

R. F. WHITNEY.
LEATHER WRINGING MACHINE.
APPLICATION FILED MAR. 16, 1910.

976,968.

Patented Nov. 29, 1910.

3 SHEETS—SHEET 1.

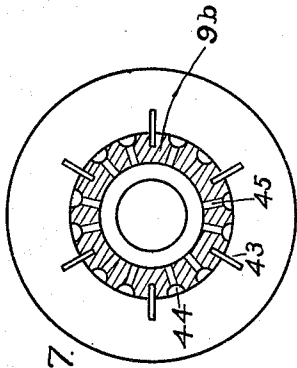


FIG. 7.

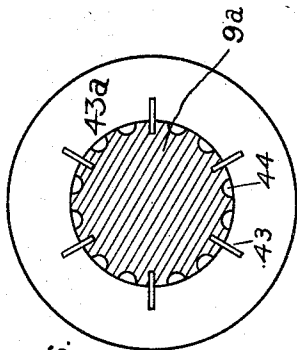


FIG. 6.

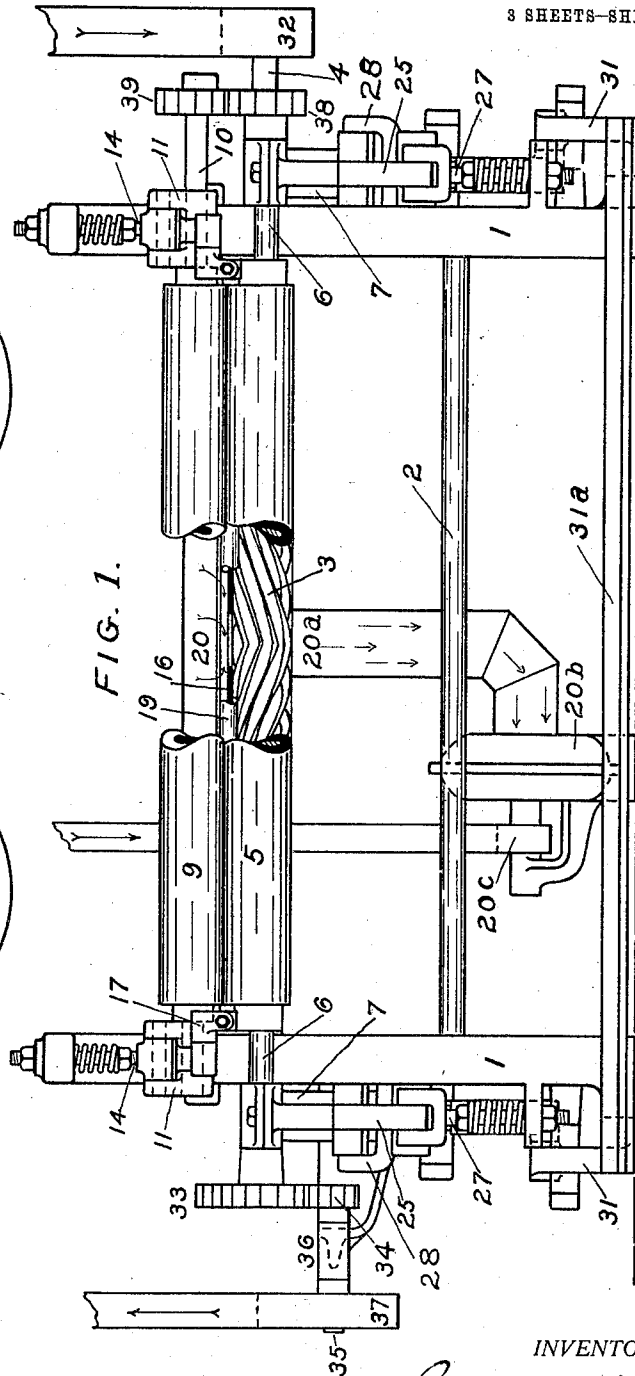


FIG. 1.

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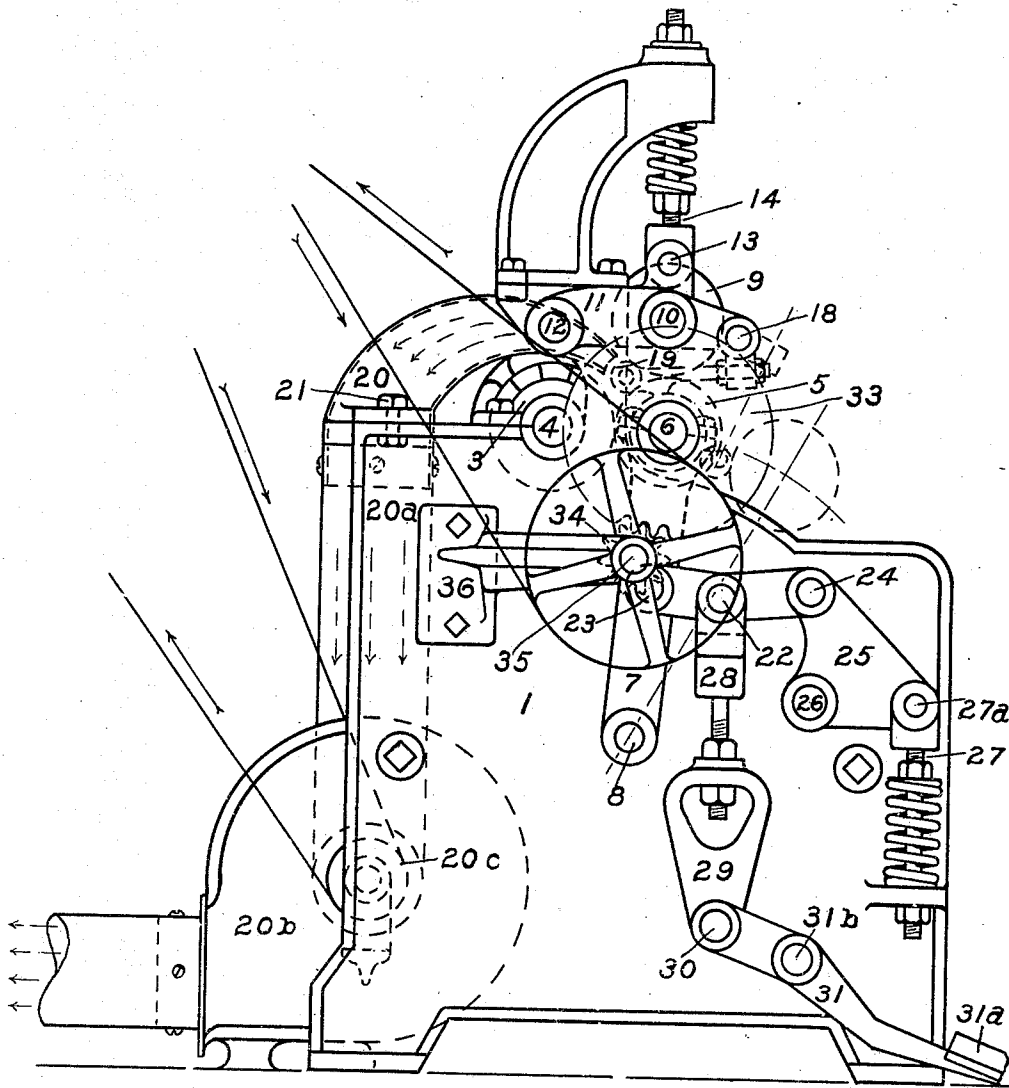
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3 SHEETS—SHEET 2.

FIG. 2.



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3 SHEETS-SHEET 3.

FIG. 3

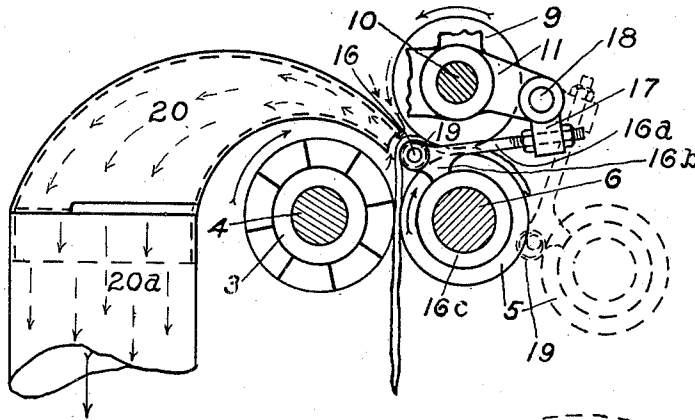
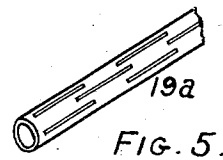
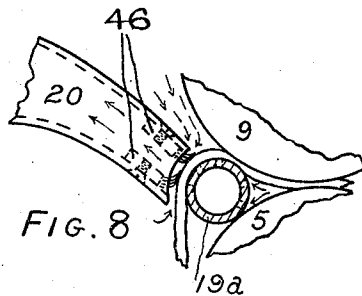
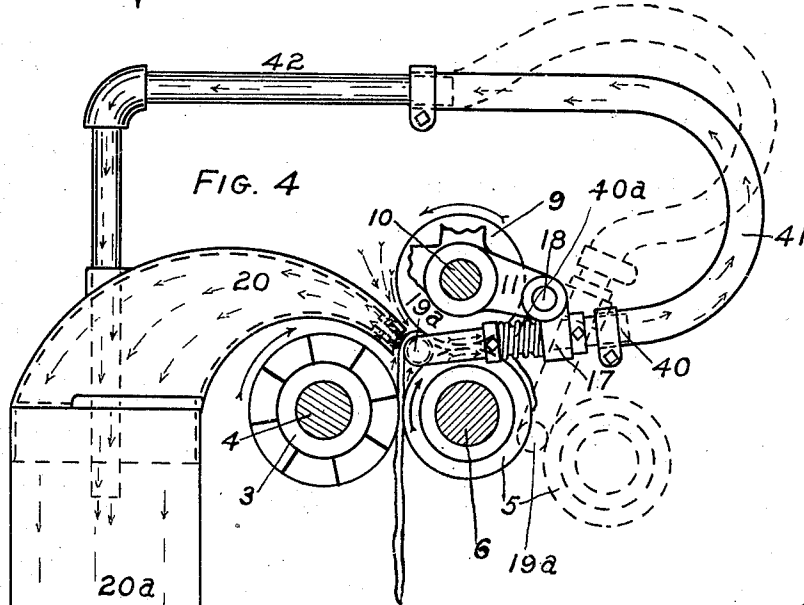


FIG. 4



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UNITED STATES PATENT OFFICE.

ROBERT F. WHITNEY, OF WINCHESTER, MASSACHUSETTS.

LEATHER-WRINGING MACHINE.

976,968.

Specification of Letters Patent.

Patented Nov. 29, 1910.

Application filed March 16, 1910. Serial No. 549,640.

To all whom it may concern:

Be it known that I, ROBERT F. WHITNEY, of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Leather-Wringing Machines, of which the following is a specification.

My invention relates to setting, putting out, scouring and wringing machines for leather and other materials, and its object is to provide means for carrying off the water as it is squeezed or pressed from such leather or other material.

It is illustrated by the accompanying drawings in which—

Figure 1 is a front elevation of the machine in operative position. Fig. 2 is an end elevation of the machine looking from the left of Fig. 1 in operative position. Fig. 3 is an enlarged detailed view in elevation of the rolls and flue, showing the inoperative position in dotted lines. Fig. 4 is an enlarged detailed view in elevation of the rolls, flue, pipe and hose, showing the inoperative position in dotted lines. Fig. 5 is a perspective view of a modified form of the pipe. Fig. 6 is an enlarged cross sectional view of the pressure and feed roll with its covering. Fig. 7 is a similar view of a modified form of the pressure and feed roll with its covering. Fig. 8 shows the flue equipped with brushes.

Similar characters refer to similar parts throughout the several views.

The main frame of the machine comprises side standards 1 connected by tie girts 2. The work roll 3 is mounted on shaft 4 journaled in the frame. The bed roll 5 is mounted on shaft 6 journaled in swinging arms 7 fulcrumed on studs 8 in the frame. The feed and pressure roll 9, hereinafter called the feed roll, is mounted on shaft 10 journaled in swinging boxes 11 fulcrumed on studs 12 in the frame and pivoted at 13 to spring-controlled rods 14 slidingly mounted in the frame. The rod 16 is secured to arms 16^a mounted longitudinally adjustably in swinging blocks 17 fulcrumed on studs 18 on boxes 11. The inner ends 16^b of arms 16^a rest on collars 16^c on ends of bed roll 5.

The pipe 19, which I call a floating roll, is loosely mounted on rod 16, as may be seen in dotted lines Fig. 3. The flue 20, connected by pipe 20^a with fan 20^b, is mounted forwardly and rearwardly adjustably on and

clamped to the top of the frame by bolts 21 and is disposed with its mouth or intake close to floating roll 19. The swinging arms 7 are swung about their axes 8 by toggles 22, whose inner links are pivoted at 23 to said swinging arms and whose outer links are pivoted at 24 to rockers 25, pivoted in turn to the frame at 26 and to spring-controlled rods 27 at 27^a, which rods are slidingly mounted on said frame. The toggles 22 are operated by treadle mechanism comprising adjustable links, whose upper portions 28 are pivoted to toggles 22 and whose lower portions 29 are pivoted at 30 to treadle levers 31 connected by treadle 31^a and pivoted to the frame at 31^b. The work roll shaft 4 is furnished with pulley 32 driven by a belt, as shown. The bed roll shaft 6 is furnished at one end with gear 33 adapted to engage gear 34 fixed to shaft 35 journaled in bracket 36 projected from the frame; to which shaft 35 is fixed also pulley 37 driven by a belt, as shown. The bed roll shaft 6 is furnished at its other end with gear 38 adapted to engage gear 39 fixed to feed roll shaft 10.

The pipe 19^a, Fig. 4, is perforated, as shown in Fig. 5, and connects at either end with pipes 40 which are longitudinally adjustably and slidingly mounted in blocks 17 and furnished with controlling springs 40^a; to which pipes 40 are attached hose, or flexible pipes, 41, attached at their other ends to fixed pipe 42, leading into pipe 20^a. Pipe 19^a rests on the surface of bed roll 5.

The function of the floating roll 19 and of the perforated pipe 19^a is to press the water from the leather which tightly engages said floating roll, or pipe, as it is drawn or fed between the several rolls and between said floating roll, or pipe, and feed roll 9. In operation no water enters the floating roll 19; but water does enter the perforated pipe 19^a. Water, as it is pressed from the leather, is drawn off through flue 20; and, when the perforated pipe 19^a is employed, also through hose 41.

Fig. 6 shows a feed roll 9^a furnished with a series of keys 43 which secure its covering 43^a of felt or other absorbent material; and furnished also with a series of longitudinal grooves 44 to carry off the water taken up by the absorbent covering and forced therethrough. Fig. 7 shows a tubular feed roll 9^b furnished with a series of keys 43 which secure its covering 43^a of felt or

other absorbent material; and furnished also with longitudinal grooves 44 connected with the interior of the roll by radial holes 45, through which water squeezed from the absorbent covering escapes into the interior of the tube, whence it may be drawn through any suitable connection with the fan 20^b.

The operation of the machine is as follows: Normally (when inoperative), power being applied, the work roll is driven by pulley 32; the gear 34 by pulley 37; the fan 20^b by pulley 20^c; the bed roll 5 and floating roll 19 are in the position shown in dotted lines in Fig. 3, providing ample room for placing the leather over the bed roll and floating roll; the toggles are broken, leaving the bed roll in its lowest position with its gear 33 out of engagement with gear 34, and its gear 38 out of engagement with gear 39; treadle 31^a is raised.

The operator places the leather over bed roll 5 and floating roll 19 and then depresses the treadle, thereby straightening the toggles and bringing the rolls together, as shown in full lines, Fig. 3; bringing gear 33 on the bed roll shaft into engagement with gear 34 on shaft 35; and gear 38 on the bed roll shaft into engagement with gear 39 on the feed roll shaft; thereby positively rotating the bed roll and the feed roll. The rolls severally rotate in the directions indicated by arrows in Fig. 3. Meanwhile fan 20^b is operating, being driven by pulley 20^c, to create a suction above the leather, thereby drawing off the water pressed from the leather. The leather, during this operation, is firmly gripped between the work roll and bed roll; between the bed roll and feed roll; and between the floating roll and feed roll; constantly being tightly drawn around the floating roll, all as shown in Fig. 3. If perforated pipe 19^a is substituted for floating roll 19 water is pressed into said pipe and drawn therefrom through pipes 40, hose 41, pipe 42, pipe 20^a and fan 20^b. If feed roll 9^a is employed, water is pressed into the grooves 44 and escapes at either end of said grooves. If feed roll 9^b is employed, water enters the interior of said roll, whence it may be drawn by suitable connection with fan 20^b.

In Figs. 4 and 8 the flue 20 is shown equipped with brushes 46 arranged horizontally along the upper and lower walls of its mouth or intake; said brushes being adapted to brush the water from the leather and separate it as it passes over the floating roll or pipe, thereby permitting the water to be more easily and exhaustively drawn into the flue. Any number of brushes may be used and they may be of any length and arranged as desired, and of any shape and material.

The drawings show a machine in which the rolls are brought together and separated

by means of toggles operated directly by a treadle, but the invention is, of course, applicable, irrespective of the means employed to bring the rolls together and separate them.

It is evident that the floating roll 19 may be perforated similarly to pipe 19^a, and also that the latter may be unperforated if desired.

Having described my invention what I claim and desire to secure by Letters Patent is:

1. A machine of the character described comprising a work roll; a feed roll; a bed roll mounted in bearings movable toward and away from said work roll; a floating roll movable to and away from said feed roll; and means for accomplishing said movements; substantially as described.

2. A machine of the character described comprising a work roll; a feed roll; a bed roll mounted in bearings movable toward and away from said work roll; a perforated pipe movable to and away from said feed roll; and means for accomplishing said movements; substantially as described.

3. A machine of the character described comprising a work roll; a feed roll; a bed roll mounted in bearings movable toward and away from said work roll; means for accomplishing said movements; a flue with its intake disposed near the top and front of said work roll; and a blower connected with said flue; substantially as described.

4. A machine of the character described comprising a work roll; a feed roll; a bed roll mounted in bearings movable toward and away from said work roll; a floating roll movable to and away from said feed roll; means for accomplishing said movements; a flue with its intake disposed near the top and front of said work roll; and a blower connected with said flue; substantially as described.

5. A machine of the character described comprising a work roll; a feed roll; a bed roll mounted in bearings movable toward and away from said work roll; a perforated pipe movable to and away from said feed roll; means for accomplishing said movements; a flue with its intake disposed near the top and front of said work roll; and a blower connected with said flue; substantially as described.

6. A machine of the character described comprising a work roll; a feed roll; a bed roll mounted in bearings movable toward and away from said work roll; a perforated pipe movable to and away from said feed roll; means for accomplishing said movements; and means for carrying off water from the interior of said perforated pipe; substantially as described.

7. A wringing machine comprising coacting bed and feed rolls; a flue arranged ad-

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jacent thereto, and a blower connected with said flue; substantially as described.

8. A wringing machine comprising coacting bed and feed rolls, a flue furnished with
5 brushes and arranged adjacent thereto, and a blower connected with said flue; substantially as described.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ROBERT F. WHITNEY.

Witnesses:

RALPH W. FOSTER,
GEORGE G. CLARK.