June 7, 1932. W. BARSCH 1,862,457

DEVICE FOR SHARPENING THE BLADES OF SAFETY RAZORS

Filed July 1, 1929

Fig. 1.

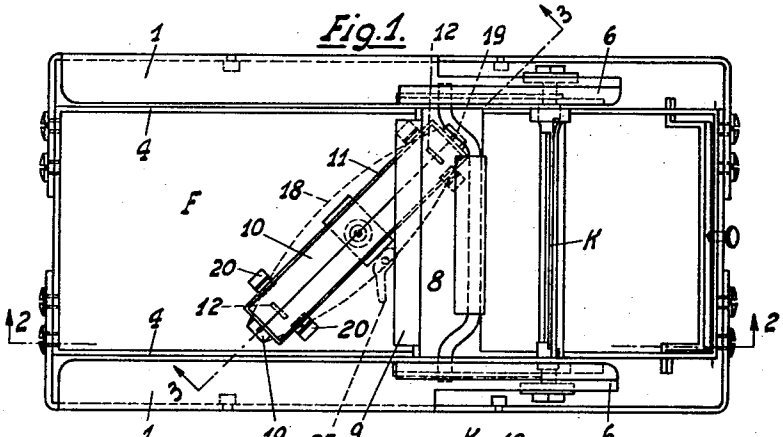


Fig. 2.

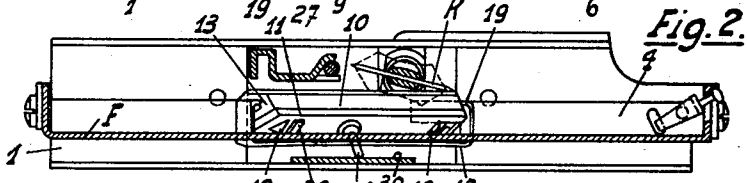


Fig. 3.

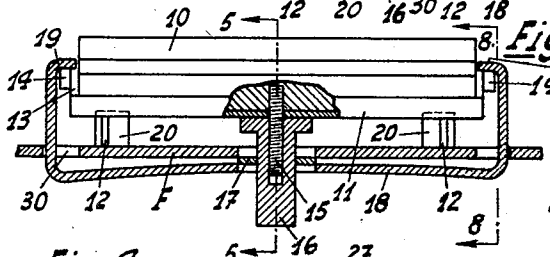


Fig. 5.

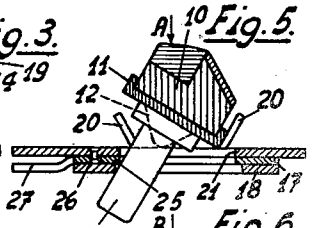


Fig. 6.

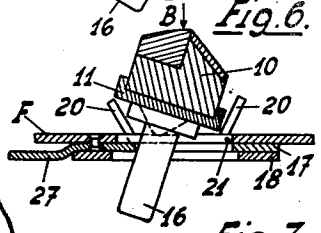


Fig. 4.

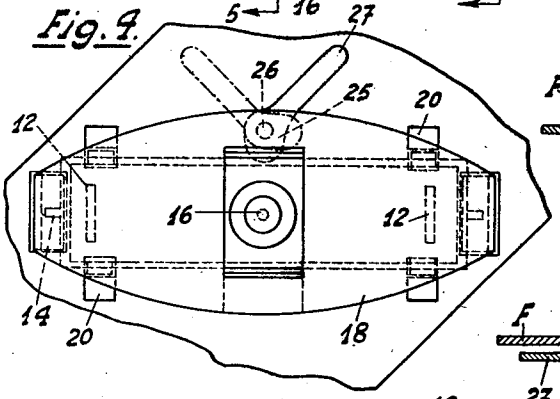


Fig. 7.

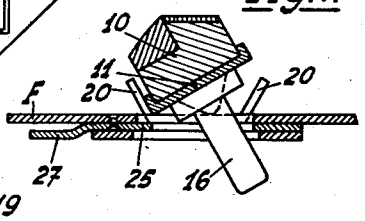
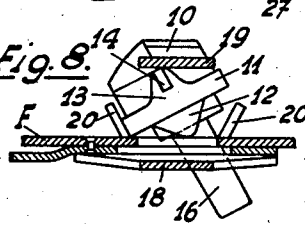


Fig. 8.



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UNITED STATES PATENT OFFICE

WILHELM BARSCH, OF PARIS, FRANCE

DEVICE FOR SHARPENING THE BLADES OF SAFETY RAZORS

Application filed July 1, 1929, Serial No. 375,302, and in Germany July 14, 1928.

The present invention relates to a device for sharpening the blades of safety razors such as described in the specification of U. S. patent application Serial Number 206,095 filed July 15, 1927, said device comprising a frame forming guides, a carriage slidably arranged therein, a blade holder provided with means such as friction discs and rotatably arranged on the carriage and engaging the guides, or any other similar device and provided with means for turning the blade at the ends of its strokes.

The invention relates more particularly to devices of the type aforesaid in which the blade is turned or tilted after each stroke, so as to bring successively each side of each cutting edge in contact with a sharpening body. Still more particularly the invention relates to such devices of the type aforesaid in which any one of several faces of the sharpening body can be brought into working position.

The principal object of the invention is to provide improved means to mount the sharpening body in the frame and in proper relation to the carriage in such a manner that any of its working faces may be conveniently and accurately set to the working position and securely and automatically retained in such a position.

Another object of the invention is to provide means whereby a convex sharpening face of the sharpening body can be set in any angular position so that the blade edge may pass along any generating line of that face.

With the above and other objects in view the invention resides in the parts and in the combination of parts hereafter described and particularly set forth in the claims appended hereto.

In the drawing in which I have shown by way of example an embodiment of my invention;

Fig. 1 is a plan view of a sharpening device for safety razor blades;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a section on line 3—3 of Fig. 1;

Fig. 4 is a bottom view of the parts shown in Fig. 3;

Figs. 5–7 are sections along line 5—5 of Fig. 3 showing different working positions of the sharpening body;

Fig. 8 is a section on line 8—8 of Fig. 3.

In the device shown in the drawing, 1 indicates two longitudinal side frames of U-shaped cross-section. Between these frames 1 and fastened thereto at each end extends a plate F with raised side portions 4, which serve as guides for slides 6 of a movable carriage 8. The two slides 6 are rigidly connected with each other at the top by means of a cross piece 9 and at the bottom by a bridge 30. The cross piece 9 is shaped to serve as a handle for moving the carriage 8 to and fro. The frame 1, the carriage 8, the blade-holder mounted on said carriage, the means to control said blade-holder and therewith the blades K to be sharpened on reciprocating the carriage are known and therefore are not particularly described hereinafter. On the fixed plate F is mounted the sharpening body 10 in such a position with reference to the carriage 8 which slides in the guides of the frame 1, that the edge of the blade K is drawn back and forth across the upper face of the sharpening body 10. The latter is of approximately prismatic form and is composed of parts consisting of different kinds of sharpening material, one part being suitable for instance for honing the blade K and the other part for stropping said blade. The body 10 is rigidly mounted upon a supporting plate 11 by means of a screw 15 and a nut 16 which protrudes downward through an opening 21 in the plate F. The nut 16 serves as a handle for setting the sharpening body 10 as will be described hereafter. Near each end, the plate 11 has two flat downward projections 12 of approximately triangular shape by which the plate 11 rests on the plate F. The plate 11 is also provided with a flange projecting upwardly and having extensions 13 at each end. Projections 14 extend outwardly from these portions 13. The flange of plate 11 serves in connection with screw 15 and nut 16 to hold the sharpening body 10 accurately in place upon the plate 11. The sharpening body 10 may be easily removed from plate 11 by simply unscrewing nut 16.

A flat blade spring 18 of slightly convex shape abuts with its central portion against spacing plates 17 secured at 21 to the bottom side of plate F. The end pieces of the spring 18 are bent upwardly at right angles to the central portion, the bent-up portions pass through openings 30 in the plate F and then inwardly at 19 to engage the pins 14 from above. By the action of said spring 18 the plate 11 with the sharpening body 10 is pressed downward on to the plate F.

On both sides of the sharpening body 10 and near the ends thereof the plate F has abutments 20 which may be conveniently cut out in the plate F and bent up at an oblique angle. These abutments 20 serve to guide the sharpening body when it is tilted from one position to the other, as will be described presently. When it is desired to move the sharpening body 10 from the position shown in Fig. 5 to that shown in Fig. 7, the operator pushes the carriage 8 to either end of the frame 1, so that the blade K will entirely clear the sharpening face of the body 10 over which it has just passed. He then swings handle 16 towards the vertical position (towards the right in Fig. 5). The projections 12 will slide on plate F, the plate 11 will be guided in its upward movement by abutments 20, while the pressure exerted on the pins 14 by the spring 18 tends to retain the projections 12 in contact with the plate F. When the handle 16 is pushed past the vertical position, the action of the spring 18 will automatically cause the sharpening body to snap to the position shown in Fig. 7. The plate 11 thereby engages the opposite abutments 20 and is guided in its tilting movement until its edge comes to bear on plate F. The sharpening body 10 has now reached its other end position and another of its working faces lies in the path of the edge of the blade K.

Means are also provided to set the convex sharpening face of the sharpening body 10 in such a manner that the blade edge may slide on any desired generatrix. For this purpose a double armed lever 27 is pivotally mounted at 26 upon the underside of the plate F (Figs. 4, 5, 6, and 7). The lever 27 comprises a cam 25 and a handle by means of which the cam 25 may be turned about the pin 26. The cam 25 projects in the path of the handle 16 and serves as an adjustable stop therefor. When the cam 25 is in its inoperative position (dotted line position of Fig. 4) the sharpening body 10 swings to its extreme end position (Fig. 5) and the sharpening takes place along a generating line A. When the lever 27 and therewith the cam 25 is turned to the full line position shown in Fig. 4, the cam 25 protrudes into the path of handle 16 and arrests the tilting movement of the sharpening body 10 before plate 11 engages plate F of the frame 1 (Fig. 6). The blade K runs now along a generatrix B. It may be easily seen that by turning the cam 25 to any intermediate position the position of the sharpening body 10 may be varied to have any desired inclination between the limits mentioned before, so that any part of the working face between A and B may be exposed to the blade K.

By choosing the thickness of cam 25 conveniently with respect to spacing plate 17, the spring 18 will press the cam 25 against plate F and prevent it by friction from being turned from its set position when handle 16 buts against it.

What I wish to secure by U. S. Letters Patent, is:—

1. In a device of the type set forth, a frame having a stationary plate, a transverse plate, a carriage slidably mounted in said frame, and a blade holder on said carriage, a sharpening body having two sharpening faces loosely placed upon said plate, pins at each end of said sharpening body, a leaf spring loosely placed upon the underside of said plate and having its end bent upward and extending through openings in said plate and engaging over said pins of the sharpening body, projections at the bottom side of the sharpening body engaging the said plate and sliding thereon during the tilting of the sharpening body.

2. In a device of the type set forth, a frame having a stationary plate, a transverse plate, a carriage slidably mounted in said frame, and a blade holder on said carriage, a sharpening body having two sharpening faces, loosely placed upon said plate, studs at each end of said sharpening body, a leaf spring loosely placed upon the underside of said plate and having its ends bent upward and extending through an opening in said plate and engaging said pins of the sharpening body, projections at the bottom side of the sharpening body resting on the said plate and sliding thereon during the tilting of the sharpening body, abutments on said plate on each side of the sharpening body adapted to guide the sharpening body during the tilting thereof.

3. In a device for sharpening the blades of safety razors, a stationary plate, a sharpening body having a convex sharpening surface mounted on said plate and adapted to be tilted at different angles with respect to the plate, a cam acting upon said sharpening body adapted to vary its extreme positions and a spring tending to move the sharpening body to its extreme position, said spring also acting upon said cam to prevent it from turning accidentally.

In testimony whereof I affix my signature.

WILHELM BARSCH.