T. F. TULLY.

MACHINE FOR CUTTING DIAMONDS.

No. 183,474. Patented Oct. 17, 1876.

Fig. 1.

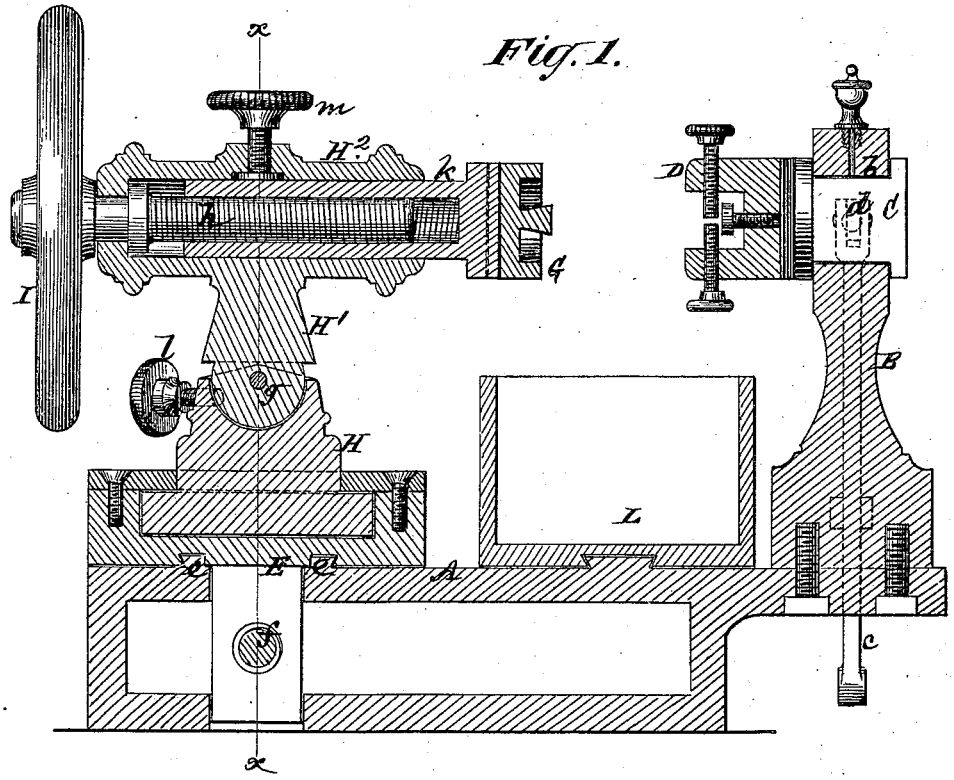
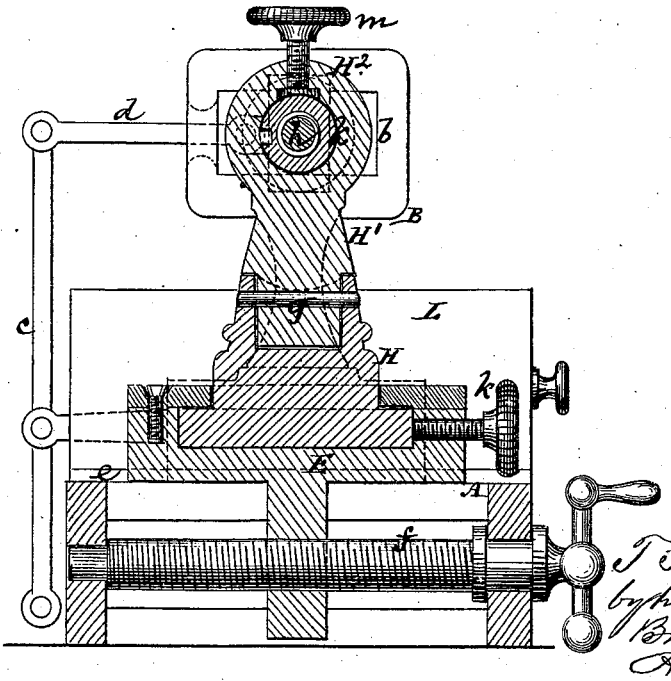


Fig. 2.



Witnesses.
John Becker
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UNITED STATES PATENT OFFICE

THOMAS F. TULLY, OF NEW YORK, N. Y., ASSIGNOR TO ISAAC HERMANN, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CUTTING DIAMONDS.

Specification forming part of Letters Patent No. **183,474**, dated October 17, 1876; application filed August 16, 1876.

To all whom it may concern:

Be it known that I, THOMAS F. TULLY, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Cutting Diamonds and other hard substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to machines for cutting, sharpening, and splitting diamonds or gems and other hard substances.

The invention consists in a peculiarly-constructed and universally-adjustable tail-block provided with a stone holder or dop, which carries the stone or substance to be cut or operated on by attrition or contact with a similar or correspondingly hard substance.

By my improved construction of tail-block increased facilities are afforded for performing the work with but little exercise of skill and without much or any necessity for resetting to cut different facets.

In the accompanying drawing, Figure 1 represents a longitudinal vertical section of a machine having my invention applied; and Fig. 2, a transverse vertical section thereof on the line *x x*.

A is the table or bed of the machine, on the one end of which is a fixed or stationary head-block, B. This head-block is constructed with a slot, *b*, in its upper end, within which a slide, C, is fitted to reciprocate in a transverse relation with the machine, the requisite motion being communicated by means of a lever, *c*, and rod *d*, from a treadle or any other power device. Attached to the inner side of this slide C, preferably in a removable manner, is the one diamond holder or clamp, D, which may be fitted with screws tipped with vulcanized rubber for holding a diamond to be split, or which may be packed with cement for holding the cutting-diamond. On the opposite end of the machine is arranged a universally-adjustable tail-block, which has attached to or connected with it at its forward end, also preferably in an adjustable manner, the opposite or other diamond-holder G, in which the diamond to be cut is held by cement. This tail-block consists, mainly, of a carriage or base, E, which is adjustable in a transverse direction along ways *e e* on the bed A by means of a screw, *f*; a lower body-piece, H, made capable of circular adjustment or rotation about a vertical axis within and on the carriage E; an upper body-piece, H^1, constructed and attached by a transversely-arranged horizontal pivot, *g*, to the lower body-piece, H, so as to admit of the upper body-piece H^1 being rocked or tipped, as required, on the pivot *g*; and a cylindrical or other shaped head, H^2, mounted on the upper body-piece H^1, and serving to contain a feed-screw, *h*, operated by a feed-wheel, I, for adjusting the diamond-holder G closer to or farther from the opposite diamond-holder D, the holder G being fitted on the forward end of a sliding socket, *k*, which is longitudinally adjustable within the head H^2 by the feed-screw *h*. Set-screws *k*, *l*, and *m* serve to retain the lower body-piece H, the upper body-piece H^1 and the sliding socket *k* at or in their respectively-adjusted positions. L is a box or draw for catching and collecting the dust produced by attrition of the diamonds or substances under operation carried by the holders D G.

The head-block B being a fixture, and all the necessary adjustments being made in or by the tail-block, a steady and unyielding support is given for one of the diamond-holders at the one end of the machine, and all the necessary adjustments are or may be made from the opposite end thereof, which facilitates the work.

By means of the several adjustments which are afforded by the construction of the tail-block—that is to say, the transverse adjustment by the sliding carriage E, the circular adjustment of the lower body-piece H in said carriage, the rocking or tipping adjustment of the upper body-piece H^1 on the pivot *g*, and the longitudinal adjustment of the dop or holder G by the screw *h*—the greatest latitude is obtained for centering the one diamond relatively to the other for feeding up the work

as the cut or reduction proceeds, and for changing the angles of the cut to form various facets.

I claim—

The combination of the sliding carriage E, the circularly-adjustable lower body-piece H of the tail-block, the upper body-piece H^1 fitted to rock up or down on the lower body-piece H^1, and the head H^2 with its feed-screw *h*, and longitudinally-sliding socket *k* carrying the dop or holder G, essentially as described.

THOMAS F. TULLY.

Witnesses:

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