Feb. 25, 1958 R. G. AMES 2,824,326

AUTOMATIC FEED PAINT AND TEXTURE APPLICATOR

Filed April 4, 1955

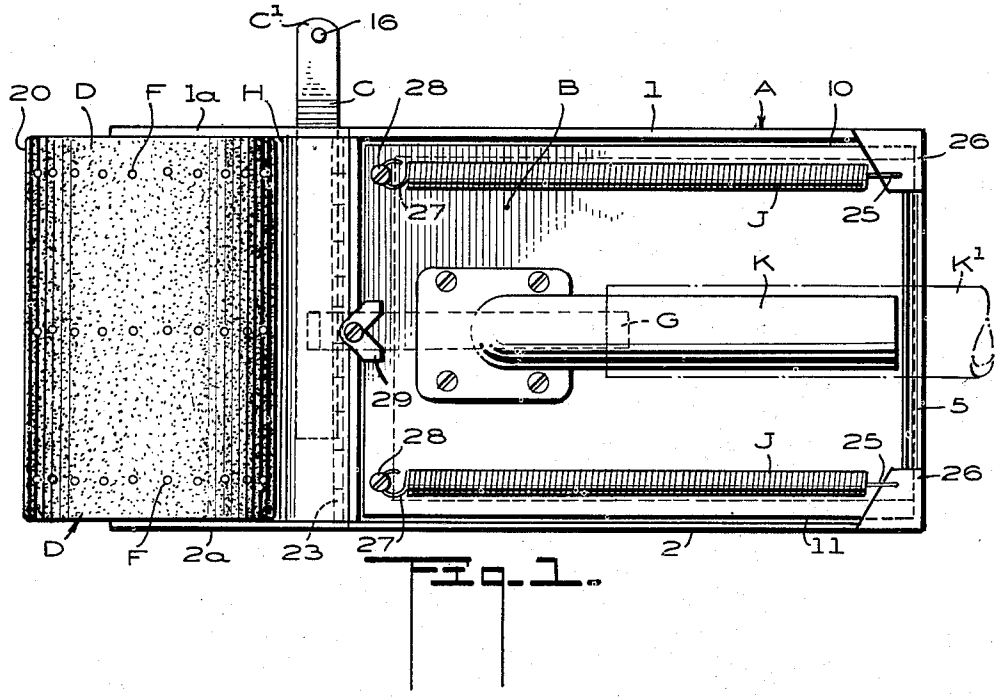


Fig. 1.

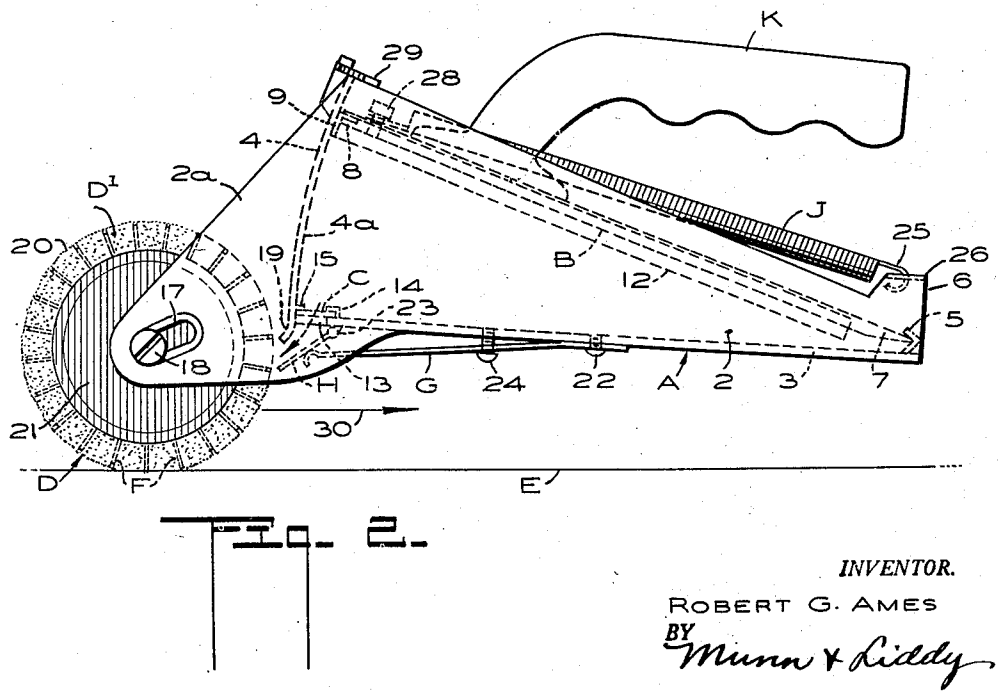


Fig. 2.

INVENTOR.
ROBERT G. AMES
BY Munn & Liddy
ATTORNEYS

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AUTOMATIC FEED PAINT AND TEXTURE APPLICATOR

Robert G. Ames, San Mateo, Calif., assignor of one-half to George W. Williams, Redwood City, and one-fourth to Stanley Ames, Belmont, Calif.

Application April 4, 1955, Serial No. 499,114

2 Claims. (Cl. 15—132.5)

In my application on a mastic-applying and surface-finishing tool, Serial No. 283,378, filed April 21, 1952, (now Patent No. 2,711,098, dated June 21, 1955) I show a casing provided with a compartment for holding mastic, and a hinged plate for forcing mastic from the compartment and onto a surface over which the tool is moved. A handle is secured to the hinged plate and is used for supporting the tool as well as for swinging the plate for ejecting the mastic.

In another application of mine on a mastic applicator and finishing tool, Serial No. 374,722, filed August 17, 1953, I show the mastic-holding casing provided with a bottom plate that has an opening therein for the discharge of mastic from the compartment provided in the casing. The compartment can be filled with a new supply of mastic by using the same opening for forcing mastic into the compartment.

In the present invention, I use the same type of casing with a hinged plate for forming a compressible compartment that can hold liquid paint, and I mount a roller adjacent to a discharge opening or nozzle in the compartment so that pressure applied to the plate will swing it and force paint from the compartment and onto the paint applicator roller. The nozzle includes a hinged member that extends across the width of the casing and adjustable spring means urge the member into yielding contact with the periphery of the roller. It is by this mechanism that the amount of paint delivered to the roller can be controlled when the hinged plate is depressed. The compartment can be replenished with paint by opening the hinged member and using the nozzle as the point of entrance.

The length of the paint-applying roller is at least equal to the width of the casing. This permits the tool to apply paint in corners. If less than the length of the roller is needed for paint-applying purposes, I provide a slide that can be manually adjusted for closing off any desired portion of the nozzle.

When the rim of the nozzle bears against the roller periphery and the hinged member is also yieldingly pressed against the roller, it is likely that the roller will tend to skid over the surface on which the paint is to be applied rather than rotate on the surface. To overcome any skidding effect, I provide the roller with a plurality of radially extending pins that project from all portions of the roller periphery. A soft layer of material encloses the roller and pins and when this layer is not compressed, it will embed the outer ends of the pins so that they will be invisible. However, as soon as the roller is placed on the surface to be painted and pressure is applied to the plate for forcing paint or other texture material onto the roller periphery, the portion of the roller contacting the surface will be compressed to a point where the outer ends of the pins in this portion will project through the layer of soft material and will contact the surface. An advancement of the tool will cause the pins to rotate the roller. As the roller rotates, additional pins will be

brought to bear on the surface and therefore continued traction will be provided sufficient to prevent the roller from slipping.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing forming a part of this application in which:

Figure 1 is a top plan view of the tool; and

Figure 2 is a side elevation.

While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claims without departing from the spirit and scope of the invention.

In carrying out my invention, I provide a casing indicated generally at A and this casing has two side walls 1 and 2 that are held apart in parallel relation by a bottom wall 3 and an arcuate-shaped rear wall 4. Figure 2 shows a V-shaped fulcrum member 5 that is placed at the leading end 6 of the tool casing. A pressure plate B has a bevelled leading edge 7 that is fulcrumed in the V-shaped recess formed by the fulcrum member 5. The rear edge 8 of the plate B has a flexible wiping element 9 that rides over the inner surface 4*a* of the arcuate rear wall 4, see Figure 2. The side edges 10 and 11 of the pressure plate B are provided with flexible wiping elements 12 and these will ride along the inner surfaces of the side walls 1 and 2. The flexible wiping elements 9 and 12 constitute a seal between the pressure plate B and the inner surfaces of the walls of the casing A.

The side walls 1 and 2, the bottom wall 3, the arcuate end wall 4 and the pressure plate B form a compressible liquid-tight compartment that may receive paint or other material. Figure 2 shows the bottom wall 3 provided with an elongated opening 13 that preferably extends across the width of the casing and is disposed adjacent to the arcuate rear wall 4. A flange 14 extends along one side of the opening 13 and a second flange 15 is carried by the inner surface 4*a* of the arcuate rear wall 4. The two flanges act as guides for a slide-valve member C, see Figure 1. The valve member is in the shape of a strip of material that is longer than the width of the casing so that the exposed end C^1 will still project beyond the side wall 1 of the casing even when the slide valve is completely closed. A handle or knob 16 is mounted on the free end of the slide valve and the operator can grasp the knob for moving the valve to uncover any portion of the slot 13 desired.

I provide an applicator roller indicated generally at D and this roller is rotatably mounted between the extended portions 1*a* and 2*a* of the sides 1 and 2. I have shown the portions 1*a* and 2*a* lying in the same planes as the side walls 1 and 2. If it is desired to make the length of the roller D equal to the overall width of the casing A, then the portions 1*a* and 2*a* would be off-set slightly to permit this. The roller D is adjustably mounted between the portions 1*a* and 2*a* and Figure 2 shows a slot 17 provided in the extension 2*a*, and a screw 18 is received in the slot and forms an axis for the roller D. The extension 1*a* has a slot (not shown) similar to the slot 17 and this permits the roller to be moved toward or away from a fixed lip 19 that is provided at the lower end of the arcuate wall 4. Normally the outer periphery 20 of the roller is in contact with the lip 19.

The roller has a compressible layer of soft material D^1 wrapped therearound, and it is the outer periphery 20 of this material that contacts with the fixed lip 19 of the outlet nozzle. The layer D^1 will also ride on the surface E that is to be painted. A plurality of pins F extend radially from the core 21 of the roller and the outer ends of these pins are disposed just below the periphery 20 of

the layer of soft material D^1 when this material is not compressed. However, if the roller is applied to the surface to be painted and pressure is applied to the tool in the manner hereinafter described for painting the surface, the portion of the layer D^1 that bears against the surface will be compressed sufficiently to expose the outer ends of the pins in this portion and permit them to contact with the surface. The pins afford the necessary traction on the surface E for rotating the roller as the tool is moved over the surface.

A leaf spring G is secured to the bottom wall **3** at **22** and the free end of the spring bears against a hinged lip H and urges the outer edge of the lip into contact with the periphery **20** of the applicator roller D. Figure 2 shows a hinge **23** that is co-extensive with the width of the casing A and the hinge and lip H have a length equal to the length of the opening **13**. The leaf spring G may be of any width desired and it is preferably placed midway between the sides of the casing. An adjusting screw **24**, see Figure 2, varies the tension of the leaf spring and in this way the spring tension on the hinged lip H can be regulated.

The pressure plate B is yieldably returned to normal position by coil springs J that have their ends **25** connected to projections **26** that are integral with the side walls **1** and **2** of the casing. The other ends **27** of the springs are connected to screws **28** and these screws are carried by the pressure plate B. A stop **29** limits the outward swinging of the pressure plate when the springs J return the plate to normal position.

A handle K is secured to the pressure plate B and, if desired, an extension handle K^1 may be slipped over the outer end of the handle K as indicated by the dot-dash line in Figure 1. This permits the operator to use the tool for painting a ceiling.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. The paint to be applied to a surface is fed into the compartment formed by the casing walls and the pressure plate, and the opening **13** in the bottom wall, may be used as the inlet to the compartment. If desired, other means may be provided for filling the compartment with paint or a texture material. The roller D may be adjusted in the slots **17** to bring the periphery **20** adjacent to the fixed lip **19**. The slide valve C may be moved for exposing any desired portion of the length of the opening **13** or for uncovering the entire opening.

The operator now supports the tool by means of the handle K and presses only the roller D against the surface E that is to be painted or have a texture material applied thereto. The compartment for holding the paint will prevent any accidental excess feeding of the paint or texture material therefrom when the pressure is relieved on the plate B, because a vacuum will be created in the compartment as the springs J return the plate against the stop **29** and this will not only stop further outward flow, but will suck up the paint in the nozzle. The operator, by pressing the handle K, while using the device, will swing the plate B to contract the capacity of the compartment and thus force paint or the texture material through the opening **13** and out of the nozzle. The fixed lip **19** and the hinged lip H, plus the extensions **1***a* and **2***a*, will guide this material onto the periphery **20** of the roller. The roller in turn will rotate and apply the material to the surface E as the tool is moved thereover in the direction of the arrow **30** in Figure 2. Sufficient traction will be provided to prevent the roller from slipping over the surface because the pins F in the rings of pins will be successively brought into contact with the surface as the device is moved thereover.

One of the unique features of the tool lies in the fact that it can be used for painting a ceiling where it is necessary to operate the tool in an upside-down position. No leakage will occur because the flexible strips **9** and **12** will prevent any leakage between the edges of the pressure

plate and the adjacent inner surfaces of the casing walls. The paint or texture material can be fed onto the roller even when the device is painting a ceiling because the operator can press upon the plate B with sufficient force to force the material through the opening **13**.

It may be wise to use the extension handle K^1 when the device is used on ceiling work and this handle can be telescoped over a portion of the handle K for this purpose, see the dot-dash lines in Figure 1. At the end of the painting stroke, the operator merely releases the pressure on the handle K and the springs J will return the plate to normal position, and this will prevent any paint from dripping from the tool. Such an arrangement is especially advantageous when the tool is being used in the manner shown in Figure 2, and it is desired to prevent any excess feeding of the paint at the completion of the painting stroke. The mere removal of the tool from the surface E automatically causes the plate B to return to normal position and thus tends to create a vacuum within the compartment which will prevent any excess dripping of paint or other material from the nozzle. The hinged lip H will open automatically to a greater extent as the operator increases the pressure on the plate B because of the increased flow of material between the lips. In this way the thickness of the layer of material applied to the surface E can be controlled.

When the extension handle K^1 is used, the operator may use both hands to grasp the handle. This will steady the tool while in use and permit greater pressure to be applied if desired. The hinged lip H swings open automatically as the pressure on the plate B is increased and in this way the thickness of the layer of paint applied to the roller, is controlled.

I claim:

1. In an automatic feed paint and texture applicator: a contractible paint-holder compartment including side walls, a bottom wall and an arcuate rear end wall; said bottom wall having a leading edge, and being provided with an outlet opening disposed adjacent to the arcuate rear end wall; a pressure plate having a leading edge fulcrumed adjacent to the leading edge of the bottom wall, and having a trailing edge making a liquid-tight sliding contact with the inner surface of the arcuate rear end wall; the side edges of the pressure plate making a liquid-tight sliding contact with the inner surfaces of the side wall; a paint-applying roller rotatably mounted adjacent to the opening; a handle mounted on the pressure plate, whereby an operator may manipulate the applicator for applying the roller to a surface to be painted, and for exerting pressure on the plate for contracting the compartment and forcing paint through the opening and onto the roller; spring means yieldingly urging the pressure plate to its normal expanded position as soon as pressure on the handle is released, whereby the plate will create a vacuum within the expanded compartment for drawing paint from the opening and preventing any dripping; the roller being provided with a plurality of radially-extending traction pins, and a layer of compressible material normally covering the pins; the portion of said layer of material contacting a surface being compressible, whereby the pins in this portion will contact the surface and provide traction for rotating the roller as the applicator is moved thereover.

2. In an automatic feed paint and texture applicator: a contractible paint-holding compartment including side walls, bottom wall and an arcuate rear end wall; said bottom wall having a leading edge, and being provided with an outlet opening disposed adjacent to the arcuate rear end wall; a pressure plate having a leading edge fulcrumed adjacent to the leading edge of the bottom wall, and having a trailing edge making a liquid-tight sliding contact with the inner surface of the arcuate rear end wall; the side edges of the pressure plate making a liquid-tight sliding contact with the inner surfaces of the side walls; a paint-applying roller rotatably mounted adjacent

to the opening; a handle mounted on the pressure plate, whereby an operator may manipulate the applicator for applying the roller to a surface to be painted, and for exerting pressure on the plate for contracting the compartment and forcing paint through the opening and onto the roller; spring means yieldingly urging the pressure plate to its normal expanded position as soon as pressure on the handle is released, whereby the plate will create a vacuum within the expanded compartment for drawing paint from the opening and preventing any dripping; a hinged lip mounted adjacent to the outlet opening for determining the amount of paint delivered to the roller; and adjustable spring means for swinging the lip toward the roller; the pressure on the handle and the pressure of said spring means on the lip determining the thickness of the layer of paint applied to the roller.

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