Nov. 7, 1961 J. D. GOODE, JR 3,007,837

PRESSURE FED, WALLBOARD TAPING MACHINE

Filed Nov. 9, 1959

4 Sheets-Sheet 1

Fig. 1

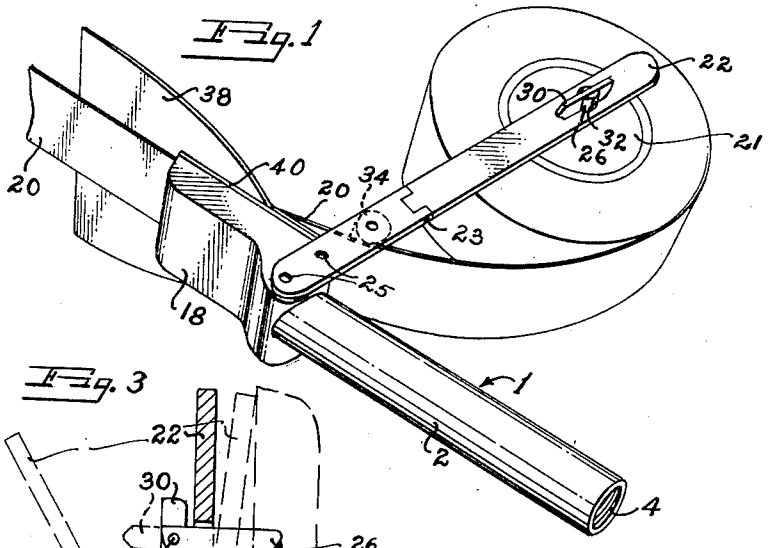


Fig. 3

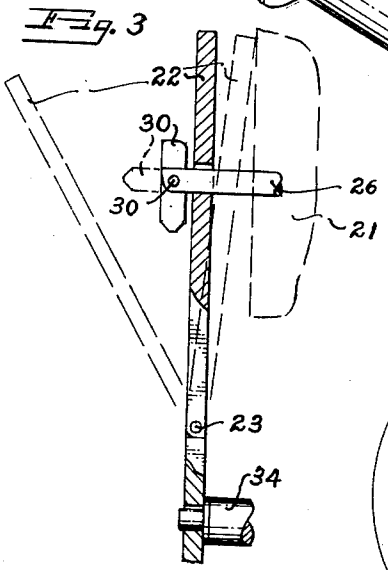


Fig. 2

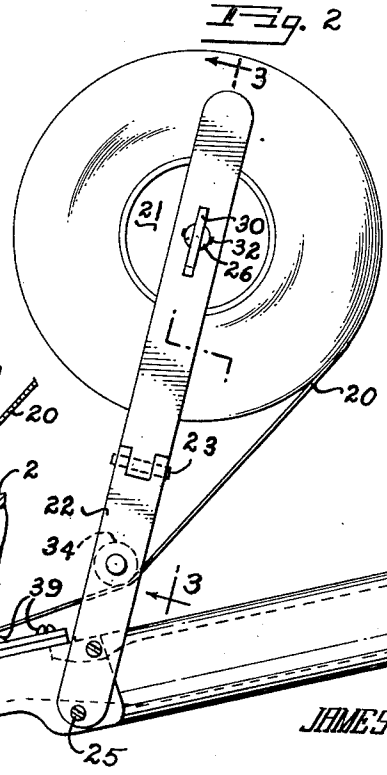


Fig. 4

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PRESSURE FED, WALLBOARD TAPING MACHINE

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Fig. 5

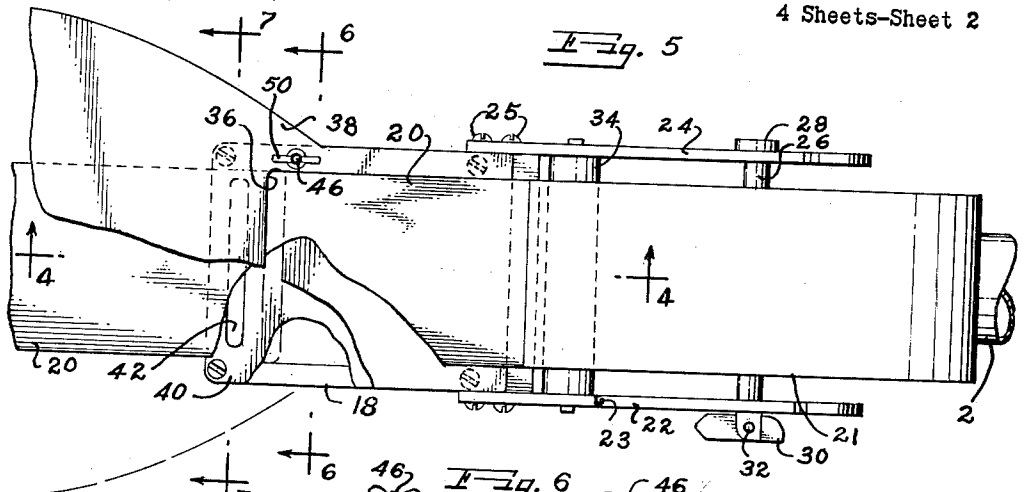


Fig. 6

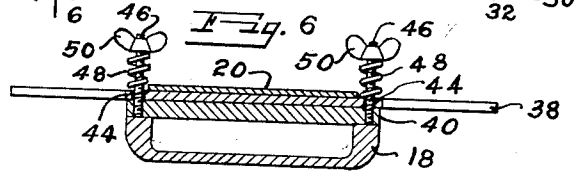


Fig. 7

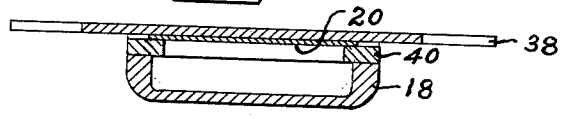


Fig. 8

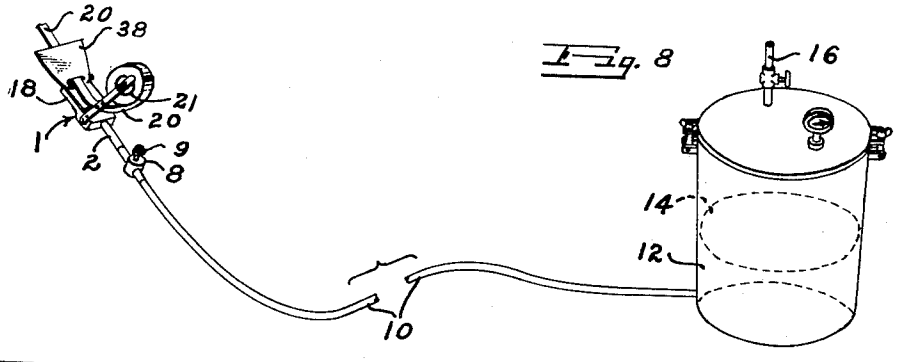
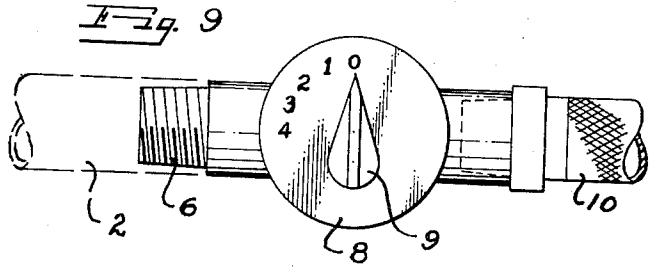


Fig. 9



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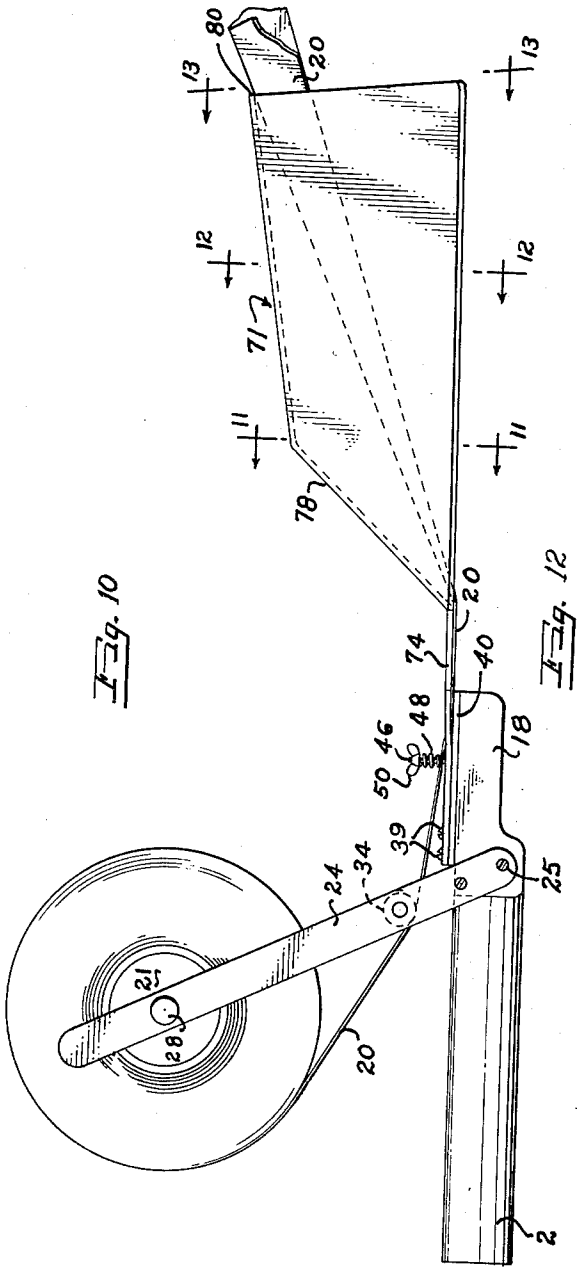


Fig. 10

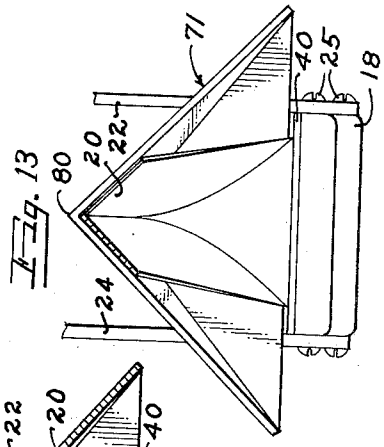


Fig. 13

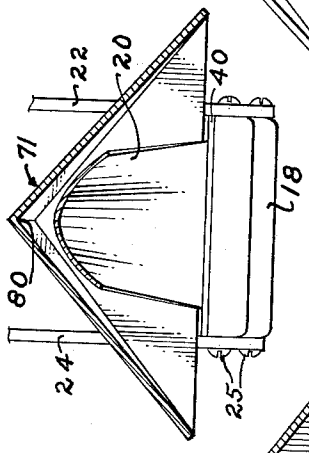


Fig. 12

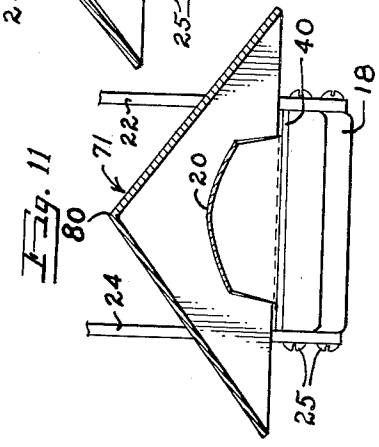


Fig. 11

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Fig. 14

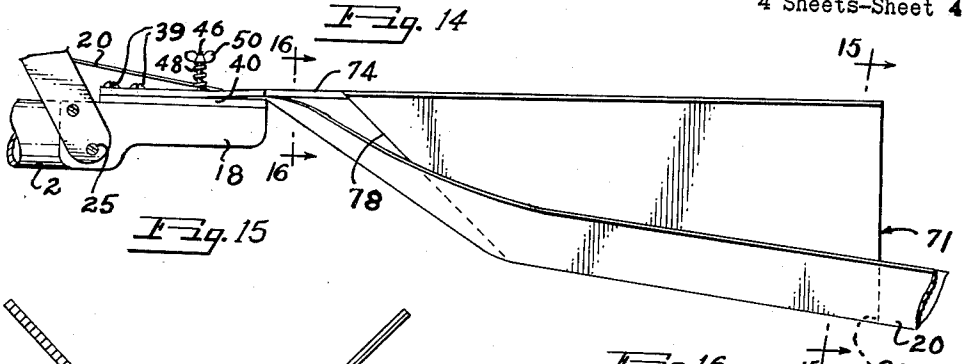


Fig. 15

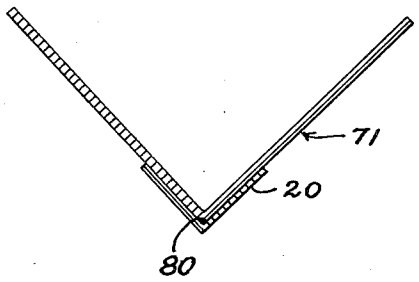


Fig. 16



Fig. 17

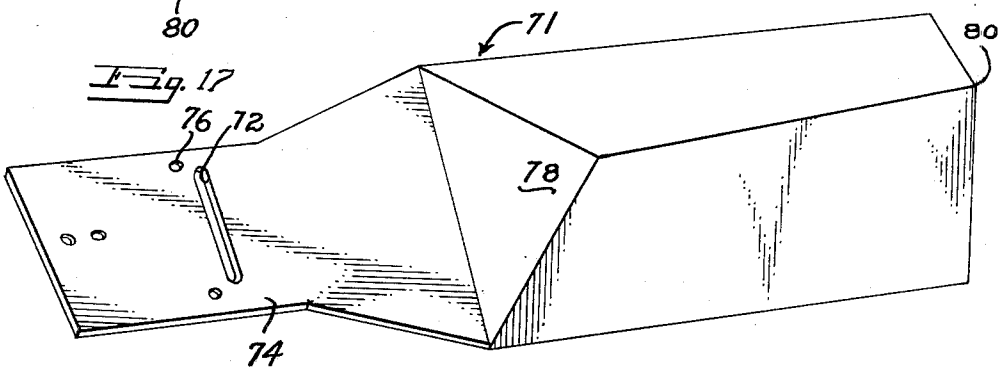
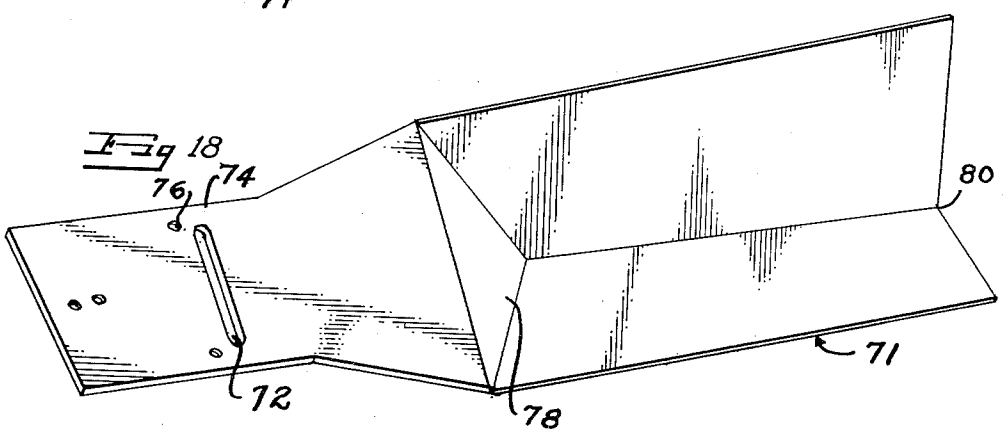


Fig 18



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United States Patent Office 3,007,837 Patented Nov. 7, 1961

3,007,837

PRESSURE FED, WALLBOARD TAPING MACHINE

James D. Goode, Jr., Wichita Falls, Tex.

Filed Nov. 9, 1959, Ser. No. 851,687
14 Claims. (Cl. 156—461)

This invention relates to taping machines and more particularly to taping machines to coat wallboard tape with mastic and to apply the tape to the joints and to the corners of wallboard in a rapid and expeditious manner.

The present device is so constructed that a relatively inexperienced operator may apply wallboard tape, which is coated with a layer of bedding cement, in a workmanlike manner and much more rapidly than the average experienced workman can apply such tape to the wallboard joints, by conventional manual methods.

Various taping machines have been proposed heretofore, but these, for the most part, were cumbersome to handle, and could not be operated effectively in certain positions, or under certain conditions. The present tool is so constructed that is will apply coated wallboard tape to walls, ceilings and to exterior and interior corners, with a minimum of tool pieces and with a minimum of change from one type of work to another type work.

The present device is so constructed, that mastic bedding material is supplied to the device for coating the tape under hydraulic pressure, which enables larger quantities of mastic of bedding material in larger containers to be located remotely therefrom and wherein the mastic may be supplied to the side of the tape adjacent the wallboard in immediate proximity to the point where the tape is being applied, thereby preventing undue drying of the mastic material. Furthermore, the mastic may be applied to the inner side of the tape to a desired thickness, which thickness is controlled by the flexing of the blade of the tool, and the flow of mastic may be controlled or entirely closed off. To cut off the flow of mastic to the tool the pressure is released from the blade of the tool. Therefore, waste of the mud is prevented, which waste presents unsightly and possibly damaging conditions to floors and the like, in the room in which the tape is being applied.

An object of this invention is to provide a taping machine for applying tape to wallboard joints preparatory to finishing the wall, which machine is light, easy to operate, and which may be readily controlled, by the operator, to supply the desired amount of mud or mastic to the side of the tape that is being applied to the wallboard joints.

Another object of the invention is to provide a taping machine for taping wallboard joints and the like, wherein bedding mud is supplied under hydraulic pressure to coat the tape, the supply of which mud is controlled by the manipulation of the blade of the tool.

Still another object of the invention is to provide a tool for which only two blades are required to properly tape both flat surfaces and exterior and interior corners.

Yet another object of the invention is to provide a taping tool wherein the spool of wallboard tape may be readily removed and replaced in a minimum of time.

A still further object of the invention is to provide a control and cut-off valve on or adjacent the taping machine, which cut-off valve will enable the mud to be quickly closed off, as for changing from a flat blade to a corner blade or the like, without the necessity of having to leave the operating position.

Another object of the invention is to provide a pneumatically actuated mud dispenser, wherein mud is dispensed, under pneumatic pressure, from a remote reservoir, to a point of use.

A yet further object of the invention is to provide a

tool for applying mastic to wallboard tape which tool is simple in construction, easy to use, low in the cost of manufacture and which is sturdy of construction and durable in use.

With these objects in mind and others which will become manifest as the description proceeds, reference is to be had to the accompanying drawings in which like reference characters designate like parts in the several views thereof, in which:

FIG. 1 is a perspective view of one form of tool, taken from the bottom and a side, and showing the tape extending outward therefrom;

FIG. 2 is a side elevational view of the tool as shown in FIG. 1;

FIG. 3 is a fragmentary, sectional view taken on the line 3—3 of FIG. 2, looking in the direction indicated by the arrows, with parts broken away, and with parts shown in elevation to bring out the details of construction;

FIG. 4 is a fragmentary, sectional view taken on the line 4—4 of FIG. 5, looking in the direction indicated by the arrows;

FIG. 5 is a top plan view of the device as shown in FIG. 1, with parts thereof broken away to show the details of construction;

FIG. 6 is a sectional view taken on the line 6—6 of FIG. 5, looking in the direction indicated by the arrows;

FIG. 7 is a sectional view taken on the line 7—7 of FIG. 5, looking in the direction indicated by the arrows;

FIG. 8 is a composite, perspective view showing the reservoir for the mastic, with a hose leading therefrom, and with the taping tool being shown on the hose in position to apply mud to the tape and the tape to the wallboard;

FIG. 9 is an enlarged plan view of a cut-off and control valve on the taping tool;

FIG. 10 is a side elevational view of the taping tool showing the blade thereon in position to apply tape to an exterior corner;

FIG. 11 is a sectional view taken on the line 11—11 of FIG. 10, looking in the direction indicated by the arrows;

FIG. 12 is a sectional view taken on the line 12—12 of FIG. 10, looking in the direction indicated by the arrows;

FIG. 13 is a sectional view taken on the line 13—13 of FIG. 10, looking in the direction indicated by the arrows;

FIG. 14 is a fragmentary side elevational view of a portion of the taping machine and showing the corner taping blade attached thereto in position to apply wallboard tape to an interior corner;

FIG. 15 is a sectional view taken on the line 15—15 of FIG. 14, looking in the direction indicated by the arrows;

FIG. 16 is a sectional view taken on the line 16—16 of FIG. 14, looking in the direction indicated by the arrows;

FIG. 17 is a perspective view of the corner taping blade removed from the tool and showing the side of the tool for taping concave, interior corners; and

FIG. 18 is a perspective view similar to FIG. 17, but of the opposite side of the tool for taping exterior corners.

With more detailed reference to the drawings, the numeral 1 designates generally the form of taping tool of the machine as shown in FIGS. 1 through 8. The taping machine, which has a taping tool thereon, is so constructed as to coat the side of the tape opposite the troweling blade of the tool, so that the coated side of the tape may be readily applied to the wallboard joint, which wallboard taping is usually referred to, in the trade, as "dry wall" taping.

Various taping machines and apparatus have been proposed heretofore, but these, for the most part, were heavy and cumbersome, and usually carried a mud reservoir and a roll of tape thereon, which made it tiring to the workman who used such devices. Furthermore, most of the tools in use heretofore did only part of the operation of mudding and applying the tape to the wallboard joint, thereby making it necessary to have more than one device to perform all the necessary steps of taping a wallboard joint.

The present taping machine, as shown in FIGS. 1 through 8, has a taping tool **1**, on which tool a hollow handle **2** is screw-threaded, as indicated at **4**, to threadably receive a mud supply hose connection, or the connection **6** of a cut-off valve, as indicated at **8**, to which valve a flexible hose **10** is connected which leads to a "mud" reservoir **12**. The mud reservoir **12** may have a piston type partition **14** therein so that pneumatic pressure may be applied through connection **16** into the upper portion of the reservoir **12** to force mud therefrom and through the hose **10** and valve **8** to the taping tool **1**.

The taping tool **1** has a hollow body portion **18**, which is preferably wider than the tape **20**, which is to be coated, which tape is rolled on a spool **21**. Standards **22** and **24** are secured to opposite sides of hollow body **18**, as by screws **25**. The standards **22** and **24** are each apertured near the upper ends thereof to receive a shaft **26** therethrough, which shaft has a head **28** on one end thereof. The other end of the shaft **26** is bifurcated to receive a pivoted latch member **30** therein, which latch is pivotally connected to shaft **26** by a pivot pin **32** which passes transversely through an aperture in the shaft and through an aperture in the latch member **30**. The latch **30** may be pivoted from the position, as shown in full outline in FIGS. 1, 2, 3, and 5, to that shown in dashed outline in FIG. 3, when it is desired to place a spool **21** for tape **20** on the shaft **26**, or to remove the spool of tape therefrom. The standard **22** is hinged, as indicated in FIGS. 1, 2, 3, and 5, to pivot about a pin **23**, from the position as shown in full outline in FIG. 3, to that shown in dashed outline therein. In so doing, the latch **30** may be moved to the dashed outline position, so the spool **21** may be removed therefrom, or to insert the spool of tape thereinto.

A roller **34** is journaled in standards **22** and **24** and is positioned below the hinge pin **23**, so as to guide the tape **20** off the spool **21**, and down beneath the roller **34** and through a slot **36** formed in blade **38**, at a point near the outer end of body **18**. The tape passes beneath the blade **38** into contact relation with a cover plate **40**, which plate **40** closes the upper portion of hollow body **18**, with the exception of an elongated slot **42**, which is formed transversely across the cover plate **40**, immediately adjacent the end of hollow body **18**. The elongated slot **42** is of a length slightly less than the width of the tape **20**, so that the tape will form a gasket seal between the upper face of the cover plate **40** and the lower face of trowel blade **38**.

The blade **38** extends outward and is preferably made of resilient material, such as steel or spring steel, and is of such width and shape as to enable the pressing of the tape into tight relation with the wallboard, so as to form a smooth joint. The blade **38** has holes **44** therein, which holes slidably receive screws **46**, which screws pass therethrough and are screw threaded into, or otherwise secured, to cover plate **40**, as will best be seen in FIGS. 5 and 6. A spring **48** is telescoped over each of the screws **46**, which springs are in bearing relation with the upper face of the blade **38**. A wing nut **50** is screw threaded onto each screw **46** in bearing relation with the respective compression springs **48**, so, upon tightening wing nuts **50**, spring pressure will bear on the upper face of blade **38** to cause the blade to move into binding engagement with the tape **20**, so as to close slot **42**, in cover plate **40**, when the tool is not in use.

The valve **8** is preferably connected to and is immediately adjacent the handle **2**, which valve preferably has a cut-off regulator as indicated at **9**, to enable the mud to be readily turned on or turned off at this point.

Operation of first form of tool

In order to operate the taping machine, as shown in FIGS. 1 through 8, the reservoir **12** is filled to the desired level with mud or bedding material of the character used by taping and bedding artisans. Then air pressure or other suitable pressure is applied to the mud within reservoir **12**, which causes the mud or bedding material to flow through hose **10** to valve **8**, and upon opening valve **8** to the desired degree, the mud will flow through handle **2** into the hollow body **18**. However, with the wing nuts **50** adjusted to apply spring pressure to blade **38**, the blade will cause the tape **20** to form a mud tight seal between the upper face of cover plate **40** and the face of tape **20** adjacent thereto. However, upon the artisan pressing the blade **38** against the wall surface, the blade will yield, as indicated in FIGS. 2 and 3, which will permit a gauged amount of mud or bedding material to flow from the hollow body **18** out through slot **42** onto the side of the tape **20** that is to be applied to the wall. As greater pressure is applied to the blade, the elongated slot is uncovered to a greater degree, which will permit a larger amount of mud to flow therefrom, and likewise, as the pressure is released, the mud flow will be decreased, or upon release of all pressure to the blade **38**, the flow of mud will be closed off. However, as pressure is applied and the coated tape is fitted in place to cover the wallboard joint, the tool is drawn in the direction toward the hollow handle, which will enable the coating of the tape with the mud or bedding material and simultaneously the tape will be applied to the joint as it is fed from roll **21** until the tape is exhausted therefrom.

The flow of mud through hose **10** may be further regulated by having the valve **8** connected to the handle **2**, the opening of which valve may be gauged so that more pressure may be applied to the trowel blade, by hand, without a surplus of mud extruding through the slot **42**. However, immediately upon release of pressure on blade **38**, the slot **42** will be closed, thereby the mud supply will be shut off.

The form of blade as shown in FIGS. 1 through 8, is for applying tape to flat walls. However, for taping exterior and interior corners, the blade **38** may be detached from the cover plate **40** and another blade attached thereto, by means of screws **39**, which blade will make possible the performance of these particular functions.

Second form of invention

The second form of invention is shown in FIGS. 10 through 18, which form comprises a blade, generally designated at **71**, as best shown in perspective in FIGS. 17 and 18, which is readily attached to the cover **40** of the body **18** of the taping machine as shown in FIGS. 1 through 8. By attaching the blade, designated at **71**, in the manner as shown in FIG. 10, to the cover plate **40** so that the apex **80** of the blade **71** will extend upward, as shown in FIGS. 10 to 13 and 17. The tape **20** is then threaded through slot **72** in blade **71** so the tape will pass outward between the upper face of cover plate **40** and the lower face of the flat portion **74** of blade **71**, with the screw threaded members **46** being slidably fitted through holes **76** in blade portion **74**, and with the springs **48** in bearing relation against the upper face of blade portion **74**, and with the wing nuts **50** adjusted to apply spring pressure to the upper face of the blade **71** so as to seal the transverse slot **42**, the tool is ready to be used.

The blade **71** slopes upwardly, as indicated at **78**, and the blade converges to form substantially a right angle apex **80** at the outer end. Therefore, upon the tape **20** passing outward through the inner portion of the apex **80**, FIG. 13, and with the tape, which has been coated with mud or mastic bedding material passing over slot **42**

into contact with an exterior corner, the tape is ready to be applied.

Operation of second form of invention

With the tape **20** folded at 90 degrees, as indicated in FIG. 13, pressure is exerted on blade **71** at the outer end thereof, which will cause the portion **74** thereof to spring away from the cover plate **40**, whereupon, mud or bedding material will be extruded through slot **42** onto the lower side of the tape **20**. As the tool is drawn along the exterior corner, the tape **20** will be folded and creased and applied snugly to the 90 degree corner, and as more mud on the tape is needed, greater pressure is applied on the blade **71**, which will cause the slot **42** to be opened to a greater degree to permit mud to escape therefrom, under the pressure exerted on reservoir **12**, in accordance with the amount of pressure applied to the blade **71**.

The valve **8**, as shown in FIG. 9, may be regulated to give the maximum flow, if desired, or the wing nuts **50** may be tightened or loosened to decrease or increase the flow, respectively, in accordance with the pressure applied. By using the blade in this manner, exterior corners may be readily taped. However, the same blade may be reversed to tape interior corners.

Modified use of second form of invention

The blade **71** may be reversed, in the manner shown in FIGS. 14, 15, 16 and 18, to apply the tape of an interior corner. To utilize the blade **71** in this manner, the opposite side of the blade portion **74** is fitted on cover plate **40**, so that the apex **80** of the blade **71** will extend downwardly, as shown in FIGS. 14, 15 and 18, and screws **39** are utilized to attach the blade **71** to the cover **40**, whereupon, screw members **46** are slidably fitted in holes **76** so that compression springs **48** will apply pressure to the blade portion **74**, upon screwing wing nuts **50** downward on the respective screw members **46**.

As in the aforementioned forms of the invention, the resilient pressure applied to blade **74** forces the tape **20** downward into sealing relation with the upper face of cover plate **40**, thereby a seal is formed to close the slot **42**. With the hose **10** attached to handle **2**, mud or bedding material is directed from reservoir **12** to valve **8**, and thence, with the valve **8** open to the hollow body **18**, and with the tape **20** threaded downward beneath the roller **34** and through slot **72**, and thence along the exterior portion of the apex **80**, the tape is coated and the tool is ready for use.

Operation of second form of invention for taping interior corners

In the operation of the device as described above, to the taping of interior corners, pressure is applied to hose **10** by suitable pressure within reservoir **12**, and the apex **80** of the blade **71** is placed within the interior corner, and with the outer face or apex side of the folded tape coated with mud or bedding material, the tool is drawn along the interior corner, with the desired amount of pressure being applied to the blade, a flow of mud will be extruded through slot **42** in cover **40**, the extrusion of the mud being so gauged as to apply the proper amount thereof to the tape, so the tape will be sufficiently coated to be properly applied, but with no excess mud, and with the supply of mud being shut off each time the pressure on the blade **71** is released, the tape can be applied to interior corners at a very rapid rate, with a novice performing work which must usually be done by artisans of much skill and long experience.

While the device has been illustrated and described in some detail in different forms and applications thereof, it is be to understood that changes may be made in the minor details of construction and adaptations made to types and places of use, without departing from the spirit of the invention or the scope of the appended claims.

Having thus clearly shown and described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a tool for taping wallboard joints, a body having a chamber formed therein, a trowel blade having an end thereof secured in fixed relation to said body, which trowel blade has a slot formed therein within the length thereof, the other end of said blade being resiliently movable with respect to said body, said body having an opening formed in a side thereof and being in communication with said chamber therein, means guiding tape to and through said slot and between said blade and said portion of said body in which said opening is formed, said blade being movable with respect to said body to normally urge said tape in close fitting relation therewith, and conduit means connected to said body and being in communication with said chamber therein for supplying mastic thereinto and to said tape.

2. A device for coating tape with mastic and applying said coated tape to a wallboard joint, as defined in claim 1, wherein further resilient means normally moves said blade into binding engagement with said tape to cause said tape to effect a seal between said tape and said body surrounding said opening therein.

3. A tool for taping wallboard joints comprising; a hollow body, an elongated trowel blade mounted on and having an end thereof attachably secured to said hollow body, said trowel blade having a slot formed therein and overlying a portion of said hollow body, tape holding means mounted on said body, guide means mounted on said body to guide said tape, said body having an opening formed in a side thereof, which opening is intermediate said slot and an end of said body, said opening being in fluid communication with the hollow portion of said body, said tape being adapted to pass through said slot in said blade and between said blade and the portion of said body in which said opening is formed, so a side of said tape will be in communication with said opening in said body, and conduit means for directing mastic substance into and through the hollow portion of said body to coat, with mastic, the side of said tape which is in communication with said opening in said body in accordance with the movement of said blade with respect to said body.

4. A tool for taping wallboard joints as defined in claim 3; wherein said elongated trowel blade has at least one substantially plane face throughout the troweling length thereof, which plane face is adapted to receive the uncoated face of said tape thereagainst for application of pressure to said tape for applying the coated side of said tape to said wallboard joint.

5. A tool for taping wallboard joints as defined in claim 3; wherein said elongated trowel blade attachably secured to said body is a blade which has at least two faces thereof lying in divergent planes, and wherein said tape passing outward between said body and said blade is directed onto both of said planes for applying coated tape to a wallboard joint with the surface of the wall boards lying in divergent planes.

6. A tool for taping wallboard joints as defined in claim 3; wherein said elongated trowel blade has the outer end thereof of an angular shape so said coated tape passing from between said body and said blade will be directed to the apex of said angular shaped blade, with the uncoated side of said tape being against said blade.

7. A tool for taping wallboard joints as defined in claim 3, wherein said elongated trowel blade has the outer end thereof of an angular shape so said coated tape will be directed over the exterior of the apex of said angular shaped blade, with the uncoated side of said tape being against said blade.

8. A tool for taping wallboard joints as defined in claim 3, wherein said elongated trowel blade has the outer end thereof of an angular shape so said coated tape

will be directed to a point interior the apex of said angular shaped blade, with the uncoated side of said tape being against said blade.

9. A tool for taping wallboard joints as defined in claim 7, wherein said elongated trowel blade of angular shape has a substantially right angle exterior shape.

10. A tool for taping wallboard joints as defined in claim 7, wherein said elongated trowel blade of angular shape has a substantially right angle interior shape.

11. A tool for taping wallboard joints as defined in claim 1, wherein control valve means is operatively mounted within said conduit means to further control the supply of said mastic to said chamber in said body.

12. A tool for taping wallboard joints as defined in claim 3, wherein said tape holding means comprises a pair of standards which extend outward from said body in substantially parallel relation, and wherein means secure the inner ends of said standards to said body, and wherein an axle extends between said standards a spaced distance outward from said body, which axle is adapted to rotatably mount a spool of said tape thereon.

13. A tool for taping wallboard joints as defined in claim 12, wherein one of said standards is hinged intermediate the length thereof, and wherein latch means is

provided on said axle to secure said standard in fixed relation with respect to said axle which extends between said standards.

14. In a tool for taping wall board joints, a body having a chamber formed therein, a flexible conduit connected in fluid communication with said chamber in said body for supplying mastic to said chamber, a trowel blade mounted on said body, said trowel blade having a slot formed in the working face thereof, means guiding said wallboard tape through said slot, said body having an opening formed therein which opening is in communication with said chamber for simultaneously admitting a mastic substance to one side only of said tape as said tape is applied to said wallboard joint, and means controllable by the movement of said blade for controlling the amount of mastic substance applied to the face of said tape.

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