Dec. 23, 1924. 1,520,375

H. TRUST ET AL

MIXING AND BEATING MACHINE

Filed June 16, 1920

Fig. 1.

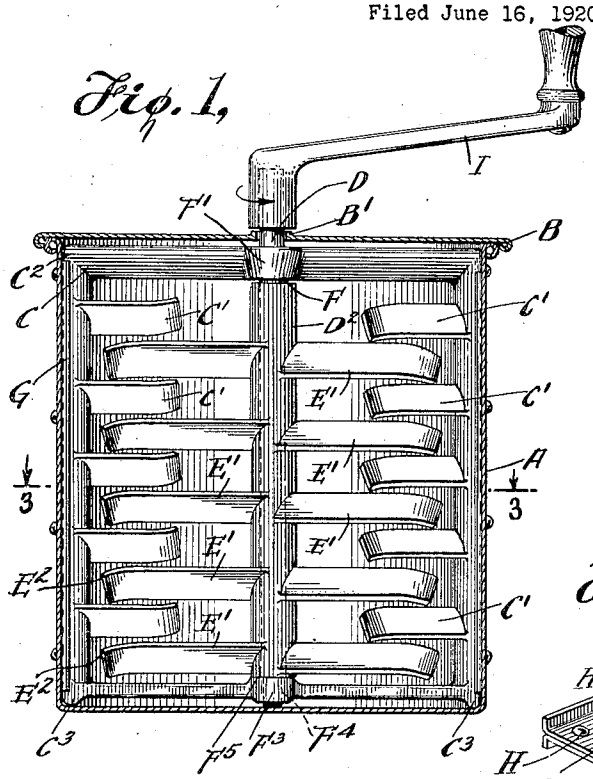


Fig. 2.

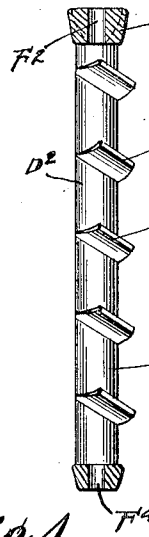


Fig. 4.

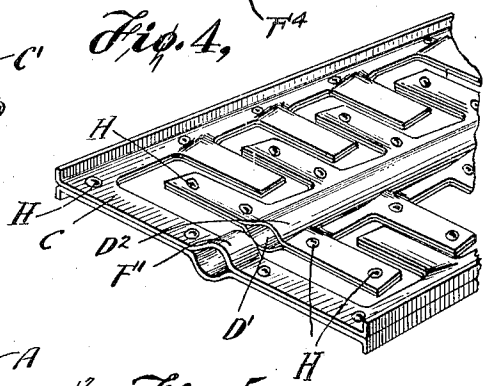


Fig. 3.

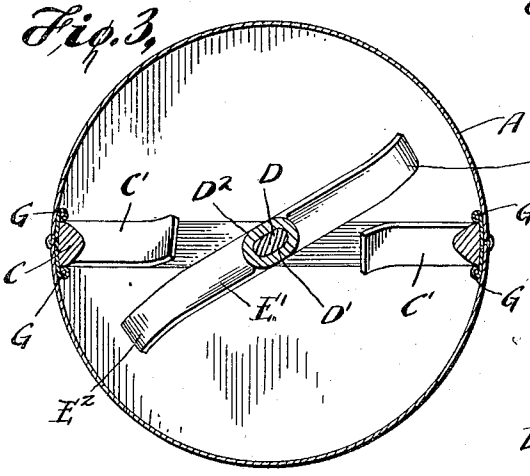
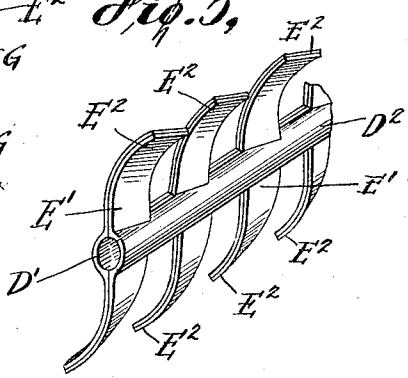


Fig. 5.



Inventors
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Patented Dec. 23, 1924. 1,520,375

UNITED STATES PATENT OFFICE.

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

MIXING AND BEATING MACHINE.

Application filed June 16, 1920. Serial No. 389,339.

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 machine that can be made almost entirely from sheet metal by using dies to cut and form the parts, thus providing a light and cheap construction embodying strength and durability.

A further object is to provide a construction that can easily be taken apart to clean.

A further object is to so form the blades of the mixer that the ingredients being mixed will not be thrown by centrifugal force violently against the sides of the containers.

Referring to the drawings which form a part of this application:

Figure 1 is a vertical sectional view of a mixing machine disclosing the general arrangement of the parts.

Figure 2 is a side view of the rotating portion of the beater showing the form of the blades.

Figure 3 is a plan view with the cover removed.

Figure 4 is a perspective view of the rotor and frame portions as made when formed of sheet metal.

Figure 5 is a perspective view of the rotor showing the curvature of the blades.

A indicates a container, preferably formed from sheet metal and provided with a cover B, having an opening B′ at its centre. C indicates a frame, rectangular in shape, which may be made of a casting as illustrated in Figure 1, but which we prefer to make of sheet metal as illustrated in Figures 4 and 5, and which is provided with curved blades C′—C′, etc., which extend towards the vertically extending shaft D which is supported in the frame C as illustrated. These blades C′ are curved so that the ingredients being thrown against them are thrown upward in the container while the blades E′ throw the ingredients in a downward direction due to their incline and towards the centre of the container due to their curved form at the ends E^2—E^2, etc., as shown. The shaft D is round in cross section from its top down to the top of the rotor shaft at F and rests in a bearing F^2 formed in the frame C at F′, and is elliptical in cross section as illustrated at D in Figure 3, to fit the elliptical opening D′ of the shaft casing D^2, and the lower end of the shaft D is made circular and of reduced diameter at F^3 to fit a bearing formed in the frame C at F^4. The shaft D is freely removable from the casing D^2 and frame C. The frame C is removably supported in the receptacle A and is prevented from rotational movement by a flange G placed at each side of its edges G^2, said flanges being secured to the inner sides of the receptacle by suitable means. The shaft D is provided with a shoulder at the point where its diameter is reduced, indicated by F^5, which forms an end bearing for the shaft and prevents it from projecting through the frame C and contacting with the bottom of the receptacle A, the frame C also being provided with feet C^3—C^3 respectively to hold the lower end of the frame from contact with the bottom of the receptacle. H—H, etc., indicate rivets by means of which the sheet metal parts are held together. I indicates a crank for turning the rotor.

By turning the crank in the direction indicated by the arrow, the ingredients placed in the receptacle are caused to flow downward and against the blades C′—C′ and deflected in an upward direction by them, thus causing a churning action which rapidly mixes the fluids treated.

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 a receptacle, stationary inclined and curved blades mounted in said receptacle, a rotor having curved and inclined blades also mounted in said receptacle and cooperating with said stationary blades, the curvature and inclination of said stationary blades and said rotor blades being such that material being mixed is propelled downwardly and centrally of the receptacle, the end portions of both stationary and rotor blades having substantially the same shape and form.

2. In combination with a mixing machine

having a cylindrical receptacle with a flange secured longitudinal thereof on opposite sides therein; of a rectangular frame removably supported by said flanges, inwardly extending blades connected to the side of the frame adjacent the flanges, and bearing on the other pair of opposite sides of said frame, a drive shaft supported in said bearings, and a rotor having outwardly extending blades supported on a hollow central casing mounted on said shaft, said shaft and rotor slidingly interlocking for rotation one with the other, all of said blades being curved, inclined and spaced to propel the mixture downwardly and centrally of said receptacle, and the ends portions of all of the blades being substantially the same shape and form.

Signed at New York city, in the county of New York and State of New York, this 10th day of June, A. D. 1920.

HENRY TRUST.
FRANK M. ASHLEY.