

Aug. 5, 1958

M. MERMELSTEIN

2,846,201

PAINT MIXING DEVICE

Filed Oct. 27, 1955

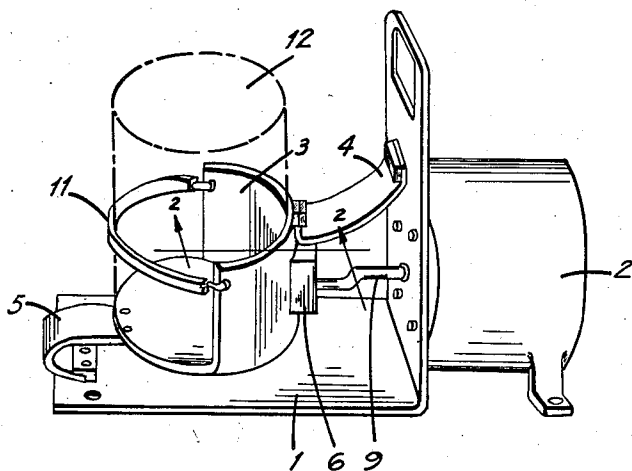


FIG 1

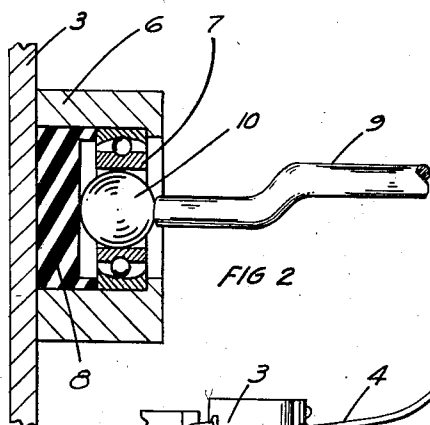


FIG 2

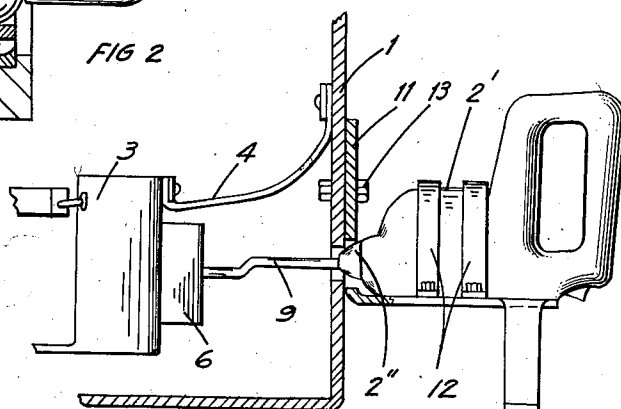


FIG 3

INVENTOR.
MORRIS MERMELSTEIN

BY

BY *Andros and Smith*
ATTORNEYS

1

2,846,201

PAINT MIXING DEVICE

Morris Mermelstein, Schodack Center, N. Y.

Application October 27, 1955, Serial No. 543,045

3 Claims. (Cl. 259—72)

This invention relates to paint mixing machines, more particularly to machines that mix paint by shaking a can of paint violently and rapidly.

Mixing devices presently in use are heavy machines. The can of paint is secured to a platform that is mounted so as to move in a circular path in the vertical plane of the machine to give, in effect, an up-and-down shaking of the can.

One object of the present invention is to provide a mixing machine which will shake a can of paint in a manner that there is no single plane of shaking and the paint will be more rapidly mixed while entraining less air.

A further object is to provide a single and inexpensive paint mixer especially one that would be desirable in the small shop.

A yet further object is to provide a paint mixer that may be powered by an electric hand drill such as is conventionally found in home workshops.

Other and further objects and advantages will appear from the following specification taken with the accompanying drawing in which like characters of reference designate similar parts in the several views, and in which:

Figure 1 is a perspective view of the device.

Figure 2 is a fragmentary detail section of the driving connection taken on line 2—2 of Figure 1.

Figure 3 is a fragmentary view, partly in section, of a device powered by a hand drill.

As will be seen from Figure 1 an L-shaped frame element, 1, carries an electric motor, 2, with its axis generally horizontal. A paint can holding socket, 3, is held in the L-shaped frame by spring elements 4 and 5, so that the element 3 may be said to float in frame element 1.

Mounted on the side of can holding element 3 is a cylindrical boss, 6.

Within boss 6, as seen in Figure 2, is a ball bearing, 7, backed up by an abutment element, 8, which may be of wood, plastic or rubber.

The motor, 2, is provided with a shaft, 9, having an offset end terminating in a ball, 10, of a size to snugly fit the interior of the inner race of ball bearing 7, forming a ball and socket, universal connection between the holding element 3 and shaft 9.

A strap, 11, is provided to hold a can, 12, in place. This strap may, of course, be adjustable and is preferably of strong elastic.

The spring elements 4 and 5 are preferably of fabric and rubber, similar to automobile tire material. Although they may be made of other suitable flexible spring-like material such as spring metal, in which last case they would need to be somewhat longer than the rubber springs.

In operation a can of paint is placed in the holder 3, bottom up and the motor is started. Ball 10 is driven crankwise. This circular motion of the ball 10 causes the holder 3 to move with what may be termed a free motion, since boss 6 is not at the center of gravity of the movable parts 3, 4, 5 and including the can of paint,

2

The can of paint will clearly be shaken in several different vertical planes. That is, it will rock and forth in a direction parallel to the plane through the motor 2 and holder 3, due to the up and down motion imparted to boss 6; it will vibrate in a plane at right angles to the motor shaft 9 due to the circular motion of boss 6; and it will rotate about its own axis due to the horizontal motion imparted to boss 6, which lies at the circumference of holder 3. The net result of these several motions is indeterminate and will, of course, vary widely from instant to instant, and will vary with changes of location of the center of gravity of the can of paint as the pigment becomes uniformly mixed with the vehicle.

The device of Figure 3 is the same as that of Figure 1 except that the motor 2' is a portable electric drill, and the shaft 9 is mounted in chuck 2' as though it were a drill. The portable electric drill 2' is fastened securely to L-shaped support 11' by any suitable means. The means shown in Figure 3 are straps 12. L-shaped support 11' is mounted on frame element 1 by suitable means which are shown in Figure 3 as bolts 13. If adjustment of the support 11' on frame element 1 is required, appropriate holes may be made to receive bolts 13.

In regard to the abutment element 8, it will be noted that during the free motion of the support 3 with its can of paint, when the device is in motion, the ball 10 will from time to time move axially of bearing 7. Abutment element 8 cushions the axial thrust of ball 10 so that the device will not be excessively noisy. Also the cushioning effect softens the hammering effect of the abutment axially on shaft 9.

It will thus be seen that the objects hereinbefore set forth may readily and efficiently be attained and, since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

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

1. A paint mixing device, comprising a frame, a socket adapted to receive a container of paint material to be mixed, means connected to said socket adapted to removably secure said container to said socket, flexible means connecting said socket to said frame at two points, a motor mounted on said frame having a shaft generally aligned normally to the vertical axis of said socket, said two points lying on opposite sides of said shaft on a line that is diagonal to the longitudinal axis of said shaft and to the vertical axis of said socket, a crank on the end of said shaft, and a ball and socket connection between said socket and said crank to impart universal vibratory movement to said socket through said flexible means.

2. A paint mixing device, comprising a frame, a socket adapted to receive a container of paint material to be mixed, means connected to said socket adapted to removably secure said container in said socket, flexible members, diagonally opposed with respect to the vertical axis of said socket, one of which connects the top and the other the bottom of said socket to said frame, floatingly carrying said socket in said frame for universal movement therein, and a single motor driven crank drivingly connected to said socket by a ball and socket joint.

3. A paint mixing device, comprising an L-shaped frame, a socket adapted to receive a container of paint

to be mixed, a strap connected to said socket adapted to removably secure said container therein, flexible means connecting said socket to said frame at points of connection that lie in a plane that is diagonal to the vertical axis of said socket, a motor mounted on said frame, a single crank connected to said motor and being drivingly connected to said socket by a ball and socket joint to impart universal movement to said socket through

said flexible means, and an abutment element in said socket joint to cushion the axial thrust of said ball.

References Cited in the file of this patent

UNITED STATES PATENTS

1,519,475	Altorfer	Dec. 16, 1924
1,997,400	Wysocki	Apr. 9, 1935
2,230,325	Haver	Feb. 4, 1941