Aug. 25, 1942. H. C. KOCH 2,293,747

APPARATUS FOR COATING THE EDGES OF STRIPS

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Fig. 1.

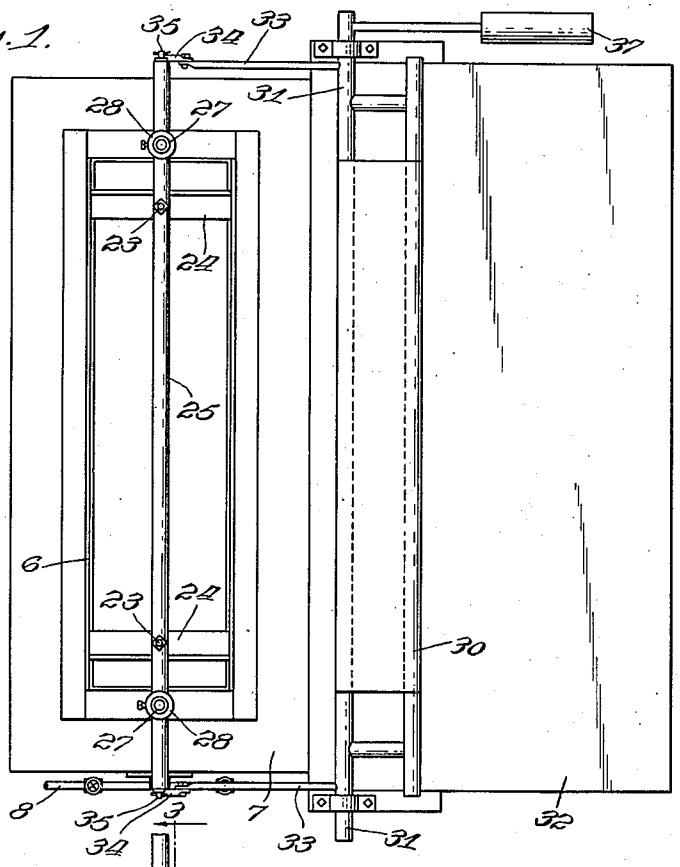
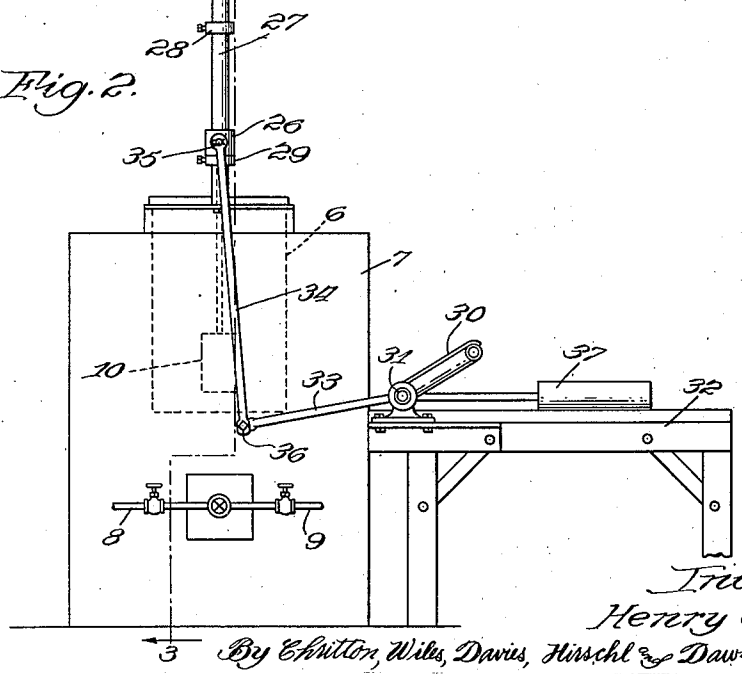


Fig. 2.



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Fig. 3.

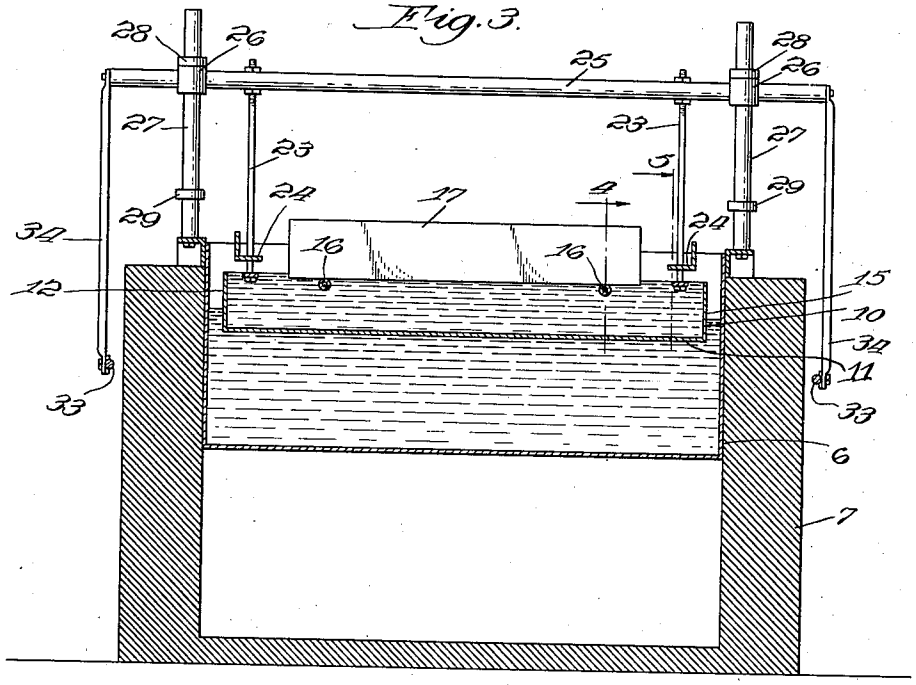


Fig. 4.

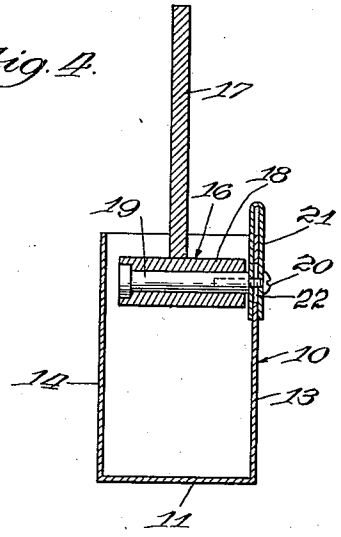
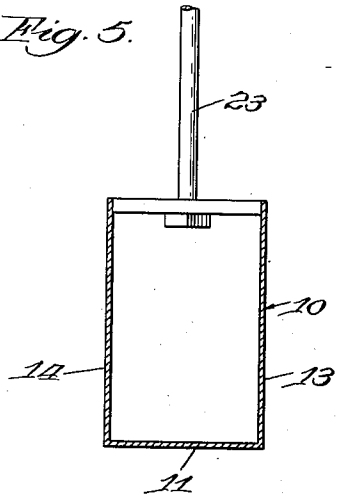


Fig. 5.



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UNITED STATES PATENT OFFICE

2,293,747

APPARATUS FOR COATING THE EDGES OF STRIPS

Henry C. Koch, Chicago, Ill., assignor to Abbott Coburn, Chicago, Ill.

Application July 13, 1939, Serial No. 284,316

9 Claims. (Cl. 91—46)

My invention relates more particularly to an apparatus for applying a suitable coating material to edges of board material.

A specific instance of the use of such an apparatus and constituting the use for which I have more particularly devised my invention, is in connection with the manufacture of strip material for sheathing buildings commonly made of any suitable base sheet material, such as known in the building art as insulating board, coated on the faces thereof to be exposed when applied to use, with an adhesive, as for example and more particularly asphalt material applied hot to the base sheet material and covered with a layer of grit, as for example crushed slate, adhered to the adhesive coating.

Certain of the strips referred to are provided for location at such places on the buildings as to render desirable the application of such an adhesive coating, with a covering of grit, to edges of the strips, as for example when edges of the strips are exposed to view when applied to the building.

In accordance with the methods employed in producing such coated strips, only those surfaces which are at the outer sides of the strips when applied to use, are first coated with the adhesive material and the grit then applied; and the coating of the edges of the strips and the application of the grit thereto, as desired, is performed as additional operations, particularly as conditions require that the coating applied to such edges be of substantially uniform thickness and of a particular thickness, results which cannot be accomplished without applying the coating separately to the faces and edges of the strips.

My primary object is to provide an apparatus whereby an operator, without exercising exceptional skill, may quickly apply to the edges to be coated, coatings of the uniform desired thickness, and preferably of uniform temperature; and other objects as will be manifest from the following description.

Referring to the accompanying drawings:

Figure 1 is a plan view of apparatus constructed in accordance with my invention.

Figure 2 is an end view of the apparatus.

Figure 3 is a section taken at the irregular line 3—3 on Fig. 2 and viewed in the direction of the arrow.

Figure 4 is an enlarged fragmentary sectional view taken at the line 4 on Fig. 3 and viewed in the direction of the arrow; and

Figure 5, a similar view taken at the line 5 on Fig. 3 and viewed in the direction of the arrow.

The apparatus shown and adapted to supply hot adhesive coating material for coating edges of coated strips comprises an open top tank 6 for the coating material located in, and forming the top of, a furnace 7 provided with any suitable means for heating the contents of the tank, such as for example an oil burner (not shown) located in the furnace structure below the tank 6 and supplied with fuel and atomizing air through pipes 8 and 9, respectively.

Any suitable means (not shown) for maintaining the contents of the tank 6 at the desired predetermined temperature, such as for example thermostatic means subjected to the heat of the contents of the tank and controlling the burner referred to, may be provided.

Located in the tank 6 and adapted to be reciprocated vertically therein into and out of fully submerged condition in the fluid coating in the tank is a trough 10, as for example metal, shown as having a closed bottom 11 and closed surrounding side walls 12, 13, 14 and 15, with its upper end open, the four side walls 12—15 of the trough 10 being spaced from the adjacent side walls of the tank 6.

Located in the trough 10 and extending crosswise thereof are spaced apart members 16 forming seats for the lower edge of a strip, such as that represented at 17, to which coating from the tank 6 is to be applied, the members 16 being so positioned that when the strip 17 is applied thereto as shown in Fig. 3 the lower edge of the strip will extend the desired distance below the upper edge of the trough 10.

The members 16 are preferably in the form of rollers 18 journaled on headed rods 19 secured at one end to a side of the trough 10 as through the medium of screws carried by stirrups straddling the said side wall of the trough, one of such screws being shown at 20 and one of the stirrups at 21, the trough having vertically elongated openings therein, one of which is shown at 22, through which the screws 20 extend, adapting the members 16 to be vertically adjusted into any desired position.

The particular form of members 16 as shown and described are preferred as they form rolling supports engaged by the lower edge of the strip 17 permitting the operator to reciprocate the strip while it bears on the members 16.

The trough 10 is provided to present, for the coating of the strips applied to the members 16, in succession and in alternation with each full reciprocation of the trough, a body of the coating material of a predetermined depth such as

to provide a coating of the desired predetermined thickness on the edges of the strips.

Upon each lowering of the trough 10 in the tank 6 the trough is entirely submerged (Figs. 1 and 2) in the bath of coating material in the tank, the coating in the tank overflowing the upper edge of the trough and filling it, the heat of the bath reheating the contents of the trough substantially to the temperature of the bath.

In the arrangement shown the trough is shown as provided with parallel upwardly extending rods 23 slidable in openings in guide bars 24 secured to and extending crosswise of, the tank 6 and connected at their upper ends to a vertically movable bar 25 having heads 26 with apertures at which the heads slide on posts 27 extending upwardly from the tank 6 and provided with upper and lower vertically adjustable stops 28 and 29, respectively.

At the side of the furnace 7 is a treadle 30 rockably supported at trunnions 31 on a platform 32 on which the workman stands. The treadle 30 has rigid arms 33 at opposite ends connected with the heads 26 by links 34 pivoted to the heads 26 and the arms 33 at 35 and 36, respectively.

The weight of the trough 10 and the parts between the trough and the trunnions 31 is such that the trough in normal condition is submerged in the tank 6 and the treadle 30 is raised (Figs. 1 and 2); the operator to raise the trough 10 pressing down on the treadle 30. Upon releasing the pressure against the treadle 30 the trough 10 automatically lowers to submerged position.

It is desired that counterweight means, such as those shown at 37 be provided to prevent the trough 10 from lowering too rapidly when the operator releases the pressure of his foot against the treadle 30.

As will be understood, when the operator is ready to coat the edge of a strip he presses down on the treadle 30 which thereby raises the trough 10 to the position shown in Fig. 3, the trough being full of the heated coating. He then places the strip to be coated edgewise on the rollers 16 the strip extending at its edge to be coated into the coating in the trough 10, as shown in Fig. 3, and reciprocates the strip lengthwise to insure the coating of the edge of the strip throughout its length. He then removes the strip from the trough 10 and releases pressure on the treadle 30 whereupon the trough 10 returns to submerged position in the coating in the tank 6 (Figs. 1 and 2); and while the applied coating is hot applies grit coating thereto.

Conditions may require different depths of penetration of the edge of the strip 17 into the coating in the trough 10, this being provided for by the adjustment means for the members 16 as above referred to.

While I have illustrated and described a particular construction embodying my invention, I do not wish to be understood as intending to limit the invention thereto, as the same may be variously modified and altered and the invention embodied in other forms of structure without departing from the spirit of the invention.

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

1. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material, a trough member, means to move said trough up and down in the material in said receptacle for segregating from the body of said material a portion thereof and supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, and seats secured in said trough for engagement by the lower edge of a strip to be coated inserted into said trough and determining the elevation at which the strip extends in said trough.

2. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material, a trough member, means to move said trough up and down in the material in said receptacle for segregating from the body of said material a portion thereof and supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, and seats having roller portions secured in said trough for engagement by the lower edge of a strip to be coated inserted into said trough and determining the elevation at which the strip extends in said trough.

3. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material, a trough member, means to move said trough up and down in the material in said receptacle for segregating from the body of said material a portion thereof and supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, and seats secured in said trough for engagement by the lower edge of a strip to be coated inserted into said trough and determining the elevation at which the strip extends in said trough, and means for vertical adjustment of said seats.

4. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material in heated condition, a trough member movable up and down in the material in said receptacle for segregating from the body of said material a portion thereof and supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, and means for moving said member to a position elevated above and partially immersed in coating material in said receptacle including means controlling said movement between submerged and only partially submerged positions of said trough.

5. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material, a member, means to move said member up and down in the material in said receptacle for segregating from the body of said material a portion thereof and supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, said means including means positioned to be operated by the foot of the operator while standing in position for immersing the strip in the material on said member.

6. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material, a member, means to move said member up and down in the material in said receptacle for segregating from the body of said material a portion thereof and supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, means guiding said member for up and down movement, and said means including a treadle and connections

between said treadle and member for moving said member.

7. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material, a trough member, means to move said trough up and down in the material in said receptacle for segregating from the body of said material a portion thereof and said means supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, and seating means secured in said trough for engagement by the lower edge of a strip to be coated when inserted into said trough and for determining the elevation at which the strip extends in said trough.

8. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material, a trough member, means to move said trough up and down in the material in said receptacle for segregating from the body of said material a portion thereof and said means supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, and seats spaced apart and secured in said trough for engagement by the lower edge of a strip to be coated when inserted into said trough and for determining the elevation at which the strip extends in said trough..

9. Apparatus for coating edges of strips of building material comprising a receptacle for fluid coating material, a trough member, means to move said trough up and down in the material in said receptacle for segregating from the body of said material a portion thereof and said means supporting it partially surrounded by the material in said receptacle and in a position for immersing therein the edge of a strip to be coated, and seating means secured in said trough for engagement by the lower edge of a strip to be coated when inserted into said trough and for determining the elevation at which the strip extends in said trough, and means for vertical adjustment of said seats.

HENRY C. KOCH.