March 14, 1944. J. C. LOWE 2,344,047

PULP MACHINE

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Fig. 1.

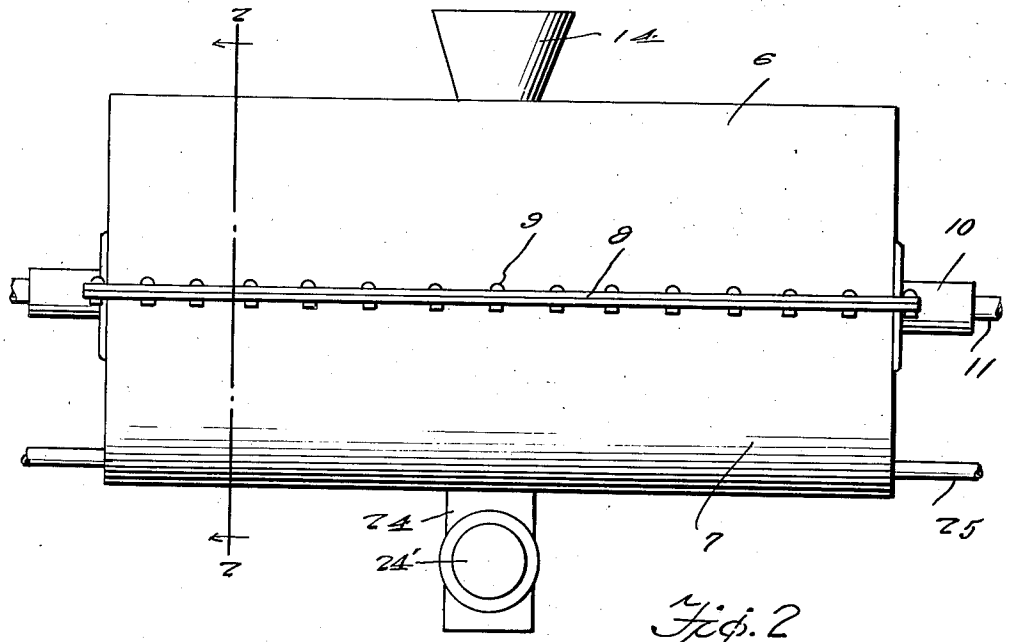
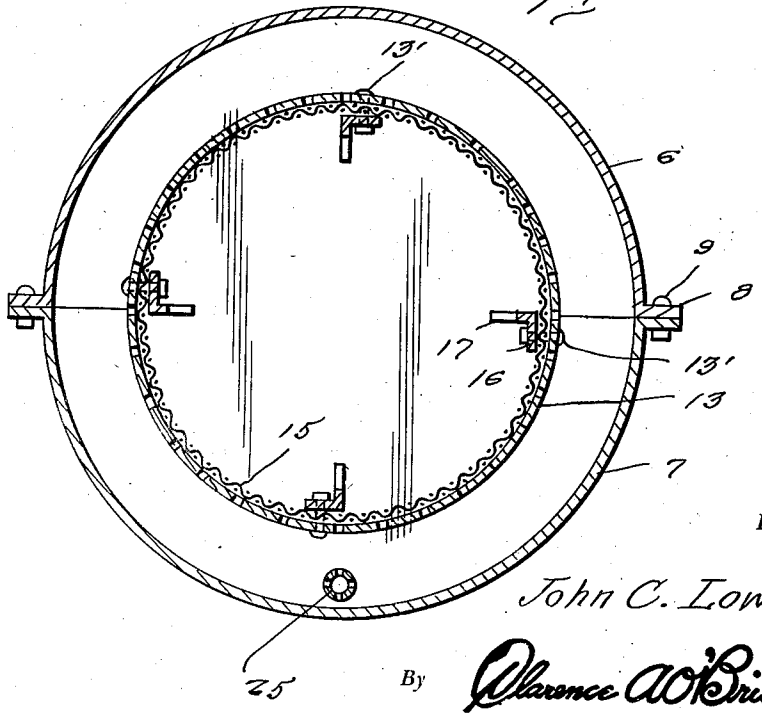


Fig. 2



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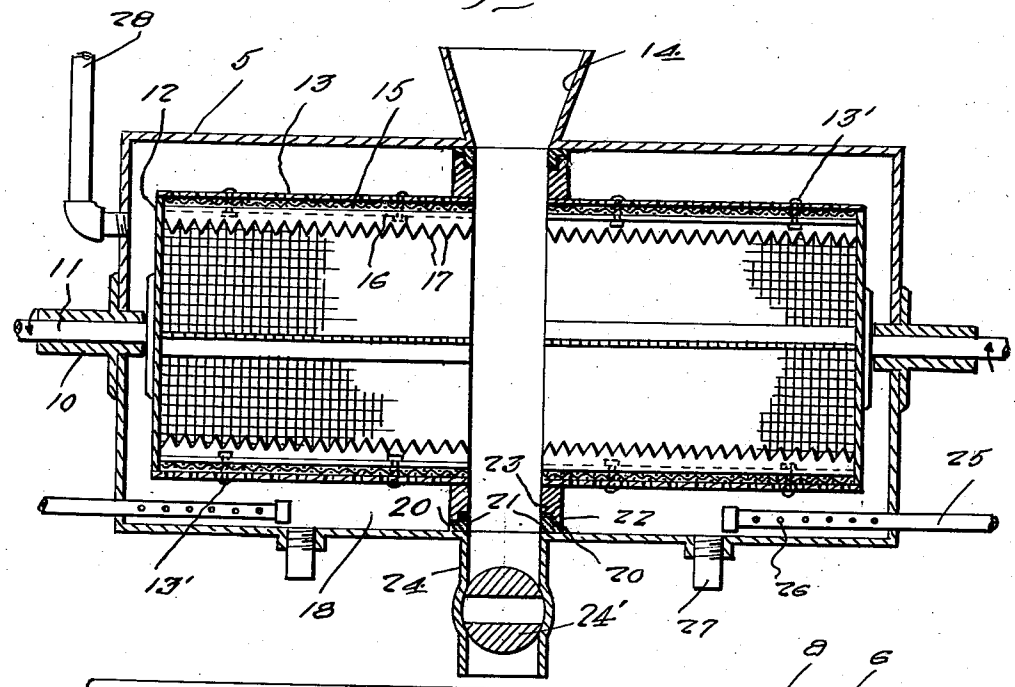
Attorney

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Fig. 3.



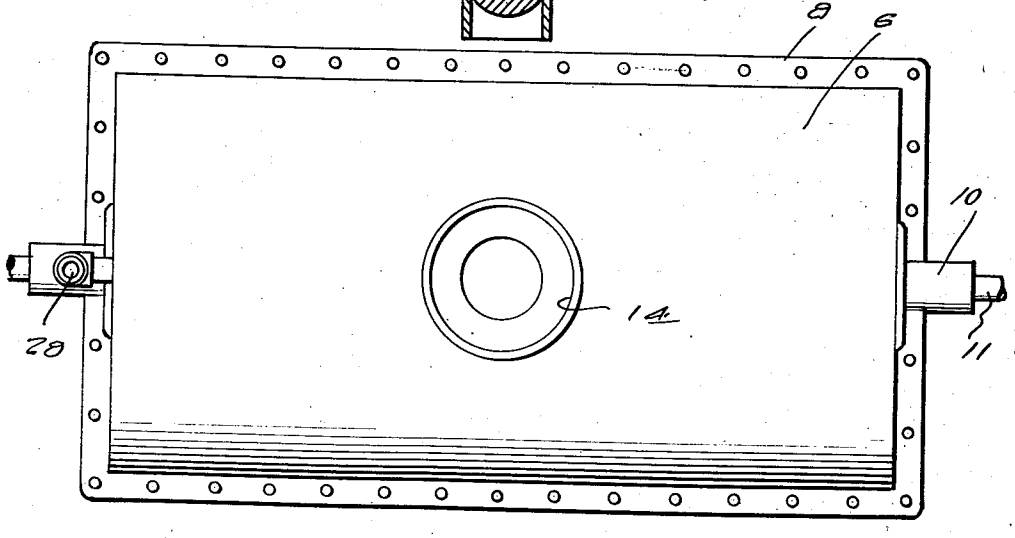


Fig. 4.

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UNITED STATES PATENT OFFICE

2,344,047

PULP MACHINE

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Application May 27, 1941, Serial No. 395,457

7 Claims. (Cl. 92—20)

The present invention relates to new and useful improvements in machines for treating paper pulp for use in the paper making industry, and embodies means for oppositely rotating a pair of perforated drums in which the pulp is fed to cause a circulation of the stock through the pair of drums for efficiently agitating the same while the stock is being subjected to the chemical solution or other fluid utilized for the treating of the pulp.

A further object is to provide a machine of this character of simple and practical construction, which is efficient and reliable in performance, relatively inexpensive to manufacture and maintain in operation, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which

Figure 1 is a side elevational view.

Figure 2 is a transverse sectional view taken substantially on a line 2—2 of Figure 1.

Figure 3 is a longitudinal sectional view, and Figure 4 is a top plan view.

Referring now to the drawings in detail, wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the numeral 5 designates a cylindrical casing formed of upper and lower longitudinal sections 6 and 7 having flanges 8 around the abutting edges thereof for connection by bolts 9. A bearing 10 is secured in each end of the casing in which a shaft 11 is journalled, each of the shafts having its inner end secured to the end wall 12 of a perforated drum 13.

As will be apparent from an inspection of Figure 3 of the drawings, one of the drums 13 is positioned in each end of the casing, and the adjacent ends of the drums are spaced apart and open to provide free circulation of the paper pulp or stock when the same is fed through the hopper 14 projecting upwardly through the top section 6 of the casing.

Secured to the inner surface of each of the drums 13 by bolts 13' is a foraminous or screen lining 15, the adjacent ends of each screen likewise being spaced apart and open, and secured to the inner surface of each screen are a plurality of longitudinally extending agitators 16 of angle construction as shown in Figure 2 of the drawings with one flange of the agitator projecting radially and formed with teeth 17. Preferably four of the agitators are provided in each of the screens 15 and spaced substantially equidistantly from each other circumferentially in the screen.

The end wall 12 of each drum is spaced from the adjacent end wall of the casing and the sides of the drums 13 are spaced circumferentially in the casing to provide a chamber 18 surrounding the outer end and side walls of the drum. The chambers 18 are closed adjacent the inner ends of the drums by means of a sealing ring construction which includes a sectional ring member 20 secured to the upper and lower sections of the casing and having a flange 21 on the inner periphery thereof engaged at its side edge by a flange 22 formed on the outer periphery of a ring member 23 secured on the outer periphery of the drum 13. Accordingly, the stock may enter the hopper 14 for feeding the same into the open ends of the drums, the sealing members 19 excluding the stock from the chambers 18 at each end of the casing.

A discharge pipe 24 is connected to the lower section 7 of the casing at a point between the adjacent ends of the drums, the pipe 24 having a conventional form of valve 24' therein.

Liquid supply pipes 25 project inwardly from each end of the casing having perforations 26 at the inner ends of the pipes for supplying the chambers 18 with water, chemical, or other desired liquid for the treatment of the pulp and drain pipes 27 are connected to the bottom portion of the lower section 7 communicating with the chambers 18. A steam feed pipe 28 may also be attached to the end wall of the upper section 6 of the casing for regulating the temperature of the mix in the casing.

Suitable drive means are provided for each of the shafts 11 of the respective drums for rotating the same in opposite directions as indicated by the arrows in Figure 3 of the drawings, the opposite rotation of the drums causing a circulation of the stock longitudinally in the drums from one drum to the other.

It is believed the details of construction and manner of operation of the device will be readily understood from the foregoing without further detailed explanation.

Having thus described my invention, what is claimed as new is:

1. A paper pulp machine comprising an imperforate cylindrical casing and a pair of perforate drums rotatably mounted in the casing in longitudinally spaced relation to each other, said drums being open at their adjacent ends and

oppositely rotated for causing a circulation of the mix in the drums from one to the other through the open ends thereof.

2. A paper pulp machine comprising an imperforate cylindrical casing, a pair of perforate drums rotatably mounted in the casing in longitudinally spaced relation to each other, said drums being open at their adjacent ends to afford free communication with each other and said drums being spaced concentrically from the walls of the casing, and means for sealing the sides of the drums at their adjacent ends to the walls of the casing to retain paper pulp stock in the drums.

3. A paper pulp machine comprising an imperforate cylindrical casing, a pair of perforate drums rotatably mounted in the casing in longitudinally spaced relation to each other, said drums being open at their adjacent ends and spaced concentrically from the walls of the casing, and means for sealing the sides of the drums at their adjacent ends to the walls of the casing to retain paper pulp stock in the drums, said drums being oppositely rotated for causing a circulation of the stock from one drum to the other through the open ends thereof.

4. A paper pulp machine comprising an imperforate cylindrical casing, a pair of perforate drums rotatably mounted in the casing in longitudinally spaced relation to each other, said drums being open at their adjacent ends to afford free communication with each other and spaced concentrically from the walls of the casing, means for feeding stock to the drums through a wall of the casing, means for sealing the sides of the drums at their adjacent ends to the walls of the casing to retain paper pulp stock in the drums and means for discharging the stock from the drums through a wall of the casing.

5. A paper pulp machine comprising an imperforate cylindrical casing, a pair of perforate drums rotatably mounted in the casing in longitudinally spaced relation to each other, said drums being open at their adjacent ends to afford free communication with each other and spaced concentrically from the walls of the casing, means for feeding stock to the drums through their open ends, means for sealing the sides of the drums at their adjacent ends to the walls of the casing to retain paper pulp stock in the drums, means for supplying liquid to the casing, said liquid being adapted to enter the drums through the perforations therein for treating the stock in the drums, and means for discharging the stock directly from the drums.

6. A paper pulp machine comprising an imperforate cylindrical casing, a pair of perforate drums rotatably mounted in the casing in longitudinally spaced relation to each other, said drums being open at their adjacent ends and spaced concentrically from the walls of the casing, agitators in the drums, and means for sealing the sides of the drums at their adjacent ends of the walls of the casing to retain paper pulp stock in the drums, said drums being oppositely rotated for causing a circulation of the stock from one drum to the other through the open ends thereof.

7. A paper pulp machine comprising an imperforate cylindrical casing, a pair of perforate drums rotatably mounted in the casing in longitudinally spaced relation to each other, said drums being open at their adjacent ends and spaced concentrically from the walls of the casing, a foraminous lining in each drum, agitators in the drums, and means for sealing the sides of the drums at their adjacent ends to the walls of the casing to retain paper pulp stock in the drums, said drums being oppositely rotated for causing a circulation of the stock from one drum to the other through the open ends thereof.

JOHN C. LOWE.