

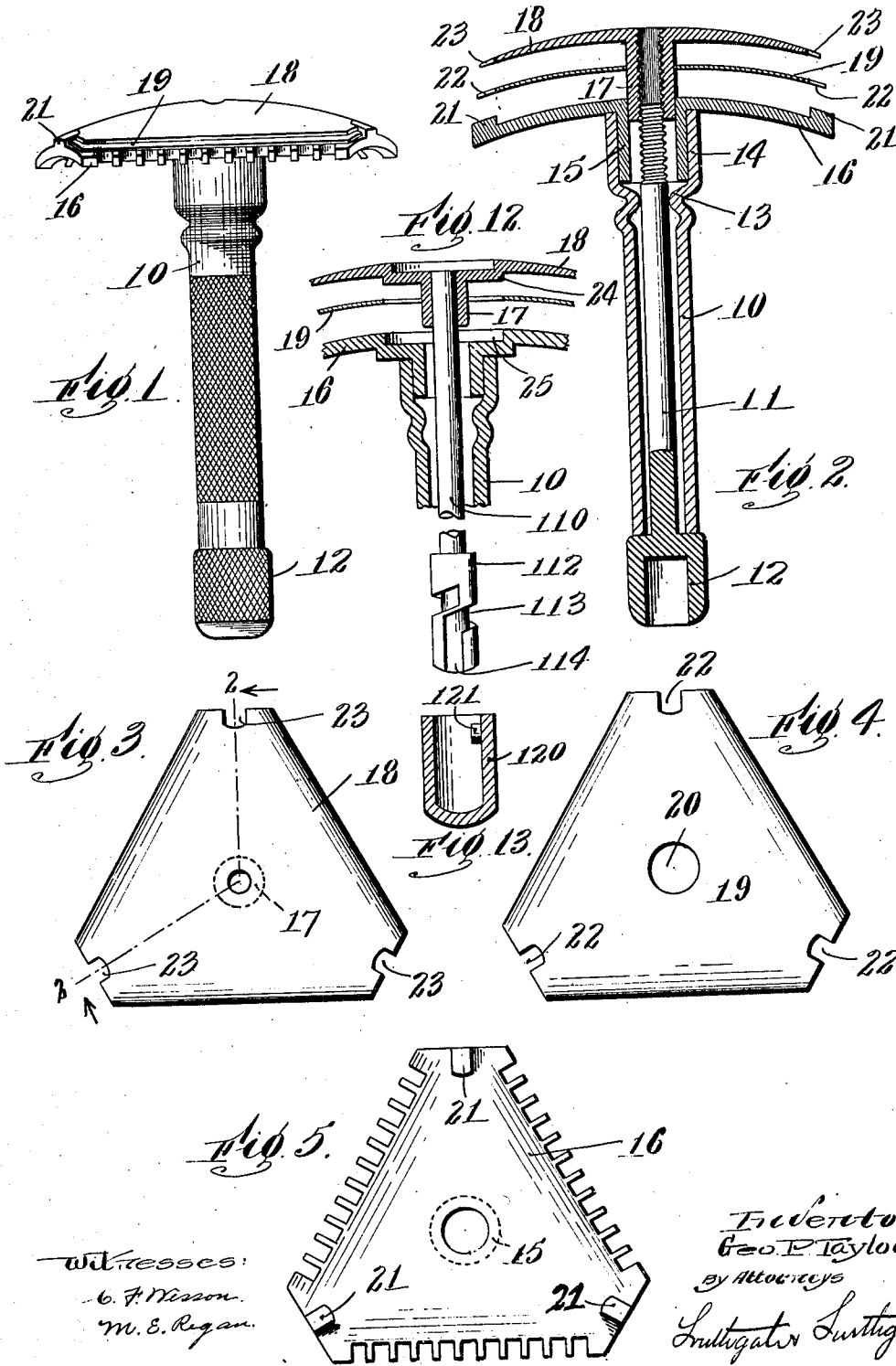
No. 892,629.

PATENTED JULY 7, 1908.

G. P. TAYLOR.  
SAFETY RAZOR.

APPLICATION FILED APR. 9, 1906.

2 SHEETS—SHEET 1.



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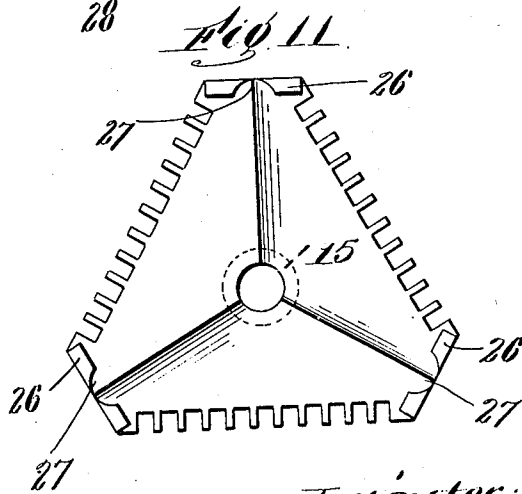
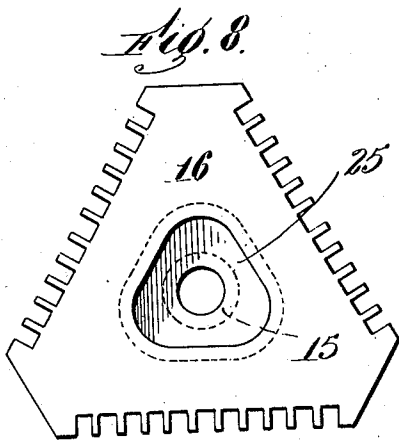
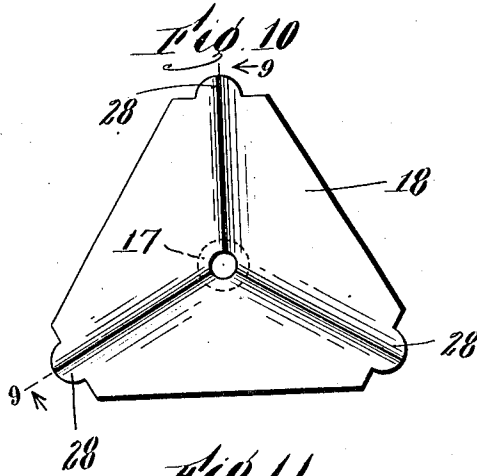
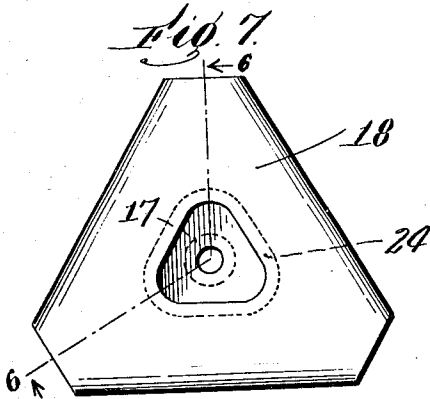
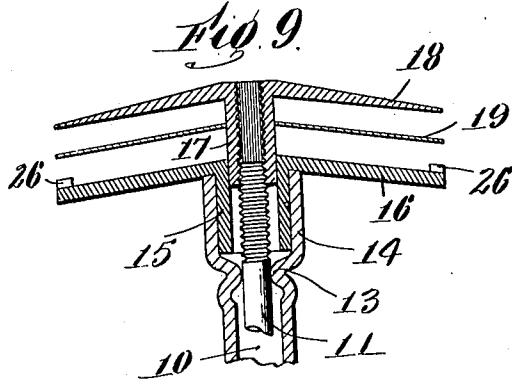
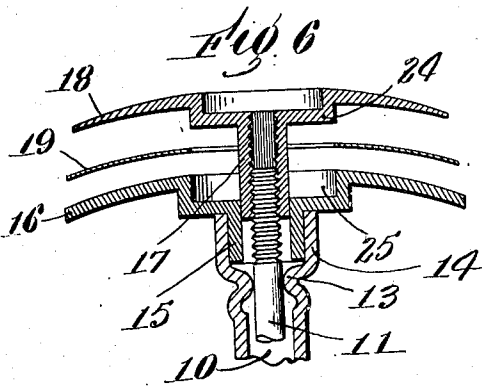
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APPLICATION FILED APR. 9, 1906.

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

GEORGE P. TAYLOR, OF CLINTON, MASSACHUSETTS.

## SAFETY-RAZOR.

No. 892,629.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed April 9, 1906. Serial No. 310,669.

*To all whom it may concern:*

Be it known that I, GEORGE P. TAYLOR, a citizen of the United States, residing at Clinton, in the county of Worcester and State of Massachusetts, have invented a new and useful Safety-Razor, of which the following is a specification.

My invention relates to that class of razors known as safety razors, the principal objects thereof being to provide such a razor having a rigid, permanently shaped concavo-convex polygonal blade of substantially uniform thickness having means for supporting and positively holding the blade at three or more points; to force the backing-plate against the guard-plate by means effectively applied to the backing-plate on the side of the blade opposite to that on which the backing-plate is located so as to get more efficient action; to so construct the parts as to avoid the liability of injuring the edges in setting the blade; and to provide means whereby the blade will not have to be changed as often as is the case with the present makes of safety razors.

Further objects and advantages of the invention will appear below.

Reference is to be had to the accompanying drawings in which,

Figure 1 is a side elevation of a razor constructed in accordance with the principles of my invention. Fig. 2 is a sectional view of the same on the line 2—2 of Fig. 3. Fig. 3 is a plan of the backing-plate of the same. Fig. 4 is a plan of the blade. Fig. 5 is a plan of the guard-plate. Fig. 6 is a sectional view on the line 6—6 of Fig. 7 showing my invention in a modified form. Fig. 7 is a plan of the backing-plate of the same. Fig. 8 is a plan of the guard-plate of the form shown in Fig. 6. Fig. 9 is a sectional view on the line 9—9 of Fig. 10 showing another form in which my invention may be embodied. Fig. 10 is a plan of the backing-plate of the same. Fig. 11 is a plan of the guard-plate used in Fig. 9, and Fig. 12 is a central vertical sectional view showing another form of the invention, and Fig. 13 is a sectional view of a part of the same.

Referring to the first five figures, it is to be noted that the invention is shown as applied to a hollow handle 10 through which passes a rod 11. This rod is provided with a head 12 constituting a shoulder on the end of the handle 10 while the handle is provided with an inwardly projecting ring 13 bearing on the

rod and assisting in keeping the latter in central position. Above this ring is a socket 14 in which is located a hub 15 constituting a part of the guard-plate 16. This hub is hollow and through it is adapted to move a projection 17 on the backing-plate 18. This projection is hollow and internally screw-threaded to fit the screw on the rod 11. A blade 19 is provided with a perforation 20 through which the projection 17 extends. It will be seen that by this construction, the force to hold the backing-plate is exercised by the clamping means which, in the present form, is represented by the screw-threaded rod entering the screw-threaded projection 17. This clamping means is located on the opposite side of the blade from the backing-plate 18 and it exerts pressure on the backing-plate in such a manner as to most efficiently hold the blade in position on the guard-plate. By this construction also, there are no projecting parts on the backing-plate and nothing which is likely to be injured or to cause injury. The adjustment of the backing-plate is readily secured by turning the head 12, while the backing-plate is accurately located in central position by the bearing of the ring 13 on the rod 11, also by the hub 15 bearing on the projection 17.

The most successful safety razors which have heretofore been constructed are provided with resilient flexible blades. It is well known that the tempering of steel for a razor is carried on at a different temperature than tempering for springs, consequently if the resiliency of this blade is secured in its highest degree, it is at the expense of the temper of the blade for the purpose for which it is intended. Furthermore, by providing these normally flat blades and forcing them to a curved position, if they are not given a proper spring temper, they are likely to become set when kept clamped in the holder for long periods or they even may be broken when under the pressure necessary to hold them firmly in position. In order to overcome these difficulties and to generally improve articles of this class, I have formed the blade 19 of a comparatively rigid piece of steel of substantially uniform thickness having a permanent form. This form is preferably concavo-convex and the guard-plate and backing-plate are of corresponding shape so that the entire attention of the manufacturer can be given to producing the proper steel and the proper temper for the best razor

blade. As this blade does not have to be bent or flexed while setting it in the tool, it does not have to undergo the severe strains mentioned and does not have to be tempered in such a way as to in any degree destroy its value as a razor blade. Furthermore, it can be more easily honed and stropped. Razor blades of this character have usually been provided with one or at the most, two cutting edges, and when set in the handle have been held by pressure exerted between the backing-plate and the guard-plate and have been positively held by projections or the like at the two ends of the blade.

The positive means for holding the blade is necessarily relied upon to a great extent in securing it in position and it is of course impossible to hold a blade under the best conditions when the positive holding means are applied at two points only. Consequently, I have provided means whereby the positive action can be secured at three or more points thus holding the blade against movement in all directions. This result I have secured in connection with the use of an equal number of edges on the blade. I have placed a positively holding means at the ends of the several cutting edges and for three or more cutting edges, I have placed three or more holding means on the blade and have not only secured the results above mentioned but have provided a blade which can be used longer and consequently does not have to be changed as often as those which have heretofore been used.

The holding means to which I have referred consists in the form now being described, of three projections 21 and a guard-plate 16. The projections fit, when the parts are in position in notches 22 on the blade and similar notches 23 on the backing-plate. In the form illustrated in Figs. 6, 7 and 8, the parts are of a similar nature but the backing-plate itself is provided with a projection 24 which passes through an enlarged perforation in the blade and into a cavity 25 on the guard-plate. This assists in guiding the parts and as this shoulder and cavity are of the same general shape as the blade, in the present instance triangular, the same result as to positive holding of the parts in position is secured. In this instance the other parts are as above described but the ends of the cutting edges of the blade are rigidly connected together so as to more thoroughly keep the concavo-convex blade in a substantially rigid condition independently of the thickness of the material of which it is made. This is also true of the form shown in the next three figures.

In the form shown in Figs. 9, 10 and 11, instead of a rounded concavo-convex blade, backing-plate, and guard-plate, I have illustrated these elements as being provided with

a number of blade surfaces corresponding to the number of cutting edges of the blade. When three cutting edges are used there will be three planes intersecting in three lines, meeting preferably at the center of the knife and giving the general concavo-convex effect and the advantages thereof. In this form also, I have shown a guard-plate as provided with an upwardly extending flange 26 having a notch 27 therein. In this case, the blade is provided with a corresponding projection 28 entering the notch and affording the means for holding the parts positively in position. The backing-plate may also be constructed in the same shape as the blade.

It will be seen that when the principles thus set forth are carried out, whether in any one of the forms shown or otherwise, the objects mentioned above will be attained.

In Figs. 12 and 13 I have shown another form in which the backing-plate may be clamped to the main body of the structure. In this form, the clamping plate, which for convenience is illustrated as of the type of Fig. 6, is not provided with a perforation but is secured directly to a rod 111 which passes through the hollow handle 10 and has an enlargement at its outer end. This enlargement is provided with a cam groove 113 which is preferably helical and with a longitudinal slot 114 communicating with the end of the groove. In place of the head 12, shown in the other figures, a cap 120 is provided, this cap having a projection 121 adapted to enter the grooves 114 and 113 to clamp the parts in position in an obvious manner against the end of the handle 10. It will be observed that the objects above mentioned are attained with this form, at least, as efficiently as with the other forms illustrated.

While I have illustrated and described certain forms in which my invention may be embodied, it is to be understood that the same is not limited to these specific forms, as many modifications may be made by any person skilled in the art, within the scope of my invention as expressed in the claims.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is:—

1. In a safety razor, the combination of a hollow handle having a socket, a screw-threaded rod passing through said handle, a guard-plate, separate from the handle and having a hub cooperating with the socket therein and a backing-plate having an internally screw-threaded hollow projection passing into said socket and engaging the screw-threaded rod.

2. In a safety razor, the combination of a hollow handle having a socket, a screw-threaded rod passing through said handle, a guard-plate having a hollow hub projecting into the socket, and a backing-plate having

an internally screw-threaded projection passing into said hub and engaging the screw-threaded rod.

3. In a safety razor, the combination of a hollow handle having a socket, a screw-threaded rod passing through said handle, a guard-plate separable from the handle and having a hollow hub, a backing-plate having an internally screw-threaded hollow projection passing into said socket and hub and engaging the screw-threaded rod, and a rigid blade located on said plate, said blade having an opening for said projection.

4. In a safety razor, the combination of a hollow handle having a socket, a screw-threaded rod passing through said handle, a guard-plate separable from the handle and having a hollow hub, a backing-plate having an internally screw-threaded hollow projection passing into said socket and hub and engaging the screw-threaded rod, and a rigid blade located on said plate, said blade having an opening for said projection, said guard-plate having means located at more than two points for holding the blade in fixed position.

5. In a safety razor, the combination of a hollow handle, a screw-threaded rod therein, a guard-plate separate from the handle, a backing-plate having an internally screw-threaded hollow projection passing into the handle and engaging the screw-threaded rod, and a rigid blade having an opening for said projection, said guard-plate having means located at more than two points for holding the blade in fixed position, said means comprising a non-circular cavity fitting the projection on the backing-plate.

6. In a safety razor, the combination of a hollow handle, a rod passing therethrough, a guard-plate separable from the handle and having a hollow hub projecting into the handle, said rod entering said hub, and a backing-plate having an integral projection passing into said hub and removably secured to said rod.

7. In a safety razor, the combination of a handle, a guard-plate separate from the handle having a polygonal cavity, the handle having means for fixing the position of the guard-plate, and a backing-plate having a projection passing into the cavity and guided thereby.

8. In a safety razor, the combination of a handle, a guard-plate separate from the handle having a triangular cavity in its outer face, the handle having means for fixing the position of the guard-plate, and a backing-plate having a triangular projection passing into the cavity in the guard-plate and guided thereby to hold the blade in fixed position between said plates.

9. In a safety razor, the combination of a hollow handle, a rod therein, a guard-plate having a hollow hub projecting into the han-

dle, a backing-plate having a projection passing into the hub and secured to the rod, said backing-plate and guard-plate being of a general triangular form, and a blade having three cutting edges and three non-cutting edges, each of the latter being opposite one of the cutting edges, said blade being held between the guard-plate and the backing-plate.

10. In a safety razor, the combination of a guard-plate having a non-circular cavity therein, a backing-plate having a projection of the same shape as said cavity, and adapted to pass into the cavity to guide the guard-plate and backing-plate and prevent their turning with respect to each other, and means extending through the projection and the cavity for fastening the guard and backing plates together.

11. A safety razor having a rigid permanently shaped concavo-convex polygonal blade of substantially uniform thickness.

12. In a safety razor, the combination of a hollow handle, a rod therein, a guard-plate separable from the handle and having a hollow hub projecting into the handle, a backing-plate having a projection passing into the hub and secured to the rod, a permanently concavo-convex blade, the guard-plate and backing-plate being of the same shape as the blade, the backing-plate having a central projection having sides at an angle to each other, each side being parallel with a cutting edge of the blade, the guard-plate having a depression for receiving said projection and holding the parts in position.

13. In a razor, the combination of a handle, a guard-plate separable from the handle and having a triangular cavity in its outer side, a backing-plate having a triangular projection adapted to enter said cavity, said plates being concavo-convex, a cutting blade having a triangular perforation for receiving the projection on the backing-plate, said blade being permanently concavo-convex and having a cutting edge parallel with each of the edges of said perforation, the curvature of the blade being along lines parallel with the cutting edges whereby the blade is held in position on the guard and backing-plates partly by its own curvature.

14. As an article of manufacture, a safety razor having a permanently shaped polygonal concavo-convex cutting blade, a convex guard plate, and a concave backing plate of substantially the same shape as the blade, whereby the backing plate and guard plate may be clamped together upon the blade to hold it without bending it.

15. As an article of manufacture, a safety razor having a polygonal concavo-convex cutting blade, the curvature of the blade being on lines parallel with the cutting edges, a convex guard plate, and a concave backing plate of substantially the same shape as the

blade, whereby the blade may be held in position on the guard and backing plates partly by its own curvature, and said plates may be clamped together upon the blade to hold it  
 5 without bending it.

16. In a safety razor, the combination of a hollow handle having a socket, a rod passing through said handle, a guard plate separable from the handle and having a hub cooperating with the socket therein, a backing plate  
 10

having a projection passing into said socket, and means on said rod for securing the said parts together.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing  
 15 witnesses.

GEORGE P. TAYLOR.

Witnesses:

LOUIS W. SOUTHGATE,  
 C. F. WESSON.