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1,664,505

J. FRANZ

MACHINE FOR COATING OBJECTS

Filed Nov. 18, 1926

2 Sheets-Sheet 1

Fig. 1.

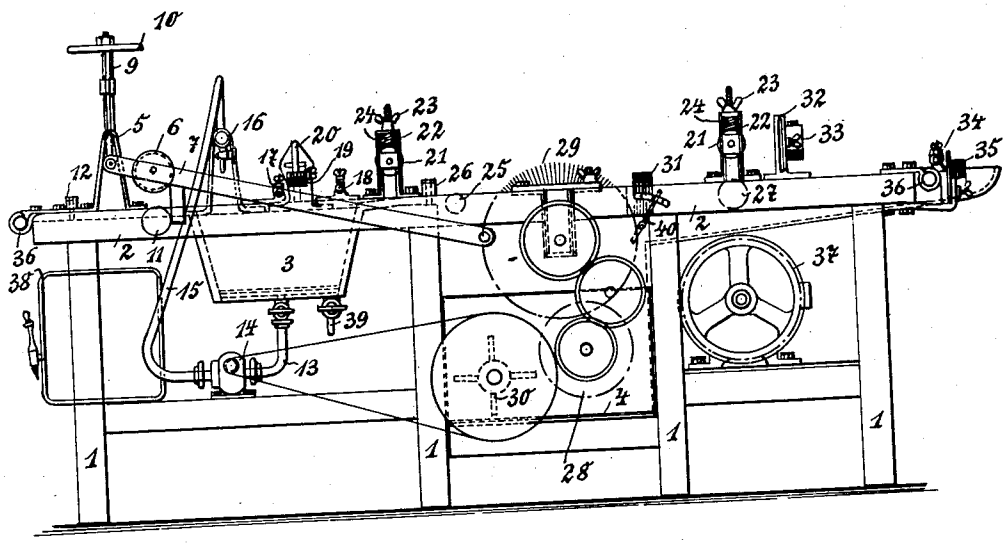
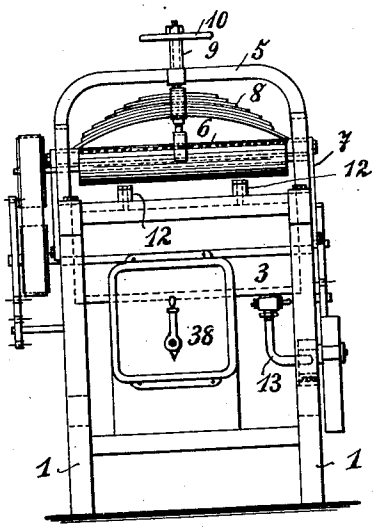


Fig. 2.



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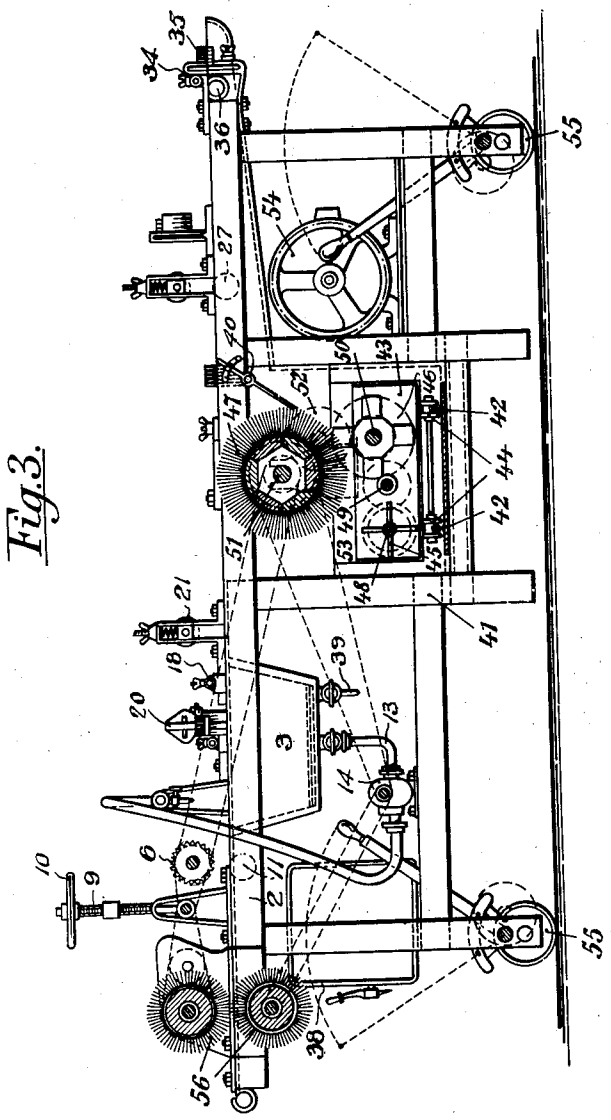
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Fig.3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR COATING OBJECTS.

Application filed November 18, 1926, Serial No. 149,104, and in Germany August 12, 1925.

This invention concerns a machine for coating objects such as boards with colour, paint or the like and has as its purpose the provision of a machine with the aid of which objects such as boards, planks or the like may be painted or otherwise coated rapidly and cleanly and whereby, if desired, the upper and lower surfaces of the board or the like may be given coatings of different natures, as for example of different colours.

A further object of the invention is to provide a machine of this type which can be readily and conveniently cleaned.

To achieve the stated ends the machine according to the present invention is provided with means for automatically feeding the objects to be treated, coating devices such as paint-spraying devices and distributing brushes contacting with the surfaces of the object.

The coating devices together with auxiliary devices are, according to a further feature of the invention, preferably arranged in a removable trough.

Two embodiments of the invention are illustrated by way of example in the accompanying drawings in which:

Fig. 1 is a lateral elevation of one embodiment,

Fig. 2 is an end elevation of the same, and

Fig. 3 is a lateral elevation of the second modification.

In the modification illustrated in Figs. 1 and 2, two troughs 3 and 4 for containing colour or paint are arranged one behind the other in the longitudinal direction in the frame 2, resting on legs 1, of the machine. A yoke 5 in which a forked member 7 supporting a feed roller 6 is adjustably mounted is arranged on the frame 2 of the machine in front of the colour trough 3 which is provided with an outlet cock 39. The fork 7 is loaded by a spring 8 which can be stressed to a greater or less degree by adjustment of a nut member 9 by means of the hand-wheel 10. The feed roller 6 co-operates with a freely rotatable pressure roller 11; and adjustable guide rollers 12 which are rotatable about vertical axes and act laterally on the object to be treated are disposed in front of the yoke 5. A pipe 13 leads from the trough 3 to one side of a rotary gear pump 14. The other side of the pump 14 is in communication through a pipe 15 with a device 16 for putting on the colour. The said device is furnished in known manner with regulable cocks to enable the width over which spraying is effected to be adjusted at will and at the same time the quantity of colour put on to be regulated in accordance with requirements. Lateral stripper brushes 17 and 18 between which a distributing brush 19 is disposed, adjustable as to its level, in a suitable frame 20 are provided on the frame beyond the spraying device 16 and above the trough 3. A roller 21 mounted in a yoke 22 on the frame 2 of the machine and loaded with the said yoke by a spring 24 of which the effect is adjustable by means of a nut 23 is provided in front of the trough 4 and a similar roller is provided beyond the trough 4. The object to be treated, for example a board to be painted is pressed by the rollers 21 against guide rollers 25, 26, 27, which are rotatably mounted in any suitable manner in the frame 2. A rotatable roller 28 by means of which colour is supplied to a brush roller 29 rotatably mounted in the frame 2 of the machine is disposed in the colour trough 4. The vessel 4 is also furnished with an agitating device 30 to ensure uniform composition of the colour during long periods of operation. A further provision is an adjustable stripper plate 40 to remove superfluous colour from the brush roller. A distributing brush 31 is arranged in the frame 2 beyond the brush roller 29 while a distributing brush 33 adjustable as to level in a yoke 32 is mounted on the frame 2 beyond the last pressure roller 21. Further lateral stripper brushes 34 and a distributing brush 35 are arranged beyond the frame 2 of the machine. At both the forward and rear end of the frame 2 of the machine a roller 36 is rotatably mounted in a suitable yoke.

All the rotary members of the machine are driven by an electric motor 37 which is preferably disposed towards the rear of the machine and is controlled by a starter 38 arranged at the front end of the machine frame.

In the modification illustrated in Fig. 3 the track 42 on which run the wheels 44 of a colour trough 43 is secured in suitable manner in the frame 41 of the machine.

According to the invention the shafts 48, 49, 50, 51 carrying the agitating mechanism 45 and the roller 46 feeding the coating roller 47 with colour are so journalled that one end of each of the shafts 48, 49 and 50 pro-

jects through a lateral wall of the vessel. Gear wheels driven from an intermediate wheel 52 mounted on the machine frame are secured to the ends of the shafts 48, 49, 50 projecting outside the vessel. The travelling colour trough 43 is according to the invention furnished with upwardly extending arms 53 on which are formed bearings in which the shaft 51 of the brush roller 47 which acts from below on the board or the like to be painted is journalled. One half of a clutch of which the other half is mounted on a shaft carried by the frame of the machine is secured to one end of the shaft 51 of this brush roller 47. The shaft 51 of the brush roller 47 and therewith the said roller may thus be driven from the motor 54 which actuates the other members of the machine. In addition to the clutch the shaft of the brush roller also carries a toothed wheel adapted to drive the toothed wheels of the shafts 48, 49, 50 journalled in the colour trough 43 through the intermediary of the toothed wheel 52. The devices 45 and 46 accommodated in the colour trough 43 are thus also driven by the motor 54.

If desired the frame 41 of the machine may be mounted on wheels 55 so that the entire machine may be moved readily from place to place. A pair of brush rollers 56 are preferably arranged one vertically above the other at the entry end of the machine for the purpose of cleaning the board to be painted, these rollers also being driven from the motor 54.

The operation of the machine illustrated in Figs. 1 and 2 is, briefly as follows:—

If a board is to be painted in two different colours, that is on the upper surface in one colour and on the lower surface in another, then the desired colours are introduced into the troughs 3 and 4 and the board passed into the machine over the roller 36 and between the guide rollers 12. The feed roller 6 is adjusted in such a manner that in combination with a roller 11 it draws the object to be treated through the machine. The board or the like thus passes under the colour spraying device 16 and the colour put on thereby is distributed by the brushes 19 while any colour which may run down on to the edges of the board is stripped off by the brushes 17 and 18 and spread on the edges. During further feed movement the board is pressed by the pressure rollers 21 against the guide rollers 25, 26 and 27 and the rotary brush 29 coats the lower surface of the object to be painted with colour transferred to it from the trough 4 by the roller 28. The colour so put on is distributed uniformly by the brush 31. The further brushes 33, 34 and 35 assist considerably in the further treatment of the article painted on all sides so that the colour is uniformly distributed on all surfaces before the board leaves the machine to be stacked for drying purposes.

If, in the case of the machine illustrated in Fig. 3, the colour trough 43 is to be cleaned or a new colour introduced thereinto the clutch between the shaft 51 of the brush roller and the shaft driven by the motor 54 is disengaged whereupon the colour trough 43 together with all the devices disposed in or on the same may be run out laterally from the frame 41 of the machine so that all the parts are readily accessible. After cleaning, repair or filling of the colour trough 43 has been effected it is run back into the machine frame 41 so that, when the clutch has been engaged the machine may be set in operation.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a machine for coating objects such as boards with colour, paint or the like in combination a spring actuated adjustable roller driven by a motor and pressed against the top of the object to be treated, a colour trough in communication with a spraying device actuated by a pump, a second colour trough arranged longitudinally behind the first mentioned trough, a feed roller in said second trough, a rotary brush-roller, cooperating with said feed roller and adjustable brushes fixed to the machine and extending into the path of the object to be treated so as to contact with the lateral surfaces of the latter.

2. In a machine for coating objects such as boards with colour, paint or the like in combination a spring actuated adjustable roller driven by a motor and pressed against the object to be treated, a colour trough in direct cor munication with a spraying device actuated by a pump also driven by said motor, a second colour trough arranged longitudinally behind the first mentioned trough, a feed roller in said second trough driven by said motor, a rotary brush-roller, cooperating with said feed roller, an agitating device driven by said motor arranged in said second colour trough and adjustable brushes fixed to the machine and extending into the path of the object to be treated so as to contact with the lateral surfaces of the latter.

3. In a machine for coating objects such as boards with colour paint or the like in combination a spring actuated adjustable roller driven by a motor and pressed against the object to be treated, a colour trough arranged underneath the travelling path of the object to be treated, a spraying device arranged above the path of the object to be treated, a pump driven by said motor, delivering paint from said trough to said

spraying device, adjustable brushes arranged at either side of the machine for coating the lateral faces of the object to be treated, a frame longitudinally arranged behind said trough, a second colour trough adapted to be moved into and out of said frame, bearings in said second trough carrying the shafts for paint feed rollers, an agitating device and a brush roller, intermeshing gear wheels mounted on said shafts, a gear wheel fixed to a shaft driven by said motor and cooperating with one of the gear wheels carried by said second colour trough and adjustable lateral brushes arranged in the path of the object to be treated.

4. In a machine for coating objects such as boards with colour, paint or the like, in combination, means for feeding the objects to be treated, a colour trough in communication with a spraying device actuated by a pump, a removable colour trough arranged behind the first mentioned trough, a feed roller mounted in said second trough, a rotary brush-roller cooperating with said feed roller and adjustable brushes fixed to the machine and extending into the path of the object to be treated so as to contact with the lateral surfaces of the latter.

In testimony whereof I have affixed my signature.

JOSEPH FRANZ.