July 2, 1935. M. A. FRIEDMAN 2,007,046

PACKAGING SHARP EDGED BLADES

Filed March 28, 1933

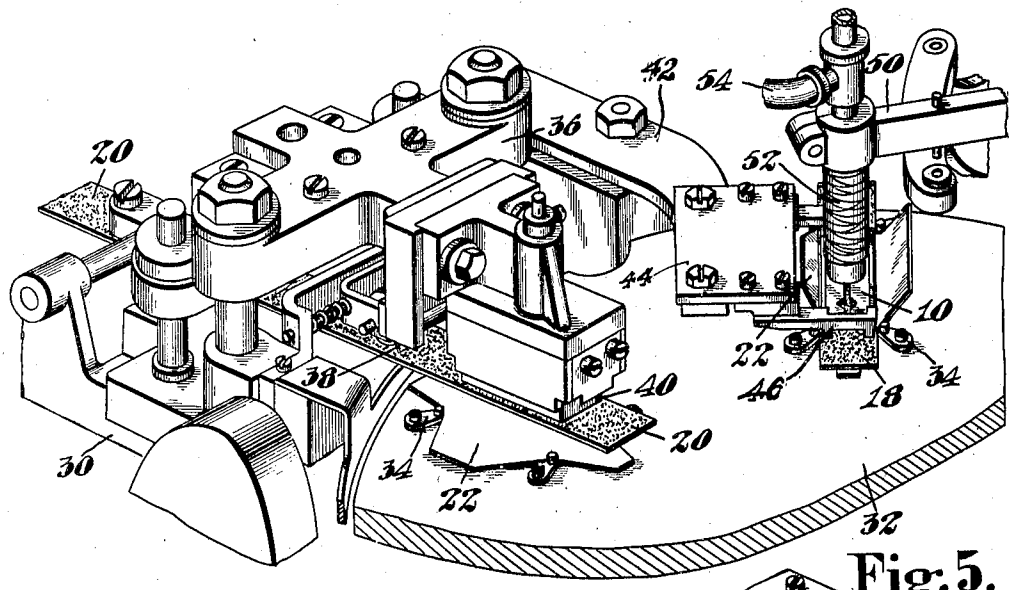


Fig.1.

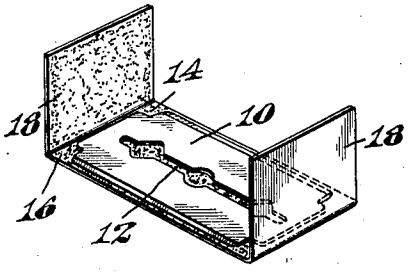


Fig.2.

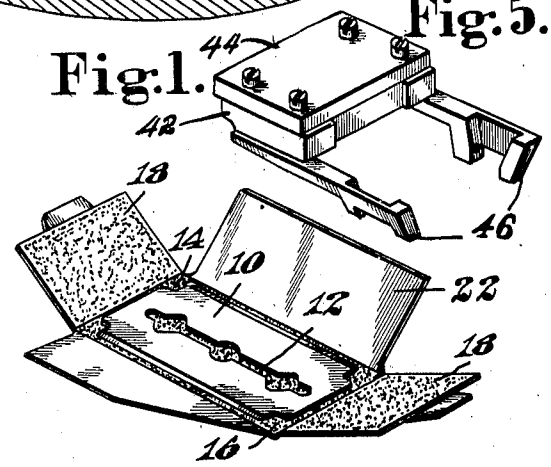


Fig.3.

Fig.5.

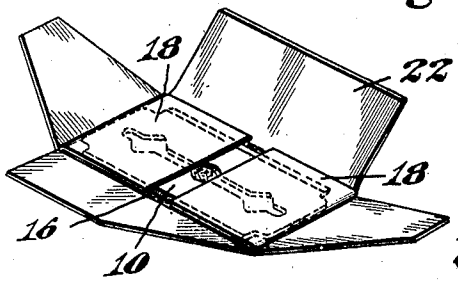


Fig.4.

INVENTOR.
Morton A. Friedman.
by J. W. Yeaway
Atty

Patented July 2, 1935

2,007,046

UNITED STATES PATENT OFFICE

2,007,046

PACKAGING SHARP EDGED BLADES

Morton A. Friedman, Belmont, Mass., assignor to Gillette Safety Razor Company, Boston, Mass., a corporation of Delaware

Application March 28, 1933, Serial No. 663,143

8 Claims. (Cl. 93—2)

This invention relates to improvements in the packaging of sharp edged blades such, for example, as safety razor blades. It has been the practice heretofore to wrap safety razor blades of good quality in paper envelopes having moisture-resistant qualities and to enclose the blade so wrapped in an outer envelope or larger package. Experience has shown that the user, in removing his blade from such wrappings, is likely to draw the envelope, or one of its flaps, across the keen edge of the blade, thus impairing its fine shaving quality. It seems probable also that in transporting blades so wrapped, the keen edge of the blade may occasionally be brought into contact with the fold of the envelope and so slightly dulled.

The present invention is concerned with the problem above outlined. In one aspect, it comprises a new and improved method of wrapping sharp edged blades in such manner that the blade is maintained in position with its edges out of contact with the wrapper during storage and transportation and in such a manner that the blade may be removed from the wrapping without danger of dulling its cutting edge.

My invention also includes within its scope a novel blade package herein shown as including an inner panel or strip of slightly greater width than the blade to which the blade may be made to adhere in such position that the longitudinal edges of the panel project beyond and protect the sharpened edges of the blade and having end flaps adapted to be folded down upon the blade. Such a panel may be conveniently wrapped in an envelope of the character commonly used for packaging safety razor blades, and the blade, panel and envelope may be assembled without necessitating further steps than those already customarily practiced. The material of the panel may be waxed or paraffined paper and when this is used the blade may conveniently be made to adhere thereto by pressing it into contact therewith by a heated tool. Further, by giving the panel sufficient length to permit it to be doubled upon the blade the panel itself is noticeably stiffened against transverse bending and the blade thereby more securely protected.

These and other features of the invention will be best understood and appreciated from the following description of a preferred manner in which it may be carried out, illustrated in the accompanying drawing which shows one suitable form of mechanism for mechanically handling the blade and the component parts of the package. In the drawing:—

Fig. 1 is a view in perspective of a portion of the blade wrapping machine, showing two stations therein;

Fig. 2 is a view in perspective, on a larger scale, showing a blade positioned upon the panel;

Fig. 3 is a similar view showing a blade in an opened package;

Fig. 4 is a similar view showing the panel folded upon the blade, and

Fig. 5 is a view in perspective of the blade guiding or locating elements of the machine.

In the drawing, my invention is illustrated in its application to the packaging of new "Gillette" blades. These are double-edged blades **10** sharpened on their opposite longitudinal edges, provided with reentrant corner notches **14** and with an internal positioning slot **12** having local enlargements therein.

In packaging the blade **10**, I employ a strip **20** of waxed paper of good weight and of slightly greater width than the width of the blade across its cutting edges. The strip is cut into panels **16** of slightly greater length than the blade **10**, leaving sufficient material to form end flaps **18** of substantial length.

The blade **10** is accurately located upon the body of the panel **16** with its cutting edges parallel to and within the longitudinal edges of the panel. The bare blade is made to adhere lightly to the material of the panel as by pressing it into engagement with the surface of the waxed paper by a heated tool which momentarily softens the wax in a limited area and causes it in hardening to adhere in a spot or spots to the surface of the blade. The wax bond, however, is easily broken by the user when he desires to separate the blade from the panel and if any trace of the wax remains upon the surface of the blade it is unobjectionable since it is substantially transparent and rust-resistant in its effect.

After having located and attached the blade as above outlined, the end flaps **18** of the strip may be folded over upon the blade into the covering position shown in Fig. 4. This has the effect of doubling the thickness of the panel and correspondingly stiffening it against transverse bending.

Having enclosed the blade in the folded panel, as shown in Fig. 4, it may now be wrapped in a blade envelope **22** of any desired or ornamental design, whereupon the packaged blade is ready for distribution and sale, securely packaged and attractively wrapped.

In Fig. 1, I have shown portions of a blade wrapping machine satisfactory for carrying out the

method of my invention. The machine comprises a frame 30 designed to support the actuating mechanism of the machine which is not herein illustrated since it forms no part of the invention. The machine includes a rotary table or turret 32 having a series of stations disposed thereon in spaced relation, for example 60° apart, and each having a series of edge gauges 34 by which an envelope blank 22 is located in position. Guiding and feeding means are provided for advancing the end of the waxed paper strip 20 into alignment and above the envelope blank 22, delivered to the initial station. In approaching the table, the strip 20 is led into position beneath a reciprocating cross head 36 provided with a transverse shearing knife 38 and a rectangular forming block 40. The forming block 40 constitutes the male member of a co-operating pair of dies of which the other member is supplied by a rectangular recess formed in the surface of the table 32 in position beneath the blank 22 of the envelope.

In the station shown at the left of Fig. 1, the waxed strip 20 is advanced sufficiently to form the entire panel 16 with its end flaps 18. In the depression of the cross-head 36, the strip will be severed and the panel forced down with the envelope into the die cavity, partially shaping the envelope as shown in Fig. 3.

When the table 32 is rotated 60° in a clockwise direction the partially formed package, held frictionally in its die cavity, is carried into the blade receiving station. Above this station projects a bracket 42 to the end of which is secured a plate 44 having oppositely disposed guide arms 46. Each of these arms has a downwardly inclined tapering guideway formed therein and designed to engage the unsharpened projecting end portions of a blade and guide the blade accurately into position upon the panel 16.

Successive blades are delivered to the panels successively placed beneath the arms 46 by means of a suction head including a cylinder 52 mounted in the outer end of an arm 50 and having a suction connection 54. The lower end of the cylinder has suction openings arranged to engage the face of a blade 10 presented in a magazine, not shown, so that the blade may be picked up by the cylinder and carried forward above the table 32 into substantial registration with the guide arms 46. The arm is actuated to carrying the cylinder 52 in a four-motion path for this purpose. The cylinder 52 is electrically heated so that in depositing the blade upon the panel it will temporarily raise the temperature of a spot in the blade sufficiently to cause the wax of its surface to soften and form a wax bond therewith.

The bracket 42 is mounted for vertical movement from a position of clearance above the table 32 and the wrapping blanks carried thereby, to a position in contact with the surface of the waxed blanks 14. The timing of the movements of the bracket 42 and the blade presenting cylinder 52 is such that the arms 46 are brought down upon the waxed strip and the latter is thus held flat under tension while the blade is deposited thereon and for an appreciable interval after the cylinder 52 has been elevated from the blade. The strip 14 is therefore held stationary and the blade 10 is located positively thereon and held for a sufficient interval to permit the temporarily softened wax to harden and form the desired bond between the panel and the blade. Finally, after this has occurred the bracket 42 is elevated to its initial position so that the table 32 may be turned beneath it to present new wrapping material in blade receiving position.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:—

1. The method of wrapping sharp edged blades, which consists in tensioning a waxed paper strip between spaced locations therein, pressing and heating a bare blade upon the strip while thus held under tension, allowing the blade to cool and form a wax bond with the strip also while the latter is held under tension, and then folding the ends of the strip over the blade.

2. The method of wrapping razor blades having projecting unsharpened end portions, which consists in tensioning a waxed paper strip between spaced areas shaped to fit the end portions of the blade, registering a blade upon the strip by engaging its end portions, and holding the blade thereby while it is successively heated and cooled in the formation of a wax bond with the strip.

3. The method of wrapping razor blades, which consists in engaging a paper strip at spaced locations therein, delivering a blade upon the surface of the strip while the latter is so held, attaching the bare blade to the strip, and then enveloping the attached blade by folding the ends of the strip thereover.

4. The method of packaging sharp-edged blades, characterized by the steps of engaging a waxed paper strip at separate points therein, guiding a blade to the surface of the strip between the points of engagement, attaching the bare blade to the strip while thus positioned, and subsequently enveloping the attached blade by folding the ends of the strip thereover.

5. The method of packaging sharp-edged blades, characterized by the steps of holding a waxed paper strip in flat condition, moving a blade into position upon the strip while positively engaging both ends thereof, attaching the blade while thus positively located, and subsequently enveloping the attached blade.

6. The method of packaging sharp-edged blades having reentrant corner recesses, which consists in holding a waxed paper strip in flat condition by engaging it in spaced locations, moving a blade into position upon the strip while guided positively against longitudinal and lateral displacement by the edges of said recesses, attaching the blade while thus positioned, and subsequently enveloping the attached blade.

7. The method of wrapping sharp blades, which consists in tensioning a strip of waxed paper by engaging it at separate locations in two transversely spaced areas, positively locating a blade longitudinally on the strip with its ends between said engaged areas and then successively heating and cooling the bare blade while so located to form a bond between it and the paper.

8. The method of wrapping safety razor blades which consists in progressively cutting a waxed strip into panels longer than the blade to be wrapped, holding the panel by engaging it near each end at two transversely spaced points, depositing a bare blade upon the panel with its ends located between said engaged areas, successively heating and cooling the bare blade while the panel is so held to form a wax bond with the panel, and then folding the ends of the panel over upon the blade.

MORTON A. FRIEDMAN.