

W. WHITE.
WET MACHINE.
APPLICATION FILED FEB. 1, 1909.

939,460.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 1.

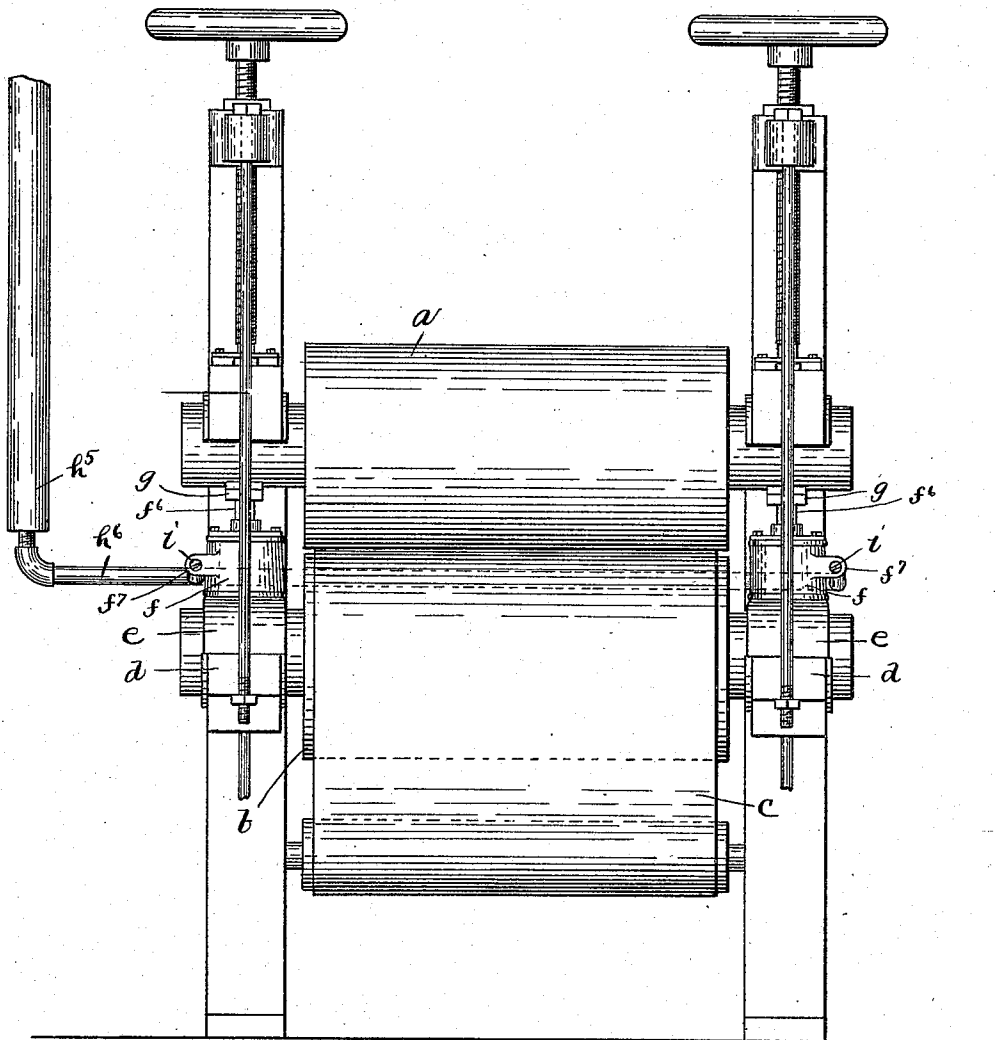


Fig. 1.

Witnesses:
H. B. Davis.
Cynthia Doyle.

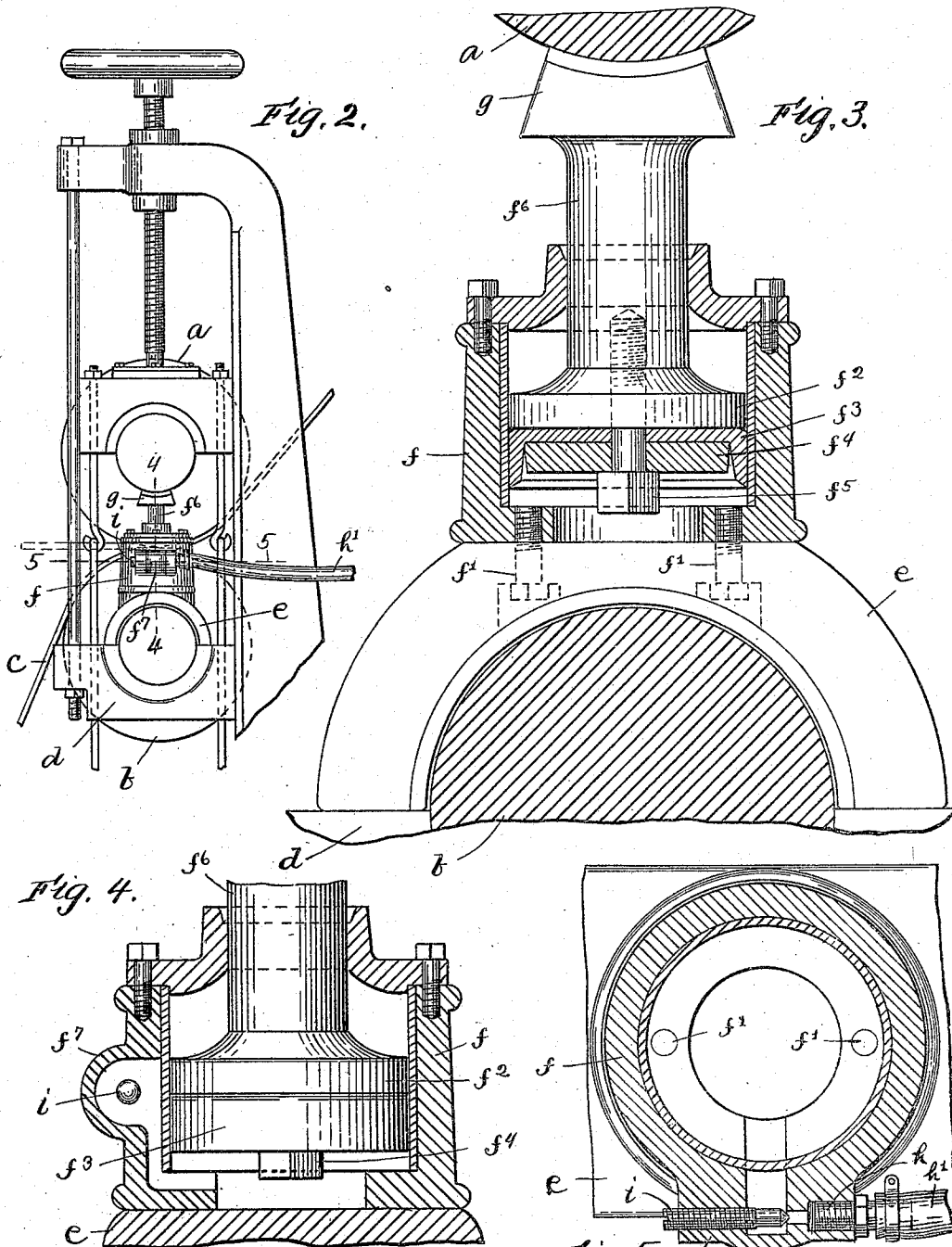
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Attys.

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2 SHEETS—SHEET 2.



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Cynthia Doyle

Fig. 5. Inventor:
W. Wallace White,
By Lewis & Hamman
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UNITED STATES PATENT OFFICE.

WALLACE WHITE, OF LAWRENCE, MASSACHUSETTS.

WET-MACHINE.

939,460.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed February 1, 1909. Serial No. 475,372.

To all whom it may concern:

Be it known that I, WALLACE WHITE, of Lawrence, county of Essex, State of Massachusetts, have invented an Improvement in Wet-Machines, of which the following is a specification.

This invention relates to wet-machines and has for its object to provide means for causing the upper press-roll to settle gradually onto the felt on the lower press-roll when passing off the end of a sheet of pulp, whereby the sudden downward movement of said roll, now common in wet-machines, which results in severely pressing and thereby injuring the felt, is prevented.

As a result of this invention the life of the felt is very materially prolonged.

Figure 1 is an end view of a portion of a wet-machine having means embodying this invention for retarding downward movement of the upper press-roll when it passes off the end of a sheet. Fig. 2 is a side elevation of the parts shown in Fig. 1. Fig. 3 is an enlarged vertical section of the retarding-device, shown in position between the upper and lower press-rolls. Fig. 4 is an enlarged vertical section of a portion of the retarding-device taken on the dotted line 4—4 Fig. 2. Fig. 5 is a horizontal section taken on the dotted line 5—5 Fig. 2.

The retarding-devices herein shown for the purpose of illustrating this invention are adapted to be supported on the bearing-boxes of the lower press-roll, and to engage the journals of the upper press-roll, being readily removable for the purpose of enabling new felts to be applied to the machine as is frequently required. Two retarding-devices are employed, one at each end of the upper press-roll, and they are made alike or substantially so, hence one only need be described in detail.

a, *b*, represent respectively the upper and lower press-rolls and *c* the felt.

d represents one of the bearing-boxes for the lower press-roll, which is made as a half-box.

e represents the semi-circular base of the retarding-device, which is adapted to rest on the bearing-box *d*, but it is preferably so made as not to engage the journal of the lower press-roll. An upright cylinder *f* is erected on said base *e*, which is rigidly secured thereto by any suitable means, as by bolts *f'*, and said cylinder has a piston of any suitable construction. As here shown,

the piston consists of a plate *f*², a flanged disk or cup *f*³ of leather or other material and a plate *f*⁴, said cup being securely held in position between the plates *f*² and *f*⁴ by a bolt *f*⁵. Said piston has a stem *f*⁶ which projects up through a hole in the end of the cylinder *f*, and bears at its upper end a rest *g* having a curved face which is adapted to engage the under side of the journal of the upper press-roll. The cylinder is designed to contain water or other fluid, and to conduct the same thereto it has a chambered boss *f*⁷ at one side of it, said chamber being in open communication with the interior of the cylinder, and said boss having a hole through it which crosses said chamber. A screw-threaded nipple *h* is screwed into one end of the hole in the boss *f*⁷, and a screw *i* is turned in the other end of said hole, said screw projecting more or less into the orifice at the end of the nipple to control the passage to the chamber, movement of said screw varying the area of said passage. A flexible hose or pipe *h'* is attached to said nipple *h*, which is connected with any suitable water-supply, a stand-pipe *h*⁵ being herein shown. The two retarding-devices thus described will be placed in position on the bearing-boxes of the lower press-roll, and the two flexible pipes will be connected to the opposite ends of a pipe *h*⁶, leading to the stand-pipe *h*⁵. When the water is turned on the two pistons will rise in their respective cylinders and the rests *g* will be moved up against the journals of the upper press-roll. It is not intended to exert any upward pressure on said upper press-roll for the reason that usually special means are provided for exerting a downward pressure on said roll and for adjusting it to properly coöperate with the lower press-roll to compress the pulp. Hence I do not apply any pressure to the water supply, but merely take the water from the stand-pipe. Enough pressure is thus obtained to raise the piston, and this pressure is controlled by the screw *i* which serves as a controlling-valve for the water-way.

As soon as the sheet is cut and the upper press-roll passes off the end of the cut sheet it moves downward, and its downward movement is severely checked or retarded by the pistons moving slowly in their respective cylinders, the water being forced back into the stand-pipe through the valve-controlled water-way. By the device herein described

downward movement of the upper press-roll will be severely retarded, so that it will settle gradually onto the felt on the lower press-roll without severely compressing said felt, and as the upper press-roll is gradually raised by the formation of the sheet, the pistons will be permitted to gradually rise to cause the rests *g* to follow up the journals of said roll in order that they may be all times in readiness to again operate when the upper press-roll passes off of the end of the next sheet.

Whenever it is necessary to change a felt the retarding-devices will be removed from their supports, and such movement is permitted by reason of the employment of the flexible pipes *h'* without disconnecting them from the stand-pipe, and after a new felt has been placed in position on the machine said retarding-devices will be replaced in position beneath the journals of the upper press-roll.

In lieu of the particular form of retarding-devices herein shown it is obvious that other forms of retarding-devices may be employed which come within the spirit and scope of this invention.

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

1. In a wet-machine, the combination with the upper and lower press-rolls and the felt, of a pair of retarding-devices arranged beneath the journals of the upper press-roll and adapted to retard downward movement of said roll and consequent severe compression of the felt is prevented, substantially as described.

2. In a wet-machine, the combination with the upper and lower press-rolls and the felt, of a pair of retarding-devices removably supported beneath the journals of the upper press-roll and adapted to engage said journals and to be operated by a downward movement of said press-roll when it passes off the end of a sheet, substantially as described.

3. In a wet-machine, the combination with the upper and lower press-rolls and the felt, of a pair of retarding-devices removably placed on the bearing-boxes of the lower press-roll and having rests adapted to engage the journals of the upper press-roll and movable downward by said upper press-roll to operate the retarding-devices and thereby in turn retard downward movement of said roll, substantially as described.

4. In a wet-machine, the combination with the upper and lower press-rolls and the felt, of a pair of cylinders containing pistons arranged beneath the journals of the upper press-roll, said pistons having rests adapted to engage said journals, whereby downward movement of said roll operates to force the pistons into the cylinders and thereby retard downward movement of the roll, substantially as described.

5. In a wet-machine, the combination with the upper and lower press-rolls and the felt, of a pair of fluid-pressure cylinders containing pistons arranged beneath the journals of the upper press-roll, said pistons having rests adapted to engage said journals, whereby downward movement of said roll forces the pistons into the cylinders to retard the downward movement of the roll and a fluid supply to which both of said cylinders are connected, substantially as described.

6. In a wet-machine, the combination with the upper and lower press-rolls and the felt, of a pair of fluid-pressure cylinders containing pistons arranged above the journals of the upper press-roll, said pistons having rests adapted to engage said journals, whereby downward movement of said roll forces the pistons into the cylinders to retard the downward movement of the roll, valves controlling the passage of fluid to and from said cylinders, and a fluid supply to which both cylinders are connected, substantially as described.

7. In a wet-machine, the combination with the upper and lower press-rolls and the felt, of a pair of fluid-pressure cylinders containing pistons arranged beneath the journals of the upper press-roll, said pistons having rests adapted to engage said journals, whereby downward movement of said roll forces the pistons into the cylinders to retard the downward movement of the roll, a fluid supply, and flexible pipes connecting both cylinders with said fluid supply, in order that said cylinders may be removed from their supports without disconnecting them from the supply, substantially as described.

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

WALLACE WHITE.

Witnesses:

B. J. NOYES,

H. B. DAVIS.