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IMPLEMENT FOR CUTTING CARPETS AND THE LIKE

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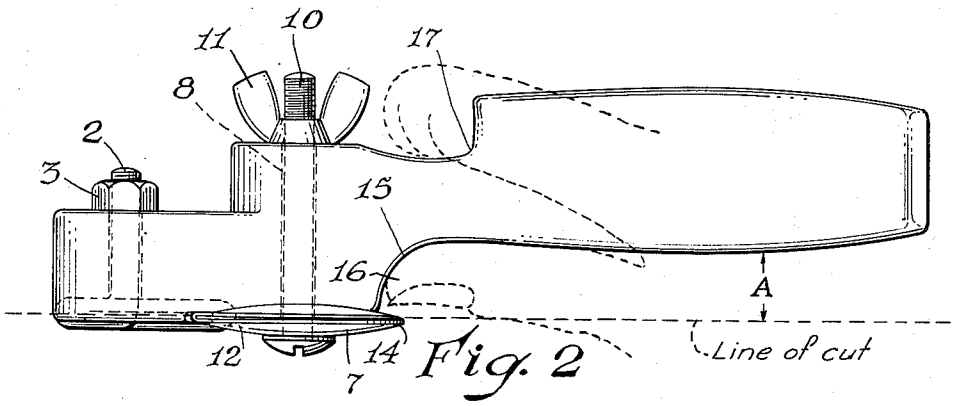


Fig. 2

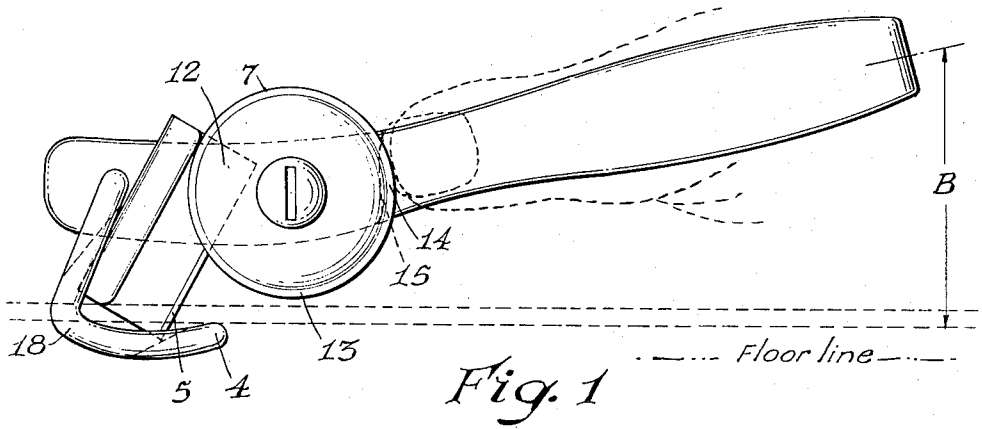


Fig. 1

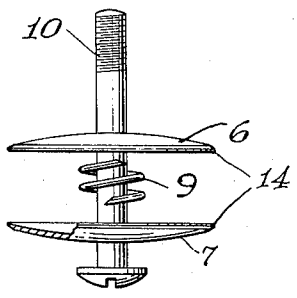


Fig. 3

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IMPLEMENT FOR CUTTING CARPETS AND THE LIKE

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6 Claims. (Cl. 30—294)

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This invention relates to hand implements for cutting rugs, carpets, mats, and other fabrics and work pieces, and more particularly to a new and improved structure and arrangement of co-operating elements and devices.

An object is to provide improved blade-holding and guiding devices adapted to allow the user an unobstructed sight along the intended line of cut on the work in advance of the cutting edge; employing therefor a guide member of large area that keeps itself prominently in view like a target, even under difficult circumstances of use, such as poor lighting.

Another object is to provide the implement with a handle having abutment members adapted to be engaged respectively by the user's thumb and forefinger for the purpose of pushing the tool rearwardly, or pulling it along the work, thus enabling the user to keep his wrist and hand in a natural position for accurate guiding and cutting.

Other objects are, to provide improved means for rigidly securing the cutting blade and guiding device together and avoiding accidental displacement such as wobbling in use; to prevent improper installation of the blade and the guide in relation to each other when assembling; and to provide means for readily releasing and dismantling them.

Further objects are, to provide a blade-controlling and guiding device for cutting the work along a predetermined line with greater ease, smoothness, accuracy and speed than has been done with earlier implements; to avoid injury to the user's hands or damage to adjacent objects, such as base-boards and floors; and to provide means for progressively raising a portion of the carpet slightly—immediately in advance of the front of the cutting blade—to facilitate the work of cutting.

My invention is exemplified in a cutting implement that comprises individual members and structures in combination, substantially as described and claimed and illustrated in the accompanying drawings.

In the drawings—

Fig. 1 is a side view of a cutting implement embodying my invention;

Fig. 2 is a top plan view; and

Fig. 3 is an exploded view of parts of a multiple-duty guiding device shown in Figs. 1 and 2.

In a preferred form of my implement the following devices are used:

A unitary head and handle; a cutting blade mounted in a bracket, slotted to provide a seat, as shown by dotted lines, Fig. 1; the bracket being secured to the head by a threaded shank 2 and nut 3.

The lower portion 5 of the cutting blade abuts against the seat, being thus kept in fixed position.

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An end, 4, of the bracket, situated a short distance in advance of the cutting edge 5 of the blade and projecting slightly above the bottom end of said edge, serves as a work-lifting member or runner, to bow the material and stretch its top face adjacent the edge 5, during use of the implement by a pulling movement toward the operator thereby easing the cut and prolonging the usefulness of the blade.

Clogging the knife blade is avoided by a novel feature at the bottom part of the bracket near its end 4, as will be described later in the specifications.

The upper portion of the blade is clamped by improved and novel means that will now be described. It is shown generally in Fig. 3 and comprises operating features that attain several desirable results.

Opposed clamping elements such as disks 6, 7, Fig. 3, preferably saucer-shaped, and of relatively large size, substantially as shown, are carried on the head or handle. They are loosely received on a spindle member such as a bolt that extends through a transverse hole 8 in the head.

Disk clamping and releasing means is provided, such as the following manually adjustable structure:

Between disks 6, 7 is a compressible spring member 9, and on the threaded end 10 of the bolt is a wing nut 11. Tightening the nut 11 clamps the meeting rims of the disks together in substantial alinement with the plane of the bracket, so as to grip the upper part of the cutting edge of the blade between them, at 12, Figs. 1 and 2, while compressing the spring 9. Loosening the nut allows the disks to separate by expansion of member 9. The rims of the disks when clamped meet at their bottom periphery 13 and also are tightly in contact at their right-hand or advancing periphery 14 in alinement with the plane of the bracket. The bottom peripheral parts 13 of the two clamped disks 6, 7 act like a tracing element, slidable on the top face of the work along a predetermined or assumed path—straight or otherwise, as indicated in Fig. 1.

By the above described arrangement the user's eyes are aided in sighting tracing and directing the blade edge 5 along the desired line. He has for practical purposes an unobstructed view of the above-mentioned raised-up cutting zone over the part 4 that is situated between the bottom part 13 of the disks and the cutting edge 5 of the blade, as is clearly indicated in Fig. 1 where the line of sighting passes from the thumb nail at 14 to the bottom of the blade at 5.

The bolt head at the center of the disks and the small arc of contact between the disks and the work face at 13, the closeness of the point 13 to the cutting edge 5 and the symmetrical shape

and large size of the disks all contribute to accuracy in use.

A safety socket is provided by the peripheries of the two clamped disks 6, 7. The disk part 14 projects beyond the edge of a shoulder 15 that is formed on the handle and serves as an abutment against the end of the user's thumb when the implement is being forced toward the left, Fig. 1, as is sometimes done in order to release the blade from an unfinished cut.

Part 14 and shoulder 15 together provide a safety socket, Fig. 2, that receives and shields the user's thumb 16 and thumb nail when the implement is in use, as is indicated by dotted lines. By that arrangement accidents are avoided, especially when the implement is being worked close to a base-board, door, or wall.

The handle that I provide for the tool is constructed to assure unusually efficient grips and abutments for the user's thumb and fingers. Preferably, the handle is offset laterally from the plane of the disks, as is shown at A, Fig. 2. It also may be inclined upwardly with respect to the head and to the floor line, as is shown at B, in Fig. 1.

A recess is formed at the opposite side of the handle from the above described safety socket. The rearward end wall 17 of the recess is shaped to receive and fit the user's forefinger when the cutter is being advanced toward the right, Fig. 2. The position of the forefinger is indicated by dotted lines.

As previously noted, to prevent clogging the blade in use, the bottom part 18 of the bracket preferably is curved like a runner or rocker. It slides along the floor underneath the carpet and when the handle is raised or lowered at B the part 18 allows the blade to rock on the runner or rocker and thereby change its angle of cutting entrance into the work without deviating from the predetermined line of cut.

Varying the inclination of the handle and runner in the manner indicated, at B, helps to prevent the carpet or work piece from clogging at the juncture of the blade edge 5 and the bracket member 18.

Clogging often occurred in earlier devices where the carpet was directed into the blade between two walls or tracks, in unchangeable relation to the cutting edge of the blade. Now that difficulty can be avoided by merely altering the tilt of my handle, at B, so as to cause the carpet to properly feed itself into the blade.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In an implement of the class described having a rigid unitary head and handle; a bracket member fixed to the head and extended therefrom vertically downward and having at its bottom a rigid runner, said bracket and runner formed with a slot having a seat therein; opposed clamping disks mounted adjustably in relation to each other on a threaded bolt extending through the head and having a clamping nut thereon; said disks when clamped face to face having the meeting plane of their rims substantially in the same plane as the slot in said bracket; a blade held rigidly to said head, between the bracket and runner and the disks, having the lower end of its cutting edge received in said slot and abutting against said seat; the upper end of the said edge of the blade received between the rims of said disks; the disks constituting, in their clamped position, visual sighting and tracing means for assisting in directing the blade edge along a desired line of cut during pulling movements of the implement toward the operator.

2. A structure as set forth in claim 1 wherein said handle is offset laterally from the said plane of the disks and cutting blade; an abutment shoulder on said handle at the end of the offset; a peripheral portion of said disks projecting in advance of said shoulder and presenting therewith a safety socket.

3. A structure as set forth in claim 1 wherein said handle is formed, on the side opposite the disks, with a recess having an end wall shaped to fit the user's forefinger.

4. A structure as set forth in claim 1 wherein said slotted bracket has its runner provided with a curved bottom face adapted to accommodate varying inclined positions of the handle during the use of the implement.

5. In an implement of the character described, the combination of a rigid unitary head and handle, the handle portion being the forward end of the tool; a slotted bracket fixed to the head having at its lower end a runner projecting forwardly and upwardly toward the handle; a cutting blade removably seated at its lower end in the slot of said bracket; a pair of opposed disks received on a spindle member carried by said head; means on said member for clamping together and releasing the disks; the bottom periphery of said disks constituting a tracing element forward of the free end of the runner; the rearward peripheral portion of the disks, above the forward end of the runner, constituting releasable clamping members for the upper end portion of said blade.

6. In an implement of the class described having a unitary head and handle; a bracket fixed to the head and extended therefrom vertically downward and having at its bottom a runner extended in the direction of pulling movements toward the operator in the use of the implement; said bracket and runner formed with a slot and seat for mounting a cutting blade; said runner having an end projecting upwardly in position to provide a work-lifting member; blade clamping and releasing disks mounted operatively on said head in opposed relation; said disks in their released condition being movable toward and away from each other and when clamped being fixed in substantial alinement with the plane of a cutting blade seated in said bracket; said disks when clamped also constituting visual sighting and tracing means for assisting the operator in directing the cutting edge of a blade clamped thereby along a desired line of cut.

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