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E. M. BELL

**2,721,384**

## INSULATION STRIPPER

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*Fig.1*

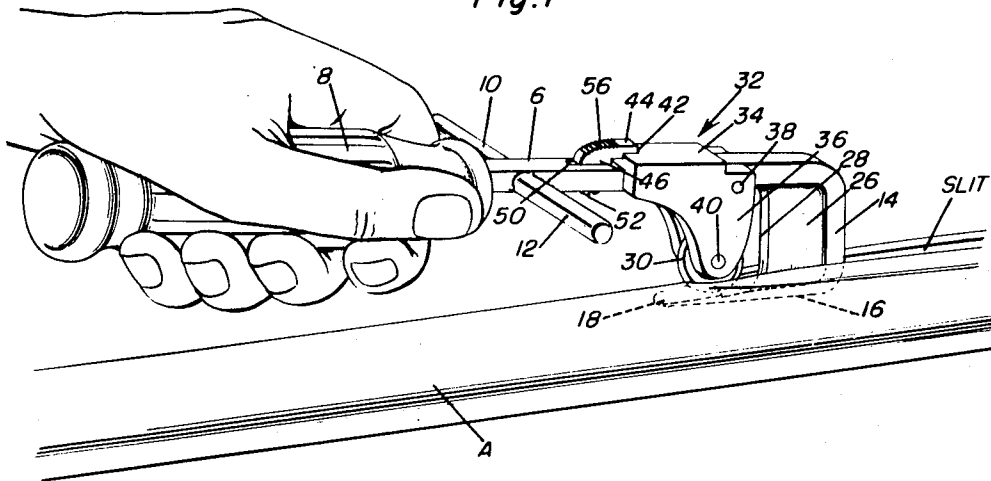


*Fig.2*

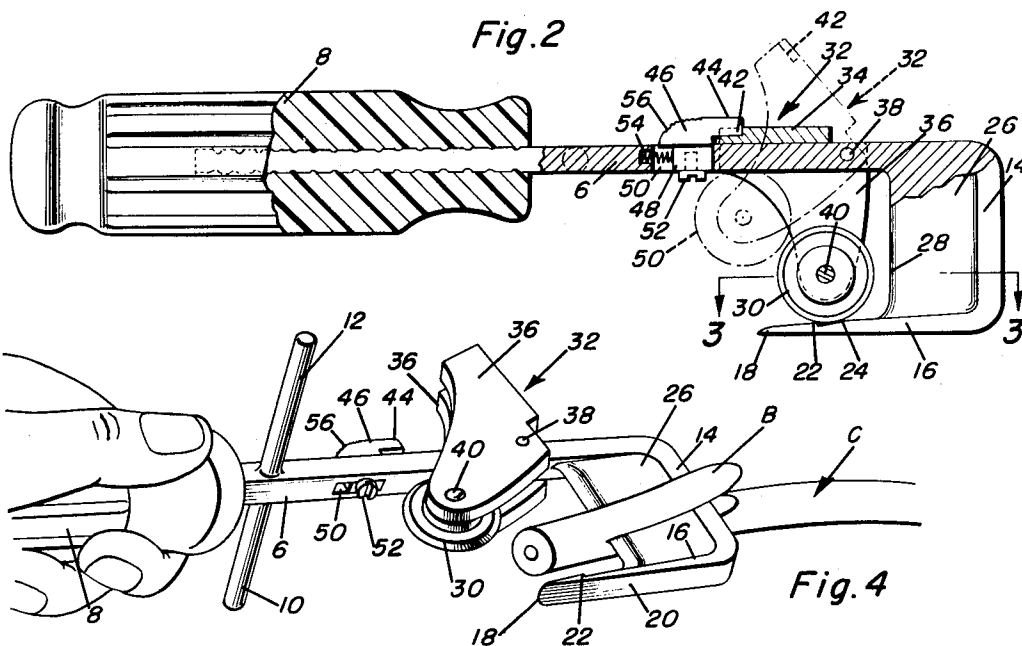


**Fig. 4**

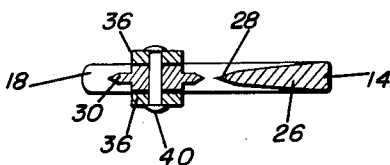


*Fig.3*

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## INSULATION STRIPPER

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2 Claims. (Cl. 30—91)

This invention relates to hand implements and tools somewhat generally classified but has reference in particular to a multipurpose tool which lends itself aptly for practical and efficient use when it is necessary for one to cut, strip or otherwise peel insulation and equivalent coverings from electrical conductors and the like.

Stripping and cutting tools for hand use are not, of course, new. As is well known, many and varied forms and styles of such tools have been proposed for use by others than myself. As a matter of fact, it can be stated, also in terms of generalities, that it is old in this art to provide a tool for slitting peelable insulation by cutting around the same in a circumferential manner, by slitting the same lengthwise and spreading the slitted portions for removal and, in addition, by removing the insulation in small pieces, for instances, much in the manner in which a draw-knife or pocket-knife would be used for whittling the same away bit-by-bit.

The object of the present invention is to provide a simple, practical and economical tool in which manufacturers, tool makers, retailers, electricians and others will find their respective requirements and needs aptly and satisfactorily met.

Along the same lines, another objective is attained through the provision of the construction wherein I reduce the number of parts entering into the combination thereby not only increasing the efficiency of the structure as a whole, but also rendering the same not too costly to manufacture and to otherwise simplify factors of assembling and sale.

Briefly, a preferred embodiment of the invention has to do with a tool which is characterized by a rigid shank having a handle at one end, a cutting blade at the opposite end with a cutting edge at right angles to the axis of said shank, a rigid piloting and guiding finger having its free piloting end projecting beyond said cutting edge and in spaced parallelism in respect to said shank, and a pair of finger-clutching pins projecting from opposite sides of said shank adjacent to the handle.

Further, novelty is predicated upon the structure briefly stated and the combination therewith of a cutting disk which may be moved toward and from the fixed cutting edge and which is coplanar therewith and which may be used especially well for stripping ductile coverings such as lead and which is preferably mounted for operation on a yoke, said yoke, in turn, being pivotally mounted on said shank.

Other objects, features and advantages will become more readily apparent from the following description and the accompanying sheet of illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views:

Figure 1 is a perspective view showing the tool as constructed in accordance with the principles of the invention and illustrating the manner in which the same may be aptly and satisfactorily used, employing the cutting disk, for stripping a lead covering or casing from a conductor or the like;

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Figure 2 is a view in section and elevation;

Figure 3 is a section on the line 3—3 of Figure 2 looking in the direction of the arrows; and

Figure 4 is a perspective view showing the manner in which the tool is used for whittling insulation off in draw-knife fashion.

Referring now to the drawings with the aid of reference numerals and lead lines, the aforementioned rigid linearly straight metal or equivalent shank, which may be of any suitable or appropriate length, is denoted by the numeral 6. A suitable handle or hand-grip 8 is affixed to one end of the shank (at the left in the drawings). It should be stated in this connection that when the tool is used for slitting a cable covering, for example, the lead sheath A in Fig. 1, the handle or hand-grip A is grasped in the manner illustrated in Figure 1. Adjacent to this hand-grip I provide outstanding right angularly disposed rigid pins denoted by the numerals 10 and 12 and these may come in handy, as is often the case, in providing additional gripping force and leverage simply by hooking the index and first fingers over the same much in the manner shown, for example, in Figure 4, particularly when the device is used for stripping pieces of insulation B from fabric or equivalent insulation coverings C in the manner shown in Figure 4. Regardless of which mode of use is pursued, the shank is provided at its outer or working end with a hook the first lateral bend of which is denoted by the numeral 14 and the second bend at 16. The latter bend is here described as a finger and it is disposed generally in spaced parallelism with respect to the adjacent end portion of the shank. The left hand or free end portion is gradually thinned and tapered to form a piloting and guiding point 18. The bottom of the finger is perfectly smooth and flat as at 20 while the top side is defined as having a sort of a transverse shoulder 22 adjacent to which the surface is formed into what may be called a cutting anvil 24. Before discussing the purpose of the anvil attention is called to a web 26 which integrates the shank with the portions 14 and 16 of the stated hook. This web has a cutting edge 28 formed thereon which is spaced away from the piloting end 18. This cutting edge may be used like a draw-knife in the manner illustrated in Figure 4 for shaving and otherwise removing the insulation much in the manner illustrated. When so using the tool the handle may be employed in conjunction with the finger pins or pull members 10 and 12.

The cutting disk 30 is movable toward and from the cutting edge 28 and is also movable toward and from the shoulder 22 and anvil 24 in the manner shown in dotted and full lines, respectively, in Figure 2. This cutting disk is mounted on a carrier bracket which is generally denoted by the numeral 32 and which is, specifically, a yoke. The bight portion 34 of the yoke cooperates with the shank and the side members or wings 36 thereof straddle the shank and are pivoted thereto as at 38. The journal 40 of the cutting disk or wheel is journaled for rotation in bearings provided therefor in the free ends of the side members 36.

When the cutting wheel or disk is in operative relation to the anvil for cutting purposes as shown in full lines in Figure 2, it is latched in place. To this end the web 34 is provided at one end with a suitable keeper seat 42 for the projecting end 44 of a latch 46. The latch has a keying portion 48 slidable back and forth in a slot or keyway 50 provided therefor in the shank and carrying an assembling and retaining screw 52. The numeral 54 denotes a return and holding spring for the latch while the numeral 56 designates serrations or other milled surface portions to facilitate finger-operation of the latch.

It will be clear that the swingable or pivoted bracket or yoke 32 may be swung to an out-of-the-way position

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as shown in phantom lines in Figure 2 permitting the instrument or tool to be employed without the aid of the cutting disk for removing insulation in draw-knife fashion as shown in Figure 4. Or, the device may be adjusted and the latch secured and the cutting disk or wheel used in the manner shown in full lines in Figure 1. Here the cutting edge cooperates with the shouldered anvil in producing the satisfactory slicing or slitting result illustrated in Figure 1. It will be noticed in this connection that the piloting end 18 projects well beyond the point where the periphery of the wheel coacts with the anvil in forming a sort of a crotch. This is for satisfactorily feeding and guiding the tool along the cable in the manner illustrated.

It will be understood that inasmuch as the cutting edge of the wheel or disk is coplanar with the fixed cutting edge 28 it is possible to use these two edges simultaneously by placing an insulated wire, for example, between the two in a position at right angles and thus pressing the bracket with the finger to bring the cutting edge 28 against one side of the insulation and the edge of the cutting wheel against a somewhat diametrically opposite side and thus moving the tool in a circular path around the axis of the insulation to cut an endless groove or to cut away the insulation in a so-called circular manner at right angles to the axis of the insulation as is done with certain insulation cutting and stripping tools. This means therefore that the cutters are used either singly or collectively and the disclosure is to be interpreted accordingly.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A hand implement comprising, in combination, a rigid shank having an axially fixed hand-grip at one end, the opposite end of said shank having a first lateral bend and a second lateral bend and the two bends defining a hook-shaped terminal, a rigid web mounted in said hook-shaped terminal and coplanar with the shank and respective bends, one edge of said web terminating short

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of the adjacent end portion of the second bend and providing a cutting edge, the protruding end of the second bend projecting beyond said cutting edge and providing a piloting and guiding finger, a yoke-like bracket pivotally mounted on said shank and provided with a freely attached and rotatable cutting disk, said cutting disk having its cutting edge movable toward and from the first-named cutting edge and coplanar with said web and swingable toward and from said piloting and guiding finger.

2. A hand implement comprising, in combination, a rigid shank having an axially fixed hand-grip at one end of the shank, the opposite end of said shank having a first lateral bend and a second lateral bend, said bends defining a hook-shaped terminal on the last named end of said shank, a rigid web mounted within the confines of the hook-shaped terminal and co-planar with the shank and the stated bends, the free terminal end of the second bend projecting beyond an adjacent marginal edge of said web and constituting a piloting and guiding finger, said finger being provided inwardly of its free end with a shoulder and a cooperating portion constituting an anvil, a yoke-like bracket pivotally mounted on said shank and having side members straddling the shank, said side members being provided with bearings, a freely rotatable cutting disk mounted between said side members and having journals journaled for free rotation in the bearings, the cutting edge of said disk being movable toward and from the anvil and also the adjacent vertical edge of said web, a latch operatively mounted on said shank, said latch being releasably connected with a cooperating portion of said yoke and serving to maintain the yoke in a given position in respect to the shank and said piloting and guiding finger.

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