

April 20, 1954

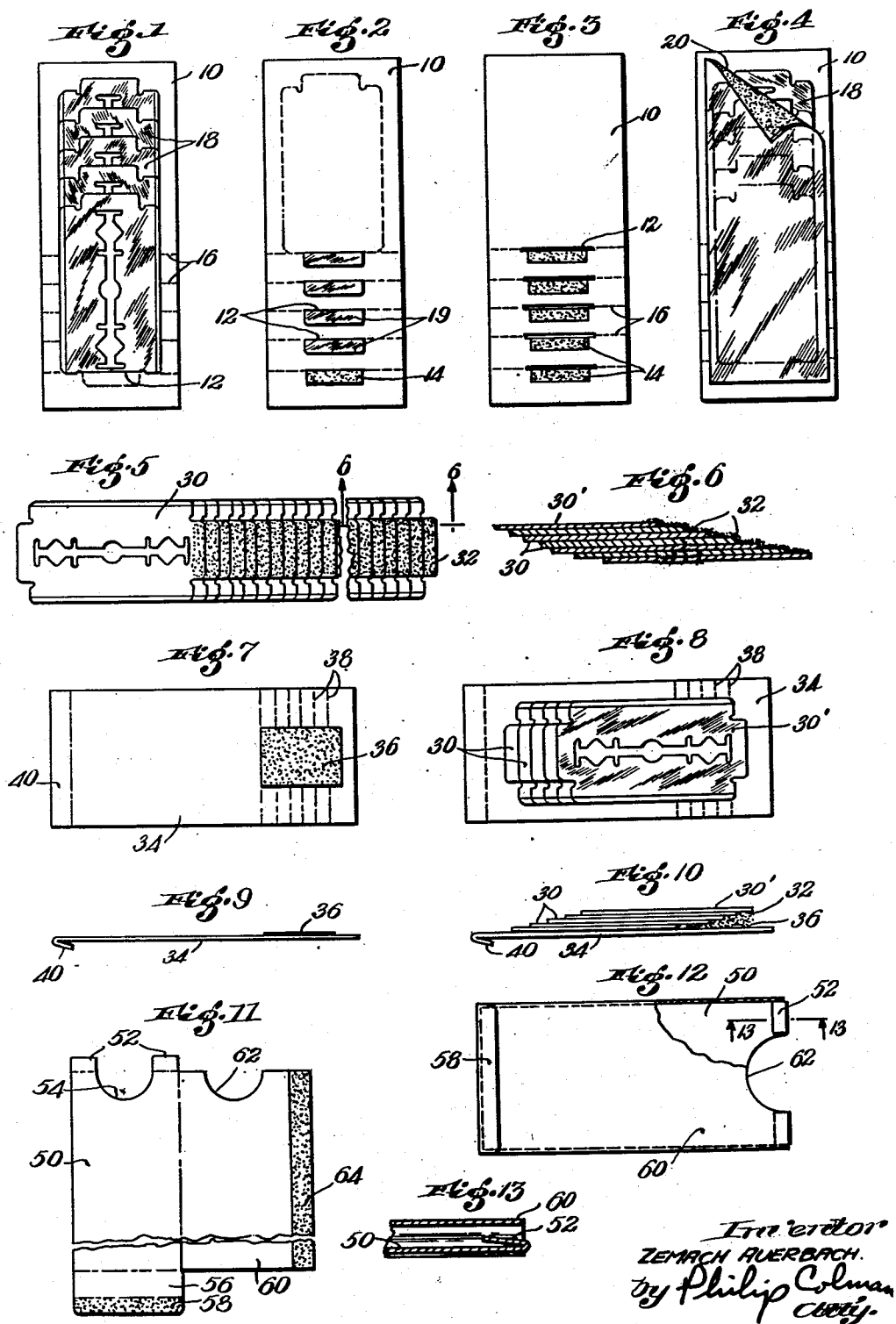
Z. AUERBACH

2,675,909

RAZOR BLADE DISPENSING PACKAGE

Filed Sept. 4, 1948

5 Sheets-Sheet 1



April 20, 1954

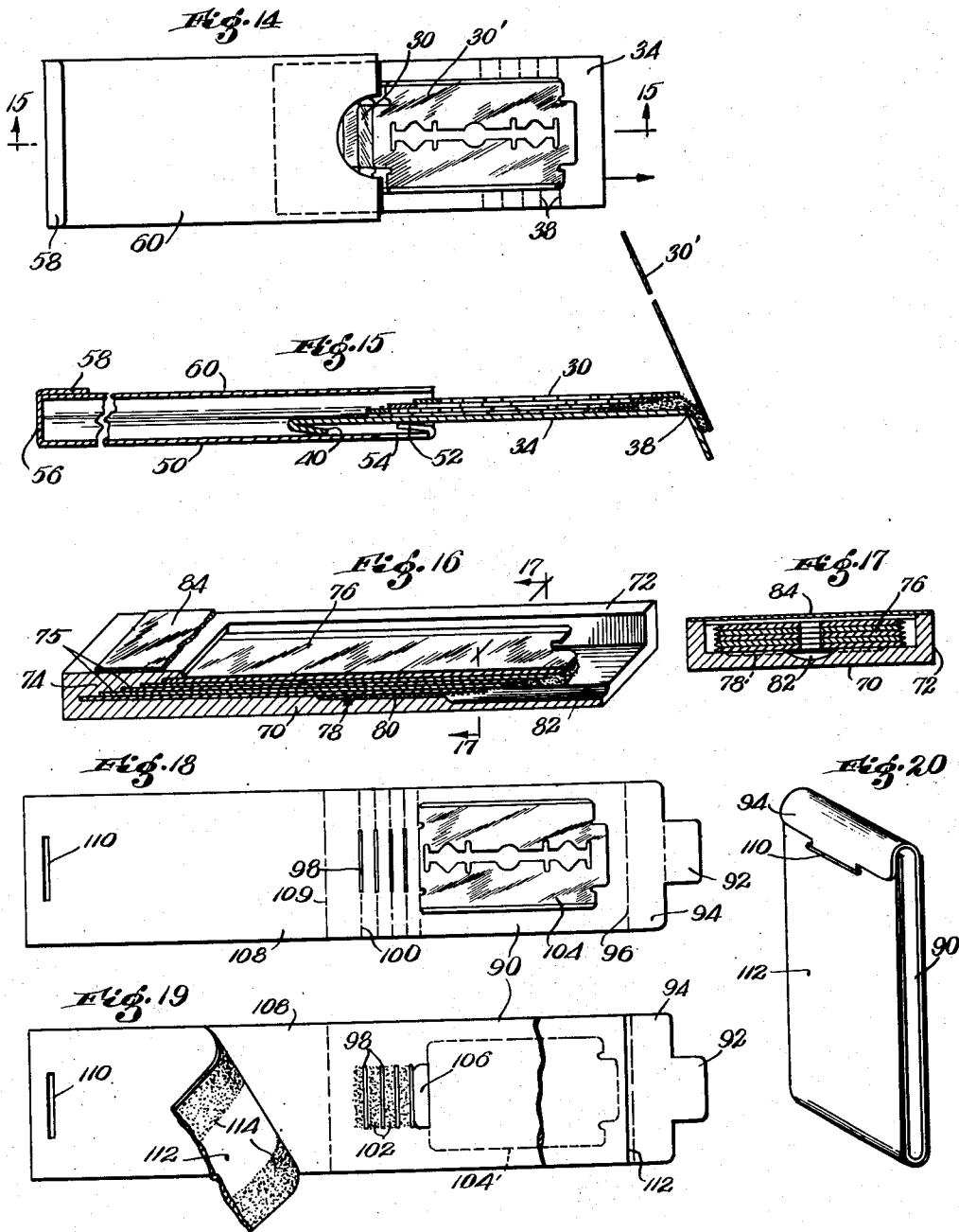
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RAZOR BLADE DISPENSING PACKAGE

Filed Sept. 4, 1948

5 Sheets-Sheet 2



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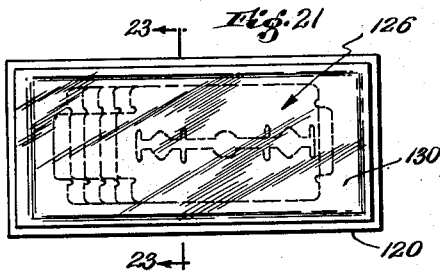
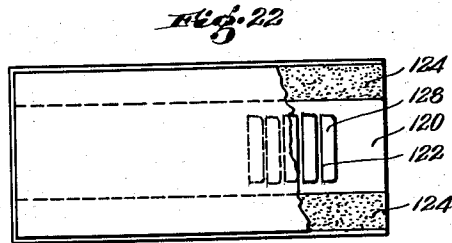
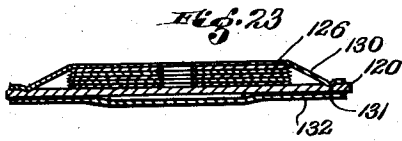
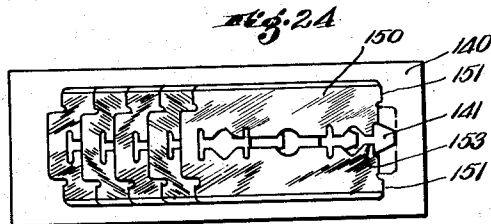
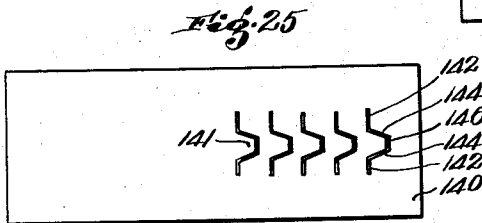
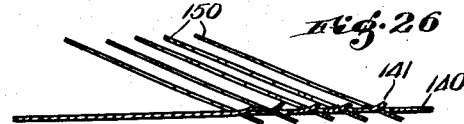
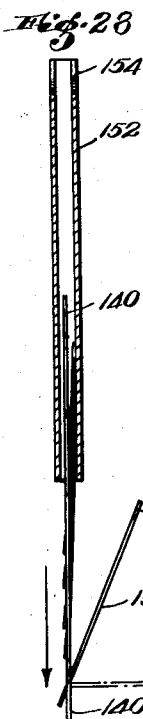
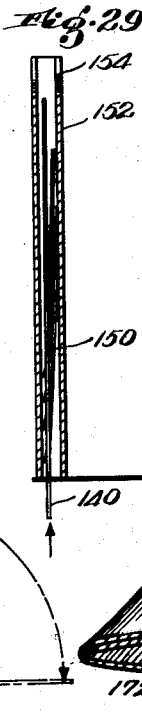
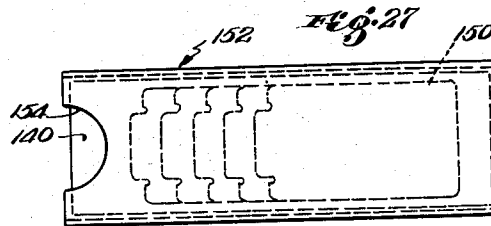
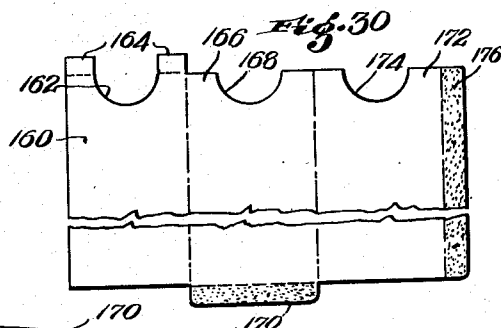
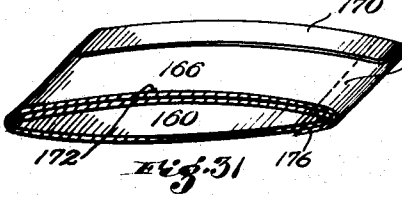
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RAZOR BLADE DISPENSING PACKAGE

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5 Sheets-Sheet 3



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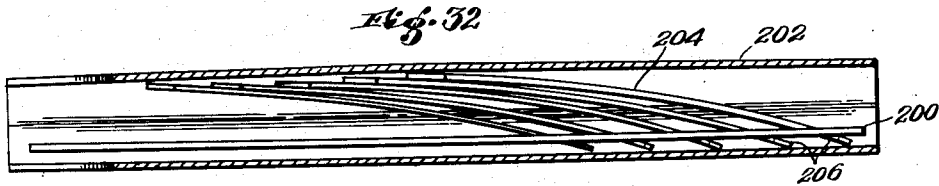
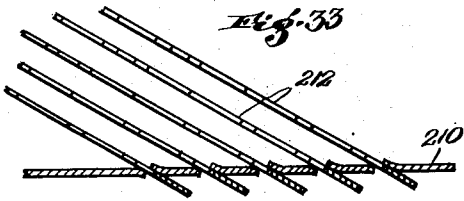
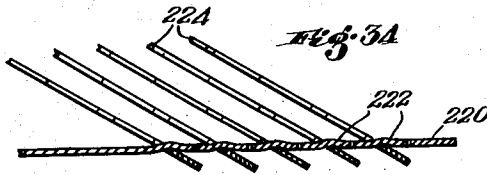
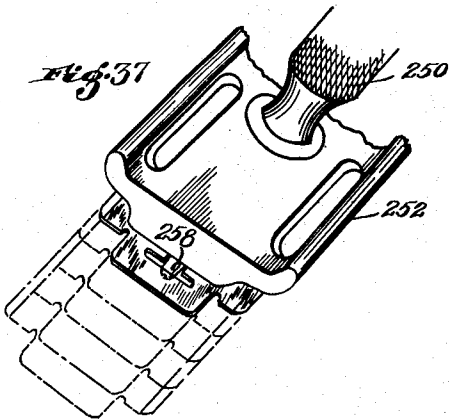
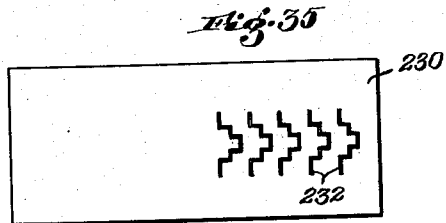
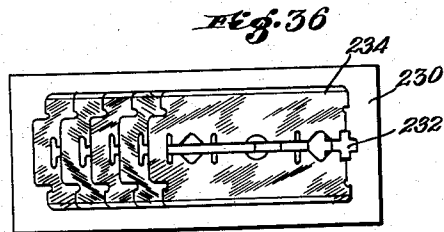
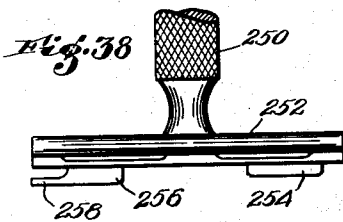
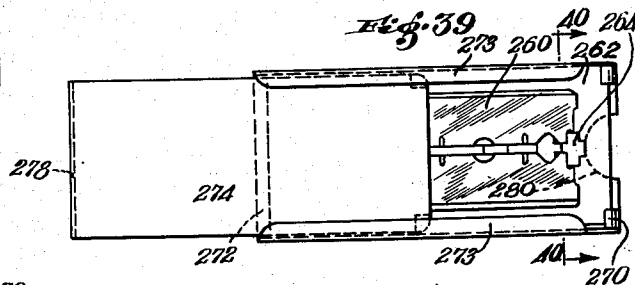
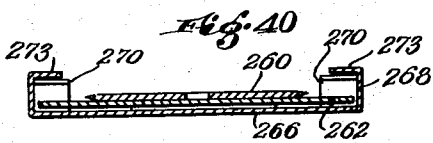
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RAZOR BLADE DISPENSING PACKAGE

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5 Sheets-Sheet 4



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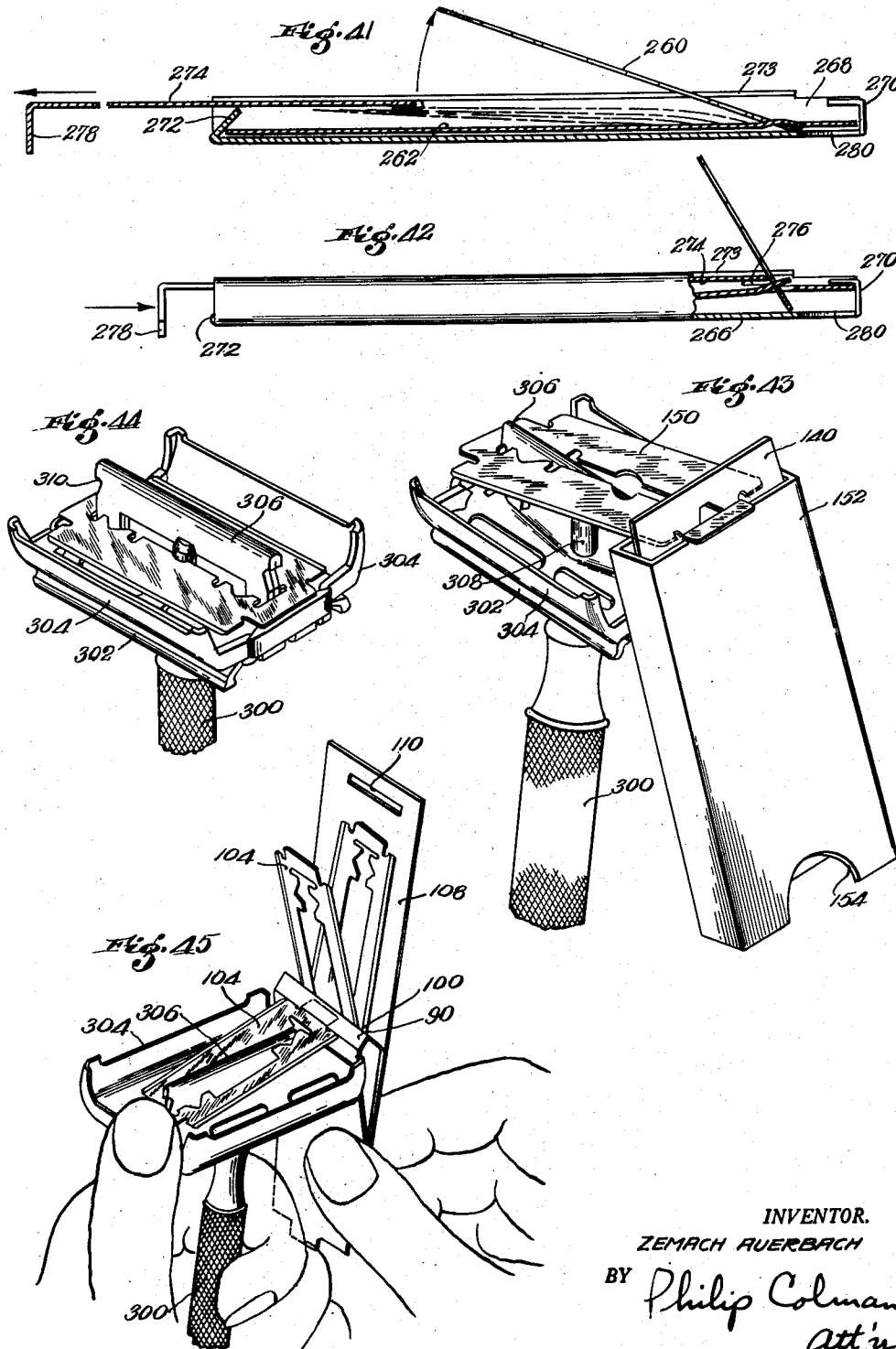
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RAZOR BLADE DISPENSING PACKAGE

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5 Sheets-Sheet 5



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UNITED STATES PATENT OFFICE

2,675,909

RAZOR BLADE DISPENSING PACKAGE

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Application September 4, 1948, Serial No. 47,801

9 Claims. (Cl. 206—16)

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My invention relates to the art of packaging razor blades for public consumption.

The problem is one which involves many difficulties not immediately apparent, particularly where wafer-thin double-edged blades are concerned. The cutting edges are so delicately honed that even the slightest casual contact is sufficient to dull an edge significantly. Consequently the blades must be protected while being packaged, so packaged as to withstand handling in transit, and so arranged in the package that they may safely be removed and inserted in a razor in a natural sequence of steps. It is not sufficient merely to provide protection for the blades in the package; the ideal package is one in which the blades are so presented to the user as to induce a safe process of removal and insertion in a razor. In other words a blade may easily be wrapped in a protective shield or sheath but if the operations involved in removing the sheath and inserting the blade in the razor are of a character to induce or permit dulling contact of its edges, the package cannot be regarded as successful.

Much thought has been given to these problems and many shrewdly devised packages developed. However, the improvements in blade packaging previously accomplished have fallen far short of a completely satisfactory solution. In general blades are conventionally packaged in one of two forms: In packages or tucks of individually wrapped blades, each blade having an inner paper wrapper and an outer envelope; or in metal or plastic magazines from which bare blades may be ejected one by one. The objection to the conventional paper package lies in the fact that a casual user is all too likely to draw the fine edge of the blade along the paper or against his finger, thus dulling the blade or cutting himself. The objection to the magazine type of package is the relatively high cost of the magazine.

The principal object of my invention is to improve the quality and economy of razor blade packages.

Another object of my invention is to provide a razor blade package combining the advantage of adequate protection of the cutting edges of the blades with the simplicity and economy obtained by packing bare blades without individual wrappers.

A further object of my invention is to package bare razor blades in such fashion that they may be directly loaded into a razor, all without expensive magazines or complicated containers.

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Still another object of my invention is to provide a package in which razor blades may be arranged for successive removal in a very simple and natural sequence of steps which minimize the likelihood of injuring the cutting edges of the blades or of cutting the user.

With these ends in view an important feature of the invention resides in the combination of a substantially flat carrier and a plurality of bare or unwrapped razor blades assembled thereon in longitudinal alignment and consecutively overlapping relation, each blade being detachably secured at one end to the carrier.

Another feature of the invention consists in a cover or sheath cooperatively associated with the carrier to facilitate selective removal of the blades from the carrier.

A further feature of the invention resides in an assembly of blades so secured to a carrier and associated with a cover that proper manipulation of the cover and carrier will cause a selected blade to swing automatically away from the carrier to a position facilitating direct loading into a safety razor.

Another feature of the invention comprises a combination of means effective to maintain proper alignment of the blades upon the carrier both during shipment and while the package is in use.

The present application is a continuation in part of my three copending but subsequently abandoned applications Ser. No. 560,530 filed October 27, 1944; Ser. No. 615,139 filed September 8, 1945; and Ser. No. 783,948 filed November 4, 1947.

These and other objects and features of the invention will be more readily understood and appreciated from the following detailed description of preferred embodiments thereof selected for purposes of illustration and shown in the accompanying drawings, in which:

Fig. 1 is a view in front elevation showing the carrier and blades assembled thereon in accordance with one embodiment of the invention;

Fig. 2 is a view in rear elevation of the carrier showing the reduced ends of the blades projecting through the carrier;

Fig. 3 is a view similar to Fig. 2 with the blades withdrawn to show the relation of the slots and the adhesive bands;

Fig. 4 is a view in front elevation showing the complete package of razor blades with a suitable cover;

Fig. 5 is a plan view of another embodiment showing a strip of blades cemented together;

Fig. 6 is a view in cross section along the lines 6—6 of Fig. 5 on an enlarged scale;

Fig. 7 is a plan view of a carrier strip;

Fig. 8 is a plan view of a carrier strip with blades assembled thereon;

Fig. 9 is a view in side elevation of the strip shown in Fig. 7;

Fig. 10 is a view in side elevation of the assembly shown in Fig. 8;

Fig. 11 is a plan view of a blank for an envelope or blade sheath;

Fig. 12 is a plan view of an envelope assembled from the blank shown in Fig. 11;

Fig. 13 is a view in cross section along the line 13—13 of Fig. 12;

Fig. 14 is a plan view of an assembled package with the carrier pulled out to correct position for the removal of the first blade;

Fig. 15 is a view in cross section along the line 15—15 of Fig. 14;

Fig. 16 is a view partly in cross section and partly in perspective of another form of blade package;

Fig. 17 is a view in cross section along the lines 17—17 of Fig. 16;

Fig. 18 is a plan view of an opened package embodying another form of my invention;

Fig. 19 is a bottom plan view of the opened package of Fig. 18;

Fig. 20 is a view in perspective of the aforementioned package when closed;

Fig. 21 is a plan view of a sealed package constructed in accordance with another embodiment of the invention;

Fig. 22 is a bottom plan view of the package shown in Fig. 21;

Fig. 23 is a view in cross section along the line 23—23 of Fig. 21;

Fig. 24 is a plan view of a carrier with blades assembled upon it illustrating a further embodiment of the invention;

Fig. 25 is a plan view of the carrier shown in Fig. 24;

Fig. 26 is a view in longitudinal cross section of the carrier and blades shown in Fig. 24;

Fig. 27 is a plan view of a closed blade package comprising an envelope open at opposite ends and including the carrier and blade of Fig. 24;

Figs. 28 and 29 are views in cross section showing the operation of the package shown in Fig. 27;

Fig. 30 is a plan view of a blank used for assembling another form of blade-containing envelope;

Fig. 31 is a view partly in cross section and partly in perspective of an envelope assembly from the blank shown in Fig. 30;

Fig. 32 is a view in cross section through another form of closed razor-blade package on an enlarged scale;

Fig. 33 is a view in cross section through another form of carrier, on an enlarged scale, showing the arrangement of the blades thereon;

Fig. 34 is a view in longitudinal cross section through a carrier showing another type of blade mounting;

Fig. 35 is a plan view of a carrier punched to receive blades in accordance with another embodiment of the invention;

Fig. 36 is a plan view showing the carrier of Fig. 35 with blades mounted thereon;

Fig. 37 is a view in perspective of a razor associated with a group of blades;

Fig. 38 is a view in side elevation showing the guard and handle portions of a razor;

Fig. 39 is a plan view of a razor blade package

constructed in accordance with another embodiment of the invention;

Fig. 40 is a view in cross section along the line 40—40 of Fig. 39;

Fig. 41 is a view in longitudinal cross section through the package shown in Fig. 39;

Fig. 42 is a view in side elevation of the package shown in Figs. 39—41;

Fig. 43 is a view in perspective of a "one-piece" form of razor and a blade package of the type shown in Figs. 28 and 29 illustrating the loading of a blade from said package into the razor;

Fig. 44 is a view in perspective of the head of the razor of Fig. 43; and

Fig. 45 is a view in perspective illustrating the loading of said razor from the blade package of Figs. 18—20.

While every attempt has been made to obtain complete accuracy in the drawings, it is to be borne in mind that razor blades are only .004" or .006" in thickness, a fact which introduces obvious difficulties in their representation on normal scale drawings.

Although several embodiments of the invention are herein shown and described, there are two important and novel concepts common to them all. In the first place each embodiment of the invention includes a plurality of bare razor blades arranged in substantial longitudinal alignment and consecutively overlapped by an amount sufficient to permit ready separation of one blade from the others. Secondly, each embodiment of the invention includes a substantially flat carrier or backer wider than the blades and providing not only a base or anchorage for the blades but also an element protecting the sharpened blade edges.

The embodiment of the invention illustrated in Figs. 1—4 is organized about a flat carrier strip or base 10 conveniently cut to rectangular shape from relatively stiff but flexible paper, cardboard or the like. Five narrow parallel slots 12 are cut through the central portion of the carrier strip 10 in its lower half, each slot corresponding in length to the width of the reduced end of a conventional double edged razor blade and only wide enough to receive the blade end in a snug fit. The slots 12 are longitudinally aligned and spaced apart by reference to the amount of overlap it is desired to establish between successive blades in the package.

The carrier strip 10 is scored transversely as shown at 16, in line with the narrow slots 12 so that the carrier 10 will fold naturally when a blade is to be removed from the package. Adjacent each slot on one surface of the carrier 10 there is disposed a band 14 of an adhesive, preferably a non-drying or pressure-sensitive type which remains tacky.

A plurality of bare, double edged, razor blades 18 is then assembled upon the carrier 10, each blade having one of its reduced ends 19 extending through a slot 12 in the carrier and resting upon the underlying adhesive band 14. The appearance of the package from the front is clearly shown in Fig. 1 wherein it will be evident that the blades are narrower than the carrier 10 and lie upon it in longitudinally aligned overlapping relation. Covering the staggered group of blades 18 and adhering to the margins of the carrier 10 is a transparent scotch tape or cellophane cover 20, shown in Fig. 4, having a non-drying, pressure-sensitive adhesive coating on its inner surface, the cover 20 serves to protect the blades against the effects of atmospheric conditions.

In use, the cover 20 is peeled back until the

free end of the bottom blade is exposed. The cover 20 touches only the top blade and the ends of those beneath it. Then the end is grasped and the blade pulled free from the carrier, preferably by pivoting the blade laterally with respect to the carrier, the adhesive bond being broken as the reduced end 19 passes through its slot 12. There is no connection between adjacent blades, and the removal of one blade leaves the others undisturbed on the carrier. When one or more blades have thus been removed, the cover 20 is rolled back upon the carrier and returned to its original position overlying and sealing the rest of the blades.

It is important to note that the slots 12 are preferably just long enough to receive the reduced blade ends 19 with a close sliding fit. Consequently the combination of the adhesive band and the slot serves as a firm anchorage for each blade maintaining the blades in longitudinal alignment and serving to preserve the neat, efficient appearance of the package regardless of the removal of the blades.

While it may be preferred to remove the blades successively from the bottom of the package, it is equally possible to peel the cover 20 back further until the top blade is exposed. In any case, the first operation is to peel back the cover 20. The next operation is to bend the carrier 10 along either the top or bottom score 16. If the carrier 10 is folded along the upper score line, the bottom blade will stand away from the carrier, and the folding stress of the carrier will fulcrum the inserted end of the top blade against the carrier and remaining blades, so that the bottom blade will also stand away from the remainder of the blades. If the carrier is folded about the lowermost of the score lines 16, the top blade will pivot outwardly and stand away from the carrier and from the remainder of the blades. Thus, either the top or the bottom blade may be selected and engaged with the razor of Figs. 43-45, or that shown in Figs. 37 and 38. After the blade has been engaged by the razor, the package is pivoted or twisted to extract the blade.

The scored lines 16 permit the user to fold the carrier prior to removing a blade and thereby swing the selected blade sharply away from the remainder of those in the stack, facilitating its removal either by hand or by engagement with a razor element. In other words, while the blades are neatly arranged in a minimum space upon a light inexpensive carrier and firmly secured in position, each successively selected blade may quickly and easily be exposed and swung to a position for convenient loading into a razor.

In Figs. 5-15 I have shown a second embodiment of my invention.

I arrange a large number of razor blades 30, such as the double-edged centrally slotted type shown, in longitudinally aligned overlapping relation and then apply a band or strip 32 of an adhesive such as rubber, glue, or a plastic composition along the center of the group of blades to form a unitary strip composed of any suitable number of blades mounted on the adhesive strip. The adhesive is selected to permit a clean break when it is desired to remove one or more blades from the group. From such a strip it is a simple matter to break off smaller units in groups of five, ten, or other number convenient for packaging purposes. A typical unit is shown in cross-section in Fig. 6.

A carrier strip 34 of paper, cardboard, or other suitable material is cut to desired size and shape,

as shown in Fig. 7, and scored along lines 38 adjacent one end with parallel transverse lines spaced apart by the amount of overlap between adjacent blades in the strip shown in Fig. 5.

A band or panel 36 of non-drying adhesive is applied to the face of the carrier 34 along the center portion of the carrier where the score lines 38 are located. At the other end of the carrier strip 34 the paper is creased and folded to form a reverse flap 40 shown in Fig. 9.

A group of five blades 30, for example, is broken from the long strip shown in Fig. 5 and is pressed upon the carrier 34 so that the adhesive 32 on the blades 30 overlies the adhesive strip 36 on the carrier. The condition of the package when this operation has been accomplished is shown in Fig. 10 where it will be apparent that the adhesive 32 on the blades 30 has united with the moist adhesive strip 36 on the carrier 34.

To contain the blades in the carrier I form an outer envelope from a blank of the type shown in Fig. 11 wherein is provided a bottom panel 50 having a pair of projecting ears or tabs 52 on either side of a semi-circular recess or notch 54. At the other end of the bottom panel 50 is a flap 56 terminating in an end portion 58 covered with a suitable adhesive or paste. Integral with the bottom panel 50 is a top panel 60 also provided with a reentrant recess or notch 62 and having along its outer end a marginal portion coated with an adhesive 64. An envelope is formed by folding the top panel 60 over the bottom panel 50 and securing it in place by means of the adhesive band 64. To form the bottom of the envelope the flap 56 is folded upwardly and sealed to the outer surface of the top panel 60 by means of the adhesive band 58. The tabs 52 are folded back before the envelope is formed to provide a pair of rearwardly-extending stop members as clearly shown in Fig. 13. To complete the package it is only necessary to introduce the carrier 34 into the envelope with the tab 40 first riding in over the tabs 52; thereafter the carrier cannot be separated from the envelope by reason of the fact that the tab 40 catches in the tabs 52 and prevents disengagement of the two elements of the package. Alternatively the carrier and blades may be placed on the panel 50, and the panel 60 folded over and cemented in place.

When it is desired to remove a blade from the package, the end of the carrier 34 is grasped between the thumb and forefinger, the notches 54 and 62 serving as finger holes to make it possible easily to seize the end of the carrier. The carrier is then moved relative to the envelope until the full length of the upper blade 30' is exposed. The package and the blades are then arranged in the condition illustrated in Fig. 14. When the uppermost blade 30' has thus been exposed, the carrier is bent along the first score line 38 and the uppermost blade 30' is swung upwardly to the position shown in Fig. 15, the carrier strip 34 bending easily along the score line. This operation projects the blade 30' into a position from which it can be easily removed from the carrier by breaking the adhesive bond which normally secures it in place. As before, the blade may be grasped in the fingers and removed or its center slot may be engaged by a hooked razor element of the type shown in Fig. 38. The latter is a preferable mode of operation since the blade need not be touched by the user but loaded directly into his razor.

When the blade 30' has thus been removed from the package, the carrier 34 is once again

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housed in the envelope. In this way the blades 30 are successively removed from the package, the removal of one blade having no disturbing effect on the package or its contents. It must be emphasized that a prime advantage of a package so constructed is the fact that in its handling and use in any normal and natural manner, there is no likelihood whatsoever that the blades will come in contact with anything which would act to dull them. The fact that the carrier 34 is wider than the blades is important inasmuch as that form of construction results in protecting the sharp edges of the blades while they are in the package.

It will be understood and appreciated by those skilled in the art that a carrier and blades of the type shown in Figs. 1-4 may be used in conjunction with an envelope or housing of the type shown in Figs. 11-15 and, by the same token, a carrier and blade assembly of the type shown in Figs. 7-10 could be used with a protecting cellophane cover of the type shown in Fig. 4 and the envelope dispensed with.

In Figs. 16 and 17 I have shown a modification of the invention in which a one-piece carrier is made of rigid material and extended to form a casing or box to contain the blades. The carrier comprises a bottom or base 70 and longitudinal sidewalls 72, of molded plastic material, paper, or the like, forming a rectangular casing open at the top and at one end. The other end is closed by a relatively thick wall 74 having a series of stepped blade-receiving recesses 75 dimensioned to accommodate the reduced ends of five razor blades 76 arranged in longitudinal alignment and overlapping relation. The bottom blade lies on the base 70, and its reduced end fits snugly into the lowermost recess 75, while successive blades in the stack slide naturally into the upper recesses, the side walls 72 being somewhat higher than the group of blades on the carrier.

The bottom 70 is cut on its inner surface to form a depressed area 78 in which a mass of non-drying adhesive 80 is disposed in position to underlie about one-half of the bottom blade 76 and also to engage the ends of the overlapping blades above, thus holding all the blades upon the base 70. Also cut or formed in the base 70 is a concave groove or recess 82 extending from the open end inwardly and under the end of the stack of blades. The purpose of the groove 82 is to accommodate the user's fingernail and permit the nail to engage the ends of the blades 76 so that they may be successively lifted at one end, freed from the adhesive 80, and withdrawn from engagement with the end recesses 75. The base 70 is wider than the blades, and the combination of the adhesive 80 and the interfitting of the blades 76 and the recesses 75 prevents lateral shifting of the blades in the package and thereby preserves the keen edges of the blades. A transparent cellophane cover strip 84 has on its lower surface a coating of non-drying adhesive and serves to protect the blades in the carrier.

Another embodiment of the invention is shown in Figs. 18-20. This package is organized about an elongated rectangular flat carrier strip scored transversely at its center as shown at 109 to divide the carrier into halves 108 and 90 which may be folded together. In one half I cut five parallel transverse slots 98 each just long enough to receive the reduced end of a conventional double-edged centrally slotted razor blade. One blade 104 is shown on the carrier half 90 with its reduced end 106 projecting through the slot

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98. The carrier half 90 is scored transversely opposite the ends of the slots 98 as shown at 100, and a band or strip 102 of non-drying adhesive is disposed adjacent each slot in position to engage the surfaces of the projecting ends of the razor blades 104 and anchor them to the carrier.

In the other half 108 of the carrier strip, which is employed as a cover member, I cut a slot 110 spaced inwardly a slight amount from its outer end and dimensioned to receive a tab 92 cut from the other end of the carrier half 90. Over the back of the carrier strip I place a paper backer strip 112 having marginal bands of adhesive 114 on its inner surface for securing the backer to the carrier without adhering to the projecting ends of the blades 104. The package is closed by folding the carrier along the line 109, bringing the cover half 108 over the half 90 and the blades thereon. Then the tab 92 is introduced into the slot 110 to lock the package in closed position. To extract a blade from the package, it is merely necessary to withdraw the tab 92 from the slot 110, unfold the carrier, and pull out one blade. The upper blade may be swung away from the others by bending the package along a score line 100, it making little difference whether the blades are removed successively from the top or bottom. As before, the blades are in longitudinally aligned consecutively overlapped relation and maintained in position by the snug fit of the blade ends in the slots 98 as well as by the adhesive bands 102.

Alternatively the backer 112 may be provided with a coating of non-drying adhesive to engage and hold the projecting ends of the blades; or the marginal portions may be coated with a drying adhesive while the center or blade-end-engaging portion is provided with a coating of a non-drying adhesive.

In Figs. 21-23 I have shown another embodiment of the invention. I provide a flat rectangular carrier strip 120 of relatively stiff paper cardboard or the like and form five parallel transverse slots 122 adjacent one end. Along both margins of one surface of the carrier 120 I form bands 124 of a non-drying adhesive. Five bare, double-edged, centrally slotted razor blades 126 are assembled on the strip 120, each having one of its reduced ends 128 extending through one of the slots 122 and snugly fitting therein. The blades are thus assembled on the carrier in longitudinal alignment and overlapping relation. A cover 130 of transparent flexible material such as cellophane having its inner surface coated with a pressure sensitive adhesive is placed over the blades 126 and secured to the carrier by pressed engagement into marginal intaglio lines formed on the upper surface of the carrier, thus hermetically sealing the blades. A backer 132 is cemented to the rear of the carrier to cover the blade ends 128. The blades are held in place by their frictional contact with the edges of the slots 122 and with the backer 132, there being no adhesive contact between the backer and the blades. To remove a blade 126 it is merely necessary to peel back the cover 130 until the free end of the bottom or top blade is exposed, whereupon the end of the blade is grasped with the fingers or the central slot of the top blade is caught by a hooked element in the razor and the blade pulled from the package. The carrier 120 is wider than the blades so that the blade edges are always protected. When the cover 130 is pressed back in place, the blades are hermetically resealed.

In Figs. 24-29 I have illustrated another embodiment of my invention. As before, I provide a flat carrier strip 140 of stiff paper, cardboard, Celluloid, or the like, rectangular in outline and wider than the blades with which it is to be used. Through the carrier five slots are cut forming tongues 141 disposed along the center of the carrier and dimensioned to pass through the center slots of conventional double-edged razor blades. As shown in Fig. 25, each slot includes a pair of opposed transverse cuts 142 merging into a pair of converging angular cuts 144 which intersect a short transverse cut 146, the cuts together forming a wedge-shaped tongue 141. Five double-edged, centrally slotted razor blades 150 are assembled on the carrier in the following manner.

The reduced end of a blade 150 is inserted beneath one of the tongues 141 and passed through the slot in the carrier, the blade being almost parallel to the carrier during this step. The shoulders of the blade act as stops and come to rest against the surface of the carrier. The blade 150 is now rotated nearly 180° so that the tongue 141 passes through the center slot of the blade and locks it to the carrier. In this manner the blades may be automatically and successively mounted upon the carrier 140.

The condition of a carrier with five blades thus secured to it, is shown clearly in Fig. 24. The blades 150 do not lie flat upon the carrier as in some embodiments previously discussed but naturally assume an angle of about 30° to the plane of the carrier. They may, however, be easily flexed to lie substantially flat, and this fact leads to a most convenient form of sheath or cover shown in Figs. 27-29. I employ an envelope 152 open at both ends and provided with concave finger notches 154 at one end. Into the envelope 152 I insert the carrier 140 with the blades 150, the walls of the envelope serving to spring the blades until they lie substantially flat on the carrier as shown in Fig. 29. The closed package is shown in Fig. 27.

To remove a blade from the package the user pushes the carrier 140 part way out of the envelope by pressing a finger into the notch 154. Then he grasps the ejected lower end of the carrier and withdraws it further until the uppermost blade passes by the end of the envelope. Being then free from the restraining influence of the envelope or sheath the blade springs outwardly to the position shown in Fig. 28. The blade may then be pulled free either by hand or by the hooked element of a razor. However, the release of the blade may be facilitated if the carrier is first pushed back into the sheath until the lower edge of the sheath has met and pushed the blade until the blade has swung out perpendicular to the package, as shown in Fig. 29. The blade may then be removed by a slight pull, after which the carrier is pushed back until it is again fully housed in the sheath. The cover or sheath thus selects the blade to be removed and also moves it to discharge position.

The fact that the blades automatically pivot or swing out from the carrier when released from the sheath facilitates the loading of a razor and still further diminishes the chance of unwanted contact with the sharp edges of the blade. The fact that the carrier 140 is wider than the blades provides protection for their sharp edges while they are in the sheath and also permits free relative movement of the carrier and sheath without imperiling the keen edges of the blades.

The tongues 141 lock the blades detachably

to the carrier and serve to prevent misalignment or lateral shifting of the blades with respect to the carrier since the natural resilience of the tongues acts to bind the blades down with their shoulders held to the carrier strip. It is contemplated that blades will be fed as manufactured into a machine in which a paper strip will be punched to form the tongues and the blades sequentially inserted and locked by the tongues, the strip being cut to form packages containing any desired number of razor blades.

I have shown an alternative form of sheath or envelope in Figs. 30 and 31. A flat piece of paper or cardboard is cut and creased to form a panel 160 having a finger notch 162 and a pair of tabs 164 at one end. Contiguous with the panel 160 is a second panel 166 having a finger notch 168 at one end and an adhesive coated flap 170 at its opposite end. A third panel 172 joins on the panel 166 and has a finger notch 174 and an adhesive coated side flap 176. The panels are folded upon one another and cemented in place by the flaps 170 and 176 to form an envelope open at one end and closed at the other, the construction being clearly shown in Fig. 31. The finger notches 162, 168 and 174 are superimposed to form a single notch, and the tabs 164 are folded inwardly to form limit stops of the type shown at 52 in Fig. 13. The envelope described may be used in conjunction with a number of different carriers, such for example as shown in Figs. 1, 15 and 26. The carrier 140 shown in Fig. 26 would be provided with cooperating limit tabs to engage the tabs 164.

In Fig. 32 I have shown an enlarged view in cross section of a package having a flat carrier strip 200 within a sheath 202. Five blades 204 are secured to the carrier by having their reduced ends 206 inserted through slots cut in the strip 200. The view illustrates the manner in which the blades are flexed by engagement with the walls of the sheath. It will be obvious that when the carrier is moved to the right in the figure, there will come a time when the top blade will pass by the right hand upper edge of the sheath 202 and then snap upwardly when thus released. The remaining blades will not be disturbed by the removal of the top blade.

Fig. 33 shows an enlarged sectional view of a carrier 210 and five blades 212 inserted through slots cut in the carrier. It illustrates the action of the edges of the slits (there being no tongues) in urging the blades to swing upwardly and away from the surface of the carrier.

In Fig. 34 there is shown a carrier 220 from which five tongues 222 have been struck, five blades 224 inserted in the carrier openings with the tongues first passed through the center slots of the blades and then pressed down substantially flush with the carrier 220. Each blade lies at an angle of approximately 30° with respect to the carrier. The frictional engagement of the edges of the tongues 222 and the edges of the carrier from which they were cut affords an added locking action tending to prevent twisting or lateral displacement of the blades grouped on the carrier strip 220.

In Figs. 35 and 36 I have shown a modified form of tongue construction. From a flat rectangular carrier strip 230, cut from paper, cardboard or the like, are struck five stepped tongues 232 their shape and dimensions being such that each will fit snugly through the center slot of a razor blade 234 of conventional double-edged form. The stepped formation of the tongues is some-

what more advantageous than the wedge-shaped tongues of Fig. 25 because the base portions of the tongues have straight sides and maintain frictional engagement with the inner edges of the blade slots through a considerable arc of movement of the blade with respect to the carrier and tongue. The converging sides 144 of the tongues 141 shown in Fig. 25 effect a quicker release of the blade upon rotative movement. Consequently a package of blades including a carrier strip having the stepped tongues 232 will better withstand rougher handling.

In Figs. 37 and 38 I have shown a safety razor member particularly designed for use with blade packages of the type herein described. On the end of a conventional handle 250 there is mounted a guard 252 bearing a pair of spaced blade-positioning lugs 254 and 256 dimensioned to enter the center slot of a conventional double-edged razor blade. The outer end of the lug 256 is extended to form an overhanging hook or projection 258. As shown in Fig. 37, the projection 258 may be inserted in the center slot of the top blade of a stack of longitudinally aligned consecutively overlapped razor blades, the hook being just long enough to engage the top blade without extending far enough to catch the next one beneath. A hooked razor of this type may be employed to advantage in connection with all the embodiments of my invention herein shown and described. Thus the blade itself need never be touched from the time it is packaged until it is engaged by a razor particularly designed to extract it from its package and simultaneously position it in the razor.

In Figs. 39-42 there is shown a razor blade package constructed in accordance with my invention and provided with a rigid-wall container. Five bare double-edged centrally-slotted razor blades 260 are mounted on a flat carrier 262 provided with tongues 264 of the stepped type shown in Fig. 35. The carrier and the blades are placed in a sheet metal box having a bottom wall 266, opposed long side walls 268 and a pair of vertical tabs 270 at one of its ends. The other end is open except for a flange 272 which is bent back to form a limit stop. If desired, a pair of tabs may be provided in lieu of the flange 272, the tabs being located adjacent the side walls 268. The side and end walls 268 and 270 are bent inwardly at the top to define a rectangular flange 273 leaving an open top for the container of less width than the bottom wall 266. There is provided a sheet metal cover plate 274 which slides in the container beneath the inwardly-extending flange 273 the cover having its inner corners struck down to form hooks or stops 276 adapted to engage the stop 272 and prevent complete separation of the cover 274 from the container. At the other end the cover 274 is bent to form a downwardly-extending flange 278 serving as a convenient handle by means of which the cover can be operated. A finger notch 280 is cut into one end of the bottom wall 266 to provide means for ejecting a carrier exhausted of blades from the container.

In loading the container the first step is to retract the cover 274 until the hooks 276 engage the stop 272. Then the carrier 262 with five blades 260 is inserted in the container with the free ends of the blades extending in the direction of the retracted cover 274. The blades are then flexed downwardly below the plane of the cover and held there while the cover is moved back across the container.

In extracting a blade from the package thus described, the user slides the cover 274 out of the container just far enough to pass by and release the free end of the top blade. The blade then automatically swings up to the position shown in Fig. 41. The cover then is pushed back until it engages the blade and swings it still further upward. It is then a simple matter either to grasp the exposed blade and pull it free or engage its center slot with a hooked razor.

A "one-piece" hooked razor is shown in Figs. 43-45. Upon a handle 300 there is mounted a guard 302 on each side of which are pivotally mounted cooperating blade-clamping members 304 linked to a cross bar 306 and operated by a spindle 308 as fully shown and described in United States Letters Patent No. 2,009,272 issued to J. Muros on July 23, 1935. The cross bar 306 is provided at each end with a notch 310 forming in effect a hook which is adapted to engage the end of the central blade slot and extract the blade from a package.

As shown in Fig. 43 the hooked razor is conveniently employed to extract a blade 150 from a package of the type shown in Figs. 28 and 29. The razor may be used in conjunction with any of the types of packages herein discussed. By way of further example, Fig. 45 illustrates the use of the hooked razor to extract a blade 104 from a package of the type shown in Figs. 18-20. In this case the carrier 90 is folded back about the score line 100 to expose one blade 104 and swing it outwardly. The package is held in the right hand, while the left hand grasps the razor handle 300, the left thumb being employed to guide the blade upon the cross bar 306. By separating his hands the user may simultaneously extract the blade from the package and load the blade in his razor.

Having thus disclosed my invention and described in detail illustrative embodiments thereof, I claim as new and desire to secure by Letters Patent:

1. A multiple blade carrier having blades hingeably mounted thereon, uniformly spaced apart in overlapping position in combination with a sleeve for housing said carrier and blades whereby said blades may be singly pivoted upon said carrier away from said sleeve and removed from said carrier.

2. A multiple blade carrier having blades hingeably mounted thereon, uniformly spaced apart in overlapping position in combination with a sleeve for housing said carrier, one end of said sleeve being used to select a blade for insertion into a razor.

3. A multiple blade carrier having blades hingeably mounted thereon, uniformly spaced apart in overlapping position in combination with a sleeve for housing said carrier and blades, a finger notch at one end of said sleeve for initiating movement of said carrier, the opposite end of said sleeve being used for selecting a blade and positioning same for insertion into a razor.

4. A razor blade package comprising a strip having a series of parallel slits, a plurality of bare blades each narrower than the strip and inserted at one end in one of said slits and together forming a stack of aligned blades consecutively overlapped on the strip, and a cover, the cover and the strip being relatively slideable with respect to each other to expose the top blade of said stack.

5. A razor blade package comprising a strip having a series of transverse slits, a plurality

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of bare blades narrower than the strip and having reduced ends, a reduced end of each blade being inserted in one of said slits, the blades together forming a stack of consecutively overlapped aligned blades, and a cover, the cover and the strip being relatively slidable to expose the top blade of the stack.

6. A razor blade package comprising an elongated strip having a series of parallel slits forming a plurality of spaced tongues, a plurality of centrally slotted bare blades each narrower than the strip and each having a reduced end inserted in one of said slits with the associated tongue projecting through the blade slot, the blades being thus arranged on the strip as a stack of consecutively overlapped aligned blades, and a cover, the cover and the strip being relatively slidable to expose the top blade of the stack.

7. A razor blade package comprising a strip having a series of parallel slits, a plurality of bare blades each narrower than the strip and inserted at one end in one of said slits and together forming a stack of aligned blades consecutively overlapped on the strip, and an open-ended envelope, the envelope normally containing said strip and blades and the strip being relatively slidable to expose the top blade of the stack.

8. A razor blade package comprising a fibrous strip having a series of transverse slits, a plurality of bare blades narrower than the strip and having reduced ends, a reduced end of each blade being inserted in one of said slits and projecting through said strip, the blades together forming a stack of consecutively overlapped aligned blades and an open-ended envelope serving to cover and confine the stack and the blade ends which project through said slits.

9. A razor blade package comprising a substantially flat carrier having a plurality of spaced parallel slits, a plurality of bare resilient razor

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blades each having one end inserted in one of said slits, a sheath mounted on said carrier for sliding movement, said sheath serving to confine the blades in the form of an overlapping stack lying flat upon the carrier, said sheath being movable in one direction selectively to expose and release a single blade and then movable in the opposite direction to engage the released blade and swing it to upstanding position.

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