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G. B. CRIPPEN

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TROWELING TOOL

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Fig. 2

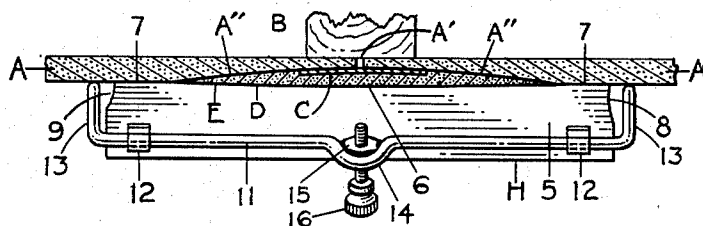


Fig. 3

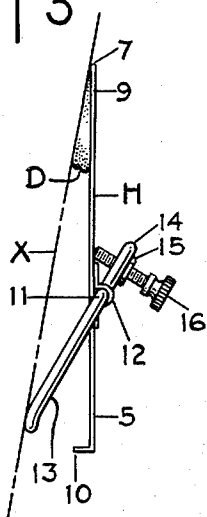


Fig. 1

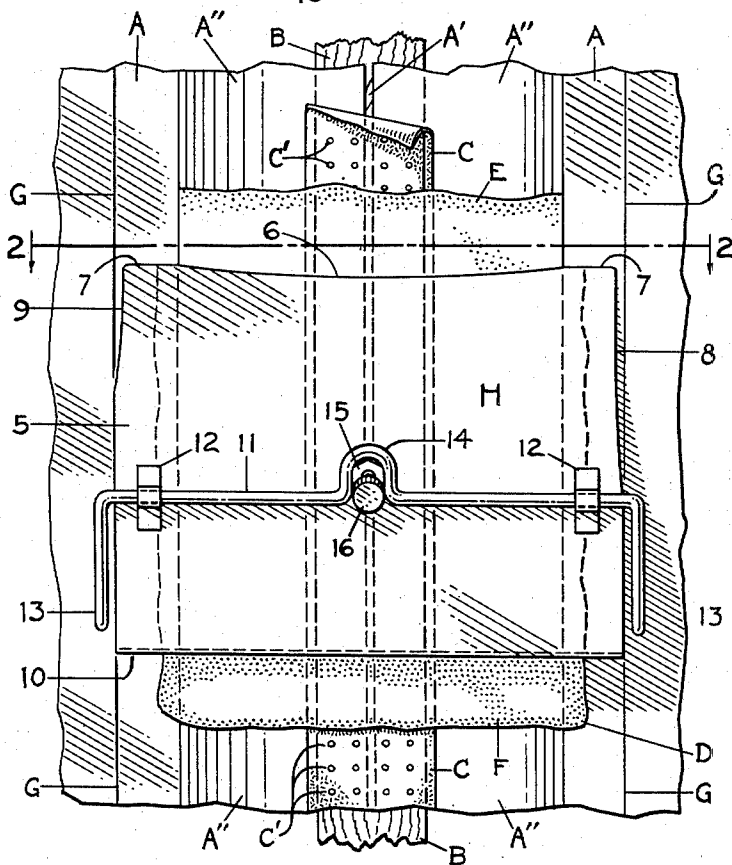
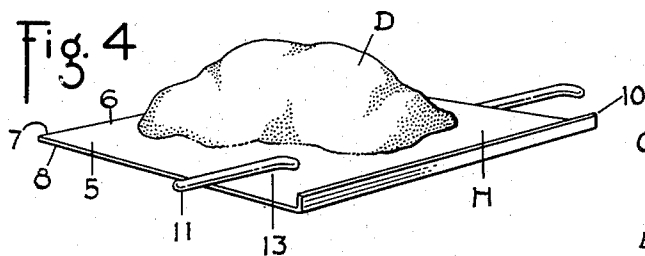


Fig. 4



GEORGE B. CRIPPEN
INVENTOR.

BY *E. Lorenz Muller*

UNITED STATES PATENT OFFICE

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TROWELING TOOL

George B. Crippen, Decatur, Ill.

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2 Claims. (Cl. 72-128)

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This invention relates to troweling tools and more particularly to one especially adapted for cement-finishing the joints in wall board installations.

In wall board installations where the same are to be painted or coated with a decorative paint or some characteristic plastic material, or papered with wallpaper, it is customary to previously cover the joints with a suitably adhered tape and a smoothed plastic cement covering over the tape to prevent cracking of the decorative coating or applied wallpaper.

Special care and skill is required to properly do this preliminary work in covering and closing the slotted seam openings at the meeting edges of the installed wall boards preparatory to applying the finishing surface coating and covering of cement. Therefore, it is for this particular purpose that the present invention is primarily produced.

The main object is to provide a generally improved and easily adjusted, practical and highly efficient tool, of simple and inexpensive construction.

Another object is to produce a tool of its character which not only is adjustable and well adapted for the traveling and smoothing operations but can be used as a pallet.

With the foregoing described and other objects and advantages to be attained as will hereinafter appear, the invention consists in the parts and novel construction and arrangement thereof as hereinafter described and set forth with particularity in the appended claims.

In the accompanying drawings, illustrative of a practical but non-limiting exemplification of the invention,

Figure 1 is a front elevational view, illustrating the application and use of the tool;

Figure 2 is a view taken on the line of section 2-2 of Figure 1;

Figure 3 is a side elevational view of the tool, illustrating an angular adjustment thereof for performance of its work; and

Figure 4 is a perspective view, illustrating how the tool may be used as a pallet.

Referring now to the drawings in detail, the letter A designates fragmentary portions of two adjoining slabs of wall board illustrated as they are secured at their meeting marginal portions to studding B, a fragmentary portion of which is shown in elevation in Figure 1 and in cross section in Figure 2. In practice, the wall boards are nailed to the studding B and there is usually a resulting slotted space A' between the meeting

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edges of the boards. This open slotted seam or joint A' has to be obviously closed to avoid cracking of a decorative coating of paint, characteristic plastic material, wallpaper or the like. So, too, the exposed nail heads should be painted over or otherwise covered to prevent rusting which might cause stain spots in the decorative paint, plastic material or wallpaper; also, so as to prevent the nail head from cutting and puncturing the applied wallpaper.

In practice, the covering of the open seam A' between the installed wall board slabs A, is accomplished by the application of a strip of adhesive tape, wide enough to cover the opening A' with appreciable overlap on the adjoining slabs A on opposite sides of the opening and also of a width to cover the adjacent nail heads. This adhesive tape, of conventional or usual character, is designated in the drawings by the reference letter C, and it usually is made of a suitable tough paper, although it sometimes may be a woven fabric, and, in substantially all cases, it is preferably perforated throughout, as at C'. Then, after said tape is applied as described, an application is made of a characteristic cementitious plastic material to the meeting edge portions of the slabs as at A''.

Before applying the adhesive tape, and the seam filler cement, the better practice is to first paint the meeting edge portions of the installed wall board slabs A to a substantial width, say for example, approximately five inches on opposite sides of the seam with a paint that is non-porous and liquid resistant when set and allowing it to dry before applying the adhesive tape and seam filler cement. This prevents the moisture from leaving the cement and penetrating the wall boards. It also assures the intended regular evaporation of moisture and proper hardening and setting of the cement in due time and minimizes shrinkage thereof, which is of practical importance.

It is here noted that the transverse area of this preliminary coating of non-porous and liquid resistant paint is sufficient to receive thereover a finishing surface filler or coating and to a somewhat wider extent than the aforesaid tape and the cement as applied for its adhesion to the wall board joint as well as filling the joint.

Usually, in the more general practice, the outer faces of the meeting edge portions of the wall board slabs are tapered arcuately to a thinner edge than the normal thickness of the slab, as at A'', thus producing a comparatively shallow, transversely dipped or dished depression or chan-

nel extending lengthwise and on opposite sides of the open seam A' between the slabs A. It is this longitudinal depression or channel that has to be filled up substantially flush with the normal outer face of the applied wall board, and for which purpose the troweling and smoothing tool of the present invention is especially designed and intended.

In the average installation the studding B is of a 2" by 4" cross section with the two-inch face exposed for the attachment of the wall board slabs A, and the tape C is of approximately the same width, possibly a little wider or narrower but usually the wider. Anyway, the said depression or channel is still somewhat wider, say for example, at least five or six inches wide. However, as far as the present invention is concerned, these particular dimensions may vary.

Because of shrinkage in the applied cement filler when set, the cement is supplied in the said depression or channel at a thickness medially thereof a little greater than the middle depth of the depression or channel, or, in other words, with a slight transverse convexity of the outer face of the body of cement somewhat higher than the normal face of the work and tapering down with its longitudinal edges already substantially flush with the wall board face, so that when the cement has hardened and shrunk its outer face is flattened and practically even and flush throughout with the normal wall board face.

It is here noted that the used cements of different manufacturers have different shrinkages. Therefore, the cement when applied will be accordingly proportioned in bulk quantity used in each case so as to take care of the resultant shrinkage. For this purpose the device of the present invention is made adjustable as will be later described.

In Figures 1 and 2 of the accompanying drawings the body of the applied filler cement, as a whole, is designated by the reference letter D. The upper part of the cement where it is smoothed off and convex surfaced is indicated at E, and the part below the troweling tool, not yet smoothed, is indicated at F.

Before the troweling tool is used, a pair of lateral limit or guide lines G are marked one each equidistant on opposite sides of the seam A' of the adjoining wall board slabs A, say four or five inches on each side or approximately ten inches apart on the average job. These lines G, which may be erased or dusted off after use, are easily applied to the wallboard by measuring off points near the ceiling and at the floor or the baseboard if the latter is in place, and striking the lines with a snap-chalk-line stretched between the located points. In any case, of course, the guide lines G should be at least as far or a little farther apart than the width of the working end of the troweling tool, because they are provided to guide the tool inasmuch as the seam A' and the applied tape C are covered by the applied filler cement D and are thus hidden from view.

The troweling tool itself will now be described. As a whole, it is identified by the reference letter H in the drawings. In specific detail it comprises a generally flat plate-like body portion 5 throughout the major part thereof. The forward working end of the body plate 5 is cut out arcuately to a given depth throughout the greater length of such working front edge, as at 6, leaving relatively short straight edge portions 7 at the front corners of the tool (see Figure 1).

The straight edge portions 7 of the troweling tool are provided to ride on the flat face portions of the wall board, and the depth and curvature of the cut-out or recessed portion 6 of the front edge of the tool is in accordance with the thickest and highest convexity of the applied finishing filler cement D as smoothed down as at E. Thus, with a body of the cement first applied roughly and unevenly lengthwise of the seam A' and covering the tape C, and also spread transversely the full width or possibly a little over that of the depressed or channel portion A'' of the wall board, the troweling tool H is placed right angularly with its front edge 15 against the face of the wall board and then moved downward or upward, as the case may be. Then as the straight edge corner portions 7 ride in contact with the wall board and the arcuately recessed intermediate edge portion 6 is arched 20 spaningly between said corner portions 7, the rough and uneven body F of cement has its excess extreme side marginal portions on the slabs A smoothed out by said straight edge portions 7 of the tool. At the same time, the arcuate edge 25 portion 6 of the tool acts upon the main body portion of the cement with a scraping action, thereover which removes all excess cement and leaves the remainder quite smooth and even and with a transversely convex surface throughout 30 the length thereof.

The thus smoothed and transversely convexed elongated body of cement fills the arcuate depression or channel A'' and it is thickest at its middle, the convex surface thereof tapering to a feather edge at each longitudinal side which 35 merges with the adjacent face portions of the slabs A at the corresponding edges of said depression or channel A''.

The middle thickness and height of convexity 40 of the smoothed body of cement is determined by the angle that the tool H is held relative to the face of the wall board. That is to say, if the tool is held at a right angle or perpendicularly to the face of the wall board, then the 45 evened and smoothed body of cement is of the maximum thickness and height of convexity of its surface, whereas, if the tool is held at a lesser angle and more nearly approaching a flattened or parallel relation to the face of the work, the thickness of the smoothed cement body and height of convexity of the surface thereof is accordingly lessened by a novel provision for adjustment which will presently be described.

It is here noted that, usually, a first stroke 55 may be made with the tool in the right angular or perpendicular position to scrape off the major excess cement without any appreciable pressing action, and then follow with the tool at a lesser angle somewhat as shown in Figure 3, as a finishing stroke so as to press the cement and at the same time remove the rest of the excess.

The flat plate-like body portion of said troweling and smoothing tool H is substantially truly rectangular in its entirety except as to its specific 60 front edge portions 6 and 7 as hereinabove described, and one side edge portion 8 which is cut away partly on a straight longitudinal and partly on an arcuate line for some distance rearwardly from the adjacent front corner, and the 65 other side edge portion 9 which is cut away similarly but for a shorter distance rearwardly from its adjacent front corner. These cutaway side portions 8 and 9 are provided so that in instances where the seam occurs too close to a door or 75 window frame for the front edge portions 6 and

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7 of the tool to be used, the tool can be given a quarter turn and either one or the other of said two side edge portions 8 or 9 used in smoothing the cement filler D.

As shown in Figures 3 and 4, the rear edge portion of the plate-like body 5 of the tool H is turned rightangularly, as at 10, to produce a flange which serves the dual purpose of a stiffener for the body plate and a grasping portion for holding the tool more securely while manipulating it in use.

For adjusting the tool H so as to be supported positively in the desired angularly set working relation to the wall board slabs A, a normally stiff and form-retentive wire bail-like member having a generally straight intermediate main body portion 11 is hinged mounted crosswise the top face of the tool by bearing-straps 12 which are welded or otherwise fastened to the face of the tool body. The rightangular opposite end portions 13 of this bail-like member are blunted or formed in any suitable or obvious manner to ride easily and freely on the face of the wall board.

With the bail-like member set in an angular relation to the tool body 5 similar to that shown in Figure 3, and the two elements placed in the working relation to the face of the work which is represented in the figure by the dot-and-dash line X, the drawing of the tool will smooth off the filler cement D in the depression or channel, will remove all surplus cement and leave intact the desired filler, the longitudinal feather edges of which are in the direct plane of the normal face of the work but with somewhat convex outer surface, the middle of which is just far enough above the work surface so that, when the cement hardens and sets, the shrinkage that results will bring the outer face of the filler flatwise and even with the normal face of the work.

By varying the relative angularity of the tool H, which is accomplished by adjusting the bail-like member 11, the convexity of the cement filler D will be obviously raised or lowered. In this connection it is here noted that although some variation of adjustment may be necessary, depending upon the difference in amount of shrinkage of different manufacturers' materials, the variance in convexity of the applied cement will not necessarily be of wide degree, but such variance can be taken care of with due precision and exactness by the tool of the present invention.

The adjustment of the troweling tool of the present invention is effected in a simple yet practical manner by providing an offset loop 14 at the middle of the straight cross body portion 11 of the bail-like member and welding or otherwise securely fastening a screw-threaded apertured block or nut member 15 in said offset looped portion 14 so that the screw-threaded aperture of said member 15 is at an appreciable distance laterally from the pivotal axis of the bail-like member. In this way an adjusting screw 16, inserted in the aperture of said member 15 and bearing at its inner end against the adjacent top face portion of the tool body, can be adjusted lengthwise in the member 15 and thereby effect the desired angular adjustment of the tool with respect to the rightangular end leg portions of the bail-like member. In this way, the straight edge front corner portions 7 of the tool body member 5 ride on the opposed normal face portions of the wall board, as do the rightangular end portions 13 of the bail-like member 11, and with the angular set of the tool body thus given by the special

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adjustments just above noted, the tool, due to the concave front edge formation 6 thereof, is readily drawn along the seam A', guided between guide lines G marked on the wall board slabs A at opposite sides of the seam. These guide lines, however, are provided merely to assure proper tracking of the tool in symmetrical relation to the seam A' and the adhesive tape C applied thereover beneath the covering of applied filler cement D as hereinbefore described.

Unless the operator is already sufficiently aware of the shrinkage of the particular filler cement or plastic material D to be used on the job and be evened and smoothed down by the tool of the present invention, before making the final angular adjustment of the tool for the work, a test can be specially made prior to doing the job, say for example, a day or so before the actual start, by applying the material to one joint and smoothing the same with the tool at an imagined proper adjustment and noting the shrinkage after the material has set and dried. This usually requires about 24 hours time. Or, in some instances, two or three joints may have the material applied thereto and the same respectively smoothed down with the tool at a different adjustment for each joint. So, too, if desired, one joint may have a sample of the material applied and smoothed part way down successively by the tool at, say for example, three different selected adjustments. These tests will enable the operator to do the work with due satisfaction.

In practice, too, it has been found advisable to let the cement that is first applied to fill the seam space and for adherence of the tape dry and then sand it lightly to remove any rough particles. This takes approximately 24 hours time.

After the final evening and smoothing of the filler cement or plastic material, the job is left to dry. This usually takes another 24 hours time. The work is then sanded or rubbed down, if desirable or necessary. It then can be pointed over with flat wall paint or covered decoratively with any other paint, characteristic plastic material, or wall paper, as may be desired.

The above noted instances are for illustration of examples of utility of the present invention and in themselves are not a direct part of the invention which has to do only with the tool itself.

It is here noted that the troweling tool H may be used as a pallet or mortar-board to hold the cement D before it is applied roughly and unevenly to the depression or channel A' at the joint between the meeting ends of the wall board slabs A, the cement as thus applied before the smoothing and dressing down by the troweling tool of the present invention being spread on the work by use of an ordinary or conventional hand trowel.

In using the tool H as a pallet or mortar-board it is turned upside down or reversed, as indicated in Figure 4, and the cement D is placed on the regular bottom face of the tool body 5 as now up.

From the foregoing it is apparent that a very simple yet practical and efficient troweling and smoothing tool is produced, which is easily adjusted and manipulated in use, and, while the illustrated structure is a practical working embodiment of the invention, it is not in specific limitation, as modification and change is possible and even contemplated within the scope of the appended claims.

What is claimed is:

1. A troweling and smoothing tool of the char-

acter described, the same comprising a generally flat plate-like body, applicable angularly with one end thereof in slidable and drag relation to the face of the work, said body being generally rectangular and the sliding and dragging end being straight-edged at portions of minor length adjacent each side and corresponding corner of the body but the major portion of said sliding and dragging end edge between said straight-edged portions being cut out and recessed curv-
 5 edly, whereby, in the use of the tool, the straight-edged end portions ride with scraping effect on the face of the work and the intermediate curv-
 10 edly cut away and recessed portion is above the face of the work and thus evens out and smooths
 15 a body of plastic material on the work, the tool by the aforesaid provision removing excess of such material from the work and leaving the remainder thereof with a transversely convex sur-
 20 face raised above the normal face of the work, and wherein the plate-like body is angularly ad-
 justable for its operation, the provision for ad-
 25 justment comprising a bail-like element hingedly mounted on the body transversely thereof and having right angular end leg portions rideable sup-
 30 portingly on the face of the work with the body inclined and its straight-edged end portions ride-
 able also on the work, and means for varying and adjustably setting the angular relation between the body and said bail-like element.

2. In a troweling and smoothing tool of the character described and including a plate-like

body whose drag end is arranged and adapted to slide in angular relation to the work so as to even and smooth down a longitudinal body of plastic material applied over a seam in the work and over and along which the tool is drawn in use, means for adjusting the working angularity of the tool body comprising a bail-like element hav-
 ing a straight intermediate cross portion hingedly
 mounted transversely on the tool body and hav-
 ing right angular end leg portions to slide sup-
 portingly at their ends on the work with the tool
 body carried thereby at an inclination and its
 drag end to the work, and means for varying and
 setting the relative angular relation between the
 tool body and the bail-like element comprising
 an adjusting and supporting screw mounted with
 longitudinal adjustment of itself on the cross por-
 tion of the bail-like element in a position later-
 ally offset from the pivotal axis of the element.

GEORGE B. CRIPPEN.

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