H. T. BAKER.

METHOD OF INCREASING THE LONGEVITY OF THE CUTTING EDGE OF STEEL CUTTING INSTRUMENTS.

APPLICATION FILED MAR. 22, 1918.

1,277,824. Patented Sept. 3, 1918.

Fig. 1

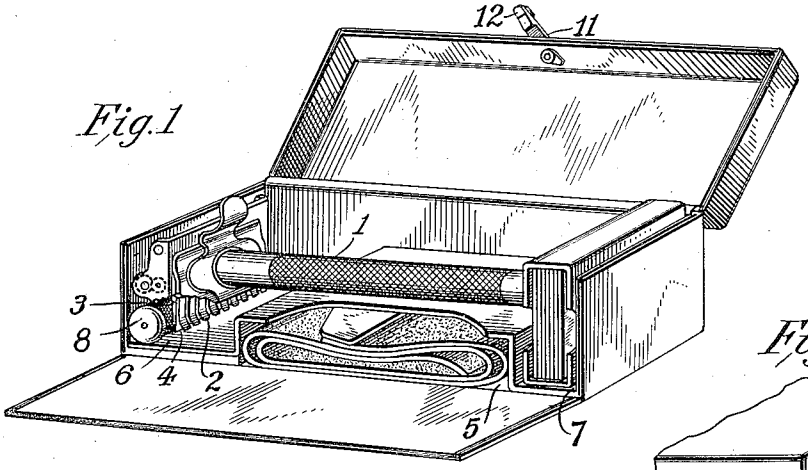
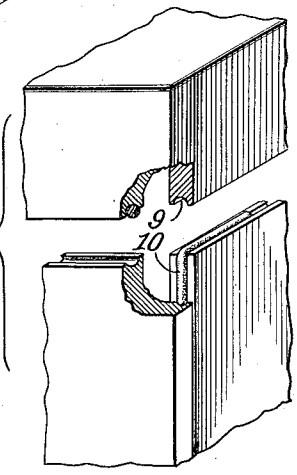


Fig. 3



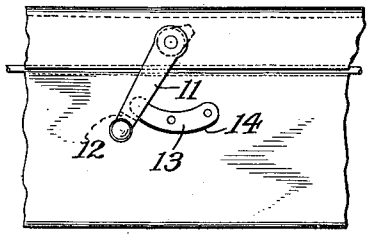


Fig. 6

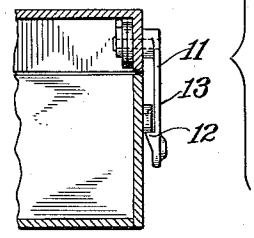


Fig. 7



Fig. 2

Fig. 5

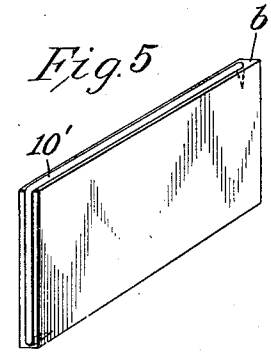
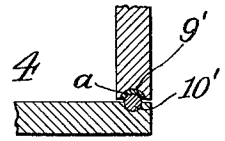


Fig. 4



Inventor:
Henry T. Baker,
By his Attorneys,
Merwin & Swearton.

UNITED STATES PATENT OFFICE.

HENRY T. BAKER, OF NORFOLK, VIRGINIA

METHOD OF INCREASING THE LONGEVITY OF THE CUTTING EDGE OF STEEL CUTTING INSTRUMENTS.

1,277,824. Specification of Letters Patent. Patented Sept. 3, 1918.

Application filed March 22, 1918. Serial No. 224,063.

To all whom it may concern:

Be it known that I, HENRY T. BAKER, a citizen of the United States, residing in Norfolk, county of Norfolk, and State of Virginia, have invented certain new and useful Improvements in Methods of Increasing the Longevity of the Cutting Edge of Steel Cutting Instruments, of which the following is a specification.

This invention relates to the protection and preservation of cutting edges of tempered steel instruments and in particular to what are well known as safety-razor blades. It has for its particular objects the efficacious and economical protection and preservation of the cutting edges thereof, preferably without necessitating any material change in the character or shape of the present case or container therefor.

My invention is fully set forth and described in the accompanying specification and drawings forming a part thereof, in which—

Figure 1 is a longitudinal perspective view of a case fitted with a safety razor and also a package of extra blades therefor;

Fig. 2 is a longitudinal elevation of the absorbent-containing cartridge, isolated;

Fig. 3 is a fragmentary perspective view, partially in section, showing the tongue and groove joint for sealing the case;

Fig. 4 is a detail fragmentary section showing a modified form of tongue and groove joint between the body of the container and the hinged flaps thereof;

Fig. 5 is a perspective view of a modified form of tongue;

Fig. 6 is an elevation, and

Fig. 7 is a cross section of a fragment of the case showing the locking member.

Referring to the drawings and the construction shown therein, the reference numeral 1 designates a handle of the holder of the safety razor, 2 the safety guard, 3 the blade proper and 4 the cutting edge of said blade. Said razor is packed in a casing having a central compartment 5 for a strop, one end compartment 6 for the blade-carrying head of the razor and another end compartment 7 for a package of extra blades. An absorbent-containing cartridge 8, preferably elongated and tubular, and also preferably formed of reticulated fabric, is adapted to lie immediately beneath and in alinement with the cutting edge of said blade. Said cartridge is filled with a suitable hygroscopic material, preferably calcium chlorid, though other well known hygroscopic agents may be substituted therefor, even if the same are liquid, such for example as sulfuric acid, provided it is suitably confined against spilling, as for example in a receptacle corresponding to a miniature non-spillable or non-upsettable ink-well of the well known type. Such liquid is equally as serviceable as is the aforesaid solid hygroscopic substance.

The edges of the body of the container are preferably provided with a groove 9 and corresponding tongue, rib or bead 10 of rubber (Fig. 3) or of metal (Fig. 4), adapted to register therewith, in order to make a water and air tight joint between the flaps and the body of the case when the said flaps are shut, thereby preventing both the access of air and moisture into the container. A locking member, consisting of an arm 11, having an inwardly projecting offset or lug 12 and a coöperating member 13 having a cam-shaped face 14 which is adapted to engage the upper face of said lug, serves to securely lock said case and prevent accidental opening of the same.

In Fig. 3 the tongue and groove construction shown consists of a rubber cord 10 which is adapted to snugly fit in the groove 9, this construction being one convenient form of sealing the joints in the case. Another form of construction of said tongue and groove joint is that shown in Fig. 4 wherein a tongue 10′ of wire is adapted to snugly fit in a groove 9′ which is lined with rubber or felt packing *a*. In Fig. 5 is shown a convenient means for retaining the metallic wire tongue 10′ when such construction is used, the same being accomplished merely by driving the pointed ends of the wire into the sides of the case at any desired point along the edge of the same. The uncovered portion of the edge represented by the letter *b* in Fig. 5 corresponds to that portion of the edge which would be covered by the rear edge of the cover, which latter edge could be provided with a suitable tongue, if desired, though obviously, the said edge may be completely spanned by said tongue if desired.

In order to effectively prevent the thin

wafer-like blades of the safety razor from becoming dull upon standing, I have discovered that it is essential, even though the same may be thoroughly dried with absorbent paper or towels, to provide means for preventing the deposit thereon or the contact therewith, of moisture such as is normally contained in the air, particularly when the humidity is above normal. The reason for this is, because the cutting edge of such blades, if microscopically examined, will be found to roughly correspond to the serrated edge of a saw, and said edge will therefore readily receive and retain fine particles of moisture deposited thereon resulting in a rapid oxidation or rusting of the steel, with the accretion of material on the cutting edge, and particularly in the recesses or cavities between the adjacent points of the teeth. The ordinary razor of the old-fashioned type when stropped on a partly oiled or coated strop is not only free from such corroding particles, with the consequent production of a clean face upon the metal forming the cutting edge, but a thin film of greasy material is deposited upon the said teeth and this prevents partially the corrosion or rusting of the same for short periods. In the case of safety razors however, and particularly where the same are used by troopers either in trenches or on ship board, it is not only extremely difficult to thoroughly dry the instrument and blades before packing the same, but often the atmosphere is so humid that when packed in the ordinary case, the blade which is secured in the holder, soon has its cutting edge so oxidized or rusted that the desirable cutting qualities thereof are seriously impaired. While the reserve stock of blades are themselves preserved against the effect of the atmosphere, being incased in wax paper which are in turn sealed in small envelops, it is often difficult to obtain the necessary extra sets of these blades, so that it is customary with troopers, campers and others to endeavor to utilize a single blade for much longer periods than is ordinarily recommended or advisable, with the consequence that shaving therewith is often far from being an anticipated pleasure. By providing an air-tight container containing a hygroscopic absorbent in communication with the compartment holding the naked or used blade, and preferably having such absorbent in close proximity to the exposed cutting edge of such blade, it is possible to greatly prolong the life of such blades and render the sharpening of the same unnecessary except at much greater intervals, thus making the use thereof a pleasure rather than a burden to be shirked.

While my invention is particularly adapted to safety razor blades it may also be employed with almost equal advantage in field surgical kits for not only the preservation of cutting edges of surgical instruments and the like but also to prevent contamination of such cutting edges by the germ-laden atmosphere, particularly, as when the cutting edge of such instrument is kept entirely free from moisture it is almost impossible for germs to propagate thereon.

As is customary, before packing the razor fitted with a blade in the case, the blade immediately after using the same is cleaned as thoroughly as possible and preferably at least roughly dried.

A blade treated in accordance with my herein described invention will, it is found from actual experience preserve its cutting edge under humid conditions particularly for from five to ten times as long as a safety razor blade mounted in a holder or packed in the ordinary case in the usual manner.

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

1. The method of preserving the cutting edge of a tempered steel blade, which consists in first substantially drying the same and then subjecting it to the action of hygroscopic material while confined in a substantially air-tight container.

2. The combination comprising a container for a blade of a safety razor and a perforated cartridge containing hygroscopic material held in proximity to the cutting edge of such a blade packed in said container.

3. The combination comprising an air-tight container for a blade of a safety razor, a cartridge for hygroscopic material constructed to effectively expose the same and arranged to fit therein, and means for holding the said cartridge adjacent such a blade.

4. An article for use with a safety razor blade to preserve the edge of the blade, comprising a holder for hygroscopic material of a size to fit within the razor-box adjacent the razor blade and constructed to effectively expose such hygroscopic material.

In witness whereof, I have hereunto set my hand at New York, county and State of New York, this 20th day of March, 1918.

HENRY T. BAKER.