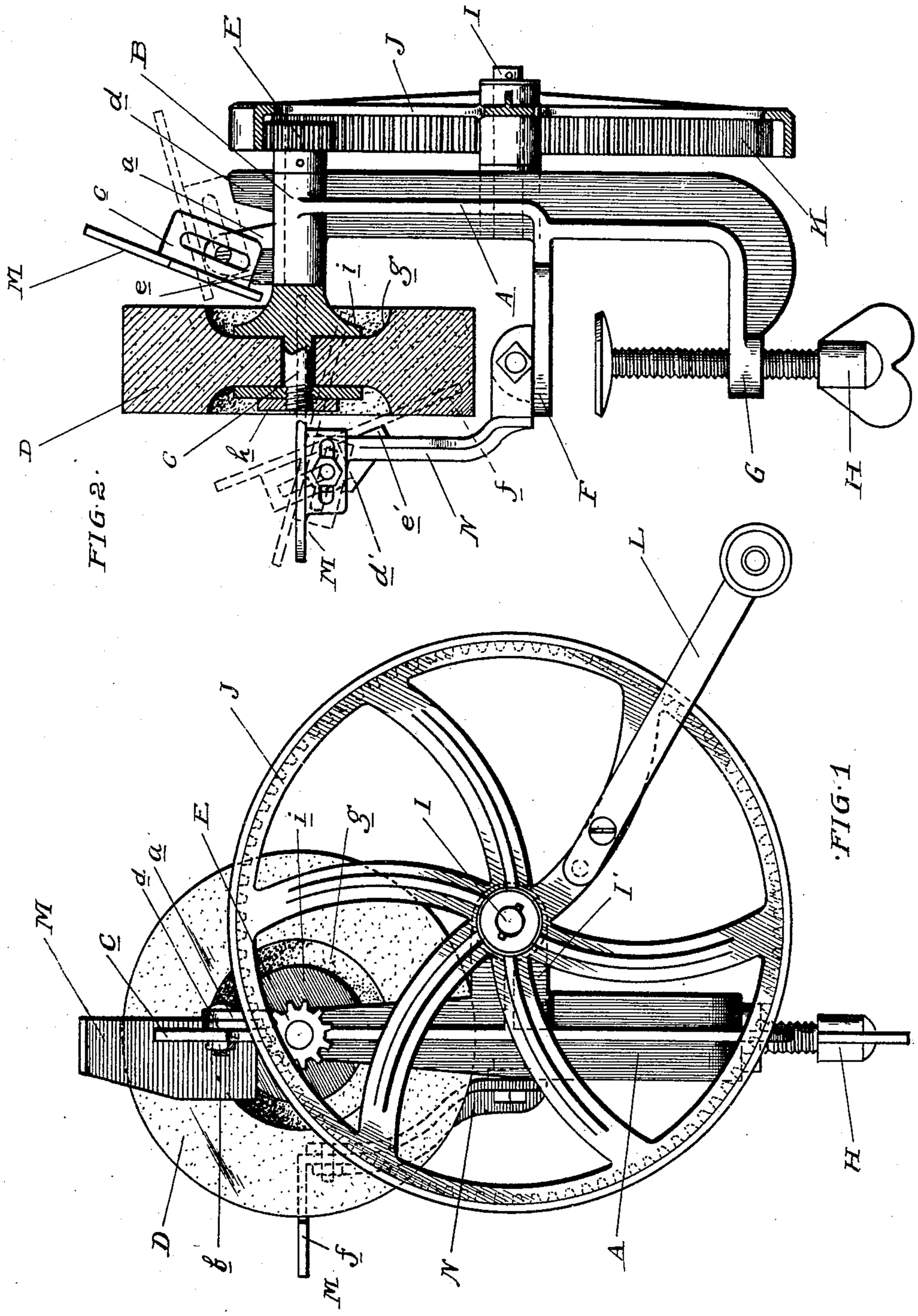
No. 809,254. PATENTED JAN. 2, 1906.

G. W. GOLDEN.

GRINDER.

APPLICATION FILED JAN. 3, 1905.



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GRINDER.

No. 809,254. Specification of Letters Patent. Patented Jan. 2, 1906.

Application filed January 3, 1905. Serial No. 239,412.

To all whom it may concern:

Be it known that I, GEORGE W. GOLDEN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Grinders, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to grinders more particularly designed for the sharpening of knives, shear-blades, &c.; and it is a special object of the invention to enable an unskilled person to properly sharpen such instruments.

It is a further object to obtain a simple construction.

The invention consists in the construction as hereinafter set forth.

In the drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a cross-section thereof.

A is a frame, preferably formed of cast metal, which is provided with a horizontal bearing B at its upper end, in which is journaled the arbor C, carrying the grinder-wheel D. At the opposite end of the bearing a pinion E is mounted upon the arbor. Below the grinder-wheel D is a laterally-projecting arm F on the frame A, which is adapted to rest upon a shelf or table, and at the lower end of the frame is a second lateral projection G, having a threaded aperture therein engaging a clamping-screw H. Thus the frame may be secured in position on any table or shelf where it may be convenient for use.

In the central portion of the frame A is a stub-shaft I, which projects laterally from the frame and oppositely from the arms F and G. This shaft is preferably secured to a rearwardly-extending lug I′ on the frame, as shown in Fig. 1. Upon this shaft is journaled a drive gear-wheel J, which meshes with the pinion E and imparts movement to the latter. In order to produce the required speed for the arbor and at the same time to arrange the parts as compactly as possible, the gear-wheel J is provided with the internal gear-flange K, which overlaps and meshes with the pinion E. The gear-wheel is provided with a suitable operating crank-handle, such as L.

To properly sharpen an instrument, it must be held at a proper angle to the grinding-face, and this is seldom done by the ordinary unskilled person. As a consequence, if a knife is to be sharpened, it is either held too flat, so as to produce a thin wiry edge, or if inclined the angle is not the best one for producing a sharp edge. Again, in the grinding of shear-blades if the proper angle is not formed the instrument will not cut. I have therefore provided my machine with guides M, which are adjusted to different angles, and to enable the unskilled user to set them properly suitable stops are arranged. In the position shown in Fig. 2 the guide M on the right-hand side of the wheel is shown in full lines as adjusted for sharpening a knife, while in dotted lines the same guide is adjusted for sharpening a shear-blade. The guide M is secured, preferably, to an upwardly-extending ear *a* on the frame A and is clamped by a screw *b*, which engages a slotted ear *c* on the guide and passes through an aperture in the ear *a*. *d* is a stop formed by an upwardly-projecting lug on the frame A, which arrests the movement of the guide M at a suitable angle for sharpening shear-blades. *e* is a second stop, forming the opposite limit of movement of the guide M, and when said guide is adjusted against the stop *e* it is at a proper angle for sharpening knife-blades. The guide on the left-hand side of the machine, as illustrated in Fig. 1, is similarly formed, but is secured to a bracket N, which is itself secured to a lug on the arm F. The bracket N is also provided with stops *d′* and *e′* for limiting the adjustment of the guide, as has been described.

A grinder constructed as above described may be used for sharpening other instruments in addition to knives and shear-blades, and the guides M may be adjusted to any desired angle and then clamped for tightening the screw *b*.

For grinding on the face or periphery of the wheel an extension *f* is provided on the left-hand guide M, and this extension forms a guide or arrest adjacent to the periphery of the wheel. In order that the rotation of the drive-gear J and crank-handle L may not interfere with the instrument being ground, the shaft I is set back of the frame, as has been described, and thus provides greater clearance than if arranged at the center of the frame. The grinder-wheel is preferably provided with central recesses *g* upon opposite sides thereof, which permit of arranging

the clamping-nut *h* and the collar *i* on the arbor, so as not to interfere with the instrument being ground.

What I claim as my invention is—

1. In a grinder, the combination with a frame, an arbor journaled therein, a grinder-wheel mounted on said arbor, and a drive connection for revolving said arbor, of an adjustable guide arranged at the side of said wheel, and auxiliary means for limiting the adjustment of said guide to hold the same at a predetermined angularity.

2. In a grinder, the combination with a frame, arbor journaled therein, grinder-wheel mounted upon said arbor, of a guide adjustably secured to said frame at one side of said grinder, and stops for limiting the angular adjustment of said guide, to hold the same in predetermined positions of adjustment for two different kinds of work.

3. In a grinder, the combination with an arbor, of a grinder-wheel mounted thereon and having a central recess, clamping means for securing said wheel on said arbor, arranged in said recess, completely below the surrounding surface of the grinder-wheel and a guide for the work on the recessed side of said wheel.

4. In a grinder, a frame comprising a vertical bar and clamped at the lower end of said bar, a journal-bearing at the upper end of said bar, an arbor in said bearing, a grinder-wheel on said arbor, the clamping means being countersunk below the surface of the grinder-wheel, a pinion mounted on the opposite end of said arbor, a drive-gear intermeshing with said pinion, and a rearwardly-projecting lug on said frame, upon which said drive-gear is journaled, whereby the periphery of said drive-wheel is arranged to clear the front face of the grinder-wheel.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. GOLDEN.

Witnesses:
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JAS. P. BARRY.