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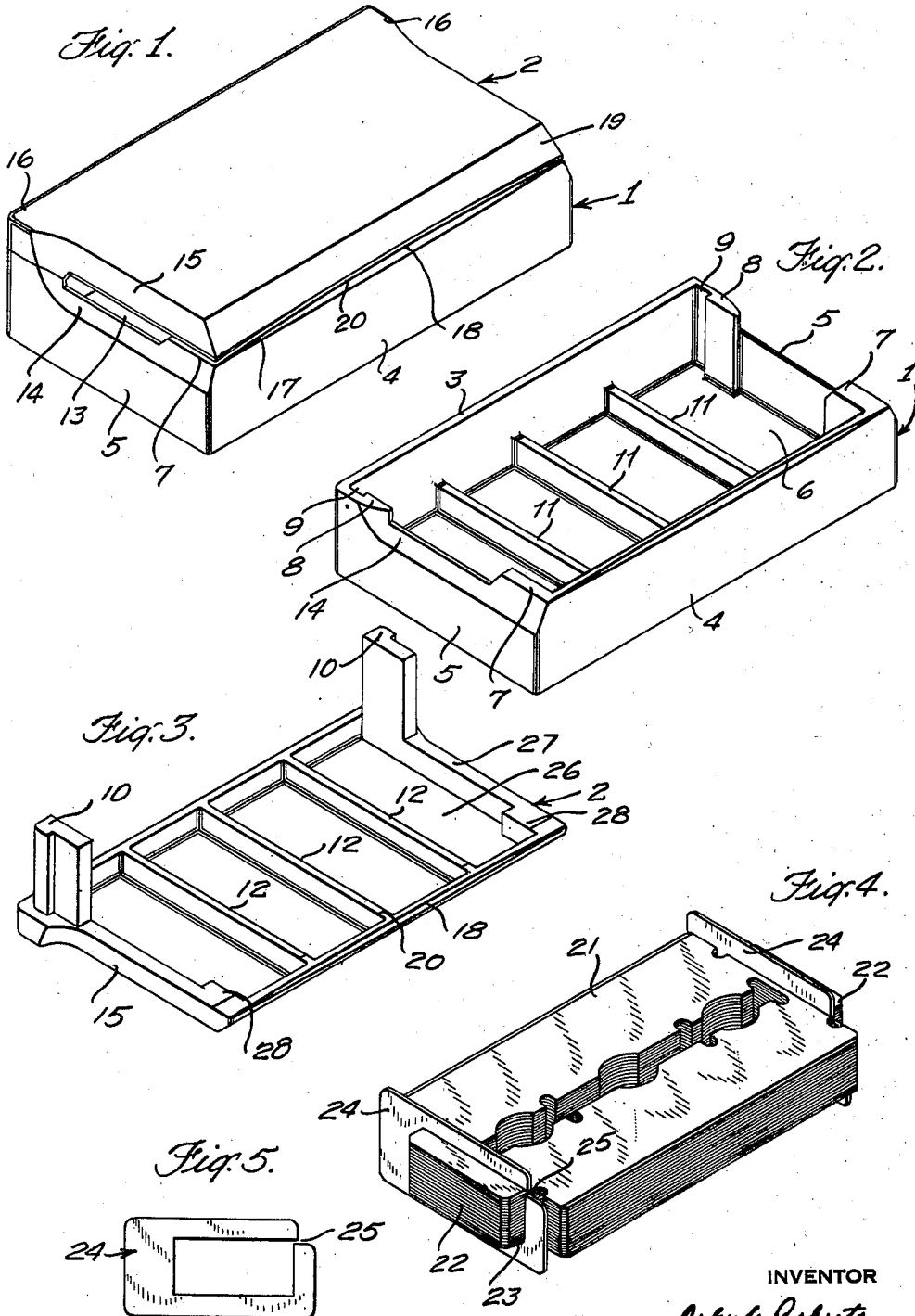
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2,300,596

BLADE PACKAGE

Filed Nov. 15, 1938

2 Sheets-Sheet 1



INVENTOR

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Nov. 3, 1942.

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BLADE PACKAGE

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2 Sheets-Sheet 2

Fig. 6.

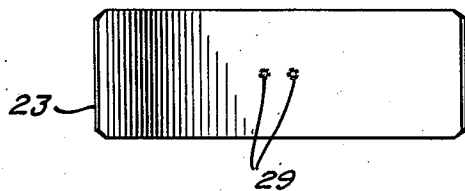


Fig. 10.

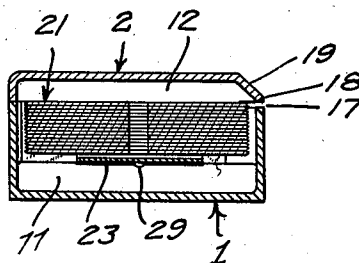


Fig. 7.

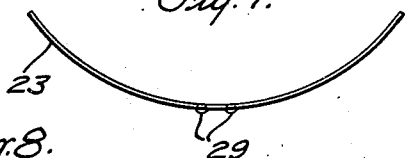


Fig. 8.

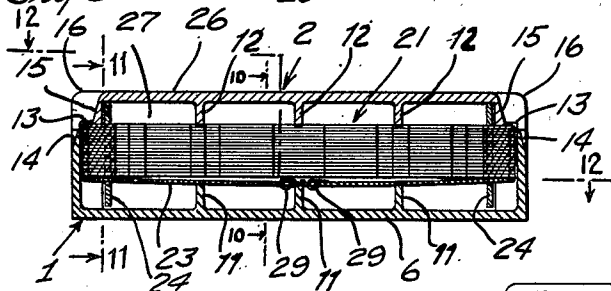


Fig. 11.

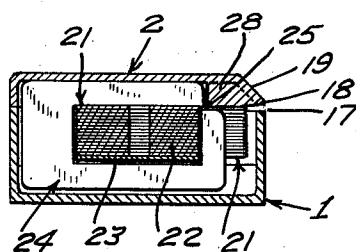


Fig. 9.

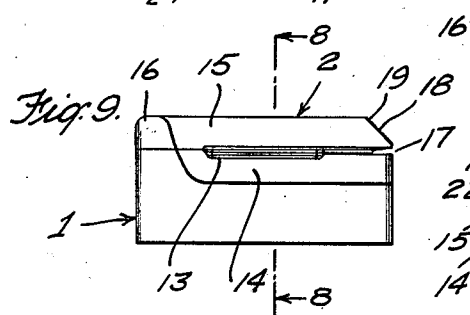


Fig. 12.

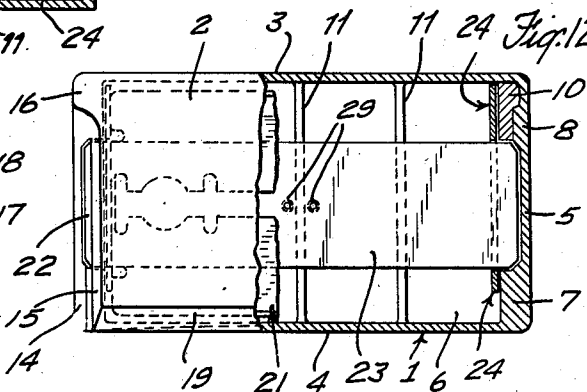
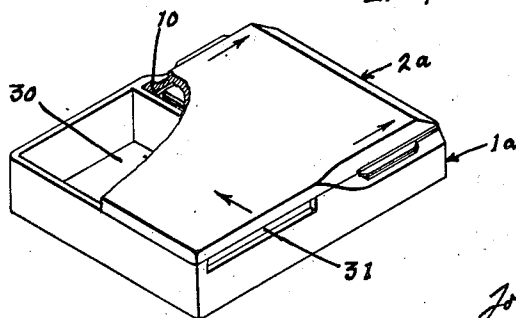


Fig. 13.



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UNITED STATES PATENT OFFICE

2,300,596

BLADE PACKAGE

John G. Roberts, Dobbs Ferry, N. Y.

Application November 15, 1938, Serial No. 240,491

5 Claims. (Cl. 206—46)

This invention relates to the packaging of razor blades and particularly to containers for holding and dispensing such articles. Its object, generally stated, is to regulate the dispensing of blades stacked in a container that is provided with a blade exit slot of indeterminate width and therefore not to be relied upon to limit the passage of but one blade at a time. To this end the invention provides a boxlike container which holds within it not only the stack of blades but also under pressure in a definite flatwise relation to the stack a regulating device of gate formation. The gate has a section in position to block edge-wise movement of the blades except at a gap substantially as wide as the thickness of a single blade and in line with the slot to permit the dispensing of one blade at a time. The gate is preferably of loop formation and of loose fitting size and embraces an end of the stack. Two such gates are usually and preferably employed, one at each end of the stack. As herein particularly described the invention is adapted to box constructions and assemblies for blades that are made of wafer-like, flexible spring steel, have generally rectangular contours and are characterized by double shaving edges, narrow unsharpened end extensions and longitudinal perforations. The box structure is preferably adapted for successive blade removals by limited end openings and a side exit slot. These openings give sufficient access to the end extensions of the blades for the application of lateral removal pressure under finger engagement. By virtue of such a separate, or "floating" gate arrangement, any distortion of the box, such as may be caused by pressure in handling it, which would alter the width of the slot in the box, does not affect the gate opening inside. With it, the box may be made of lighter weight, and the slot of generous width without sacrificing uniformity of operation. The gate may be constructed of thin sheet metal of the order of blade thickness and is adapted for manufacture in a punch press. The two gates nestle without binding between the shoulders of the blades and the inner surfaces of the box ends. They are held against forward and rearward displacement by the front and rear box walls. Such gates effectively guard the box from reentrance of blades, once they are removed.

Upward pressure on the pack is preferably secured by a flat spring of substantially blade length and of a width the same as that of the blade end extensions. The spring bows upwardly at its ends and is held centrally against the box bottom by an interlocking arrangement which prevents slipping of the spring lengthwise as the pack is depleting but permits free play for positional adjustment laterally. Lateral slipping of the spring, as well as of the blade pack edges, is prevented by appropriate shaping of the box cor-

ners, thereby keeping the blade edges from contact with the box sides.

The box preferably consists of two generally rectangular tray-like parts the edges of which are so fashioned as to provide a registering fit to secure the parts together along the rearward edge and corners thereof while leaving a blade exit slot between the forward edges and around the forward corners to the box ends. Such a box may be made of plastic, sheet metal or any other suitable material. If made of plastic, as contemplated, it is molded in two parts, one of which includes the floor and four walls and the other of which includes the roof and two posts. These posts are shaped to interlock with the floor section at the two rear box corners. They also serve to position the blade pack and spring from lateral movement to the rear. In order to strengthen the box and at the same time to enable it to be made of lighter material, both the floor and the roof are provided with one or more ribs and one of these ribs serves as an anchoring support for the spring. The roof section of the box is strengthened at its forward corners by material of such shape that it serves to prevent the gates from slipping forward as the blades are being removed. The floor and roof sections of the box may be extended so as to include a used blade compartment.

In the drawings, all except Fig. 13 being enlarged, Fig. 1 is a general isometric view of the box; Fig. 2, an isometric view of the floor section; Fig. 3, an inverted isometric view of the roof section; Fig. 4, an isometric view of a bundle which comprises the box contents; Fig. 5, a view in elevation of a gate; Fig. 6, a plan view of a spring; Fig. 7, a front elevation of the spring; Fig. 8, a view in sectional elevation of the assembly on line 8—8 of Fig. 9; Fig. 9, an end elevation of the assembly; Fig. 10, a view in sectional elevation on line 10—10 of Fig. 8; Fig. 11, a view in sectional elevation on line 11—11 of Fig. 8; Fig. 12, a plan view partly in section on line 12—12 of Fig. 8; and Fig. 13, an isometric view, in part fragmentary, of a box having both new and used blade compartments.

A box of plastic material includes a floor section 1 and a roof section 2. The rear side 3, front side 4 and ends 5 of the floor section are formed integrally with the floor 6. Enlarged corners 7 at each end of the front side serve to strengthen the box and to guide the blade pack and spring. Corners 8 at the rear side are shaped with vertical slots 9 in such a way as to register with posts 10 of the roof section. The floor is strengthened by ribs 11 and the roof is likewise strengthened by ribs 12. Finger-hole openings 13 are formed by beveling the upper end edges of the box as shown at 14 in the floor section and 15 in the roof section. This beveling extends part way to

the rear of the box leaving full material at the upper rear corners 16. A blade exit slot 17 is provided between the front side of the floor section and the forward edge 18 of the roof section and extends around the box ends to the finger-holes. The width of the slot, which may be that of the thickness of several blades, is determined by the height of the front side 4 and corners 7. The rear side 3 and corners 8 are, therefore, at a slightly higher level. The lips of the box are slightly concave to avoid edge injury to the blades as they come out of the box. In order to guard against edge scraping of the blades as the one coming out slides away from the one below it, the underneath surface of the roof is sloped slightly upwardly at 20 from a point behind to a point forward of the normal position of the bevel at the forward blade edge. Thus as one blade is passing out there will be no pressure contact and no snapping apart of the two edges. The roof section above the lip may be beveled, as shown at 19.

The contents comprise a pack of blades 21 having narrow end extensions 22, a spring 23 and two gates 24. As shown in Fig. 4, these elements are held together by slipping the gates over the end extensions of the blades and the ends of the spring. This partial assembly constitutes a temporarily self sustaining bundle of the entire box contents. It is self sustaining by reason of the pressure at the spring ends exerted upwardly against the blade pack and downwardly against the lower section of the gates. A gate gap 25, substantially of blade thickness dimension, serves to limit the removal of the blades to one blade at a time. The upper section of the gate is of the same height as the depth of the roof section from the underneath surface of the roof 26 to the surface area 27 so that the gate is maintained always in such position that the topmost blade is at the level required for removal through the exit slot. Also, as will be noted, the gates nestle, but without binding, between the shoulders of the blades and the box ends, and are restrained, likewise without binding, by the rear side of the box and the box strengthening corners at 28. The lower section of the gate is spaced slightly above the box floor, being held away from it by the pressure of the pack of blades against the upper gate section. As the upper section of the gate rests upon the upper surface of the topmost blade in the pack, its forward end not only forms one part of the gap for determining the succession of blade removals but also effectively guards the box from reentrance of a blade by squarely meeting the edge of any blade that the user may attempt to reinsert. Reinsertion is likewise frustrated at the outer surface of one or the other of the two gates upon any attempt to slide a blade inwardly on top of the pack from either end of the box.

The package is completely assembled by letting the bundle into the floor section and placing over it the roof in interlocking registration with the floor section. In order to avoid separation of the two box parts, the posts may be dipped in cement or in any other suitable way coated to provide frictional engagement with the rear corners of the floor section. Two bosses 29 formed on either side of the central point of the spring straddle the central rib of the floor section and thus pre-

vent endwise movement of the spring as it pushes up the blade pack.

The box is manipulated for removal of a blade by holding it in one hand at the corners 16—16, or in any other convenient way, and by pressing slightly downwardly with thumb and finger of the other hand and pinching inwardly on the topmost blade at the two exposed end extensions thereof to obtain frictional engagement therewith. Then with a lateral pull the blade comes out over the post section of the two gates and through the exit slot 17. This operation amounts to simply a touch and pull at the pack. All but the topmost blade are obstructed by the gate posts and remain in place. When the blade being removed is out of the box, the spring lifts the remainder of the pack and the next blade takes its place for subsequent removal in the same manner.

In the box shown in Fig. 13 the floor section 1a and roof section 2a are extended to provide a used blade compartment 30 and the floor section is shaped to form an entrance slot 31 thereto.

This application is a continuation-in-part of my application, Serial No. 235,188, filed October 15, 1938, Box for razor blades.

I claim:

1. In combination, a stack of razor blades, a gate of loop formation and of loose fitting size relative to an end of said stack, said gate being of rigid material, embracing said stack at said end and contacting the upper surface of the topmost blade of the stack, a box enclosing said stack and gate and provided with a blade exit slot at the level of said topmost blade, and pressure means supported by the box to maintain said stack with said topmost blade at such level, said gate having a blade dispensing gap only wide enough to permit the passage of a single blade at a time in line with said topmost blade and said slot.

2. The combination, according to claim 1, wherein the said box includes two generally rectangular sections, one of which conformably surrounds said stack opposite the blade edges and the other of which covers the stack opposite the flat surface of the topmost blade, said sections being united along their rearward edges and corners to form a unitary container while being separated along their forward edges and corners to form the said exit slot.

3. The combination according to claim 1, in which the said gate is of sheet metal.

4. The combination according to claim 1, in which there are two such gates respectively embracing the stack at the two ends thereof.

5. A box for holding a stack of razor blades, having a slot through which the blades can be dispensed edgewise and wide enough to permit the simultaneous passage of more than one blade, and a separate regulating device of gate formation having a section provided with a gap substantially as wide as the thickness of a single blade, adapted to be held within the box under pressure in a definite flatwise relation to the stack with said section in position to block edgewise movement of certain of the blades towards said slot and with said gap in alignment with and between one of said certain blades and said slot.

JOHN G. ROBERTS.