

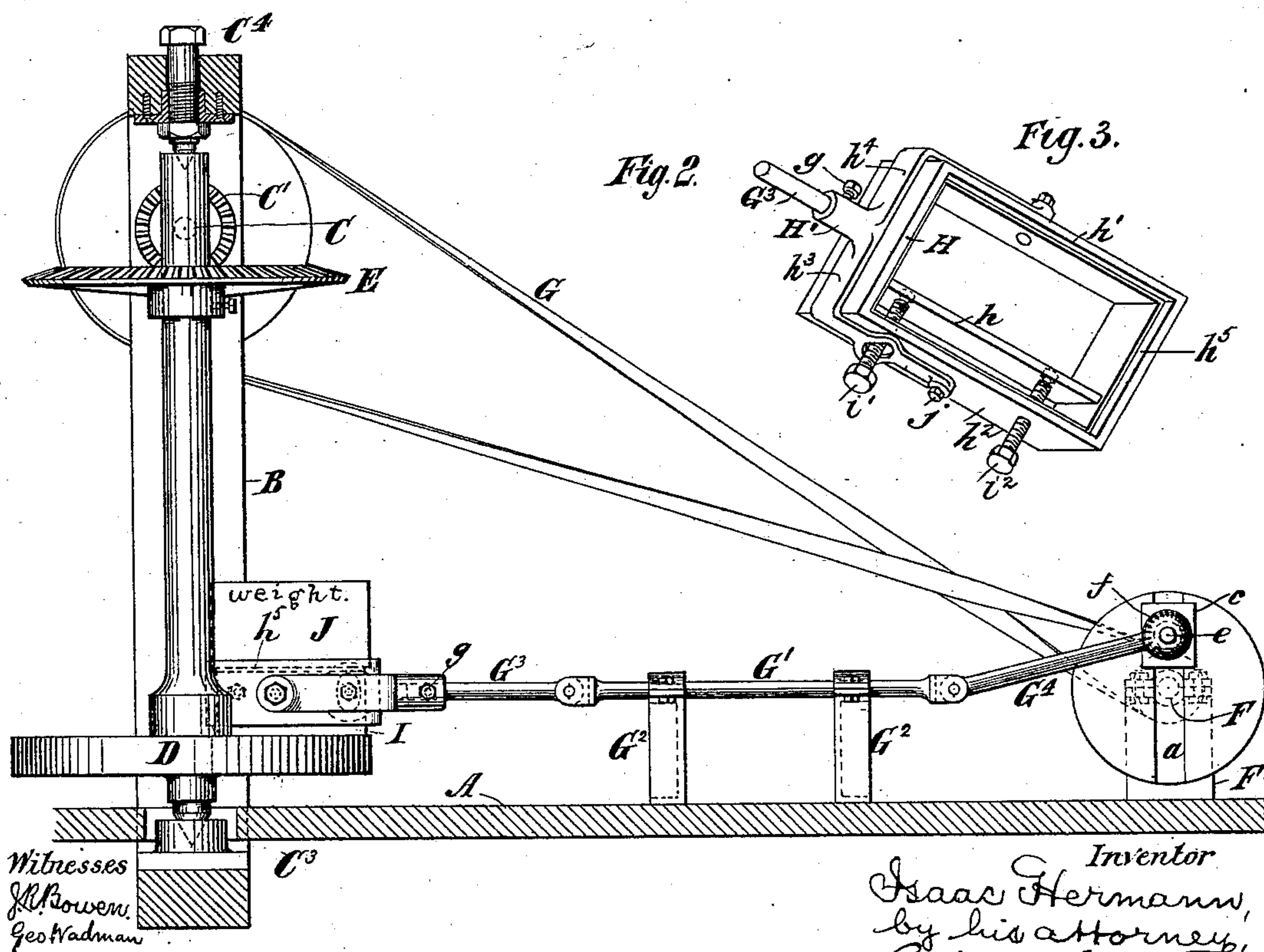
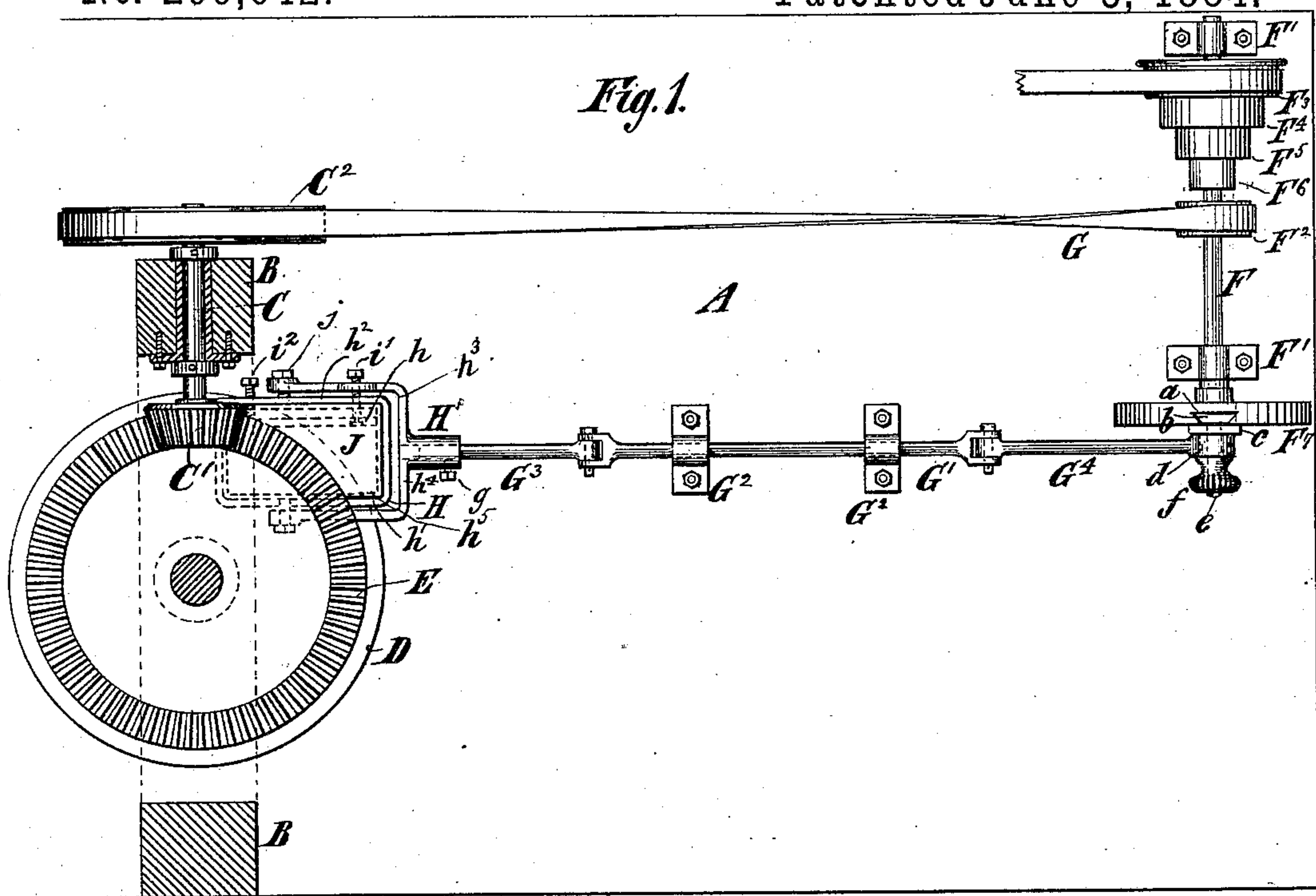
(No Model.)

I. HERMANN.

MACHINE FOR DRESSING THE FACES OF WHEELS FOR GRINDING  
DIAMONDS AND OTHER ARTICLES.

No. 299,642.

Patented June 3, 1884.





# UNITED STATES PATENT OFFICE.

ISAAC HERMANN, OF NEW YORK, N. Y.

MACHINE FOR DRESSING THE FACES OF WHEELS FOR GRINDING DIAMONDS AND OTHER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 299,642, dated June 3, 1884.

Application filed October 25, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ISAAC HERMANN, of New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Machines for Dressing the Faces of Wheels for Grinding Diamonds and other Articles, of which the following is a specification.

The object of the improvement is to produce a machine in which the wheels or disks employed for grinding diamonds and other articles may be dressed.

I will describe in detail a machine embodying the improvement, and then point out the improvement in the claim.

In the accompanying drawings, Figure 1 is a sectional plan of a machine embodying the said improvement. Fig. 2 is a sectional elevation of the same, and Fig. 3 is an enlarged perspective view of the holder.

Similar letters of reference designate corresponding parts in all the figures.

A designates a base-piece, which may be supported in any suitable manner. On this base-piece is erected a frame, B, consisting of two uprights and an intermediate cross-piece.

C designates a shaft supported in a bearing in one of the uprights of the frame A, provided with a bevel-wheel, C', at the inner end, and with a pulley, C<sup>2</sup>, at the outer end.

D designates a wheel or disk, such as is employed commonly in grinding or shaping diamonds. In order that the wheel or disk may be dressed, the lower journal of its spindle is inserted in a step-bearing, C<sup>3</sup>, and a center, C<sup>4</sup>, is inserted into the upper end of the spindle. The center C<sup>4</sup> consists, as here shown, of a pointed screw fitted in the cross-piece of the frame B, and capable of being adjusted toward and from the step-bearing, to enable the wheel or disk and its spindle to be placed within the frame B or removed therefrom.

E designates a bevel-wheel, which is slipped over and fastened upon the spindle of the wheel or disk D before the same is inserted in the frame B. It is arranged in such position that it will engage with the bevel-wheel C' of the shaft C and derive rotary motion therefrom.

F designates a shaft, arranged in a position parallel with the shaft C, and journaled in bearings F', extending from the base-piece A.

On this shaft F is a pulley, F<sup>2</sup>, which receives a belt, G, that also passes around the pulley C<sup>2</sup> of the shaft C. This belt is crossed, so as to transmit to the shaft C a rotary motion in the reverse direction from that in which the shaft F rotates. The shaft F is also provided with a number of pulleys, F<sup>3</sup> F<sup>4</sup> F<sup>5</sup> F<sup>6</sup>, to any one of which may be applied a belt that also passes around one of a reversely-arranged set of pulleys on a driving-shaft. At one end the shaft F is provided with a circular head, F<sup>7</sup>, provided in its outer face with a diametrically-arranged dovetail groove, *a*, receiving a block, *b*. Another block, *c*, is arranged outside the groove, and from this extends a wrist or crank, *d*. A screw-threaded rod, *e*, passes through the block *b* and through the wrist *d*, and receives a nut, *f*, outside this wrist. By these means the wrist *d* may be connected to the head F<sup>7</sup> at different distances from the center.

G' designates a pitman-rod, connected at one end by rod G<sup>4</sup> to the wrist *d* and at the other end to a rod, G<sup>3</sup>. This rod G' is adapted to slide longitudinally in guides formed in standards G<sup>2</sup>, that extend from the base-piece A, and at the farther end from the pitman it has a hinge-connection with a rod, G<sup>3</sup>. The rod G<sup>3</sup> enters a socket in the shank H' of a holder, H, for emery-stone I or other dressing material or article. A thumb-screw, *g*, secures the rod G<sup>3</sup> in the socket of the shank H' in such manner that the rod may be readily detached and reattached. The holder H is pivoted to the arms *h*<sup>3</sup> *h*<sup>4</sup> of the socket H' by the pivots *j*. Within the holder H is a plate, *h*, which is adjustable backward and forward relatively to the sides *h*<sup>1</sup> *h*<sup>2</sup> of the holder H by means of the thumb-screws *i*<sup>1</sup> *i*<sup>2</sup>, which have a swiveling connection with the plate *h* and work in tapped holes in the side *h*<sup>2</sup> of the holder. The thumb-screw *i* works freely in a slot in the arm *h*<sup>3</sup>. The emery-stone I is clamped between the plate *h* and the side *h*<sup>1</sup>. The top of the holder is provided with a rim, *h*<sup>5</sup>, in which is inserted and held a weight, J. As the shaft F is rotated, the emery-stone will be reciprocated back and forth upon the top of the wheel or disk D transversely to the spindle of the latter, and the wheel or disk is simultaneously rotated. In this way the required dress will be imparted to the top face of the wheel or disk D.

Obviously the speed at which the wheel or

disk is rotated and the emery-stone reciprocated may be varied by shifting the driving-belt from one to another of the pulleys  $F^3$   $F^4$   $F^5$   $F^6$ , and the length of the traverse of the  
5 emery-stone may be altered by changing the connection of the pitman-rod  $G$  to the head  $F^7$ ; also, the variation in the speed of the wheel or disk  $D$  and the reciprocation of the holder  $H$  may be effected independently of each other.

10 What I claim as my invention, and desire to secure by Letters Patent, is—

In a machine for dressing a wheel or disk,  $D$ , employed in grinding diamonds and other articles, the combination of the frame  $B$ , the  
15 bearings  $C^3$   $C^4$ , one of which is adjustable, the gear-wheel  $E$  on the spindle of the wheel or

disk  $D$ , the wheel  $C'$ , the shaft  $C$ , the pulley  $C^2$ , the band or belt  $G$ , the pulley  $F^2$ , the shaft  $F$ , the pulleys  $F^3$   $F^4$ , &c., arranged on said shaft and adapted to receive a belt, whereby 20 motion is transmitted to the said shaft, the head  $F^7$ , the wrist  $J$ , adjustably connected to the head  $F^7$ , the holder  $H$ , for the material used to dress the wheel or disk  $D$ , and the pitman-rod  $G^4$ , connected to the wrist  $J$  and adapted 25 to impart a reciprocating motion to the holder  $H$ .

I. HERMANN.

Witnesses:

T. J. KEANE,  
JAMES R. BOWEN.