Aug. 11, 1953 F. BIKLES 2,648,174

SHARPENING AND POLISHING MACHINE

Filed March 28, 1950

Fig. 1

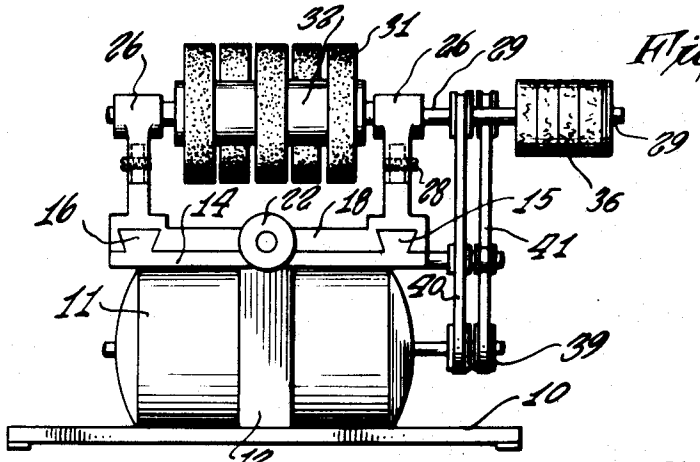


Fig. 2

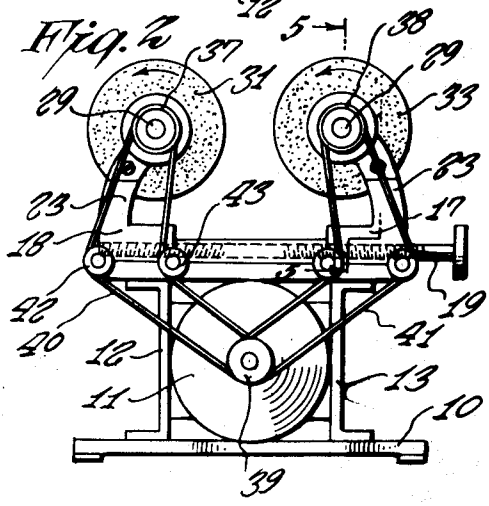


Fig. 3

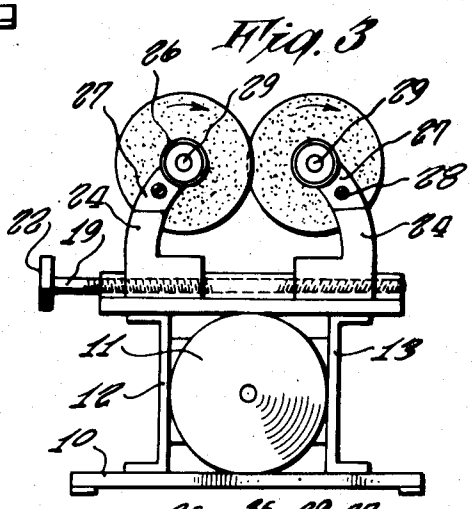


Fig. 4

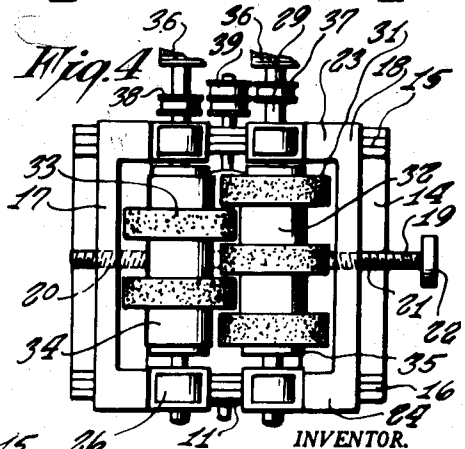


Fig. 5

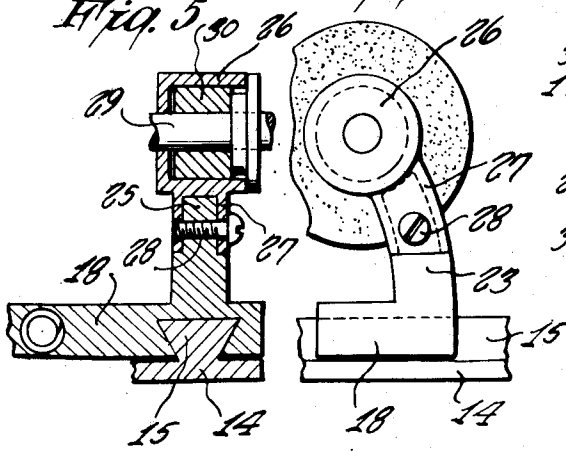


Fig. 6

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SHARPENING AND POLISHING MACHINE

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1 Claim. (Cl. 51—80)

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This invention relates to a combined grinding and polishing equipment.

It is an object of the invention to provide a combined grinding and polishing machine, adapted to sharpen knives of all sizes by simply pulling the knife through joined overlapping sets of grinding wheels rotating in the same direction on the opposite sides of the knife blade edge whereby the knife will not be drawn between the sets of grinding wheels but will be kept in balance while the grinding action is being effected upon the opposite faces thereof.

It is another object of the invention to provide in a combined grinding and polishing machine a supporting bracket having parallel and longitudinally spaced guideways and adjustable brackets mounted on the guideways and operated by an adjusting screw, each of said brackets having upstanding projections to which the set of grinding wheels are attached by respective end attaching elements and whereby the said grinding wheels can be removed from the adjustable bracket by a simple release of the attaching elements from the upstanding projections of the bracket and thereby making it unnecessary to remove the brackets from the guideways and wherein an adjusting screw having reverse threads operate on the respective brackets to bring the grinding wheel sets carried respectively thereby either toward or away from each other depending upon the direction in which the adjusting screw is turned and in a simultaneous manner.

Other objects of the invention are to provide a combined grinding and polishing machine which is of simple construction, inexpensive to manufacture, easy to adjust, and compact, which has a minimum number of parts, and which is durable and efficient in operation.

For a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a side elevational view of the grinding and polishing machine embodying the features of the present invention.

Fig. 2 is an end elevational view looking upon the end of the machine having the polishing elements with the polishing elements omitted.

Fig. 3 is an end elevational view of the machine as viewed from the opposite side of the same.

Fig. 4 is a fragmentary top plan view of the machine.

Fig. 5 is an enlarged fragmentary vertical sectional view, taken on line 5—5 of Fig. 2, and through the bracket and the attaching element for the grinding wheel set.

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Fig. 6 is an enlarged fragmentary side elevational view of the bracket and the attaching element for the grinding wheel set shaft.

Referring now to the figures, 10 represents a base support on which is mounted an electric motor 11 that can be operated from any electric source. Extending upwardly from the sides of the base 10 are vertical support members 12 and 13 between which the electric motor 11 is retained and on the upper ends of which there is supported a frame 14 having parallel dove-tail guideways 15 and 16 on the respective opposite ends thereof.

Adjustable on the guideways 15 and 16 are opposing supporting brackets 17 and 18 that are connected together by an adjusting screw 19 having opposite threads 20 and 21 upon the respective opposite ends thereof, whereby upon turning the screw by its knob 22 the brackets 17 and 18 can be adjusted either toward each other or away from each other.

Upon the opposite ends of each of the adjustable brackets 17 and 18 are respectively upstanding arcuate projections 23 and 24. The end of each projection has a reduced portion 25 for receiving a shaft bearing assembly 26 by means of its socket projection 27. A screw 28 fixes the socket projection to the reduced portion 25 thereby to hold the bearing assembly upon the upstanding arcuate projection.

By means of these bearing assembly attachments 26, sets of grinding wheels are mounted upon the adjustable brackets 17 and 18 so that they will be adjusted therewith toward and away from each other. In each bearing assembly is a shaft 29 journalled at each end thereof in bearing elements 30 in the bearing assembly attachment member. Each shaft contains a different set of grinding wheels. One shaft has three grinding wheels 31, which are held in spaced relationship by spacing elements 32. The other shaft or set comprises two grinding wheel elements indicated at 33 and are adapted to extend between the grinding wheel elements 31 on the one shaft. The other shaft also has spacing elements 34 for holding the two grinding wheels 33 in spaced relationship on the shaft. Each shaft has end plates 35 for holding the assembly of the grinding wheels and the spacing elements together. By adjusting the screw 19 the grinding wheels can be brought closer to one another or

further away depending upon the angle of cut desired on the sides of the knife blade.

Each shaft has an extension on which polishing units **36** are provided. Each polishing unit comprises several leather discs which are fixed to the shaft to turn therewith without slippage.

The drive of these shafts **29** is effected between the electric motor and pulleys **37** and **38** on the respective shafts. The electric motor **11** has a double pulley **39** and V-belts **40** and **41** extend respectively from this double pulley **39** and connect respectively with the pulleys **37** and **38** on the respective shafts **29**. Each pulley belt **40** extends over two idler pulleys **42** and **43** on the frame **14** and laterally spaced from each other. There is a similar pair of pulleys at each side of the frame **14**.

It will be seen to sharpen the knife that the knife is disposed between the sets of grinding wheels and with these wheels being driven in the same direction, the same grinding force is applied to the respective opposite sides of the knife blade, whereby the knife blade will be kept in balance while it is pulled longitudinally between the sets of grinding wheels. The grinding wheel sets are brought closer and closer to each other, by the adjustment of the screw **19**, in order to obtain the desired grinding angle. The knives are drawn lengthwise over the grinding wheels.

It will be seen that the grinding wheel sets can be easily removed from the adjustable brackets **17** and **18** by loosening and removing screws **28** which hold the bearing assembly attachments **27** on the reduced projections **25**.

It will now be apparent that there has been provided a sharpening and polishing machine which is easy to operate and which will effectively sharpen knives and as well provide a polishing means for objects found about the kitchen.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the appended claim.

I claim:

A sharpening machine for blades comprising a base support, a frame, a frame pedestal piece mounted on said support for supporting said frame, said frame having parallel guide projections disposed respectively at the opposite sides thereof, brackets extending between the guide projections and slidable thereon, an adjusting screw having opposite threads engaging with the respective brackets to adjust the same toward and away from one another, each of said brackets having upstanding portions at the opposite ends thereof, bearing attachments releasably connected to the upstanding projections, said upstanding projections on the adjustable brackets being curved upwardly and inwardly and having a reduced projection, said bearing attachments respectively having a curved socket portion adapted to fit respectively the curved projections of the upstanding portions of the brackets, a shaft journalled between the bearing attachments and having grinding wheels fixed thereon, spacing elements separating the grinding wheels, an electric motor disposed under the frame and resting upon said base support, a double pulley driven by said motor, single pulley means carried by each of said shafts, endless belts extending between the double pulley of the electric motor and the pulley of each shaft to rotate said shafts, idler pulleys carried by said frame, one of said idler pulleys engaging each flight of each endless belt constantly to tension each belt to effect a continuous driving connection between the motor and each belt regardless of the relative position of said shafts with respect to each other, the grinding wheels of the respective shafts being so spaced that they overlap one another and operate simultaneously on the respective opposite sides of a blade when said shafts are adjusted toward each other.

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