

March 29, 1932.

G. A. MOLLER

1,851,520

KNIFE SHARPENER

Filed Oct. 17, 1929

Fig. 1.

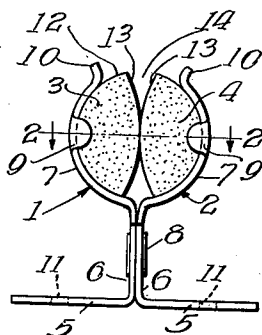


Fig. 3.

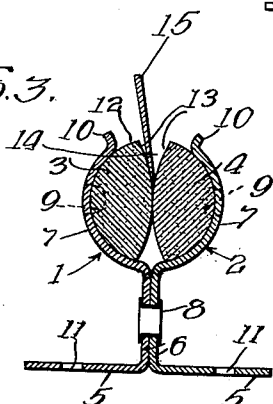


Fig. 4.

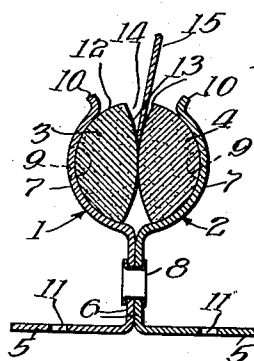


Fig. 2.

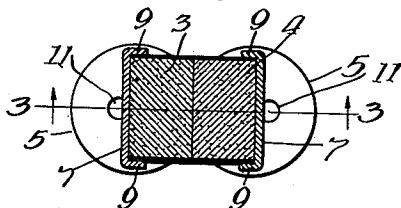


Fig. 5.

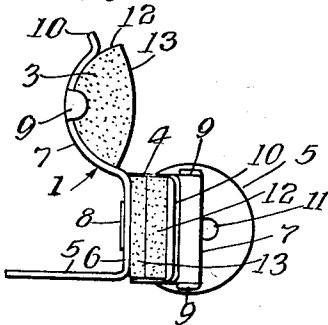
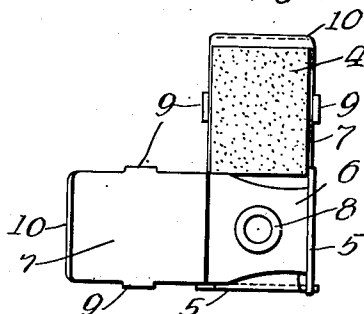


Fig. 6.



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UNITED STATES PATENT OFFICE

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KNIFE SHARPENER

Application filed October 17, 1929. Serial No. 400,407.

This invention relates to improvements in knife sharpeners and has especial reference to such devices for household use.

The object of the invention is to provide a simple, durable, cheap, and efficient device of this character.

A special feature of the invention is that the sharpening elements are easily and readily renewable. A further feature relates to the reversibility of the sharpening elements, thus giving the device a relatively long life.

Many other advantageous features of construction and use will become apparent from the following specification taken in conjunction with the accompanying drawings, and such features are particularly pointed out in the appended claims.

In said drawings:—

Fig. 1 is an end elevation of the device;

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

Figs. 3 and 4 are vertical sections on the line 3—3 of Fig. 4 and showing two different positions of the knife which is being sharpened;

Fig. 5 is an end elevation showing the parts of the holder swung around in relation to each other to facilitate the removal and replacement of the cutting elements; and

Fig. 6 is a side elevation of the device as shown in Fig. 5.

The device as shown consists of two frame or holding parts 1 and 2. These frame parts are exactly alike and can be formed by the one set of tools and dies.

The frame parts are formed to removably hold two cutting or grinding elements 3 and 4 which serve to do the actual sharpening.

Each frame part consists of a flat, base portion 5, a middle flat standard portion 6, and a cutting element holding portion 7.

The two frame parts 1 and 2 are adapted to be securely clamped together at one point by a hollow rivet 8 which joins the two flat standard portions and pivots one upon the other, so that they can be swung around upon each other, as shown in Figs. 5 and 6, to facilitate the inserting of the cutting elements and their removal and replacement.

The holding portions of the parts 1 and 2

each consists of a cylindrically formed back with bent-in ears 9 at its ends, which serve to retain the cutting elements 3 and 4 against removal when the parts are in working position, as shown in Fig. 1. The upper edges 10 of the holding parts 1 and 2 are flared outwardly to avoid any sharp edges which might catch and hold the cutting elements.

The base portions are each provided with a hole 11 to receive a screw in securing the device in position upon a table or other support for use.

The cutting elements 3 and 4 are preferably made of carborundum or some similar hard cutting or abrasive material. They are quite hard and are molded or formed in a peculiar shape which greatly facilitates the production of sharp edges on knives, etc.

The cutting elements are exactly alike, or duplicates. This reduces costs similar to the saving effected in the production of the frame parts.

Each cutting element is formed as a section of a cylinder having a cylindrical back 12 which fits in the cylindrical part 7 of the holder. The inner side of each cutting element is a curved surface 13 produced on a much greater radius. These two inner curved surfaces 13 are held tightly in contact with each other by the resiliency of the holders. This form of cutting elements provides a very sharp V-opening 14 to receive a knife blade 15 to be sharpened.

In sharpening a knife blade by means of this device, the blade is first laid against one of the surfaces 13 of one of the elements, and its edge is pressed against the opposite element and the knife is drawn lengthwise through the device. This action is repeated as many times as necessary, alternating with arranging the blade tipped against the opposite element, as indicated in Figs. 3 and 4.

The V-space, being a very sharp V, a very sharp edge can be produced on a knife blade.

It will be apparent that if the sides of the cutting elements being used become worn, the cutting elements can be reversed to use the lower parts of the inner curved surfaces by rotating one of the holder parts upon the other, as shown in Figs. 5 and 6. When the

two holder parts are rotated in relation to each other through 90 degrees, the cutting elements are free to be removed. The holder parts are so formed that they have to be sprung out slightly to place the two cutting elements in operative position, and this causes the two cutting elements to be pressed tightly against each other and prevents the knife edge from working down between them.

It is to be noted that the flared out edges 10 of the holders 7 are spaced wider apart than the adjacent corners or edges of the cutting elements. By this means, portions of the outer cylindrical surfaces 12 of the cutting elements 3 and 4 are exposed adjacent to the flanges 10. The object of this is to provide means for readily sharpening scissors or shears. The flanges 10 serve as stop guides for the blades of such cutting instruments as they are drawn lengthwise with their cutting edges in contact with the cutting elements.

It is to be noted that the flanges or guide stops 10 are spread apart sufficiently so that the opening provided between them is wide enough to permit the abrasive elements 4 to be removed through said opening one at a time.

It is only necessary to rotate the two elements 4 in the holder about 30 degrees to position one of the elements so that it can be taken out through said opening and, after this is done, the other element can be removed. This is a convenience for renewing worn elements without the necessity of dismounting the device after it has been secured in place for use.

The device is extremely simple, strong, durable and effective.

As many modifications of the invention will readily suggest themselves to one skilled in the art, I do not limit or confine the invention to the specific details of construction herein shown and described.

I claim:

1. In a device of the kind described, two abrasive elements having convex curved surfaces for contact with each other to provide a V-shaped opening for receiving a knife blade, the opposite sides of the elements being cylindrical in shape, holding members for said elements, said members having shanks contacting on the center plane of said opening, and pivot means securing said shanks together and said members being capable of being swung out of alignment on said securing means to facilitate the removal and replacement of said elements.

2. In a device of the kind described, a holder for abrasive elements, the holder provided with a cylindrical opening, stop projections at the ends of the opening, a pair of abrasive elements having cylindrical outer surfaces for engagement in said opening and inner convex sides for operative engagement

with the work, the holder being provided with an open top through which the abrasive elements may be removed when they are swung around in said cylindrical opening approximately 45 degrees from their normal working positions.

In witness that I claim the foregoing as my invention, I affix my signature this 14th day of October, 1929.

GEORGE ALBIN MOLLER.