

No. 688,035.

Patented Dec. 3, 1901.

R. D. SCOTT.
MACHINE FOR COLORING LEATHER.

(Application filed Jan. 5, 1901.)

(No Model.)

5 Sheets—Sheet 1.

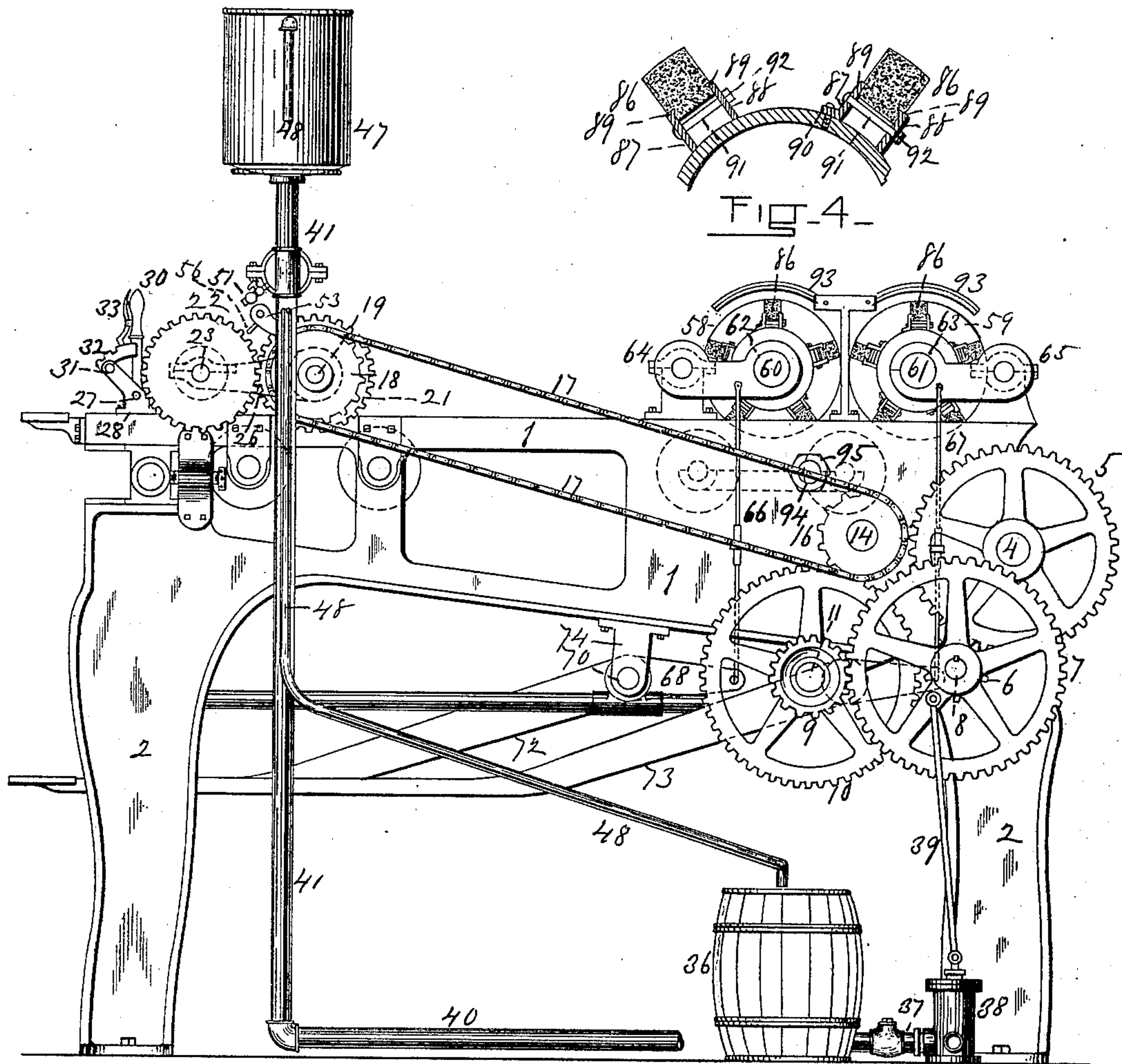


Fig. 1

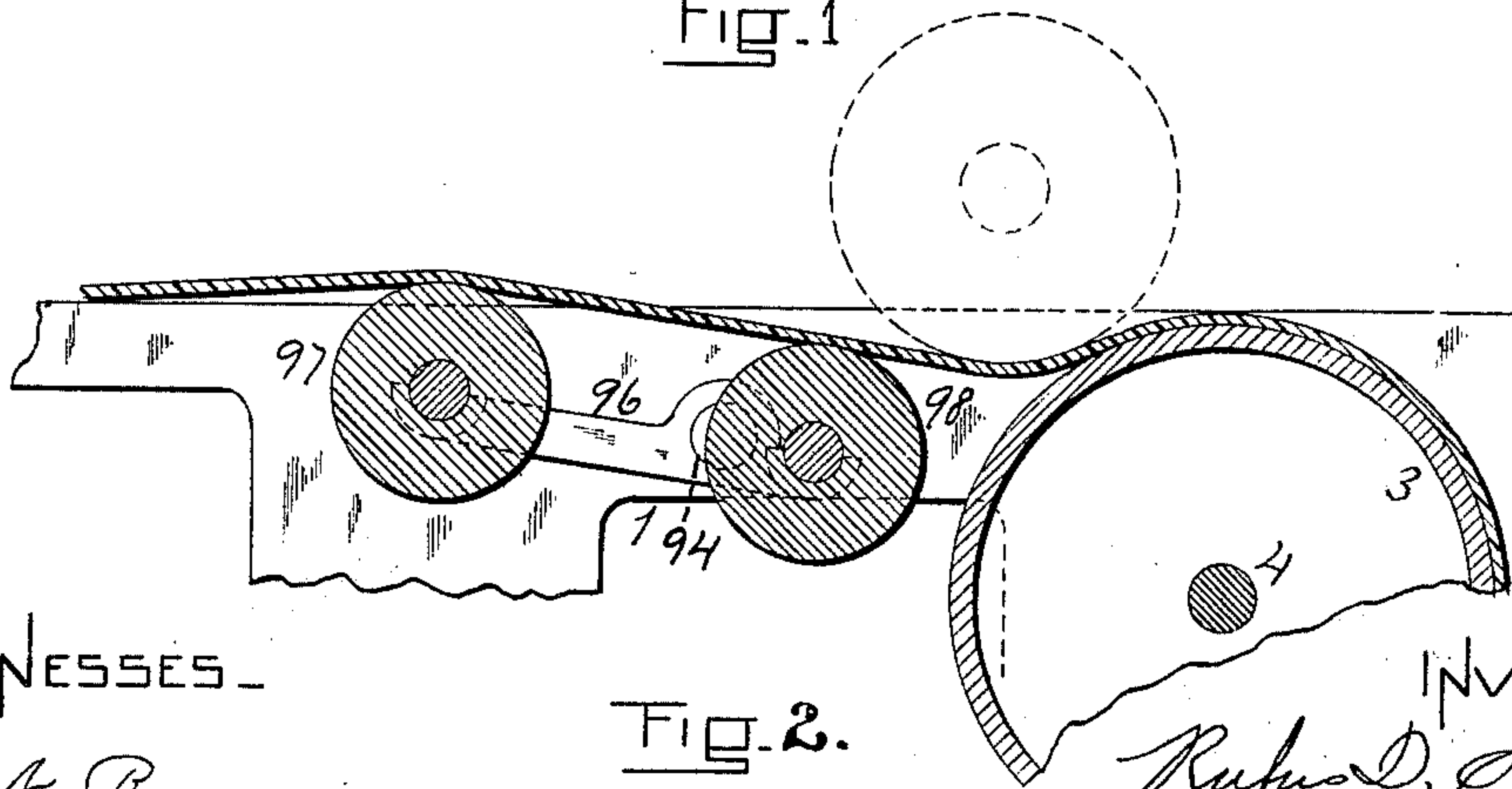


Fig. 2.

WITNESSES—

A. A. Bonney.
E. P. Small.

INVENTOR—

Rufus D. Scott,

By his Atty.

Henry Williams

No. 688,035.

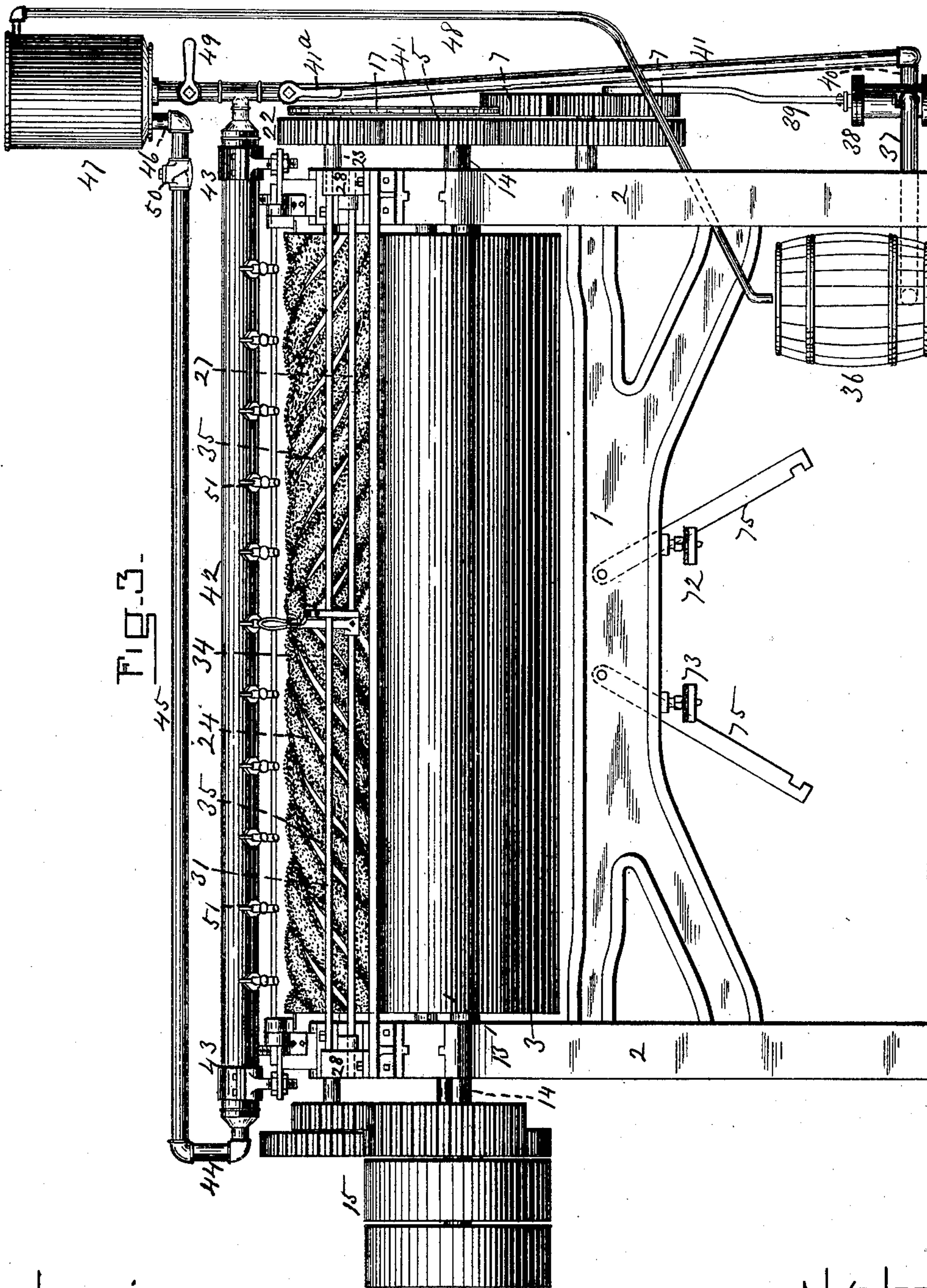
Patented Dec. 3, 1901.

R. D. SCOTT.
MACHINE FOR COLORING LEATHER.

(Application filed Jan. 5, 1901.)

(No Model.)

5 Sheets—Sheet 2.



WITNESSES:

A. A. Ronney.
E. P. Small.

INVENTOR.
Rufus D. Scott,
By his Atty.
Henry W. Williams

No. 688,035.

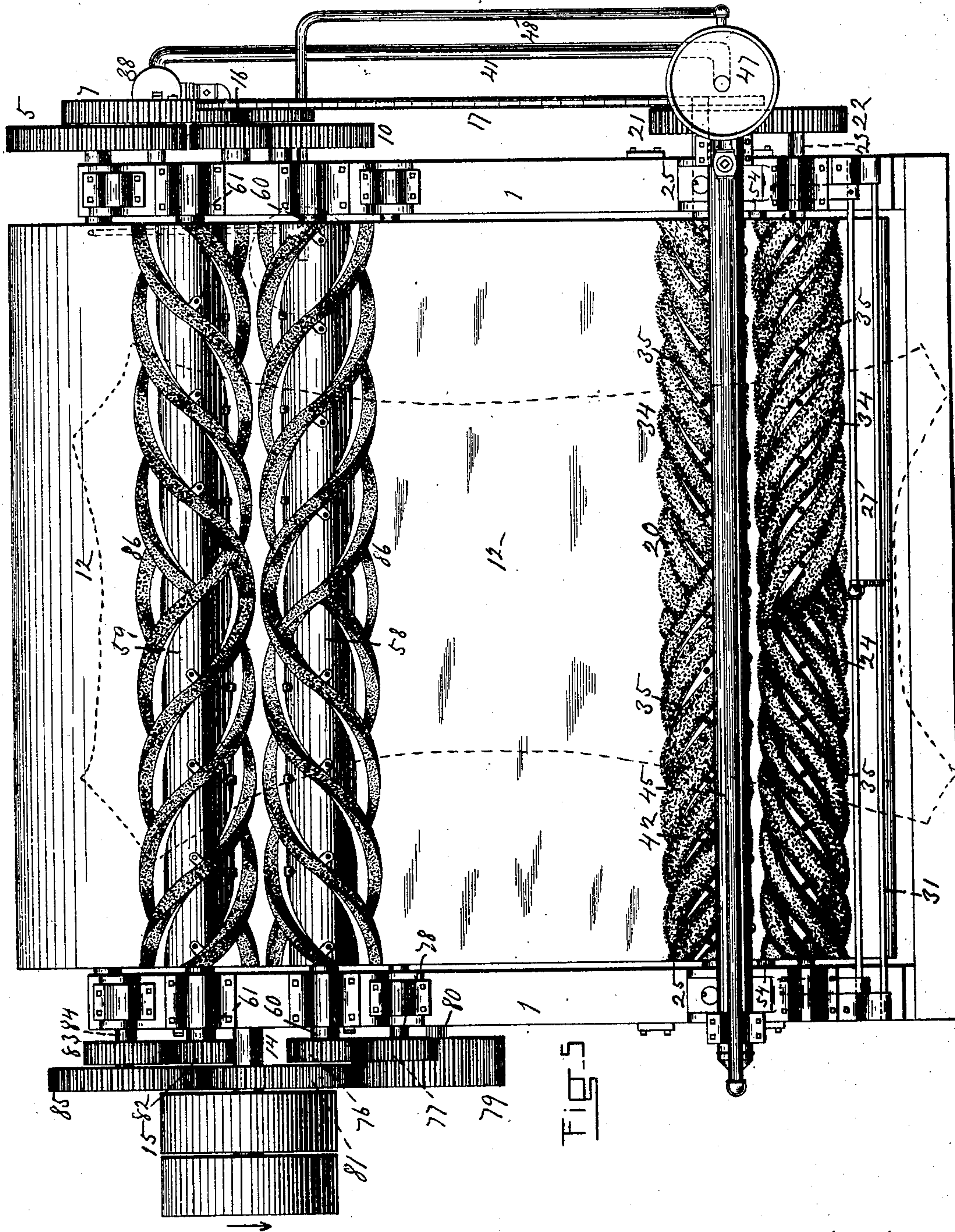
Patented Dec. 3, 1901.

R. D. SCOTT.
MACHINE FOR COLORING LEATHER.

(Application filed Jan. 5, 1901.)

(No Model.)

5 Sheets—Sheet 3.



WITNESSES -

A. A. Bonney.
C. B. Small.

INVENTOR
Rufus D. Scott,
By his Atty.
Henry C. Williams

No. 688,035.

Patented Dec. 3, 1901.

R. D. SCOTT.

MACHINE FOR COLORING LEATHER.

(Application filed Jan. 5, 1901.)

(No Model.)

5 Sheets—Sheet 4.

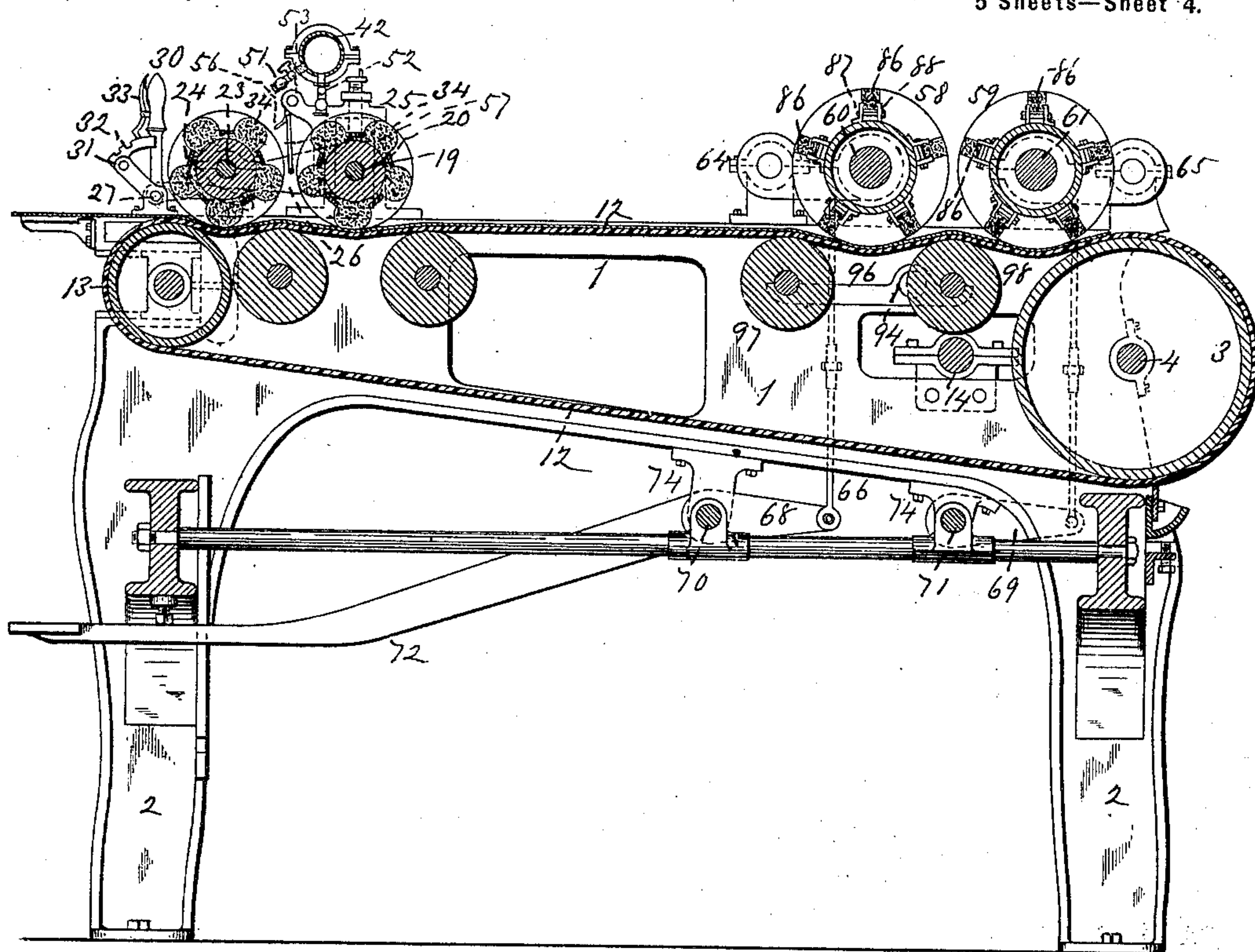


Fig. 6.

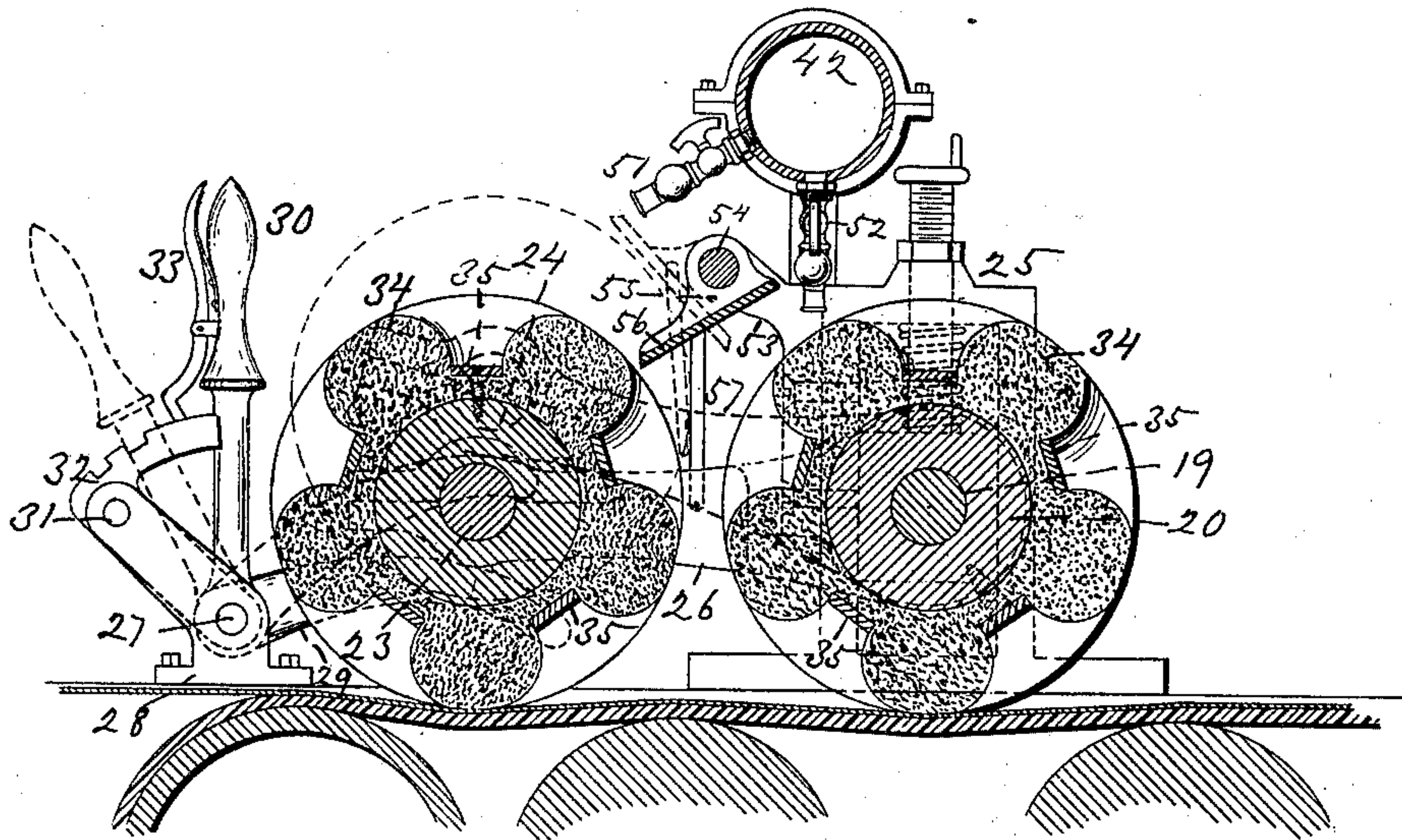


Fig. 7.

WITNESSES.

A. H. Bonney.
E. P. Small.

INVENTOR.

Rufus D. Scott,
By his Atty.
Henry Williams

No. 688,035.

Patented Dec. 3, 1901.

R. D. SCOTT.

MACHINE FOR COLORING LEATHER.

(Application filed Jan. 5, 1901.)

(No Model.)

5 Sheets—Sheet 5.

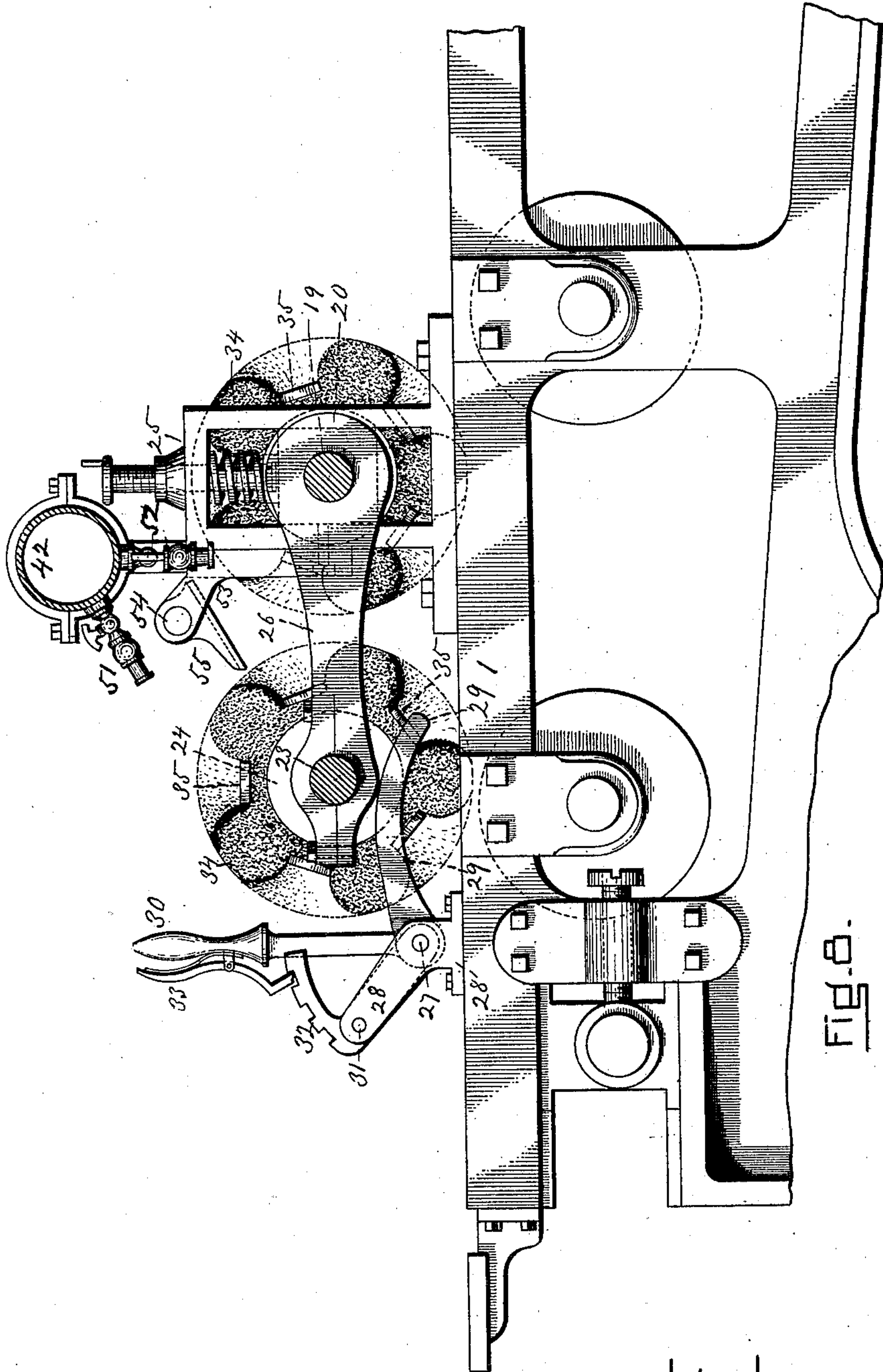


Fig. 8.

WITNESSES:

A. W. Bonney.
E. P. Small.

INVENTOR:

Rufus D. Scott,
By his Atty
Henry Williams

UNITED STATES PATENT OFFICE.

RUFUS D. SCOTT, OF DANVERS, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SCOTT LEATHER MACHINE CO., A CORPORATION OF NEW YORK.

MACHINE FOR COLORING LEATHER.

SPECIFICATION forming part of Letters Patent No. 688,035, dated December 3, 1901.

Application filed January 5, 1901. Serial No. 42,215. (No model.)

To all whom it may concern:

Be it known that I, RUFUS D. SCOTT, a citizen of the United States, residing in Danvers, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Treating and Coloring Hides or Skins, of which the following is a specification.

This invention relates to that class of apparatus for treating hides or skins in which the hide or skin is drawn by means of a belt or carrier under mechanisms for seasoning, rubbing in, and stretching the skin and for spreading and finishing it during the progress of the hide or skin through the machine.

The invention relates particularly to the construction of the seasoning-rolls, to the construction of the "rubbing-in" rolls, to mechanism for the equalization of the upward pressure on the carrier under the rubbing-in rolls, to the means for providing a pump and a continuous pressure in the feed-pipe, to the drip mechanism, to the means for diverting the drip from one of the seasoning-rolls when it is lifted, and to other constructions and combinations whereby the machine is rendered more effective.

The nature of the invention in detail is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved machine. Fig. 2 is an enlarged detail showing the equalizing-rolls beneath the rubbing-in rolls. Fig. 3 is a front elevation of the machine. Fig. 4 is a sectional detail of a part of one of the rubbing-in rolls. Fig. 5 is a plan view of the machine. Fig. 6 is a central transverse section. Fig. 7 is an enlarged cross vertical section in detail, showing the distributing-rolls and drip mechanism. Fig. 8 is an enlarged detail in vertical section, illustrating the means for lifting the front roll, the section being taken just behind the gears of the shafts which carry the seasoning or distributing rolls.

Similar characters of reference indicate corresponding parts.

Reference-figure 1 represents the frame, of which 2 indicates the legs. A drum 3 is

mounted on the driving-shaft 4, having its bearings in the frame. Fast on this shaft is the gear-wheel 5, engaging with the pinion 6, rigidly connected with the gear-wheel 7 on the stud 8, supported by the frame. The gear-wheel 7 engages with the pinion 9, which is rigid with the gear-wheel 10 on the stud 11, supported by the frame. A belt or carrier 12, preferably of elastic material, is driven by the drum 3 and stretches therefrom around the free roll 13, adjustably supported in the frame.

A driving-shaft 14 is mounted in the frame and driven by pulleys 15. This shaft is provided with the sprocket-wheel 16, Fig. 1, which is connected by a chain 17 with the sprocket 18 on the horizontal shaft 19, which carries the rear seasoning-roll 20, Figs. 5 and 6. Rigid on the same shaft is a gear-wheel 21, which meshes into the gear-wheel 22, rigid on the shaft 23, which carries the front seasoning-roll 24. The rear seasoning-roll 20 is supported by vertically-adjustable boxes 25, sustained by the frame, and the shaft 23, sustaining the front roll 24, has its bearings in arms 26, which are supported loosely by and extend forward from the shaft 19.

27 is a horizontal rod or shaft whose opposite ends are supported in bearings in brackets 28, secured to the front end of the frame. Near the opposite ends of this rod lifting-arms 29, Fig. 7, are rigidly secured, said arms extending rearward beneath the arms 26. A handle 30 is centrally secured to the shaft 27. A horizontal rod 31 has its opposite ends supported by the brackets 28 and is provided with a quadrant 32, which is engaged by a suitable spring 33, secured to the handle 30, whereby the handle is enabled to lift and hold in position the lifting-arms 29, thus swinging up the arms 26 and lifting the shaft of the front roll 24.

The two seasoning-rolls 20 and 24 are operated in reverse directions as the skin is fed in by the carrier or belt 13, the rear or advance roll 20 rotating in the same direction as the moving skin and the front roll 24 rotating in the reverse direction. Each of these rolls is covered with felt or similar substance 34,

which covering is formed into reverse spiral ribs or convolutions, so as to spread the skin as it passes under by means of narrow metallic strips 35, preferably of brass. Each strip is narrow, somewhat curved, arranged spirally on the felt, and screwed or suitably secured to the roll in reverse spiral directions, as indicated in Figs. 3, 5, and 7, thus producing the soft spiral ribs or convolutions which receive the seasoning substance and transmit it to the skin. The brass strips are so thin and so closely secured to the roll that they never come in contact with the skin, which is treated by the felt on the roll.

The apparatus for supplying the seasoning substance to the roll comprises the reservoir or source of supply 36, from which a pipe 37 leads to a pump 38, whose piston 39 is driven from the gear-wheel 7 or other convenient point, and pipes 40 and 41, provided with a suitable cock 41^a and leading to one end of the horizontal distributing-pipe 42, which is suitably supported in brackets 43, sustained by opposite ends of the machine. The other end of the distributing-pipe 42 is connected by pipes 44, 45, and 46 with an overflow 47, which is supported by the upper end of the pipe 41 and is connected with the reservoir 36 by the pipe 48. Opening the cock 41^a and closing the cock 49 places the parts in a normal condition for supplying the rolls with seasoning fluid. A suitable back-pressure valve 50 is furnished for regulating the pressure in the pipe 45. The distributing-pipe 42 is provided with two rows of discharge pipes or faucets 51 and 52, Fig. 7. The discharge-pipes 52 extend vertically downward from the distributing-tube and the discharge-pipes 51 extend diagonally forward therefrom. The vertically-adjustable boxes 25 are provided with forwardly-extending arms 53, which support inwardly-extending studs 54, having rigidly secured to them brackets 55, which sustain the opposite ends of a long plate or deflector 56. Substantially vertical rods or lifting-pins 57 are secured at their lower ends to the arms 26, and in case the forward roll 24 is not to be used and is swung up off the skin by means of the handle 30 the arms 26 in their upward movement cause the lifting-pins 57 to push up the deflector 56, sliding over its surface, into the position indicated in dotted lines in Fig. 7. In this position the fluid from the distributing-pipe 42 will be guided through both sets of faucets 52 and 51 upon the rear roll 20, so that that roll, being the only one which is treating the skin, gets all the coloring-matter; but if both the rolls 20 and 24 are in use the deflector is in the position indicated in full lines in Fig. 7, with the result that the coloring-matter which passes through the faucets 52 is directed to the roll 20 and the coloring-matter which passes through the faucets 51 is directed to the roll 24. This contrivance is useful inasmuch as the front roll, which rotates in the opposite direction from the movement of the skin,

must necessarily be raised in order to let the skin under, and when raised it should receive no fluid from the distributing-tube 42.

58 and 59 are rubbing-in rolls supported, respectively, on shafts 60 and 61, which are sustained by the swinging boxes 62 and 63, whose outer ends are pivoted in brackets 64 and 65. The arms 62 and 63 are respectively connected by the rods 66 and 67 with the dogs 68 and 69, rigid on the shafts 70 and 71, which are operated, respectively, by the treadles 72 and 73. The shafts 70 and 71 are supported by suitable brackets 74. Fig. 3, represents suitable locks for the treadles. The front rubbing-in roll 58 rotates in reverse direction from the movement of the skin, and the rear rubbing-in roll 59 rotates in the same direction as the movement of the skin, so that the rolls rotate reversely, such rotation being caused by the pinion 76, Fig. 5, on the shaft 60, said pinion being engaged by a pinion 77 on a stud 78, supported by the machine, said pinion 77 being engaged by the gear-wheel 79 on the stud 80, which gear-wheel 79 is engaged by the large gear-wheel 81 on the shaft 14, which is driven by the pulleys 15. The shaft 61 of the rear rubbing-in roll has a pinion 82, engaged by the pinion 83, rigid on the stud 84, on which also is rigid the gear-wheel 85, engaged by the gear-wheel 81 on the shaft 14. The rubbing-in rolls are provided with spirally-arranged rubbing-in strips 86, of felt or equivalent material, made substantially rectangular in cross-section. Each strip is supported on its opposite sides by continuous spiral metallic plates 87 and 88, each of which has an inwardly-formed and tolerably sharp lip 89 at its upper end, which is adapted to extend under and hold the rubbing-in strip without, however, perforating it. The plate 87 is provided at its lower end with a flange 90, which is secured to the rubbing-in roll, and the opposite plate 88 is made to clamp the opposite side of the strip by rods 91 and nuts 92. Thus the strips are held adjustably and removably in position without being perforated or weakened. It will be noticed that these felt strips 85 are arranged spirally and that the spiral arrangement at each end is the reverse of that at the other end. The natural method of such an arrangement would of course be that the spiral ribs would start at the opposite ends of the roll and meet in the middle, so that there would be a number of pairs of ribs, each pair having a projecting apex in the middle of the roll. Should a skin be passing through the machine which has a weak portion or a hole in it, this apex would be likely to tear it at the weak spot or catch in the edges of the hole, thus injuring the skin. By my arrangement illustrated in Fig. 5 there is no possibility of an apex or V-shaped joint formed by two meeting oppositely-spiral ribs, because in this invention the end of a rib intersects an oppositely-spiral rib; but the rib which is intersected is continuous beyond

that point. The effect is not only that there are no V-shaped apexes formed by the meeting ribs, but that the ribs do not even intersect on any one plane, or, in other words, even at their points of intersection they "break joints."

Preferably the rolls 58 and 59 are protected by suitable covers 93.

The machine is provided at opposite ends at a point under the rear portion of the front rubbing-in roll 58 with horizontal studs 94, Figs. 1, 2, and 6, secured in position by suitable bolts 95. Each stud has fulcrumed upon it a lever 96, Figs. 2 and 6, whose long arm extends forward and supports the axis of a horizontal roll 97 and whose short arm extends rearward and supports the axis of a parallel roll 98. The belt or carrier 12 is pliable and somewhat elastic, and the rubbing-in rolls 58 and 59 have a tendency to press it down to a greater or less extent, as indicated in Figs. 2 and 6. The portions of the fulcrums of the levers 96 are so placed as to bring the roll 98 between the rubbing-in rolls 58 and 59 and the roll 97 in front of the rubbing-in roll 58. When both rolls 58 and 59 are on the carrier, the effect therefore is to bring the roll 98 between them and to properly distribute the upward strain; but when the rear roll 59 only is on the carrier the rolls 97 and 98 assume the position indicated in Fig. 2, in which the roll 97 extends upward and the roll 98 downward, taking up the slack in the manner described.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an apparatus for treating and coloring hides or skins, the seasoning-rolls mounted on the frame and provided with coverings of felt or equivalent soft material; and the narrow metallic strips 35 secured in reverse spiral directions to the roll outside the felt covering, whereby the felt covering is formed into reverse spiral ribs or convolutions, substantially as described.

2. In a machine of the character described, the seasoning-rolls 20 and 24 on the shafts 19 and 23 respectively; boxes supported by the frame for sustaining the shaft of the rear seasoning-roll; arms extending forward from the shaft of the rear seasoning-roll and sustaining the shaft which supports the front seasoning-roll; a horizontal rod 27 supported in brackets at the front end of the frame; lifting-arms extending rearward from said rod beneath the arms which extend forward from the rear shaft; and a handle secured to said rod and adapted to rotate the same and thus lift the front seasoning-roll, substantially as set forth.

3. In a machine of the character described, a pair of reversely-rotative seasoning-rolls supported by the frame; a transverse distributing-tube supported by the frame over the seasoning-rolls and containing the seasoning-fluid; a row of downwardly-extending faucets

or drip-tubes secured to the distributing-tube; a row of faucets or drip-tubes extending from the distributing-tube and located at one side of the row above named; and a deflecting-plate parallel with the seasoning-rolls and between them and the upper of the two rows of faucets or drip-tubes, whereby the drip from the upper row of tubes is deflected to the farther roll and a drip from the lower row of tubes is allowed to drop directly upon the nearer roll, substantially as described.

4. In a machine of the character described, a pair of reversely-rotative seasoning-rolls supported by the frame; a transverse distributing-tube supported by the frame over the seasoning-rolls and containing the seasoning-fluid; a row of downwardly-extending faucets or drip-tubes secured to the seasoning-tube; a row of faucets or drip-tubes extending from the distributing-tube and located at one side of the row above named; a deflecting-plate parallel with the seasoning-rolls and between them and the upper of the two row of faucets or drip-tubes; mechanism for raising the front roll; and mechanism intermediate with the mechanism for raising the front roll and the deflecting-plate, whereby when the front roll is raised the deflecting-plate is swung at such an angle as to guide the drip to the rear roll, and when the front roll is lowered the deflecting-plate is at such an angle as to guide the drip to the front roll, substantially as set forth.

5. In a machine of the character described, a pair of seasoning-rolls mounted on the frame of the machine; a horizontal drip-tube supported by the frame above said seasoning-rolls; means for guiding the drip from the tube to the rolls; a reservoir for the seasoning fluid; an overflow vessel 47; a pipe extending from one end of the tube to the overflow; a pipe extending from the overflow to a pump; a pipe extending from the pump to the reservoir; a pipe extending from the other end of the tube to the pipe which connects the overflow with the pump; and a back-pressure valve in the pipe connecting the tube with the overflow, substantially as described.

6. In a machine of the character described, the carrier or belt 12, and mechanism for sustaining and operating the same; the rubbing-in rolls mounted on the frame of the machine above the carrier or belt; the tilting rods or levers 96 fulcrumed to the frame of the machine below the carrier or belt; and the free rolls 97 and 98 supported by said lever on opposite sides of the fulcrums and bearing up against the under surface of the carrier or belt, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RUFUS D. SCOTT.

Witnesses:

HENRY W. WILLIAMS,
A. N. BONNEY.