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B. RAYBIN

3,085,332

HANDLE FOR SURGICAL BLADES, AND THE LIKE

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FIG. 1

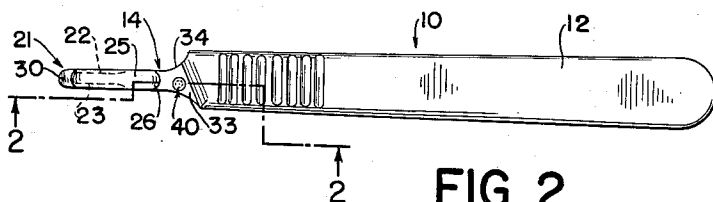


FIG. 2

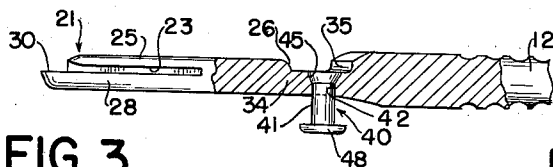


FIG. 3

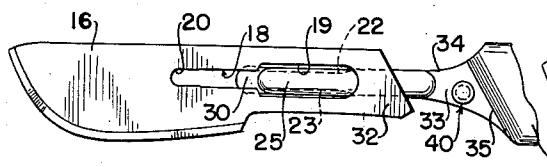


FIG. 4

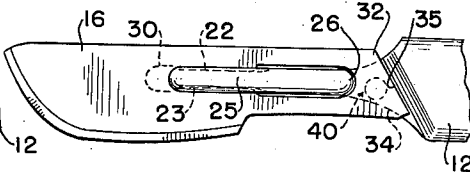


FIG. 5

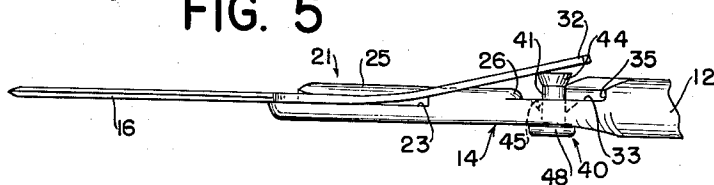


FIG. 6

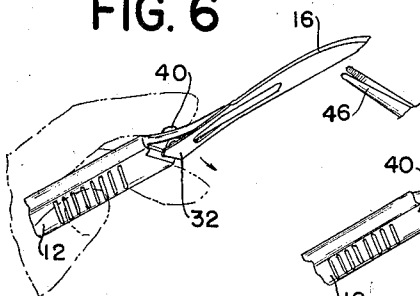


FIG. 7

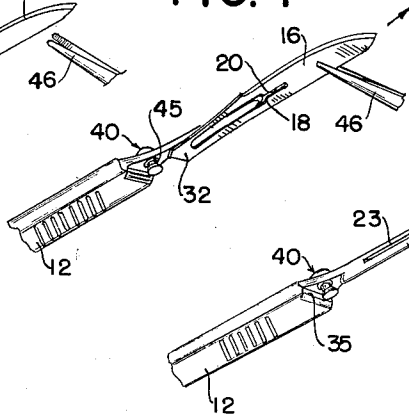


FIG. 8

INVENTOR
BENJAMIN RAYBIN

BY

Robert Irving Williams
ATTORNEY

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HANDLE FOR SURGICAL BLADES, AND THE LIKE
Benjamin Raybin, Staunton, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

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This invention relates to scalpels and the like, and more particularly to surgical knives having handles arranged to receive and removably retain a surgical blade.

A type of scalpel which is commonly employed is one formed with a forward extension or prong on which a surgical blade is so mounted that it may be removed only when the rear end or heel of the blade is deflected in a direction transverse of the prong. In so deflecting the heel of the blade, a nurse may engage an edge of the heel with a finger of her free hand and deflect it to a position in which she can push it longitudinally off the prong with that hand. Whereas such a procedure may be relatively readily performed after an operation on a patient is completed, difficulties are involved in performing it while a patient is being operated on, because the nurse's hands must remain encased in rubber or plastic gloves which must remain unbroken to provide sterile coverings for her hands, because considerable force must be applied to deflect the heel of the blade and to propel it forwardly, and because the thinness of surgical blades is such that even their dull edges can cut or tear a surgical glove unless special care is used. Since a nurse with a broken glove must leave the operation room in order to again render her hands surgical sterile, the consequences of cutting or tearing a glove can cause great difficulty. If, in order to avoid contact of her free gloved hand with the blade, the nurse seizes the heel of the blade with forceps held in her free hand to deflect the heel and then to push the blade forwardly off the prong by the forceps so held, she has to use great care to avoid that possibility of slippage of the forceps off the blade which might cause the hand holding the forceps to contact a dull edge of the blade due to the force exerted to push the blade forwardly, and thus cut or tear the glove on that hand. Moreover, since the nurse has only two hands available, it would be impractical, even if no other procedural difficulties were involved, to use one tool to deflect the heel of the blade, and another tool to push or pull the blade forwardly off the prong.

With the foregoing and other considerations in view, the present invention contemplates the provision on the handle itself of means for deflecting a portion of the blade when desired, and there is exemplified means movably carried by the handle for deflecting the heel of a blade for removal.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

FIGURE 1 is a plan view of a surgical blade handle embodying the invention;

FIG. 2 is a view on a larger scale and partly in section along the lines 2-2 of FIG. 1;

FIG. 3 is a plan view of the forward portion thereof with a blade in position for movement onto the handle;

FIG. 4 is a similar view showing the blade in place;

FIG. 5 is a side view showing, in heel-deflecting position, the means for deflecting the heel of the blade;

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FIG. 6 is a perspective view on a smaller scale further illustrating the operation of the deflecting means;

FIG. 7 is a similar view showing a further step in the removal of the blade; and

FIG. 8 is a similar view showing the blade removed but still held by the forceps.

There is particularly exemplified a scalpel handle 10 having a rearwardly-disposed hand grip 12, and a forwardly-disposed blade support 14 for receiving and removably retaining a thin, resilient surgical blade 16. As is customary, the blade is formed with an elongated opening 18 which is wider at its rearward part 19 than at its forward part 20; and the blade support comprises a forwardly-extending prong 21 formed with side grooves 22 and 23 to receive the edges of the part 20 of the opening 18, the width of the upper (FIG. 2) part 25 of the prong being such as to receive the part 19 of the opening, and the part 25 terminating rearwardly at 26 to permit the rear edge of the opening 18 to lie below it when the blade is in place.

The lower part of the prong extends well forwardly of the grooves to provide a platform 30 on which the blade may be rested to guide the edges of the portion 20 into the grooves as the blade is drawn rearwardly. The length of the grooves corresponds with the length of the part 20 of the opening 18. When the blade is in place, its heel 32 (in the present instance, only the forward portion of the heel) contacts the upper surface 33 of a connecting member 34. Just behind the surface 33 and the rear edge of the blade, the hand grip is formed with a shoulder 35, which, as exemplified, extends diagonally across the handle to conform to the shape of the heel of the blade. The surface 33, while well below the upper surface of the part 25, is, as exemplified, slightly higher than the bottom of the grooves to hold the blade under slight tension.

In order to deflect the heel of the blade, there is provided on the handle, in accordance with the present invention, means operable by a digit of the hand gripping the hand grip, and movable with respect to the handle but permanently carried thereby, for deflecting the heel of the blade to a position where the rear edge of the part 19 of the opening 20 clears the upper part 25 of the prong 21. As exemplified, this means is in the form of a movable stud 40 comprising a stem 41 vertically (FIG. 2) movable in a vertical hole 42 in the member 34, and carrying at its upper end an enlargement 44 fittable into a recess 45 in the surface 33, the recess 45 being so shaped that the top of the stud will normally lie under the heel of a blade when the latter is in place for use. As exemplified, and desirably in certain instances, the hole 42 is disposed somewhat toward the edge of the handle toward which the shoulder 34 recedes. In the present instance, the enlargement 44 and the recess 45 are correspondingly beveled, and the enlargement 44 seats fully into the recess; but, as will be appreciated, its upper surface may project above the surface 33 in instances where there is a space between the surface 33 and the heel of the blade at this point. The lower end of the stud carries a head 48. Accordingly, all that is necessary is for the nurse to press against the head 48 of the stud with one of the digits of the hand which grips the handle, to deflect the heel of the blade sufficiently to permit removal, whereupon the forward end of the blade may be gripped by forceps 46 held in the nurse's free hand, and the blade drawn forwardly by the forceps to remove it, as shown in FIGS. 6, 7, and 8.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description

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or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A surgical knife comprising a flexible blade having a rearwardly-disposed heel, and a handle therefor having a hand grip, a seat on one side of the handle for receiving the heel of said blade, means projecting from said side of the handle forwardly of said seat for removably retaining said blade with its heel on said seat until said heel is flexed transversely away from said seat, a member disposed transverse of and in line with said seat and having one end portion at one side of said heel and adapted to bear transversely against said side of the heel and another end portion disposed outwardly beyond the side of said handle opposite said seat and movably carried by said handle for movement generally transversely of said handle to carry the first mentioned portion thereof beyond said seat to bear against said heel and deflect it from its position on said seat to clear said projecting means.

2. A surgical knife comprising a flexible blade having a rearwardly-disposed heel, and a handle therefor having a rearward hand grip, a forward portion, and an intermediate portion, means projecting from one side of said forward portion for removably retaining the forward portion of said blade on the handle, means on said intermediate portion providing at said side a depressed seat for receiving in a plane rearwardly of said projecting means the heel of a blade so retained, said projecting means lying

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in the path of forward movement of a heel on said seat, a generally transverse opening extending from said seat and from the heel of said blade to the opposite side of said intermediate portion, and a heel-deflecting stud carried by said handle at one side of said heel and extending thru said opening and comprising a bar extending from said opening and extending beyond the opposite side of said intermediate portion a distance greater than the distance transversely of said handle from said seat to the projecting side of said projecting means, said stud being movable generally transversely of said intermediate portion to extend beyond said seat and bear against and deflect said heel to clear said projecting means to permit the removal of the blade in a forward direction, and means at the ends of said stud to retain it on said handle.

3. A knife as in claim 2 wherein said projecting means terminates rearwardly just forwardly of said seat.

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