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W. V. SCHECK

3,387,368

KNIFE WITH NON-STICKING BLADE

Filed June 7, 1967

2 Sheets-Sheet 1

Fig - 1 -

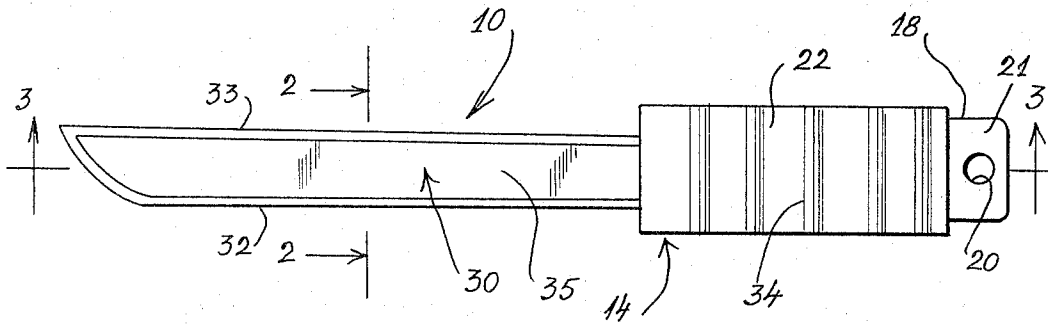


Fig - 2 -

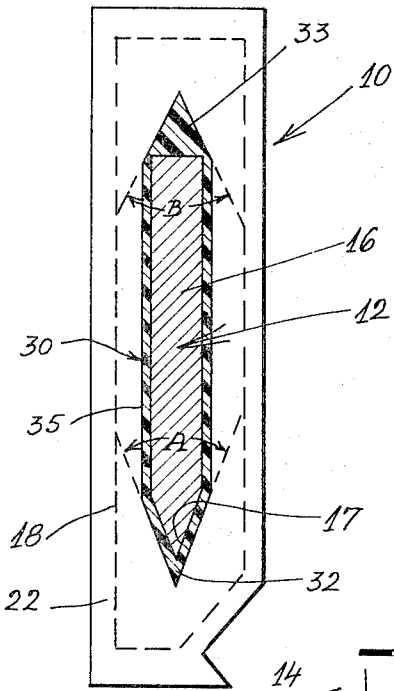


Fig - 5 -

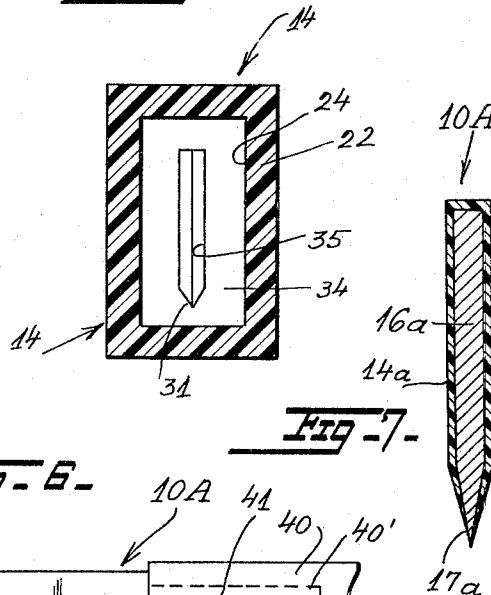
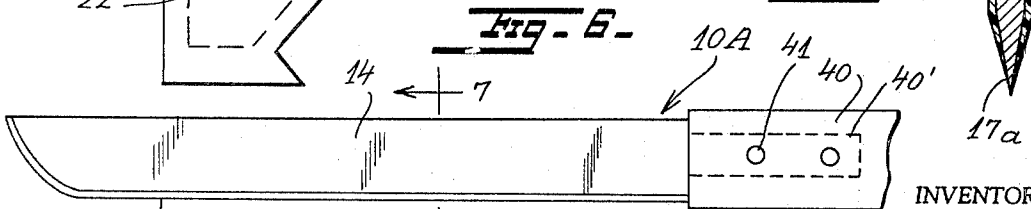
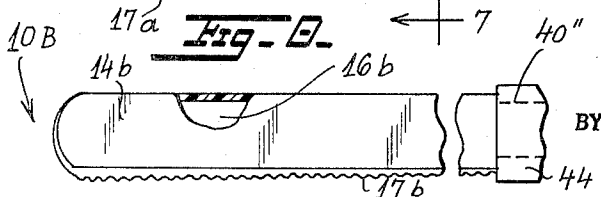


Fig - 7 -



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Fig - 8 -



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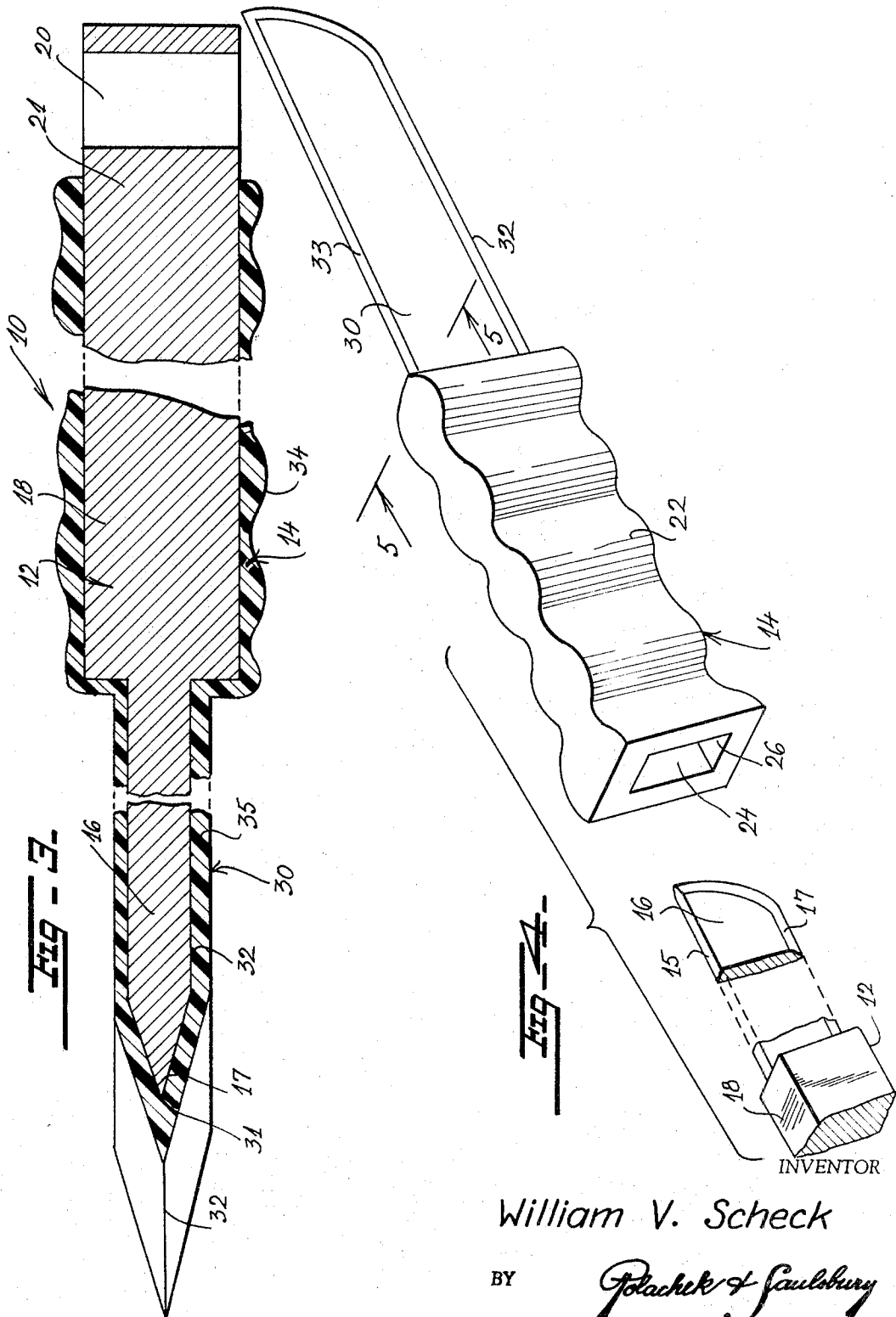
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KNIFE WITH NON-STICKING BLADE

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9 Claims. (Cl. 30—348)

ABSTRACT OF THE DISCLOSURE

The disclosure describes a knife having a non-sticking jacket formed of polytetrafluorethylene (Teflon), nylon, or other self-lubricating plastic. The jacket can be made as a separate or separable member for interchanging with other knives or for replacement by other jackets.

The invention relates to the art of knife construction and more particularly concerns a knife with a non-sticking jacket or cover.

It has been proposed heretofore to form knife blades in various shapes to prevent sticking when cutting cheese and other articles. These knives require and are formed with various corrugations, grooves or other irregularities. United States Patents 2,803,876 and 3,035,344 describe knives of this character. It has been proposed to make the entire knife of polytetrafluorethylene. This material is known to have self-lubricating properties. A knife made entirely of this material is quite expensive which precludes general use. Furthermore, it lacks the stiffness generally required for a knife of general application. It has been proposed to apply a thin coating of polytetrafluorethylene to an edge of a razor blade to improve its non-sticking properties. However, as pointed out in United States Patent 3,071,856 which is typical of this prior art, the reduction in "pull" may persist for several shaves but it does not persist longer than that. This is because the coating which is of the order of 0.0001 of an inch or less, wears off at the cutting edge.

The present invention is directed not at razor blades, but at knives of general application. According to the invention, a knife having an integral blade and handle is provided with a jacket made of polytetrafluorethylene (Teflon), nylon or other self-lubricating plastic. The jacket can be bonded to the knife. In a preferred form of the invention the knife and jacket are separable for interchanging the jacket on another knife or for replacing the jacket with another one. The jacket may have two cutting edges beveled at different angles.

The invention will explain in detail in connection with the drawing, wherein:

FIGURE 1 is a side view of a knife assembly embodying the invention.

FIG. 2 is an enlarged cross sectional view taken on line 2—2 of FIG. 1.

FIG. 3 is a longitudinal sectional view on an enlarged scale, with parts broken away, taken on line 3—3 of FIG. 1.

FIG. 4 is an exploded perspective view with parts broken away of the knife assembly.

FIG. 5 is a cross sectional view taken on line 5—5 of FIG. 4.

FIG. 6 is a side view of another knife embodying the invention.

FIG. 7 is an enlarged cross sectional view taken on line 7—7 of FIG. 6.

FIG. 8 is a side view of parts of a further knife embodying the invention.

Referring to the drawing, there is shown in FIGS. 1—5 a knife assembly 10 including a core 12 and a jacket 14. The core has a flat blade 16 formed with a beveled edge 17. The knife may have a blunt back 15. The blade is integrally formed with a rectangular handle 18. The

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handle may have a hole 20 at its free end 21 for a purpose to be described.

The jacket 14 has a hollow generally rectangular tubular section 22 formed with a rectangular cavity 24 open at end 26. The section 22 snugly receives handle 18. The jacket has an extension in the form of a flat tubular section 30. This section has a narrow cavity 32 formed with a beveled bottom groove 31 in which fits the beveled edge 17 of blade 16. The jacket section 30 is formed with one or preferably two opposed beveled outer edges 32 and 33 defining cutting edges. The bevels can be formed at different angles A and B as shown in FIG. 2.

The core 12 can be forced into the jacket 14 for almost its entire length. The free end 21 of handle may extend out of the open end of the jacket as clearly shown in FIG. 1. This will permit the core to be grasped with a suitable tool inserted in hole 20, while the jacket is manually grasped at section 22 for pulling the core out of the jacket. The section 22 can be formed with lateral corrugations 34 to facilitate holding the knife assembly when cutting an article and for inserting and removing core 12.

Jacket 14 is made entirely of a self-lubricating plastic such as polytetrafluorethylene. It can be made by coating a form similar in shape to core 12. The unplasticized jacket can then be sintered to set the material. If bonding to core 12 is desired, this can be done by spraying a thin coating of unset polytetrafluorethylene inside the jacket for its entire length. Then the core 12 will be inserted. The assembly can then be baked to sinter the thin layer. When this layer sets to stable form, the jacket will be bonded to the core 12.

The core 12 can be used as a knife itself. However, the jacket is provided as a separate and separable article for improving the cutting characteristics of the knife with two cutting edges instead of just one. The jacket can be manufactured and distributed as a separate article of manufacture which purchasers can use for replacement on cores 12. The core need not be of a high quality steel since it primarily serves as a rigid or flexible core for the jacket.

The assembly will be very easy to clean. It can be wiped, in most cases, with a dry cloth without requiring washing.

It will be noted in FIG. 2 that the side walls 35 of section 30 of the jacket are thinner while the beveled edges 32, 33 are much thicker. This construction economizes in the use of the expensive plastic material while providing the benefits of easy cutting and cleaning, and long useful life.

The knife assembly can be made up in various shapes and sizes to suit different applications.

Knife 10A shown in FIGS. 6 and 7 has a steel blade 16a which is fully coated on both sides by a thin jacket 14a made by spraying, baking or otherwise applying polytetrafluorethylene (Teflon), nylon, or other plastic having self lubricating properties. After the coating is applied edge 17a is ground to expose this edge of the blade which is not covered by the coating. The edge 17a thus serves as the cutting edge of the knife. The knife has an end 40' which is secured by rivets 41 in handle 42.

FIG. 8 shows a further knife 10B constructed like knife 10A except that the blade 16b has a serrated edge 17b. The sides of this knife are coated with a thin jacket 14b of self-lubricating plastic material. Blade 16b has end 40'' and is set into handle 44 at its rear end. Serrated edge 17b is exposed. Jacket 14b covers both sides of the blade, but the serrated cutting edge 17b of the blade itself is exposed.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

What is claimed is:

1. A new article of manufacture comprising a jacket for a knife having a blade and integral handle, said jacket being made from a synthetic resinous plastic material, said jacket having a first elongate and narrow section with an elongate and narrow internal cavity for snugly receiving the blade, said first section having a sharp external cutting edge along the length thereof, said jacket having a tubular second section extending longitudinally from one end of the first section and integral therewith; the bore of said tubular second section communicating with said cavity and being open at its free end for receiving said blade and for snugly accommodating the handle of the knife, whereby the knife will stiffen the jacket for use in cutting.

2. A knife assembly as recited in claim 1, wherein the plastic material is polytetrafluorethylene.

3. An article of manufacture as recited in claim 1, further comprising another sharp cutting edge on the first section opposite from the first named cutting edge.

4. An article of manufacture as recited in claim 3, wherein the two cutting edges are beveled at different angles for cutting articles of different degrees of hardness.

5. A knife assembly comprising a core, said core includes a flat elongated blade, a jacket covering both sides of the blade, said jacket being made of self-lubricating synthetic resinous plastic material so that the knife cuts easily and is easy to clean, said core further comprises a generally rectangular handle, said blade being integral with and longitudinally aligned with said handle, said jacket covering the blade and substantially all of the handle, said jacket having a long flat first section closed at one end and forming an elongated and narrow cavity for snugly receiving the blade, said first section also hav-

ing a sharp beveled cutting edge along the length thereof, said jacket having a wide tubular second section longitudinally extending from the other end of said first section and integral therewith, the bore of said tubular second section communicating with said cavity and being open at its free end for receiving and removing said core.

6. A knife assembly as recited in claim 5, wherein said blade has a cutting edge exposed for cutting while the jacket covers the remainder of both sides of the blade.

7. A knife assembly as recited in claim 6, wherein said edge is serrated at least in part.

8. A knife assembly as recited in claim 5, wherein said wide section has corrugations to facilitate manually grasping the jacket while using the same for cutting.

9. An article of manufacture as recited in claim 5, wherein the plastic material is polytetrafluorethylene.

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