

F. MONROE.
MIXING MACHINE.
APPLICATION FILED JUNE 17, 1919.

1,365,529.

Patented Jan. 11, 1921.

3 SHEETS—SHEET 1.

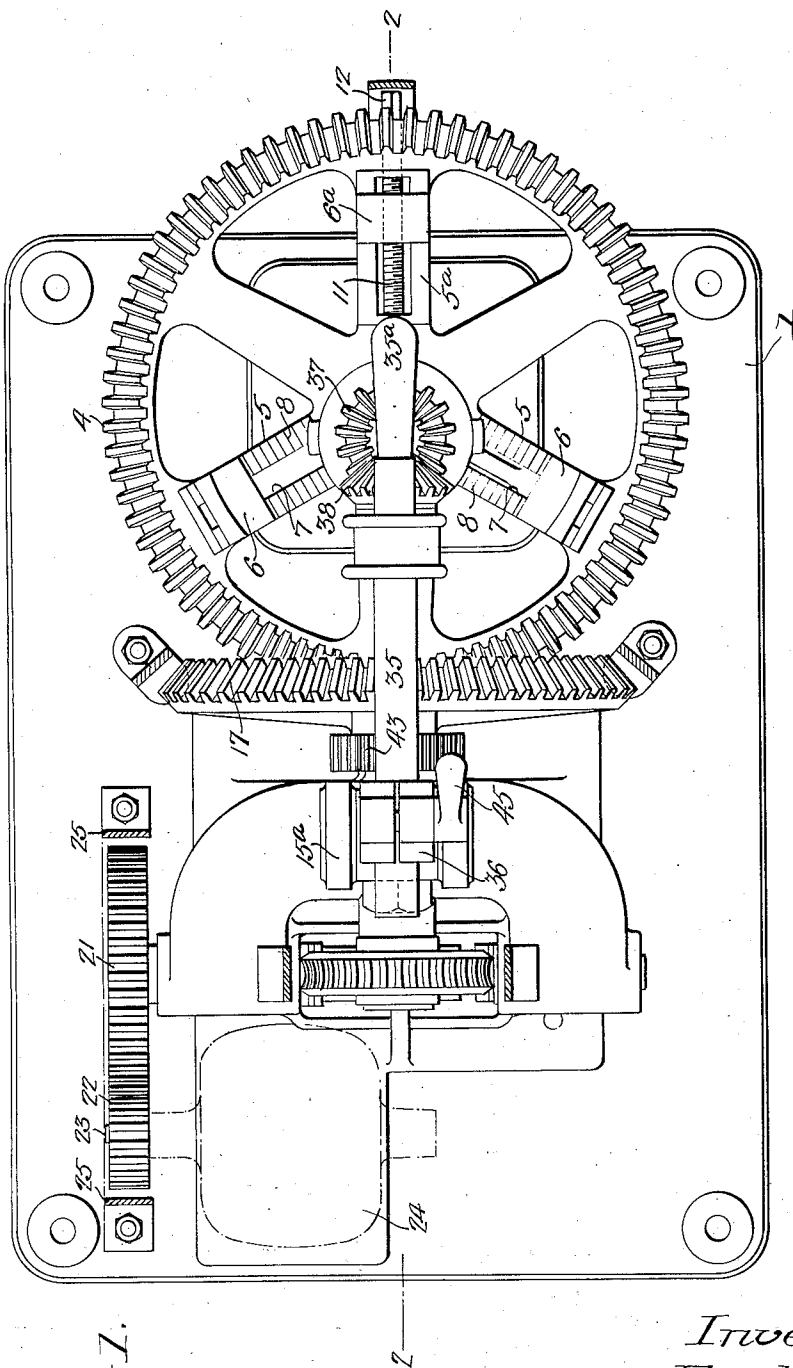


Fig. 1.

Inventor,
Frank Monroe,
by his Attorneys,
Hawson & Hawson

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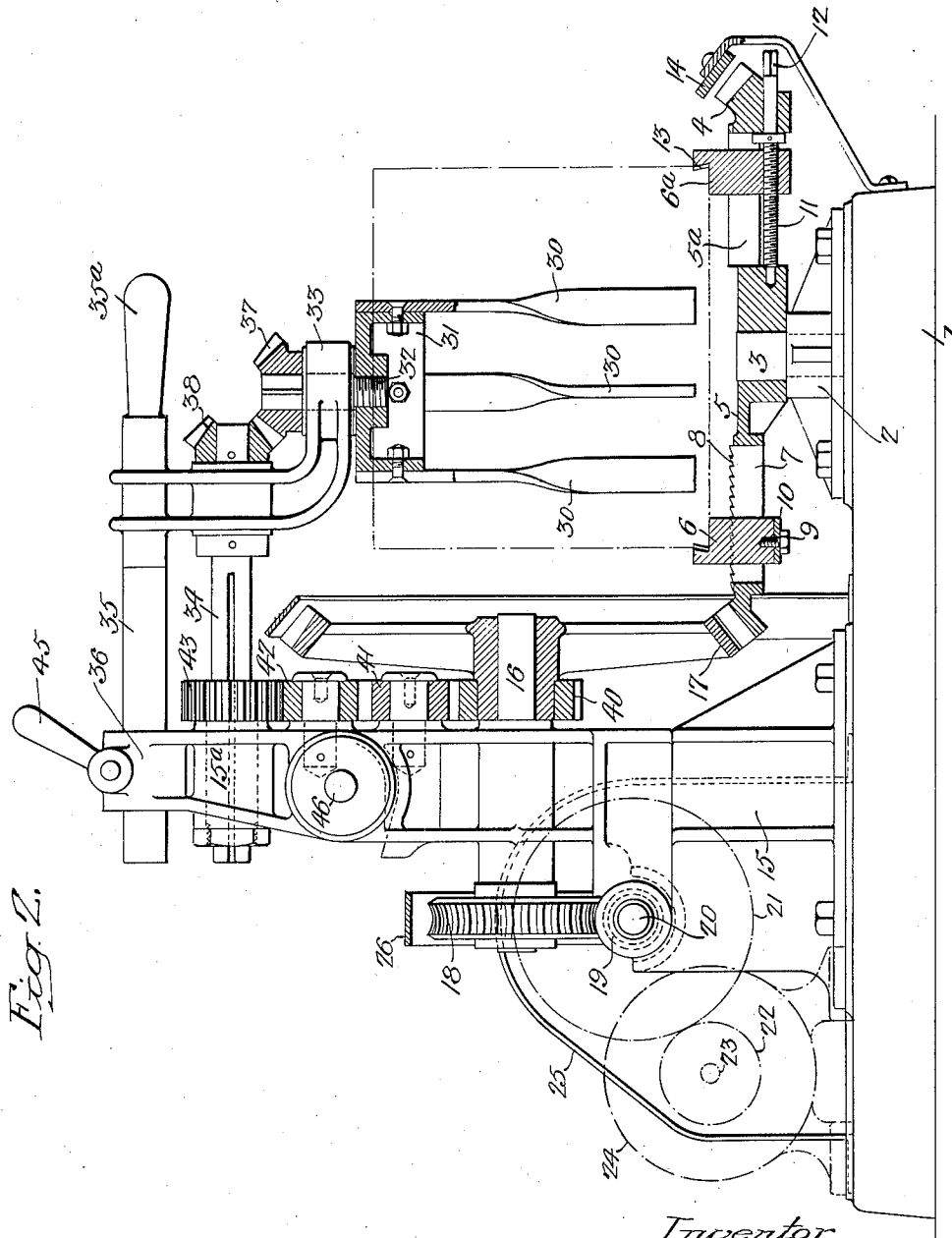


Fig. 2.

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Frank Monroe.
By his Attorneys,
Howson & Howson

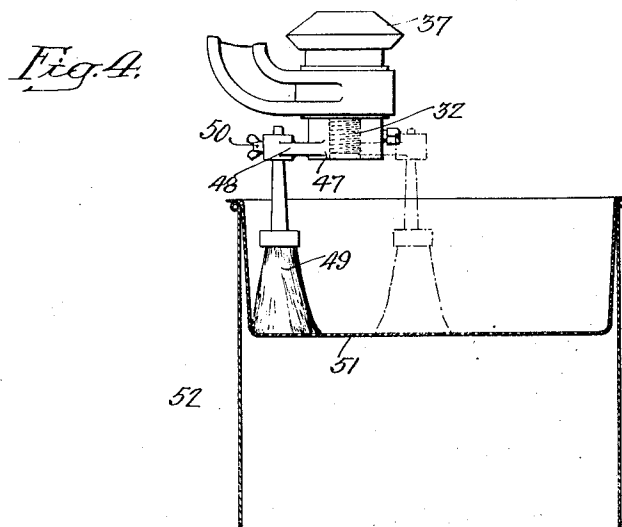
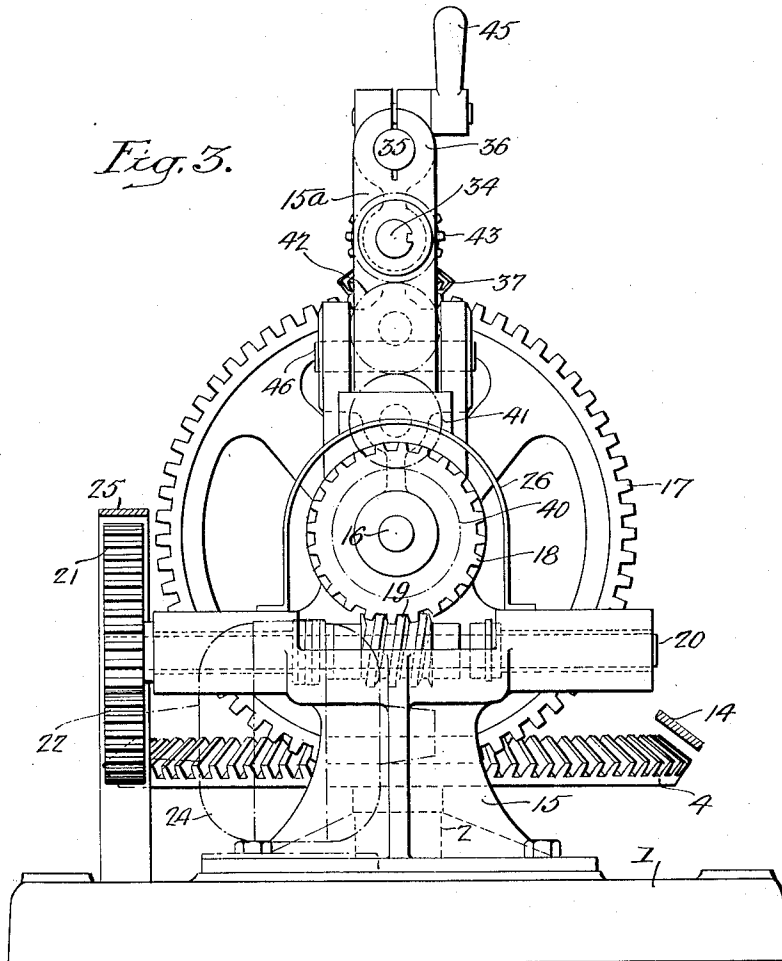
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3 SHEETS—SHEET 3.



Inventor
Frank Monroe
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Howson & Howson

UNITED STATES PATENT OFFICE.

FRANK MONROE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO MONROE, LEDERER & TAUSSIG, OF PHILADELPHIA, PENNSYLVANIA, A FIRM COMPRISING FRANK MONROE, NESSIE LEDERER, AND JULIUS TAUSSIG.

MIXING-MACHINE.

1,365,529.

Specification of Letters Patent.

Patented Jan. 11, 1921.

Application filed June 17, 1919. Serial No. 304,744.

To all whom it may concern:

Be it known that I, FRANK MONROE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Mixing-Machines, of which the following is a specification.

My invention relates to means, preferably power-driven, for mixing or stirring semiplastic, viscous, liquid, or other materials, and while my improved structure may be employed for many purposes, it has been particularly designed for use in the mixing or stirring of paint, and such mixing or stirring may be carried out in the can which the painter will use.

My invention includes means whereby I provide an adjustable can support for various sized cans, means whereby the mixing or stirring members are adjustable with respect to the can, a pivotal mounting for the bracket or support carrying the mixing or stirring members, means for driving the can in one direction and the mixing elements in another direction, and other features of my invention more particularly described hereinafter, reference being had to the accompanying drawings in which:

Figure 1, is a plan view of one form of mixing or stirring structure embodying my invention.

Fig. 2, is a sectional elevation on the line II—II, Fig. 1.

Fig. 3 is an end elevation, and

Fig. 4, illustrates a detail of my invention.

The machine forming the subject of my invention may include, a base 1, having a step bearing 2, carrying a stub-shaft or spindle 3 for the reception of a bevel gear wheel 4, turning thereon, or if desired, the stub-shaft, or spindle 3 may be secured to the gear wheel and rotate in such step bearing; the latter being provided with means preventing removal therefrom.

This bevel gear wheel serves as a support for a can or receptacle, shown by dotted lines, in which material to be mixed or stirred may be contained, and in order that such support may be adjustable, certain of the spokes 5 of the bevel gear wheel 4 are

provided with radially adjustable dogs or stops 6, slidably mounted in slots 7 of the spokes. A plurality of these dogs may have notched or serrated shoulders adapted to engage teeth 8 formed on the upper sides of the spokes and flanking the slots; said dogs being retained in their adjusted positions by bolts or screws 9 supporting plates 10, which engage the under side of the spokes at each side of the slots in the same.

Another dog, 6^a, may be arranged for adjustment back and forth along the slot of the spoke 5^a in which it is mounted by means of a screw 11 having a polygonal head 12 whereby it may be readily turned by a wrench or other suitable means to move said dog toward and from a can or other receptacle mounted on the bevel gear wheel 4. If desired, the engaging lips of the dogs may be slightly undercut as indicated at 13, so as to prevent vertical movement of the receptacle as well as any movement tending to displace the same laterally.

Preferably, the axis of rotation of the receptacle should be the same as that of the gear wheel, and care should be taken in adjusting the dogs 6 and 6^a of the gear wheel to see that such receptacle is centrally mounted with respect to the axis of rotation. Preferably, the base 1 carries a suitable guard 14 for the gear wheel 4 so that the latter will be protected and prevented from coming into contact with the operator or his clothing.

Adjacent the step bearing and, if desired, directly in line with the same on the base, is a pedestal support 15 for suitable gearing whereby the receptacle and the mixing device may be moved. Journaled in this support is a shaft 16 carrying a bevel gear wheel 17 which meshes with the bevel gear wheel 4 driving the mixing receptacle. At the opposite end of this shaft 16 is a worm wheel 18, driven by a worm 19, on a shaft 20; the opposite end of said shaft 20 carrying a gear wheel 21, driven from a pinion 22, on a motor shaft 23; a motor being indicated diagrammatically at 24. Preferably, the gear wheels 21 and 22 are covered by a

housing or guard 25, and the worm wheel is preferably covered or inclosed by a housing or guard 26.

As indicated in the drawings, the gear wheel 4 supporting the receptacle may be slightly larger than the gear wheel 17 so that movement of the receptacle will be at a speed slightly less than that of the gear wheel 17.

The stirring device comprises a plurality of arms 30, carried by a head 31, supported by a spindle or shaft 32, mounted above the receptacle and supported by a bracket 33. This bracket in turn carries a shaft 34, suitably journaled in an upper pivotally connected portion 15^a of the standard or pedestal support 15, and additionally the bracket carries a guide rod 35 adapted to a slideway 36 at the top of said pivoted portion 15^a.

The spindle 32, and the shaft 34, carry gear wheel 37 and 38, respectively, whereby motion of said shaft 34 may be imparted to the spindle 32, and thence to the mixing arms 30. The shaft 34 may be driven by a train of gears from the shaft 17; such train of gears being indicated at 40, 41, 42 and 43, and so arranged that the direction of movement of the arms 30 will be opposite to the direction of rotation of any receptacle carried by the gear wheel 4. The gear 40 is preferably fixed to the hub of the gear wheel 17.

By providing an adjustable mounting or support for the bevel gear wheels 37 and 38, the arms 30 may be disposed in proper position with reference to any size receptacle supported by the gear wheel 4; the position of said arms with respect to such receptacle being preferably close to one side of the same so that proper mixing of the contents of the receptacle may be effected.

The guide rod 35 adapted to the slideway 36, is provided with a cam or screw locking lever 45 so that when the desired adjustment of the mixing or stirring arms is effected, the parts may be locked in the adjusted position.

The portion 15^a supporting the shaft 34 and rod 35 is pivotally connected at 46 to the pedestal support or standard 15, so that the mixing or stirring arms may be readily lifted from the mixing receptacle, and the rod 35 may have a hand-hold 35^a to assist the operation. Generally the weight of the upper structure will be sufficient to hold the mixing arms in proper position but, if desired, means may be provided to lock the upper pivoted portion 15^a to the pedestal 15.

When employed by a painter, for whose use my improved mixing device has been particularly devised or designed, it frequently becomes necessary to screen out or separate the liquid portion of paint from the so-called paint skins. For this purpose, the usual practice is to place a sieve or colander

in the top of the receptacle and pass a brush around the same.

My improved mixing device is quite well adapted for brushing these paint skins, and in Fig. 4, I have shown an arrangement wherein the spindle or shaft 32 carries a collar 47 having an arm 48 to which a brush 49 may be secured by a set screw 50, and such brush is set preferably adjacent one wall of a sieve 51 in which the paint and paint skins are disposed and which may be set in a suitable receptacle 52 to receive the paint brushed loose from such skins.

I claim:

1. In a mixing machine, the combination with a revoluble receptacle support, of a rotatable mixing member, an upright frame, a shaft mounted in said frame, a guide bar mounted in said frame and having at the outer end thereof a depending member forming a support for the mixing member and for the outer end of the said shaft, said shaft and bar being slidable longitudinally in said frame to permit adjustment of the mixing member laterally of the receptacle support, a driving device, and elements operably connecting the said shaft with the driving device and with the mixing member.

2. In a mixing machine, the combination with a revoluble receptacle support, of a rotatable mixing member, an upright frame, the upper portion of said frame being pivoted to the main portion, a shaft mounted in said upper portion, a guide bar mounted in said upper portion and having at the outer end thereof a depending member forming a support for the mixing member and for the outer end of said shaft, said shaft and bar being slidable longitudinally in said upper portion to permit adjustment of the mixing member laterally of the receptacle support, elements operably connecting the said shaft with the mixing member, a driving element, elements including a gear wheel keyed to said shaft so as to permit relative movement between the gear wheel and the shaft longitudinally of the shaft, while preventing relative rotational movement of the gear and shaft, and means for oscillating the upper portion of the frame around its pivot so as to elevate the mixing member above the receptacle support and at the same time disconnect the said mixing member from the actuating device.

3. In a mixing machine, the combination with a revoluble receptacle support having a plurality of radial ways, of clamping elements adapted to travel in said ways, a plurality of said ways being provided with teeth and the associated clamping elements having notches corresponding with said teeth, and one of said ways being plain to permit the associated clamping element to slide freely therein, a screw mounted for rotation in said support parallel to the said

plain way and operably connected with the
clamping element whereby the latter may
be shifted back and forth in the said way,
means carried by the said notched elements
5 for securing the latter to the support with
the said teeth occupying the notches, a rota-
table mixing member for disposal within a
receptacle secured to the support by said
clamping elements, an actuating device, ele-
ments operably connecting the receptacle 10
support with the actuating device, and ele-
ments operably connecting said mixing
member with the actuating device.

FRANK MONROE.