Jan. 7, 1964 J. C. HOVELAND 3,116,511

MASTIC APPLICATOR

Filed Aug. 6, 1962 2 Sheets-Sheet 1

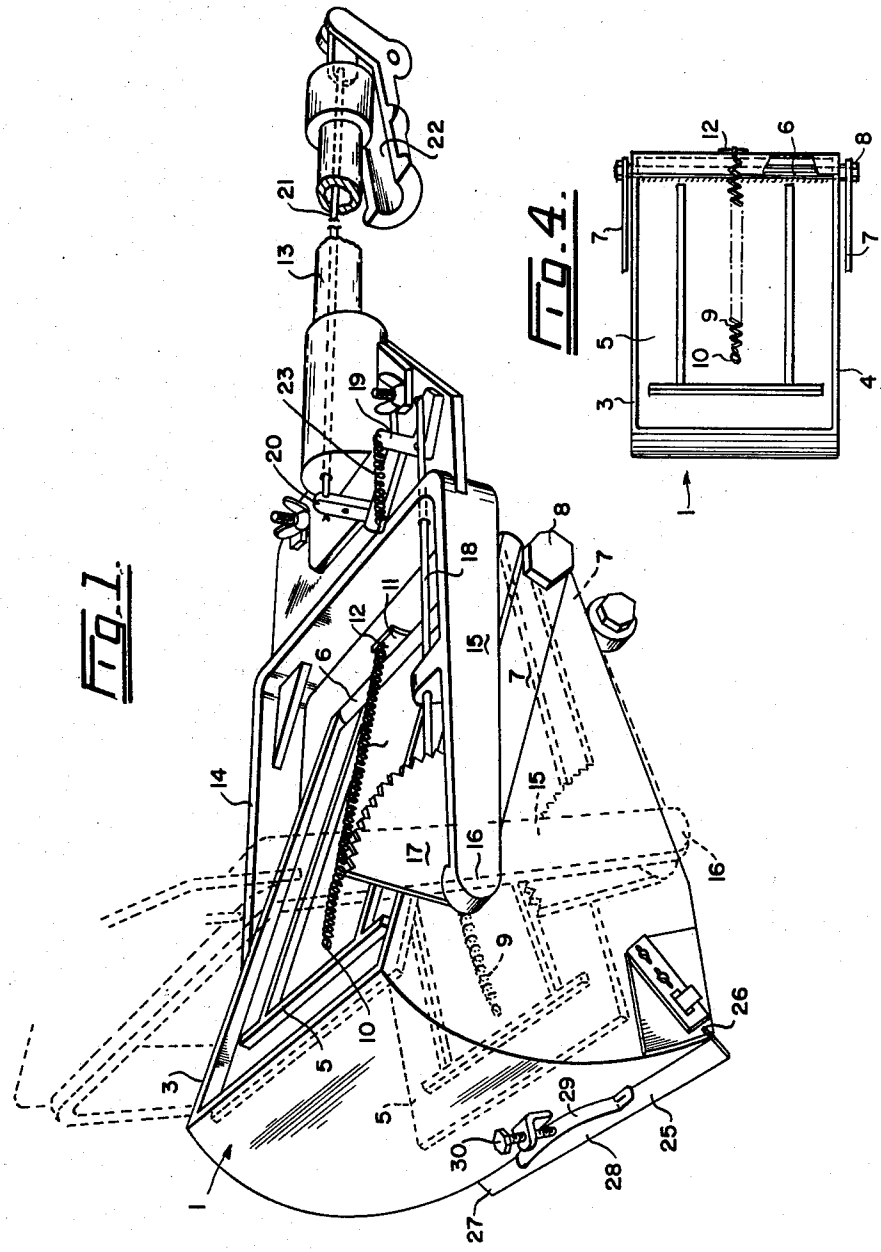

FIG. 1.

FIG. 4.

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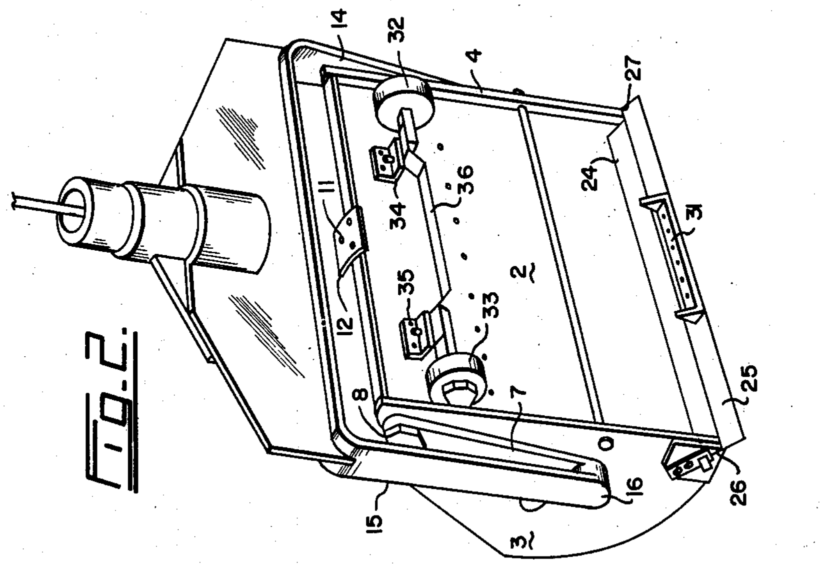

Fig. 2.

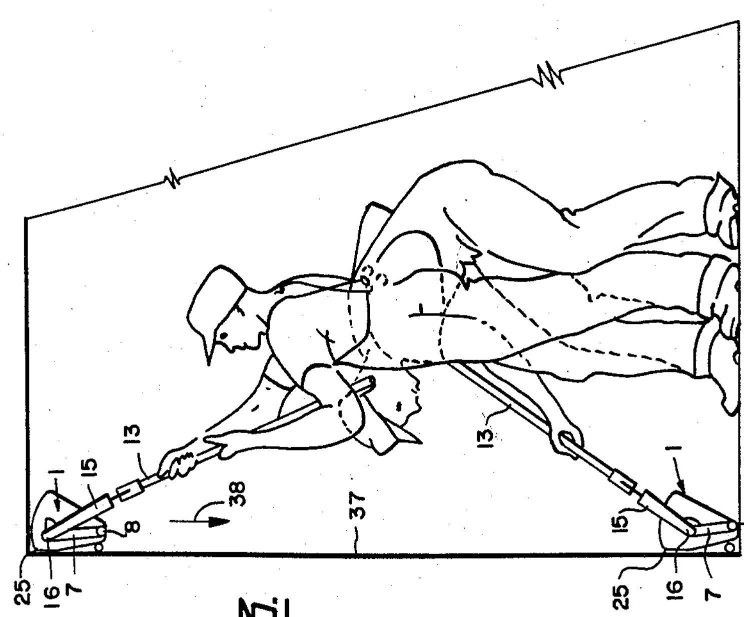

Fig. 3.

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United States Patent Office 3,116,511 Patented Jan. 7, 1964

3,116,511

MASTIC APPLICATOR

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Filed Aug. 6, 1962, Ser. No. 214,904
3 Claims. (Cl. 15—555)

This invention relates generally to mastic applicators and particularly to improvements to a mastic applicator of the type having one plate depressible toward the other to squeeze mastic from between the plates.

Mastic applicators of the type found in Canadian Patent No. 563,078 issued September 9, 1958 are well known and comprise a body member having a bottom, sides and ends with a plate fulcrumed to the body and depressible towards the bottom to squeeze out mastic contained withing the body through an opening in the bottom and onto a wall surface.

A device such as is illustrated and described in Patent 563,078 includes a handle pivoted to the mastic pressing plate so that pressure may be maintained on the plate as the device is moved over a wall or ceiling surface.

The chief difficulty found in devices of this nature is that when the handle is pivoted directly to the mastic pressing plate, the limit of travel of the handle with respect to the plate is approximately 90 degrees and, I have found that the maximum angular spacing between the mastic pressing plate and the bottom plate of a device of this nature is approximately 27 degrees. This means that only a limited amount of mastic can be carried in the body between the plates and considerable time must be spent during the mastic application operation in filling the body with mastic.

For example, I have found that a device of this nature will only cover from 12 to 14 feet of tape and since there generally is around 500 feet of tape in an ordinary house, it will readily be seen that much time would be spent in filling such a device.

I have found that when applying mastic close to a floor or in a confined space it is frequently necessary to have a handle that will move past 90 degrees with respect to the pressure plate of a mastic applicator and, in many cases, it is necessary to move as much as 120 degrees.

Further, in prior devices of the type illustrated in prior Patent 563,078 a bar is provided at the trailing edge of the device that is intended to flex at its mid portion to provide a crown effect to the mastic applied to the wall. This bar is positioned at right angles to the travel of the mastic applicator over the wall and its action is to shave off the excess mastic.

The difficulty with the use of a flexible bar of this type is that it is practically impossible to obtain a mastic that does not have small foreign particles inbedded there unless much time and effort is spent during the mastic preparation. As a result, small particles are frequently left in the mastic and whenever the bar passes over the mastic in a scraping action any foreign particle caught by the bar will gouge into the mastic and leave a groove or tear in the finished mastic surface.

To overcome the above and other difficulties inherent in prior devices of this sort I have provided a mastic applicator wherein the movable pressure plate is secured at one end to a shaft mounted rotatably in the body of the device with this shaft extending at its ends beyond the side of the device. Arms are affixed to the ends of the shaft to lie in the same direction and parallel with the edges of the pressure plate and I then provide a bifurcated handle affixed rotatably at its ends to the ends of the arms. In this manner I eliminate the restriction placed on the movement of the actuating arm with respect to the pressure plate as found in prior devices and, with

this construction, it is possible to move the actuating arm through an arc of at least 120 degrees with respect to the pressure plate. Therefore, I am enabled to move my mastic applicator down a wall and close to a floor or in a confined space and at all times maintain sufficient pressure on the plate to force mastic from the applicator.

In addition, I have replaced the bar at right angles to the movement of the mastic applicator as found in prior devices with a blade set at an angle of approximately 32 degrees with respect to the surface over which the applicator will pass so that the action of the blade will be to slide smoothly over the mastic in the form of a trowel and to give a much more satisfactory finish to the mastic surface. Obviously a blade operating at an angle of approximately 32 degrees with respect to the mastic surface will pass over any foreign particles imbedded in the mastic to sink the particles into the mastic and to leave a finished surface free from blemishes and tears.

Another advantage of the sloped blade is that it will create a pressure on the mastic as the applicator is moved over the wall surface. Because of this, the mastic need not be under pressure in front of the blade in order to leave an even coat of mastic. The applicator only needs to feed mastic to the wall surface in front of the blade which means that less effort will be required to operate this device.

It is well known that all of the slow setting fillers will shink when they dry. I have found that owing to this shrinkage, the vertical trowel-bar system as seen in prior devices, requires three coats if a satisfactorily finished surface is to result. I have found that an applicator using my sloped-blade system, will require only two coats to accomplish the same result.

To illustrate this further, I have found that the vertical trowel-bar system will apply an even coat of mastic on its pass over a joint. If the joint contains any excess depressions or scratches, these will show up slightly after the mastic is dry and will require at least two additional coats before these excess depressions and scratches are eliminated satisfactorily.

In my sloped-blade system, the application of the first coat to the wall surface will force the mastic against the wall and when the applicator passes over an excess depression, it will not leave an uneven coat. It will discharge an excess amount of mastic when a depression is passed over and will leave a slight hump at the point of the depression. When the mastic dries and shrinks, this slight hump will recede and leave practically a level surface so that only a second coat is required to leave a smooth, finished job.

With reference now to the drawings:

FIG. 1 is a projected side elevation of my improved mastic applicator with the movable pressure plate shown in the raised position in solid lines and in the depressed position in dotted lines.

FIG. 2 is a projected view of my device looking at the bottom thereof and illustrating the trowelling blade and shoe.

FIG. 3 is a diagrammatic view illustrating the mastic applicator in use in the raised and lowered positions.

FIG. 4 is a partial plan view of the applicator.

As seen in the drawings my device comprises the body member indicated generally at **1** and having a bottom **2**, sides **3** and **4** and a plate **5** fixed rigidly at its one end to the shaft **6** which projects at its ends from the sides **3** and **4** of the box.

Actuating arms **7** are fixed rigidly to the ends of the cross shaft **6** as indicated at **8**. It should be noted that only one of the arms **7** is visible at the side **4** of the box although it will be obvious that an identical arm would be connected at the opposite end of the shaft **6** to operate parallel to the side **3**.

The mastic pressing plate 5 is held normally in the up position with respect to the bottom plate 2 by the tension spring 9 secured at 10 to the plate and at 12 to the projecting lug 11. The plate 5 is depressible as indicated in the dotted lines of the FIG. 1 toward the bottom plate 2 and whenever pressure is released, the spring 9 will return the plate automatically to the raised position as indicated.

Movement of the plate 5 is accomplished through the handle 13 which is bifurcated into the forks 14 and 15 and the forks are connected pivotally as at 16 to the ends of the arms 7. Again only one pivotal connection 16 is seen in the drawings although it will be understood that identical connection would be at the opposite side of the machine which, in the view illustrated, is hidden.

Obviously, as pressure is applied on the handle 13, the pressure will be transmitted through the forks 14 and 15 and their pivotal connection 16 to the arms 7. Since the arms 7 are fixed rigidly to the ends of the cross-shaft 6, pressure on the arms 7 will rotate the cross-shaft 6 and this will move the plate 5 in the box as indicated in the dotted lines in FIG. 1 in the drawings. Continued pressure on the handle 13 will continue to move the plate 5 and, if desired, the handle 13 may be rotated about the pivotal point 16 to change the angular position between the forks 14 and 15 and the arms 7 as desired.

In apparatus of this sort it is the custom to provide some means for locking the angular position of the handle with respect to the plate 5 and, in this case, this is accomplished by the quadrant 17 located on one of the arms 7 adjacent its connection with the arm 15 and a pin 18 coupled through the linkages 19 and 20 to the cable 21. The cable is in turn connected to the actuating lever 22 so that pressure on the lever 22 to move the lever toward the handle 13 will force the end of the rod 18 into contact with one of the teeth on the quadrant 17 and lock the handle. A spring 23 maintains the rod 18 normally out of contact with the quadrant 17.

Mastic from within the body member 1 is fed through the opening 24 as the plate 5 is depressed towards the bottom 2. As the mastic is extruded from the opening 24 onto a wall or ceiling surface, it is customary to level off the mastic on the wall or ceiling in a slight crown effect and this has been done in prior devices of this nature by a bar that scrapes off the mastic. In my improved device I accomplish this by the trowel blade 25 which is fixed at its ends 26 and 27 along the opening 24 and is free at its centre portion 28 so that the bar may be distended upwardly under the pressure of the mastic to impart the necessary crown effect to the mastic. A tension spring 29 and adjustment 30 is provided so that pressure against the centre portion 28 of the blade 25 may be adjusted and the resultant crown effect to the mastic may be controlled.

It will be noted also that the blade 25 in my improved mastic applicator is positioned at an angle of approximately 32 degrees to the bottom of the applicator and, as a result, the blade 25 will trowel over the mastic and smooth the surface of the mastic without catching on any foreign particles that might be imbedded in the mastic coat. In addition, I have provided the shoe 31 positioned at the centre of the blade 25. The action of the

shoe 31 is to normally ride along the surface of the wall or ceiling over which the mastic applicator is passing and whenever a protrusion or other deformity in the wall surface is encountered, the shoe 31 will ride on the protrusion and crown the trowel blade away from the wall surface and ensure that a coating of mastic will be applied over the protrusion.

As is customary in devices of this nature I provide rollers 32 and 33 at the leading edge of the mastic applicator. These rollers are independently pivoted at 34 and 35 and linked by the link 36 to ride along an uneven wall surface and maintain the bottom of the mastic applicator substantially level at all times.

Reference now to FIG. 3 in the drawings will illustrate my improved apparatus in operation. In the raised position and when operated by the workman it will be noted that the trowel blade 25 is pressed against the surface of the wall 37 and the applicator may then be moved downwardly along the wall surface 37 in the direction of the arrow 38. In the second position the applicator has been moved to the bottom of the wall surface 37 and it will be noted that the handle 13 has been moved well past an angle of 90 degrees with respect to the position of the handle when the applicator was in the raised position.

With this construction, it will be obvious that a complete range of movement of the device and movement of the handle with respect to the device is possible and, at the same time, sufficient pressure may be maintained against the mastic pressing plate throughout the range of movement of the device to press mastic onto the wall or ceiling surface at all times.

What I claim as my invention is:

1. In a mastic applicator having a body with a bottom, sides and an end and an opening in the bottom, a transverse shaft mounted rotatably in the body and extending at its ends beyond the sides of the body, a pressure plate secured to the shaft, such plate being depressible towards the bottom as the shaft is rotated and adapted to squeeze material in the body through the opening, arms each connected at one end to one end of the shaft and disposed parallel to the edges of the pressure plate, an actuating handle bifurcated at one end and connected rotatably at its bifurcated end to the opposite ends of the arms and spring means reacting between the pressure plate and the body normally to maintain the pressure plate away from the bottom.

2. The mastic applicator as claimed in claim 1 and a trowel blade mounted transversely of the body and positioned at an angle with respect to the surface over which the body will pass to trowel smooth any surface squeezed through the opening without shaving such material.

3. The mastic applicator as claimed in claim 2 and a shoe secured to the trowel blade to contact the wall surface under pressure from the bar.

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