

[54] **CUTTING TOOL**

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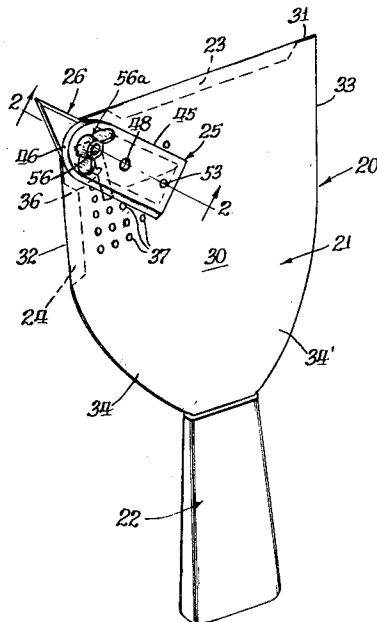
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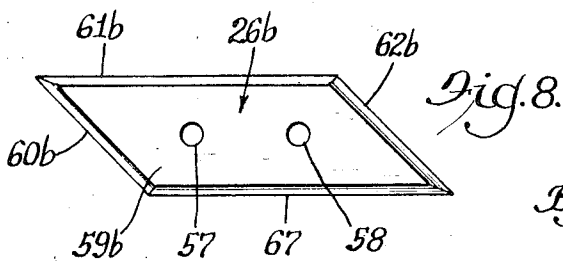
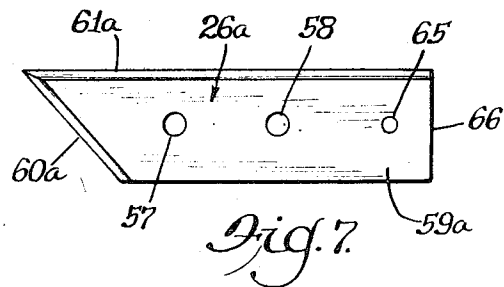
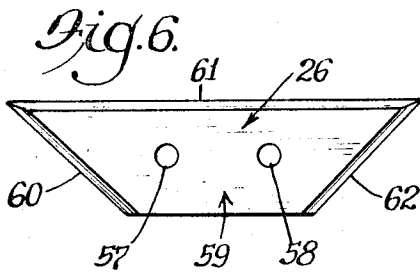
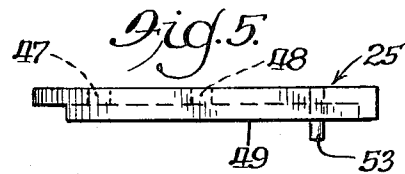
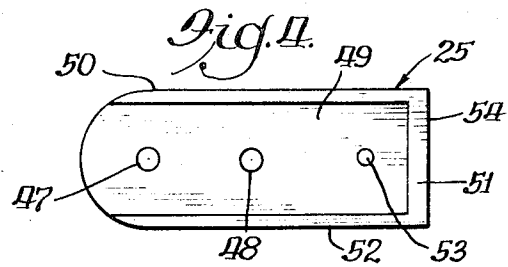
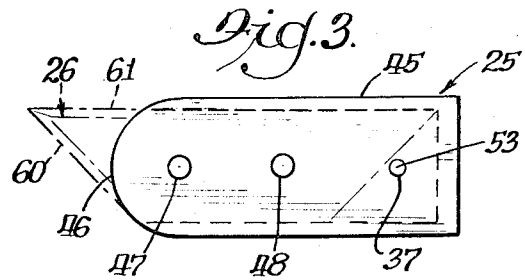
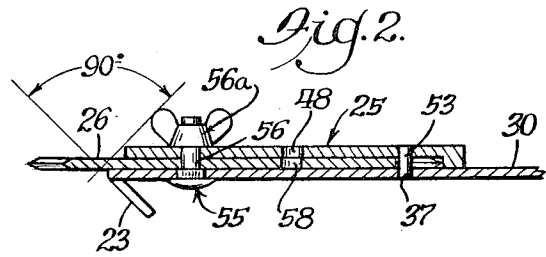
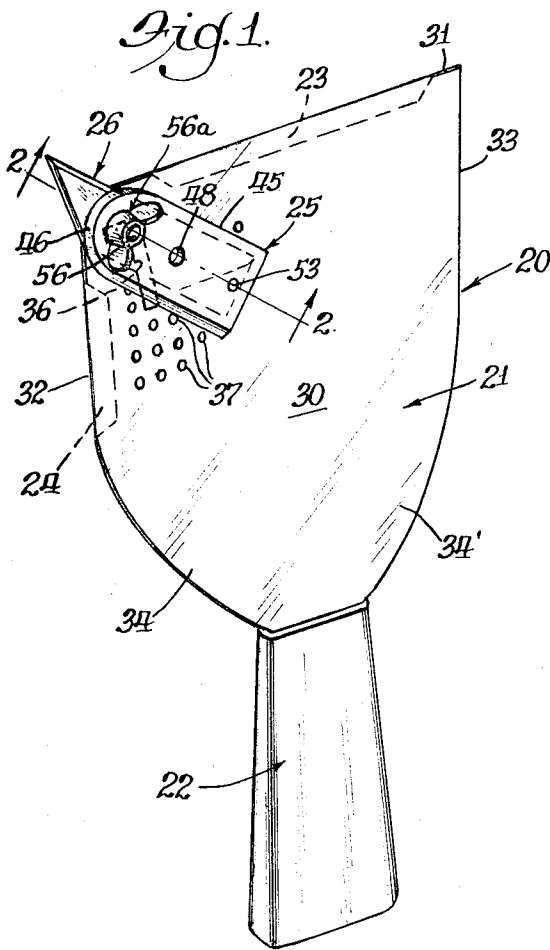
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[57] **ABSTRACT**

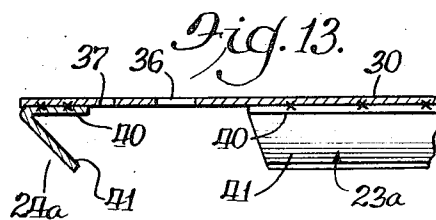
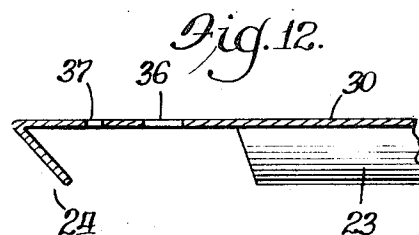
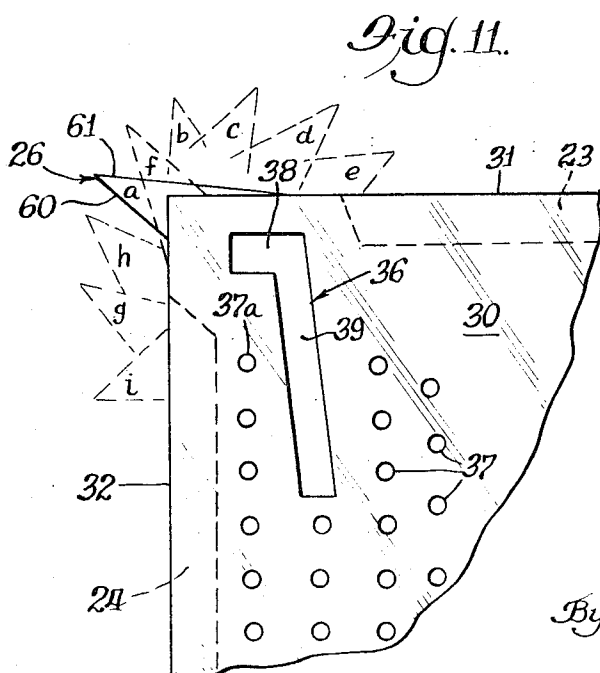
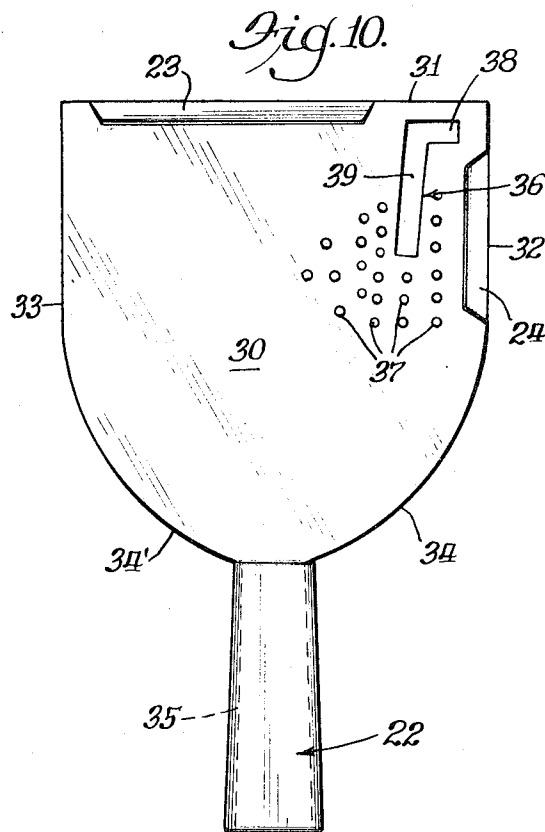
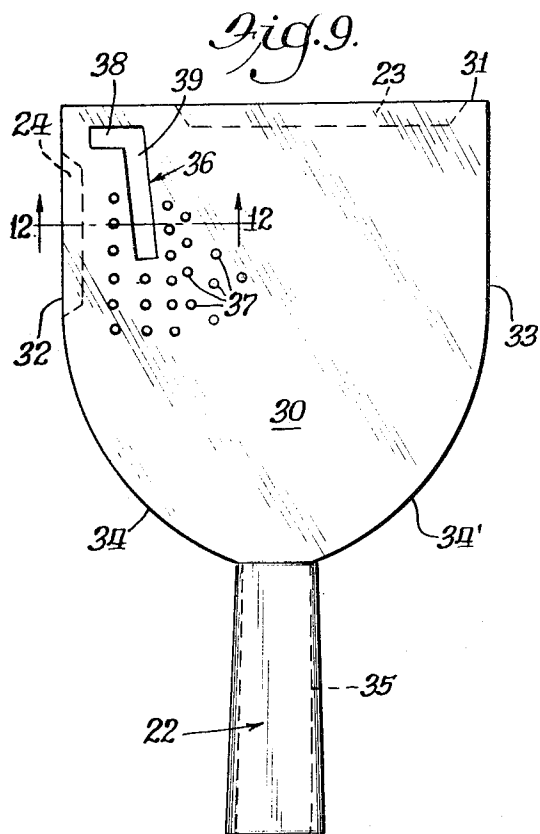
A hand operated tool for cutting and trimming mounted wall covering materials including paper, cloth, canvas, vinyl plastic, cork and the like. A large wiper blade for smoothing out the covering materials is provided with at least two marginal guide means which cooperate with an adjacent wall in guiding the tool for linear movement along the intersection of two walls. A knife blade is mounted in a holder fastened to the wiper blade in position to project beyond one corner of the wiper blade and guide means in accordance with the desired depth of cut, as dictated by the thickness of the covering material, and to dispose the cutting edge thereof at a proper angle for smoothly severing the covering material.

**10 Claims, 13 Drawing Figures**





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## CUTTING TOOL

In accordance with current practice, wallpaper hangers and like workmen, after mounting covering materials on a wall, usually trim the top and bottom margins thereof by means of a straight-edge held tightly against the covering material at the desired margin to guide a razor blade along a desired line of cut. Such a procedure is not entirely satisfactory, inasmuch as it normally requires a succession of cuts to be made in short lengths after moving the straight-edge to successive positions along the line of cut. This generally produces a jagged or non-uniform trim edge unless extreme care is exercised. So-called margin trimmers, which in general comprise razor blade holders of one type or another, have also been developed for use with the straight-edge. Wheel knife trimmers which may be rolled along the desired line of cut avoid some of the difficulty of using a hand held knife or razor blade. Modified wheel knives having serrated edges on the knife wheel have also been developed which provide a series of perforations through the wall covering material, so as to weaken the same along a desired tear line. To the best of my knowledge, however, none of such previously known devices have proven dependably satisfactory in use, so that the most prevalent and accepted practice remains that of using a straight-edge and razor blade which not only requires a certain amount of skill on the part of the workman, but as pointed out hereinabove does not always result in a smooth, straight line of cut.

In recognition of the foregoing shortcomings and difficulties of trimming devices and practices, the present invention has been developed for the purpose of providing a new, improved and simplified hand tool capable of effecting neat trimming of wall covering materials, particularly materials of thicker and tougher variety, such as grasscloth, canvas, cork, vinyl plastic and the like; the same being easy to operate and efficient in its trimming capabilities while requiring minimum skills on the part of the workman.

In brief, the present invention comprises a relatively wide wiper blade which may be used to smooth down the wall covering materials when applying the same to the wall, and which is provided with guide means along at least two margins thereof which are engageable with an adjacent wall for positioning the wiper blade in a correct angular position to exact a desired cutting action by means of a cutting blade mounted in a holder fastened to the wiper blade and having a sharp tip end projecting past the margins thereof. The cutting action takes place by positively guiding the wiper blade along a desired line of cut by maintaining the guide means thereof engaged with an adjacent planar wall. Thus, a smooth, uninterrupted cut may be effected accurately and with minimum effort across the width or length of a sheet of wall covering material glued on a wall.

An important object of this invention is to provide an improved hand tool for trimming wall covering materials.

A further important object of this invention is to provide a trimming tool employing a cutting knife, and means for positively guiding the knife movement along a desired linear line of cut.

Another important object of this invention is to provide an improved hand tool as aforesaid, which provides a conveniently adjustable knife edge capable of

being readily replaced to accommodate wear, and which is positionable by the operator to effect selected cutting depth and cutting angle to avoid tearing of the covering materials.

A still further object of this invention is to provide a hand tool for trimming wall covering materials which is readily usable for trimming operations along the ceiling, base and corners of a room.

A still additional object of this invention is to provide an improved, simplified hand-operated trimming tool which is economical to produce, is accurate and efficient in operation and requires minimum operating skill on the part of the operator.

Having thus described this invention, the above and further objects, features and advantages thereof will appear to those skilled in the art from the following description of a preferred form thereof representing the best mode presently contemplated for enabling those of skill in this art to make and utilize this invention; such preferred embodiment being illustrated in the accompanying drawings.

## IN THE DRAWINGS

FIG. 1 is a perspective view of a hand tool in accordance with this invention;

FIG. 2 is a cross-sectional view taken substantially along vantage line 2—2 of FIG. 1 and looking in the direction the arrows thereon;

FIG. 3 is a top plan view of the knife blade holder and indicating with dotted lines one form of knife blade useful therewith;

FIG. 4 is a bottom plan view of the holder seen in FIG. 3;

FIG. 5 is a view in side elevation of the holder illustrated in FIGS. 3 and 4;

FIGS. 6, 7 and 8 are plan views of two, three and four cutting edge blades useful with the holder illustrated in FIGS. 3-5;

FIG. 9 is a front elevational view of the wiper blade seen in FIG. 1 disassociated from the knife blade and holder;

FIG. 10 is a rear elevational view thereof;

FIG. 11 is an enlarged partial view in front elevation of the wiper blade seen in FIG. 9 indicating various operational positions for the knife blade combined therewith;

FIG. 12 is an enlarged cross-sectional view taken substantially along line 12—12 of FIG. 9 looking in the direction of the arrows thereon to illustrate one form of guide according to the invention; and

FIG. 13 is an enlarged cross-sectional view similar to FIG. 12 illustrating a modified construction for the guide means.

Turning now to the features of the preferred embodiment of the present invention, initial reference is made to FIG. 1 which illustrates the various elements in combined context for a cutting tool 20 according to this invention. As there shown, the tool 20 comprises a generally planar wiper blade means 21 having a handle means 22 projecting from the lower side thereof, guide means 23 and 24 fixed to at least two right angularly related margins of the blade 21 and holder means 25 for positioning a cutting knife 26 at one corner of the blade means between adjacent ends of the guide means 23 and 24.

Turning now to the specifics of the wiper blade means 21, special reference is made to FIGS. 1, 9 and 10 of the drawings. As best shown in FIGS. 9 and 10, for example, the wiper blade means comprises a planar metal body 30 which importantly is formed with a linear top wiper edge 31 and at least one (herein two) linear side edge portions 32 and 33 which intersect preferably at right angles with the wiper edge 30, although this angle of intersection may vary from 90° to 45°. It is not essential that the lateral edges 32 and 33 define the complete lateral margins of the blade body. As illustrated, for instance, each of the linear edge portions 31 and 32 merges into a curvilinear edge portion 33 or 34 to provide a symmetrical configuration for the blade body merging into an outwardly extending and centrally located tail portion 35 about which the handle means 22 is mounted.

The blade means 21 is distinguished by a substantially L-shaped slotted opening 36 formed adjacent one corner (the upper left-hand corner thereof, as viewed in FIGS. 1 and 9). A series of locator openings 37 also are formed about the lower end of the slotted opening 36 in spaced array for cooperation with the holder means 25 as will appear presently. It is to be noted that while the embodiment here illustrated shows only one slotted opening 36 and an array of locator openings 37 adjacent one corner of the blade body 30, it is fully contemplated that the same opening figuration may be provided adjacent the other or upper right-hand corner of the blade body as viewed in FIG. 9 to provide a cutting tool of this invention adaptable for left-handed operators. Such modification is not illustrated herein nor will it be further described, as it is considered to be an obvious modification to the illustrated preferred embodiment and well within the scope and purview of this invention.

The L-shaped opening 36 as shown comprises two sections or portions, namely, an upper portion 38 formed as a generally rectangular opening paralleling the wiper edge 31 of the blade body and an elongated tail portion 39 which preferably is disposed in obtuse angular relationship to portion 38 so as to angle downwardly from one end thereof on a bias with respect thereto and to the lateral margin 32 of the blade body. It is also fully contemplated that instead of the generally L-shaped opening 36, the same may constitute a semi-arcuate or linear slotted opening reaching from approximately near the upper left-hand corner of the blade body downwardly toward the central axis of the blade body to follow generally the same pattern of placement as illustrated for opening 36. Opening 36, as will appear in greater detail from the description which follows, accommodates the means for fastening the holder means 25 to the blade body 30 in selected adjusted positions.

Disposed along the top wiper margin 31 of the blade body, and at least one of the lateral margins, such as margin 32 of the blade body, are the guide means 23 and 24, respectively. As shown, each of the guide means 23 and 24 preferably comprises an integral extended portion of the blade body 30 folded backwardly in like directions from the margins 31 and 32 thereof at approximately a 45° angle (see FIGS. 2 and 12) to form generally planar linear guide lips; both guide means 23 and 24 being similarly constructed. Importantly, the

guide means 23 or 24 terminate short of the one corner of the blade body which supports the holder means 25 and knife means 26 to avoid interference therewith.

Before leaving the description of the guide means 23 and 24, reference is now made to FIG. 13 of the drawings which shows an alternate or modified form of the hereinabove described integrally formed lip extensions for means 23 and 24. As thereat shown alternate guide means 23a and 24a may comprise a separately formed angulated metal strip, each having an elongated body portion 40 adapted to be fixed as by welding or riveting along a selected margin, such as edge margin 32 of the blade body for guide means 24a and the long margin 31 for alternate guide means 23a. Extending angularly outwardly, preferably at 45° from the body portion 40 thereof, is a guide lip portion or extension 41 which protrudes outwardly of the blade body 30 to present a guide engageable with an adjacent wall such as at the corner of a room, at the ceiling or with the base cove molding at the bottom edge of wall covering laid on the wall. Whether the guide means are made integrally with the blade body 30 as means 23, 24 or detachably formed and secured thereto as illustrated in the modified forms 23a and 24a, is relatively immaterial except for manufacturing convenience. Both forms of guide means function alike, serving to engage one face or one adjacent wall surface for guiding movement of the tool 20 in a linear path to effect a desired uninterrupted linear cut of the wall covering material.

Reference has heretofore been made to the handle means 22 mounted about the tail extension 35 of the blade body 30. Such handle means may comprise a palm-gripping handle of plastic molded integrally about the tail portion 35 of the blade body or, alternatively separated metal or plastic half shells welded or otherwise affixed to portion 35 in accordance with familiar practice. In operation, the handle means 22 normally resides between the thumb and the forefinger of the operator's right hand for the particular right-handed tool illustrated with the operator's fingers engaging the one face of the blade body 30. The thumb is then positioned on the opposite face thereof as the same is drawn or moved along a desired cut line. When the wiper blade 30 is utilized to wipe down or smooth out wallpaper or other covering materials glued to the wall, the operator normally grips the handle means 22 within the palm of his hand in a conventional fashion.

With reference now to FIGS. 3, 4 and 5 of the drawings the knife holder means 24 will be described in detail. As shown best in FIG. 3, the holder means 25 comprises a unitary metal body member 45 of generally elongated rectangular configuration, having one radiused end 46 beyond which the knife blade 26 projects in operation. Two enlarged openings 47 and 48 are provided intermediate the ends of the metal body member 45, one opening 47 being adjacent the radiused end 46 and the second opening 48 being spaced therefrom along the longitudinal axis of the body member 45. As shown best in FIG. 4, the bottom face of body member 45 is recessed or routed out to provide an elongated, generally rectangular, knife-receiving socket or chamber 49 bounded only on three sides by skirt wall portions 50, 51 and 52. A cylindrical locator pin 53, adjacent the non-radiused end 54 of the body member 45, projects from the latter, through the

chamber 49 and past the bottom face of the body as defined by bottom margins of the respective bordering wall portions 50, 51 and 52 (see FIG. 5). Pin 53 may constitute a length of cylindrical rod of a diameter suitable to closely fit in the locator openings 37 formed in the wiper blade body. From FIG. 2 in particular, it will be noted that in mounting the holder means 25 on the wiper blade 30, pin 53 extends through one of the openings 37 an amount sufficient to lie substantially flush or in coplanar relationship with the opposite face of the blade body 30. The two openings 47 and 48 provided in the holder body accommodate a wingnut and bolt fastener means 55 comprising a conventional carriage or shouldered bolt body 56 having a wingnut 56a mounted over a threaded outer end portion thereof.

As will be readily appreciated from examining FIG. 2 of the drawings, the knife blade 26 is adapted to be mounted within the socket or chamber 49 of the holder means and to that end is of a thickness substantially equal to the depth of recess 49, so that the face of the blade means nearest wiper body 30 is generally coplanar with the bottom or underface margins of the skirting wall portions 50, 51 and 52 of the blade holder means 25 in assembly. Thus, the holder and blade comprise a two-part block combination which fits flush against the adjacent face of the wiper blade body 30.

The knife blade 26 is shown divorced from the holder means 25 in FIG. 6 of the drawings, from which it will be recognized that the same has a pair of enlarged openings 57, 58 formed through a planar body portion 59 thereof; such openings 57 or 58 being receptive of the shank or body portion 56 of the bolt means 55 in assembly with the wiper body 30 as illustrated best in FIGS. 1 and 2 of the drawings. As best shown in FIG. 6, the preferred blade 26 is formed with three cutting edges 60, 61 and 62 each of which is ground from opposite faces of the body portion 59. Importantly, it is to be noted that the cutting edge 61 extends along one lengthwise edge margin of the body member 59 while the other two cutting edges 60, 62 converge along the opposite end edges of the body member at a bias or angle to the lengthwise cutting edge 61. Preferably cutting edge 61 is at a 45° relationship with the end cutting edges 60, 62. Thus it will be appreciated that the blade means 26 is formulated substantially as a regular trapezoid with the end legs thereof comprising the cutting edges 60, 62 and the base thereof comprising the elongated cutting edge 61.

As illustrated in FIG. 3 in particular, the blade means 26 is adapted to be mounted within the chamber 49 of holder means 25, so that one of the end cutting edges 60 or 62 just clears the locator pin 53, while the opposite end cutting edge extends tangentially from the radiused end 46 of the holder means. The mounting bolt means 55 may be inserted through either of the openings 47 or 48 of the holder means to pass through a corresponding and registering aligned opening 57 or 58 of the blade means and slotted opening 36 of the wiper blade. If it is desired to extend the knife blade means outwardly into a secondary position, then the bolt means 55 is disposed through opening 47 of the holder means and opening 58 of the blade means in which position the exposed end cutting edge 60 or 62, as the case may be, does not lie in tangential relationship to the radiused end 46 of the holder means. This

extended positioning of the blade means is desirable in certain instances where extremely heavy or thick wall covering materials, such as cork, are encountered and extended knife cutting depth is required.

From the foregoing description of the blade means 26, it will be readily appreciated the same is reversible, or, that is, either of the end cutting edges 60 or 62 may be exposed beyond the radiused end 46 of the holder means to cooperate with the lengthwise extending cutting edge 61 in severing the wall covering material. As particularly noted in FIG. 2, it will be observed that the several cutting edges 61 and 62 of the blade means 26 are preferably hollow-ground or chisel-ground from opposite faces of the knife blade. In any event, it is preferred that the cutting edge per se be aligned generally along a central axis or plane of the blade body 59 paralleling the exterior faces thereof.

With reference now to FIG. 7 of the drawings, a modified blade 26a is therein illustrated, which differs from the preferred blade 26 illustrated in FIG. 6 principally in that the same comprises only two cutting edges 60a and 61a. Edge 61a extends along one lengthwise edge of the generally rectangular blade body 59a with the single end cutting edge 60a thereof being formed in angular disposition relative to edge 61a, preferably at substantially 45°. Essentially, the modified blade 26a of FIG. 7 is formed to eliminate the third cutting edge 62 of blade 26. Further modification of blade 26a over the blade of FIG. 6 is also found in the provision of a smaller secondary opening 65 adjacent the one non-cutting end 66 thereof. Opening 65 accommodates passage of the locator pin 53 to positively lock blade 26a in holder socket 49. The modified blade 26a also includes the two enlarged openings 57 and 58, as previously described, for passage of the holding bolt means 55.

In FIG. 8 a second modified form of the blade means is indicated generally at 26b. As therein shown, blade means 26b is shaped as a rhomboid having an elongated cutting edge 61b along one base thereof, with the end edges presenting cutting edges 60b, 62b corresponding to the edges 60 and 62 of the blade means 26, previously described. A second elongated cutting edge 67 paralleling the elongated cutting edge 61b is also provided in this form of the blade means so that there is a cutting edge along each of the four bounding margins thereof. The bolt receiving openings 57 and 58 are provided in the main body 59b of blade means 26b to cooperate with the fastener means 55 and holder means 25 in operation. Again, as with the angular disposition of the cutting edges 60, 62 on blade means 26, and edge 60a for blade means 26a, cutting edges 60b and 62b of the blade means 26b preferably are at approximately 45° with respect to the lengthwise cutting edges 61b and 67, respectively, although this angular relationship is not critical and may be varied as desired.

As will best be seen from examining FIG. 11 of the drawings, provision of the slotted adjustment opening 36 in the wiper blade body 30 provides a convenient means for selectively locating the holder means 25 in various angular and lateral dispositions relative to the linear margins 31 or 32 while always maintaining end 46 thereof inside such margins. Thus the tip portion of blade means 26, for instance, formulated by intersec-

tion of adjacent cutting edges 60,61 or 61,62, may be disposed in various positions about an adjacent corner of the wiper blade body 30. In greater particular, the preferred position, schematically indicated by letter *a* in FIG. 11, shows the tip portion of the blade means 26 projecting beyond the upper left-hand corner of the wiper blade body for normal cooperation with either of the guide means 23, or 24. In this condition, it will be noted that the longer cutting edge 61 of the blade means 26 is in generally obtuse angular relationship to edge 31 while the secondary cutting edge 60 thereof is at a more acute angular disposition with respect to the lateral margin 32 and guide means 24. Alternate positions for the blade means are indicated by letters *b-i* with the series of positions labeled, *a, f, b, c, d* and *e*, being primarily for cooperation of cutting edge 61 with guide means 23 along marginal edge 31 of the blade body. Indicated blade positions *f, a, g, h* and *i* on the other hand are intended primarily for tool operation employing blade cutting edge 60 and guide means 24.

As will be readily appreciated, the spaced array of the several locator openings 37 serve to provide convenient means for positively locking the blade holder means 25 in various angular positions about one corner of the blade body 30, the same being locked in any of its selected positions by tightening the wingnut member 56a on the holding bolt means 55. When it is desired to use the tool 20 as a means for smoothing down wall covering materials, holder means 25 with its contained blade means 26, is usually reversed to dispose the cutting tip of the blade means inwardly of the margins or the wiper blade, which position may be accomplished, for example, by locating the pin means 53 in the locator opening indicated at 37a in FIG. 11.

For operation, a tool of the character hereinabove described is assembled in the manner indicated with the sharpened double-edge tip portion of one of the described blade means extending or protruding past one corner of the wiper blade body 30, such as indicated in FIG. 11. Depending upon the depth of cut and thickness of wall covering materials encountered as well as the angle of contact between the blade means and the material required to produce a smooth drawing cut through the latter, the blade means is selectively disposed in one of the various positions dictated by an individual locator opening 37. Be that as it may, when it is desired to perform a cutting or severing action with the tool, the tip point thereof is inserted through the wall covering material at a desired trim line, as for example the junction between a sidewall and the ceiling in a room, with the wiping edge 31 of the blade body 30 parallel to the ceiling. The underdisposed guide means 23 is positioned to engage and is pressed against the adjacent face of the covering materials on the sidewall immediately below the line of cut. By virtue of the angular relationship of the guide means 23 to the body member 30, the latter is disposed substantially at a 45° angle from the sidewall. Cutting operation is brought about by drawing the extending tip portion of the blade means along the line of intersection between the sidewall and ceiling while pressing the guide means 23 tightly against the sidewall.

Conversely, if it is desired to trim wall covering materials along a lateral margin thereof, as for example at the corner intersection of two sidewalls of a room,

the tip of the blade means is properly positioned in one of the locations indicated at *f, a, g, h* or *i* in FIG. 11, or others, as permitted by the cooperating presence of a locator opening 37. In this operational circumstance, the guide means 24 bordering the marginal edge 32 of the wiper blade body 30 engages one sidewall, disposing the wiper blade body 30 at substantially 45° to the two walls at the room corner. So positioned, the tool is then drawn vertically downwardly along the desired line of cut to perform the cutting operation.

It is to be noted, that the wingnut 56a of the bolt means (see FIG. 2) also aligns generally along a 45° position when assembled with the wiper blade. So aligned it too provides a rough guide for the operator to keep the tool properly aligned during cutting activity.

From the foregoing description it is believed that those familiar with the art will readily understand and appreciate the novel concepts and advancements presented by the hereinabove described invention and will recognize that substitutions, modifications and changes may be effected in the described embodiment without departing from the spirit and scope thereof as particularly defined in the following appended claims.

I claim:

1. A hand tool for laying and trimming wall covering materials comprising: a wiper blade having a planar body formed with an elongated linear wiper margin engageable with wall covering materials for smoothing the latter when mounting the same on a wall, first guide means extending along said margin and comprising an elongated planar lip projecting angularly outwardly of the plane of said blade body whereby to align the latter in angular disposition to a planar wall engaged by said guide means, knife blade means having a sharp cutting edge removably mounted on said wiper blade adjacent said margin and guide means, and holder means for securing said knife blade means in selected position relative to said margin so as to expose selected portions of said cutting edge thereof beyond said margin and at selected angles relative thereto.

2. The invention of claim 1, and at least one additional linear margin on said wiper blade body, intersecting said wiper margin, second guide means extending along said additional margin and having a planar lip portion projecting angularly outwardly of the plane of said blade body.

3. The invention of claim 2 and wherein said holder means cooperates with said additional margin and second guide means to selectively expose portions of a second cutting edge formed on said knife blade means beyond said second margin and at selected angles relative thereto.

4. The invention of claim 1 wherein said holder means is mounted on one face of said wiper blade body and serves to maintain said knife blade means in adjacent contacting parallelism with the said one face.

5. The invention of claim 1 and handle means projecting from a third margin of said wiper blade opposite said wiper margin thereof, said handle means extending outwardly of said third margin and providing means for hand gripping engagement by a human operator of the tool.

6. The invention of claim 1 wherein said holder means comprises a rigid elongated body member having a recessed socket formed in one face thereof, which

socket is receptive of said knife blade means is of a depth substantially equal to the thickness of said knife blade means; said socket being bounded on three sides by skirt wall margins with said blade means having a portion thereof extending beyond one end of said socket when mounted in said holder means.

7. The invention of claim 1 wherein said holder means comprises an elongated rigid member having a generally planar body provided with a blade holding socket recess in one face and an opening therethrough, said wiper blade body having an elongated slotted opening formed adjacent said wiper margin, and bolt fastener means mountable through the said opening in said holder means and said slotted opening in said

wiper blade body.

8. The invention of claim 1 wherein said guide means comprises an integral portion of said blade body.

9. The invention of claim 1 wherein said guide means comprises an elongated rigid member having a planar body portion and a planar lip portion disposed in angular relation to said body portion, and means for rigidly attaching said body portion thereof to one face of said wiper blade.

10. The invention of claim 2 wherein said guide means are integrally formed with said wiper blade body.

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