Sept. 29, 1953 F. KOBOS 2,653,421

SCREW DRIVER SHARPENER

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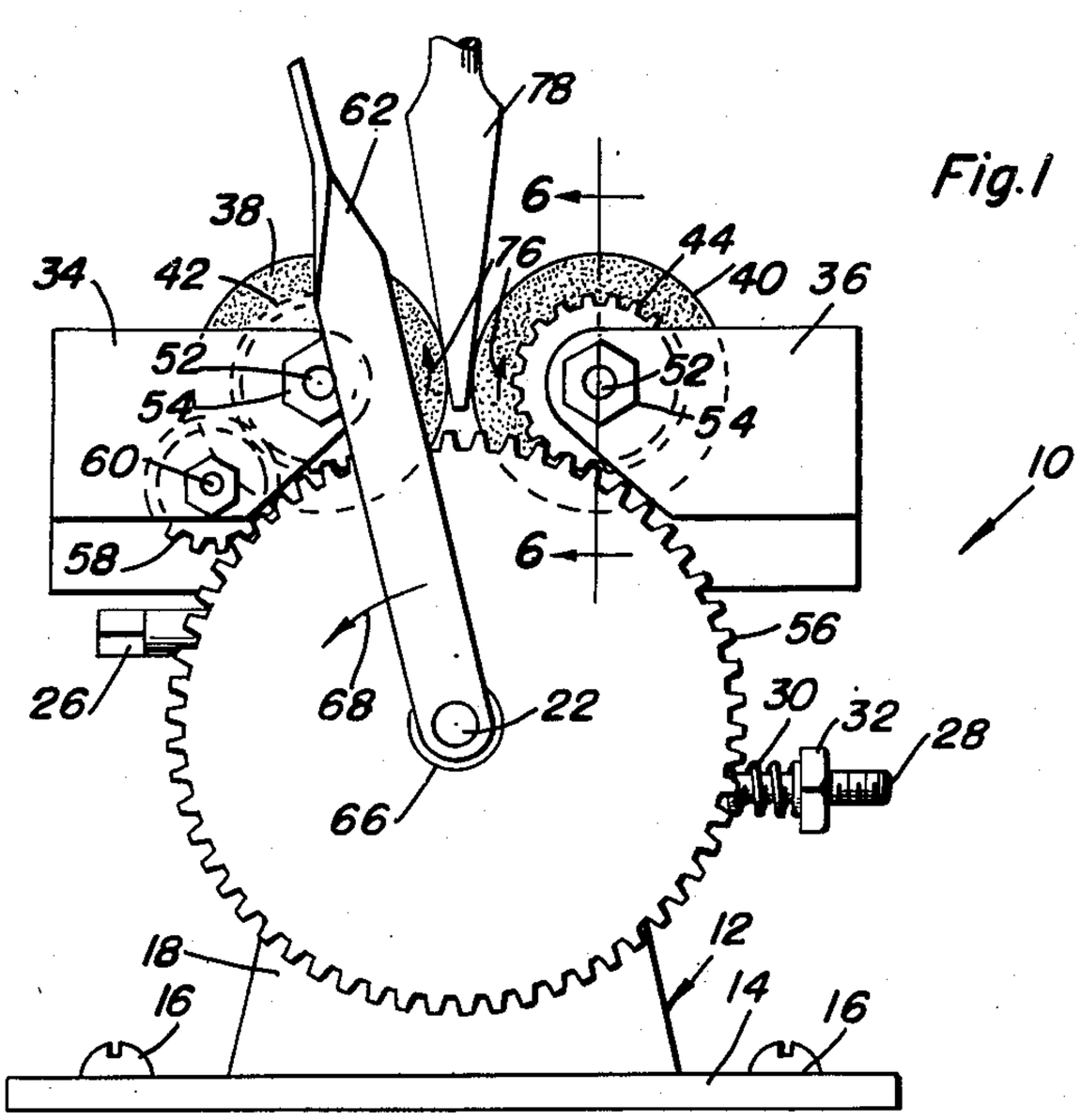

Fig. 1

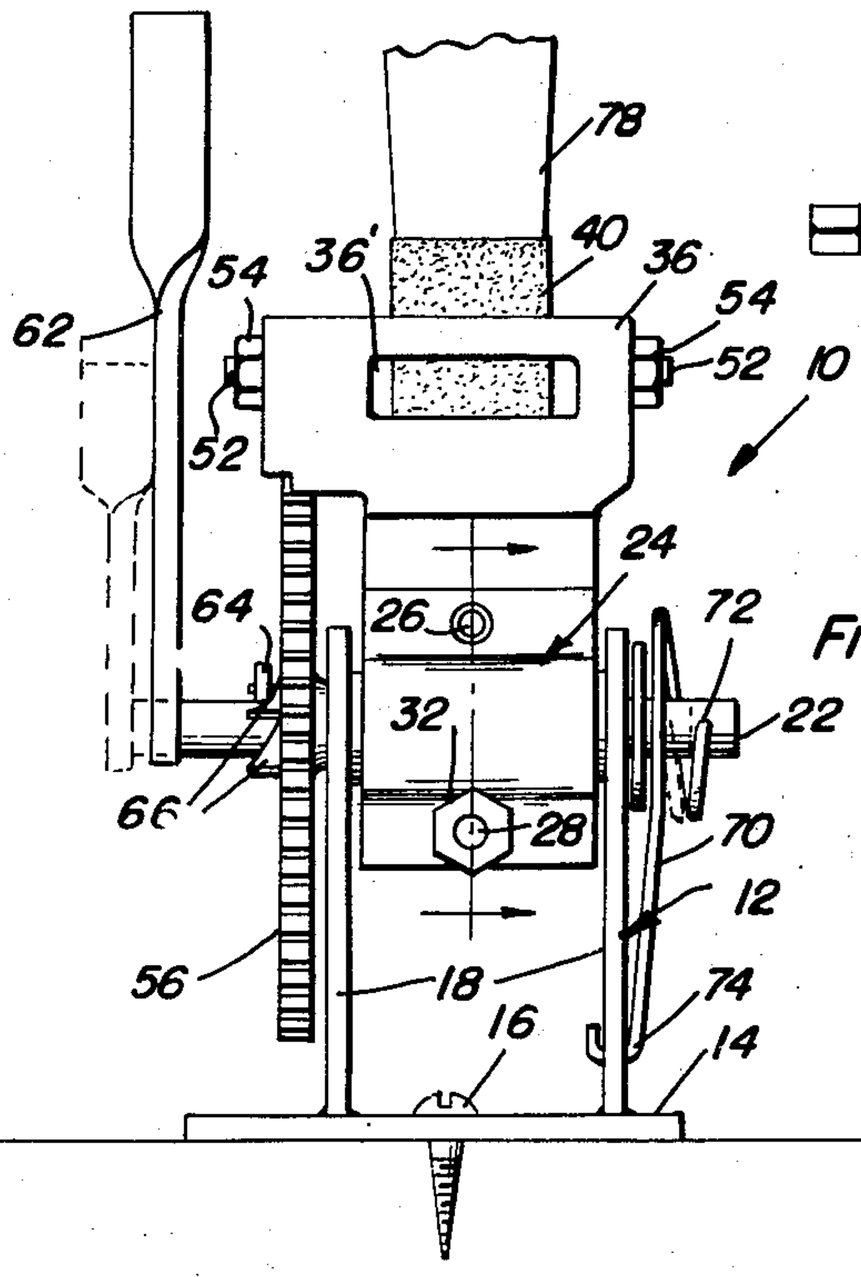

Fig. 2

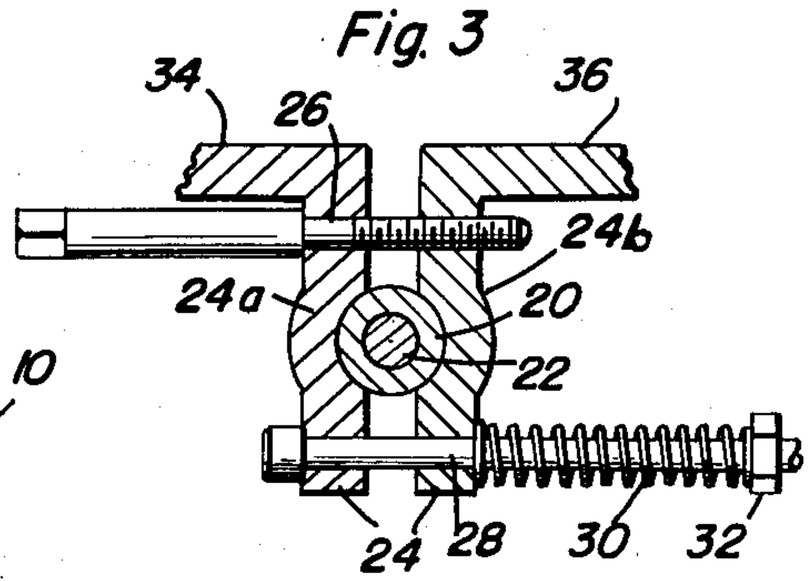

Fig. 3

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Fig. 4

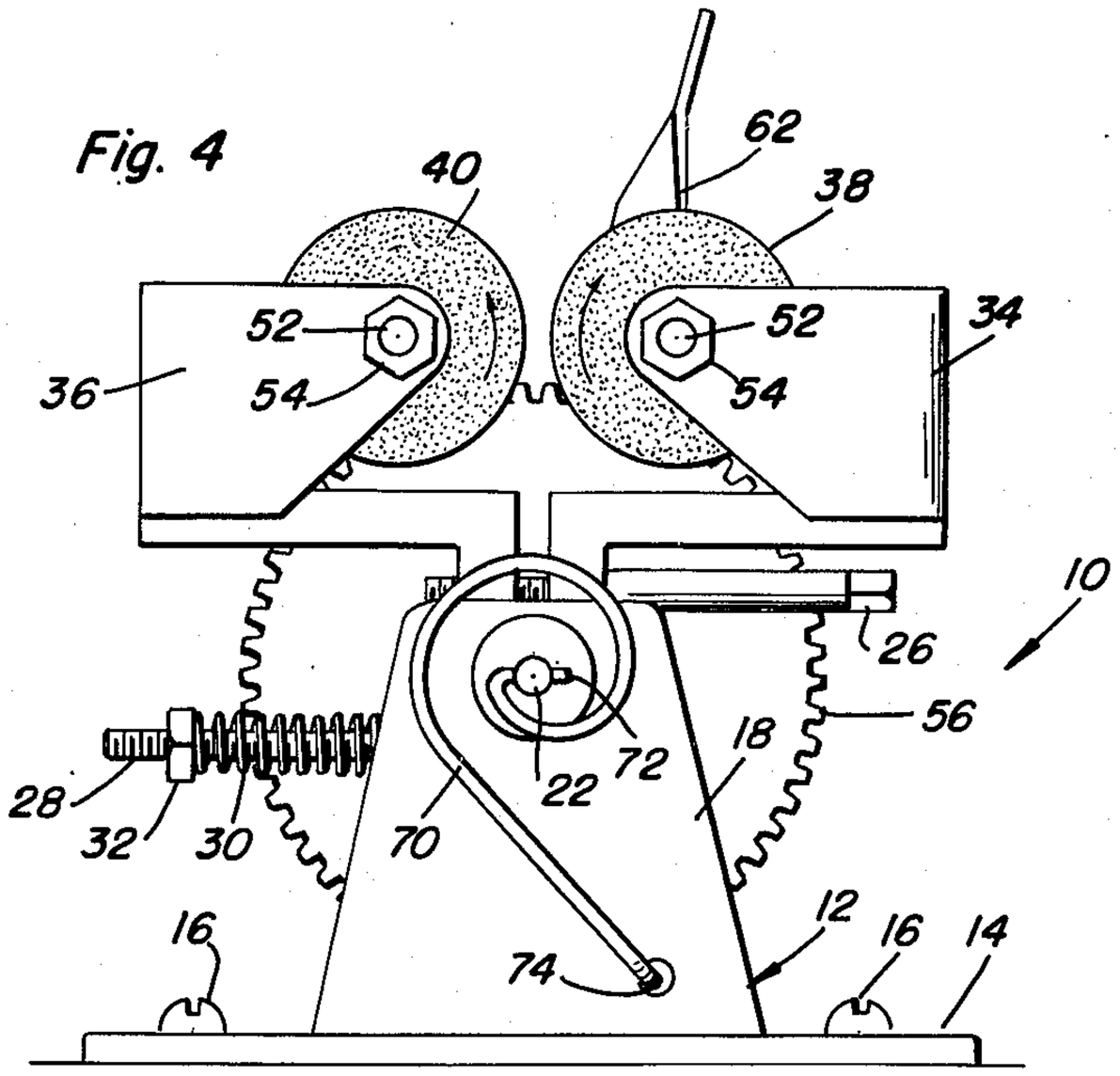


Fig. 5

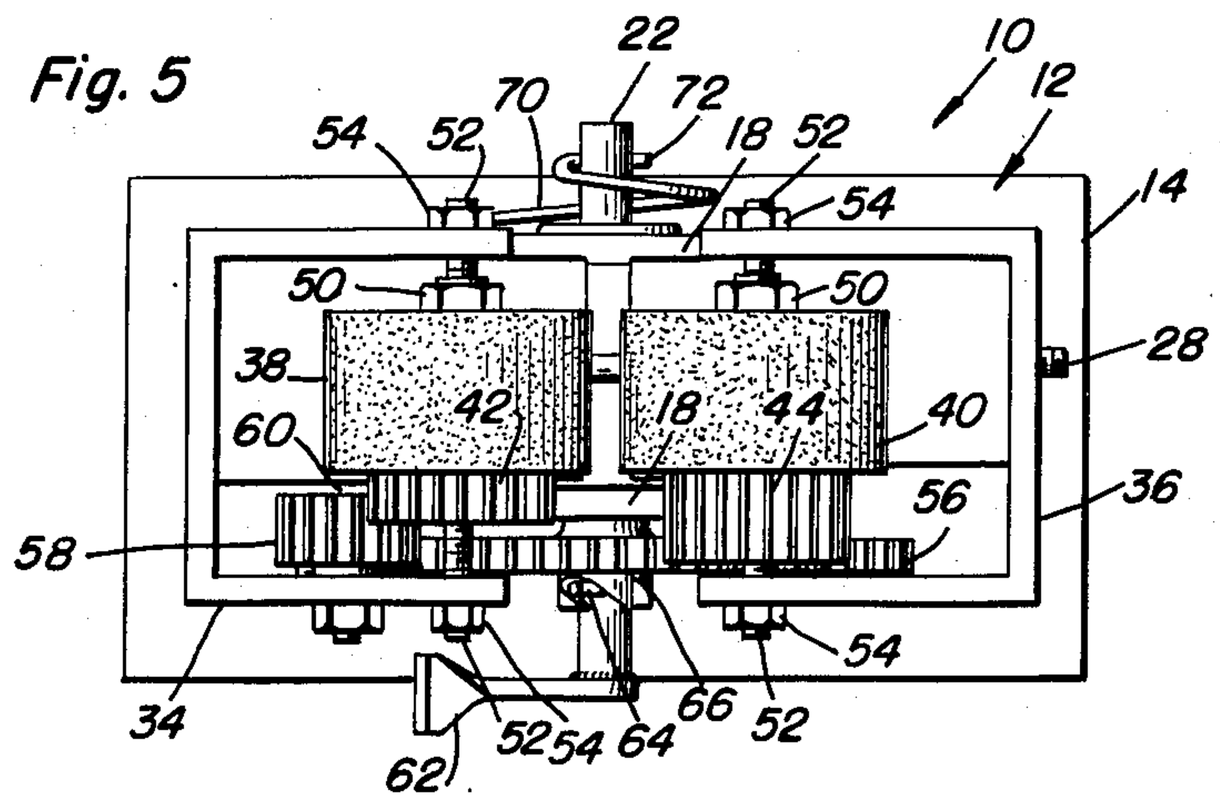
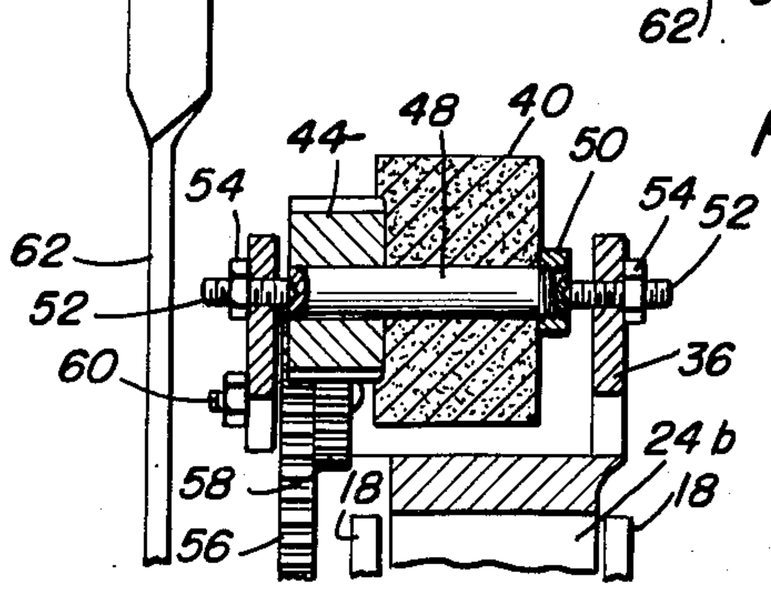


Fig. 6



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Patented Sept. 29, 1953 2,653,421

UNITED STATES PATENT OFFICE

2,653,421

SCREW DRIVER SHARPENER

Frank Kobos, Houston, Tex.

Application May 22, 1952, Serial No. 289,299

3 Claims. (Cl. 51—80)

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This invention relates to new and useful improvements and structural refinements in sharpeners for tools, particularly screw drivers, and the principal object of the invention is to provide a device of the character herein described whereby the point of the blade of screw drivers, or the like, may be quickly and easily sharpened.

The instant invention represents a substantial improvement on my prior invention for which U. S. Patent No. 2,249,084 was granted to me on July 15, 1941. Since practicing the invention in accordance with my previous patent, I have found that the same lends itself to certain improvements and refinements, and the instant invention embodies such improvements and refinements therein.

Some of the advantages of the instant invention reside in its simplicity of construction, in its efficient and dependable operation, and in its adaptability to economical manufacture.

With the above more important objects and features in view and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a side elevational view of the invention;

Figure 2 is an end view thereof;

Figure 3 is a sectional detail, taken substantially in the plane of the line 3—3 in Figure 2;

Figure 4 is an elevational view, taken from the opposite side to that shown in Figure 1;

Figure 5 is a top plan view of the invention; and

Figure 6 is a fragmentary sectional view, taken substantially in the plane of the line 6—6 in Figure 1.

Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of a screw driver sharpener which is designated generally by the reference character 10 and embodies in its construction a support 12 including a base 14 which may be suitably secured to a support by means of screws 16, the support 12 also including a pair of transversely spaced side plates 18 which are rigid with the base 14. A stationary, tubular sleeve 20 extends between and is rigidly secured to the side plates, this sleeve having rotatably journaled therein a drive shaft 22.

A clamp assembly 24, disposed between the side plates 18, consists of a pair of complemental

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clamp sections 24*a*, 24*b* which frictionally embrace the sleeve 20 and are connected together by means of an adjusting screw 26 disposed above the sleeve and a stud 28 disposed below the sleeve, as is best shown in Figure 3. The stud 28 carries a compression spring 30, and a nut 32 adopted to act as a stop member for spring 30.

The clamp sections 24*a*, 24*b* are formed integrally with a pair of substantially U-shaped, opposing holders 34, 36 respectively, and these holders have rotatably mounted therein a pair of coacting abrading wheels 38, 40, respectively, as shown.

As is best shown in Figure 6, the abrading wheels 38, 40 are fixed to and rotatable with pinions 42, 44, respectively, each of these pinions being provided with an axial support member 48 on which the associated abrading wheel is mounted by means of a nut 50. The ends of each support member 48 are countersunk to receive pointed extremities of fulcrum screws 52 which are provided on the holders 34, 36 and are adjustably secured therein by suitable nuts 54, whereby the abrading wheels and the associated pinions are rotatably mounted in the holders.

The aforementioned drive shaft 22 carries a gear 56 which meshes with the pinion 44 of the abrading wheel 40, and also meshes with an intermediate pinion 58 which, in turn, meshes with the pinion 42 of the abrading wheel 38. The intermediate pinion 58 is carried by means of a suitable fulcrum pin 60 provided on the holder 34.

The aforementioned shaft 22 has secured thereto an actuating lever 62 and the shaft also carries a pin 64 which engages an over-running clutch member 66 on the gear 56, it being understood that the gear 56 is rotatably positioned on the shaft 22 and is driven only when the lever 62 is pressed in the direction of the arrow 68 in Figure 1. When the lever is returned to its initial position, the pin 64 merely "skips" over the over-running clutch member 66, so that no rotation is imparted to the gear 56. A wire spring 70 has one end thereof (72) secured to the shaft 22, the other end of the spring being anchored to one of the side members 18 as shown at 74, the spring 70 being so configurated as to perform a double function, namely, that of returning the lever 62 to its initial position after the lever is depressed as indicated by the arrow 68 in Figure 1, and also, that of sliding the shaft 22 in the sleeve 20 to a position wherein the clutch pin 64 engages the over-running clutch member 66.

It will be apparent from the foregoing that when the lever 62 is depressed as shown by the

arrow 68 in Figure 1, the gear 56 and pinions 58, 42, 44, will rotate the abrading wheels 38, 40 in opposite directions (see the arrows 76 in Figure 1), so that by placing a screw driver blade 78 between the two abrading wheels, the blade will be effectively and easily sharpened. When the lever 62 is returned by the spring 70 to its initial position, the abrading wheels 38, 40 remain stationary.

It will be noted that the abrading wheels 38, 40 are spaced apart to accommodate a screw driver blade therebetween and the space between the two abrading wheels may be effectively varied by simply turning the adjusting screw 26 so as to bring the holders 34, 36 closer together, or further apart, as desired. While this adjustment is being made, the compression spring 30 on the stud 28 will urge the clamp members 24*a*, 24*b* in frictional engagement with the sleeve 20 and this frictional engagement will be sustained regardless of the adjustment of the screw 26.

The holders 34, 36 are provided in the end walls thereof with rectangular recesses 36' through which a screw driver with a broken blade may be inserted for contact with the adjacent abrading wheel, whereby the broken end of the blade may be ground to an even edge.

It is believed that the advantages and use of the invention will be readily understood from the foregoing disclosure and accordingly, further description thereof at this point is deemed unnecessary.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that minor changes in the details of construction and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

Having described the invention, what is claimed as new is:

1. In a screw driver sharpener, the combination of a support including a pair of spaced side members and an open-ended tubular sleeve extending between and secured to said side members, a clamp embracing said sleeve and including a pair of spaced half-sections, a pair of holders for coacting abrading wheels provided on the respective half-sections of said clamp, a stud extending through said half-sections below said sleeve, a stop member on said stud, an adjusting screw extending through the half-sections above the sleeve and threadedly engaging a first of said half-sections for moving said holders toward and away from each other, the headed end of said adjusting screw abutting the other of said half-sections, said stop member engaging said other half-section and a spring provided on said stud biasing said stop member and one of said spaced half-sections urging said half-sections in frictional engagement with said sleeve regardless of the adjustment of said screw, the adjustment of said screw determining the degree of compression of said spring.

2. A screw driver sharpener comprising a support including a stationary tubular sleeve, a clamp positioned on said sleeve, a pair of spaced holders provided on said clamp, means for adjusting said clamp to vary the space between said holders, a pair of abrading wheels rotatably mounted in said spaced holders, a drive shaft rotatable in said sleeve, a gear slidably and rotatably mounted on said shaft, a pin on said shaft and a slot in said gear forming an overrunning clutch, a pair of driven pinions rotatable with said wheels, one of said pinions meshing with said gear, an intermediate pinion meshing with the other driven pinion and with said gear, said intermediate pinion being rotatably mounted in the holder of said other driven pinion, a resilient member terminally secured to the shaft and said support, and an oscillatory actuating crank secured to said drive shaft, said resilient member urging said pin to engage said gear in said slot when said crank is actuated and urging said crank to its initial position and disengaging said pin from said gear when said crank is released.

3. A screw driver sharpener comprising a support including a stationary tubular sleeve, a clamp positioned on said sleeve, a pair of spaced holders provided on said clamp, means for adjusting said clamp to vary the space between said holders, a pair of abrading wheels rotatably mounted in said spaced holders, a drive shaft rotatable in said sleeve, a gear slidably and rotatably mounted on said shaft, a pin on said shaft and a slot in said gear forming an overrunning clutch, a pair of driven pinions rotatable with said wheels, one of said pinions meshing with said gear, an intermediate pinion meshing with the other driven pinion and with said gear, said intermediate pinion being rotatably mounted in the holder of said other driven pinion, a resilient member terminally secured to the shaft and said support, and an oscillatory actuating crank secured to said drive shaft, said resilient member urging said pin to engage said gear in said slot when said crank is actuated and urging said crank to its initial position and disengaging said pin from said gear when said crank is released, said clamp including a pair of spaced half sections, said means for adjusting said clamp including a stud extending through said half sections below said sleeve, a stop member on said stud, an adjusting screw extending through said half-sections above the sleeve and threadedly engaging a first of said half-sections for moving said holders toward and away from each other, the headed end of said adjusting screw abutting the other of said half-sections, said stop member engaging said other half-section, and a spring provided on said stud biasing said stop member and one of said half sections urging said half-sections into frictional engagement with said sleeve regardless of the adjustment of said screw, the adjustment of said screw determining the degree of compression of said spring.

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