April 13, 1937. A. M. BACH 2,076,975

CENTRIPETAL DISSOLVER

Filed May 12, 1936

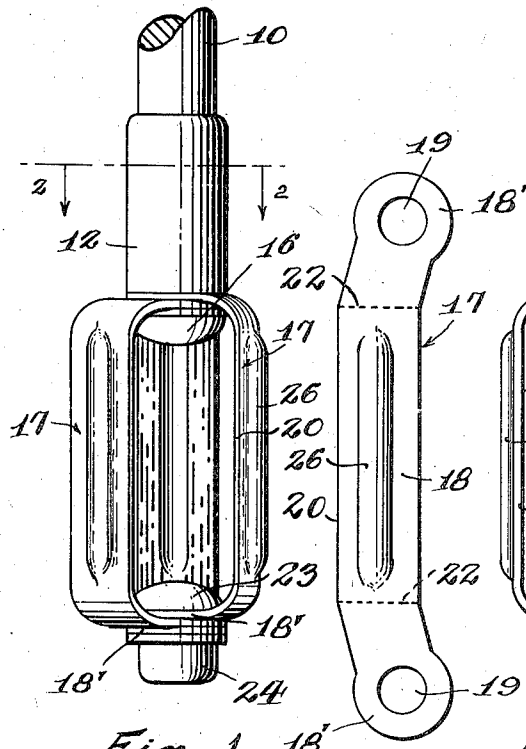



Fig. 1.

Fig. 3.

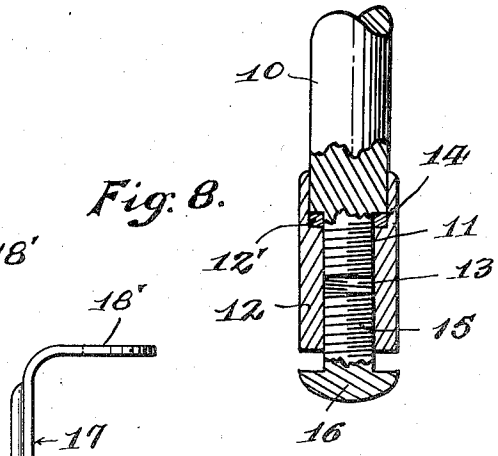



Fig. 8.

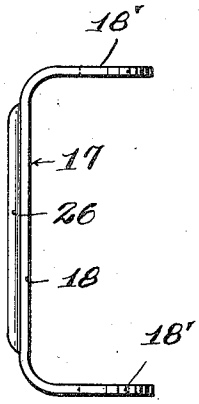



Fig. 4.

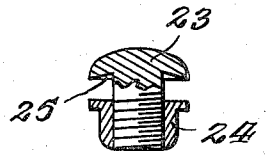



Fig. 6.

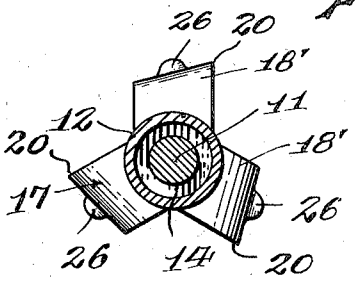



Fig. 2.

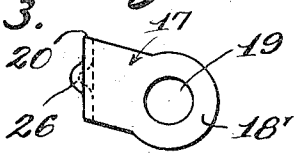



Fig. 5.

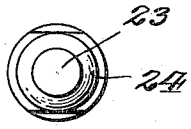



Fig. 7.

Inventor

Anton Marinus Bach,

By Christian P. Nielsen

Attorney

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# UNITED STATES PATENT OFFICE

2,076,975

## CENTRIPETAL DISSOLVER

Anton M. Bach, Palo Alto, Calif.

Application May 12, 1936, Serial No. 79,385

4 Claims. (Cl. 259—126)

My invention relates to a centripetal dissolver and it consists in the constructions, arrangements and combinations herein described and claimed.

It is an object of the invention to provide an agitating means, the blades of which are so pitched as to avoid outward centrifugal force and tend to draw the material undergoing treatment inwardly toward the center of the agitating unit.

It is a still further object of the invention to provide a unit which is of extreme simplicity, cheap to manufacture and which may be readily dismantled for the purpose of replacing parts, or cleansing.

Additional objects, advantages and features of invention will be apparent from the following description considered in conjunction with the accompanying drawing, wherein

Figure 1 is a side elevation of the dissolver constructed in accordance with my invention.

Figure 2 is a cross section on the line 2—2 of Figure 1.

Figure 3 is a plan view of a blank for one of the blades of the unit.

Figure 4 is a side elevation of one of the blades.

Figure 5 is a top plan view thereof.

Figure 6 is a sectional view of the lower mounting head and stud.

Figure 7 is a bottom plan view thereof.

Figure 8 is a sectional view of the upper mounting head and stud.

There is illustrated in Figures 1 and 8 a shaft 10 which may be the armature shaft of an electric motor (not shown) or a separate shaft having any suitable coupling means for attachment to a prime mover. The shaft 10 terminates in a reduced threaded stud member 11.

A sleeve 12 is employed, having a bore 13 of the same diameter as the stud 11, this bore extending substantially throughout the length of the sleeve, but is provided with an enlarged annular recess 14 receiving the lower end of the shaft 10 and a fiber washer 12' therewithin. The bore of the sleeve 12 is interiorly threaded throughout its length and receives the stud 11, the stud 11 stopping short of the other end of the sleeve a substantial distance to permit threaded engagement of a clamping bolt 15. The bolt 15 preferably comprises a globular head 16 presenting a surface which is smooth and liable in a minimum degree to adhesion of substances from the material agitated.

In the present instance, three agitator blades 17 are employed, although the number may be increased or decreased, if desired, depending largely upon the work required of the agitator unit. The blades 17 are identical in construction, and therefore, a description of one will be dealt with.

The blades 17 are stamped from suitable metal as an integral elongated member 18 the ends of which terminate in ears 18' having circular formation, medially of which an aperture 19 is formed. The ears 18' are of a length to position the blades a spaced distance from the longitudinal axis of the shaft, when in assembled relation, thus providing ample space into which the material may be drawn by centripetal action during rotation, without liability of packing of partially dissolved materials.

It should be noted that the major portion of the members 18 comprise straight longitudinal leading edges 20, and in order that the body 18 may be presented at an angle of 15 degrees with respect to the axis of rotation to produce the centripetal action the ears 18' are disposed at such angle with respect to the longitudinal axis of the body 18 as may be clearly seen in Figure 3.

In the final formation of the blades, the ears 18' are bent at right angles, on the dotted lines 22, so as to align the apertures 19 for reception of assembly bolts, as will now be described.

The ears 18' of the agitator blades at each end, are arranged in superposed contacting relation, and for this reason the length of the body portions 18 will be progressively longer, as shown in Figure 1. With the ears 18' thus arranged and the uppermost ear abutting the sleeve 12 with the apertures 19 aligned with the bore of the sleeve, the bolt 16 is screwed into the bore for retention of the blades. The lower ears 18' of the blades will also be aligned, and through the apertures 19, I provide a globular headed screw stud 23 in screw threaded engagement with an annular smooth faced nut 24. Tightening of respective screw studs 16—23 obviously will hold the blades rigid against individual movement, and if found necessary, the under face of the head of the studs may be slightly undercut, as at 25 (see Fig. 6). Such construction presents a clamping action adjacent the outer periphery of the bolt, and the nut may be similarly undercut if desired.

Each of the blades 17 has formed therein a rib 26, pressed outwardly of the body of the metal, extending longitudinally of the blade, and function as strike members to more thoroughly beat the material during operation of the device, as well as reinforcing the blade. Obviously, the rib

may be pressed inwardly rather than outwardly, if desired.

The present drawing illustrates the form as would be employed at soda fountains, or in like situations, for the thorough beating and mixing of ice cream and liquids, and in operation, the shaft 10 would be driven at a desired speed, imparting rotation of the agitator. The blades 17 due to their angle, would encounter the substance being agitated, tending to draw it toward the center of the agitating unit. The substance would thus be thoroughly broken up and liability of splashing of the liquid due to centrifugal force would be obviated.

While I have shown and described a preferred construction, I am aware that variations may be made, and I therefore consider as my own, all such modifications as fairly fall within the scope of the appended claims.

I claim:—

1. In an agitator, a rotatable shaft, a sleeve thereon, said sleeve being interiorly threaded, a plurality of agitator blades, each of said blades having right angularly disposed apertured ears at each end, screw means engageable through the apertures of the ears at one end and in screw threaded engagement with the bore of the sleeve and means engageable with the apertures of the other ends of the ears for securement of the blades.

2. In an agitator, a rotatable shaft, a sleeve thereon, a plurality of agitator blades having right angularly disposed ears, the ears being of a length to position the blades a spaced distance from the longitudinal axis of the shaft, said blades having one longitudinal edge portion spaced a greater distance from the axis of the shaft than the other, said ears being apertured and arranged in superposed position for registry of the apertures, and screw members engaged through the apertures for securement of the blades, one of said screw members being secured in the sleeve.

3. In an agitator, a rotatable shaft having a reduced threaded stud, a sleeve on the stud, said sleeve having an annular recess for accommodation of a portion of the shaft, a plurality of agitator blades, each of said blades having right angularly disposed apertured ears, the ears being of a length to position the blades a spaced distance from the longitudinal axis of the shaft, said blades having one longitudinal edge portion spaced a greater distance from the axis of the shaft than the other, the ears at respective ends being arranged in superposed relation for registry of the apertures, a globular head screw engaged through the ears at one end and in screw threaded engagement with the sleeve, a globular head screw engaged through the apertures of the other ears and a nut member on the screw for clamping the ears.

4. The structure of claim 3 in which the blades include a longitudinally extended rib.

ANTON M. BACH.