

(No Model.)

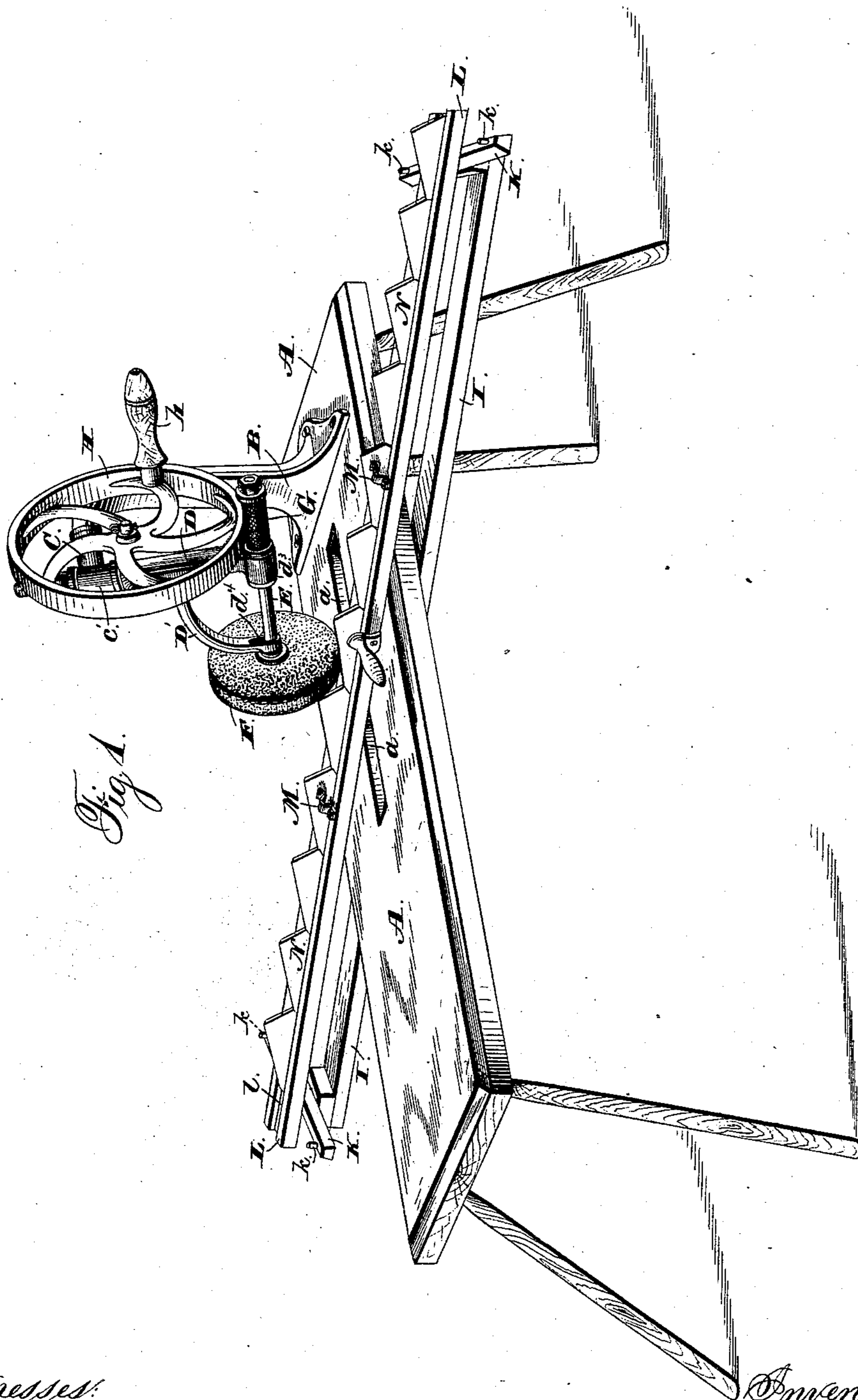
3 Sheets—Sheet 1.

C. W. CLAYBOURNE.

SICKLE GRINDER.

No. 298,176.

Patented May 6, 1884.



Witnesses:
 Jas. E. Hutchinson.
 Henry C. Hazard.

Inventor
C. W. Laybourne, by
Prindle & Russell, his Attys

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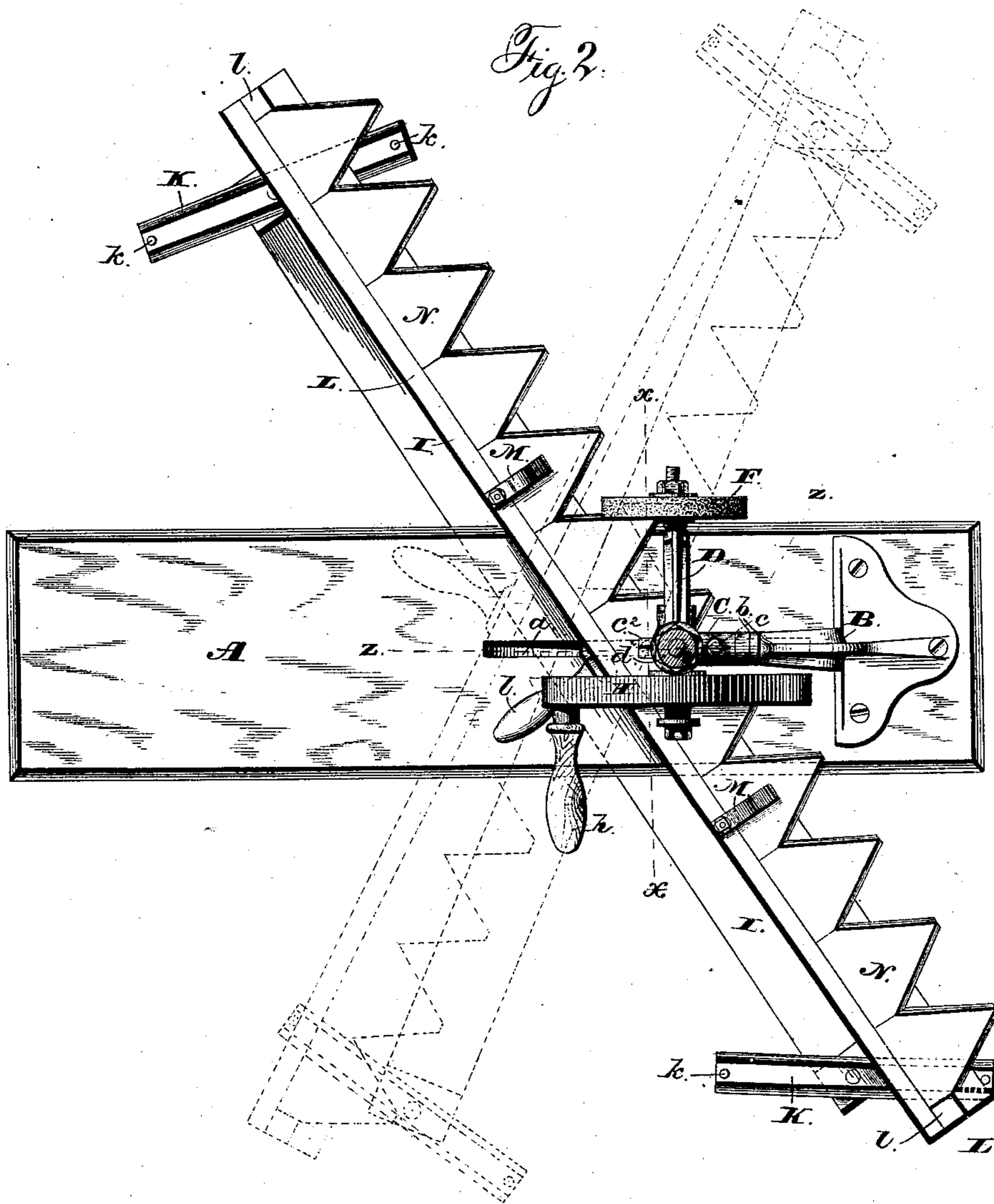
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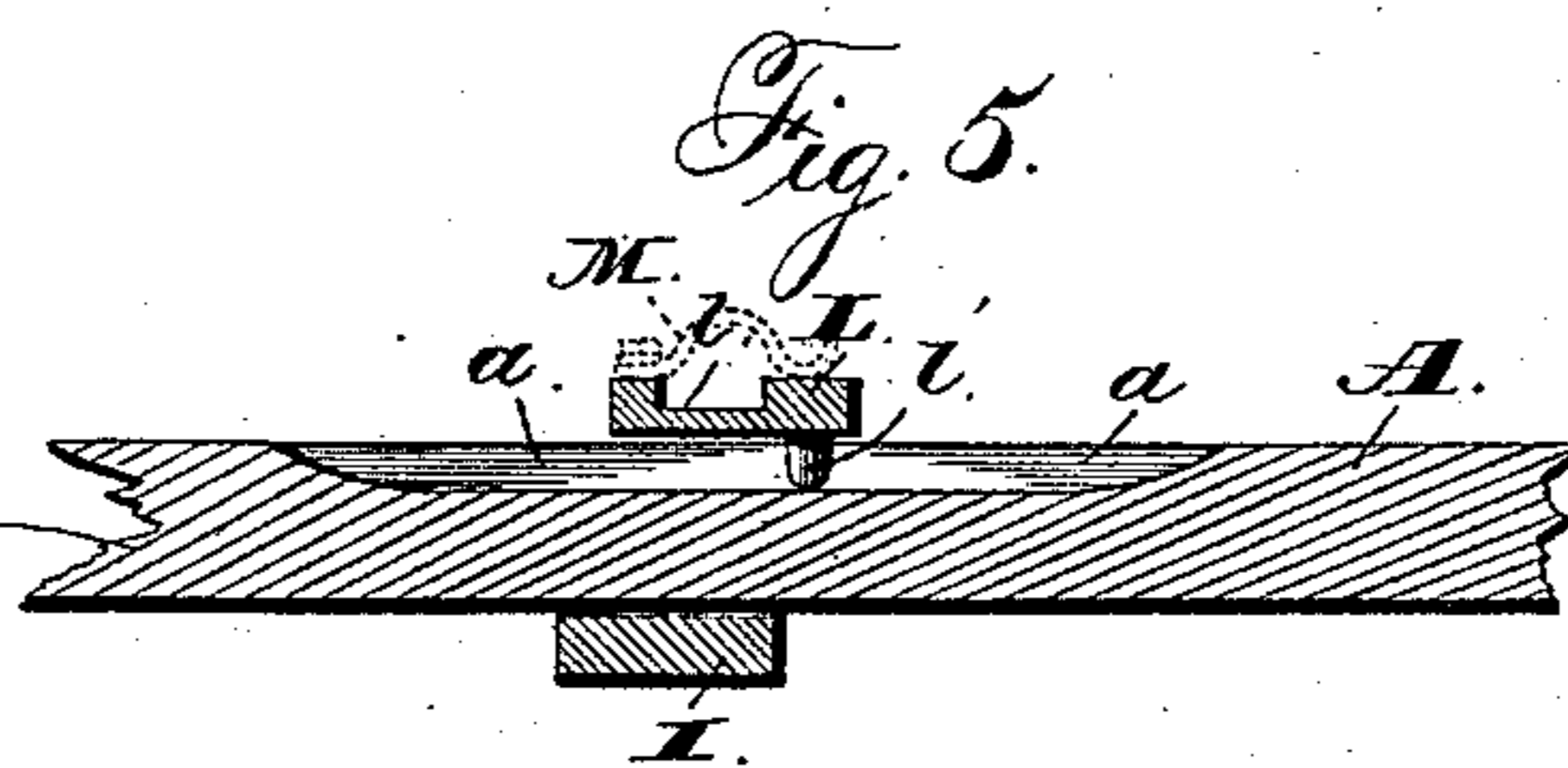
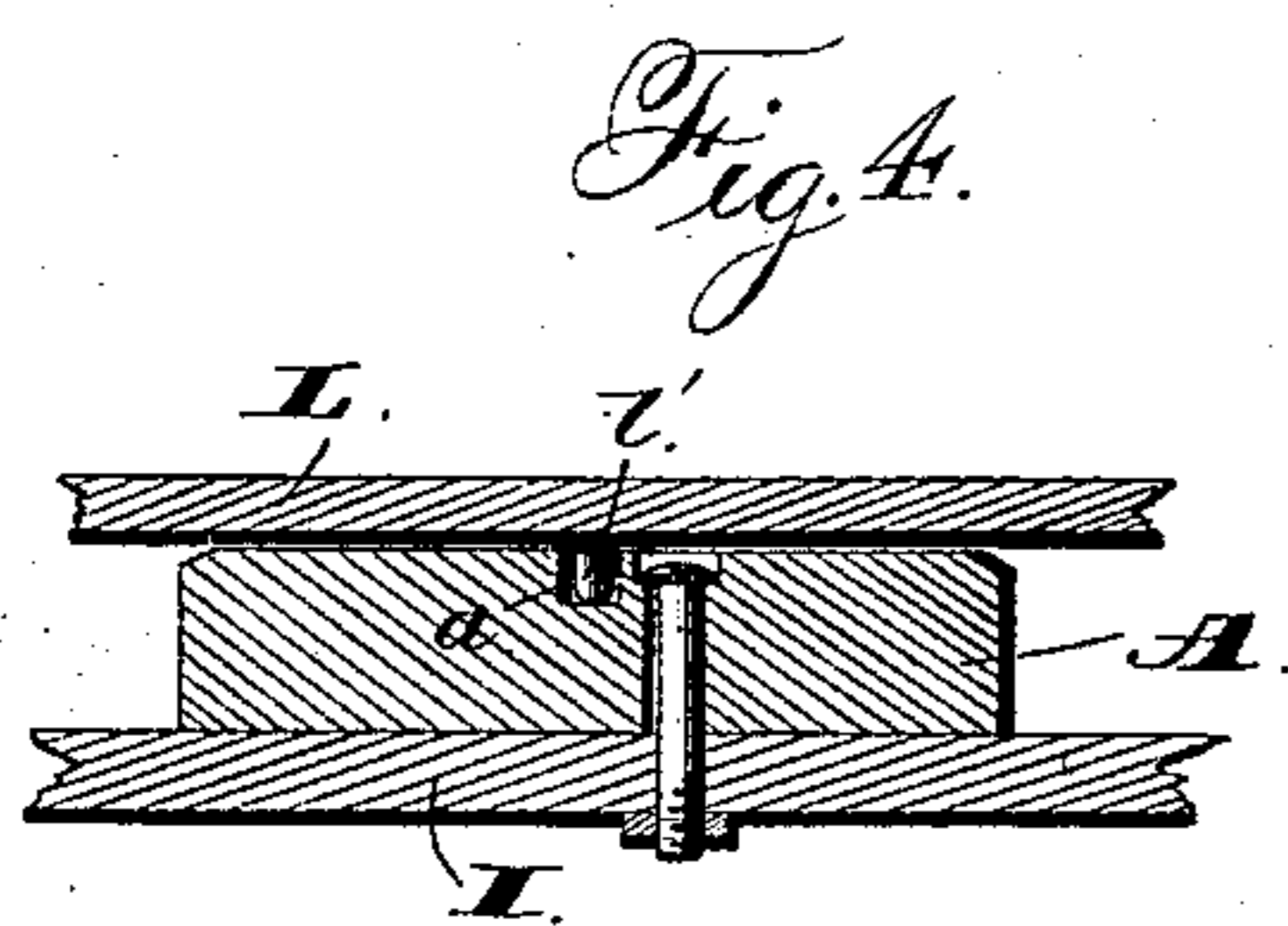
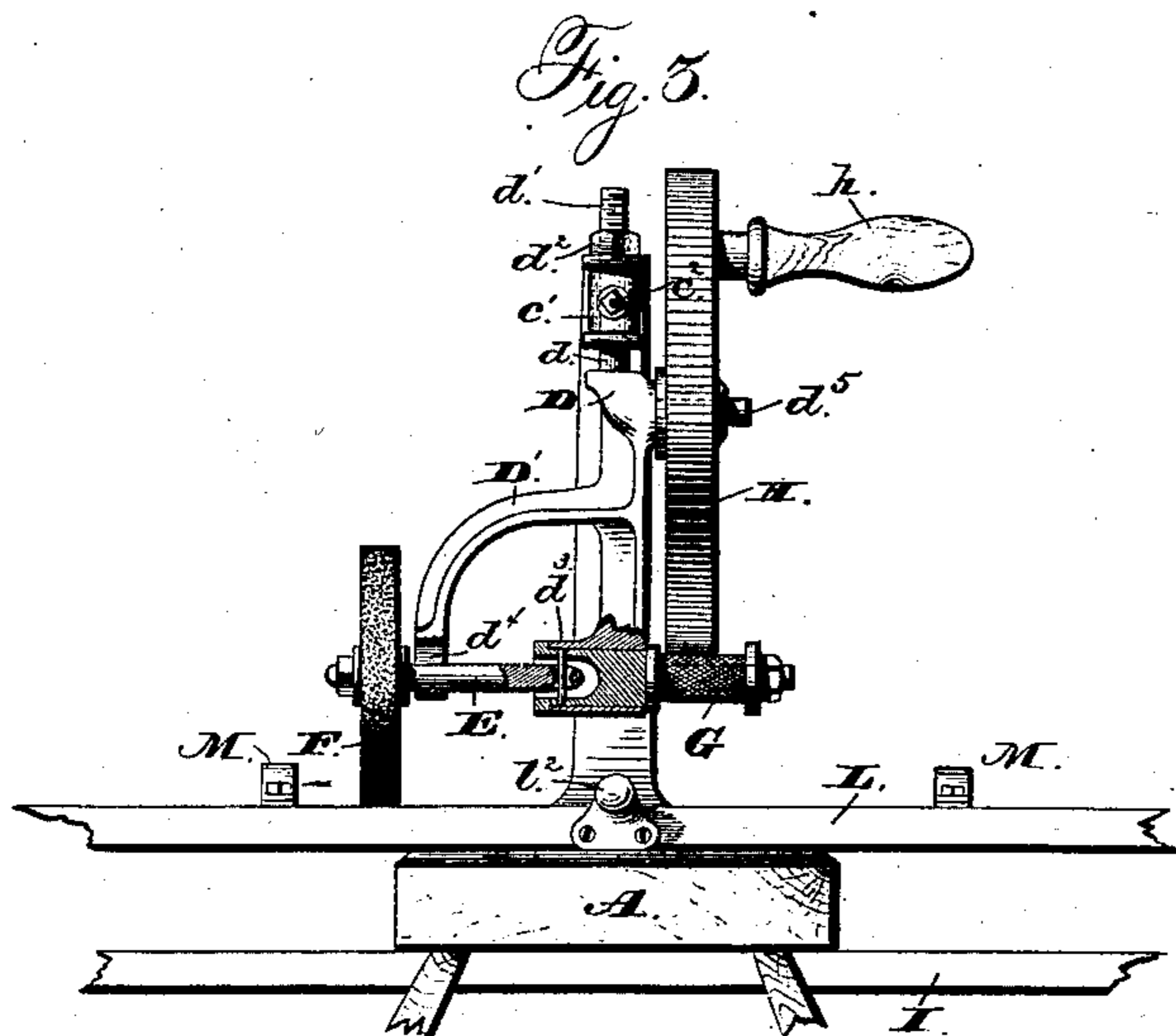
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UNITED STATES PATENT OFFICE.

COLIN W. CLAYBOURNE, OF QUINCY, ILLINOIS.

SICKLE-GRINDER.

SPECIFICATION forming part of Letters Patent No. 298,176, dated May 6, 1884.

Application filed July 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, COLIN W. CLAYBOURNE, of Quincy, in the county of Adams, State of Illinois, have invented certain new and useful Improvements in Sickle-Grinders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—
Figure 1 is a perspective view of my machine as arranged for use. Fig. 2 is a plan view of the same, the full and dotted lines showing different positions of the knife-rest. Fig. 3 is a rear elevation of said machine, and Figs. 4 and 5 are respectively sections upon lines *xx* and *zz* of Fig. 2.

Letters of like name and kind refer to like parts in each of the figures.

My invention has for its object an increase in the ease, rapidity, and accuracy with which sickles, knives, and other cutting mechanism may be ground; and to this end it consists in the construction, arrangement, and combination of parts, as hereinafter described, and more specifically set forth in the claims.

In the annexed drawings, A represents a table or other similar support, to which, at or near one end, is secured a standard, B, that from the same extends upward to a suitable height, and thence in a curve toward the opposite end of said table, and upon its rear upper end is provided with a horizontal bearing, *b*, that receives and is inclosed by a sleeve, C, which is held in position thereon by means of a radially inward-extending set-screw, *c*.

Within the outer end of the sleeve C is formed a hollow bearing, *c'*, which is arranged axially at a right angle to the bearing *b*, and receives and contains a journal, *d*, that is formed upon the upper end of a frame, D. Said journal *d*, at its upper end, is provided with a screw-thread, *d'*, upon which is a nut, *d''*, that limits the downward movement of said frame, and may be raised or lowered to correspondingly lower or raise said frame. When adjusted to height, said frame is locked in position by means of a set-screw, *c''*, which passes radially inward through the wall of said bearing *c'*.

Within the lower end of the frame D is a bearing, *d'''*, which axially has a right angle to

the line of said frame, and receives and contains a shaft, E, that upon one end carries an abrading-wheel, F, and upon its opposite end is provided with a friction-pulley, G, that is preferably constructed from elastic material, and is expanded radially by means of longitudinal compression.

In order that freedom of vertical motion may be given to the wheel F within certain limits, the shaft E is jointed at or near its journal, and immediately inside of said wheel is contained within a vertically-elongated opening or bearing, *d⁴*, which is provided within the lower end of an arm, D', that extends in a curve outward and downward from the side of the frame D.

Upon the pulley side of the frame D, immediately below the journal *d*, is a laterally-projecting stud, *d⁵*, upon which is journaled a wheel, H, that has such diameter as to cause its plain periphery to engage with the periphery of the pulley G. A crank-handle, *h*, projecting from the outer side of said wheel, enables the same to be rotated, and by engagement of its periphery with said pulley thereby enables the shaft E and wheel F to be revolved.

In consequence of the variable-friction engagement between the driving-wheel and the pulley of the abrading-wheel shaft, the effective power of the abrading-wheel may be gaged, so as to prevent injury to the temper of an article being ground, as any pressure of such article upon said wheel in excess of what is safe will cause a partial or entire stoppage of the rotation of the latter, and consequently lessen or arrest the abrasive action. The supporting-frame as constructed enables the abrading-wheel to be set at any desired angle, or to be varied in height above the table to suit the work to be done.

In the grinding of sickles for harvesters and mowers, and in the sharpening of many other forms of cutters, it is necessary that the article being operated upon should be supported and guided, in order that the work may be properly done and no waste of time or material result. To accomplish such object I pivot upon the lower side of the table A, beneath or slightly in rear of the line of the frame D, a bar, I, which has preferably a length of about

four feet, and upon each end has pivoted a cross-bar, K, that extends to equal distances upon each side of its pivotal bearing, is provided at each end with a vertical pin, *k*, and has its upper surface about one-half inch above the upper side of said table.

Resting upon the cross-bars K is a bar, L, which is somewhat longer than the bar I, is provided within its upper face with a longitudinal groove, *l*, for the reception of the back of a sickle-bar, and at its longitudinal center has projecting downward from its lower side a stud, *l'*, which passes into a slot, *a*, that is formed at the transverse center of the table A. A handle, *h*, projecting upward and then rearward from the center of said bar L, and two clamps, M, attached to the upper face at the rear side of the same, complete the device, the operation of which is as follows, viz: The pivoted cross-bars K furnish bearings for the outer portions of the bar L, while the pins *k* limit the motion of said bar L and prevent the same from becoming disengaged from said cross-bars. By pivoting the latter they may be placed at any desired angle to the line of the bar I, and when the machine is not in use and is to be stored said bar I may be turned nearly into line with the table A, and said cross-bars may in like manner be turned into position to occupy the least amount of space. A sickle-bar, N, is placed upon the bar L, with its back resting within the groove *l*, and is secured in position by means of the clamps M, after which the abrading-wheel F is set at the desired angle and caused to revolve, and said sickle moved beneath the same until one edge of a cutter-section has been ground, after which said clamps are loosened and said sickle-bar moved lengthwise until another cutter-section is in position to be operated upon. The pivoted bar I, with its cross-bars K, permits the bar L, with its load, to be freely swung upon the stud *l'*, in order to bring the article being ground into position, while, in consequence of the slotted bearing *a* for said stud, said bar L may be readily moved toward or from the abrading-wheel to permit the latter to act along the entire edge being ground, and will always move in a straight line.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In a grinding-machine, the driving-shaft of the abrading-wheel, provided with a fixed collar and an adjustable nut and washer, the elastic cylinder on the shaft between the collar and washer, and the wheel provided with a smooth face parallel to the shaft, and adapted to rotate in contact with the elastic material on the shaft, substantially as and for the purpose described.

2. In a grinding-machine, the combination of an abrading-wheel supported within suitable bearings, means for rotating the wheel and for adjusting the same to any desired angle and height with relation to the base of the machine, a bar for holding the article to be ground supported at each end upon supports at the ends of a pivoted bar, upon which it can also slide, and provided with a pin engaging a longitudinal slot in the base, substantially as shown and described.

3. In combination with grinding mechanism substantially as described, the knife-rest composed of the bar I, pivoted centrally upon the table A, the cross-bars K, pivoted upon the ends of the same, and provided with the studs *k*, the bar L, having the longitudinal groove *l*, pivoted stud *l'*, and handle *h*, and the clamps M, all constructed and combined to operate substantially as set forth.

4. In combination with the grinding mechanism, the knife-rest consisting of a bar pivoted to the under side of the table, and provided at its ends with pivoted cross-bars, the upper faces of which are on a plane above the top of the table, and are provided with stop-pins at their ends, and the grooved bar for holding the knife resting on the cross-bars, and provided with a pin on its lower side engaging a groove in the table, substantially as and for the purpose described.

COLIN W. CLAYBOURNE.

Witnesses:

JOHN R. WILLIAMS,
ALBERT BERGER.