(No Model.)

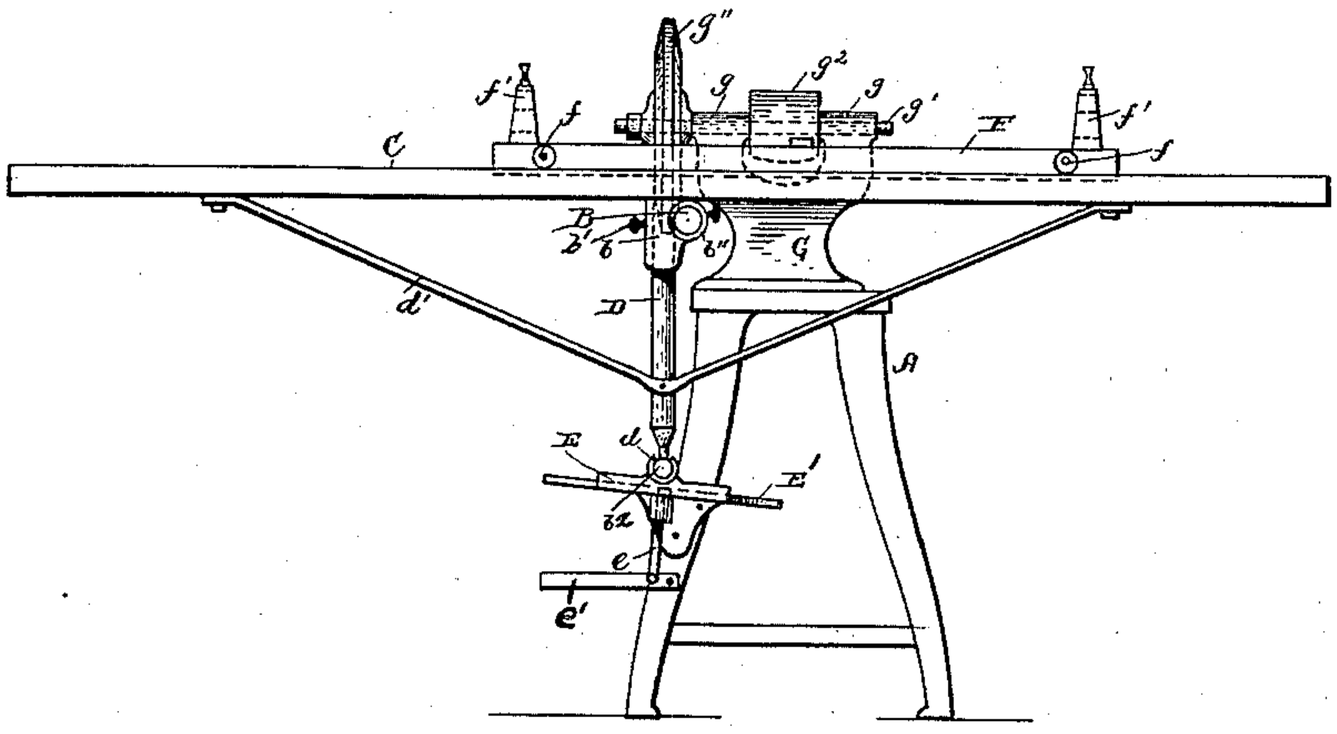
2 Sheets—Sheet 1.

H. BUCKINGHAM.

GRINDING AND SHARPENING MACHINERY.

No. 401,875. Patented Apr. 23, 1889.

Fig. 1.



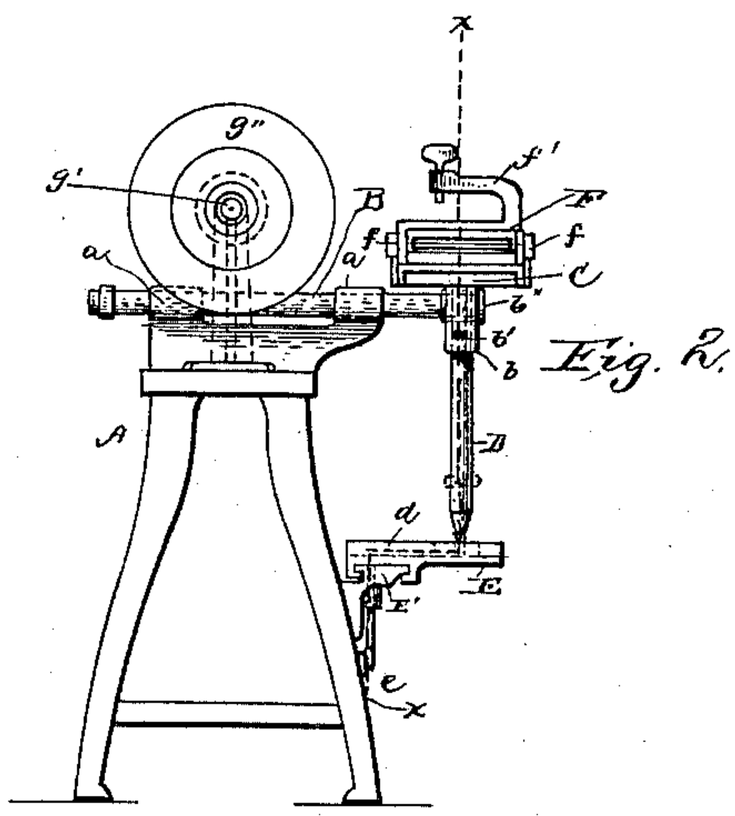


Fig. 2.

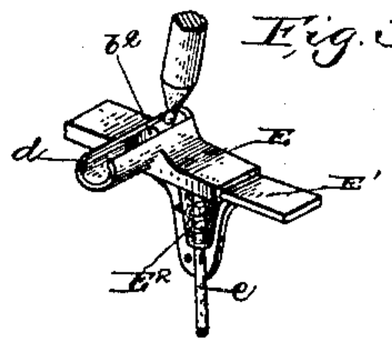


Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

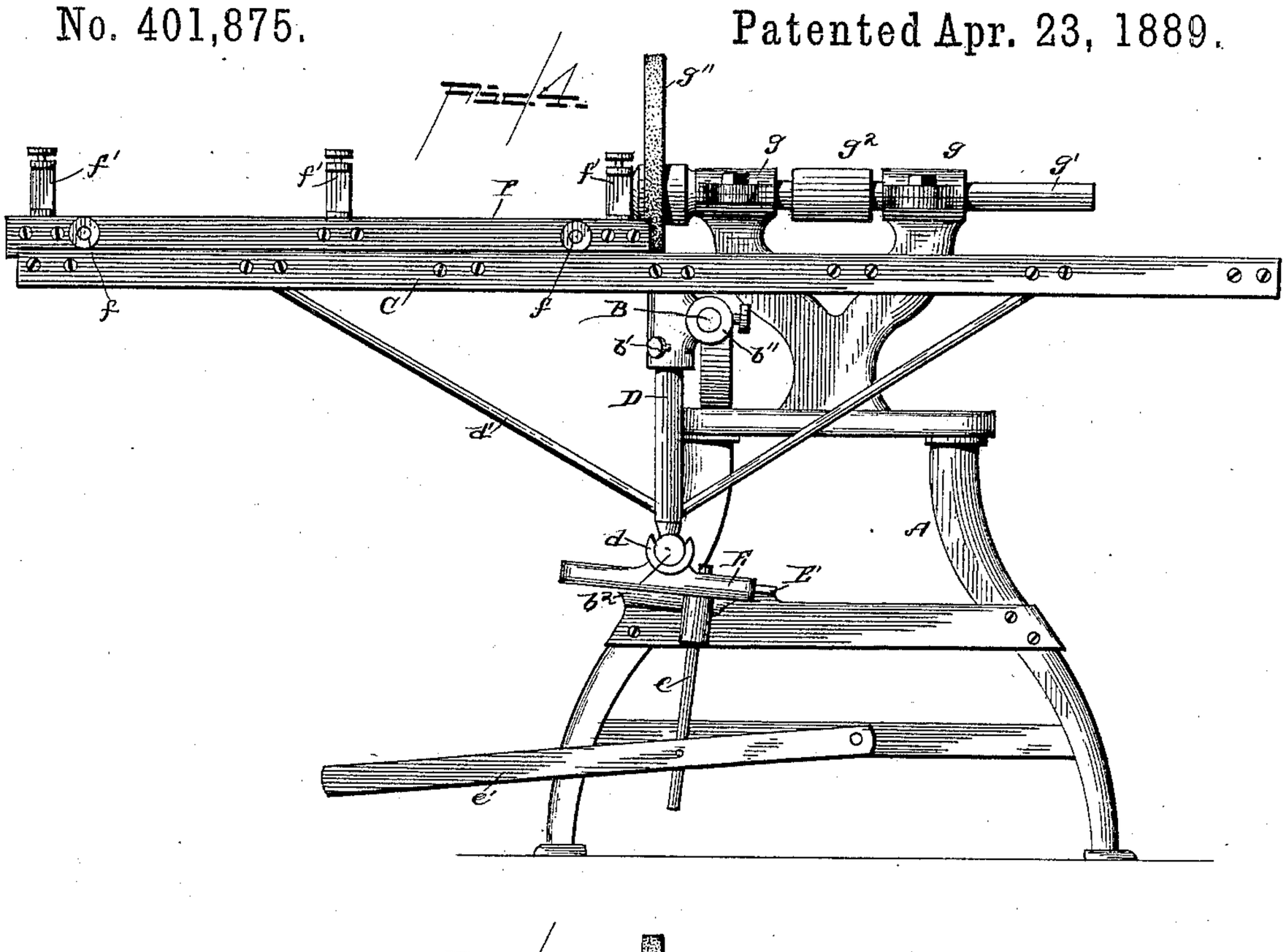
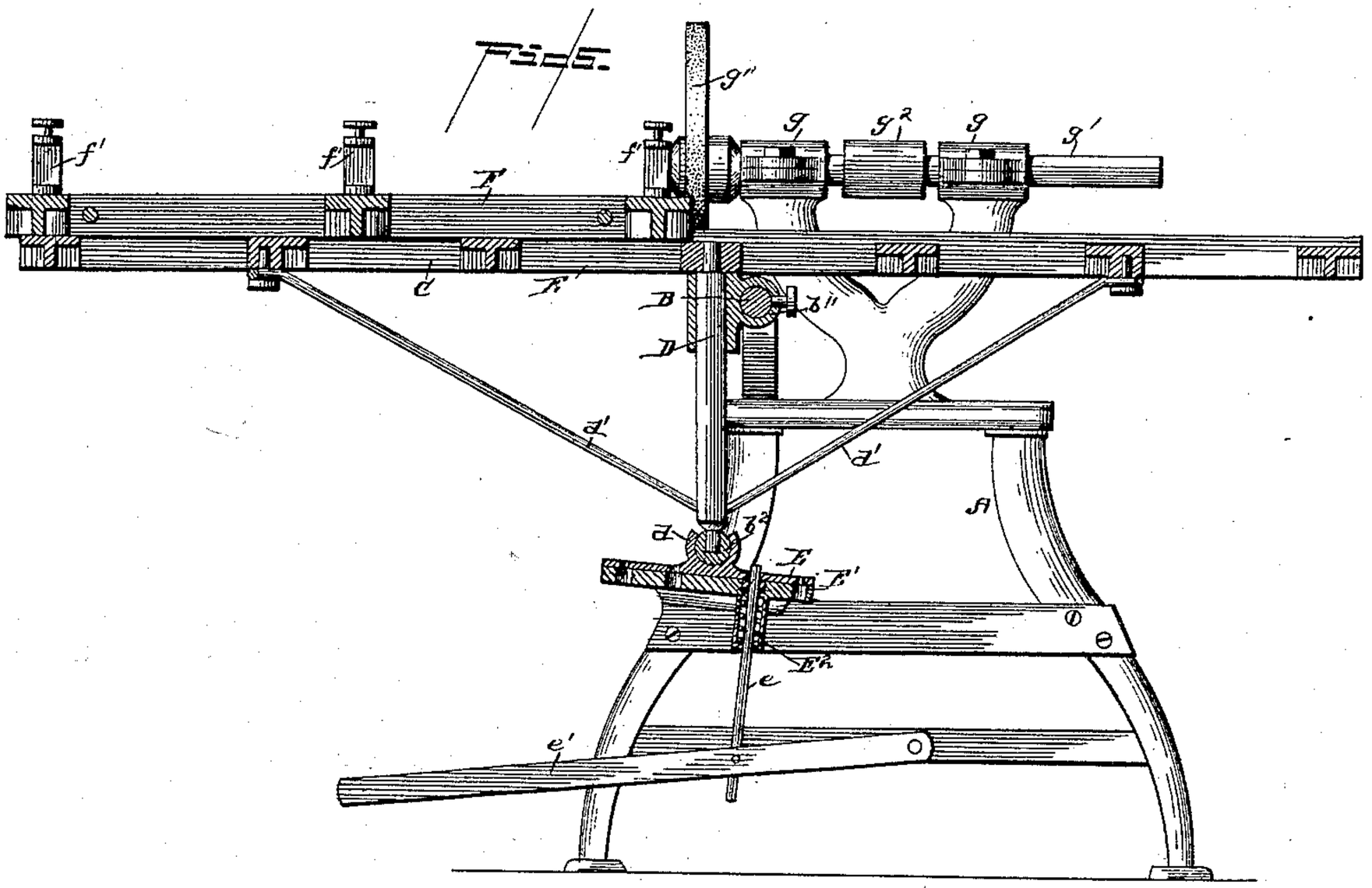


Fig. 5.



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UNITED STATES PATENT OFFICE.

HIRAM BUCKINGHAM, OF HARTFORD, CONNECTICUT.

GRINDING AND SHARPENING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 401,875, dated April 23, 1889.

Application filed June 11, 1887. Serial No. 241,055. (No model.)

To all whom it may concern:

Be it known that I, HIRAM BUCKINGHAM, a citizen of the United States of America, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Grinding and Sharpening Machinery, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention pertains to certain new and useful improvements in sharpening-machines, being designed more particularly for sharpening cutter-bars for mowers, harvesters, and reapers; and it consists in the detailed construction, combination, and arrangement of the parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of my invention. Fig. 2 is an end view thereof. Fig. 3 is an enlarged detail view of the plates and spring-held rod for adjusting the position of the tilting table. Fig. 4 is an enlarged front elevation; and Fig. 5 is a vertical sectional view taken on the line *x x*, Fig. 2.

The object of this invention is to provide new and improved means for readily sharpening the teeth of a cutter-bar by the convenient application thereof to the emery-wheel at the desired inclination, and also to permit of the inward and outward sliding thereof during the sharpening process.

In carrying out my invention I provide a stationary stand or table, A, from which projects at one end a bracket having two corresponding journal-boxes, *a a*, through which is passed a horizontal shaft, B, one end of which is collared, as shown.

C is a long longitudinal tilting table, to about the center of which is secured, in a socket thereof, the upper end of a rocking arm or bar, D, which is passed through a collar or sleeve, *b*, and rigidly secured therein by a set-screw, *b'*, working in said collar or sleeve. This collar or sleeve *b* has cast or formed integral with one side thereof a horizontal collar or sleeve, *b''*, loosely secured on the outer end of the shaft B. The lower end of this rocking arm or bar D has a circular extension fitted to or in a short cylindrical bar, b^2, working in a cylinder or tube, *d*, having an upper opening, as shown, thus forming a ball-and-socket-like connection. To this arm or bar D is connected the lower end or vertex of a V-shaped supporting or bracing bar, *d'*, the ends of which are rigidly secured to the under side of the table A. The cylinder or tube *d* is rigidly secured on a sliding plate, E, fitted on a stationary plate, E', by means of overhanging lugs clutching projecting flanges of said latter plate, which is rigidly secured to a supporting-leg of the stand or table A. Through an aperture in this plate E' projects a spring-held rod or finger, *e*, encircled by a spring, E^2, the upper end engaging detents or recesses in the under side of the plate E, the lower end of said rod or lever being secured to a short foot-lever, *e'*, pivoted at one end to a cross-bar of the stand or table A.

F is a sliding table fitted upon the longitudinal table A, and has small rollers *f*, designed to slide on the side flanges of said latter table. From this table F project two overhanging clamps, *f' f'*, provided with suitable clamp-screws for securing in position the cutter-bar, as shown.

From the stand or table A, at about the center thereof, projects a bracket, G, having two journal-boxes, *g g*, through which is passed a short shaft, *g'*, carrying on one end an emery-wheel, *g''*, and at its center a driving-pulley, g^2, to which motion is transmitted by an ordinary driving-belt driven by an engine or any suitable motor.

From what has been said it will be seen that by means of my invention the cutter-bar secured on the longitudinal sliding table can be presented at any desired angle to the surface of the emery-wheel, and can also be readily moved to or away from said wheel by reason of the ball-and-socket-like connection of the supporting arm or bar; and it will also be seen that by reason of the foot-lever and spring-held bolt or finger the sliding plate E can be held at the desired point relative to the plate E'.

I claim as my invention—

1. The herein-described grinding-machine, comprising the stand or table, the longitudinally-tilting table, the central supporting bar or arm, the sliding table designed to move on said tilting table and having rollers on either

side, the horizontally-disposed sliding shaft to which said supporting bar or arm is connected, and the emery-wheel, substantially as shown and described.

2. The combination, with the stand or table having the bracket provided with journal-boxes, of the longitudinaly-tilting table, the horizontally-disposed sliding shaft, the sliding table designed to move on said tilting table and having overhanging clamps, and the emery-wheel, substantially as shown and described.

3. The combination, with the stand or table and the stationary plate secured thereto, of the sliding plate having a cylinder, the spring-held finger or rod, the foot-lever, the central supporting arm or bar having a cylindrical end, the tilting table, the sliding table having rollers and clamps, and the emery-wheel, all arranged substantially as shown and described.

4. The combination, with the stand or table having the bracket supporting the journal-boxes, of the horizontally-disposed sliding shaft, the tilting table, the central supporting bar or arm secured thereto, the collar or sleeve secured on said bar or arm and to a collar on said shaft, the ball-and-socket-like connection, and the supporting V-shaped bar, substantially as shown and described.

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

HIRAM BUCKINGHAM.

Witnesses:
W. J. McConville,
H. S. Barbour.