April 25, 1944. C. G. BARRETT 2,347,246

RAZOR BLADE SHARPENER

Filed Sept. 17, 1941

Fig. 1.

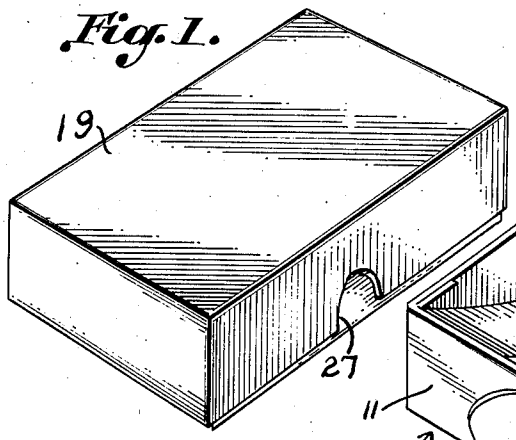


Fig. 2.

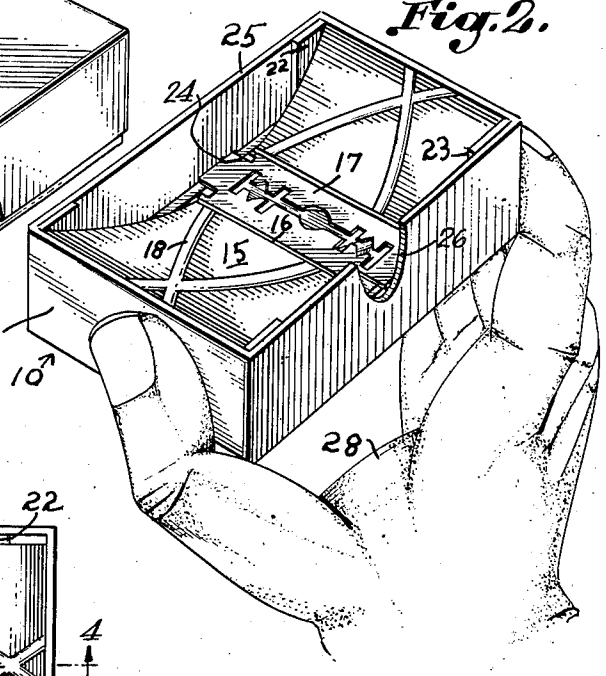


Fig. 3.

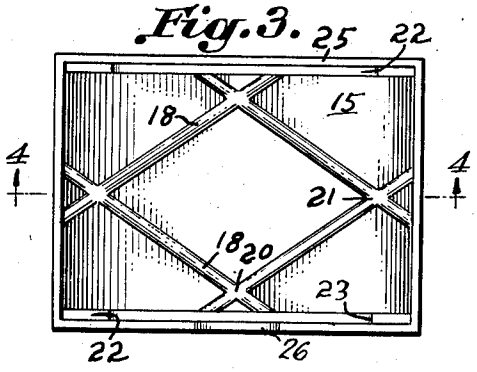


Fig. 4.

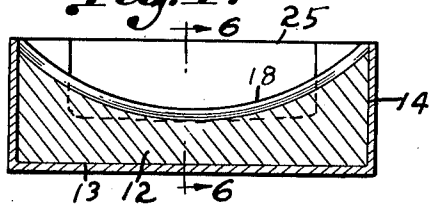


Fig. 5.

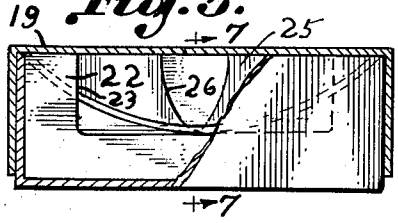


Fig. 6.

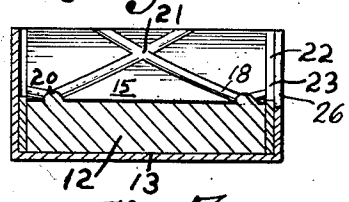
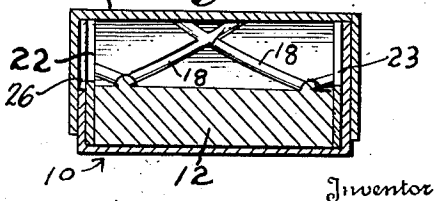


Fig. 7.



Inventor

CHARLES G. BARRETT.

By Miller & Miller

Attorneys

Patented Apr. 25, 1944 2,347,246

UNITED STATES PATENT OFFICE

2,347,246

RAZOR BLADE SHARPENER

Charles G. Barrett, Alexandria, Va.

Application September 17, 1941, Serial No. 411,239

9 Claims. (Cl. 51—211.1)

This invention relates to a razor blade sharpener or honer, and has for an object to provide improved razor blade sharpeners which will be simple and inexpensive of construction and will be easy and certain of operation.

A further object of this invention is to provide a razor blade honer which may be made of cast or pressed metal such as steel, but may likewise be made of any other suitable material such as brass or composition of matter, one well known composition of matter serviceable for this purpose being a phenolic condensation product commercially known as Bakelite. Likewise any other suitable material may be used which is capable of being made into the particular form or outline of this invention and which may be provided with a smooth surface.

Many razor blade honers and sharpeners are already well known along the general line of this invention including the use of the inside of a drinking glass, but in all the prior known forms the principal defect present is that their successful operation is too dependent upon the personal element of the operator. The edges of a double-edged razor blade for which this invention is intended are at a double angle to the plane of the body of the blade, and it is therefore necessary when honing or sharpening the edge of the blade that the blade be held at the proper angle to the sharpening surface within very small limits.

When using the form of power known sharpener typified by the inside of a drinking glass, the finger of the operator is usually placed on one surface of the blade as the blade is moved back and forth over the sharpening surface. When so operated, it is necessary that just the proper amount of pressure be placed on the top of the blade in order to bend the blade to the proper curvature to make the edges of the blade to come into proper contact with the sharpening surface. With too little pressure, there will be no sharpening effect. With too great pressure, the blade wil be bent so much that the bevel at the edges will cause the extreme edges to be bent away from contact with the sharpening surface thus likewise producing no sharpening effect.

With this invention, the sharpening effect takes place at four constantly changing points on a double-edged razor blade, two points on each edge, and the weight of the razor blade is relied on for keeping the blade at just the proper angle and just the proper pressure on these four points so as to produce the best sharpening effect.

This sharpener represents the introduction of a basically new principle and design into the practice or "art" of maintaining a continuously sharp and effective cutting edge on the conventional type of double-edge safety razor blade. Omitting reference to the various types of more or less complicated "stropping" devices, the conventional type of hone sharpener heretofore available has consisted of a one-piece molded abrasive formed with a more or less suitably curved plain concave surface over which the blade is moved in varying and irregular paths as determined by the pressure and push of the forefinger on the blade. Obviously, the travel of the blade over the sharpening surface will never repeat itself exactly, and the pressure of the forefinger on the blade will vary as between different individuals and will also vary from day to day for the same individual, resulting in a continuously varying bending effect on the blade and a correspondingly continuously varying sharpening angle for the cutting edge of the blade with respect to the surface of the sharpener.

With a thing so delicate as the edge of a razor blade, it is definitely necessary that these variables be eliminated, and that the blade in its travel over the sharpener be confined to a fixed and pre-determined path which must positively repeat itself at every stroke, and that the pressure applied against the sharpening surface shall also be pre-determined and of just the correct value to give the desired sharpening effect. When so arranged, the sharpening process becomes semi-automatic and positive in its results, merely depending upon the hand to impart motion to the sharpener and blade. These desirable and necessary actions are obtained by the simple expedients of using a suitably designed box or container to limit and define the path of the blade with respect to the sharpener, and by so designing the surface of the sharpener in respect to its contact with the cutting edge of the blade that the weight of the blade automatically and necessarily creates the proper unit pressure of blade on sharpener at points of contact.

With the foregoing and other objects in view, this invention comprises the combination, construction and arrangement of parts hereinafter claimed, disclosed and illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of the sharpener within the container;

Fig. 2 is a perspective view of the sharpener with the blade thereon in operative sharpening position;

Fig. 3 is a top plan view of the sharpener of this invention;

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

Fig. 5 is a partly broken away view of the housing and cover in which the sharpener is kept;

Fig. 6 is a sectional view on the line 6—6 of Fig. 4; and

Fig. 7 is a sectional view on the line 7—7 of Fig. 5.

There is shown at 10 the razor sharpener of this invention which consists of a box or housing 11 to which may be applied a cover 19 for closing the same and keeping dust or grit from accumulating on the sharpener block 12. This sharpener block 12 is the essence of this invention and may be made of a suitable abrasive material, cast, molded, shaped or machined to the shape and form shown, depending upon the material of which it is to be made.

This block 12 has a flat rectangular bottom 13 and flat rectangular ends 14 so shaped that they fit within the bottom and ends of the box 11. The top surface 15 is in the form of a section of a cylinder of suitable radius, the width of the block being just equal to or very slightly greater than the cutting edge 16 of a conventional sized double-edged razor blade 17, which is to be sharpened thereon.

Upstanding from this concave surface 15 are a plurality of ridges 18 forming a diamond-shaped outline, symmetrically placed with respect to the sides and ends of the block 10. As will be seen, the ridges 18 cross each other at points 20 and 21, the points 20 being in the center line between the ends 14 of the block and very close to the side edges thereof, while the points 21 are in the center line between the side edges of the block and close to the ends 14 of the block.

The housing 11 consists of a small box suitably sized to fit about the block along the bottom and ends thereof, but slightly wider than the block, by the thickness of two false sides 22. Each of these false sides 22 are cut away as shown in Figs. 2 and 5, so as to provide stops 23 cooperating with the notched necks 24 of the razor blade 17, the thickness of these false sides being substantially equal to or somewhat less than the distance of the notched necks 24 extending beyond the end points of the razor edges 16.

One of the sides 25 of the housing 11 is provided with a centrally located finger notch 26 extending to just below the center point of the block 12. The cover 19 is provided with oppositely disposed shallow finger notches 27 to facilitate removing the cover 19 from the housing or box 11.

In operation, the cover 19 is removed from the box 11 in order to use the sharpener which, however, is not removed but is left within the frame or box 11. Then, holding the sharpener in the box with the cover removed in the palm of the left hand with the finger notch 26 to the right, grasp the blade at the end between thumb and forefinger of the right hand and lay the blade 17 across the sharpener ridges 18 in the position shown in Fig. 2, using the forefinger at the finger or thumb notch 26 to ease the blade 17 at the right end gently down to the surface of the ridges 18 of the sharpener block 12. Then grasp the sharpener box between the forefinger and thumb of the right hand 28, as shown in Fig. 2, and shake the sharpener toward and from the body just vigorously enough to make the blade travel from end to end of its stroke as determined by blade stops 23 at the sides of the box for ten or a dozen full strokes and finish with a similar number of short strokes, slowly working the blade from end to end of the sharpener by suitably inclining the sharpener toward and away from the body while continuing to shake the sharpener in short and fairly rapid movements. Then transfer the sharpener to the left hand, removing blade 17 by using the forefinger of the right hand at the finger notch 26 to raise the blade from the surface of the sharpener sufficiently to grasp it between the thumb and forefinger. Then, reverse the blade and repeat the sharpening operation on the other side of the blade edges in the same manner as described above.

It will be apparent that the sharpening effect will take place on the blade edges at constantly changing point contacts between the blade edges 16 and the ridges 18 as the blade 17 slides back and forth thereover.

This action applied to a new blade will appreciably improve its shaving qualities and, when repeated about every third day, will prolong the life of a blade from two to three months. After using, the cover 19 should be replaced on the box to protect the sharpening surface from dust and dirt.

The novel features and the operation of this device will be apparent from the foregoing description. While the device has been shown and the structure described in detail, it is obvious that this invention is not to be considered limited to the exact form disclosed, and that changes may be made therein within the scope of what is claimed without departing from the spirit of the invention.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, a plurality of criss-crossed angular ridges upstanding from said concave surface to provide constantly changing point contact surfaces as the blade is moved parallel to the longitudinal sides, means for keeping the razor blade in proper angular relation to the contact point sharpening surfaces of said ridges, said means comprising a housing in which said sharpener block is retained, said sharpener block being of a width substantially equal to the length of the blade edges, and false sides in said framework between the sides of said sharpening block and the sides of said housing, said false sides being of a thickness not greater than the length of a razor blade neck beyond the blade edges, said false sides being cut away to a point slightly distant from the ends of the sharpener block to provide stops cooperating with necks of the blade to limit the travel of the blade over the sharpening surfaces.

2. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, a plurality of criss-crossed angular ridges upstanding from said concave surface to provide constantly changing point contact surfaces as the blade is moved parallel to the longitudinal sides, means for keeping the razor blade in proper angular relation to the contact point sharpening surfaces of said ridges, said means comprising a housing in which said sharpener block is retained, said sharpener block being of a width substantially equal to the length of the blade edges,

and false sides in said framework between the sides of said sharpening block and the sides of said housing, said false sides being of a thickness not greater than the length of a razor blade neck beyond the blade edges, said false sides being cut away to a point slightly distant from the ends of the sharpener block to provide stops cooperating with necks of the blade to limit the travel of the blade over the sharpening surfaces, one of said sides having a finger-notch extending therein adjacent its center permitting proper placement and removal of the blade from the sharpening surface.

3. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, a plurality of criss-crossed angular continuous ridges upstanding from said concave surface to provide constantly changing point contact surfaces arranged to form progressively and repetitiously, continuous straight line contacts at each point of blade support as the blade is moved parallel to the longitudinal sides, guide means for keeping the razor blade in proper angular relation to the contact point sharpening surfaces of said ridges, and stop means cooperating with blade necks to limit the travel of the blade.

4. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, a plurality of angular continuous ridges upstanding from said concave surface to provide constantly changing point contact surfaces arranged to form progressively and repetitiously, continuous straight line contacts at each point of blade support as the blade is moved parallel to the longitudinal sides, guide means for keeping the razor blade in proper angular relation to the contact point sharpening surfaces of said ridges, and stop means cooperating with blade necks to limit the travel of the blade.

5. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, a plurality of angular ridges upstanding from said concave surface to provide constantly changing point contact surfaces as the blade is moved parallel to the longitudinal sides, and guide means cooperating with the ends of blade necks to guide the blade in its travel for keeping the razor blade in proper angular relation to the contact point sharpening surfaces of said ridges.

6. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, a plurality of angular ridges upstanding from said concave surface to provide constantly changing point contact surfaces as the blade is moved parallel to the longitudinal sides, guide means cooperating with the ends of blade necks to guide the blade in its travel for keeping the razor blade in proper angular relation to the contact point sharpening surfaces of said ridges, and stop means cooperating with the sides of the blade necks to limit the travel of the blade.

7. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, and a plurality of criss-crossed angular continuous ridges upstanding from said concave surface to form a single diamond shaped sharpening surface whose diagonals are substantially equal respectively to the length of the stroke of the blade and the width of the cutting edge of the blade.

8. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, a plurality of criss-crossed angular continuous ridges upstanding from said concave surface to form a single diamond shaped sharpening surface whose diagonals are substantially equal respectively to the length of the stroke of the blade and the width of the cutting edge of the blade, and stop means limiting the stroke of the blade.

9. A razor blade sharpener or honer comprising a substantially rectangular member adapted to be held in the hand of an operator, said rectangular member having an upper concave surface, a plurality of criss-crossed angular continuous ridges upstanding from said concave surface to form a single diamond shaped sharpening surface whose diagonals are substantially equal respectively to the length of the stroke of the blade and the width of the cutting edge of the blade, stop means limiting the stroke of the blade, and guide means maintaining the lateral position of the blade with respect to the sharpener.

CHARLES G. BARRETT.