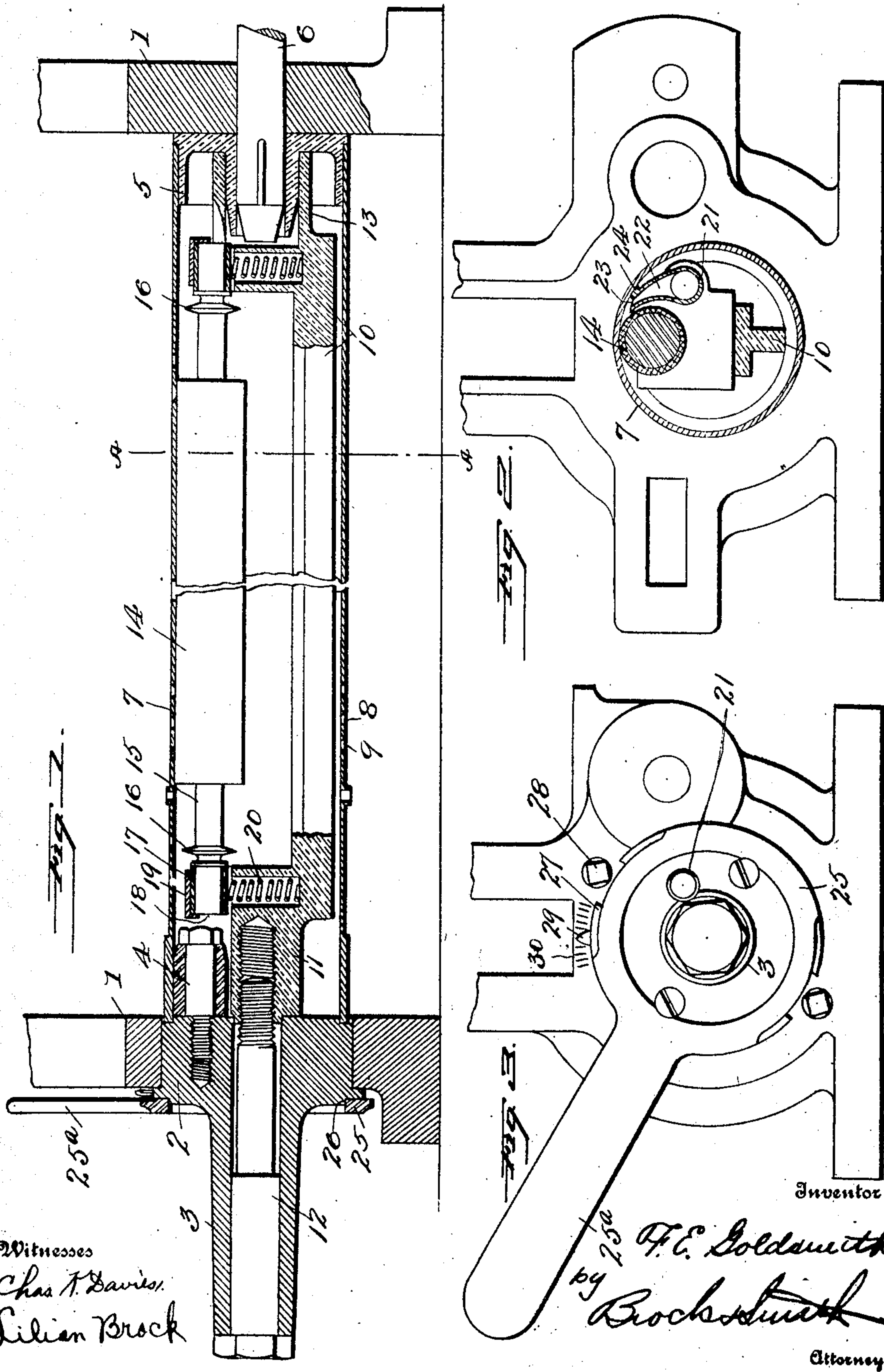


F. E. GOLDSMITH.
MACHINE FOR COATING.
APPLICATION FILED JULY 26, 1908.

918,440.

Patented Apr. 13, 1909.



UNITED STATES PATENT OFFICE.

FREDERICK E. GOLDSMITH, OF MIDDLETOWN, OHIO, ASSIGNOR TO THE CERAMIC MACHINERY COMPANY, OF HAMILTON, OHIO.

MACHINE FOR COATING.

No. 918,440.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed July 26, 1906. Serial No. 327,924.

To all whom it may concern:

Be it known that I, FREDERICK E. GOLDSMITH, a citizen of the United States, and a resident of Middletown, in the county of Butler and State of Ohio, have invented a new and useful Machine for Coating, of which the following is a specification.

This invention relates to a machine for coating objects such, for instance, as tile.

10 An especial object of the invention is to provide a very compact and self-contained apparatus for applying coating.

The characteristics and advantages of the invention will hereafter be more particularly pointed out in connection with the accompanying drawing which illustrates exemplifying structures in which the invention is embodied.

20 In the drawing: Figure 1 is a longitudinal section; Fig. 2, a cross section at *a*, Fig. 1; and Fig. 3, an end view at *b*, Fig. 1.

1, 1 are standards resting on any suitable support; 2, a head mounted so that it may oscillate in the left-hand standard; 3, a hollow extension of the head; 4, one or more anti-friction wheels revolubly mounted on studs secured to head 2; 5, a rotary head adjacent to the right-hand standard; 6, a shaft revolubly mounted in the right-hand standard through which it extends and is there splined to a bore in the head 5 of shaft 6 and is driven from any suitable source of power and serves to rotate the head; 7, a tubular shell, usually metallic, revoluble at the left hand end on anti-friction roller or rollers 4 and secured at the right hand end to revoluble head 5 by which it is rotated; 8, perforations in shell 7; 9, counter-bores in perforations 8 flaring toward the surface of the shell; 10, a general designation of the frame carried within the shell 7; 11, the left end of the frame 10; 12, a bolt passing through head 2 and having a screw-thread engaging a thread in a bore of frame portion 11; 13, right-hand end of frame 10 having a bore fitting over the hub formed in the head 5; 14, a roll, which I term a suction roll; 15, its shaft; 16, flanges on shaft 15; 17, thimbles of anti-friction metal forming bearings for end of shaft 15; 18, housings for bearings 17 in frame 10; 19, tops of the housings 18; 20, springs in sockets in frame 10 pressing against the lower sides of bearings 17, serving to urge roll 14 with a yielding pressure toward the inner surface of shell 7; 21, a tube suitably

supported in the ends of frame 10 and passing through left-hand standard 1; 22, a spout communicating with tube 21 and terminating in discharge opening 23 adjacent to the inner surface of the shell; 24, a longitudinal member on the spout in contact with the inner surface of the shell; 25, a rotatable collar having a handle 25^a and centered with relation to the head 2 by an annular socket 26 provided therein; 27, bayonet joint members on collar 25 coöperating with studs or clips 28 on standard 1; 29, a pointer on head 2; and 30, index marks on standard 1.

The position of suction roll 14 and spout 22 in relation to the vertical may be adjusted by rotating head 2. The pointer and scale 30 afford a guide for this adjustment. The head 2 is secured in the machine at adjusted position by throwing the handle 25^a of collar 25, so that bayonet clutch members 27 engage studs 28. By unlocking the collar 25 the head 2, frame 10 and related parts, and shell 7 may be readily removed through the hole in standard 1.

In operation coating material from any suitable source is introduced by any suitable means into tube 21 and thence to spout 22 from which it issues at 23. The shell 7 is in the meantime rotated in the direction of the arrow by shaft 6, and suction roll 14 in contact with the shell is also rotated in the same direction. The coating material issuing from opening 23 is prevented from passing down to the right between the spout and shell by the longitudinal rib 24. The material, however, passes to the surface of suction roll 14 and as the shell and roll rotate is forced out through perforations in the shell 7 to the surface of the shell where it forms a kind of fountain or mound extending along the upper exterior surface of the shell. This mound or bead of color is carried approximately centrally over the contact point of roll 14 and shell 7. The inner surface of shell 7 as it rotates beyond the contact point draws away from the exterior surface of roll 14 and as these surfaces separate a suction is created which draws the coating material rapidly down and away from the surface of shell 7. Because of this function the roll 14 is termed the suction roll. As the tile or other objects pass over the shell 7 they receive a deposit of coating on the under side. If no means were provided to prevent such a result in many cases a superfluous amount

of coating material might be deposited, especially on the edges of the tile and particularly the last edge passing over the shell. The action of the suction roll, however, in the present invention, is such that the coating material is rapidly drawn down and away from the tile as it leaves the shell and any superfluous material is removed preventing the formation of "beads" or other imperfections on the tile. As the coating material is carried on beyond the contact point of the shell and roll and is drawn inward by the suction roll it falls through the shell and into a suitable receptacle placed to catch the overflow. Coating material is prevented from getting upon the bearings or other running parts of the machine by various means. Flanges 16 on shaft 15 serve for this purpose.

Any desired device may be used for feeding biscuit or other objects to be coated over the shell 7. Usually a pressure roll is mounted in the standards above the shell serving to guide or hold the biscuit in proper relation to the shell as they pass over it and receive a deposit of coating material on their undersides from the fountain or mound of material carried on the shell.

The construction of the shell and suction roll may be widely varied. It is, however, desirable that the suction roll shall have a surface layer of flexible or elastic material such as rubber, and it is also desirable that the shell shall be of such material or proportions as to be to an extent yielding, flexible, or elastic.

While the structures as shown represent a convenient and desirable embodiment of my invention, I consider the said invention broadly new with me, and do not intend to limit myself in any respect to details of construction.

Reference is made to applicant's co-pending applications Serial No. 253720, filed April 3, 1905, for coating machine, and Serial No. 257370, filed April 25, 1905, for coating.

What I claim is:

1. In a machine for coating, a rotary pervious shell, and an elongated continuous spout for discharging coating material within the shell so that it passes to the outer surface thereof.

2. In a machine for coating, the combination of a rotary pervious shell, a roll within the shell, and means for discharging coating material within the shell adjacent to the roll so that it passes to the exterior surface of the shell.

3. In a machine for coating, a rotary pervious shell, a roll contacting with the inner surface of the shell and rotating therewith, and means for delivering coating material within the shell adjacent to the roll.

4. In a machine for coating, a rotary pervious shell, a roll contacting with the inner

surface thereof and rotating therewith, and a spout for delivering coating material within the shell so that it is forced by rotation of the shell and roll to the exterior surface of the shell.

5. In a machine for coating, two standards, a shaft passing through one of the standards, a rotary head secured to the shaft, a removable head in the other standard, an anti-friction roller thereon, a shell arranged to revolve with the rotary head and on said roller, a stationary frame carried within the shell by said heads, a roll carried by the frame adjacent to the inner surface of the shell, and a spout for coating material also carried by the frame within the shell.

6. In a machine for coating, a rotary pervious shell, a spout delivering coating material within the shell, and a roll within the shell contacting with its inner surface and adjacent to the spout.

7. In a machine for coating, a rotary pervious shell, a spout delivering coating material within the shell, and a roll within the shell contacting with its inner surface and adjacent to the spout serving to force coating material to the exterior of the shell and to withdraw such material from the surface of the tile after passing the point of contact of the shell and roll.

8. In coating apparatus, the combination of a rotary pervious shell and a roller within the shell engaging its inner surface.

9. In coating mechanism, the combination of a cylindrical shell, means for rotating it, a spout arranged to deliver coating material within the shell, and means for varying the position of the spout.

10. In coating mechanism, the combination of a pervious cylindrical shell, standards, a head mounted in one of the standards and capable of oscillation, a frame within the shell connected to the head at one end and supported at the other by the other standard so that it may oscillate, an elongated spout adjacent to the inner surface of the shell carried by the frame, and means for supplying coating material to the spout.

11. In coating mechanism, the combination of a pervious cylindrical shell, standards, a head mounted in one of the standards and capable of oscillation, a frame within the shell connected to the head at one end and supported at the other by the other standard so that it may oscillate, an elongated spout adjacent to the inner surface of the shell carried by the frame, means for supplying coating material to the spout, and a roll carried by the frame and engaging the inner surface of the shell adjacent to the spout.

12. In coating mechanism, the combination of a pervious cylindrical shell, standards, a head mounted in one of the standards and capable of oscillation, a frame within the

shell connected to the head at one end and supported at the other by the other standard so that it may oscillate, an elongated spout adjacent to the inner surface of the shell 5 carried by the frame, means for supplying coating material to the spout, and springs carried by the frame urging the roll toward the shell.

13. In coating mechanism, the combination of a pervious cylindrical shell, standards, 10 a head mounted in one of the standards and capable of oscillation, a frame within the shell connected to the head at one end and supported at the other by the other standard 15 and so that it may oscillate, and anti-friction rolls carried by the head and constituting a revoluble mounting for one end of the shell.

14. The combination of a standard, a

head revolubly mounted therein, an index showing the angular position of the head, 20 a revoluble collar on the head and a bayonet clamp carried by the standard and collar for locking the head in adjusted position.

15. The combination of a revolubly mounted perforate shell, a stationary frame 25 supported within the shell, a roll engaging the inner face of the shell, a shaft carrying the roll and mounted in bearings in the frame and drip flanges carried by the shaft between the roll and the bearings. 30

In testimony whereof I have affixed my signature in the presence of two witnesses.

FREDERICK E. GOLDSMITH.

Witnesses:

ALBERT DELL,
WM. LORD.