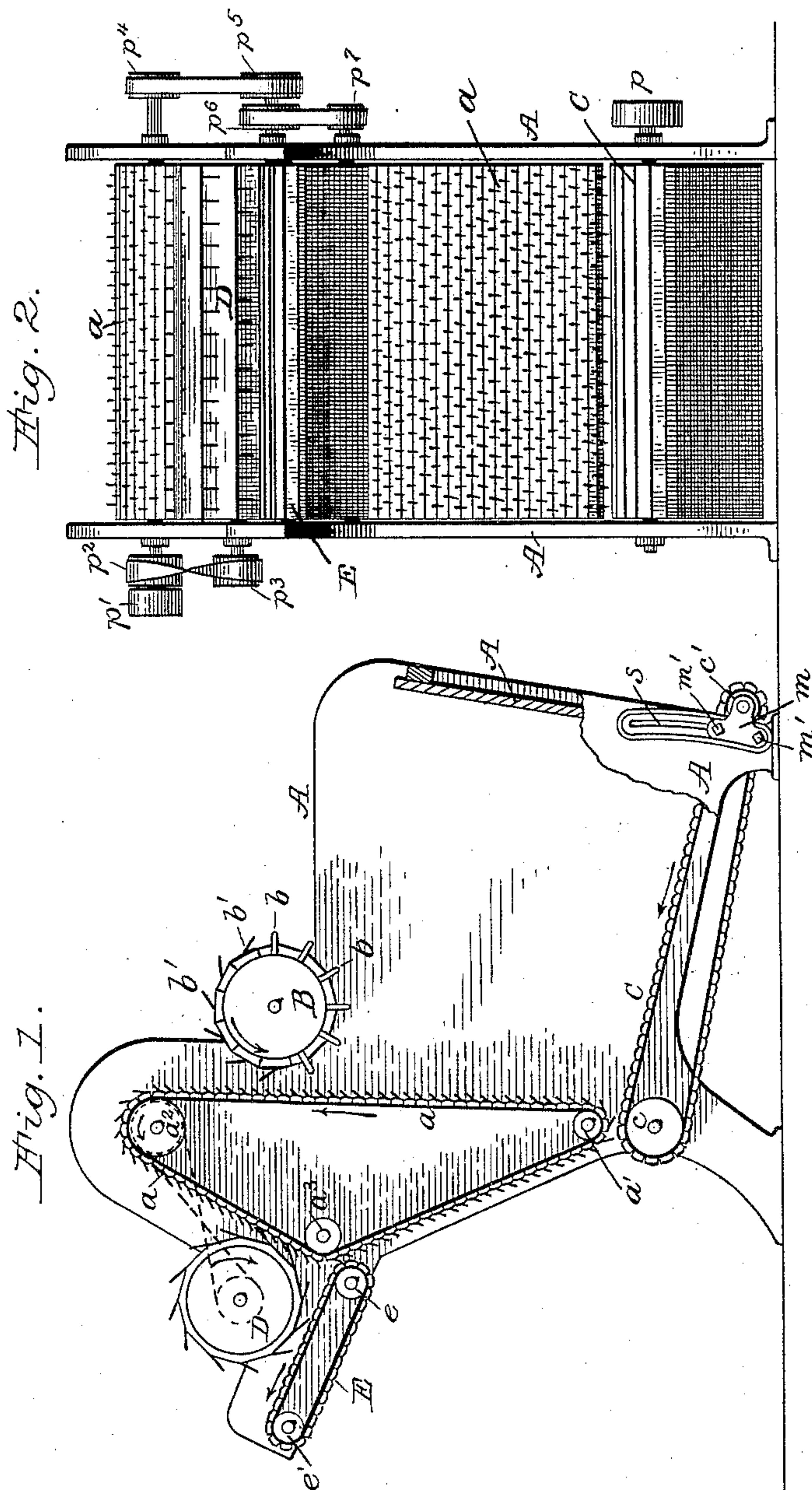


(No Model.)

F. G. & A. C. SARGENT.  
FEEDING MECHANISM FOR WOOL WASHING MACHINES.

No. 411,534.

Patented Sept. 24, 1889.



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# UNITED STATES PATENT OFFICE.

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## FEEDING MECHANISM FOR WOOL-WASHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 411,534, dated September 24, 1889.

Application filed January 17, 1887. Serial No. 224,649. (No model.)

*To all whom it may concern:*

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

Our invention relates to feed mechanism especially adapted for feeding wool and other similar fibers to washing-machines; and it consists in certain new and useful constructions and combinations of the several parts thereof, substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a feeding-machine constructed according to our invention with a portion of one of the sides broken away to show the construction of the operating mechanism. Fig. 2 is an end view of the same.

A A is the casing of the machine, which is constructed in the general form of two sides and an end of a box upon feet. An apron C forms the bottom of the box and runs over rollers  $c\ c'$ . The ends of the shaft of roller  $c$  are mounted in boxes in the side casing A, and on the projecting end of one of them is attached the pulley  $p$ , by which it is driven from any suitable counter-shaft. The apron C runs in the direction indicated by the arrow, and with many kinds of long wool it is found necessary to incline it upward toward the vertical face of the toothed apron  $a$  in order to prevent the wool piling up against the latter too much and choking and clogging the action of it and undue felting of the wool. The apron  $a$  runs over the rollers  $a' a^2 a^3$  and takes up the wool brought against its lower vertical face by apron C. These aprons are shown in our Patent No. 266,900, granted to us October 31, 1882; but in that patent the apron C did not incline upward toward apron  $a$ , as above described, and consequently with long wool too great a mass or body of it lay against the vertical face of the apron  $a$ , while with the apron C inclined upward, as described, the excess of wool dropping from apron  $a$  continually rolls away from it to the lower end

of apron C and is brought up again by the latter in the proper quantity as wanted.

To adapt the mechanism to feed forward different lengths of wool, the apron C has its roller  $c'$  made adjustable up and down, as follows: The shaft of this roller projects at each end beyond the faces of casing A and is mounted at each end in a box  $m$ . A slot  $s$ , curved in an arc of which the axis of roller  $c$  is the center, is made through the face of casing A on each side. Each box  $m$  has an ear overlapping the slot  $s$  on its side, and bolts and nuts  $m' m'$  pass through slot  $s$  and this ear and secure the box  $m$  in any desired position. The length of slot  $s$  is such that the roller  $c'$  and its end of the apron may be raised to or above a level with the roller  $c$  or lowered, so that the apron will incline upward toward the latter roller, as may be required by the length of wool being fed forward. A doffer B knocks the excess of wool off of apron  $a$  back upon apron C. It is covered with projecting pins  $b$ , covered with copper, on part of its surface and inclined pins  $b'$  on other parts for that purpose. The inclined pins  $b'$  are set in the same transverse plane to the axis of the doffer as the pins  $b$ —part way round the same. The apron  $a$  is driven by a pulley  $p'$ , attached to the end of the shaft of roller  $a^2$ . A pulley  $p^2$  on the same shaft is belted to the pulley  $p^3$  on the shaft of the doffer D by a cross-belt. Another pulley  $p^4$  on the other end of the shaft of roller  $a^2$  is belted to pulley  $p^5$  on the shaft of doffer B, and pulley  $p^6$  on the latter shaft is belted to pulley  $p^7$  on the shaft of the roller  $e$  of apron E.

The apron E is employed to carry away the wool as it drops from the reversed teeth of apron  $a$ , and to facilitate this delivery of the wool from apron  $a$  a doffer D is employed, which has a faster surface speed than that of apron  $a$  and is provided with teeth or fingers inclining backward from the direction of rotation of the doffer, as shown, to prevent the winding of the fiber upon said teeth or fingers. The apron E revolves upon rollers  $e\ e'$  and is inclined upward to carry the fiber over the edge of the bowl of the washing-machine



and deliver it into said bowl directly from the apron *a*.

To enable the apron E to take any wool from the teeth of the apron *a* which has not  
5 been knocked off by doffer D or previously fallen from the teeth, the apron E has its roller *e* so set as to bring it at that point contiguous to the apron *a* where the latter passes its roller *a*<sup>3</sup> and changes its direction of in-  
10 cline from forward and downward to backward and downward, thus causing its teeth to open or draw apart at that point and allowing the frictional contact of apron E to easily withdraw the wool from between the  
15 teeth.

The operation of the mechanism is as follows: The dry wool is thrown into the box on top of apron C, which carries it forward to apron *a*, and the latter constantly takes up on  
20 its teeth a certain quantity of the wool and carries it upward past doffer B. Any excess of fiber is knocked off by the doffer B or falls off of the surface of apron *a* back onto the apron C. On passing over roller *a*<sup>2</sup> the teeth  
25 of apron *a* are reversed, and the doffer D, working against them and against the inclined surface of apron *a*, shoots the sheet of fiber evenly forward upon apron E to be fed to the next machine. This feed mechanism thus de-  
30 livers an even quantity of fiber to the washer in a given time than can be done by hand and without the use of skilled labor and judgment in supplying the same to the machine in an even quantity.

35 If desired, the doffer D may be dispensed with; but the operation of the feed is more certain when it is used.

What we claim as new and of our invention is—

40 1. The combination of the receiving-box, the feeding-apron *a*, provided with teeth or spurs and arranged to move vertically upward over roller *a*<sup>2</sup>, and thence downward over roller *a*<sup>3</sup>, and the apron C, forming the bottom  
45 of the receiving-box and arranged with one end adjacent to the vertical face of apron *a* and with its upper surface inclining upward from the opposite end toward the former from a horizontal plane, whereby the surplus wool

dropping thereon from apron *a* will tend to 50 roll away from the foot of the latter by the action of gravity toward the farther side of the receiving-box, substantially as described.

2. The combination of the receiving-box, the apron C, forming the bottom thereof and 55 having its roller *c*' adjustable up and down therein and adapted to incline the upper surface of the apron downward toward the same with relation to a horizontal plane, and the apron *a*, provided with teeth or spurs and ar- 60 ranged to move vertically upward over roller *a*<sup>2</sup> and downward over roller *a*<sup>3</sup>, substantially as described.

3. The combination of the receiving-box, the apron C, forming the bottom thereof, the 65 apron *a*, provided with teeth or spurs and arranged to move vertically upward over roller *a*<sup>2</sup>, and thence downward over roller *a*<sup>3</sup> and over the intermediate roller *a*<sup>3</sup>, which latter is arranged to bring the faces of the apron on 70 each side of it at an angle with each other in passing over it and to open its teeth apart, and the apron E, revolving contiguous to and taking the fiber directly from said opened teeth of apron *a* and opposite to said inter- 75 mediate roller, substantially as described.

4. The combination of the receiving-box, the apron C, forming the bottom thereof, the apron *a*, provided with teeth or spurs and ar- 80 ranged to move vertically upward over roller *a*<sup>2</sup>, and thence downward over roller *a*<sup>3</sup> and over the intermediate roller *a*<sup>3</sup>, which latter is arranged to bring the faces of the apron on each side of it at an angle with each other in passing over it and to open its teeth apart, 85 the doffer D, arranged to act upon the fiber carried by apron *a* above said roller *a*<sup>3</sup> and the apron E, revolving below said doffer and contiguous to and taking the fiber directly from said teeth of apron *a*, where so opened 90 apart and opposite to said intermediate roller *a*<sup>3</sup>, substantially as described.

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Witnesses:

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