Oct. 2, 1934. J. D. DUNN 1,975,357

PLASTER CUTTING TOOL

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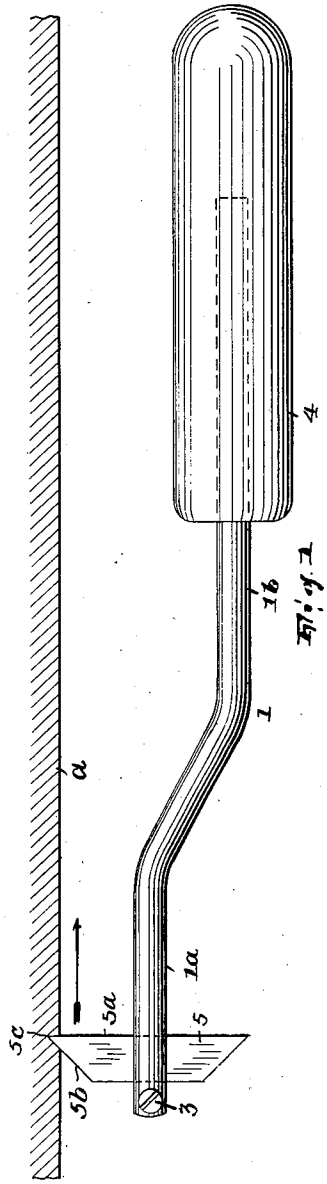


Fig. 1.

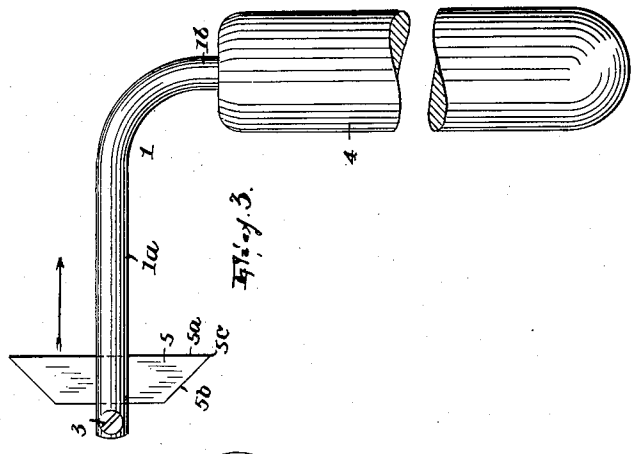


Fig. 3.

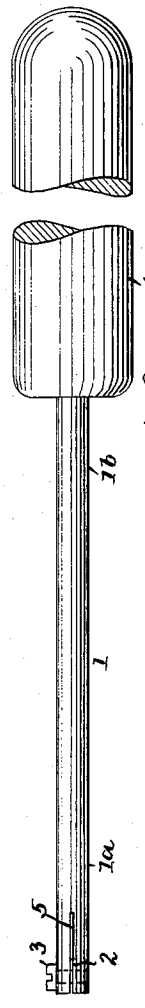


Fig. 2.



Fig. 4.

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PLASTER CUTTING TOOL

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1 Claim. (Cl. 72—138)

In forming a rout or furrow along a crack in plaster preparatory to refilling the crack to repair the wall, plasterers commonly use one corner of a putty knife. The corner soon wears away and becomes dull because it exists as an apex of a mere right angle and in holding the knife in the most effective way possible with such a blade, to wit, with its forward edge oblique to the plane of the wall surface, considerable pressure is required in order to oppose the tendency of the knife to be cammed away from the wall and so not effect a cut of the required depth. In consequence of the worker having to exert this pressure on the knife, and particularly since on account of its form it is disposed quickly to become dull, the worker's hands become blistered and so sore that frequently, if the particular job is an extensive one, he has to stop the work for several days until the soreness has passed.

One object of this invention is to provide a tool for doing this work which shall be characterized as follows: so that the tool may be effectively used for an indefinite time without injury to the worker's hands: The actual knife or cutting portion of the tool is a thin flat blade which stands with its forward or cutting edge substantially at right angles to the adjoining portion of the tool shank and has a back edge which forms with such cutting edge an acute angle and develops to a point therewith, the other or handle end portion being bent off from the first named end portion of the shank in a direction away from the side of the shank from which this point projects. If the tool is thus constructed once its knife is entered into the plaster the required depth the work of cutting the plaster is one characterized more by a pull on the tool substantially parallel with the wall surface and less by pressure toward the wall than in the case of a knife of the putty knife class or any knife presenting a cutting edge which in use stands oblique to the plane of the wall, and there is ample clearance between the wall surface and the fingers of the worker's hands for using the tool in the indicated manner; besides, the knife point does not dull so quickly because of its acute-angular terminus and because it acts rather to part the plaster than to break down the cohesion between its particles by a wiping or rubbing action. In addition, since the knife is shaped substantially to a point it can be turned to follow sharp crooks or bends in the crack without breaking the plaster away unnecessarily, which is not true of a knife presenting considerable width at its entering portion. A feature of the knife as I preferably form it is that it is quite thin—approximately 22/1000'' thick—and that it is preferably of uniform thickness, since beveling is found to have a tendency to break away, rather than merely cut, the plaster. If the blade has the thickness indicated and is made of a strip of spring steel, when its point becomes dull the extremity of the knife can be clipped off on a line substantially parallel with the original oblique back edge to form a fresh sharp point.

Another object is to provide a tool of this class in which the knife and the shank shall be separate members, the knife member being clamped in the shank member so as to be removable, as when it has become too short for effective use and has to be replaced by a new one.

In the drawing,

Fig. 1 shows one form of the tool in side elevation and in section the plaster of a wall, the tool being shown in the position for starting a cut;

Fig. 2 is an elevation 90° offset around the axis of the tool shank from the elevation of Fig. 1;

Fig. 3 is a side elevation of a modified form of the tool; and

Fig. 4 is an enlarged transverse section of the knife member.

The shank member is formed by a bar 1 of metal having both end portions 1*a* and 1*b* straight but it is bent so that the axis of one end portion is disalined with that of the other, said end portions in the form shown in Figs. 1 and 2, now being described, being parallel, involving the presence of two reverse bends in the bar.

The free end of one end portion 1*a* has a longitudinal slit 2 which extends in a plane common to the two end portions of the bar and preferably at one side of their axes and this slit may be contracted by a screw 3 which is tapped into the thicker part of the bar at one side but is free in the thinner part at the other side of the slit, having its head arranged to bear against the latter part. The other end portion 1*b* of the bar may be equipped with a handle 4.

The knife member is here a suitable length 5 of strip spring steel of a uniform thickness throughout—approximately 22/1000''—and has here one end edge oblique to one of the longitudinal edges of the strip, whereby the said longitudinal edge 5*a* and oblique edge 5*b* (which respectively form what I term the front and rear edges of the knife member) meet in a point 5*c*. As shown, both ends of the strip may be formed as described, or alike.

The knife member is fitted in the slit and held therein by the clamping action of the screw 3 so that its point 5*c* (either of them, if both are pro-

vided) projects from the shank member in the same direction as the end portion 1*a* is bent off with respect to the end portion 1*b* and its edge 5*a* is presented toward the latter end portion.

In using the tool it is held with the axes of its end portions 1*a* and 1*b* substantially parallel with the surface of the wall *a* to be treated (the offsetting of the handle end portion with respect to the other end portion affording the necessary clearance for the user's hand between it and the wall surface) and, having established the point 5*c* at the proper depth in the plaster, the tool is drawn in the direction of the arrow in Fig. 1. In this the effort involved is principally one of drawing the tool through the plaster parallel with its surface, little effort being required to keep its point from working outward or toward the surface. Due to the thinness of the knife member, the lack of bevelling and the fact that its forward and rear edges are developed to a point the operation is principally of a cutting nature, with little effect to fracture the plaster, so that not appreciably more of the plaster is removed than is intended.

When the point of the knife member wears away and becomes rounded so that an excessive amount of pressure is required the extremity may be snipped off at the same angle relatively to the front edge 5*a* as before, or with the new rear edge related to the front edge in the same angle as initially.

The construction of Fig. 3 is the same in all respects as that shown in Figs. 1 and 2 excepting that there is only a single bend in the bar forming the shank, the handle end portion 1*b* of the latter projecting substantially at right-angles to its other end portion 1*a*. The working point of the knife member in this case is the one which is up as the tool is shown, the tool being adapted to be drawn in the direction of the arrow. Whatever effort is here required to keep the point 5*c* from working outward or toward the surface of the plaster is characterized by less leverage on the hand, so that in this respect at least this form of the tool is preferable to the form first described, though it may require more adroitness or experience to use it effectively.

I am aware that tools for cutting divers materials have been proposed in which the cutting edge was presented toward the handle end of the tool so that the tool was adapted to be drawn in a direction in which its handle end portion was approximately parallel to the surface of the material. But I know of no such tool having the specific characteristics set forth in the appended claim and therefore more suitable for forming a narrow rout or furrow in a plaster surface than an ordinary putty knife.

Having thus fully described my invention what I claim is:

The hereindescribed plasterer's tool comprising a bar forming an elongated shank member and having one end provided with a longitudinal slit, a knife member consisting of a strip of flat metal rigidly secured in the slit and extending transversely of the bar with its longitudinal edges substantially perpendicular to the axis of such bar, that longitudinal edge of the strip which faces the other end of the bar being the knife cutting edge and the strip having a rear edge oblique to and forming substantially a point with such cutting edge.

JOHN D. DUNN.