Oct. 2, 1923. 1,469,370

H. TRUST ET AL

MIXING AND BEATING MACHINE

Filed Dec. 31, 1919

Fig. 1.

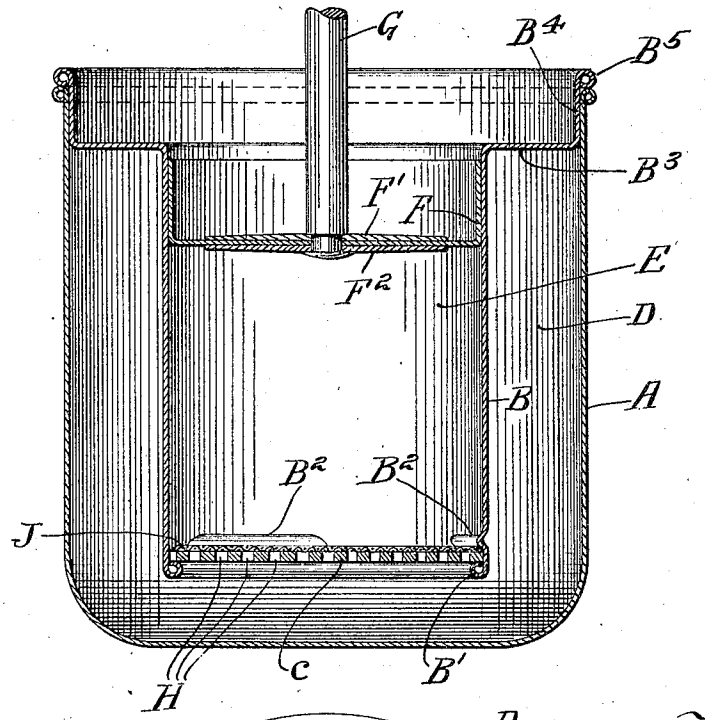
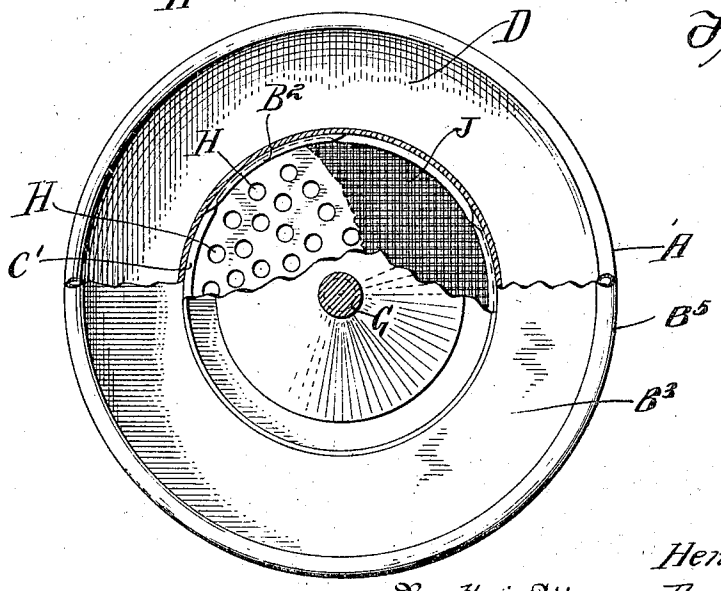


Fig. 2.



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UNITED STATES PATENT OFFICE.

HENRY TRUST, OF PARK RIDGE, NEW JERSEY, AND FRANK M. ASHLEY, OF BROOKLYN, NEW YORK; SAID ASHLEY ASSIGNOR TO JOSEPHINE TRUST, OF PARK RIDGE, NEW JERSEY; JOSEPHINE TRUST ADMINISTRATRIX OF SAID HENRY TRUST, DECEASED.

MIXING AND BEATING MACHINE.

Application filed December 31, 1919. Serial No. 348,618.

To all whom it may concern:

Be it known that we, HENRY TRUST, a citizen of the United States, and resident of Park Ridge, in the county of Bergen and State of New Jersey, and FRANK M. ASHLEY, a citizen of the United States, and resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Mixing and Beating Machines, of which the following is a specification.

Our invention relates to mixing and beating machines and the object of our invention is to provide a mixing machine of simple constructon and low cost.

Referring to the drawings forming a part of this specification:

Figure 1. is a vertical sectional view of a machine embodying our invention.

Figure 2. is a plan view shown partly in section.

A indicates a receptacle in which the ingredients to be mixed are placed. B indicates a cylinder having an inwardly extending flange or bead B′ and also having inwardly extending projections B^2—B^2, etc., between which the perforated plate C is held. The projections B^2 do not extend inward towards the centre of the cylinder as far as the flange B′, and therefore openings C′ formed in the edge of the plate C are closed by the flange B′ when the plate is resting on same as illustrated.

The openings C′ are just large enough to allow the plate C to pass the projections B^2, the plate then being turned to bring a solid portion of the plate beneath said projections to prevent it from lifting when the machine is operating. The upper end of the cylinder B is provided with a laterally extending flange B^3 which terminates in a cylindrical wall B^4 which fits closely the inner wall of the receptacle A, and a beaded edge or flange B^5 formed integral with the cylinder B rests on the top edge of the receptacle A. The difference in diameter between the cylinder B and receptacle A, provides an annular chamber D which is in open communication with the chamber E of the cylinder B, and which is covered by the flange portion B^3. F indicates a piston preferably formed of sheet metal and the head of which is strengthened and stiffened by metal discs F′ and F^2 respectively placed on each side thereof and carried by the piston rod G. The piston may be operated by an engine or manually. J, indicates a sheet of woven wire.

In operation, the fluid ingredients to be mixed are poured in receptacle A and chamber E until both are about one-half full and the piston F then placed in position and reciprocated. The fluid in chamber E is forced rapidly through the perforations H—H—H, etc., forming jets of liquid which causes a rapid mixture of the ingredients and on the upward stroke of the piston the ingredients are drawn through the perforations into said chamber E and thus further mixing, and this action is repeated until the mixure is complete. The plates may be furnished with perforations of different size. The woven wire having a fine mesh may be supported on a plate C for mixing varnish and other such fluids if desired. It will be observed that all the parts except the piston rod are made of sheet metal and can therefore be made at low cost by the use of proper dies and tools.

Having thus described our invention, we claim as new and desire to secure by Letters Patent of the United States:

1. A mixing machine comprising an air tight receptacle, a cylinder supported in said receptacle, a plate having perforations therein supported by said cylinder and a piston adapted to be reciprocated in said cylinder to alternately draw the ingredients into and force out of said cylinder through the perforations in said plate by means of the difference in the fluid pressure in said cylinder and receptacle.

2. A mixing machine comprising a receptacle, a cylinder of relatively small diameter supported in said receptacle, a plate having perforations therein supported by said cylinder and a piston adapted to be reciprocated in said cylinder to alternately change the relative air pressures in said cylinder and receptacle and thereby draw the ingredients into and force out of said cylinder through the perforations in said plate.

3. A mixing machine comprising a receptacle, a cylinder of smaller diameter supported in said receptacle and forming an annular chamber between said receptacle

and cylinder, a plate having perforations therein supported by said cylinder, and a piston adapted to be reciprocated in said cylinder to alternately change the relative air pressures in said cylinder and receptacle and thereby draw the ingredients into and force out of said cylinder through the perforations in said plate.

4. A mixing machine comprising a receptacle, a cylinder of smaller diameter supported in said receptacle and forming an annular chamber between said receptacle and cylinder, a removable plate having perforations therein supported by said cylinder, and a piston adapted to be reciprocated in said cylinder to alternately change the relative air pressures in said cylinder and receptacle and thereby draw the ingredients into and force out of said cylinder through the perforations in said plate.

5. A mixing machine comprising a receptacle made of sheet metal, a cylinder made of sheet metal of smaller diameter supported in said receptacle and forming an annular chamber between said receptacle and cylinder, a plate having perforations therein supported by said cylinder, and a piston adapted to be reciprocated in said cylinder to alternately change the relative air pressures in said cylinder and receptacle and thereby draw the ingredients into and force out of said cylinder through the perforations in said plate.

6. A mixing machine comprising a receptacle, a cylinder of smaller diameter supported in said receptacle and forming an annular air tight chamber between said receptacle and cylinder, a plate having perforations therein supported by said cylinder, a wire mesh supported by said plate, and a piston adapted to be reciprocated in said cylinder to alternately change the relative air pressures in said cylinder and receptacle and thereby draw the ingredients into and force out of said cylinder through the said mesh and through the perforations in said plate.

7. A mixing machine comprising a removable receptacle, a cylinder suspended in said receptacle, a plate having perforations therein supported by said cylinder at its lower end and a piston adapted to be reciprocated in said cylinder to alternately change the relative fluid pressures in said cylinder and receptacle and thereby draw the ingredients into and force out of said cylinder through the perforations in said plate.

8. A mixing machine comprising a receptacle, a cylinder of relatively small diameter suspended in said receptacle, a plate having perforations therein supported by said cylinder, and a piston adapted to be reciprocated in said cylinder to alternately change the relative fluid pressures in said cylinder and receptacle and thereby draw the ingredients into and force out of said cylinder through the perforations in said plate.

9. A mixing machine comprising a receptacle, a cylinder suspended in said receptacle, said receptacle being rendered air tight by a flange extending from the top thereof to the top of said cylinder, a perforated plate held in the lower end of said cylinder at a distance from the bottom of said cylinder, and a piston in said cylinder.

10. A mixing machine comprising a receptacle, a cylinder suspended in said receptacle, said receptacle being rendered air tight by a flange extending from the top thereof to the top of said cylinder, a removable perforated plate held in the lower end of said cylinder at a distance from the bottom of said cylinder, and a piston in said cylinder.

Signed at New York city, in the county of New York and State of New York this 29th day of December A. D. 1919.

HENRY TRUST.
FRANK M. ASHLEY.