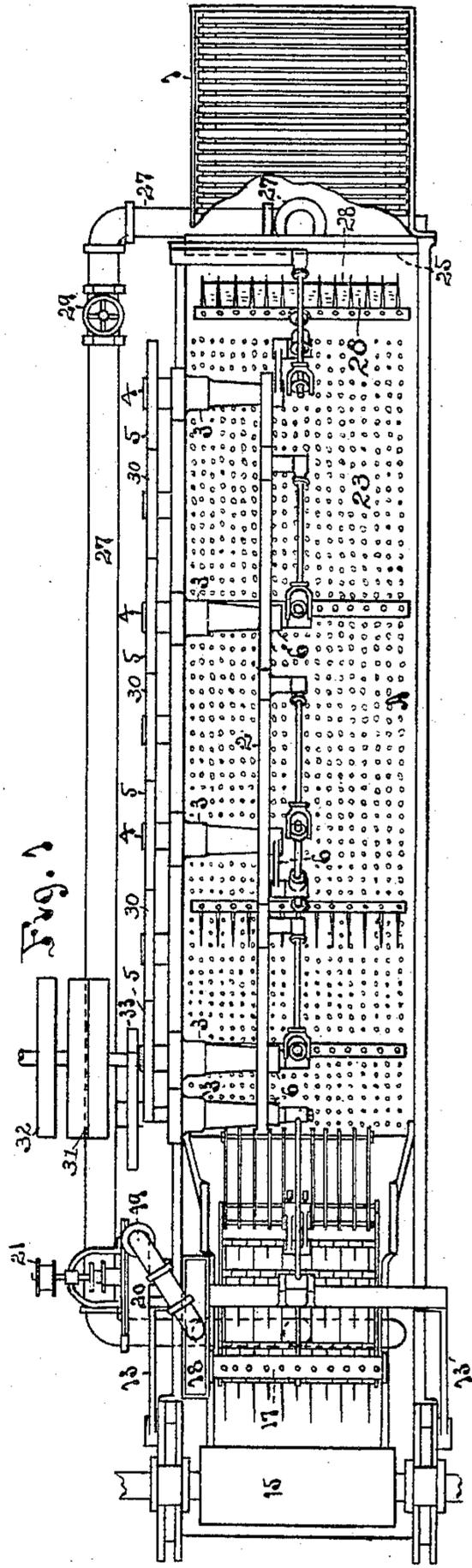


Fig. 1

Witnesses

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WOOL-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 433,583, dated August 5, 1890.

Application filed April 8, 1890. Serial No. 347,081. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK G. SARGENT and ALLAN CAMERON SARGENT, of Graniteville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Wool-Washing Machines, of which the following is a specification.

Our improvement relates to machines for washing wool and other fibrous substances of similar nature; and it consists in certain improved constructions and combinations of the several parts thereof, substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of a wool-washing machine containing our improvement, with the feed-in apron partially broken away to show the parts beneath. Fig. 2 is a side elevation of the same with the side of the bowl removed. Fig. 3 is an enlarged view of the squeeze-roll end of the machine as shown in Fig. 1. Fig. 4 is an enlarged view of the same parts as shown in Fig. 2.

A is the bowl of the machine, of usual form, having a feed-in apron 1, carried around rollers for feeding the wool into the bowl. A bar 2 extends centrally and longitudinally over the bowl, held on pipe-sleeves 3 3, projecting horizontally from the side of the bowl. These pipe-sleeves support the horizontal shafts 4 4, which are provided with the gears 5 5 on their outer ends for driving the rakes and carrier. These shafts have the cranks 6 6 on their inner ends, which support the sleeves 7 7, and the sleeves turn on the crank-pins of the cranks and have the rake-handles sustained in them, excepting the crank nearest the squeeze-rolls, which is pivoted to the pitman-rod 9, which drives the carrier 10. The upper ends of these rake-handles are pivoted to the rods 8, which are pivoted at their other ends to brackets sustained by the frame and the bar 2, and these rods 8 govern the movement of the rakes in the usual manner as they are carried by the cranks.

The carrier 10 has pivoted to its rear end nearest the rakes the supplemental carrier 11, which is connected to the pitman-rod 9 by a link, which operates it in the usual man-

ner. The carrier-bed 12 is of curved form, as shown, and is perforated to allow the washing-fluid to pass through it and have the wool lodge upon its surface. The carrier is supported upon the arms 13 13, which are attached at their lower ends to the rock-shaft 14, which revolves in brackets in the frame.

The squeeze-rolls 15 16 are supported in boxes in the frame at the upper end of the carrier, and the upper one is driven by a pulley on the end of its projecting shaft, which is broken away for convenience in showing the several parts. On the carrier is mounted the horizontal perforated tube 17, with one end closed and the other connected to the box 18, which is also mounted upon the carrier and is open at its upper side. When the box 18 is filled with washing-fluid, it flows through pipe 17 and out of its perforations, sprinkling the wool upon the carrier-bed as it is brought up by the carrier.

A curved pipe 19 leads from the rotary pump 20 upward, and has its upper end projecting downward into the open upper side of the box 18. This pipe is stationary, and the opening in the upper side of the box is long enough to allow it to move back and forth with the carrier without striking the downward-projecting end of the pipe 19, which delivers the spraying fluid into it. This arrangement does away with the use of flexible or projecting joints between the pipe 19 and the perforated pipe 17, and enables the spraying fluid to be delivered through these pipes without wear or friction of connecting-joints, which are both cumbersome and expensive. The pump 20 has an opening 22 through the side of the bowl underneath the perforated carrier bed, and is driven by the pulley 21 on the outer end of its shaft.

In order to create a current through the bowl and toward and through the carrier-bed without the use of a pump, we have adopted the following construction: The bowl is provided with a false bottom 23, which is perforated between the point 24 and the carrier-bed, the curved-up portion in advance of the point 24 being unperforated. The upper edge of this curved-up portion of the false bottom,

at 25, is below the fluid-level in the bowl, which is indicated by the dotted lines 26. Underneath the carrier-bed the pipe 27 projects upward and has its open end at just about 5 this fluid-level, forming an overflow, into which the fluid will run when it is raised above its normal level. This pipe 27 runs downward and out alongside of the bowl to the feed-in end of it, where it turns upward 10 and discharges into the space between the false bottom and the bowl, just opposite the upper end of the false bottom, where it curves upward, as described. This end of the pipe 27 therefore opens into the bowl below the 15 water-line 26, and when the fluid runs into the end of this pipe underneath the carrier-bed the fluid-pressure will discharge it again into the bowl at the feed-in end after the pipe is once filled.

20 Upon one or more of the rakes we attach paddle-boards 28 28, so as to leave the rake-teeth projecting slightly below the same, and so that as the rake is driven through the fluid it will propel the latter toward the carrier- 25 apron and raise the fluid at that end of the bowl above its normal level, causing the fluid to flow into the pipe 27 at that end from the bowl and to flow out of the pipe into the bowl at the other end. We are thus enabled to 30 cause a constant flow of the fluid through the bowl toward the carrier-bed and through it, which materially assists in moving the wool forward and delivering it from one rake to the other and the carrier in proper shape.

35 The pipe 27 is provided with a valve 29 in its horizontal portion, by which it may be closed, in which case the paddles raising the fluid-level toward the feed-out end of the bowl cause it to flow downward through the 40 perforated bottom, and thence upward behind the latter and over the edge 25 of the same, which assists in the delivery of the wool from the feed-apron to the first fork, and in carrying it along nearer to the false bottom of the 45 bowl by the downward suction of the fluid, thus preventing its floating and being imperfectly saturated by the washing-fluid in passing through the bowl to the carrier-bed.

50 The gears 5 5 are geared together by intermediate gears 30 30, attached to studs on the

side of the bowl, and the shaft 4, which drives the last fork nearest the carrier, is extended beyond the side of the machine, and has upon it the pulleys 31 32, for driving it, and the gear 5, which drives the carrier-crank 6, is 55 geared to this shaft by the pinion 33.

What we claim as new and of our invention is—

1. The combination of the carrier 10, the perforated pipe 17 and box 18, mounted there- 60 on, and having an opening in one side of the latter, and the stationary pipe 19, arranged to deliver fluid into said box through its open side and to allow the box to move to and fro without interfering with the pipe, substan- 65 tially as described.

2. The combination of the bowl, the reciprocating rakes arranged to lift above the fluid-level when traversing backward and to move forward below said fluid-level, and provided 70 with paddle-surfaces 28 28, and the pipe 27, opening into the bowl near its feed-out end at one end at a given height and opening into the bowl at its feed-in end at the other end of said pipe at a lower level, whereby the raising 75 of the level of the fluid and its flowing into the pipe at the given level will cause it to pass through the same and be delivered into the bowl again at its other end at the lower 80 level, substantially as described.

3. The combination of the rakes provided with paddles 28 28, the false bottom 23, perforated in its horizontal part and unperforated in its upwardly-curved portion at the feed-in 85 end of the machine, and having its upper edge 25 below the fluid-level of the bowl, and the feed-apron 1, having its delivery end projecting over this edge 25, whereby the action of the paddles is caused to create a current 90 through the perforated false bottom and over the upper edge 25 of the same into the bowl and prevent the wool lodging underneath the overhanging end of the apron, substantially as described.

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Witnesses:

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