

No. 795,568.

PATENTED JULY 25, 1905.

J. B. WOODWORTH.
SHARPENING MACHINE.

APPLICATION FILED JAN. 30, 1905.

2 SHEETS—SHEET 1.

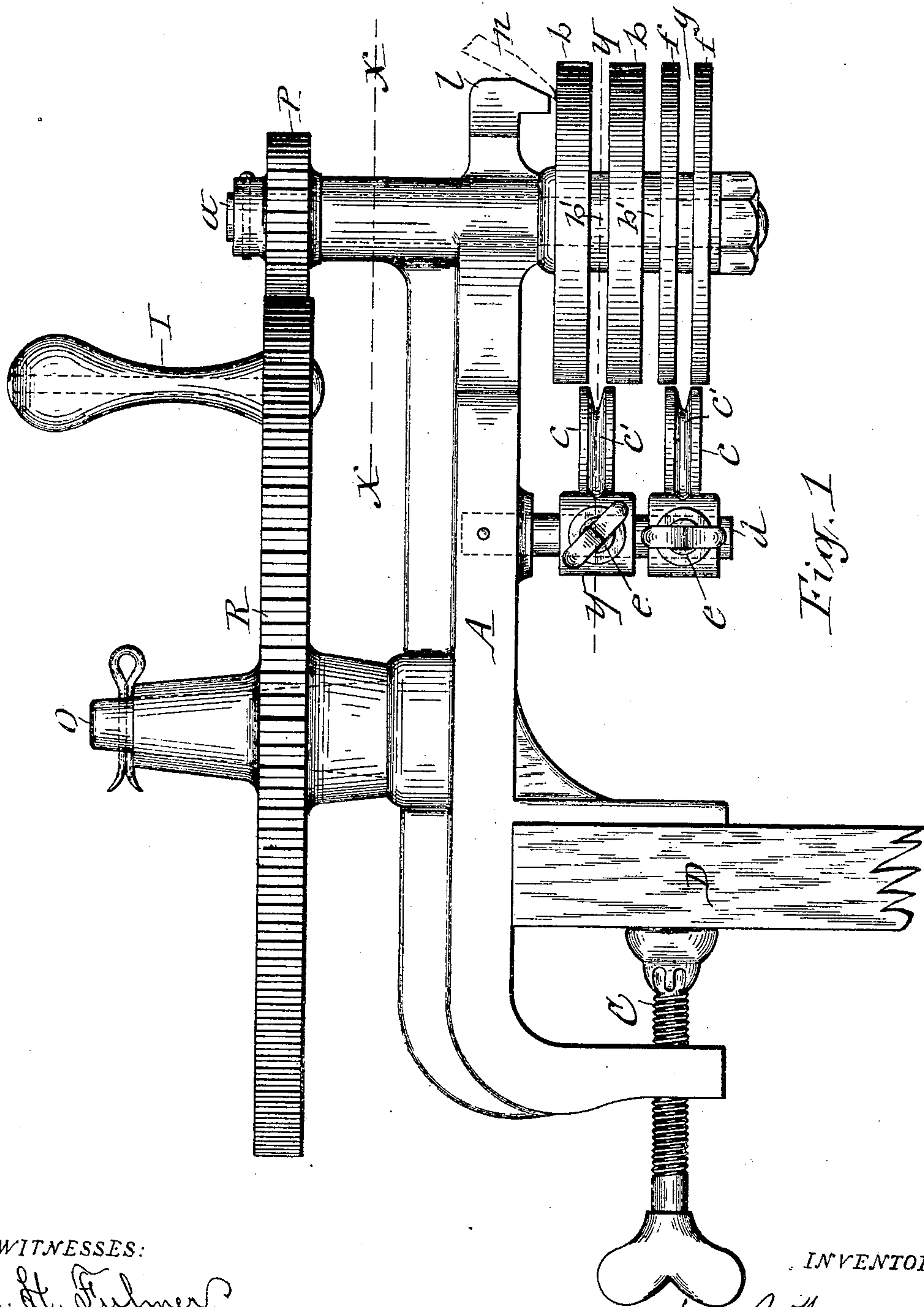


Fig. 1

WITNESSES:

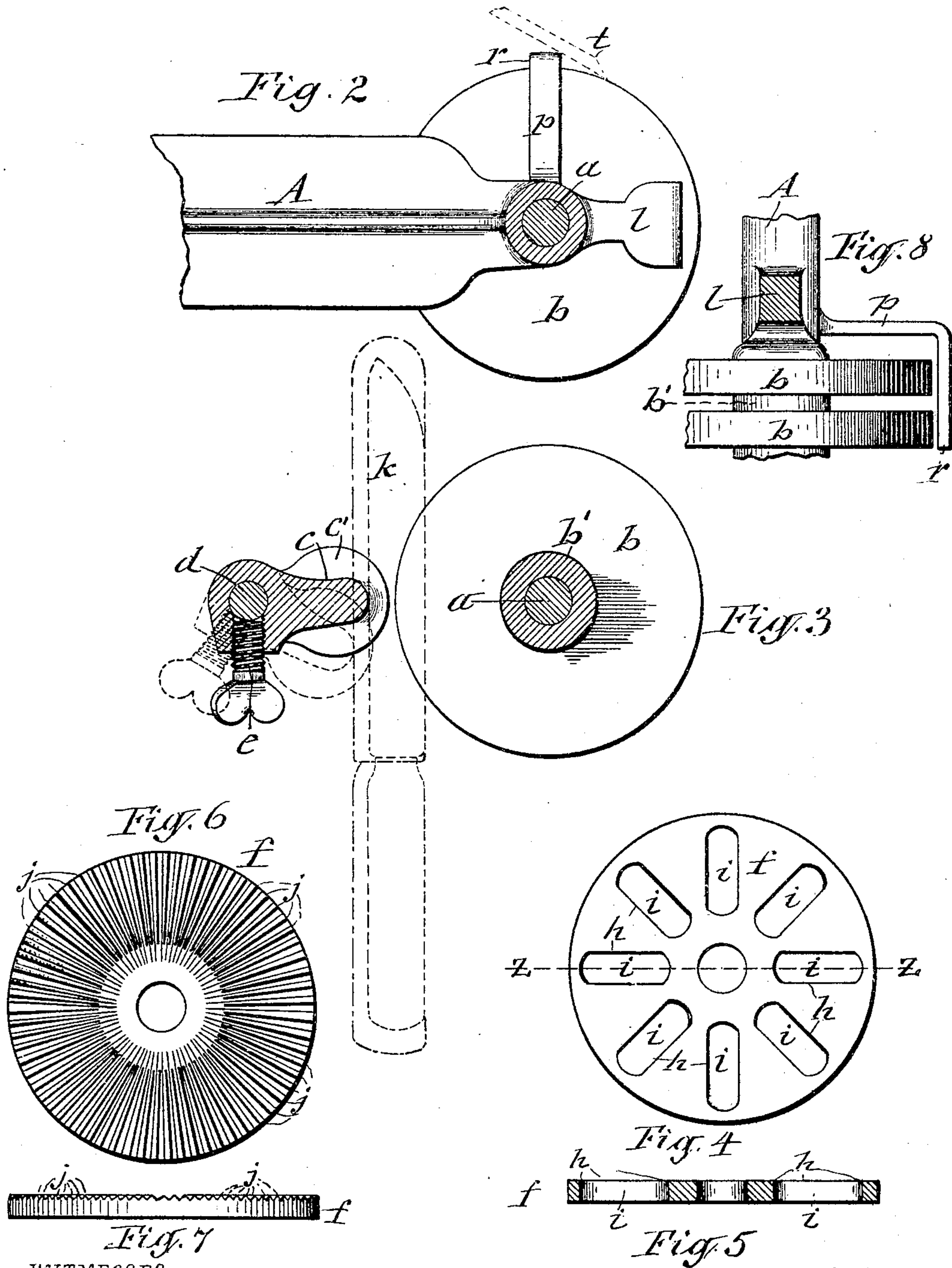
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JOHN B. WOODWORTH, OF FAYETTEVILLE, NEW YORK, ASSIGNOR OF
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SHARPENING-MACHINE.

No. 795,568.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed January 30, 1905. Serial No. 243,187.

To all whom it may concern:

Be it known that I, JOHN B. WOODWORTH, of Fayetteville, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Sharpening-Machines, of which the following, taken in connection with accompanying drawings, is a full, clear, and exact description.

The object of this invention is to provide an efficient and convenient machine for sharpening implements or tools of various forms and sizes in an expeditious and accurate manner; and to that end the invention consists in the novel construction and combination of the component parts of the machine, as hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a sharpening-machine embodying my invention. Fig. 2 is a transverse section on the line X X in Fig. 1. Fig. 3 is a transverse section on the line y y. Fig. 4 is a plan view of one of the steel disks which is designed to produce a fine cutting edge on a knife or analogous article. Fig. 5 is a transverse section on the line z z in Fig. 4. Fig. 6 is a plan view of a modification of the steel disk. Fig. 7 is an edge view of said modification, and Fig. 8 is a fragmentary side view showing the position of the tool-post for supporting a tool to be sharpened on its end.

A represents the supporting-bracket of the sharpening-machine. Said bracket may be of any suitable shape and provided with a suitable clamp C, by means of which it is rigidly secured to a post or other suitable support D.

a represents a shaft which is journaled in the free end of the bracket and has fastened to its upper end a pinion P, which engages a gear-wheel R, mounted revolvably on a post O, formed on the bracket A. A handle I, attached to the said gear-wheel, affords means for rotating it.

b b represent two circular grinding-plates, which are rigidly secured to the shaft a and maintained thereby in parallel planes. These grinding-plates may be composed of any suitable material, such as fine emery or stone of grindstone grit or of the nature of hone, according to the article to be sharpened thereby. The said grinding-plates are formed with hubs b', by means of which they are held a sufficient distance apart to form between them

a space for the reception of the part of the knife K to be ground, as indicated in dotted lines in Fig. 3 of the drawings.

c denotes a guide for sustaining the knife-blade in position between the grinding-plates b b during the operation of the machine. Said guide is provided with a V-shaped groove c' for receiving the back of the knife-blade, which is allowed to be rocked laterally in said groove, so as to allow the knife-blade to be pressed onto the side of either of the grinding-blades b b. The guide c is also adjustable to a greater or less distance from the grinding-blades, and thus adapted to hold knives of different widths. This adjustability I preferably obtain by attaching to the bracket A an arbor d, which is parallel with the shaft a and has the guide c mounted radially adjustable thereon, as more clearly shown in Fig. 3 of the drawings. A set-screw e, passing through the hub of the guide and engaging the arbor, holds the guide in its adjusted position.

f f designate circular steel disks which are rigidly secured to the shaft a and sustained parallel with the grinding-plates b and disposed with a space g between said disks to allow the knife-blade to be passed between said disks and partly turned transversely therein, so as to present the blade obliquely to the plane of one of the disks. These disks are designed for producing a fine cutting edge on the knife K, and for that purpose I provide the adjacent sides of the disks with a series of sharp scraping edges h h, which may be formed either by cutting or milling through the disks a series of openings i i, which present the sharp edges around the ends of said openings at the surface of the disk, as shown in Figs. 4 and 5 of the drawings, or by radial ribs j j, formed on the surface of the disk and of inverted-V shape in cross-section, as represented in Figs. 6 and 7 of the drawings. By passing the knife-blade longitudinally between the rotating disks f f and at the same time turning said blade transversely, so as to press the edge portion of the blade obliquely onto the face of one of the disks, the edges h h of said disk scrape the said portion of the blade so as to produce a fine cutting edge thereon. In this operation the knife is moved longitudinally in the guide a, which is disposed opposite the space g between the disks

f f and provided with the V-shaped groove *c'*. Said guide is mounted adjustably on the arbor *d* in the same manner as the guide *c*, hereinbefore described.

l denotes a support for the blade of shears, as indicated at *n*, or a tool requiring the sharpening of one edge thereof. Said tool-support projects from the bracket A to allow the tool to be held in contact with the flat side of the adjacent rotating grinding-plate *b*, as shown in Fig. 1 of the drawings.

p represents an arm which projects from the side of the bracket A and has on its free end a tool-post *r*, which extends across the peripheries of the grinding-plates *b b*, as shown in Fig. 8, to support a tool to be sharpened on its end, as indicated in dotted lines *t* in Fig. 2 of the drawings.

What I claim as my invention is—

1. A sharpening-machine comprising circular grinding-plates sustained in parallel planes with a space between them, means for rotating said plates, and knife-supporting guides disposed opposite the aforesaid spaces and adjustable in their distance from the grinding-plates as set forth.

2. A sharpening-machine comprising a revoluble shaft, circular grinding-plates rigidly secured to said shaft and disposed with a space between the plates, means for rotating the shaft, an arbor sustained parallel with said

shaft, a knife-guide mounted radially adjustable on said arbor.

3. The combination of revoluble circular grinding-plates sustained in parallel planes with a space between them, means for rotating said plates, and a knife-guide disposed opposite said space and formed with a groove for receiving the back of the knife-blade as set forth.

4. The combination of a revoluble shaft, circular grinding-plates attached to said shaft and disposed with a space between the said plates, means for rotating the shaft, an arbor sustained parallel with said shaft, and a knife-guide mounted radially adjustable on said arbor and formed with a V-shaped groove for receiving the back of the knife-blade as set forth and shown.

5. A sharpening-machine consisting of a supporting-bracket, a shaft journaled in said bracket, means for rotating said shaft, circular grinding-plates mounted rigidly on said shaft, an arm projecting from the bracket and a tool-post extending from said arm and across the peripheries of the grinding-plates as set forth.

JOHN B. WOODWORTH.

Witnesses:

J. J. LAASS,
L. H. FULMER.