

H. D. STOVER.

MACHINE FOR CUTTING PRECIOUS STONES.

No. 172,589.

Patented Jan. 25, 1876.

FIG. 1.

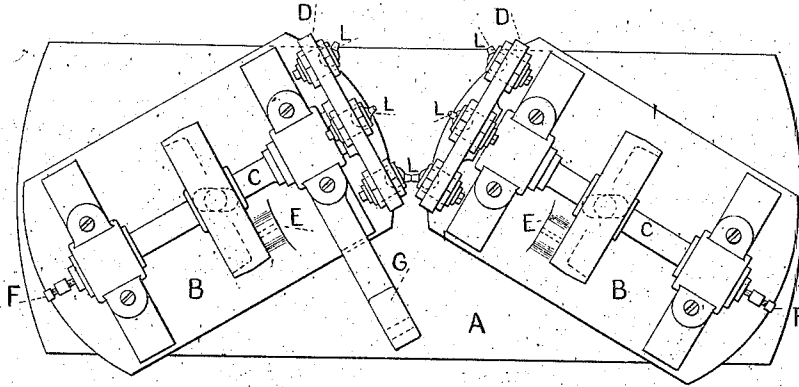


FIG. 2.

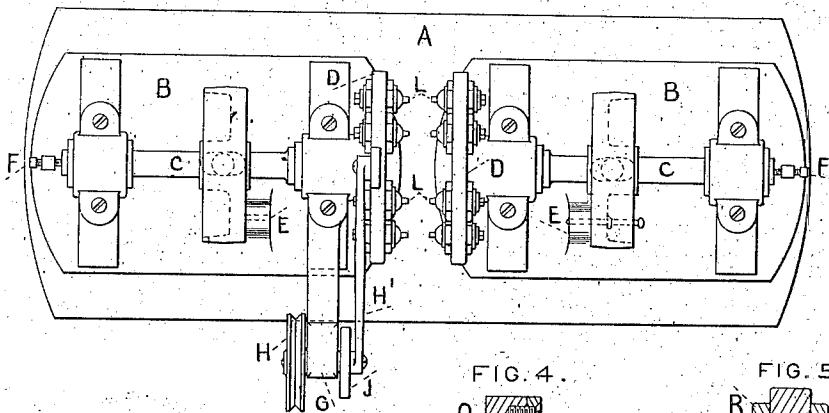


FIG. 3.

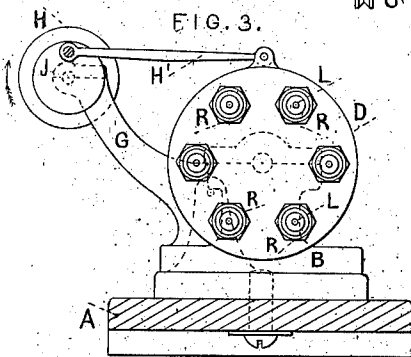


FIG. 4.

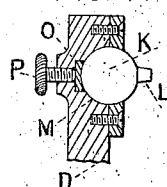


FIG. 5.

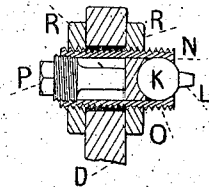


FIG. 6.

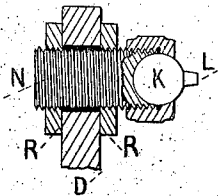
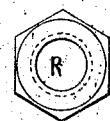


FIG. 7.



WITNESSES.

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HENRY D. STOVER, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR CUTTING PRECIOUS STONES.

Specification forming part of Letters Patent No. 172,589, dated January 25, 1876; application filed October 7, 1875.

To all whom it may concern:

Be it known that I, HENRY D. STOVER, of New York, State of New York, have invented a Machine for Cutting Diamonds and other Precious Stones, of which the following is a specification:

The object of my invention is to facilitate the operation and make more perfect the work of cutting precious stones; and to enable others skilled in the art to make and use my invention I will give a full and clear description of its construction and operation, reference being had to the accompanying drawings.

Figure 1 is a top plan of my machine, showing heads placed at an angle; Fig. 2, same as Fig. 1, with heads in line with each other, and attachment for oscillating head in place; Fig. 3, sectional elevation, showing end view of one head, with oscillating attachment connected. Figs. 4, 5, 6, and 7 are modified ways of holding and securing the sockets which contain the stones to be cut.

The arrangement of this machine is such that any number of stones can be operated on at one and the same time, or they can be acted on in single pairs. The heads in which the stones are secured may be revolved each independent of the other, or both revolved in opposite directions, bringing each stone into contact with all the others; or one of the heads may be oscillated by any suitable means, while the other is held stationary, thus bringing the same pairs into frequent contact. The devices for holding the stones are so constructed that they may be held at any angle of rotation up to forty-five degrees without readjusting the stones, and the heads may contain any number of stones from one upward, depending only on size of head required to receive them.

The construction of the machine is as follows: On a bed-plate, A, are placed two frames or head-stocks, B, to support the shafts C. These shafts C have each of them, on the ends nearest to each other, a head, D, in which are secured the stones to be operated upon, in number from one upward, according to the size of the head, and the stones are held and adjusted to any required angle in one of the ways shown at Figs. 4, 5, 6, and 7. The head-stocks B have attached to them bearings to receive the shafts C, and also a standard, E, which is

used as a stop to prevent either of the heads D from moving, when so desired. On the shafts C are secured pulleys, which may be used when the heads D are to make a complete revolution, and also to make a connection with the standard E when the heads D are to remain stationary. On the head-stock is also attached an adjusting-screw, F, by which the lateral motion of the shafts C may be prevented. The head-stocks B are so arranged that they may be adjusted at any required angle in a horizontal plane in relation to the bed-plate A, and the bed-plate A has slots in the direction of its length, for the purpose of allowing the head-stocks B to be set at the right distance apart, which distance varies with the angle of the heads. One of the head-stocks B has an arm, G, attached to it, which carries a pulley, H, and crank J. The crank J is connected with one of the heads D by means of a connecting-rod, H', when the head is to be oscillated. Only one of the head-stocks is so arranged in the drawing; but both may be so fixed, if thought best.

The manner of securing the stones to the heads is shown at Figs. 4, 5, 6, and 7; but I prefer the way shown at Fig. 5. A ball, K, having a projection, L, to which the stone is secured in the ordinary way, is fitted into a socket or bearing, M, which allows the ball to move in any direction. Behind the ball K, and in the tube N, is a concave washer, O, fitted to the surface of the ball, and back of this washer O is a screw, P, fitting into the tube N, for the purpose of forcing the washer O onto the ball K, and holding the ball K in any required position. The tube N is screwed or threaded over its whole outer surface, and has two nuts, R, one in each side of the head D, which provides a means of adjusting the stones to or from the heads D in relation to each other.

The other views, 4, 6, and 7, show other constructions on the same principle, for holding the stones in position; but they do not require special description, as the drawings show the construction plainly.

The operation of the machine is as follows: The stones, according to the number to be operated upon, are secured in the projections L of the balls K, and then the balls K are adjusted to the required angles. If the balls do

not allow of the required angle the head-stock may then be turned also, and adjusted to the proper distance apart, and then secured. When the machine has been so adjusted the heads may be put in motion in either way, as desired—that is, making a full revolution or an oscillation with both heads in operation, or with one of them held stationary by means of the stop F.

The advantages of this machine over others are the ease and accuracy with which the stones to be operated on may be adjusted in relation to each other, as regards angle and distance apart; also, that any number of stones can be operated on at same time, depending only on size of the machine.

What I claim, and desire to secure by Letters Patent, is—

1. In an organized machine for cutting precious stones, the adjustable head-stock B B, carrying the revolving or oscillating heads D D, constructed to receive one or more pairs of stones to be operated upon, substantially as set forth.

2. The ball K, to which the stones are secured, arranged, adjusted, and secured in the head or disk D or threaded tube N, as shown and described.

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Witnesses:

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