It is well known that razors give better service if the blade after being used is given a rest. Such a rest should exceed one day in length, and better service is forthcoming if the edge has three, four or more days rest between each use.

It is known that safety razor blades with more than 2 cutting edges, such as the blades now generally in use are provided with, have been proposed for the purpose to allow the use of alternate edges of the blade on alternate days and thus allow the previously used edges to rest for shorter or longer periods before they are again used. It is also known to provide the various edges of such polygonal blades with indicia to designate which edges of the blade have been used and dulled. Such blades, however, have not come into general use for the reason that it is difficult for the user to remember the indicia designating the edge last used and as a rule a person would not take the trouble to make a record of or note down the edge last used so as to be able to use the next following edge at the next occasion.

Besides, the various kinds of polygonal blades heretofore proposed for this purpose do not have a sufficient number of alternately usable edges to provide for a sufficient rest period for each edge to recover before it is to be used again.

The main object of this invention is to provide a polygonal razor blade of the wafer type which carries indicia designating the successive days of the month so that the user, in order to determine which edge to use on any particular date, may only have to know what particular day of the month it is and not need to remember otherwise which of the edges of the blade has previously been used.

Another object of this invention is to provide such a blade with a sufficient number of edges and with such a method of placing with indicia thereon that there will be provided sufficient length of rest period between successive uses of the same edge.

A still further object of the invention is to provide suitable means in such blades, in conjunction with suitably constructed holders, to properly distribute the stresses arising in the blade from the necessary clamping action, so as to stiffen the working edge in a satisfactory manner.

An object of this invention is also to provide a holder for such blades as above described in which ordinary 2 edged blades such as are now in common use may be used in an emergency, i.e. when the special blades forming the subject of this invention are not available.

With these and other objects in view which will hereinafter appear, the invention consists in a razor blade with multiple cutting edges provided with indicia designating the successive days of the month and a suitable holder for the same.

In carrying out this invention, a razor blade of the wafer type with at least 3, but preferably more, cutting edges is provided, having numbers applied to these cutting edges in various sequences, such numbers being identical with the number of days in a month, preferably from 1 to 31, but it is understood that they may run from say 1 to 15, 16 to 31 or any other sub-division of a month, as will hereinafter be further described.

With the ordinary wafer blade the surface of the holder to which the blade is clamped is cambered so that when clamped in position the blade is flexed. This flexing gives the blade as a whole an arched form, and such form no doubt stiffens up to cutting edge to a certain extent. When however the wafer blade is to be given more than two cutting edges the stress conditions are modified as instead of the blade being bent or flexed in one direction it is, under certain conditions,
curved in two directions and caused to take a dome, dish or saucer-like form. Hence the blade instead of being stressed as it would be if bent to the form like an arch is according to this invention stressed like a dome. Under these dome-like conditions the stiffening up of the edges is very much enhanced and may indeed be so altered as to be excessive. When used with a multiplicity of cutting edges, as is contemplated according to this invention, the dome-like deformation of the wafer blade need not be anything like as pronounced as the deformation given to the arch form of the usual two edged blades. Owing however to the fact that for some purposes a considerable deformation is or may be thought to be desirable, this, according to the present invention, may be realized without excessively stressing the metal of the blade by splitting the corners or dividing the metal of the blade at each corner for a considerable depth extending towards the centre of the blade, so that the individual facets or cutting edges of the blades, or the pairs of facets opposite each other (where the number of facets is even), will act more as if stressed by being subjected to the simple bending flexure as of the ordinary type of blade in the said direction rather than being stressed as if subjected to the dome-like flexure above referred to of the blade with multiple cutting edges.

According to the present invention the flexure of the blade may be partially arch-like and partially dome-like depending upon the depth to which the corners of the blade are divided. Whether the one or the other of these stress conditions predominates will depend on the particular form given. It will however be realized that the thickness of the wafer blade at or adjacent to the centre of the blade may be increased with certain advantages which may be obtained by the use of a blade, which, whilst still classed as a wafer blade, is thickened up towards the centre. The splitting of the corners or the deep recessing of the corners of the multiple-edge blade thus enables a thicker blade to be used.

The holder which I provide for these blades, preferably has a convex or dome-like surface to which the blade is clamped by the guard or cover part and in which apertures or notches are provided through which the date numbers may be seen.

The razor blades according to this invention preferably have the corners between their contiguous sides removed and notches formed in these corners in order to give the cutting edges greater flexibility when bent while being clamped in the holder.

When the said razor blade is triangular in shape the date numbers 1, 4, 7, 10, 13, 16, 19, 22, 25 and 28 may be spaced on one or on both sides of one edge, the numbers 2, 5, 8, 11, 14, 17, 20, 23, 26 and 29 spaced on one or both sides of another edge, and the numbers 3, 6, 9, 12, 15, 18, 21, 24, 27 and 30 on the last edge.

In this case in order to avoid a multiplicity of numbers in part edge the numbers may be divided and part placed on one side of the blade and the rest on the other side. For example a triangular blade may have the dates 1, 7, 13, 19 and 25 on one side of one edge and 4, 10, 16, 22 and 28 on the other side of the same edge, the second edge having 2, 8, 14, 20 and 26 on the first side and 5, 11, 17, 23 and 29 on the other side, whilst the last edge has 3, 9, 15, 21 and 27 on the first side and 6, 12, 18, 24 and 30 on the other side.

Where the blade is one having four sharpened edges the dates 1, 5, 9, 13, 17, 21, 25 and 29 may be placed on one cutting edge and the other dates 2, 6, 10, etc. 3, 7, 11, etc. and 4, 8, 12, etc. on the other three cutting edges.

In this case again alternate date numbers on each edge may be divided, half being on one side of the blade and the other half on the other side of the blade.

Where the razor blade has six cutting edges the dates 1, 7, 13, 19 and 25 may be on one edge, 2, 8, 14, etc. on the next edge, 3, 9, 15, etc. on the next edge, and so on.

Where the razor blade has eight cutting edges it may have the dates 1, 9, 17 and 25 on one edge, 2, 10, 18 and 26 on the next edge, and so on.

If preferred the alternate dates on any particular edge may be divided, one half being on one side of the blade along said edge, the other half being on the other side of the blade.

Where the number dates marked on a razor blade edge are divided, some of the dates being on one side of the blade and others on the other side, the dates on the one side may be arranged to read as a series in a clockwise manner, and those on the other side, the alternate dates thereto, as a series in the anticlockwise manner.

The razor blades according to this invention have a number of positioning holes provided therein, corresponding to the number of their cutting edges, and a center hole for the passage therethrough of the stem of the holder. The holder is provided with a corresponding number of studs for engaging the positioning holes. The notches in the corners of the blades may be cut through to the positioning holes and continued at the diametrically opposite side of the holes to near the center of the blade for the purpose of greater flexibility of the blade and its adaptability to the shape to which it is deformed when clamped in the holder.

In the modification wherein the blade has four cutting edges the invention includes the combination of a holder with a blade with four positioning holes punched through the blade, the size of the holder and of its normal blade and the position of said positioning
holes in the blade and of the positioning studs on the holder being such that ordinary two-edged blades with the standard spacing of positioning apertures therein may, if desired, be clamped in said holder and be used as a make-shift if the proper blades therefore are not available.

The invention will now be described with reference to the accompanying drawings, in which—

Fig. 1 shows a triangular blade.
Fig. 2 a square blade.
Fig. 3 a modification of the last, giving greater flexibility.

Figs. 4 and 5 are hexagonal blades.
Fig. 6 is an octagonal blade.
Figs. 7 and 8 show fragmental portions of the holder for blades such as those shown in Figs. 2 and 4.

Fig. 9 is a fragmental diagram showing a holder in section with guard plate and blade clamped in place.

In Fig. 1 the blade has three edges a, a', a'' a central stool hole b and three positioning holes e, e, e. To give flexibility the corners are removed and notched at d, d, d extend from the corners to the holes e, e, e.

It will be noted the numerals on the edges of the blade indicate the dates on which the particular edge should be used. Considering edge a this edge with the face illustrated clamped to the holder will be used on 1st, 7th, 13th, 19th and 25th. Also on the 31st if the month is a 31-day one. The same edge will be used with the other side clamped against the holder on 4th, 10th, 16th, 22nd and 28th. Hence this edge will be used for ten or eleven shaves, a number which a modern blade should be able to stand.

In Fig. 2 a square blade is shown. This has four nicks e, e in the corners and four positioning apertures e, e. These apertures e, e may be so placed apart as to suit the positioning apertures in ordinary razor blades like the Gillette. This spacing is so selected to enable an ordinary Gillette blade to be used as a make-shift in the holder provided. In Fig. 2 the inner edge of an ordinary blade is indicated by the dotted line f. It will be seen that the blade edge may be made to avoid the central stool b.

A blade as shown in Fig. 2 may be found too stiff it being now usual to clamp a wafer blade tightly in the holder so as to cause it to be very distinctly bent when in use. In the case of a blade as shown in Fig. 2 the holder might be given a camber or be made convex in the direction of the axis A A with the idea of using the upper edge 1—29 and the lower edge 3—31 but be made straight in the direction of the axes B B. In such case the side edges would only be used when the blade was rotated relatively to the holder through 90° so that when in use the camber on the blade would be in the direction perpendicular to the cutting edge.

In these various figures the date numbers on the blade are the numbers on the one side of the blade, whilst the date numbers outside the blade surface represent dates stamped on the other side of the blade.

Fig. 3 shows a preferred form the square blade would take. The intention here is to use the blade on a holder the surface of which is raised in the middle—that is one having a convex surface whose centre is higher than the sides all round. If a thin blade such as that shown in Fig. 2 is clamped down on such a surface and forced to take up a saucer shape or flat domed shape—the metal would offer very considerable resistance as a dome to deformation. There might be circumferential tensions at the periphery and a rather uncertain stress distribution due to the development of stresses such as are to be found in a flat dome. In Fig. 3 the full development of dome action stresses will be prevented and the intensity of the stresses relieved by slotting or notching the corners as shown at g.

The notching shown comprises the removal of the corners as shown at e', the slot g extending to the positioning holes e'' and a further extension k of the slot beyond the positioning hole e'', said further extension terminating in a rounded end k' to prevent a crack developing.

Referring now to Fig. 4 a hexagonal blade is shown. This is very similar to Fig. 2 and similar remarks would apply. This form might have too much rigidity if it was attempted to cause it to take up a saucer shape.

Fig. 5 shows a development of Fig. 4 where in the corners are notched or slotted as in Fig. 3.

Fig. 6 shows an octagonal form of blade. It should be noted in these blades the corners should preferably be removed as indicated at f, f in Figs. 3, 5 and 6.

In Fig. 6 some of the slots stop at the positioning hole e'' whereas others are continued to points such as k'.

In Figs. 1, 2, 4 and 6 a convenient system of date numbers is shown. It will be seen that whereas with the square blade each edge is used approximately eight times, with the hexagonal blade the edge is used five times, and with the octagonal blade four times.

The edges however are progressively getting shorter so that more work is done with four shaves on the octagonal blade than in eight shaves with the square blade.
It is important to be able to see the date numbers on the blade when clamped in the holder. The holder therefore may be notched or apertured in any convenient manner to expose the date figures.

In Fig. 7 a view is shown of the near side of a holder with the blade clamped to the further side.

This shows a square blade such as that shown in Fig. 2. The holder has the usual notches $m, m$ on the edge but certain of these notches $m', m''$ are extended to a greater depth to expose the date numerals.

This Figure 7 also shows apertures $m'', m'''$ which may be used to expose the date numbers to view in place of the deeper notches $m', m''$.

Fig. 8 is similar to the first part of Fig. 7 but shows the idea applied to a hexagonal blade holder.

Fig. 9 indicates a form of construction in which $n$ is the holder, $o$ the guard, $p$ the stem of the guard and $r$ a positioning stud on the holder.

The blade $v$ is stressed by bending to the curve shown.

The central portion of the bent surface of diameter $s$ acts like a flat dome the limits of which are to be seen dotted at $s'$ in Fig. 5. The outer parts $t, t'$ of the blade owing to the slotted corners are stressed in pure bending.

In Fig. 9 the dome part takes the curve the extension of which is shown dotted at $o''$ whilst the outer portions of the blade are bent to a sharper radius the extension of which is shown by the dotted line $v''$.

It will be understood that by varying the distance to which the slots $g, h$ extend towards the centre of the blade the proportion which develops a dome-like resistance and that which is merely bent downwards may be varied as desired.

It should be noted that where in this specification reference is made to dome-like stresses it does not necessarily mean stresses such as are developed in a masonry dome but to stresses which are developed in a thin metal sheet or plate when it is buckled or is forced to assume a saucer-like form from its original state in which it was flat. These stresses are very different from those developed in the standard type of razor blade which is bent in a direction perpendicular to its cutting edges into what has been referred to herein as the arch form in which the convex side of the blade is in pure tension and the concave side in pure compression and the edges are stiffened up by the deformation.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. A safety razor comprising a holder, a blade having a plurality of cutting edges, identifying numbers corresponding to certain days of the month on said blade adjacent each edge thereof, a guard plate having a plurality of teeth along its edges, the spaces between certain adjacent teeth along the edges of said guard plate terminating in circular apertures to expose said identifying numbers on the blade.

2. A safety razor comprising a holder, a multisided blade having indicia numbers from 1 to 31 corresponding to the days of the month adjacent the edges of said blade, a toothed guard having the spaces between adjacent teeth further indented at spaced intervals to reveal said indicia numbers thereby to facilitate the successive use of the edges of the blade upon successive days of the month.

In testimony whereof I hereto affix my signature this 4th day of June, 1931.

ALBERT FRANK FORD.

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