March 22, 1955 M. C. TURGI 2,704,397

DISPOSABLE RAZOR

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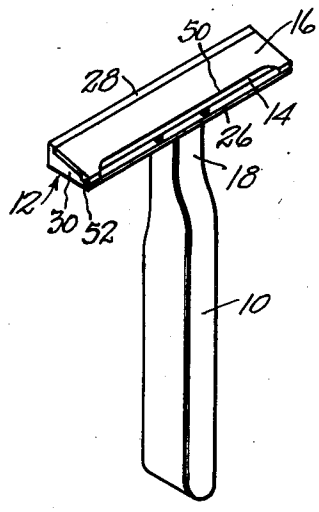

FIG. 1

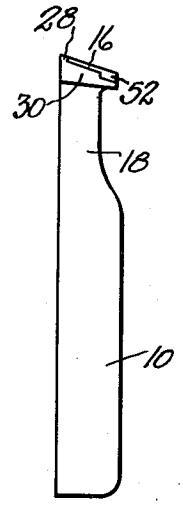

FIG. 2

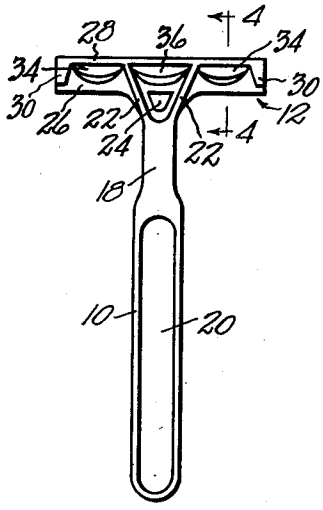

FIG. 3

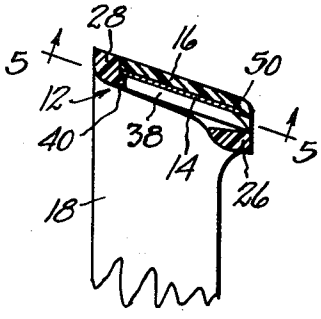

FIG. 4

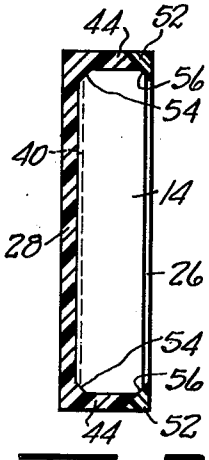

FIG. 5

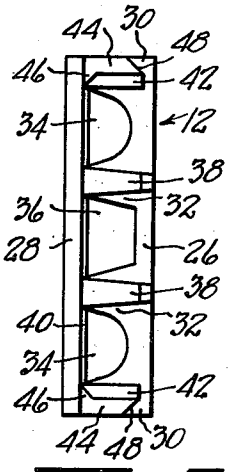

FIG. 6

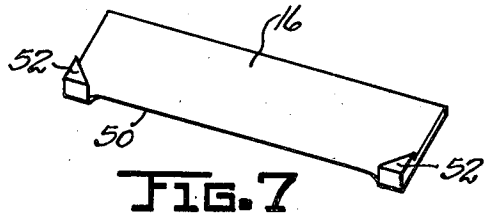

FIG. 7

INVENTOR.
MARY C. TURGI
BY
Eugene C. Knoblock
ATTORNEY

United States Patent Office

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DISPOSABLE RAZOR

Mary C. Turgi, South Bend, Ind.

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5 Claims. (Cl. 30—32)

This invention relates to improvements in disposable razors.

The primary object of this invention is to provide a disposable razor having a novel blade-holding means and a novel skin-engaging guide, which are so oriented and related as to provide an effective and safe shaving operation, and also to avoid clogging of the razor blade incident to the shaving operation.

A further object is to provide a disposable razor which is characterized by light weight, low manufacturing cost, and rapid assembly, by a plastic body which is readily disposable, by a metal blade of small size which is completely guarded by the non-metallic parts of the razor so that it cannot cut except when the razor is positioned in precise selected shaving orientation to the skin of a user, and which is of small size so that it may be packaged in a small unit and may be adapted for dispensing by machine.

Other objects will be apparent from the following specification.

In the drawing:

Fig. 1 is a perspective view of the razor;

Fig. 2 is a side edge view of the razor;

Fig. 3 is a rear view of the razor;

Fig. 4 is a fragmentary enlarged sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is an enlarged sectional view taken on line 5—5 of Fig. 4;

Fig. 6 is a top plan view of the head of the razor with the blade and the retainer plate removed; and

Fig. 7 is an inverted perspective view of the blade retainer of the razor.

Referring to the drawing which illustrates the preferred embodiment of the invention, the numeral **10** designates the handle of the razor; the numeral **12** designates the head of the razor; the numeral **14** designates the razor blade; and the numeral **16** designates the retainer plate forming a part of or bearing upon the head of the razor. Each of these parts except the blade **14** is preferably formed of a thermoplastic material, such as cellulose acetate, and the handle **10** and the head **12** are preferably formed integrally.

The handle **10** is formed of any length and transverse shape and dimension found desirable, and is made of such size as to provide for convenient gripping and manipulation of the razor by grasping said handle. As here illustrated, the handle has a reduced neck portion **18** and its comparatively large end portion is provided with a cavity or hollow at **20** to reduce the weight and cost thereof, and also to avoid difficulties due to shrinkage of large cross-sections of plastic during setting thereof. A pair of divergent spaced longitudinally projecting webs serve as a means to join the head **12** to the neck **18** of the handle and provide an aperture or opening **24** adjacent the center of the head, for purposes to be mentioned.

The head **12** projects laterally from the handle **10** to cooperate therewith to form a substantially T-shaped unit. The head has a substantially parallel front bar **26** and a rear bar **28**. The front and rear bars are interconnected by end crossbars **30**, and by intermediate crossbars **32** which merge with and are joined to the free ends of the divergent handle portions **22**. Apertures **34** are formed in the head adjacent each end thereof between the front and rear bars **26, 28** and between the crossbars **30** and the intermediate crossbars **32**. A central aperture **36** is formed in the head between the front and rear bars **26, 28** and the two intermediate crossbars **32**. The top or

uppermost surfaces of the front bar **26** and the intermediate crossbars **32** are substantially coplanar and lie in a plane inclined relative to the perpendicular to the axis of the handle **10**, as best seen in Fig. 4. The rear bar **28** is located substantially above that plane, as illustrated in Fig. 4 and Fig. 3.

Each of the intermediate crossbars **32** has a raised rib **38** extending lengthwise thereof with its upper surface lying in a plane intersecting the rear bar **28** intermediate the height thereof. The rear bar **28** may have a narrow forwardly projecting rib portion **40** defining a shoulder whose top is flush with the top of the rib **38**. End parts **30** of the head are generally of tapered shape as best seen in Figs. 1 and 2, and are characterized by ribs **42** whose upper surfaces are preferabbly coplanar with the upper surfaces of the ribs **38** and with the shoulders **40**. Rib portions **44** project at a higher level than the ribs **42** but their upper surfaces are slightly inset from the upper surfaces of the rear bar **28**. A beveled stop shoulder **46** is formed integral with each rib **44** rearwardly of each rib **42**. The front edge **48** of each rib **44** is preferably beveled, as shown in Fig. 6.

The retainer plate **16** is preferably of substantially uniform thickness throughout the major portion thereof, and is of a length to extend from end to end of the head **12** of the razor with its back edge bearing against the rear bar **28** of the head, and its top surface substantially flush with the top surface of the rear bar **28** of the head. The retainer **16** is cut away at **50** at its front edge between its opposite ends and is preferably beveled, as best seen in Fig. 4. The front corner portions of the retainer **16** are characterized by integral downwardly projecting lugs **52** which preferably are of triangular shape, as best seen in Fig. 5 and 7. The lugs **52** are so shaped and oriented that they bear against the front beveled edges **48** of the ribs **44** of the head, as best seen in Fig. 5.

The blade **14** is preferably beveled at **54** at its rear corners to bear against the beveled edges **46** of the end ribs **44** of the head, while its rear margin rests upon the shoulder **40** of the head. The body of the blade rests upon the upper surfaces of the ribs **38** at its intermediate portion, and at its ends rests upon the ribs **42** of the head. The blade **14** is of a width less than the space between the front edge of the rear bar **28** and the front edge of the front bar **26** so as to be inset from the front edge of the front bar **26**, as best seen in Fig. 5. The front corners **56** of the blade are beveled to bear against the lugs **52**.

The assembly and fabrication of the razor from its constituent parts can be accomplished rapidly and simply because of the manner in which the parts interfit, and because of the materials of which the razor is made. The operations required for the assembly of the razor are simply the insertion of the blade **14** into the socket of the head **12** with its sharpened edge adjacent to the front bar **26** and with its rear edge bearing against the rear bar **28** so that its rear margin rests upon the shoulder **40**, and its rear corners **54** engage the beveled surfaces **46**. Thereupon the retainer plate **16** is applied with its lugs extending downwardly in front of the end ribs **44** of the head and of the beveled corners **56** of the blade. Cement or a bonding material, such as a solvent for the plastic of which the head **20** and retainer **16** are formed, is applied to the contacting surfaces of the head and the retainer and serves to anchor the parts in proper relation and in the assembled form here illustrated. Because of the bonding of the retainer **16** to the head **12**, the retainer becomes in effect an integral part of the head, and the blade **14** is positively anchored within the unit. Thus there is no possibility that the blade **14** can be removed by any action short of or less than disintegration of the head and the retainer.

The cutting edge of the blade **14** is located forwardly of the inset edge **50** of the retainer **16** in order that that cutting edge may be exposed for shaving purposes. Only a limited extent of the cutting edge is exposed, however, and, consequently, the user of the razor is effectively protected by the construction of the razor against the possibility of inadvertent cuts. During the shaving operation adequate openings are provided for the discharge of shaving soap or cream, to insure that the razor will not plug. As best seen in Fig. 4, the ribs **38** provide

a space below the blade **14** through which soap may pass as shaving proceeds. In other words, the soap passes between the blade **14** and the front bar **26**. Thence it passes through the openings **34** and **36**, and with respect to the opening **36** passes between the divergent arms **22** projecting from the handle. No difficulty is encountered, therefore, during shaving with respect to visibility. In other words, the full length of the exposed portion of the blade **14** is visible, and the shaving operation can be observed as it proceeds, unimpeded by collections of soap or shaving cream.

The size of the unit lends itself particularly to compact packaging, which is of particular importance in instances where the device is to be dispensed from coin-operated dispensing machines, as is contemplated. Observe in Fig. 2 that the fore to aft dimension of the head is not substantially greater, or is even less, than the fore to aft demension of the handle **10**. This is accomplished without sacrifice of either visibility or efficiency or shaving because of the reduced character of the neck portion **18**. Consequently, the razor can be packed in a very small container and will occupy little space in the purse or luggage of a user.

By reason of the fact that the device is formed largely of plastic and the blade is small, the metal in the device is reduced to a minimum, and it is possible to dispose of the razor by passing the same through an incinerator or the like. The user of this razor, who has finished with it after one or more usages, can discard it in the waste basket of a hotel room or the like, while traveling away from home. If used at home, the device can be used until the edge of the blade has dulled, and thereupon he can discard it along with waste paper to be destroyed by burning.

Because of the small size of the device and the fact that it is molded from plastic parts, the device can be manufactured inexpensively. Thus the constituent parts formed of plastic can be molded quickly and easily and will be standardized so that they will fit together during assembly by the bonding or cementing operation described above. The device is of light weight because of the comparatively thin section of the plastic parts of which it is made, but, nevertheless, these parts are so fabricated and shaped that they have a mutually reinforcing function and tend to produce a unit which is strong, study and rigid. The strength of the completed structure serves to rigidify and strengthen the metal blade which, therefore, can be fabricated from thin steel and which can rely for its rigidity upon the reinforcement by the plastic parts. Consequently, the metal of which the blade is formed may be inherently flexible and small in size to reduce to a minimum the parts of the unit which cannot be disposed of by burning or the like.

While the preferred embodiment of the invention has been illustrated and described herein, it will be understood that changes in construction may be made within the

scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A disposable razor comprising a handle, a head on said handle having a plurality of apertures, a plurality of spaced ribs projecting from said head, a blade bearing on said ribs and spaced from portions of said head to define passages between said head and blade, marginal ribs on three sides of said head and surrounding said blade, and a retainer bonded to said marginal ribs and overlying said blade.

2. A disposable razor comprising a handle, a head on said handle having a plurality of apertures, a plurality of spaced ribs projecting from said head, a blade bearing on said ribs and spaced from portions of said head to define passages between said head and blade, marginal ribs on three sides of said head and surrounding said blade, and a retainer bonded to said marginal ribs and overlying said blade, said retainer having inwardly projecting lugs at opposite ends engaged by and positioning said blade.

3. In a disposable razor, a head having a plurality of spaced apertures, a plurality of spaced ribs projecting from one face of said head and lying in a common plane, marginal ribs at one side and both ends of said head projecting above the level of said first ribs, a blade supported on said first ribs in edge engagement with said last name ribs, and a retainer overlying said blade and bonded to at least the end marginal ribs, said retainer having an inset edge portion adjacent to the fourth margin of said head to expose the cutting edge of said blade.

4. In a disposable razor, an apertured head having spaced blade-supporting elevated portions at one surface thereof and marginal blade-positioning portions, and a retainer plate bonded to said head at said marginal portion to define a blade-receiving socket having an opening from which a cutting edge of a blade projects and through which soap may pass for discharge through said apertured head.

5. In a disposable razor, an apertured head having spaced blade-supporting portions at one surface thereof and marginal blade-positioning portions, and a retainer plate bonded to said head at said marginal portion to define a blade-receiving socket having an opening from which a cutting edge of a blade projects and through which soap may pass for discharge through said apertured head, said retainer including blade-positioning portions located at opposite ends of said opening.

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