COATING APPARATUS.


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To all whom it may concern:

Be it known that I, THOMAS A. EDISON, a citizen of the United States, and a resident of Llewellyn Park, West Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Coating Apparatus, of which the following is a description.

My invention relates to coating apparatus and is intended more particularly, but not exclusively, for use in connection with the process for forming molded articles which is set forth and claimed in an application of Jonas W. Aylsworth, Serial No. 674,289, filed January 30, 1912. According to this process, a base or backing is provided with a surface covering or veneer of suitable moldable material, the process involving the formation of the surface veneer upon the smooth polished surface of a metallic plate or other blank mold and the subsequent transfer of the same under heat and pressure to the surface of the object to be coated with the firm adhesion or welding of the surface veneer to the object. In the formation of the surface veneer on the mold or transfer plate prior to the welding of the veneer to the base or backing, the surface material or “stock” in solution or fluid form is coated to a suitable thickness upon the mold or transfer plates and then dried and hardened.

My invention relates particularly to apparatus whereby the surface material may be conveniently and homogeneously applied to or coated upon the surface of the mold or transfer plate.

The object of my invention is to provide an improved device of this character.

In order that my invention may be more clearly understood, attention is hereby directed to the accompanying drawings forming a part of this specification and in which—

Figure 1 represents a front elevation of one embodiment of my invention; Fig. 2 represents a view of the same, partly in side elevation and partly in section taken on line 2—2 of Fig. 1, the receptacle for the surfacing material and its support being omitted; and Fig. 3 represents a plan view, partly in section, on line 3—3, Fig. 1.

In all the views like parts are designated by the same reference numerals.

The apparatus shown comprises a bed plate or base 1 provided with standards 2, 2, in which the guide rod 3 is mounted. A traveling carriage 4 is pivotally and slidably mounted on the guide rod 3 and rests at its forward end upon a straight edge 5 which is supported by standards 6, 6, at the forward end of the base 1. The bed plate or base 1 at one side of the guide rod 3 is provided with a bearing 7 in which is rotatably mounted the shaft 8 of the turntable or support 9, which latter is provided with a centering pin 9' and has secured to its upper surface a covering 10 of rubber or other similar material.

For driving the shaft 8 and turntable 9, I provide a horizontal shaft 11 mounted in bearings 12 on the bed plate or base and formed intermediate its ends with a worm 13 meshing with a gear 14 secured to the shaft 8. A pulley 16 is secured to the shaft 11 and is rotated by a belt 18 driven by a motor (not shown) or any other suitable source of power. Rotatably mounted in standards 17, 17 on the bed plate is the feed screw 18 secured to which is a pulley 19 adapted to be rotated by a belt 19' driven by a pulley 20 secured to the shaft 11. The traveling carriage 4 is provided with a tubular extension 21 surrounding guide rod 3 to which extension is secured a spring support 22 carrying at its free end a feed nut 23 adapted to engage the feed screw when the forward end of the carriage rests in engagement with the straight edge 5 and to be disengaged therefrom when the forward end of the carriage is raised. A screw 24 threaded into an arm 25 secured to the tubular extension 21 of the carriage above the spring 22 serves to adjust the position of the feed nut with respect to the feed screw.

The stock or surfacing material is preferably carried in a tank or receptacle 26 mounted on a frame 27 extending over the bed plate 1 and the parts carried thereby. The receptacle 26 is provided at its lower end with a flexible outlet tube 28 which is connected to and communicates with a rigid angular tube 29 leading to the outlet nozzle 30. The tube 29 passes through one end of a horizontal arm or extension 31 secured at its other end to the under side of the traveling carriage 4, a nut 32 threaded on the tube 29 bearing against the upper surface of the arm or extension 31 and clamping the outlet nozzle 30 against the under side of the latter so that the tube and nozzle are firmly sup-
ported by the arm or extension at a fixed
distance from the table or support 9 and are
moved during the travel of the carriage
transversely over the top of the said table or
support, the arm 31 being of such a length
that the outlet nozzle is readily movable
from the center of the turntable or support
to a position beyond the periphery thereof.

Depending from the lower side of the arm
or extension 31 are bearings 33, 33 in which
a rod 34 is rotatably mounted, this rod hav-
ing at one end a crank 35 for rotating the
same and at its opposite end a forked por-
tion 36 fitting over the flattened thumb piece
of a rotary valve 37 controlling the opening
and closing of the nozzle 30.

The numeral 38 designates a stop pin
adapted to engage a shoulder on outlet nozz-
le 30 to limit the movement of the valve 37
in one direction. The rod 34 has secured
thereto a crank arm 39 connected by a link
40 to the cam lever 41 pivoted at the for-
ward end of the traveling carriage 4. The
cam lever 41 is provided with a cam surface
42 which is so shaped that when the crank 35
is in a position corresponding with the open
position of the valve, the carriage 4 is per-
mitted to engage the straight edge 5 and the
feed nut 23 to engage the feed screw 18,
whereas when the member 35 is in a position
corresponding to the closed position of
the valve 37, the carriage 4 and nozzle 30 will
be lifted by the engagement of the cam sur-
face 42 with the straight edge 5 and the feed
nut 23 disengaged from the feed screw 18.

The operation of the device is as follows:
The crank 35 being in a position correspond-
ing to the closed position of the valve 37 and
the disengagement of the feed nut 23 from
the feed screw 18, the mold or transfer plate
or other article to be coated is placed cen-
trally upon the support or turntable 9 and
the carriage 4 shifted by hand to bring the
outlet nozzle 30 over the center of the said
table or support. The driving means for the
belt 16 having been set into operation, the
turntable or support together with article
carried thereby and also the feed screw 18
will be set into rotation. Member 35 is then
rotated to open the valve 37 and place the
feed nut 23 in engagement with the feed
screw 18, after which the carriage will be
fed away from the center of the turntable
or support and the stock or surfacing mate-
rial automatically fed in a spiral path upon
the article to be coated. The valve 37 may
be closed and the travel of the carriage 4
stopped at will by rotation of crank 35. I
have found that a smooth and uniform coat-
ing free from imperfections can be obtained
in this way. It is to be noted that movement
of crank 35 in one direction simultaneously
causes the nozzle 30 to be closed and moved
away from support 9 and feed nut 23 to be
disengaged from the feed screw 18; whereas
movement of the crank in the opposite direc-
tion simultaneously causes the nozzle 30 to
be opened and moved toward the support 9
and engagement with the feed screw 18. The crank
35 may be moved at will to effect the opera-
tions just referred to regardless of the posi-
tion of the nozzle 30 in its path of travel
across the support 9. When the feed nut is
disengaged from the feed screw, the carriage
4 and the parts carried thereby are free to be
moved by hand transversely of the sup-
port 9.

Numerous changes may be made in the
specific structure herein disclosed without
departing from the spirit of my invention
and I do not, therefore, limit myself to the
exact details shown and described.

What I claim as new and desire to protect
by Letters Patent is as follows:

1. In apparatus of the class described, the
combination of a support, stock supplying
means having an outlet in proximity to said
support, and means for closing said outlet,
means for producing a relative feeding
movement between said support and stock
supplying means, and unitary means for ren-
dering said feed producing means inoperative
and said closing means operative at dif-
ferent points throughout the relative feed-
ing movement between said support and
stock supplying means, substantially as de-
scribed.

2. In apparatus of the class described, the
combination of a support, stock supplying
means having an outlet in proximity to said
support and means for closing said outlet,
means for producing a relative feeding
movement between said support and stock
supplying means, and means for simulta-
eously rendering said feed producing means
inoperative and said closing means operative,
said feed producing means when ren-
dered inoperative permitting free relative
movement between said support and stock
supplying means in a direction transverse to
said support, substantially as described.

3. In apparatus of the class described, the
combination of a support, stock supplying
means having an outlet in proximity to said
support, and means for closing said outlet,
means for producing a relative feeding
movement between said support and stock
supplying means, and unitary means for ren-
dering said feed producing means operative
and said closing means inoperative at differ-
ent points throughout the relative feeding
movement between said support and stock
supplying means, substantially as described.

4. In apparatus of the class described, the
combination of a support, a traveling car-
rriage, stock supplying means carried by
said carriage and having an outlet and a
valve for closing said outlet, feeding means
for said carriage comprising a feed screw.
and a feed nut carried by said carriage and movable into and out of engagement with said feed screw, and means for simultaneously closing said valve and moving said carriage to disengage said feed nut from said feed screw, substantially as described.

5. In apparatus of the class described, the combination with a support, stock supplying means having an outlet device in operative relation to said support and rotary means for closing said device, and means for producing a relative feeding movement between said support and stock supplying means, of means for simultaneously moving said outlet device away from said support and rendering said closing means operative to close said outlet device, substantially as described.

6. In apparatus of the class described, the combination with a support, stock supplying means having an outlet device in operative relation to said support and rotary means for closing said device, and means for producing a relative feeding movement between said support and stock supplying means, of means for simultaneously moving said outlet device toward said support and rendering said closing means inoperative to close said outlet device, substantially as described.

7. In apparatus of the class described, the combination with a support, stock supplying means having an outlet device in operative relation to said support and rotary means for closing said device, and means for producing a relative feeding movement between said support and stock supplying means, of means comprising a single controlling member for moving said outlet device away from said support and rendering said closing means operative to close said outlet device, substantially as described.

8. In a device of the class described, the combination with a support, stock supplying means having an outlet device in operative relation to said support and rotary means for closing said device, and means for producing a relative feeding movement between said support and stock supplying means, of means comprising a single controlling member for moving said outlet device toward said support and rendering said closing means inoperative to close said outlet device, substantially as described.

9. In apparatus of the class described, the combination of a support, a pivotally mounted traveling carriage, stock supplying means carried by said carriage and having an outlet and a valve for closing said outlet, feeding means for said carriage comprising a feed screw and a feed nut carried by said carriage and movable into and out of engagement with said feed screw, and means for simultaneously closing said valve and moving said carriage about its pivotal axis to disengage said feed nut from said feed screw, substantially as described.

10. In apparatus of the class described, the combination of a support, a pivotally mounted traveling carriage, stock supplying means carried by said carriage and having an outlet and a valve for closing said outlet, feeding means for said carriage comprising a feed screw and a feed nut carried by said carriage and movable into and out of engagement with said feed screw, and means comprising a single controlling member mounted on said carriage for simultaneously closing said valve and moving said carriage about its pivotal axis to disengage said feed nut from said feed screw, substantially as described.

11. In apparatus of the class described, the combination with a support, stock supplying means having an outlet device in operative relation to said support and means for closing said device, and means for producing a relative feeding movement between said support and said outlet device, of means for simultaneously moving said outlet device away from said support, rendering said closing means operative to close said outlet device, and rendering said feed producing means inoperative, substantially as described.

12. In apparatus of the class described, the combination with a support, stock supplying means having an outlet device in proximity to said support and means for closing said device, and means for producing a relative feeding movement between said support and said outlet device, of means for simultaneously moving said outlet device toward said support, rendering said closing means inoperative to close said outlet device, and rendering said feed producing means operative, substantially as described.

This specification signed and witnessed this 25th day of October, 1912.

THOS. A. EDISON.

Witnesses:
FREDERICK BACHMANN,
MARY J. LAIDLAW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."