Nov. 11, 1952 H. W. LINDAHL 2,617,235

SHARPENING MACHINE

Filed Jan. 20, 1950

Fig. 1.

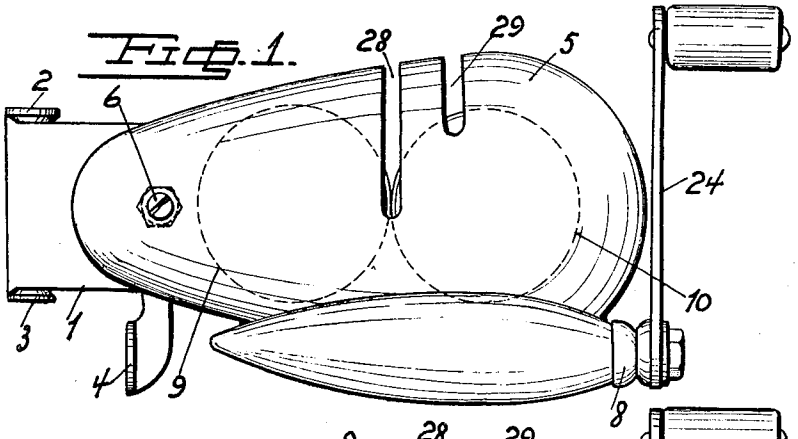


Fig. 2.

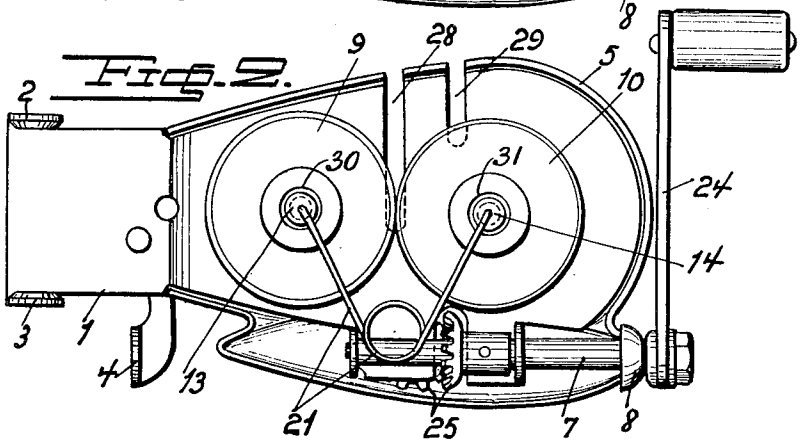
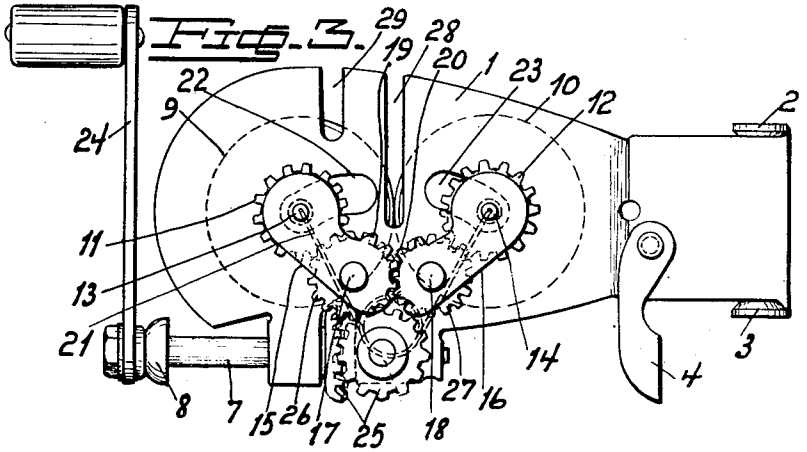


Fig. 3.



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SHARPENING MACHINE

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1 Claim. (Cl. 51—80)

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The present invention refers to a dry sharpening machine, which is primarily intended to be used in households for the sharpening of kitchen knives, penknives, scissors and the like. One object of the invention is to provide a machine adapted to be secured to a fitting arranged on a vertical support similar to that used, for instance, for can-openers according to my patent application, Ser. No. 86,610, filed April 11, 1949, now Patent No. 2,568,962, dated September 25, 1951. Consequently, where a can-opener of this type is available, there is no need for procuring a special fitting for the sharpening machine.

A second feature of the invention resides in that two sharpening disks rotatable on shaft ends and pressed against each other by means of a spring are adapted to adjust themselves automatically, according as their diameters are reduced by the wear of the disks, so that their contact point will always be at the middle of an entry slit for the implements to be sharpened.

A third feature of the invention is that the movement is transmitted from a crank shaft by mechanical means to the sharpening disks in a manner to impart a rotary movement to the disks in opposite directions, the knife or the like being thus sharpened on both sides at the same time.

The invention is illustrated in the accompanying drawing, which represents a form of embodiment thereof by way of example. Fig. 1 shows the machine in elevation with the casing applied thereto. Fig. 2 is a view corresponding to Fig. 1 but with the casing removed to disclose the sharpening disks. Fig. 3 likewise is an elevation of the machine with the casing removed but viewed from the opposite side relatively to Fig. 2 to disclose the gear drive of the machine.

The machine is provided with a frame, preferably in the form of a sheet-metal plate 1 having the parts of the machine mounted thereon. The plate 1 is provided with pivot pins 2, 3 for the securing of the same to a wall fitting, a pivoted dog 4 serving to fix the machine in a suitable position relatively to its support by snapping into any of a number of radial slits provided in a flange of the fitting.

The casing consists of curved plates 5 arranged on both sides of the frame plate 1. The end portions of said curved plates are attached to the frame plate at one end thereof by means of a threaded bolt 6, while the other end portions of the curved plates are held at the opposite end of the frame in a retaining flange 8 arranged on a crank shaft 7.

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The sharpening disks 9, 10 are attached to bushings 30, 31. The bushings 30, 31 carry gear wheels 11, 12 at one end thereof, said gear wheels bearing on the sheet-metal plate 1 on the opposite side while being freely mounted on journals 13, 14 arranged at the ends of arms 15, 16. The arms 15, 16 are pivoted about studs 17, 18. The arms 15, 16 guide each other positively by means of toothed segments 19, 20 formed integral with the arms and engaging each other. The arms 15, 16 are actuated by a compression spring 21 pressing them together and having its angularly bent ends introduced into axial apertures in the journals 13, 14.

The bushings 30, 31 of the sharpening disks and their journals 13, 14 are movable in arcuate recesses 22, 23 provided in the frame, so that they may adjust themselves, according as the sharpening disks become worn. The movement is transmitted from the crank 24 to the sharpening disks by means of a bevel gearing 25 having one of its gear wheels secured on the crank shaft 7 and the other on the frame 1, the latter gear wheel engaging an idler gear wheel 26, which in turn engages the gear wheel 11 on the journal 13, as well as an idler gear wheel 27 on the journal 18, which latter gear wheel engages the gear wheel 12 on the journal 14. Through these means the sharpening disks are obviously caused by the actuation of the crank 24 to rotate in opposite directions.

A knife to be sharpened is introduced into a slit 28 extending transversely through the plates of the casing and through the frame plate 1, and is readily moved to and fro so as to be ground on both sides of the cutting edge at the same time. Laterally of the slit 28 there is provided a shorter slit 29 intended for the sharpening of scissors, the cutting edges of which form an angle relatively to the sharpening disk.

Instead of transmitting the movement from the crank by means of gear wheels, such transmission may be effected otherwise.

What I claim is:

A sharpening machine for dry sharpening, particularly of kitchen knives, penknives, scissors and the like, comprising, in combination, a frame in the form of a sheet-metal plate provided with two pivot pins to be secured to a fitting arranged on a vertical support, two arms pivoted each at one end thereof on corresponding studs secured in said frame, toothed segments formed on said arms at the pivoted end portions thereof and engaging each other, a bushing rotatably mounted at the opposite non-pivoted end of each of said

arms, arcuate recesses provided in the frame to receive said bushings in movable relationship thereto, resilient means interconnecting said arms and tending to approach the non-pivoted ends thereof to each other, a sharpening disk attached to each of said bushings, a gear wheel secured on each of said bushings, an idler gear wheel rotatably mounted on each of the aforementioned studs, said idler wheels engaging one another and each of them engaging one of said first-mentioned gear wheels, and a crank-operated bevel gearing, one gear wheel of said bevel gearing engaging one of said idler gear wheels.

HENNING WALDEMAR LINDAHL.

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