April 15, 1930. J. E. BOND 1,754,255

AGITATOR

Filed March 14, 1928

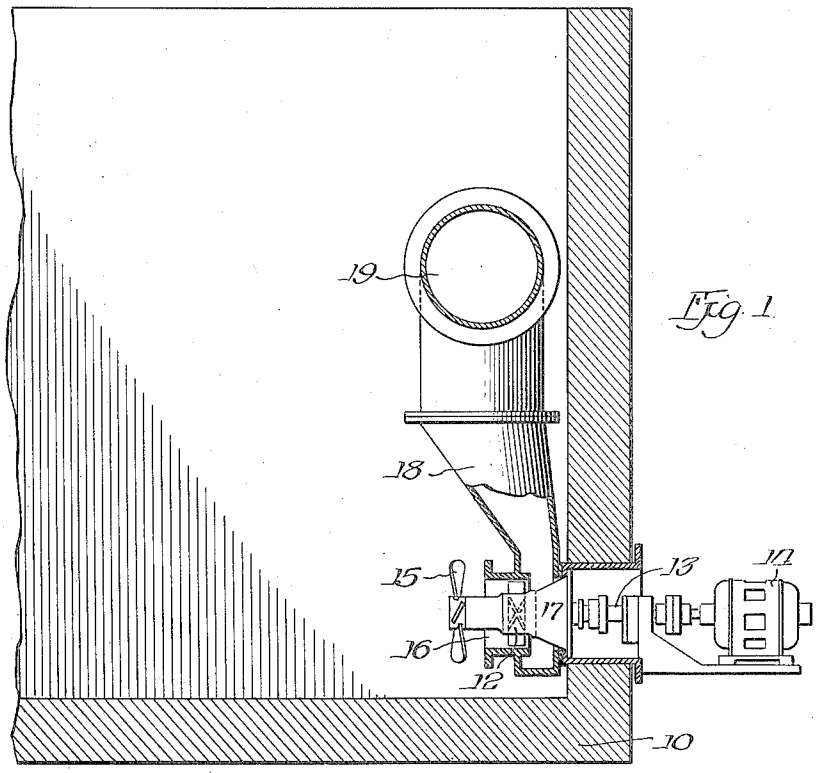



Fig. 1.

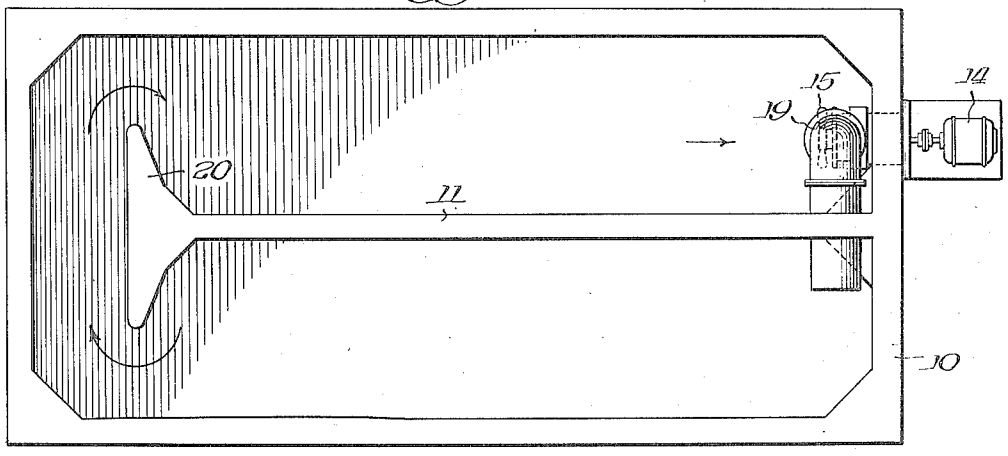



Fig. 2.

Witness:
Geo. C. Morrison

Inventor
J. E. Bond
By Murray & Murray Attys

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# UNITED STATES PATENT OFFICE

JOSEPH E. BOND, OF APPLETON, WISCONSIN

## AGITATOR

Application filed March 14, 1928. Serial No. 261,554.

My invention relates to the art of paper making and more particularly to a novel form of agitator.

The art of paper making, and especially the method of agitating the paper stock in the tank, has always presented numerous difficulties, one of which relates to the tendency of the stock to stratify, and also the tendency of the mass toward cohesion and massing. In the use of some stock in heavy solutions, considerable difficulty has been experienced in breaking up the masses or lumps of solid stock suspended therein. This difficulty becomes more serious in cold weather, and the frequency of agitator shut-downs to permit the removal of these solid masses from the pumps adds considerably to the cost of operation.

The device of my invention is intended to entirely eliminate this frequent annoyance in a simple and efficient manner by the use of a bladed rotor on the end of the pump shaft, immediately in front of the pump inlet opening. Thus when a large lump of solid stock attempts an entrance into the pump inlet, it will come into contact with the rapidly moving blades and be broken up in small enough pieces to permit ready movement through the pump.

The invention will be more readily understood by reference to the accompanying drawings in which—

Fig. 1 is a fragmentary vertical sectional view of apparatus such as contemplated by me, and

Fig. 2 is a plan view thereof, of the complete layout.

The apparatus of my invention consists of a tank 10, having a center wall 11, therein extending substantially the length thereof. At one end of the tank at the bottom is located the screw pump 12 connected by the drive shaft 13, to the external motor 14. At the inner end of the motor shaft 13 is located the rotor 15, a short distance in front of the inlet opening 16. The stock is drawn through the opening 16, by the screw pump 12, past the cone shaped plate 17, and upward through the pipe 18. The stock is discharged through the port 19 at the top of the tank and on the side of the wall opposite from the side in which the inlet opening is located. Thus the stock is drawn in at the bottom and discharged on the other side of the wall at the top, thereby causing the stock to flow the entire length of the tank and around the baffle 20 at the end of the wall 11. By the use of the screw pump 12, the apparatus may be operated where only a slight head of stock is maintained in the tank, or where the percentage of stock is greater than normal, and only a small quantity is agitated.

Thus it is plain that I have provided simple apparatus for efficiently performing the service required. All solid lumps of stock will be broken up before entering the pump, and the annoyance or delay because of an inoperative pump will be eliminated.

It is obvious that the apparatus herein described is of the most simple form and while modifications and variations may be made within the skill of the mechanic, I do not wish to be limited except as indicated in the appended claims.

I claim:

1. In apparatus of the class described, the combination of a tank, a division wall in said tank extending from one end substantially the length thereof, a pump having an inlet and an outlet opening in said tank, one on each side of said division wall, an external motor for said pump, and a rotor having blades, said rotor being located in the open space in the tank adjacent to said inlet opening.

2. In apparatus of the class described, the combination of a tank, a division wall in said tank extending from one end substantially the length thereof, a pump having an inlet at one side of said wall near the bottom of said tank and an outlet disposed above said inlet opening and discharging into the opposite side of said wall and a rotor having blades disposed across said inlet opening.

3. In apparatus of the class described, the combination of a tank, a longitudinally extending division wall therein, a pump located at one end of said tank and having an inlet at one side of said wall and a dis-

charge opening at the other side of said wall, a motor for operating said pump, and a rotor having blades disposed across said inlet opening, said rotor being operatively connected to said pump.

In testimony whereof I have affixed my signature.

JOSEPH E. BOND.