No. 875,130. PATENTED DEC. 31, 1907.

P. K. STERN.

SAFETY RAZOR.

APPLICATION FILED OCT. 8, 1907.

2 SHEETS—SHEET 1.

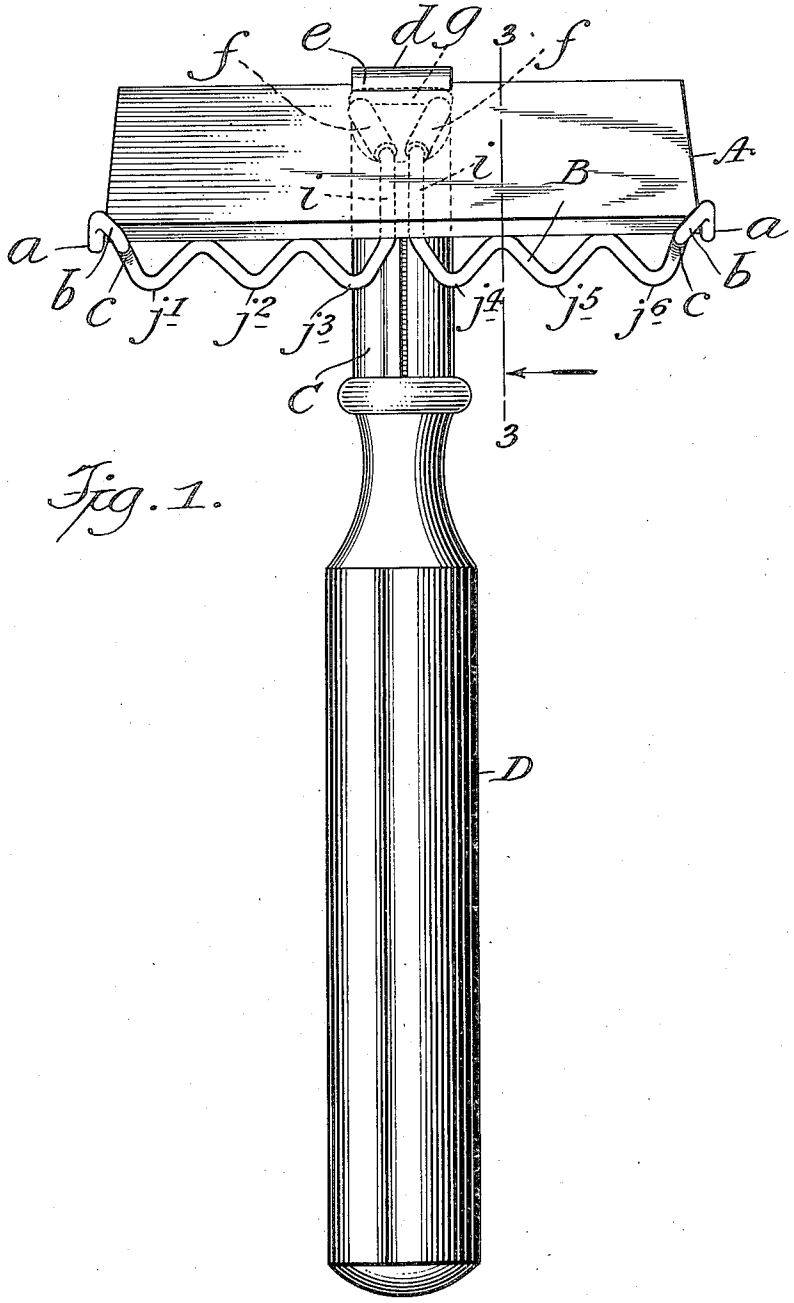


Fig. 1.

Witnesses:-

A. R. Stoppleman

M. E. Dooley

Inventor;

Philip K. Stern

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2 SHEETS—SHEET 2.

Fig. 2.

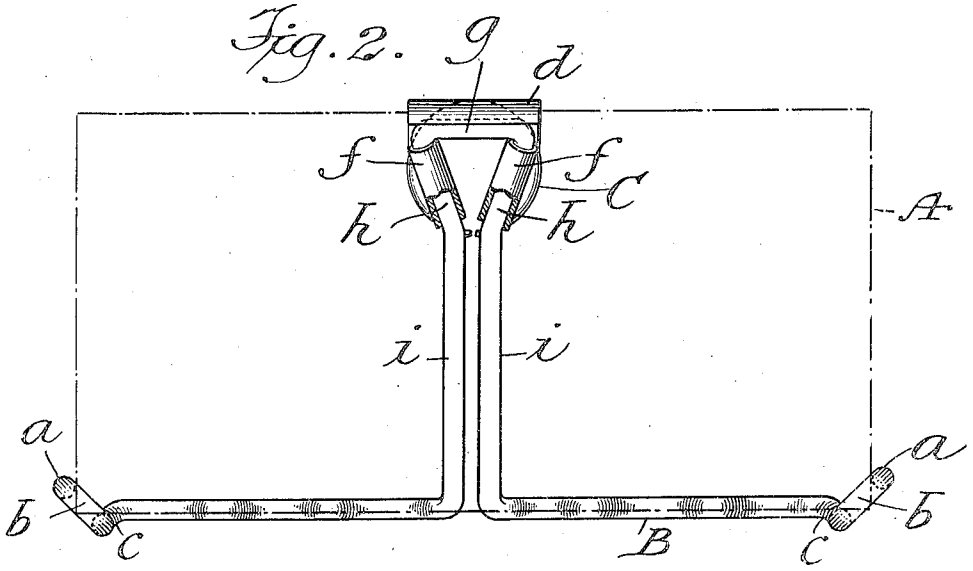


Fig. 3.

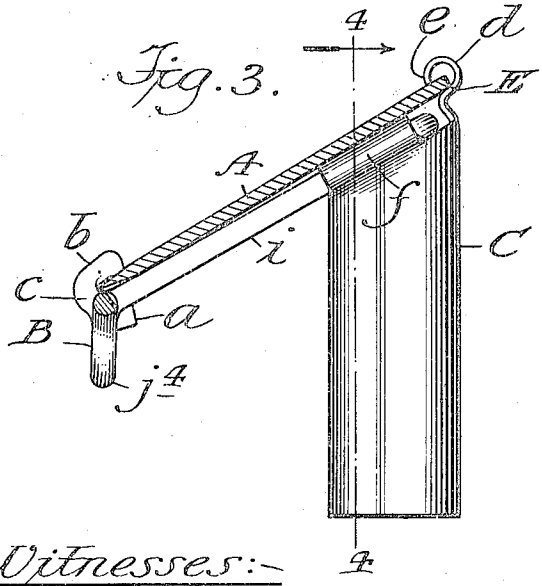
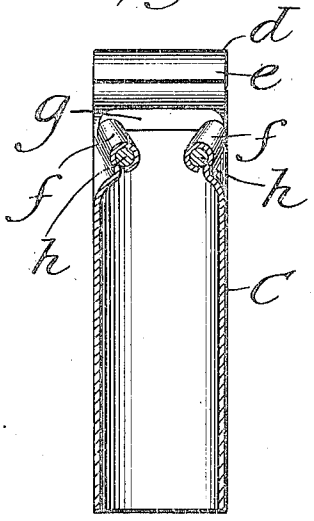


Fig. 4.



Witnesses:-

A. R. Appleman

M. E. Doody

Inventor

Philip K. Stern

UNITED STATES PATENT OFFICE.

PHILIP K. STERN, OF NEW YORK, N. Y.

SAFETY-RAZOR.

No. 875,130. Specification of Letters Patent. Patented Dec. 31, 1907.

Application filed October 8, 1907. Serial No. 396,368.

To all whom it may concern:

Be it known that I, PHILIP K. STERN, a citizen of the United States, residing in the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Safety-Razors, of which the following is a specification.

My invention in safety razors relates to certain new and useful improvements in that type of safety razors embodying a flat blade and a guard adapted to the edge of the blade to prevent the latter from accidentally abrading or cutting the skin.

It has particular reference to the means for retaining the blade in contact with the guard and also to the construction of the guard and frame for holding the blade, and the object of my invention is to provide a more simple arrangement of the guard and frame-work which carries the razor blade than any of those constructions at present in vogue and previous to my invention in so far as I am at present aware.

The features characteristic of my invention are depicted in the drawings hereto attached which form a part of this specification and are referred to in the descriptive matter thereof relative thereto and the distinct features of novelty are more particularly pointed out in the claims.

With reference to the drawings:—Figure 1 is a front elevational view of my improved safety razor illustrating certain parts of the frame-work in dotted lines. Fig. 2 is a top plan view of a still somewhat greater enlargement of the frame-work illustrating the blade in broken lines and that portion of the frame-work gripped by the ferrule in dotted lines. Fig. 3 is a vertical end elevational view of the ferrule and a section of the blade and frame-work taken on the lines 3—3 of Fig. 1, and Fig. 4 is a front vertical sectional elevational view of the ferrule taken on the lines 4—4 of Fig. 3 omitting the blade.

In the several figures, similar characters of reference are employed to designate like parts throughout where they occur, wherein,

A depicts the blade of my improved safety razor which is obtained from preferably a flat strip or ribbon of razor steel and of a thickness commonly referred to as wafer blades and B constitutes the guard therefor which is preferably formed into shape from a suitable length of sufficiently resilient wire to provide the several crimps and loops respectively; j', j^2, j^3, i, g, j^4, j^5, j^6 and a b c at one terminal and c b a at the opposite thereto of the guard B.

C indicates a split ferrule which will be hereinafter referred to as a socket. This is composed of a strip of spring sheet metal bent into the form of a cylinder into which the upper terminal of the handle D is thrust.

The principle of the invention is involved in the action of the crimped or sinuously formed metallic guard B provided with the terminal loops a b c and c b a for gripping the corners of the blade at the edge and opposite ends thereof, at diametrically opposite ends of the guard, together with a clip d extending from the ferrule or socket C, whereby the blade A is engaged and held in position by virtue of the yielding properties of the spring resulting from the crimped formation of the guard B, and the elasticity of the socket or ferrule C. In practice I prefer to construct the guard B of wire having a sufficient amount of spring to enable the terminal loops a b c and c b a to be disengaged from the corners of the blade so as to enable the blade to be removed while the guard B, in the meanwhile retains its form and such that upon the extension of the frame thereafter in the act of inserting the blade, there will be sufficient spring in the wire and ferrule C to force the abutments a—a at the opposite terminals of the guard into engagement with the ends of the blade A, while at the same time, the abutments will force the blade by its edge against the inclined surface E of the clip d thereby firmly binding the blade A against lateral or transverse motion due to strains imposed upon the same in the act of shaving.

As will be observed more particularly with reference to Fig. 2 the opposite terminals of the guard B, where the corners of the blade are engaged by the loops a b c and c b a, the abutments a and a respectively forming parts of these loops engage the ends of the blade while the portions b and b respectively engage the upper surface of the blade to prevent lifting and the remaining portions of the loops c and c constitute abutments which provide for the backing of the blade against the clip d as aforesaid, while the turned over portion e of the clip d holds the blade down in contact with the frame-work, thus firmly securing and maintaining the position of the blade A in the frame or holder.

The crimped portions extending upward against the edge of the blade between the portions j', j^2, and j^3, and j^4, and j^5, and j^6 re-

spectively are arranged so as to lie in a plane substantially parallel to the ferrule or socket C, thus making an angle with the blade as illustrated in Fig. 3, and the portions *i*—*i* of the frame or guard are secured by their angular limbs *h*—*h* to the clips *f*—*f* respectively by bending the latter securely around them. The clips *f*—*f* are turned over and inwardly at the upper edge of the ferrule C on a line at an angle of about 30 degrees from the horizontal and together with the limbs *i*—*i* with the guard B effect the inclination of the blade toward the handle whereby the angular position of the blade against the surface to be shaved is insured.

The frame consisting of the guard B and socket C as will be observed by the foregoing description possesses sufficient flexibility to not only provide for the insertion and withdrawal of the blade A but in addition possesses a sufficient amount of elasticity to clamp a slightly smaller blade or one in excess of the normal. This desideratum is of particular importance when dull blades are to be exchanged for others which may vary somewhat in dimensions.

For compactness particularly when my improved safety razor is to be carried in the pocket, I detach the handle D from the socket C and dispose the same longitudinally of the blade A at the underneath side thereof against the limbs *i*—*i* of the guard B, whereupon the same may be placed in a compact retaining case or receptacle.

It will be observed in Figs. 2 and 3, that the cutting edge of the blade extends somewhat over the center of the cylindrical surface of the wire of which the guard B is composed at the summit of the crimped portions.

Having fully described my invention I claim as new and desire to secure by Letters Patent of the United States.

1. In a safety razor, a guard formed of crimped wire provided with terminal loops adapted to engage the corners of the blade at the cutting edge thereof, and the intermediate portion of the guard being bent backwardly from the edge of the blade in the manner of a loop, and a ferrule provided with a hooked extension clamped to the loop of said guard.

2. In a safety razor, a frame consisting of a split ferrule, and a wire guard secured thereto and carried thereby, said wire guard being bent intermediately in the manner of a loop and laterally therefrom along the edge of the blade in both directions from the center thereof into a series of crimps, and the terminals of said guard being bent in the manner of loops and adapted to grip the corners of the blade at its cutting edge, and a hooked extension carried by the ferrule for gripping the blade intermediately at the opposite edge, and a handle provided with a neck and shoulder for the split ferrule

3. In a safety razor a yielding frame consisting of a crimped wire guard and a split ferrule secured thereto, said guard having an intermediate loop secured to the ferrule and a plurality of crimped portions extending in both directions along the edge of the blade and terminal loops formed at the extremities of the guard for gripping the corners of the blade at its cutting edge and a hooked extension formed upon a terminal of the ferrule for gripping the back of the blade intermediately.

4. In a safety razor a frame consisting of a ferrule, provided with a handle at one extremity, and a crimped wire guard at the opposite extremity thereof, a clip extending from the ferrule to grip the back of the razor blade, and a pair of intermediately situated crimped arms extending from the guard in opposite directions along the edge of the blade provided with terminal loops for gripping the corners of the blade at its cutting edge.

5. In a safety razor, a frame, provided with a handle connection, consisting of a blank of sheet metal bent into the form of a tube provided with a pair of securing clips and a crimped wire guard secured to said clips, and a third clip intermediately situated with respect to the former clips, adapted to engage the back of the razor blade intermediately, said wire guard being provided with a pair of crimped arms extending in opposite directions along the edge of the blade, having the crimped portions of said guard in juxtaposition to the edge of the said blade, and a pair of oppositely situated loops formed on the respective terminals of said crimped arms, adapted to engage the corners of the blades at its cutting edge.

6. In a safety razor, a frame having a split ferrule adapted to yieldingly grip the razor handle, a crimped wire frame secured to the ferrule, provided with terminal loops to engage the corners of the razor blade at its cutting edge, and an intermediate loop extending from the ferrule, said loop co-acting with the former loops to yieldingly grip the blade.

7. In a safety razor a crimped wire guard provided with terminal loops, said loops having abutments adapted to engage the corners of the blade at respectively the ends and the cutting edge thereof and the intermediate portion of said guard being bent backwardly from the edge of the blade in the manner of a loop and a ferrule provided with a pair of securing clips secured to the said loop of the said guard and a rear abutment extending from the ferrule adapted to engage the back of the blade.

8. In the herein described invention the crimped guard and ferrule carried thereby, provided with oppositely situated retaining loops formed integral with the guard and adapted to retain the blade relative to the

crimps and abutments formed in the loops adapted to co-act with the blade and restrict the same against respectively transverse and lateral movement and an extension clip from the ferrule adapted to engage the rear and upper edge of the blade.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

PHILIP K. STERN.

Witnesses:
LILLIAN E. STERN,
JOHN J. CLANCY.