

Jan. 18, 1949.

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2,459,296

FILLER GUN

Filed Aug. 25, 1945

2 Sheets-Sheet 1

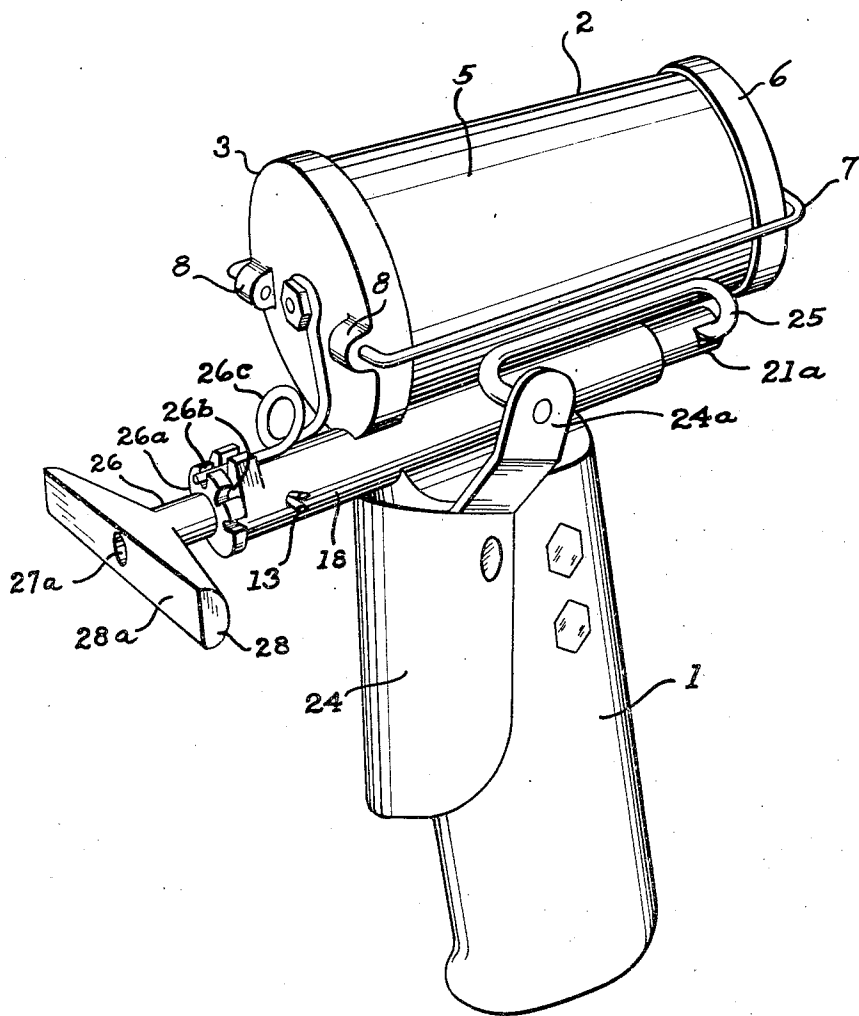


Fig. 1.

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2 Sheets-Sheet 2

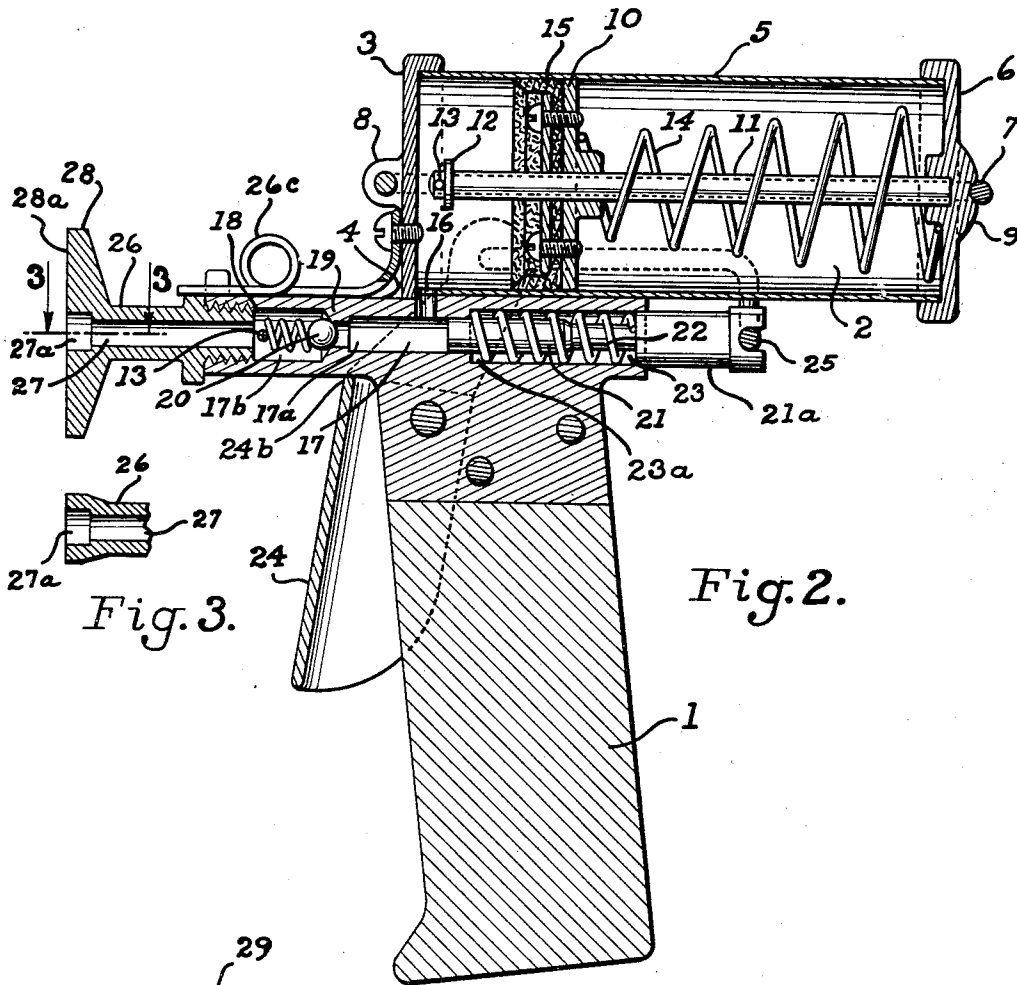


Fig. 2.

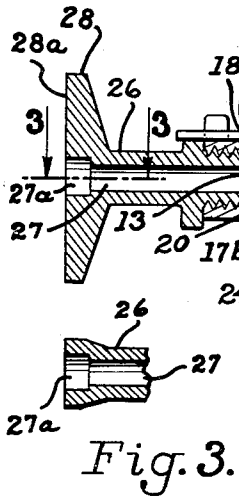


Fig. 3.

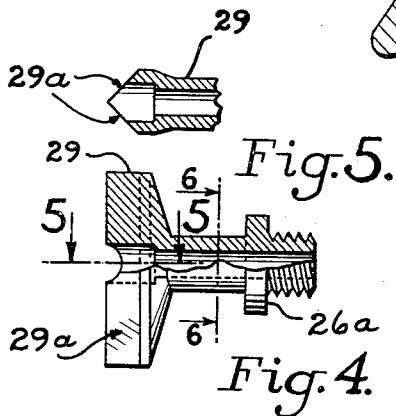


Fig. 4.

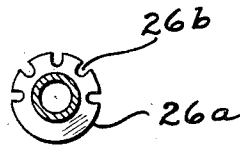


Fig. 5.

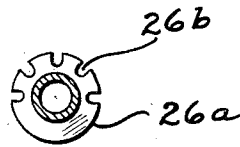


Fig. 6.

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UNITED STATES PATENT OFFICE

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FILLER GUN

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1 Claim. (Cl. 18—3.5)

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The object of my invention is to provide a device by which plastic may be applied in limited amounts to a surface or edge of a member, and by the use of the same instrument may be trowelled, that is, made to conform to the surface. My invention is specially directed to an instrument for patching plywood, particularly the edges thereof, so as to fill in any holes or imperfections and to smooth said patching material to conform to the surface being patched.

It is old in the art to apply a quick-hardening plastic material which resembles wood to a surface to fill in holes. A quantity may be applied to a hole and a spatula or similar instrument must be used for forcing the material into the hole, smoothing it and removing the excess. I have discovered that an instrument may be provided for holding a quantity of such material airtight and under control so that limited amounts may be applied through a hollow applicator and said applicator may be formed to constitute a trowelling surface.

The details of my invention and the method of operation thereof are hereinafter described with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of an instrument embodying my invention;

Fig. 2 is a longitudinal sectional view of said instrument;

Fig. 3 is a fragmentary detailed view of the tip of the applicator taken on the line 3—3 in Fig. 2;

Fig. 4 is an elevation of a modified type of applicator with portions shown broken away to show details of construction thereof;

Fig. 5 is a fragmentary sectional view taken through the tip of said modification, said section being taken on a line 5—5 in Fig. 4; and

Fig. 6 is a sectional view of said modified type of applicator taken on a line 6—6 in Fig. 4.

A device embodying my invention comprises a handle 1 having a cylinder 2 secured thereto. Said cylinder may either be welded or otherwise fixed to the handle or may be releasably secured thereto. In the drawings I have illustrated how one end cap for said cylinder may be secured to the handle by welding, as at 4, and the remainder of said cylinder be releasably secured thereto. That is, said cylinder comprises a cylindrical casing 5 capped at one end by said end 3 and at the other by a removable cap 6. A bail 7 is swingably mounted in ears 8 forming a part of end 3. It swings over and engages a notched saddle 9, forming a part of cap 6. When said cylinder is arranged as is shown in Fig. 1 and Fig. 2, it holds

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the cap 6 tightly over the casing 5 and holds the latter tightly upon the end 3. Thus the casing 5 and a cap together with the plunger 10 may be removed from the appliance if desired for repair, adjustment, replacement, or for filling with plastic material.

If it is not desired to detach the casing 5, this may be prevented by welding said casing to the handle thus making only the cap and the plunger removable. Said plunger slides upon an axially disposed rod 11, one end of which is seated in cap 6 and the other end is free, carrying a collar 12 and a cotter pin 13. Said plunger is resiliently urged toward the collar by a helical coil spring 14. That is, said spring bears one end against the plunger and the other against the inner surface of the movable cap 6. Said plunger preferably carries a cup leather 15 to form a liquid tight joint with the bore of the cylinder. That is, the bore of said cylindrical casing between said plunger and the inner surface of the end 3 normally is filled with a plastic which the plunger resiliently urges to express through a port 16 immediately inwardly of said end 3. Said port discharges into a chamber 17 formed axially of the barrel 18. Intermediate of the ends of said barrel is a ported transverse partition 19 dividing said chamber into an inner end 17a and an outer end 17b. A spring-pressed ball check valve 20 arranged in the outer end of the chamber is resiliently held across the port on the transverse partition tending to hold plastic within the inner end of said chamber.

A plunger 21 slidably engages the bore of said chamber 17 and has a path of travel equal substantially to the length of the inner end of chamber 17. It is held retracted by a coil spring 22. One end of said coil spring engages the head 21a of said plunger and the other end engages the end 23a of the spring cavity 23. A bifurcated trigger 24 straddles the handle 1 and is arranged scissors-fashion therewith. The free end 24a of said trigger carries a curved link 25 which engages the free end of plunger 21. When the edge 24b of the trigger engages the under side of barrel 18, as is shown in Fig. 2, this limits the clockwise rotation of said trigger and thereby the outward limit of travel of plunger 21. The plunger 21 may be moved to the left by gripping the trigger and the handle and squeezing them together. This moves the plunger until its end comes into abutment with the ported transverse partition 19, and forces through said port all of the plastic in the inner end 17a of chamber 17.

On the end of the barrel 18 is a plastic appli-

cator 26 screw threaded in the barrel. Its bore 27 communicates with the outer end 17b of chamber 17. Said applicator has an elongated trowelling head 28 formed at the extremity thereof and said bore 27 is counterbored at 27a to provide an enlarged area for holding plastic. A top collar 26a is provided with a series of spaced radial slots 26b and a spring detent 26c is adapted to seat in one of said spaced radial slots to prevent said plastic applicator from rotating relatively in said barrel. Thus, the elongated trowelling head may be set so as to be in substantial parallelism with the general plane of the handle 1, as is shown in Fig. 2. It also may be arranged at right angles thereto or may be disposed obliquely thereto merely by lifting said detent and setting it in a proper selected slot. That is, sometimes it is convenient for an operator to arrange said trowelling head as is shown in Fig. 1, other times a more convenient angle may be with the elongated trowelling head arranged at right angles thereto or disposed obliquely therewith.

If the trowelling head is to form plastic material over a plane surface, the trowelling surface 28a is plane. Said head preferably is elongated so that its length is several times its width, and thus such applicator may be used for applying plastic to the edge of a piece of timber, for example, or of plywood where it is closely abutted by adjacent timber, for example, or of plywood where it is closely abutted by adjacent lengths of plywood or boards.

Where it is desired to form a groove by the use of said trowelling head, one is provided as is shown in Figs. 4 and 5. This is similar in every respect to the trowelling head 28 except that said trowelling head 29 had a trowelling surface which is ridged. Thus, when this type of trowelling head is used, the exposed surface of plastic is formed into a groove. It would be readily apparent to any person skilled in the art that any surface might be simulated by forming a trowelling head with a surface complementary thereto. That is, if a fillet were to be formed, said trowelling surface could be made semi-circular, or if a milled surface were to be formed, said trowelling head could be serrated longitudinally. It is preferable, however, to provide a trowelling head with an elongated surface so that a substantial area is presented for pushing in the plastic material and for smoothing it off.

My device operates as follows:

The cylinder 2 of said device may be filled either by removing it from the handle or by removing the cap 6, depending on its construction. The plunger and the axially disposed rod for the plunger may be removed and the bore of the cylinder casing may be substantially filled with material. The removable cap 6 is then seated in place and the bail 7 is moved so as to seat in the notched saddle 9. The compression of the helical coil spring 14 will force a portion of said plastic material through the port 16 to fill the inner end 17a of chamber 17. The trigger is then pulled several times until the outer end 17b of said chamber and the bore of the plastic applicator 26 is filled. Then when an aperture in a piece of plywood is to be filled, the counterbored portion of the bore of the applicator is aligned with said aperture and the trigger pulled to force

a quantity into said hole. The elongated trowelling head can then move back and forth over said material to smooth it and any excess will be accommodated in said counterbored portion of the trowelling head. It is to be understood that my device is adapted for use with some plastic material which dries rather quickly in air, and thus the various portions tend to prevent air from contacting the material in the applicator. As is apparent when the end of the plunger 21 passes the port 16, it doesn't tend to exert any pressure on material within the port and within the bore of the cylinder because its movement is at right angles to said port. Thus the pressure of the trigger exerts all of this pressure on the material in the barrel and in the applicator to force it into any aperture with which it is aligned.

The pressure of the helical coil spring 14 is sufficiently strong to displace any portion of the plastic retained within the cylinder and to express it through said port 16. When the supply of plastic material is used up, the operation is repeated by removing the bail and filling the cylinder with a new supply.

With my improved device a workman may quickly apply plastic to an aperture, may force it into said aperture, and may trowel it over to conform to the surface and a substantial supply of plastic material may be held in said device so that little time is lost between operations.

I claim:

A plastic applying device comprising, in combination, a reservoir, a dispensing nozzle, means for expressing plastic material from said reservoir through said dispensing nozzle, a plastic applicator nozzle pivotally attached to said dispensing nozzle, a notched flange extending radially from said applicator nozzle, a pair of spaced lugs extending radially from the end of said dispensing nozzle and adjacent said flange, and a spring fixed relative to said dispensing nozzle and having a free end extending longitudinally thereof, the free end of said spring being biased to nest between said lugs and in a selected notch in said flange to lock said applicator nozzle relative to said dispensing nozzle.

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