June 19, 1956 A. G. RINGLEN ET AL 2,751,074

PACKAGED SURGEON'S BLADE

Filed April 20, 1953

Fig. 2.

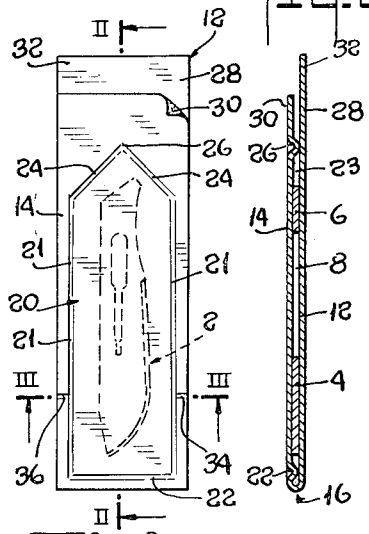
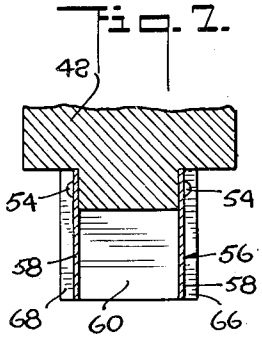


Fig. 7.



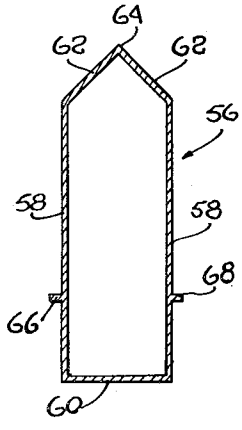


Fig. 6.

Fig. 1.

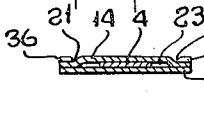


Fig. 3.

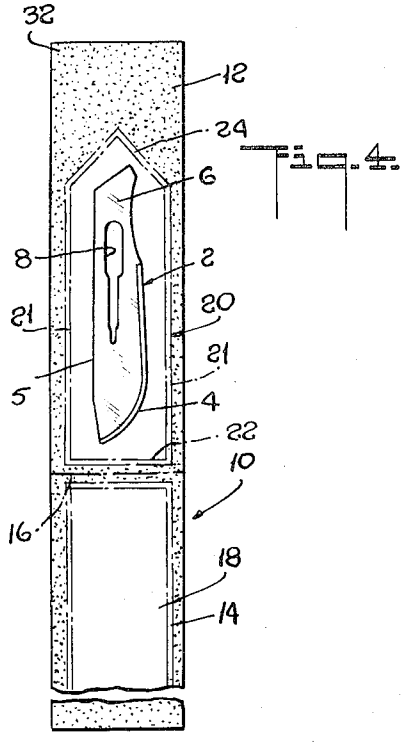
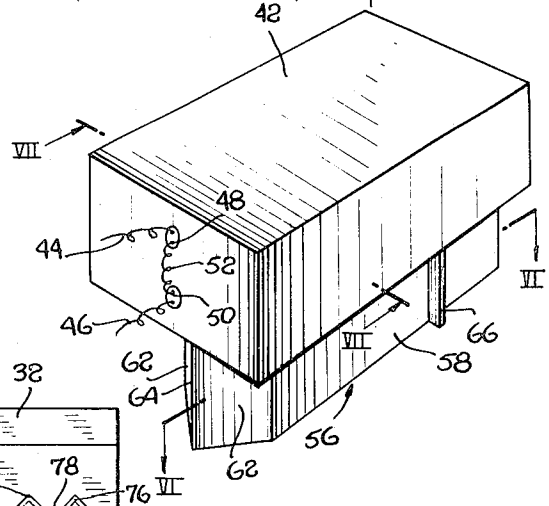


Fig. 4.

Fig. 5.



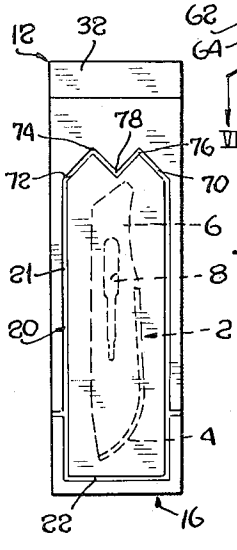


Fig. 8.

INVENTORS
ARTHUR G. RINGLEN
BY ALEXANDER SVIRCHEV
William S. Gluck
ATTORNEY

United States Patent Office 2,751,074 Patented June 19, 1956

2,751,074

PACKAGED SURGEON'S BLADE

Arthur G. Ringlen, Kings County, and Alexander Svirchev, Nassau County, N. Y., assignors to American Safety Razor Corporation, Brooklyn, N. Y., a corporation of Virginia

Application April 20, 1953, Serial No. 349,841

3 Claims. (Cl. 206—63.2)

This invention relates to a hermetically sealed package and more particularly to a package having a surgeon's blade hermetically sealed.

One of the objects of this invention is to provide an improved package to facilitate its opening without requiring manual contact with the blade.

Another object of the invention is the provision therein of means for limiting the extent to which the package is opened.

A further object of the invention is an improved procedure for hermetically sealing-in a blade.

The accompanying drawings illustrate the preferred form of the invention. In the drawings:

Fig. 1 is a plan view of the completed package showing the sealing zone and the blade;

Fig. 2 is a section of the package taken on line II—II of Fig. 1;

Fig. 3 is a section of the package taken on line III—III of Fig. 1;

Fig. 4 is a plan view showing the foil material open before superimposing one lamination on the other with the blade on one lamination;

Fig. 5 is a perspective of the die used to seal the two portions;

Fig. 6 is a plan view of the die taken on line VI—VI of Fig. 5;

Fig. 7 is a partly broken section of the die taken on line VII—VII of Fig. 5; and

Fig. 8 shows a modification of the package.

The surgeon's blade 2 is the article which is to be packaged in the particular device shown. It will be understood that this invention is not limited to a surgeon's blade but may be used for packaging other articles.

The surgeon's blade to be sealed-in is shown at 2; its cutting edge being shown at 4; the remainder of the edge portions including the back edge 5 being unsharpened. The portion 6 extends rearwardly beyond the cutting edge. Slot 8 serves for attaching the blade to a handle (not shown).

The package comprises the sections 12 and 14 wherein the blade 2 lies with its long dimension parallel to the long dimension of the two sections 12 and 14. These sections 12 and 14 are preferably sheets of foil material such as aluminum, or the like. These two sections 12 and 14 are coated with an adhesive substance 18, such as vinyl; said adhesive substance 18 being absent from within the sealing zone 20, as indicated in Fig. 4. This coating 18 forms a light bond between the sections 12 and 14, as will be pointed out hereafter. The two sections 12 and 14 are superimposed one on the other and hermetically secured together along the sealing zone 20 which surrounds and is spaced from the blade 2 and which forms the space 23 between the two sections within the sealing zone 20.

In the particular embodiment illustrated in the drawing, sections 12 and 14 are formed from the sufficiently larger piece 10 by bending this piece 10 along the fold line 16, it being understood that the sections may be separately formed.

The sealing zone 20 comprises two parallel side members 21 which are connected together by, and are at opposite sides of, the transverse member 22. At the end opposite the transverse member 22, sealing zone 20 is formed along converging lines 24 coming to the apex 26. These converging lines 24 allow the two sections 12 and 14 to be easily separated with a small amount of force.

The apex 26 is spaced from the ends of the sections 12 and 14 to form free end tabs 28 and 30 therein. The section 12 is greater in length than the section 14 and this allows a protrusion 32 to extend from the free end tab 28 of the lamination 12. The free end tabs 28 and 30 and the protrusion 32 are adapted to be grasped when the sections 12 and 14 are to be separated.

Stops are provided to limit the opening of the package. In the drawings, these stops are shown as flanges 34 and 36 extending from the opposite side members 21 of the sealing zone 20 and transversely thereto. Preferably, these flanges 34 and 36 are integral with the sealing zone 20 and are formed at a point between the slot 8 and the point of the blade.

Preferably, the thickness of the sealing zone 20 and its integral parts is about 1/32 of an inch in thickness and distance between the sealing zone 20 and the edges of the package parallel thereto is about 1/8 of an inch. The distance between the sealing zone 20 and the edges of the blade 2 is preferably at least about 1/8 of an inch and the length of the protrusion 32 is between about 1/4 and about 3/8 of an inch.

The type of die which we have preferred to illustrate is shown in Figs. 5–7 and is used to form the sealing zone 20 in securing the two sections 12 and 14 together. The die consists of the body 42 which carries the electrical apparatus which produces heat, as evidenced by the lead wires 44 and 46 which are to be connected to a source of electricity and the terminals 48 and 50 connected by wire 52. Depending from the body 42 is the die member 56 which comprises two parallel side dies 58 connected by and at opposite sides of the transverse die 60. This die member 56 may be a separate piece and attached to the body 42 in any conventional manner, as for example, by screws 54 as shown in the drawing.

These dies 58 and 60 are used to form the side members 21 and the transverse portion 22 of the sealing zone 20. At the end opposite the transverse die 60, the die member 56 is formed along the converging lines 62 integral with the side dies 58 which come to an apex at 64 and which are used to form the converging lines 24 and the apex 26 of the sealing zone. Formed from each of the opposite side dies 58 are the oppositely extending flange dies 66 and 68 substantially at right angles to the side dies 58 of the die member 56 and substantially parallel to the transverse die 60. These flange dies 66 and 68 are used to form the flanges 34 and 36 of the sealing zone 20. The thickness of the component parts of the die member 56 is approximately 1/32 of an inch.

The die member 56 is heated by the body 42 to a temperature of about 250° F. and is then applied to the super-imposed sections 12 and 14 at a pressure of about between 25 to 35 lbs. This forms the sealing zone 20 and its component parts.

The modification shown in Fig. 8 illustrates all the features of the package of Figs. 1 to 4. However, the converging lines 70 and 72 do not meet as do the lines 24 of Fig. 1. The lines 70 and 72 turn back at points 74 and 76 and meet at point 78, thereby forming two apexes 74 and 76 instead of the one apex 26, as in Fig. 1. These

two apexes 74 and 76 make separation of the two sections 12 and 14, easier to accomplish. These two apexes 74 and 76 may be formed from a die having corresponding apexes which has not been shown in the drawings.

The blade is packaged as follows:

The sections 12 and 14 outside the sealing zone 20 are coated with an adhesive substance 18 and the blade 2 is placed on the center of the section 12 with its long dimension parallel to the long dimension of section 12. The section 14 is then superimposed over the section 12. The adhesive coating 18 will make the sections 12 and 14 adhere to each other lightly. The side dies 58, transverse die 60, converging lines 62, and flanges 66 and 68 of the die 56 are then heated to a temperature of about 250 degrees F. through the body member 42 and is applied to the section 14 at a pressure of about between 25 and 35 lbs. to simultaneously form the side members 21, transverse member 22, converging lines 24, and flanges 34 and 36 of the sealing zone 20. The hot die is applied to the section 14 at a point spaced from the end of the sections 12 and 14 thereby leaving free end tabs 28 and 30 and the sealing operation also leaves the space 23 between the sections 12 and 14 with the sealing zone 20. The package is then subjected to temperatures of about between 275° and 375° F. for about three hours to sterilize the package and the blade. Of course, if the article to be packaged is not of a nature which requires sterilization, the sterilizing operation may be omitted.

When the blade is ready to be used, the protrusion 32 is grasped and pulled until the free end tabs 28 and 30 are exposed. These are grasped and the two sections 12 and 14 are separated. The apex 26 will make the separation easier because there will be less surface to separate at point 26. When the sections 12 and 14 have been separated, the flanges 34 and 36 will stop the separation of the two sections 12 and 14 at a point between the slot 8 and the front of the blade so that the blade may be attached to a handle without manual handling of the blade.

It will be understood that our invention is not limited to the details of construction described above or shown in the drawings, except as appears hereafter in the claims.

We claim:

1. An air sealed package for a surgeon's blade having a heel portion for securing the blade to a handle member, said package comprising two superimposed wall sections made of foil material strongly bonded together along a relatively narrow airtight line of sealing about a central area and inwardly of the edges of the package to define a surgeon's blade receiving compartment within said seal line, a surgeon's blade air-tightly sealed within said compartment with its heel portion terminating short of an end edge, the two wall sections being lightly bonded to each other about and outside the strongly bonded and relatively narrow line of sealing, stop means located in the lightly bonded area at a level between the ends of the compartment, whereby separation of the two wall sections in the direction of the length of the blade may be initiated at said end edge of the package by separating the wall sections in the lightly bonded area and then continued by separating the wall sections in the airtight strongly bonded line of seal until said stop means are reached.

2. A package as set forth in claim 1 wherein said stop means comprises a strongly bonded relatively narrow seal line extended laterally toward the adjacent side edge of the package to provide a separation stop transverse sealing line at said level for limiting blade exposure to such length of the heel portion as will permit attachment of the blade to a handle member without requiring manual handling of the blade.

3. A package as set forth in claim 2 wherein the sealing line is extended also in the opposite direction at the level of the first mentioned extension, to provide aligned separation stops on opposite sides of the blade compartment.

References Cited in the file of this patent

UNITED STATES PATENTS

1,387,839	Davis	Aug. 16, 1921
2,131,358	Rothschild	Sept. 27, 1938
2,143,646	Chapman	Jan. 10, 1939
2,222,020	Eaves	Nov. 19, 1940
2,420,983	Salfisberg	May 20, 1947
2,468,517	Salfisberg	Apr. 26, 1949
2,565,336	Adler	Aug. 21, 1951

FOREIGN PATENTS

531,863	Germany	Aug. 17, 1931
391,377	Great Britain	Apr. 27, 1933