

June 9, 1959

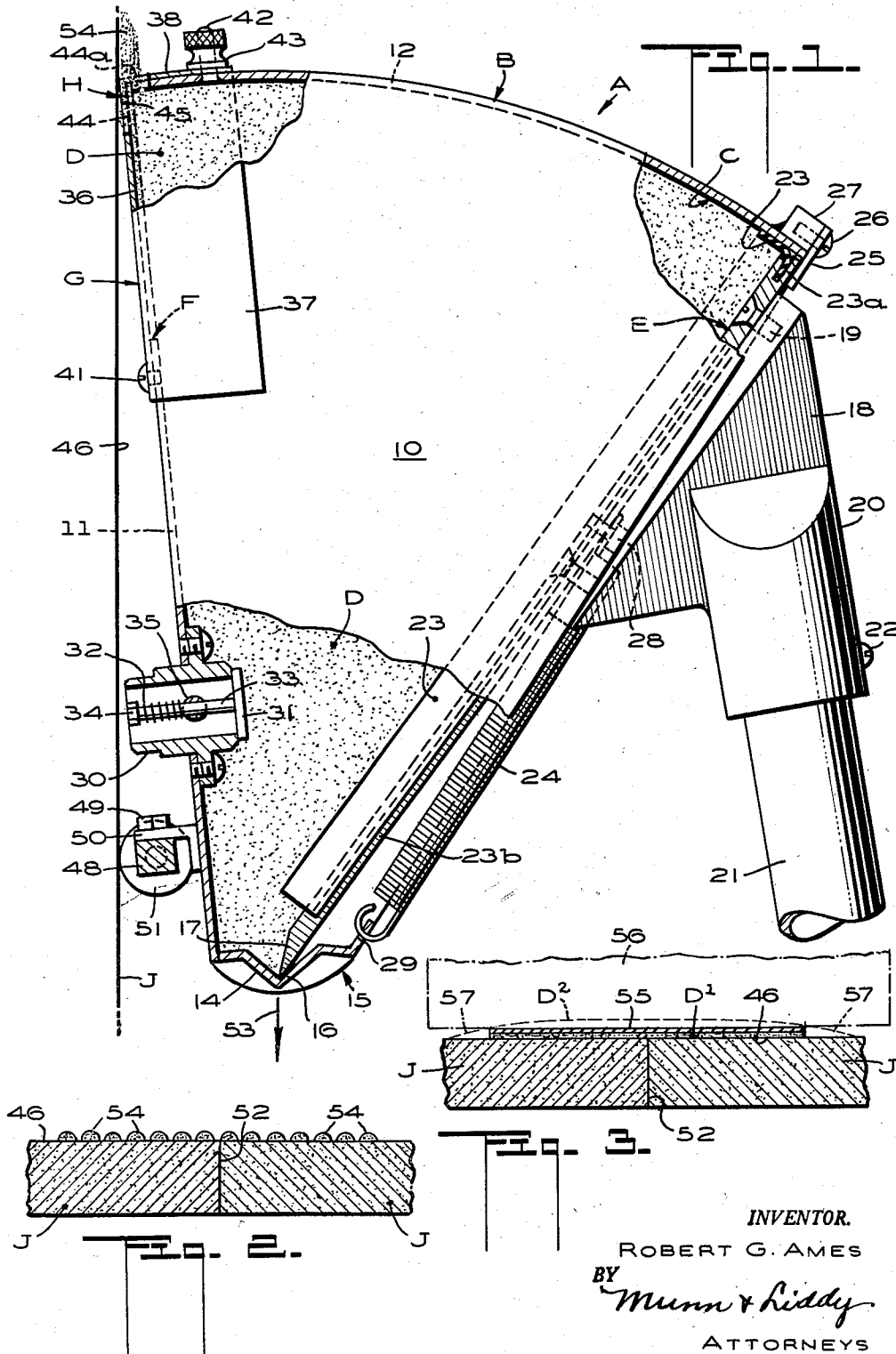
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2,889,699

MASTIC APPLICATOR WITH REMOVABLE HEADS

Filed May 5, 1955

4 Sheets-Sheet 1



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MASTIC APPLICATOR WITH REMOVABLE HEADS

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4 Sheets-Sheet 2

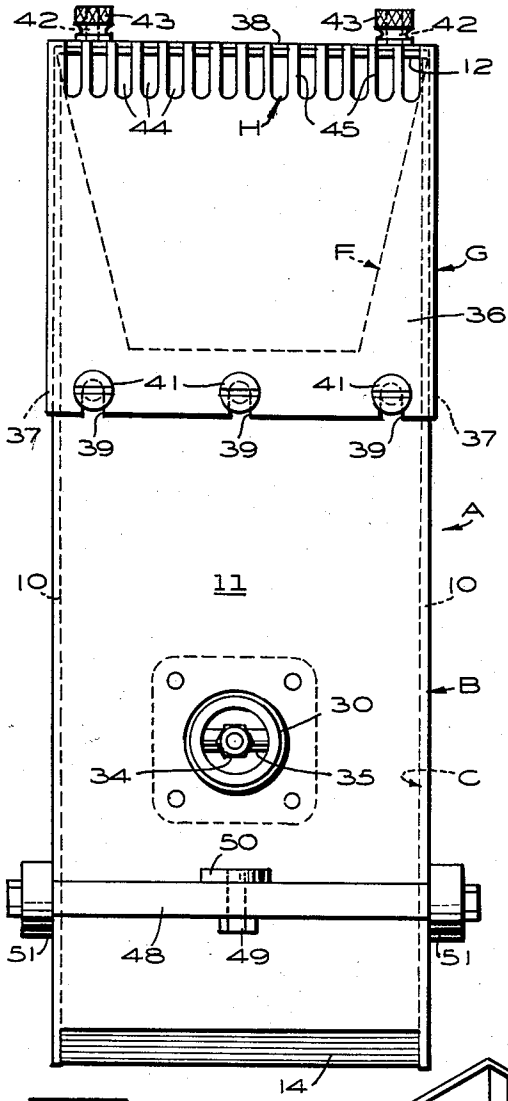


Fig. 4.

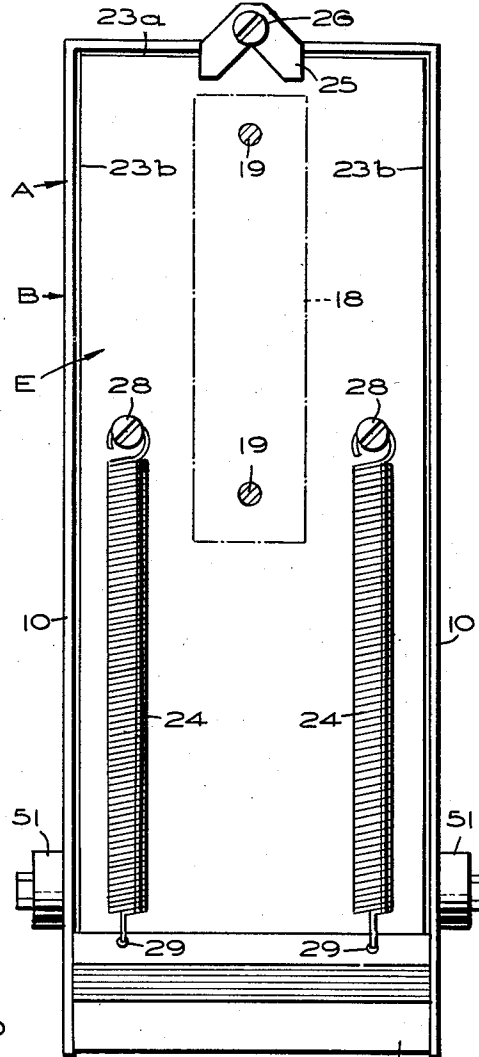


Fig. 5.

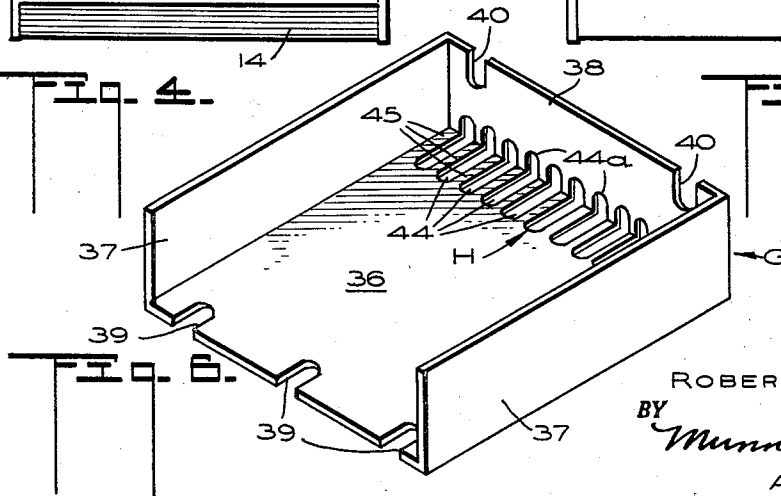


Fig. 6.

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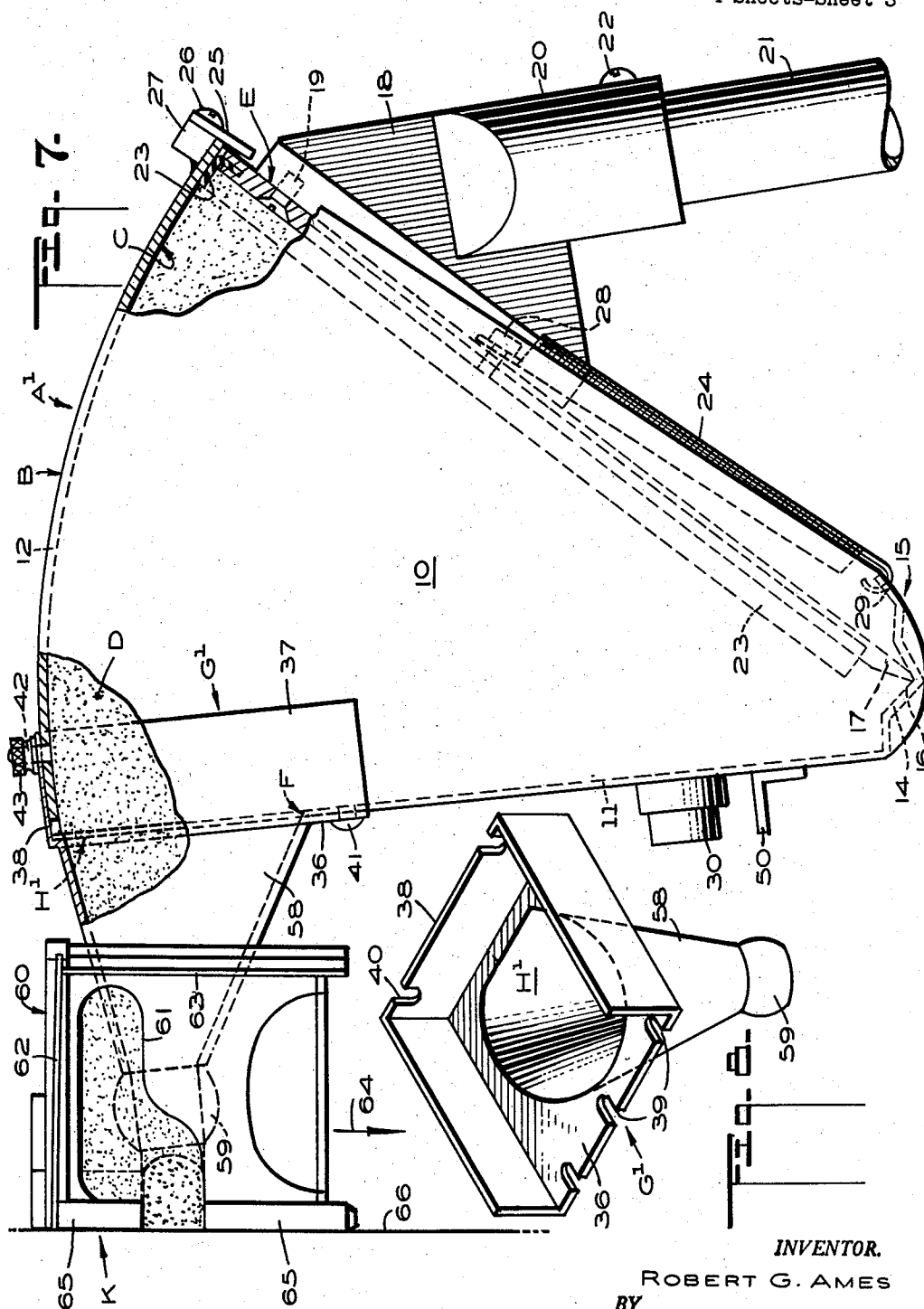
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MASTIC APPLICATOR WITH REMOVABLE HEADS

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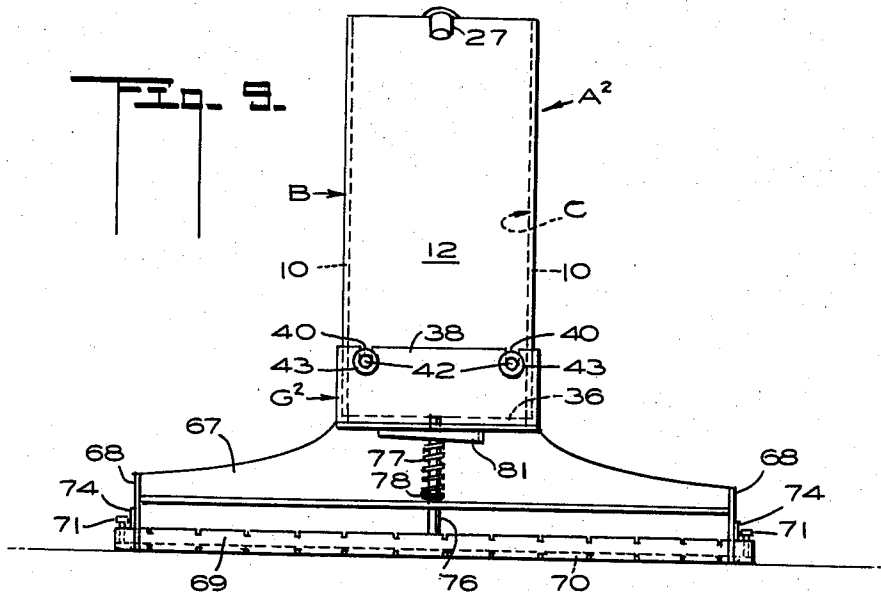
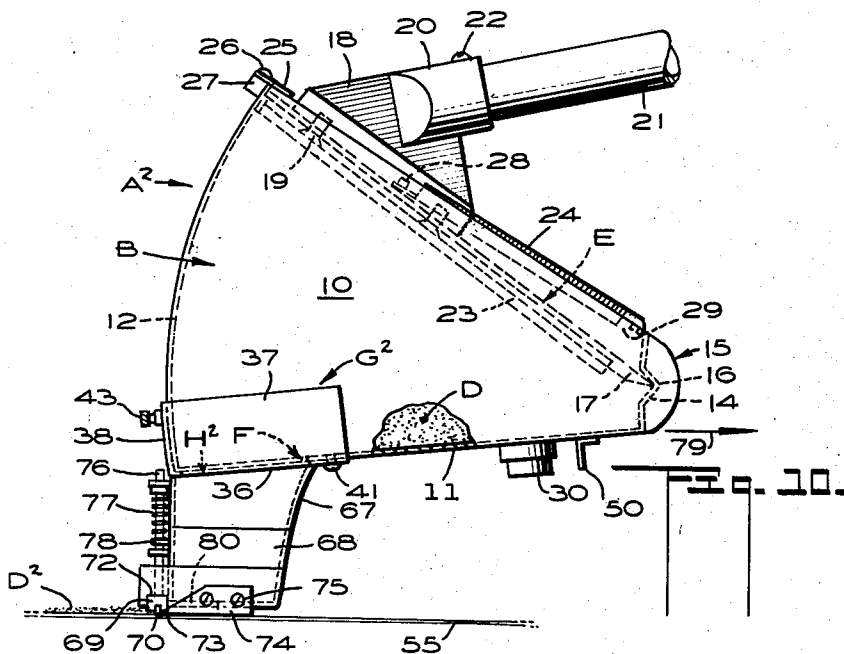
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MASTIC APPLICATOR WITH REMOVABLE HEADS 5

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Application May 5, 1955, Serial No. 506,278

4 Claims. (Cl. 72—130)

The present invention relates to improvements in a mastic applicator with removable heads. It consists of the combinations, constructions and arrangement of parts, as hereinafter described and claimed.

In the construction of buildings in which wall boards or sheet-rock panels are used, it is a common practice to apply a layer of mastic over the joints defined between adjacent boards or panels. Thereafter a strip of tape is placed over the initial layer of mastic to provide a reinforcement. Finally, one or more outer layers of mastic are added so as to conceal the tape, with these additional layers being feathered at their opposing edges to blend into the surfaces of the wall boards or panels. These operations require several different types and widths of mastic applicators. Moreover, the construction of the mastic-applying heads for sealing corner joints differ in many respects from those used for covering joints in plane surfaces.

As a cardinal object of this invention, it is proposed to provide a mastic applicator which is so designed that various types of mastic applying heads may be readily secured thereto, thus providing a multi-purpose applicator. These heads may be selectively attached to the applicator, depending upon the pattern of mastic to be ejected, and the location at which the mastic must be applied to the wall boards or panels.

Other objects and advantages will appear as the specification continues. The novel features will be set forth in the claims hereunto appended.

Drawings

For a better understanding of the invention, reference should be had to the accompanying drawings, forming part of this application, in which:

Figure 1 is a side elevational view, partly in section, illustrating the applicator having a head secured thereto for applying ribbons of mastic over a wall board joint;

Figure 2 is a sectional view illustrating two abutting wall boards having the ribbons of mastic applied thereto to provide an initial layer of mastic over the joint;

Figure 3 shows these same wall boards after the ribbons of mastic have been flattened out and a strip of tape placed over the initial layer of mastic;

Figures 4 and 5 are bottom and top plan views, respectively, of the mastic applicator shown in Figure 1;

Figure 6 is an isometric view of the removable head of the type disclosed in Figures 1 and 4;

Figure 7 illustrates the mastic applicator being provided with a modified form of a mastic-discharging head for applying mastic in a corner;

Figure 8 is an isometric view of the removable head shown in Figure 7;

Figure 9 is a rear-elevational view of the mastic applicator having a further modified form of mastic-discharging head which is adapted for applying a final covering of mastic over a wall board joint; and

Figure 10 is a side-elevational view of the applicator and head shown in Figure 9.

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

Detailed description

Referring now to the first embodiment of the invention, as shown in Figures 1 and 4-6, it will be noted that I provide a mastic applicator indicated generally at A. It includes a housing B having a compartment C therein adapted to receive mastic D. A mastic-pressing plate E is swingably mounted in this compartment, and is operable to force the mastic through an outlet opening F formed in the housing. Also, a removable mastic discharging head G is disposed over this outlet opening to receive the mastic ejected from the housing. The head is formed with an outlet H through which the mastic may be extruded against a wall surface.

In its structural features, the housing B defines spaced-apart opposing side walls 10, having a bottom wall 11 secured thereto and extending therebetween. As shown, these side walls are triangular in shape and are further joined together by an arcuate trailing wall 12. A transversely-extending fulcrum member 14 is disposed at the leading end 15 of the housing. This member is reentrantly shaped to define a fulcrum seat 16 in which the wedge-shaped end 17 of the mastic-pressing plate E is adapted to rest and pivot.

For the purpose of swinging the plate E towards the bottom wall 11, and thereby force mastic through the outlet opening F, a bracket 18 is secured to this plate by screws 19. The bracket 18 is provided with a socket 20 into which one end of an operating handle 21 may be inserted. A set-screw 22 may be provided for removably securing the handle to the socket. Of course, handles of various lengths may be used.

It will be observed that a flexible wiping member 23 is anchored to the plate E to extend across the trailing end 23a and opposing lateral sides 23b of this plate to thus prevent escapement of the mastic D around the latter as this plate is forced toward the bottom wall 11 of the housing B (see Figures 1 and 5). When pressure is relaxed on the handle 21, a pair of coil springs 24 return the plate E to its normal position, as shown in Figure 1, at which time it abuts a stop 25. This stop overlies the trailing end of the plate E, and may be removably secured by a set-screw 26 to a lug 27 on the arcuate trailing wall 12. As shown in Figures 1 and 5, each coil spring 24 has one end anchored to the plate E by a screw 28, while its opposite end is hooked through an aperture 29 formed in the fulcrum member 14.

In order to provide for the rapid filling of the compartment C with mastic, an inlet tube 30 is provided on the bottom wall 11. A pump (not shown) may be coupled to this tube to allow the mastic to be delivered to the compartment C. A suitable pump for this purpose is shown in my co-pending application on "Self-Contained Dry Wall Taper," Serial No. 454,563, filed in the United States Patent Office on September 7, 1954, now Patent No. 2,815,142.

As illustrated in Figure 1 of the drawings, a check valve 31 coacts with the tube 30 to preclude return flow of the mastic through the inlet tube. This valve may be yieldingly urged into closed position by a coil spring 32, which encircles a stem 33 of the valve, with this spring being interposed between a nut 34 on the stem and a transverse journal 35 through which the stem is guided. The opposing ends of this journal are secured to the tube 30 (see Figure 4).

Turning to Figures 1, 4 and 6, the mastic-discharging head G includes a bottom plate 36 having a pair of spaced-apart longitudinally extending lateral flanges 37

thereon. These flanges are adapted to straddle the housing B and about the side walls 10 of the latter. The head G is further provided with a transversely-extending end flange 38, which is arranged for abutting the arcuate trailing wall 12 of the housing. Particular attention is called to the fact that the flanges 37 and 38 correctly position the head G relative to the outlet opening F of the housing.

For detachably securing the head G to the housing B, marginal notches 39 and 40 are formed in the bottom plate 36 and the flange 38, respectively. Screws 41 are adapted to pass through the notches 39 and are threaded into the bottom plate 11. Studs 42 are fixed to the arcuate trailing wall 12 and project through the slots 40. Binding nuts 43 are threaded onto the studs 42, and when tightened, will clamp the flange 38 to the end wall 12. Quite obviously, the head G may be readily removed from the housing B by loosening the screws 41 and the nuts 43.

As shown in Figures 4 and 6, an outlet H of the mastic-discharging head G defines a plurality of spaced-apart parallel slots 44, with the bottom plate 36 providing surface-engaging runners 45 disposed between adjacent slots. These slots extend upwardly into the transverse end flange, as indicated at 44a in Figures 1 and 6. It will be apparent that the slots are formed at intervals along the width of the plate 36 and will allow mastic to be extruded therethrough.

In Figure 1, the mastic applicator A is shown as being disposed adjacent to a surface 46 of a wall, with the runners 45 bearing against the surface. In order to preclude the inlet tube 30 from gouging into the wall surface, as the mastic-pressing plate E is depressed, a transverse axle bar 48 is swingably secured intermediate of its ends by a stud 49 to a bracket 50, the latter being fixed to the bottom wall 11 (see Figures 1 and 4). Rollers 51 are rotatably mounted on the opposing ends of the axle bar so as to ride on the wall surface.

Referring to Figures 2 and 3, a pair of wall boards J are illustrated as forming a joint 52 therebetween. When the mastic applicator A is applied to the surface 46 of these wall boards so that the runners 45 will ride thereover, and the applicator is advanced in the direction of the arrow 53 (see Figure 1), while the operator depresses the plate E, a series of mastic ribbons 54 will be delivered to the wall surface 46. These ribbons are extruded through the slots 44 and their extensions 44a, and will be disposed parallel with one another.

Subsequently a strip of tape 55 may be applied to the ribbons of mastic, with the tape overlying the joint 52. As suggested in Figure 3, a broad knife 56 may be moved over the tape 55 so as to press the latter towards the wall surface 46. This will cause the mastic ribbons to flatten out and spread laterally, until an initial layer D¹ of mastic will be provided over the joint 52, with the tape being firmly bonded to this layer. As shown, the layer D¹ will have a uniform thickness throughout its width.

Thereafter, an outer layer D² of mastic may be applied over the tape 55, as indicated by dotted lines in Figure 3. This layer is wider than the tape and has its lateral edges 57 feathering into the surface 46 of the wall boards. The outer layer D² of mastic may be applied in the manner hereinafter set forth in connection with a modified mastic-discharging head shown in Figures 9 and 10.

Of course, wall boards must be taped in the corners of rooms, and along the wall-ceiling junctures. For this reason, a modified form of a mastic-discharging head G¹ has been provided in Figures 7 and 8. However, the remainder of the modified mastic applicator A¹ remains the same, including the housing B and the mastic-pressing plate E. The axle 48 and the rollers 51 may be detached from the bracket 50. Accordingly, like reference numerals have been applied to corresponding parts.

The modified head G¹ includes a nozzle 58, which is secured to the bottom plate 36 so as to surround its outlet

H¹. The flanges 37 and 38 remain the same as in the first embodiment. This nozzle has a partial spherical end 59 on which a corner-finishing tool head K is universally supported. The structural details of the head K are fully disclosed in my copending application on "Corner-Finishing Tool Head For Applying Mastic," Serial No. 476,493, filed in the United States Patent Office on December 20, 1954, now Patent No. 2,824,443.

Briefly, the head K includes a pair of swingable wings 60 that are adapted to be pressed into the corner of a room. Only one wing has been shown in Figure 7. Each wing has a recess 61 which is arranged to receive mastic being discharged from the nozzle 58. This mastic is applied over the wall surfaces by trowelling bars 62 and 63, when the corner head K is advanced in the direction of the arrow 64, while maintaining clips 65 in the corner 66.

It will be quite apparent that the mastic-discharging head G, shown in Figure 1, may be readily detached from the housing B, and the modified head G¹ (Figure 8) substituted therefor. Thereafter, the corner head tool K may be applied, and this will result in the mastic applicator A¹ shown in Figure 7.

With regard to the further modified mastic applicator A², as illustrated in Figures 9 and 10, the housing B and mastic-pressing plate E are identical with the first form of the invention. Here the mastic-discharging head G² includes the same flanges 37 and 38, which are detachably secured to the housing by screws 41 and nuts 43. This head has a hollow nozzle 67 secured to its bottom plate 36 so as to receive mastic forced through the outlet opening F. The bottom plate 36 has an outlet H² therein to allow the mastic to pass into the interior of the nozzle (see Figure 10). The nozzle surrounds this outlet.

As disclosed in Figure 9, the nozzle 67 is somewhat wider than the housing B. Its construction is similar to the "Mastic Applicator and Finishing Tool" shown in my copending application, Serial No. 374,722, filed in the United States Patent Office on August 17, 1953, now Patent No. 2,824,442.

In Figures 9 and 10, the nozzle 67 is shown as being provided with end plates 68, which support the opposing ends of a flexible guide 69. This guide carries a trowelling bar 70, which may be adjusted relative to the guide by screws 71. The guide is mounted in notches 72 fashioned in the end plates 68 and is held therein by fingers 73 provided on wear shoes 74 (see Figure 10). These wear shoes are fastened to the end plates by screws 75.

As shown in both Figures 9 and 10, a vertically-guided rod 76 has its lower end bearing against the guide 69 at the center of the latter. This rod is yieldingly urged downwardly by a compression spring 77 that bears against a washer 78 fixed to the rod. When the mastic applicator A² is advanced over the strip of tape 55 (see Figures 3 and 10), in the direction of the arrow 79, the guide strip will yield between the end plates 68, thus producing a crown on the outer layer of mastic D², as suggested in Figure 3 of the drawings. The mastic is discharged through an outlet opening 80, provided in the bottom of the nozzle 67, in front of the guide 69 and its trowelling bar. The tension of the spring 77 may be changed by adjusting a wedge-shaped member 81 in a lateral direction.

Thus, I have provided a plurality of mastic-discharging heads G, G¹ and G², each being adapted to be selectively disposed over the outlet opening F of the housing B. As the work of applying the mastic and tape over the joints of the wall boards J progresses, the operator may change from one mastic-discharging head to another, in accordance with the requirements.

I claim:

1. In a mastic applicator with a removable head: a housing having spaced-apart opposing side walls, and bottom and trailing end walls extending transversely between the side walls; the bottom wall having leading and trailing sections; the housing having a compartment therein

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adapted to receive mastic; the bottom wall being provided with an outlet opening disposed at a corner defined by the trailing section of the bottom wall and the trailing end wall of the housing; a filling tube carried by the leading section of the bottom wall and communicating with said compartment; means operable for pressing the mastic through the outlet opening; a removable mastic-discharging head disposed over said outlet opening to receive mastic ejected from the housing; the head having a rectangular-shaped bottom plate abutted against the bottom wall of the housing, and this plate being confined to the trailing section of the bottom wall, thereby leaving the filling tube unobstructed by said head; the head having a pair of spaced-apart longitudinally-extending lateral flanges rising from the sides of its bottom plate; these flanges abutting the exterior surfaces of the side walls of the housing; the head further having a transversely-extending end flange rising from the trailing end of the bottom plate of the head, and removably abutting the exterior surface of the trailing end wall of the housing; the leading end of said head being channel-shaped in cross-section so as to fit over the side walls and the bottom wall of the housing; the head having an outlet opening through which the mastic may be extruded; the lateral and end flanges positioning the outlet opening of the head in registration with the outlet opening in the bottom wall of the housing; and detachable means securing the head to the housing.

2. The mastic applicator with a removable head, as defined in claim 1; and in which the leading edge of the bottom plate of the head and the top edge of the end flange of the head are both fashioned with notches therein; and the detachable means are provided by screw members extending through said notches and being anchored to the housing, whereby the head may be quickly removed by loosening the screw members.

3. In a mastic applicator with a removable head: a housing defining spaced-apart opposing side walls, and bottom and trailing end walls extending transversely between the side walls; the housing having a compartment therein adapted to receive mastic, and the bottom wall

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being provided with an outlet opening; means operable for pressing the mastic through the outlet opening; a removable mastic-discharging head disposed over said outlet opening to receive mastic ejected from the housing; the head including a pair of spaced-apart longitudinally-extending lateral flanges straddling the housing and abutting the side walls of the housing; the head further having a transversely-extending end flange abutting the trailing end wall of the housing; these flanges positioning the head relative to the outlet opening of the bottom wall; the head having an outlet through which the mastic may be extruded; means detachably securing the head to the housing; the head including a bottom plate; the outlet of the head defining a plurality of spaced-apart parallel slots formed in said bottom plate at intervals along the width of the latter; said plate between the slots being adapted to act as surface-engaging runners; the slots extending upwardly into the transverse end flange of the head.

4. In a mastic applicator, a mastic-discharging head comprising: a bottom plate having a pair of spaced-apart longitudinally-extending lateral flanges projecting therefrom; the head further having a transversely-extending end flange; the bottom plate having a plurality of spaced-apart parallel slots through which mastic may be extruded; the plate between the slots being adapted to act as surface-engaging runners; these slots extending upwardly into the transverse end flange of the head; and the slots being arranged at intervals across the width of the bottom plate.

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