Sept. 30, 1941. C. C. WULFF 2,257,407

KNIFE SHARPENER

Filed Nov. 30, 1940

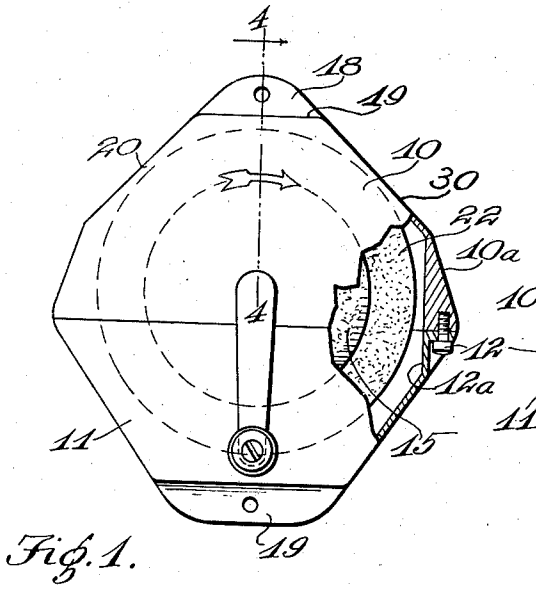



Fig. 1.

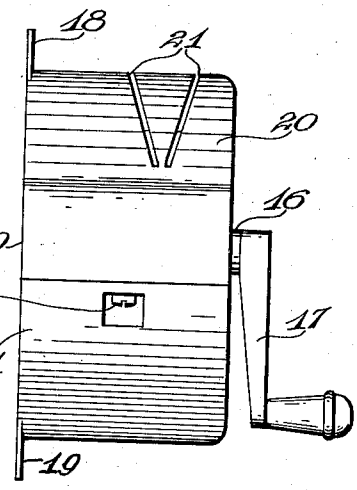



Fig. 2.

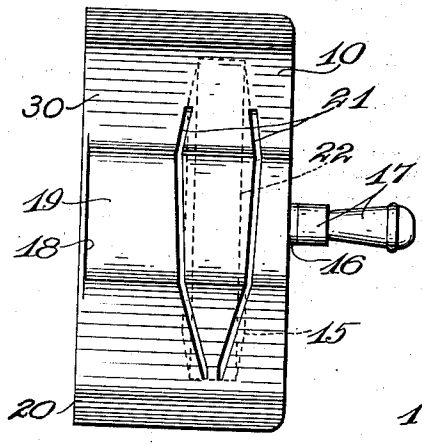



Fig. 3.

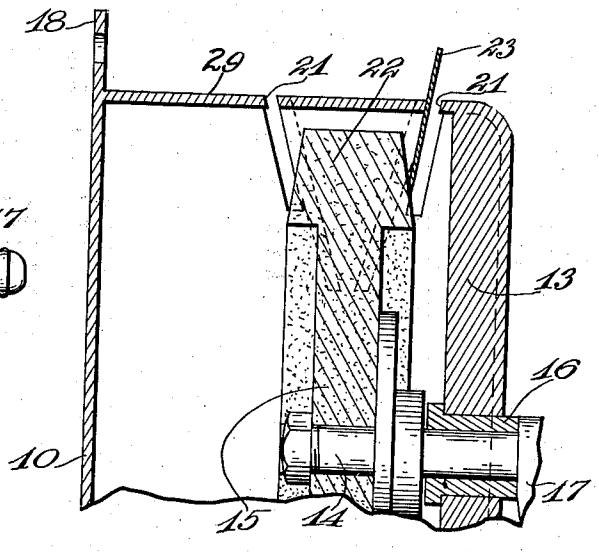



Fig. 4.

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# UNITED STATES PATENT OFFICE

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## KNIFE SHARPENER

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Application November 30, 1940, Serial No. 368,077

2 Claims. (Cl. 51—128)

My invention relates to knife sharpeners of the rotary type, and more particularly to such devices in the form of a unit which can be mounted in a handy place in the home.

One object of the invention is to design the novel sharpener in a compact and encased form, whereby to present a neat appearance and be protected from interference by external objects.

A further object of the invention is to employ a very simple mechanism for the sharpener, whereby to enable its manufacture to be economical and its use free from trouble or repair.

Another object of the invention is to provide means for disposing the knife in a position of highest efficiency relative to the sharpening element.

An additional object of the invention is to construct the casing of the sharpener in a manner to both afford access by the knife to the sharpening element as well as to train the knife in the proper course relative to such element.

Fig. 1 is a front elevation of the sharpener;

Fig. 2 is a side view;

Fig. 3 is a top plan view; and

Fig. 4 is an enlarged fragmental section taken on the line 4—4 of Fig. 1.

In accordance with the foregoing, specific reference to the drawing indicates the casing of the sharpener at 10, such casing having a separate lower portion at 11. The upper portion of the casing is intended to hold the sharpening mechanism, while the lower portion serves as a well for oil which may be used as a lubricant for the sharpening mechanism; or, such lower portion may serve simply to catch dust, shavings or other particles falling from the sharpening zone. The casing components are secured together by a pair of bolts 12 directed from the lower casing portion into the upper one by way of reinforcing webs 10*a* and 12*a* internally of the casing portions.

The front wall of the upper casing portion 10 is thickened inwardly at the center as indicated at 13 to form a journal for a spindle 14 on whose inner end is secured an emery wheel 15. The thickened portion 13 carries a bushing 16 through which the spindle 14 projects to receive a crank handle 17. Thus, the latter is employed to rotate the emery wheel 15; and the bushing 16 is extended from the casing to space the crank handle therefrom.

The back of the casing is extended with perforated ears 18 and 19 at the top and bottom to facilitate the support of the sharpener on a wall or post. The emery wheel is near to the front wall of the casing, and the top front skirt and rear skirt casing sections 29, 20 and 30 respectively are formed with a pair of slots 21 whose general courses are in paths approximately along opposite sides of the emery wheel as indicated in Fig. 3.

Fig. 4 shows more clearly that the rim portion 22 of the emery wheel is slightly beveled toward the periphery on opposite sides. Thus, the formation of the said rim portion lends itself to the beveled or tapered edge portion of a knife 23 which is applied to one face of the rim portion to sharpen one side of the knife, and to the other face to sharpen the other side thereof.

It is noted that the slots 21 in the top and skirt portions of the casing diverge from comparatively close positions at one side to widely spaced positions in the top region, terminating with some convergence at their remote ends. Assuming that the crank handle 17 is usually operated with the right hand, it is intended that the knife be inserted in one or the other of the slots 21 from the zone of their initial convergence, the knife then being lowered with its remote portion through the balance of the chosen slot.

It is noted that the casing 10 is of substantially octagonal form. This form, coupled with the courses of the slots 21 gives the knife proper guidance and the slots a peculiar direction as leads for the knife in relation to the emery wheel. Assuming that the knife is inserted in one slot to sharpen one of its sides, and in the other slot to sharpen the other side, the characteristics of the slots become apparent. First, the divergence of the slots from the point of approach enables the knife to be held practically in the same position whichever slot is used, only a slight lateral movement being necessary after the knife is raised out of one slot to swing it for lowering into the other slot. Thus, no particular concern or movement is required for shifting the position of the knife, so that time is saved.

Another characteristic of the slots 21 is the deflection they incur by reason of the inclined skirts 20 and 30 of the casing. This deflection, coupled with the angles of convergence of the slots, position the knife at an angle most favorable to the related face of the emery wheel rim portion, for the most efficient sharpening action. The slots thus not only form entrances for the knife but also leads therefor to properly position the knife without requiring the latter to be trained by hand or watched.

It will be evident from the above description that I have provided a sharpener which is primarily an article of good appearance and hardly suggestive of its mechanical character when hung on a kitchen wall or other conspicuous place. The casing makes an attractive appearance, and may be finished in enamel or with other pleasing effects. Further, the mechanism is entirely enclosed, so that it is out of sight, out of the way, and free from interference by external objects. Besides, the mechanism is a simple and direct drive rather than a more complicated geared-up type, since the sharpener is more in the nature of a hone than a grinder, and is effective at low speed. Further, the lower portion of the casing forms a well which may contain an oil bath for the emery wheel to improve the sharpening action thereof; or, if no oil is used, the well may serve to catch emery dust or metal particles dropping from the sharpening zone. Further, the slots in the top of the casing form an inconspicuous entrance and an automatic lead for the knife, so as to require no experience or particular concern by the operator to insert or properly apply the knife to the emery wheel. Altogether, the novel sharpener forms a handy, compact and efficient appliance for use in the home, workroom, basement or in the kitchen of a restaurant or back room of a store or other business place.

While I have described the invention along specific lines, various minor changes and refinements may be made without departing from its principle, and I desire to consider all such changes and refinements as coming within the scope and spirit of the appended claims.

I claim:

1. A knife sharpener, comprising an abrasive wheel, means mounting said wheel for rotation in a vertical plane, said wheel having a radial grinding face on each side thereof adjacent its periphery and which faces are slightly inwardly inclined towards said periphery, a casing over the upper portion of said wheel and substantially concentric therewith, said casing having a top portion overlying the top of said wheel, a depending front skirt integral with said top portion and overlying the upper front portion of said wheel, and a depending rear skirt integral with said top portion and overlying the upper rear portion of said wheel, a pair of longitudinally extending and laterally spaced guide slots through said top portion of said casing and the adjacent portions of said skirts, said slots commencing in said front skirt in substantially closely spaced vertical planes inwardly of said grinding faces and then extending throughout said front skirt and top portion in longitudinally diverging directions to laterally spaced points outwardly of said grinding faces, said slots then extending into said rear skirt in longitudinally converging directions and terminating therein in more widely spaced relation than at the front end.

2. The structure of claim 1, said top portion of said casing being flat and substantially horizontal, and said skirts being flat and extending from said top portion at downwardly diverging angles.

CARLYLE C. WULFF.