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O. W. HAMEL

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KNIFE

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Fig. 1

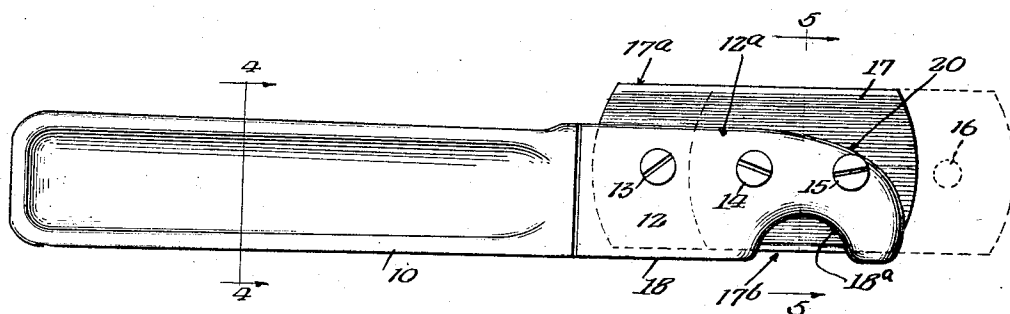


Fig. 2



Fig. 3

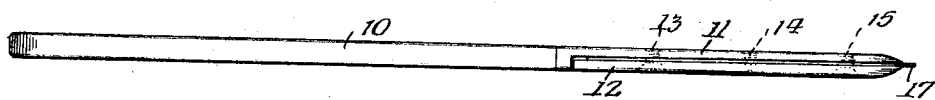


Fig. 6

Fig. 7

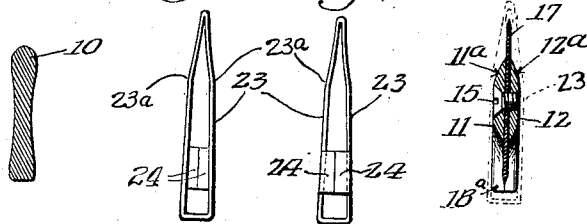
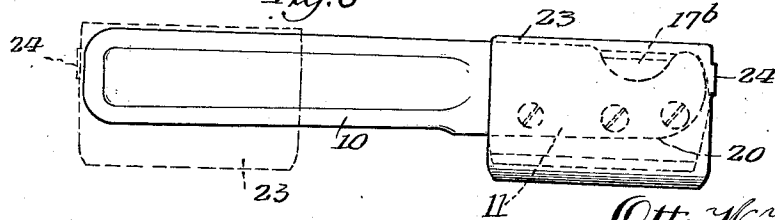


Fig. 4

Fig. 5

Fig. 8



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These improvements relate to blade holders and to knives in which the cutting blade is a readily removable member. The particular adaptation shown embodies a well known form of safety razor blade. While the device will be found to have many applications in use, it has been designed especially as a convenient tool for electrical workers.

The objects are to provide a simple, cheap and effective holder for such blades, and to provide a knife complete having special and peculiar advantages where such operations as skiving or whittling are involved calling for a blade having a portion thin and free to a materially large extent. Another object is to provide peculiar advantages in such operations as freeing a section of insulation or otherwise cutting into an object deeply, and especially where a rotating or rocking motion may be useful in the cutting operation. An advantageous safety feature is also provided.

Other objects and advantages will appear hereinafter.

It is not broadly new to provide a holder having a removable clamping leaf thereon for razor blades of the kind shown.

In the accompanying drawings, Figure 1 is a side view of the knife complete showing by dotted lines how the substantially rectangular blade may be extended. It is not new however, to provide a holder susceptible of such an extension of the blade; Fig. 2 shows what I shall call the front edge view of the knife, as looking from the top downward in Fig. 1; Fig. 3 shows the device in rear edge view; Figs. 4 and 5 show sectional views on the lines 4—4 and 5—5 respectively of Fig. 1; Figs. 6 and 7 show opposite end views of the protective casing; and Fig. 8 shows the device in side view on a smaller scale with the cover applied and showing by dotted lines how it may be slipped upon the handle.

The illustrations show the proportions of the parts, and the appropriate sizes can readily be obtained from the ordinary razor blade of the kind illustrated. Fig. 8 shows the device substantially to scale.

The body parts of the tool include the handle 10 having the integral thin and flat leaf-like or plate-like extension 11, approximately

half the thickness of the handle. The cooperating clamping member 12 is a counterpart in shape of the extension 11. Three screws 13, 14 and 15 have their heads substantially flush with the outer surface of the clamping member 12 and are threaded into the extension 11 but do not project therethrough. They pass through holes as 16, Fig. 1, regularly to be found in such razor blades. I believe a feature of improvement is in the use of screws instead of some other means to provide the clamping action. There is special advantage in the use of screws since they may lie flush with the outer surfaces of the clamping elements and therefore do not interfere with various uses of the tool such as whittling and skiving. Fig. 5 shows that the front edge-portion surfaces at 11a and 12a slant toward the blade 17, and this slanting formation continues all along the front edges of the parts 11 and 12 where these edges lie adjacent to an exposed part of the blade.

Particular attention is called to the slanting, preferably curved, edges of the parts 11 and 12 at 20. This edge 20 slants forward from the front edges toward the rear edges. By forming the holder in this manner the blade is exposed to a very considerable extent at its front free end portion. Stated otherwise, a substantially large corner portion of the blade is thus exposed. A cutting member is thus provided which is highly advantageous in some uses.

One of these is where it is desired to cut deeply with a skiving action while still holding the very thin and flexible blade strongly and firmly. Pencil sharpening for example can be done only poorly with such a part of the blade as is exposed at 17a, while it can be very well done with a sort of shaving or skiving motion at the free end or exposed corner part of the blade shown. Very importantly in such operations as removing the insulation from wires the tool as thus constructed is peculiarly advantageous since the free end of the blade can be laid down close and substantially parallel with the wire enabling the user to skive off the insulation without cutting into the wire. Insulated conductors are often formed of many fine wires

and these cut very easily. I believe it is a distinct improvement in a holder of this type, and in the knife complete, to provide such a large exposed corner area at the free end of the blade, while still holding it tightly. If the blade be extended, as shown by dotted lines in Fig. 1, certain advantages of the kind described would be had but the blade then becomes too flexible and the cutting operations cannot be controlled to advantage.

The rear edge of the blade is covered for the most part by rear-edge portions 18 of the clamping members. At 18a a notch or recess is formed in these rear-edge portions of the parts 11 and 12, exposing the blade 17 thereat. Fig. 5 shows that the clamping members are beveled toward the blade at the notch 18a, thus providing clearance for a freer use of the blade, the same as at the edge parts 11a and 12a.

The electrical worker frequently wishes to cut a ring in the insulation preliminary to removing it. According to the construction shown he can do this very readily and rapidly by simply pressing the blade at 17b into the insulation and then turning or swinging the blade about in the same plane.

One wall or the other defining the opening 18a acts as a guide so that keeping the tool in place is a simple matter. The blade at this cut-out 18a is held very rigidly, an important feature in some kinds of work. Strong cutting such as notching can be done at this place 18a to peculiar advantage. This exposed part 17b of the blade is very useful too in whittling out pieces of insulation. One of the features of advantage is that only a small part of the blade is here exposed and in some work the exposure of a larger part of it would interfere with and damage other parts of a construction being worked upon.

The protecting cover 23 is an envelope of substantially rectangular shape in side view and in edge views as shown by Figs. 6 and 7. It is entirely open at one end while the opposite end has inturned wings 24 acting as a stop. The cover is so formed that at the bend at 23a in its side members it engages with the slanting surfaces 12a and 11a and thereby holds the cover so as to protect the cutting edge of the blade from rubbing against the interior of the cover at its apex. The side walls of the cover are forced apart somewhat when the head of the tool is inserted and the casing is held in place by the spring pressure thus developed. When the knife is being used the cover may be slipped upon the free end of the handle as shown by dotted lines in Fig. 8, and, while there it would interfere with the most free use of the tool for some purposes, it is not objectionable for others, and the parts may thus be kept together.

The holder parts may be castings of aluminum or other metal, or they may be forged

in suitable dies. Other materials may be used.

I contemplate as being included in the present invention such changes and departures from what is thus specifically illustrated and described as fall within the scope of the appended claim.

I claim:

A holder for a substantially wide, short, thin and substantially rectangular razor blade of the character described comprising a pair of plate-like clamping members corresponding in shape and face to face, a handle member integral with one of said clamping members and extending therefrom, the clamping members being substantially the length of the blade to be held, means for forcing the clamping members toward each other to hold the blade tightly between them with a narrow portion of the entire length of the blade exposed along a portion of the front edges of the clamping members, the front edges of the free end portions of the clamping members respectively being formed on corresponding lines slanting from front to rear to expose a substantially large corner portion of the blade, the clamping members terminating substantially at the free end of the blade and being sufficiently wide to cover a substantially large part of the rear edge of the blade when the blade is normally assembled with the holder, the rear edge of each clamping member having a blade-exposing recess, said recesses being opposite each other and being adapted to expose a portion of the blade for cutting purposes.

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