Nov. 17, 1931. E. SKILLMAN 1,831,888

PAINT CONDITIONING MACHINE

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FIG. 1.

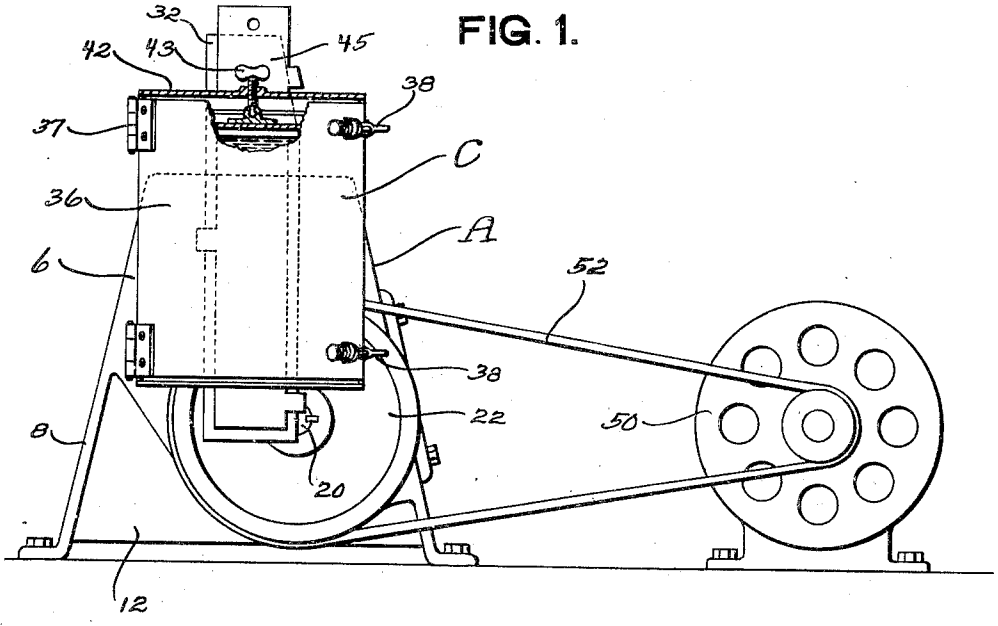


FIG. 2.

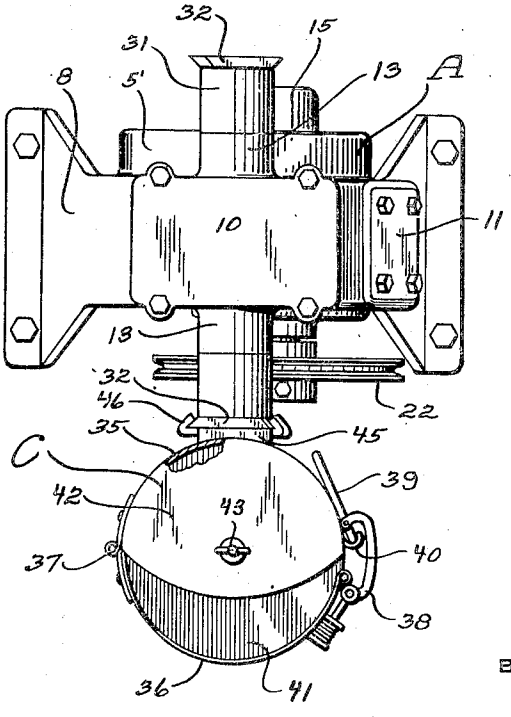
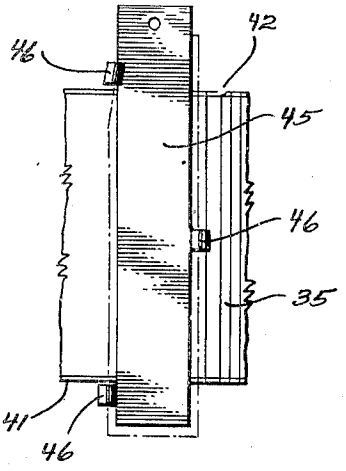


FIG. 7.



INVENTOR.
Edward Skillman

BY Lancaster, Allwine & Rommel
ATTORNEYS.

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FIG. 3.

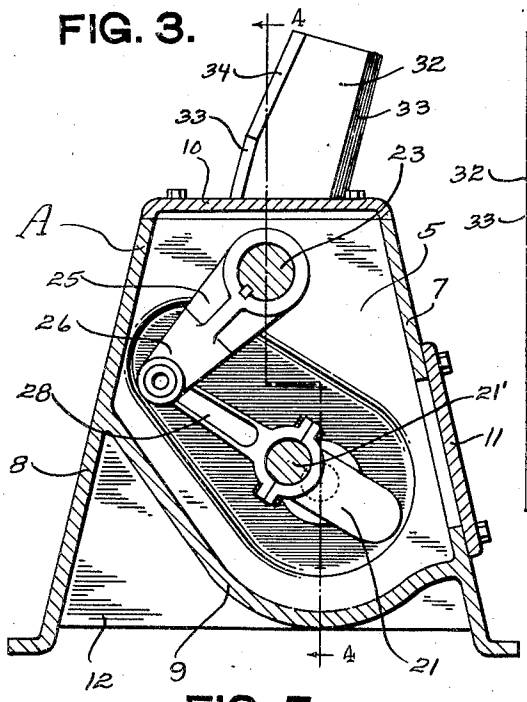


FIG. 4.

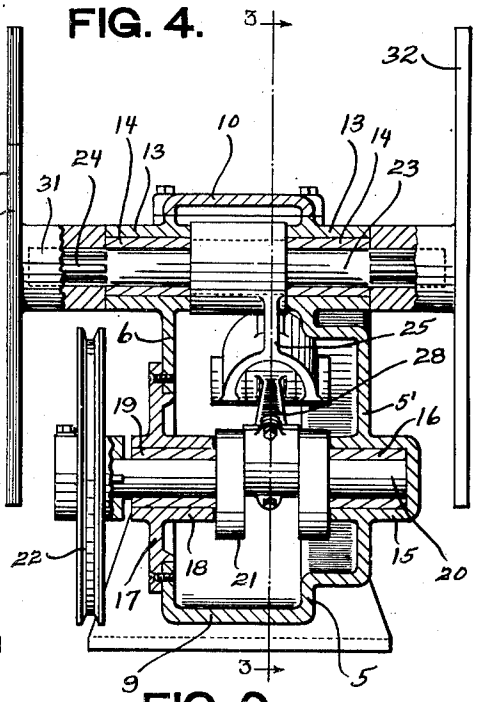


FIG. 5.

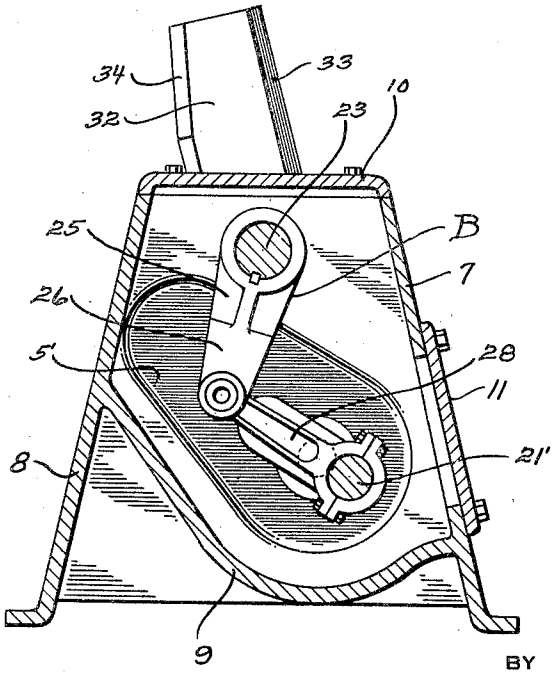
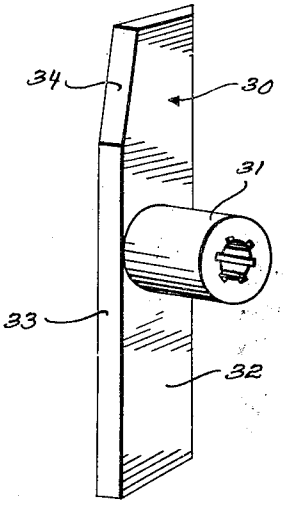


FIG. 6.



INVENTOR.

Edward Skillman

BY Lancaster, Allwine & Rommel

ATTORNEYS.

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UNITED STATES PATENT OFFICE

EDWARD SKILLMAN, OF BARTLESVILLE, OKLAHOMA, ASSIGNOR TO THE GLIDDEN COMPANY, OF CLEVELAND, OHIO

PAINT CONDITIONING MACHINE

Application filed March 16, 1931. Serial No. 523,111.

The present invention relates to a machine or apparatus for conditioning materials for use and relates more specifically to a machine particularly well adapted for reconditioning prepared paint and other liquids of such ingredients as will separate or deposit when left in a condition at rest.

Prepared paint as now generally sold in closed containers such as cans, buckets and the like of various sizes, require thorough stirring of the paint in order to recondition the paint for use. Owing to the fact that in many instances, long periods of time elapse between the time the paint is made and when ultimately opened for use, the pigment settles out of the oil or other liquid of the mixture and requires considerable time and effort upon the part of the consumer to recondition the paint for use.

It is therefore a primary object of the present invention to provide a paint conditioning machine whereby prepared paint may be reconditioned for use without requiring the container to be opened.

A further object of the invention is to provide a power operated machine whereby paint, sold in containers of various sizes, may be quickly and efficiently prepared for use.

A further object is to provide a paint conditioning machine whereby containers of prepared paint may be oscillated in a manner for thoroughly mixing the paint before opening the container.

A further object resides in the novel arrangement whereby one or more containers of different sizes may be operated upon at the same time and without damage to the containers.

A still further object is to provide a machine of this character which will be extremely compact and embodying features of construction whereby the paint may be violently agitated without causing excessive vibration to the machine.

Other objects and advantages of the invention will be apparent during the course of the following detailed description, taken in connection with the accompanying drawings forming a part of this specification and in which drawings:

Figure 1 is a view in side elevation of the machine and showing an electric motor connected for operating the machine.

Figure 2 is a top plan view of the machine and showing a holder applied to one end of the rock shaft.

Figure 3 is a vertical section on the line 3—3 of Figure 4.

Figure 4 is a vertical section on the line 4—4 of Figure 3.

Figure 5 is a vertical section similar to Figure 3 but showing the rock shaft in an opposite limit of movement from that shown in Figure 3.

Figure 6 is a perspective view of one of the chucks for detachably receiving the holders.

Figure 7 is a fragmentary side view of one of the holders and showing the coupling plate for releasably connecting the holders to the chucks.

In the drawings, and wherein similar reference characters designate corresponding parts thruout the several views the improved machine comprises a casing or housing A embodying parallel side walls 5 and 6, upwardly converging end walls 7 and 8 and a bottom wall 9 providing a closed chamber for enclosing the oscillating mechanism B. The lower edges of the side walls 5 and 6 may conform to the shape of the bottom wall 9 which as clearly shown in Figures 3 and 4 is downwardly curved from the lower portion of the end wall 7 and extends upwardly at an angle to about midway the height of the end wall 8. The upper end of the casing may be closed by a removable cover plate 10 and the end wall 7 may be provided adjacent its lower end with an opening closed by a removable plate 11. The lower ends of the end walls 7 and 8 may be outturned to provide suitable base flanges thru which fastening elements may be extended for mounting the machine. A suitable reinforcing web as at 12 may extend beneath the central portion of the bottom wall 9 and connect the lower portions of the end walls 7 and 8. The side walls 5 and 6 are provided adjacent their upper ends with axially aligning bearing sleeves 13 which project outwardly be-

yond the walls and each of which is provided with a suitable bushing 14. The side wall 5 is formed with an outwardly offset portion 5′ which is upwardly inclined toward the end wall 8 and is provided adjacent its lower end with a bearing sleeve 15 being closed at its outer end and receiving a suitable bushing 16. The side wall 6 is provided with an opening closed by a removable plate 17 provided with a bearing sleeve 18 for axially aligning with the bearing sleeve 15. The sleeve 18 may be provided with a suitable bushing 19.

The oscillating mechanism B embodies a crank shaft 20 journaled at its ends in the bearings 15 and 19 and provided intermediate its ends with a counter-balanced crank 21 arranged between the inner ends of the bearings. The projecting end of the shaft 20 which extends thru the bearing 19 has mounted thereon a suitable belt wheel 22 which may either be of the grooved type as shown for receiving a V belt or may have a flat belt base for receiving a flat belt.

Oscillatively journaled in the bearings 14 is a rock shaft 23 having splined ends 24 projecting beyond the bearing sleeves 13. This rock shaft 23 as will be observed is mounted in parallel relation to the crank shaft 20 in slightly spaced relation above the periphery of the belt wheel 22.

Keyed at one end upon the rock shaft 23 between the bearings 14 is a rocker arm 25 having a forked end 26. Connecting the crank pin 21′ of the crank 21 with the forked end 26 of the rocker arm 25 is a connecting rod 28 for imparting a rocking movement to the shaft 23 upon rotation of the crank shaft 20.

Secured to each end of the rock shaft 23 is a chuck 30 as shown in detail in Figure 6 and these chucks each embody a tubular hub portion 31 which is internally splined for receiving the splined rock shaft ends 24 whereby the chucks are held for rocking movement with the shaft 23. Carried by the outer end of each hub 31 is a chuck plate 32 having its side edges beveled toward the hub 31 as at 33 with the upper portion of one beveled side edge tapered as at 34. The hubs 31 project at a right angle from the plate 32 and are arranged midway between the ends of the plate.

Each of the chucks 30 is adapted to removably support a holder C adapted to receive the cans of paint to be mixed by the machine. The holders C include receptacles of cylindrical shape embodying a fixed semi-circular section 35 and a hinged section 36 hingedly connected along one side edge to the section 35 by suitable hinges 37. Carried by the free edge of the hinged section 36 is a pair of snap fasteners 38 each embodying a locking lever 39 for engagement with suitable hooks 40 carried by the section 36. Provided at the lower end of the holder section 35 is a disc-shaped bottom wall 41. Arranged at the upper end of the section 35 is a substantially semi-circular shaped top plate 42 carrying a clamping screw 43 adapted to be turned down into engagement with the top of the paint can arranged in the receptacle.

Secured in any preferred manner along the holder section 35 is a mounting plate 45 provided along its side edges with three coupling lugs 46 for engagement with the beveled side edges of the chuck plate 32. These coupling lugs 46 provide means whereby the holders may be detachably coupled to the chuck plate by merely slipping the lugs downwardly along the beveled side edges of the chuck plate.

The machine may be operated from any preferred source of power and in the example shown an electric motor 50 is provided and coupled to the belt wheel 22 by a V belt 52. Thus it will be seen that as the wheel 22 is rotated by the motor 50 that an oscillatory movement will be imparted to the shaft 23 and so oscillate the holders as to thoroughly mix the material in the containers clamped in the holders. It may here be well to note that the containers will be held in a substantially vertical position in the holders and will be oscillated about a horizontal axis at a right angle to the longitudinal or vertical axis of the container with the axis of oscillation substantially midway the height of the container. While only one of the holders C has been shown applied to one of the quick change chucks 30, the chucks are each of like construction permitting a holder to be applied to each end of the rock shaft 23 when such is desired. The driving connection between the shaft 20 and shaft 23 is preferably such as to cause the chucks to be rapidly oscillated thru an angle of 60° or less and thus the containers are held in a substantially vertical position while being oscillated.

The casing A provides a closed chamber in which lubricant may be retained for thoroughly oiling the oscillating mechanism B. It will also be noted that the specific formation of the casing provides an arrangement whereby relatively long bearings are provided for each of the shafts 20 and 23 and allows for the belt wheel 22 to be disposed between one of the chucks and the casing side wall 6 so that the belt 52 does not interfere with ready placing and removal of holders on the chucks.

From the foregoing it will be seen that a device has been provided whereby prepared paint as sold in containers may be quickly and easily reconditioned for use without opening the containers. It will also be apparent that a novel arrangement has been disclosed whereby containers of various sizes may be oscillated in a manner for violently agitating the contents thereof. It will further be noted

that a novel arrangement has been shown whereby the holders are rigidly held in a releasable position upon the chucks in a manner whereby the containers are held in a substantially vertical position and oscillated about an axis substantially midway the height of the container.

Changes in detail may be made to the form of invention herein shown and described, without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. In a paint conditioning machine the combination of a casing providing a closed chamber, a rock shaft journaled horizontally in the upper portion of the casing and having its ends projecting outwardly thru the casing, a rocker arm fixed on the rock shaft within the casing, a crank shaft journaled horizontally in the lower portion of the casing with its crank disposed in said chamber, a connecting rod connecting the rocker arm and crank of the crank shaft, drive means for rotating the crank shaft and imparting oscillatory movement to the rock shaft, a chuck fixed on each end of the rock shaft each embodying an elongated chuck plate having beveled side edges one of which has a tapered upper portion, said plate to be oscillated for slight degrees to each side from a vertical position, and a container holder having lugs for slidably engaging the beveled side edges of the chuck plate.

2. In a paint conditioning machine the combination of a casing, a rock shaft journaled horizontally in the upper portion of the casing with its ends projecting outwardly of the casing, means for imparting oscillatory movement to the shaft thru small degrees of oscillation, a chuck carried by each end of the shaft each embodying a hub portion fixed on the shaft and an elongated chuck plate extending at a right angle to the axis of the shaft in a substantially vertical position, and a holder embodying a mounting plate releasably engageable with either of said chuck plates, said holder to support a container with its longitudinal axis traversing the axis of the rock shaft.

3. In a paint conditioning machine the combination of a casing, a rock shaft journaled horizontally in the casing, means for oscillating the shaft, a chuck affixed to an end of the shaft embodying a chuck plate having beveled side edges one of which has a tapered upper portion, and a container holder embodying a mounting plate slidably interlocking with the beveled edges of the chuck plate and a cylindrical container embodying a hinged section and a fixed section with means for clamping the sections together.

4. In a paint conditioning machine, a horizontally mounted shaft, means for oscillating the shaft, a chuck embodying a hub affixed on the shaft and a chuck plate having beveled side edges, one of said beveled side edges having a tapered upper portion, and a holder comprising a mounting plate provided with lugs for sliding engagement with the beveled edges of the chuck plate, and a container receptacle embodying a semi-circular section fixed to the mounting plate, top and bottom walls, and a hinged section, and fastening means securing the free edge of the hinged section to the fixed section for clamping a container in the receptacle.

5. In a paint conditioner, an oscillatable chuck, and a holder for detachable connection with the chuck comprising a receptacle embodying a semi-circular wall section, top and bottom walls carried by the wall section, a semi-circular door hinged to the wall section, a snap fastener for connecting the free edge of the door section to the wall section, a clamping screw extending thru the top wall, and a mounting plate carried by the semi-circular shaped wall section for releasable connection with the chuck.

EDWARD SKILLMAN.