June 23, 1942. E. C. HOFFMANN 2,287,247

SIZER CONSTRUCTION FOR A PENCIL SHARPENER

Filed Oct. 22, 1941

Fig. 1.

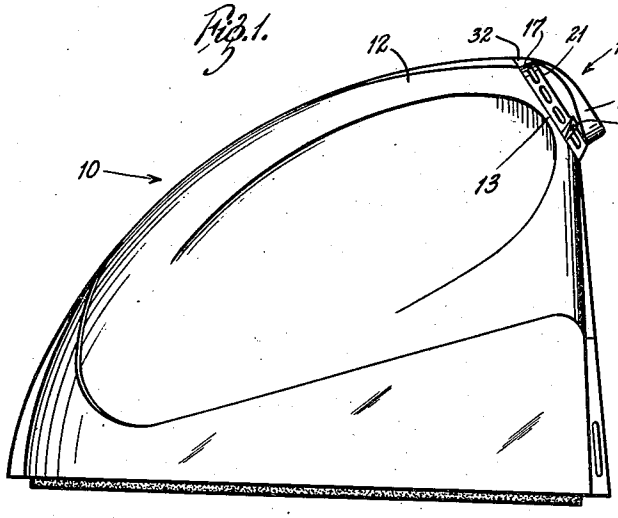


Fig. 2.

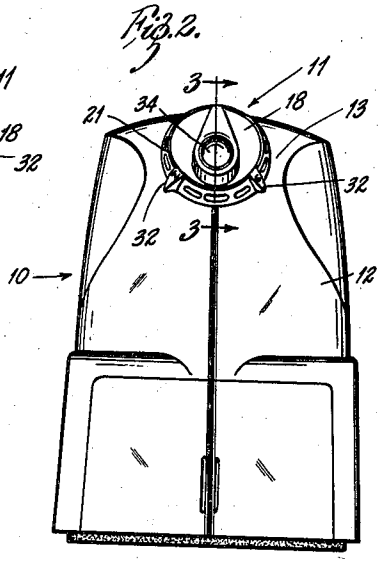


Fig. 3.

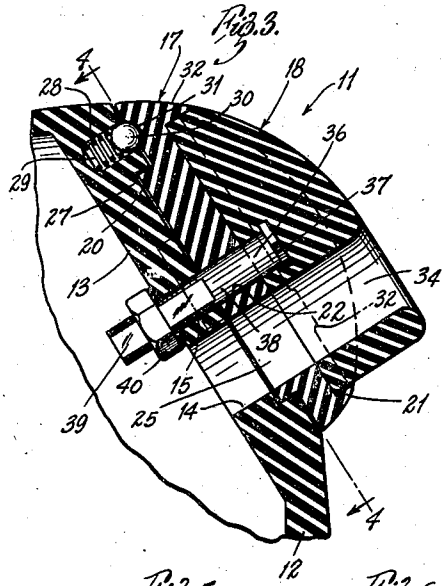


Fig. 4.

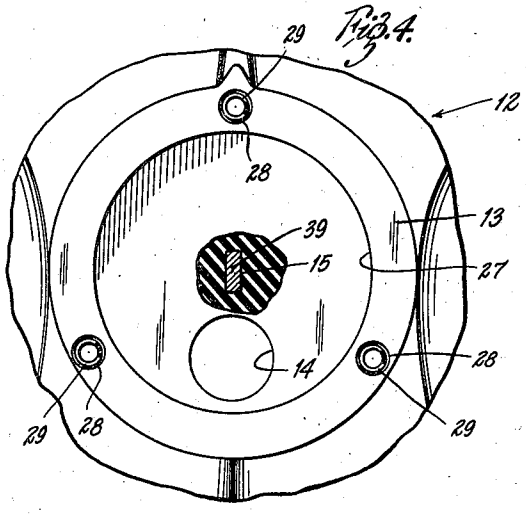


Fig. 5.

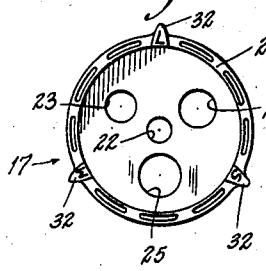


Fig. 6.

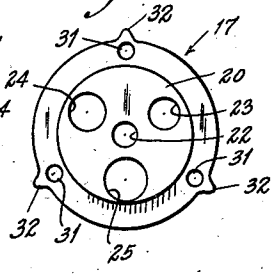


Fig. 7.

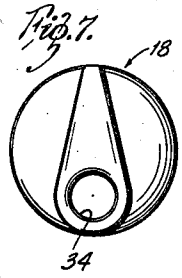
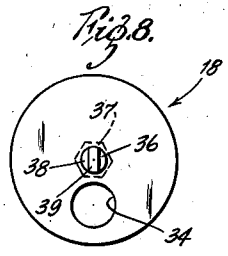


Fig. 8.



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SIZER CONSTRUCTION FOR PENCIL SHARPENERS

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Application October 22, 1941, Serial No. 416,039

3 Claims. (Cl. 120—96)

The present invention relates generally to pencil sharpeners and more particularly to sizing units forming a part of pencil sharpeners.

An object of the present invention is to provide a novel sizing construction which may be employed with a manually or automatically operable pencil sharpener.

Another object is to provide a novel sizing construction for pencil sharpeners which is positive in its selection and maintenance of a particular position.

Another object is to provide a novel sizing construction for pencil sharpeners which is adapted to long service without repair or adjustment.

Other objects are to provide a novel sizing construction for pencil sharpeners which may be easily manipulated in movement from one position to another, which is inconspicuous in its operative disposition in regard to the pencil sharpener with which it is used, which is inexpensive, and which is adaptable for all of the objects and advantages sought therefor.

Other objects and advantages will be apparent from the following description taken in conjunction with the accompanying drawing in which:

Fig. 1 is a side elevational view of a pencil sharpener of the automatic type incorporating a preferred embodiment of the present invention;

Fig. 2 is a front elevational view of the pencil sharpener shown in Fig. 1;

Fig. 3 is a section on the line 3—3 of Fig. 2;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is a front view of an element of the novel sizing construction;

Fig. 6 is a rear view of the element shown in Fig. 5;

Fig. 7 is a front view of another element of the novel sizing construction; and

Fig. 8 is a rear view of the element shown in Fig. 7.

Referring to the drawing more particularly by reference numerals, 10 indicates generally a pencil sharpener of the automatic streamline type which includes a sizing construction 11 which is constructed in accordance with the teachings of the present invention. The sharpener 10 includes a casing 12 of Bakelite, or other suitable material. No description of other elements of the sharpener is necessary to a full understanding of the present invention.

The casing 12 includes a nose portion 13 which is disposed at an angle to the horizontal (Fig. 3). The nose portion 13 includes an aperture 14 through the lower part and a small slot 15 through the central part.

The sizing construction 11 includes a first disc member 17 and a second disc member 18.

The disc member 17 is of the cross-section shown in Fig. 3, including at the rear a raised portion 20 of circular configuration, and at the front a flange 21. A circular aperture 22 extends through the central portion of the member 17 and is surrounded by three circular apertures 23, 24, and 25 of graduated size spaced at 120° and having the center of each on a circle concentric with the circular aperture 22. The raised portion 20 is disposed in a complementary depression 27 in the nose portion 13.

In the nose portion 13 spaced at 120° and exteriorly of the depression 27 are three circular wells 28, in each of which is a compression spring 29 on top of which is a ball 30. Preferably, one well is at the uppermost part of the nose portion 13. In the outer circular portion of the member 17 surrounding the raised portion 20 are three depressions 31 of a little less than a hemisphere, which are spaced at 120° to each other and 60° to the respective apertures 23, 24, and 25. On the outer side of the member 17 opposite to and above the depressions 31 are indicators 32 suitably marked L, S, and M to indicate large, small, and medium, respectively, each indicator being disposed at 180° to the aperture indicated (Fig. 5).

The member 18 includes a single circular aperture 34 which is of the same diameter as the aperture 14 in the nose portion 13 and the large aperture 25 in the member 17 (Fig. 3). The member 18 is of a diameter to fit within the flange 21 of the member 17.

A stud 36 has a head 37 fixed in and to the member 18, and further includes a cylindrical portion 38 and a flattened threaded portion 39. The cylindrical portion 38 is disposed in the aperture 22 of the member 17 and the flattened portion 39 in and extending through the slot 15 of the nose portion 13. A nut 40 threadedly engages the flattened portion 39 to maintain the several elements in operative relationship which may be soldered into a permanent relationship with the flattened portion 39.

It is manifest that the member 18 is maintained in a fixed relationship to the casing 12 whereas the member 17 may be rotated about its free pivotal axis which is the cylindrical portion 38 of the stud 36. The relationship of

the nut 40 to the stud 36 is such as to permit rotation of the member 17.

Operation

In Fig. 3 the several elements forming the sizing construction 11 are shown in operative relationship with the casing 12. It will be observed that the large aperture 25 is in the pencil receiving position.

When it is desired to change the pencil receiving opening from large to small, the member 17 is rotated by hand through 120° counterclockwise. The indicator 32 bearing the letter S will then be at the top position and the small aperture 23 will be at the bottom, which is the pencil receiving position. Similarly, when it is desired to place the medium aperture 24 in the pencil receiving position when the parts are in a position shown in Fig. 3, the member 17 is rotated by hand 120° clockwise.

The depressions 31 in the member 17 are less than half of a sphere so that the member 17 may be rotated readily. In movement of the member 17 from the position of Fig. 3, the balls 30 are forced into the wells 28, but they spring forth to again occupy the depressions 31 after the member 17 has been rotated through 120°. Thus the balls 30 moving into the depressions 31 indicate that a rotation of 120° has been effected by the member 17, and they establish positive positioning means for alining the desired aperture 23, 24, or 25 in pencil receiving position.

The casing 12 and the members 17 and 18 are shown as of Bakelite, but any desired material may be employed. Furthermore, the specific configurations thereof may be varied within the scope of the invention.

It is to be understood that the foregoing description and the accompanying drawing have been given by way of illustration and example and not for purposes of limitation, the invention being defined by the claims which follow.

I claim:

1. A sizing construction for pencil sharpeners comprising a support, a stationary member connected to the support, a movable member on the support between the support and the stationary member, alined apertures in the support and the stationary member, and spaced apertures in the movable member adapted to be moved into alinement with the aforesaid alined apertures.

2. A sizing construction for pencil sharpeners comprising a support, a stationary member connected to the support, a movable member on the support between the support and the stationary member, alined apertures in the support and stationary member, spaced apertures in the movable member adapted to be moved into alinement with the aforesaid alined apertures, and means for locating the alinement positions of the apertures in the movable member and for maintaining the alined positions thereof.

3. A sizing construction for pencil sharpeners comprising a support, an aperture through the support through which a pencil is adapted to be inserted, a movable member supported by the support, said movable member including a plurality of spaced apertures of different sizes adapted to be selectively alined with the aperture in the support, means for determining the alining positions of the movable member and for maintaining said member in selected alined position, said means including spaced wells in the support, spaced depressions in the movable member, balls in the wells, and springs in the wells beneath the balls, said balls being adapted to move into the depressions under the influence of the springs in alining positions of the movable member.

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