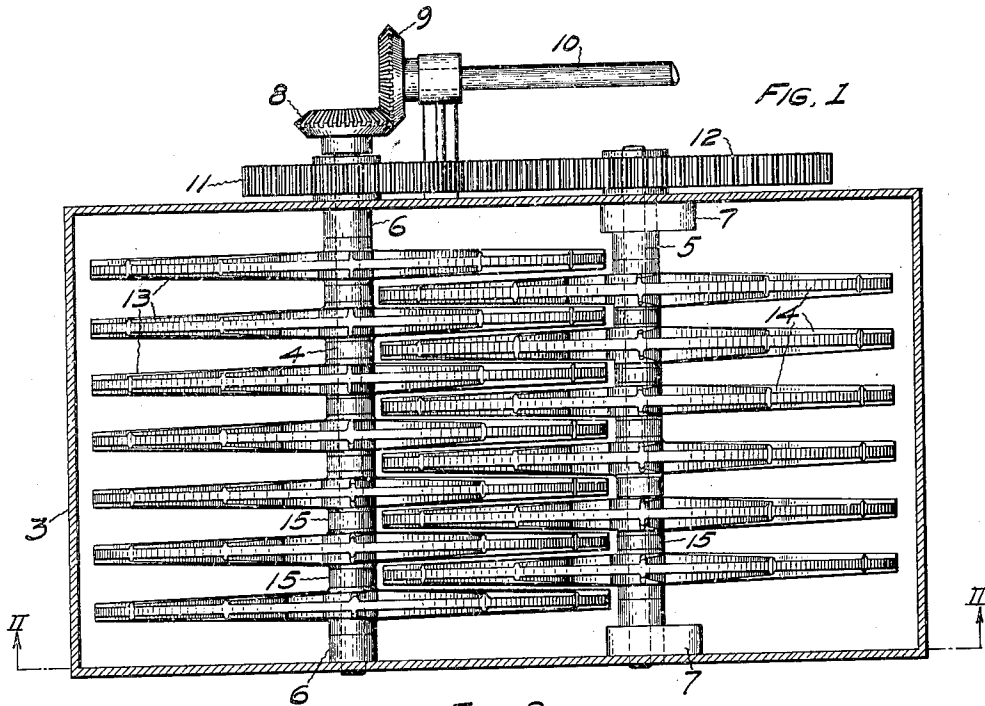
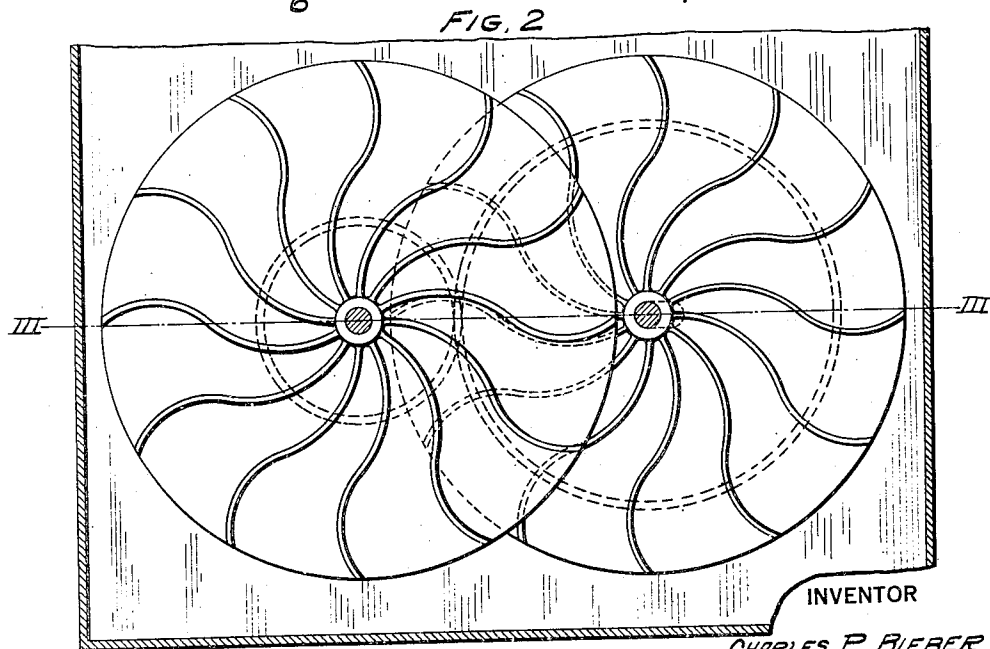


April 7, 1925.

1,532,649

C. P. BIEBER
FIBER BEATING MACHINE

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UNITED STATES PATENT OFFICE.

CHARLES P. BIEBER, OF AKRON, OHIO, ASSIGNOR TO THE GOODYEAR TIRE & RUBBER COMPANY, OF AKRON, OHIO, A CORPORATION OF OHIO.

FIBER-BEATING MACHINE.

Application filed October 30, 1922. Serial No. 597,970.

To all whom it may concern:

Be it known that I, CHARLES P. BIEBER, a citizen of the United States, and resident of Akron, Ohio, have invented new and useful Improvements in Fiber-Beating Machines, of which the following is a specification.

My invention relates to machines for beating and separating fibers, as commonly used in the manufacture of paper and similar fibrous compositions.

The object of my invention is to provide a novel type of machine of the above designated character which is adapted to beat a relatively large quantity of fiber at the same time.

Heretofore, in fiber beating and separating machines, it has been customary to provide a race-way for the fibers having a constricted portion in which is disposed a plurality of relatively movable knives. The fibers travel with the liquid through a relatively long path, passing between the knives or beater members but once during each revolution of the fibers through the race-way. As considerable time is consumed in passing through a single revolution, the period of time necessary for properly beating and separating a quantity of fibers is relatively long.

By my invention I have obviated the aforementioned difficulty by providing a novel type of machine in which a relatively large quantity of fibers may be beaten and separated in a relatively short period of time.

A better understanding of my invention may be had by reference to the accompanying drawing of which:

Fig. 1 is a cross sectional view of a fiber beating machine constructed in accordance with my invention;

Fig. 2 is a sectional view of the structure illustrated in Fig. 1, the section being taken along the line II—II thereof; and

Fig. 3 is a detailed view of one of the fiber beating discs employed in the structure illustrated in Fig. 1.

In the drawing, I show a container 3 having mounted therein two spaced vertical rotatable shafts 4 and 5, which are mounted in bearings 6 and 7, respectively, in the walls of the container. The upper end of the shaft 4 is provided with a crown gear 8, which meshes with a cooperating

crown gear 9, mounted upon the driving shaft 10. The shaft 4 is also provided with a gear wheel 11, which meshes with a cooperating gear wheel 12, mounted upon the shaft 5. Rotation of the shaft 10 drives the shaft 4 through the crown gears 8 and 9, and also drives the shaft 5 through the gear wheels 11 and 12.

Mounted upon the shafts 4 and 5 in a partially interleaved relation are disposed a plurality of spaced discs 13 and 14, respectively, each of which are of double wedge-shape in cross section. The discs are spaced from each other by means of collar members 15. The members 13 and 14, although of double wedge-shape in cross section, are also provided with irregular surfaces, which assist in beating and separating the fibers.

The bearings 7 are both adjustable with respect to the bearings 6 and the teeth of the gear wheels 11 and 12 are of such proportions that movement of the shaft 5 with respect to the shaft 4 is permitted without breaking the driving connection.

In beating the fibers, the container 3 is first filled with a quantity of fibers suspended in a liquid, preferably water. Shafts 4 and 5 are then rotated so as to agitate the mixture and beat and separate the fibers. After the fibers have been beaten to a certain extent, and it is desired to reduce them further, the shaft 5 is moved closer to the shaft 4 and the two shafts are again rotated, thus bringing the discs 13 and 14 into relatively close engagement, the wedge shape portions thereof fitting together in relatively close interleaved relation. As the gear wheel 12 is materially larger than the gear wheel 11, and is driven thereby, the shaft 5 rotates at a materially higher speed than does the shaft 4. The agitation of the fibers by the roughened or irregular surfaces of the disc and between the two cooperating sets of discs and in the other portions thereof, serves to agitate the liquid and beat the fibers so as to thoroughly separate the fibers from each other.

Although I have shown but one form of my invention and have described in detail but a single application thereof, it will be apparent to those skilled in the art that it is not so limited but that various minor modifications may be made therein with-

out departing from the spirit of my invention, and I desire to be limited only by the scope of the appended claims.

What I claim is:

- 5 1. A machine for beating fibers comprising a container, two power driven rotatable vertical relatively adjustable shafts disposed therein, and means mounted on each of said shafts for beating said fibers.
- 10 2. A machine for beating fibers comprising a container, two power driven rotatable vertical relatively adjustable shafts disposed therein, and means mounted on each of said shafts and adapted to cooperate with each other for beating said fibers.
- 15 3. A machine for beating fibers comprising a container a shaft rotatably mounted therein and means mounted on said shaft adapted to beat the fibers, said means com-

prising spaced members of double wedge shape cross-section having irregular surfaces. 20

4. A machine for beating fibers comprising a container a plurality of parallel spaced rotatable shafts mounted therein, 25 and a plurality of spaced discs mounted upon each of said shafts, the discs on each shaft being disposed in interleaved relation with the discs on other shafts, and means for rotating said shafts at different speeds. 30

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES P. BIEBER.

Witnesses:

FRANK GRAHAM,
FRED A. LIND.