

Feb. 13, 1940.

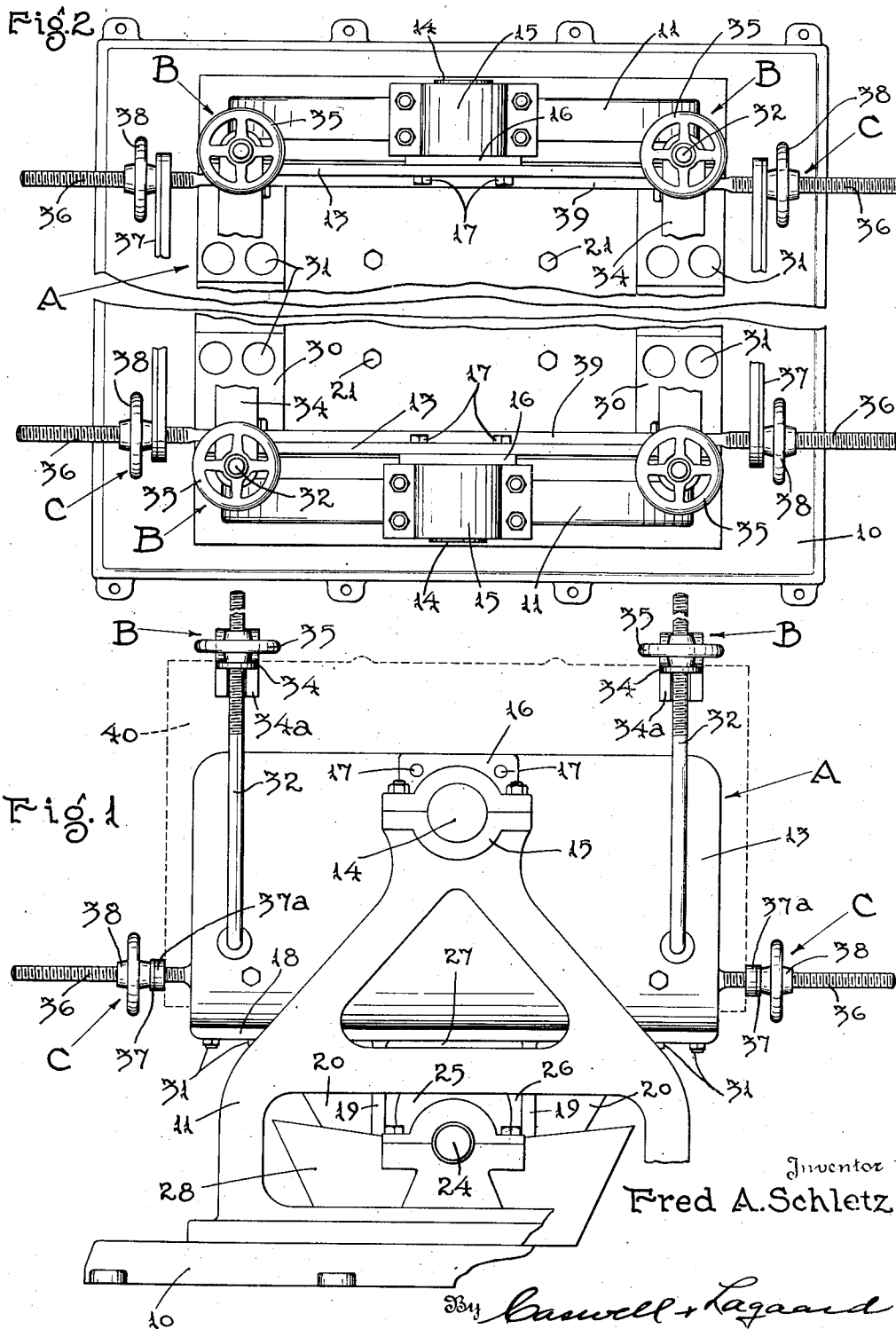
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2,190,487

MIXING MACHINE

Filed Feb. 18, 1938

2 Sheets-Sheet 1



UNITED STATES PATENT OFFICE

2,190,487

MIXING MACHINE

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Application February 18, 1938, Serial No. 191,245

8 Claims. (Cl. 259—75)

My invention relates to improvements in mixing machines and has for an object thereof to provide a simple and durable heavy duty device of the present nature which will function in a highly efficient manner to mix substances such as paint and the like while contained in closed barrels or other relatively large receptacles.

Another object of the invention is to supply a heavy duty mixer having a cradle equipped with clamping means for conveniently receiving barrels and the like of various forms and firmly holding them in place within the cradle.

A further object of the invention is to provide means disposed beneath the cradle and having parts underslung therefrom for imparting a rocking movement to said cradle.

An additional feature of the invention resides in constructing the cradle from sheet material and in reinforcing the same by means of barrel chocks and/or the cradle rocking means.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawings:

Fig. 1 is a side elevational view of a mixer embodying my invention; Fig. 2 is a fragmentary plan view thereof; Fig. 3 is an end elevational view of the same, portions of the structure being broken away to reveal parts that otherwise would be concealed, and Fig. 4 is a central sectional view taken on the line 4—4 of Fig. 3.

Referring to the drawings, wherein similar parts are designated by similar reference characters throughout the several views, it will be observed that the illustrated embodiment of my invention includes a frame consisting of a base 10 to which a pair of standards 11 are secured. Supported upon said standards 11 and disposed between them is a cradle indicated in its entirety by the reference character A. This cradle A is channel-like in form and preferably bent up from sheet metal to provide a web 12 and upstanding side flanges 13. Trunnions 14 issuing from the side flanges 13, are rockably mounted in bearings 15 on the standards 11. These trunnions are formed with attaching plates 16 at their inner ends and said plates are secured to the side flanges 13 of the cradle by means of bolts 17.

Cradle rocking means are interposed between the base 10 and the web 12 of the cradle A, said means being, in part, underslung from said web 12 and, in part, mounted upon said base 10. Included in said cradle rocking means is a plate

18 having spaced lever arms 19 depending therefrom and braced with respect to said plate by means of reinforcing ribs 20. This plate 18 is substantially coextensive with the web 12 and is secured thereto by means of bolts 21. Cast integrally with the base 10 are two bearing posts 22 in the bearings 23 of which a drive shaft 24 is journaled. On this drive shaft 24 is an eccentric 25 and fitting this said eccentric 25 is a block 26 which slides in the way 27 formed between the two lever arms 19. A pan 28 rests on the base 18, each side of said pan occupying a position between one of the bearing posts 22 and the adjacent edges of the depending lever arms 19. This pan 28 freely receives said lever arms 19 and is adapted to contain oil into which said arms dip, the splash of the oil by said arms serving to lubricate the bearing surfaces of the eccentric 25 and the eccentric block 26 and the bearing surfaces of said eccentric block and the lever arms 19. The bearings 23 on the posts 22 have bearing caps 23a, which admit of the application of the power shaft 24 to said bearings 23 after the oil pan is placed in position between said bearing posts 22. Any suitable means may be provided for rotating the power shaft 24, it being my preference to mount a suitable power unit on the base 10 and connect it with a sprocket 29 or the like on said power shaft.

Disposed within the cradle A and upon the web 12 thereof are a pair of barrel chocks 30. The bases of these chocks conform with and abut the upper surface of the web 12 and the ends of said chocks conform with and abut the adjacent surface portions of the side flanges 13 of the cradle. Said chocks are bolted to the web 12 by means of bolts 31, which preferably extend through the plate 18 of the driving means and rigidly clamp the web 12 of the cradle between said plate 18 and the chocks 30. One chock 30 is disposed at one end of the cradle A and the other chock at the other end of said cradle. Said chocks together receive a barrel or the like on its side, the length of the cradle being such that the end portions of the barrel overreach the ends of the cradle.

The cradle A is supplied with side clamps B, one for each chock 30. Each side clamp includes a pair of rods 32, each rod being pivoted to one of the cradle flanges 13 near the end of the cradle occupied by its respective chock. Slidably mounted at its ends on said rods is a yoke 34, said rods being threaded at their extremities and supplied with hand nuts 35 cooperating with the yoke to bring it to bear upon the upper side of a

barrel and clamp the barrel down against said chock.

The cradle A is also supplied with end clamps C, each of which includes a pair of threaded studs 36, each stud issuing from the end of one of the cradle flanges 13. A clamp bar 37 is slidably mounted at its ends on the studs 36 and hand nuts 38, threaded on said studs, cooperate with said clamp bar 37 to releasably clamp the same against its respective end of a barrel supported in the cradle A. At either side of said cradle A is a strap 39 which is bolted or otherwise suitably secured to its corresponding cradle flange 13. Each strap 39 is preferably integral with the opposed clamp studs 36 at the same side of the cradle and constitutes an effective tie between said studs, whereby the side flanges 13 of the cradle are relieved from the strains incident to the binding of the clamp bars 37 against the ends of a barrel.

In preparing the machine for the reception of a barrel containing material to be mixed, the side clamps B are swung down into the position shown in Fig. 4, wherein the rods 32 rest upon the hand nuts 38 of the end clamps C, said hand nuts 38, in such case, being retracted to permit the corresponding retraction of the clamp bars 37. A barrel 40, such as that indicated in dotted lines, is hoisted over the cradle A and lowered into position upon the chocks 30. Thereafter, the side clamps B are swung upwardly into the position, as shown in Fig. 1 and Fig. 3, and the hand nuts 35 thereon are turned down to tighten the yoke 34 against the upper side of the barrel and thereby rigidly secure it in position upon the chocks 30. Then, the hand nuts 38 of the end clamps C are tightened to bring the clamp bars 37 firmly against the ends of the barrel to prevent endwise movement of the barrel in the cradle A. With a barrel firmly secured within the cradle A, power is applied to the shaft 24 for rotating the same. As said shaft rotates, the eccentric 25, through the medium of the eccentric block 26, imparts alternate thrusts upon the lever arms 19 of the cradle A, thus causing said cradle to be rocked back and forth. This oscillation of the barrel agitates the contents thereof and thoroughly mixes the same.

The fitting of the chocks 30 to the cradle A and the clamping thereof to the web 12 of said cradle reinforces said web and so also does the clamping of the plate 12 to said web. This reinforcement of the cradle A by means of the chocks 30 and/or plate 12 permits the use of relatively light material in the construction of said cradle.

The chocks 30 are of wood or the like, while the yokes 34 and clamp bars 37 are respectively supplied with liners 34a, 37a of similar material. With said parts thus constructed, a barrel is noiselessly held within the container and is electrically insulated, this being an important feature especially in the event of the application to the machine of metallic barrels whose contents are of an explosive character.

The long leverage employed in the application of rocking forces to the cradle results in a highly efficient machine of quiet operation and long life.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In a machine for mixing materials in closed containers such as barrels, a frame, a channel-

like cradle rockably mounted in the frame, said cradle having a bottom web and upright side flanges, means for rocking the cradle, said cradle being adapted to receive a barrel in sidewise disposition relative to said bottom web and side flanges, barrel chocks secured to said web, means for clamping a barrel against said chocks, end clamps, one at each extremity of the cradle, each end clamp including a pair of studs, each stud issuing from the end of one of the cradle flanges, a clamp bar slidably mounted at its ends on said studs, and nuts threaded on said studs and cooperating with said clamp bar for releasable clamping the same against the corresponding end of a barrel supported in the cradle, a pair of straps, one at either side of the cradle, each strap being secured to its corresponding cradle flange and comprising a tie between the opposed end clamp studs at the same side of said cradle.

2. In a machine for mixing materials in closed receptacles such as barrels, a frame, a channel-like cradle rockably mounted in the frame, said cradle being of sheet metal and consisting of a bottom web and upright side flanges, means for rocking the cradle, said cradle being adapted to receive a barrel in sidewise disposition relative to said bottom web and side flanges, a pair of barrel chocks secured to said web, one adjacent each end thereof, side clamps, one associated with each chock, each side clamp including a pair of rods, each rod being pivoted to one of the cradle flanges near the end of the cradle occupied by its respective chock, a yoke slidably mounted at its ends on said rods, and nuts threaded on said rods and cooperating with said yoke for releasably clamping the same against the upper side of a barrel resting on said chock, end clamps, one at each extremity of the cradle, each end clamp including a pair of studs, each stud issuing from the end of one of the cradle flanges, a clamp bar slidably mounted at its ends on said studs, and nuts threaded on said studs and cooperating with said clamp bar for releasable clamping the same against the corresponding end of a barrel supported in the cradle.

3. In a heavy-duty machine for mixing materials in closed and relatively large receptacles such as barrels, a frame including a base and standards thereon, a channel-like cradle of sheet metal disposed between said standards and consisting of a bottom web and upright side flanges, trunnions issuing from the upper portions of said flanges and mounted in said standards, cradle rocking means including a plate substantially co-extensive with said web and secured thereto at the underside thereof, said plate serving to reinforce said web, spaced lever arms depending from said plate and providing a way therebetween, an eccentric block slidable in said way, a drive shaft journaled in said frame and having an eccentric thereon fitted in said eccentric block, said cradle being adapted to receive a barrel in sidewise disposition relative to said bottom web and side flanges with center of the barrel beneath the axis of said trunnions and means for clamping in place a barrel thus disposed within said cradle.

4. In a machine for mixing materials in closed receptacles such as barrels, a frame, a channel-like cradle of sheet metal rockably hung in the frame and consisting of a bottom web and upright side flanges, said cradle being adapted to receive a barrel in sidewise disposition relative to said bottom web and side flanges and adapted to be rocked in a direction lengthwise of the

barrel, means for rocking said cradle, and side clamps and end clamps for a barrel received within said cradle, said clamps serving firmly to secure such barrel relative to said cradle.

- 5 5. In a machine for mixing materials in closed receptacles such as barrels, a frame, a cradle consisting of a bottom web and upright side flanges and being rockably hung from said flanges in said frame, said cradle being adapted to receive a barrel in sidewise disposition relative to
10 said bottom web and side flanges and adapted to be rocked in a direction lengthwise of the barrel, means for rocking said cradle, side clamps and end clamps for a barrel received within said
15 cradle, said clamps being mounted on the side flanges of the cradle and serving firmly to secure such barrel within said cradle.

6. In a machine for mixing materials in closed receptacles such as barrels, a frame, a channel-like cradle of sheet metal consisting of a bottom
20 web and upright side flanges, trunnions issuing from said flanges and mounted in said frame, cradle rocking means including a plate secured to said web, said cradle being adapted to receive
25 a barrel in sidewise disposition relative to said bottom web and side flanges, a pair of barrel chocks secured to said web, one adjacent each end thereof, said chocks together with said plate serving to reinforce the web of the cradle, and
30 means for clamping a barrel in place within said cradle and upon said chocks, the barrel engaging portions of said clamping means and chocks having electrical insulating properties.

7. In a machine for mixing materials in closed

receptacles such as barrels, a frame, a channel-like cradle of sheet metal consisting of a bottom web and upright side flanges, trunnions issuing from said flanges and mounted in said frame, cradle rocking means including a plate secured
5 to said web, said cradle being adapted to receive a barrel in sidewise disposition relative to said bottom web and side flanges, a pair of barrel chocks secured to said web, one adjacent each end thereof, said chocks together with said plate
10 serving to reinforce the web of the cradle, and means for clamping a barrel in place within said cradle and upon said chocks, the barrel engaging portions of said clamping means and chocks having sound deadening and electrical insulating
15 properties.

8. In a machine for mixing materials in closed receptacles such as barrels, a frame having a base and standards thereon, a channel-like cradle of sheet metal consisting of a bottom web
20 and upright side flanges, trunnions issuing from said flanges and mounted in said standards, cradle rocking means including a plate secured to said web at the underside thereof, said cradle being adapted to receive a barrel in sidewise dis-
25 position relative to said bottom web and side flanges, a pair of barrel chocks secured to said web, one adjacent each end thereof, said chocks serving to reinforce the flanges of the cradle and, together with said plate, to reinforce the web of
30 the cradle, and means for clamping a barrel in place within said cradle and upon said chocks.

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