June 13, 1939. S. BATTOCCHI 2,161,992

ROTARY KNIFE SHARPENER

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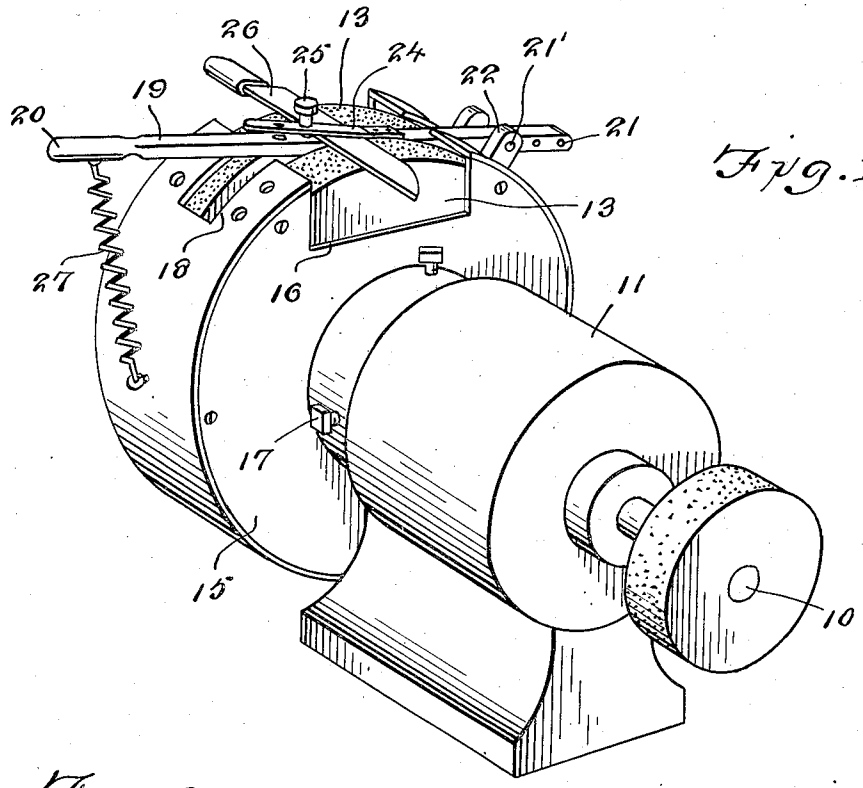



Fig. 1.

Fig. 3.

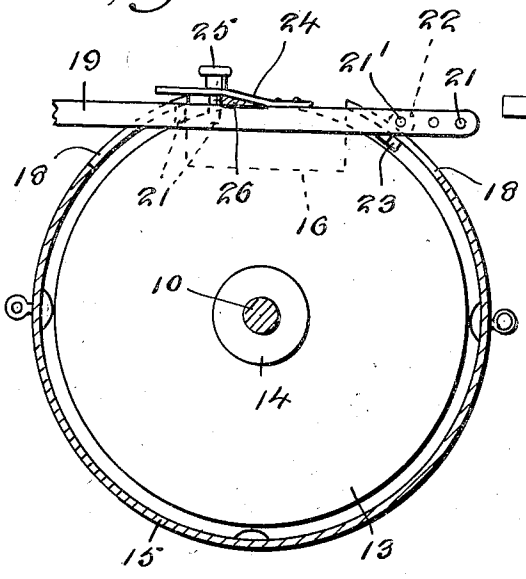
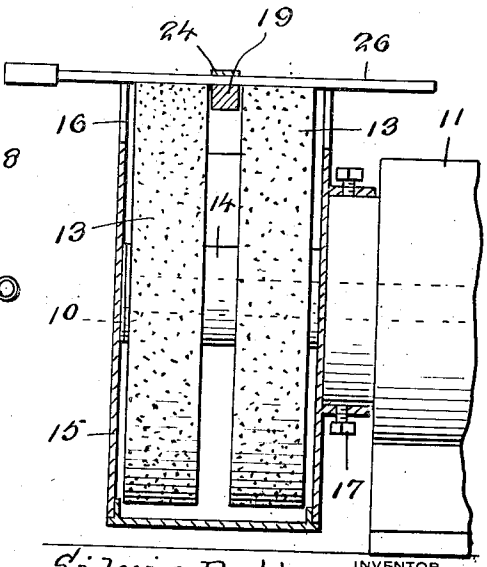



Fig. 2.




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Fig. 4.

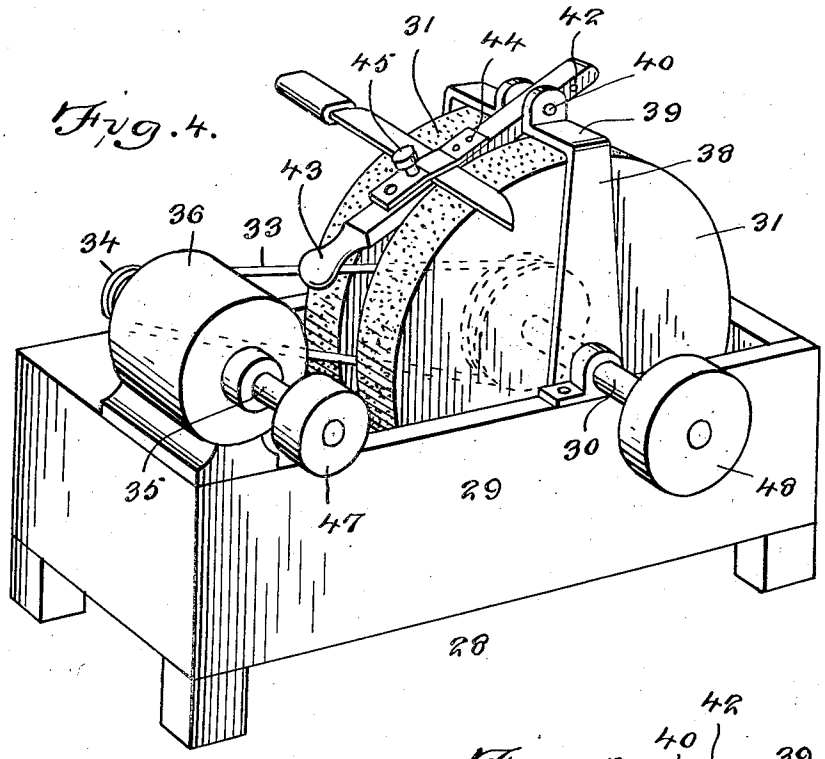



Fig. 5.

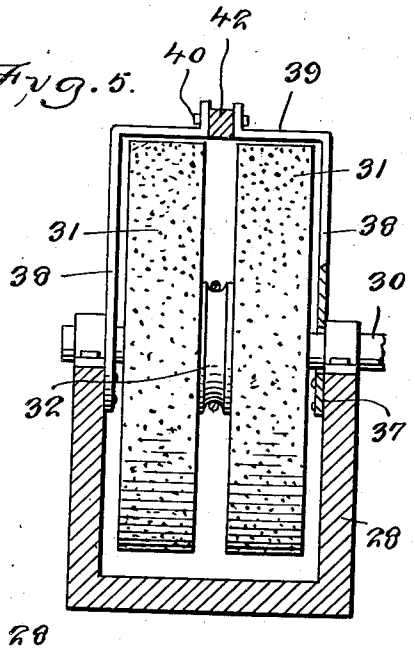
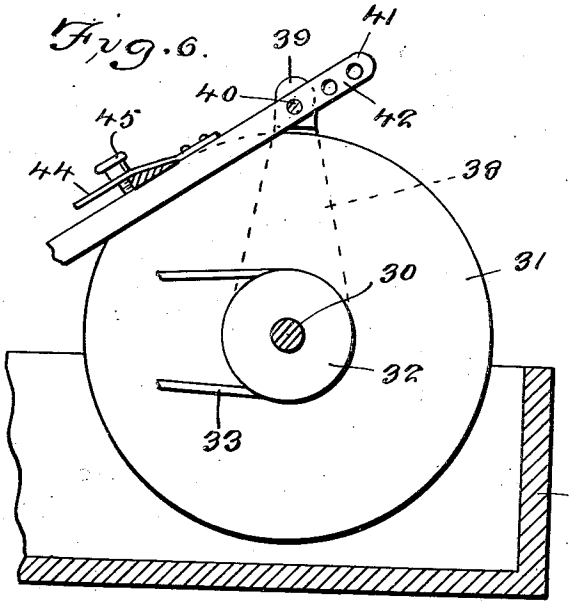



Fig. 6.




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# UNITED STATES PATENT OFFICE

2,161,992

## ROTARY KNIFE SHARPENER

Silvio Battocchi, Springfield, Mass.

Application February 1, 1937, Serial No. 123,463

1 Claim. (Cl. 51—102)

The invention relates to cutting blade sharpeners and more especially to rotary knife sharpeners.

The primary object of the invention is the provision of a sharpener of this character, wherein through the use of several sharpening elements rotatably arranged a cutting blade, such as a knife blade can be readily and conveniently ground and such blade may be adjustably held for the proper positioning of the same during the sharpening operation.

Another object of the invention is the provision of a sharpener of this character, wherein the sharpener elements are arranged with relation to a blade holder in a novel manner to enable the quick sharpening of a knife blade or the like.

A further object of the invention is the provision of a sharpener of this character, wherein the blade holder is arranged for vertical swinging movement and can be adjusted to vary the arcuate swing of the same, as well as enabling the reversing of the blade with relation to the grinding elements of the sharpener.

A still further object of the invention is the provision of a sharpener of this character, which is simple in construction, thoroughly reliable and efficient in its operation, readily and easily handled, strong, durable, and inexpensive to manufacture.

With these and other objects in view the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiments of the invention, and pointed out in the claim hereunto appended.

In the accompanying drawings:

Figure 1 is a perspective view of a sharpener constructed in accordance with the invention.

Figure 2 is a fragmentary vertical transverse sectional view through the same.

Figure 3 is a fragmentary longitudinal sectional view.

Figure 4 is a perspective view of a modification.

Figure 5 is a vertical transverse sectional view of the same.

Figure 6 is a perspective view of the holder detached.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, particularly Figures 1 to 3, inclusive, the sharpener comprises a rotary shaft 10 which is horizontally arranged and in this instance is the power shaft of an electric motor, the casing of the latter being indicated at 11 and is formed with a base 12.

On this shaft 10 at one side of the casing 11 of the motor is fixed a grinder involving a pair of spaced abrasive or sharpening disks or wheels 13, being held in spaced relation to each other through the medium of an intermediate spacer collar or washer 14, which surrounds the said shaft 10. These disks or wheels 13 are held fixed on the shaft 10 in any suitable manner.

About the disks or wheels 13 is a boxing 15 which at its uppermost portion is a segmental shaped opening 16 for exposing the disks or wheels 13. This opening 16 is cut through the periphery of the boxing 15. The boxing 15 is detachably secured to the casing 11 through the use of separable fasteners 17. This boxing can contain oil or other liquid serving as a bath for the disks or wheels 13 in the use thereof.

Aligning with the space between the disks or wheels 13 and at opposite sides of and opening into the opening 16 are slots 18 forming a clearance for a vertically swinging carrier 19 in the form of a lever which at the end opposite the handle 20 is provided with spaced holes 21 for selectively accommodating a removable pivot 21 engageable in bearings 22 which are adjustably held at 23 on opposite sides of either of the slots 18.

The carrier 19 is fitted with a spring tensioned blade clamp 24 having a changeable set screw 25 engageable with the carrier for different sizes of blades, one being indicated at 26.

The carrier is changeable to either side of the opening 16 should the occasion require in the sharpening of the blade, for example a knife or the like.

The carrier 19 has engaged therewith a coiled retractile spring 27 which is attachable to the boxing 15 at either side of the opening 16 according to the set of the said carrier.

In Figures 4 to 6 of the drawings there is shown a modification, wherein there is provided a stand 28 having a horizontally disposed bed frame 29 on which is journaled a rotary shaft 30, being disposed transversely of such frame and has fixed thereto spaced abrasive or sharpening disks or wheels 31. Between the disks or wheels 31 is a spacer collar forming a pulley 32 for an endless drive belt 33 which is also trained over a pulley 34 on the power shaft 35 of an electric motor 36 stationarily mounted upon the frame 29 at the proper location.

Suitably secured to the inner faces of the side members of the frame 29 and about the shaft 30

are the lower ends 37 of a pair of uprights 38 forming a prop or support having inset upper terminal bearings 39 for a detachable pivot 40 which is selectively engageable in holes 41 provided in one end of a carrier 42, its other end being fitted with a handle 43. The carrier 42 is fitted with a spring tensioned blade clamp or clip 44 having a changeable set screw 45 engageable with the said carrier for different sizes of blades to be sharpened. The blade 46 is held on the carrier 42 by this clamp or clip as shown in Figure 3 of the drawings.

The power shaft 35 has fitted thereon a supplemental pulley 47 and also the shaft 30 carries an additional pulley 48 for a driving belt (not shown) so that in this manner the sharpener could be operated.

The shafts 10 or 30 may be driven by hand or foot power if the occasion should require and this is contemplated for the working of the sharpener.

The clamps 24 or 44 can be mounted on either opposite side of the carrier according to the directional set of the latter in the use of the sharpener.

The carrier 46 may be reversely swung to a working position with respect to the disks or wheels in the sharpening of a blade.

The spring 27 serves to hold the carrier close and in a pulldown position with the blade against the disks or wheels at their peripheries. In the sharpening of the blade the same can be conveniently shifted in the clamp or clip transversely of the carrier for complete sharpening of such blade by the action of the disks or wheels of the sharpener.

The reversal of the carrier enables the blade to be sharpened on both sides of its cutting edge or the blade may be reversed in the said clamp or clip at the will of the operator of the sharpener.

What is claimed is:

In a sharpener of the kind described, a rotatable power element, a boxing centrally accommodating the power element and having an opening, grinding elements arranged side by side within the boxing in spaced relation to each other on said power element and accessible through the opening in the boxing, bearings changeable to either side of the opening in the boxing and fitted to the latter, and a vertically swingable and adjustable work carrier supported by said bearings and movable bodily between the grinding elements toward and away from the power element.

SILVIO BATTOCCHI.