M. ROTTENTHALER.

JEWEL SETTING TOOL.

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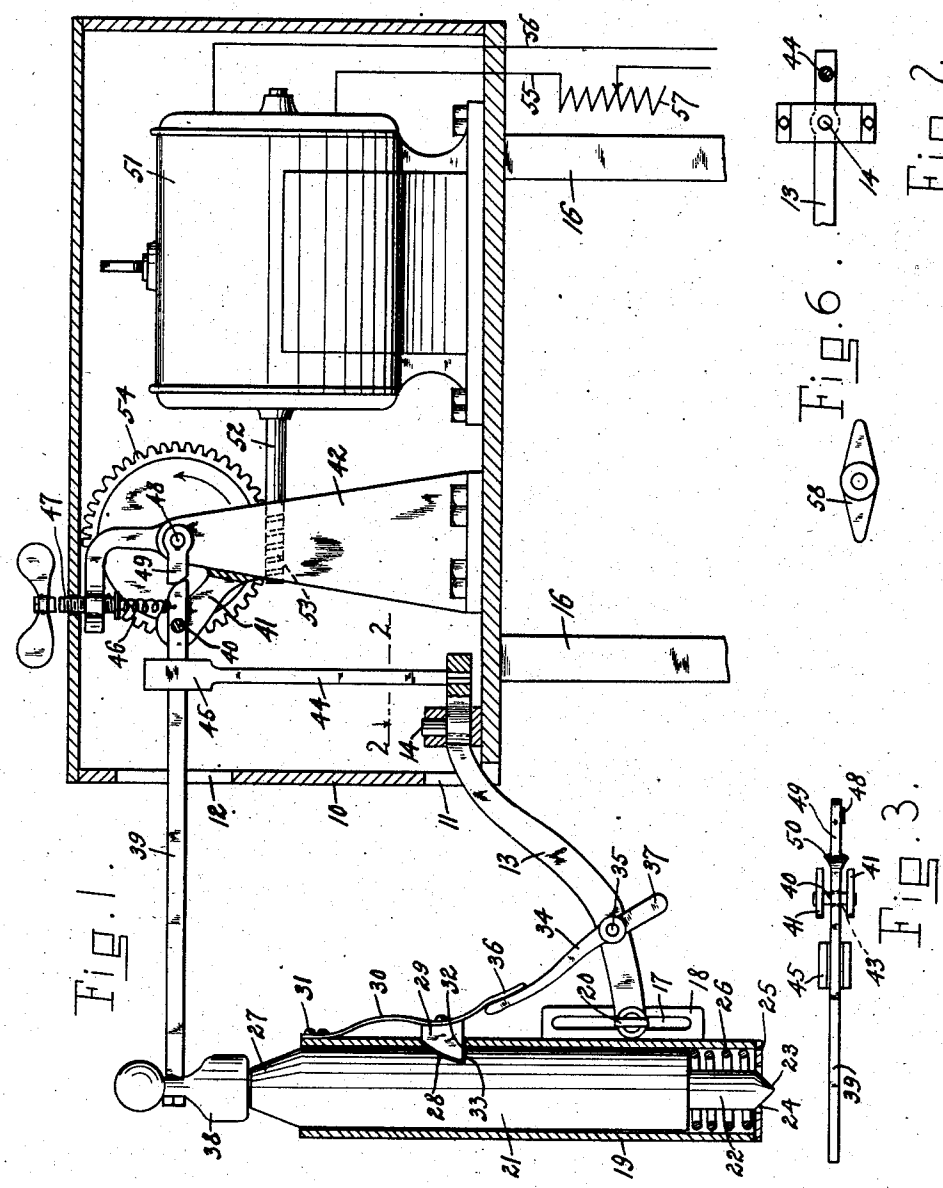

Fig. 1.



Fig. 2.



Fig. 6.



Fig. 3.

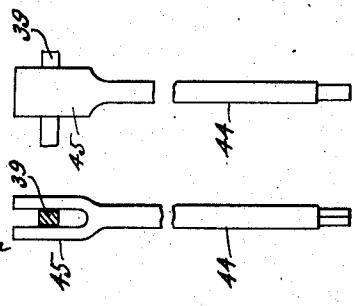

Fig. 4. Fig. 5.

WITNESSES

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# UNITED STATES PATENT OFFICE.

MIKLÓS ROTTENTHALER, OF NEW YORK, N. Y.

## JEWEL-SETTING TOOL.

1,009,582. Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed June 9, 1911. Serial No. 632,194.

*To all whom it may concern:*

Be it known that I, MIKLÓS ROTTENTHALER, a subject of the King of Hungary, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Jewel-Setting Tools, of which the following is a specification.

The present invention relates to tools adapted for use principally by the jewelry trade, and is more particularly designed as a device for facilitating the setting of precious stones in rings or other ornaments. Work of this character is usually performed by placing the work piece in a vise or other support, inserting the precious stone into the aperture into which it is to be set, and working the edges of the aperture by means of a pointed tool over the edges of the precious stone. The tool is usually struck by means of a hammer, both the tool and the hammer being handled by the same person. It will be observed that since the ring or other ornament is held by a vise or other support, it is unyieldingly supported, so that the blows of the hammer are apt to injure the precious stone.

The object of the present invention is to provide a tool for setting jewels or precious stones into ornaments, which will obviate the defects hereinbefore mentioned in that the ornament is being held in the hand of the operator, so that it will give way slightly to the tool, the operation of the hammer being automatic.

Another object of the invention is to provide a device of this character which is simple in construction, easy to operate, and which will perform its work with accuracy and despatch.

A further object of the invention is to produce a device of this character with means, whereby the force of the blows delivered by the hammer can be varied at will, and the number of blows in a given time interval changed to suit the requirements.

With these and other objects in view, which will appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical central section taken through a device constructed in accordance with this invention; Fig. 2 is a section taken on line 2—2 of Fig. 1; Fig. 3 is a plan view of a detail of construction; Fig. 4 is a front elevation of another detail; Fig. 5 is a side elevation of the part shown in Fig. 4; and Fig. 6 is a side elevation of a modified detail of construction.

Referring now more particularly to Figs. 1 to 5, inclusive, the numeral 10 indicates a closed casing, having apertures 11 and 12 in its front side. Through the aperture 11 projects a bracket 13, which is pivotally attached at 14 to the bottom of the casing 11, which latter may be either attached to a table, or be supported by legs 16, 16. The bracket 13 is adapted to swing in a horizontal plane around its pivot, and engages at its outer end a slot 17 in a vertical extension 18 of a vertical tubular tool holder 19. A set screw 20, engaging the vertical extension 18 and the bracket 13, serves to clamp the tool holder and bracket together. The position of the tool holder upon the bracket may be obviously varied according to the requirements, the slot 17 permitting of a shifting of the tool holder upon the bracket. In the tool holder 19 is slidably arranged the shank 21 of the tool, the lower reduced portion 22 of which is pointed, as shown at 23, and projects through an aperture 24 in the bottom 25 of the tool holder. Between the shank 21 and the bottom of the tool holder is arranged a spring 26, preferably coiled around the reduced portion 22 of the tool, and serves to return and hold the latter in its normal, elevated position. The upper

end 27 of the tool projects above the upper edge of the tool holder, for a purpose which will be hereinafter described.

The shank 21 of the tool is provided with a recess 28, which is engaged by a lug 29, attached to a leaf spring 30, the latter being secured at 31 to the tool holder. This leaf spring forces the lug 29 into the recess 28 of the shank of the tool, allows the latter to move downward, and limits its upward movement, for the reason that the surface 32 of the lug is arranged in a horizontal plane and so is also the surface 33 of the recess. A lever 34 is pivoted at 35 to the bracket 13, and engages the extension 36 of the leaf spring 30. In shifting the arm 37 of the lever 34 to the left, the lug 29 will be disengaged from the tool, whereby the latter can be easily taken out from the tool holder for repairing and other purposes.

The tool is struck by a hammer, the head 38 of which is attached to a handle 39, which is pivoted at 40 to brackets 41, secured to or made integral with a standard 42, the latter being fastened to the casing 10. The aperture 43 in the handle 39, which is in engagement with the pivot 40, is flaring at both ends so that the handle can be shifted in a horizontal plane, if desired. Since the hammer must obviously be shifted with the bracket 13, a connection between these two parts is necessary. For this purpose a substantially vertical bar 44 is attached to the bracket 13, its upper end 45 being fork shaped, and in engagement with the handle 39. A spring 46 is attached to the inner end of the hammer and to a set screw 47, for a purpose hereinafter to be specified. The hammer is actuated from a rotary shaft 48, suitably journaled in the standard 42. Upon this rotary shaft is mounted a cam 49, acting upon the inner enlarged end 50 of the handle 39 and raising thereby the hammer in its rotation. Rotary motion is imparted to the shaft 48 by a suitable motor, for instance an electric motor 51, upon the shaft 52 of which is mounted a worm 53, meshing with a worm gear 54, which is keyed to the shaft 48. The electric conductors, leading to the motor, are denoted by the numerals 55 and 56, and in one of the same is inserted a variable resistance 57, whereby the speed of the motor can be varied at will. Instead of the cam 49, the cam 58 (shown in Fig. 6 of the drawings), could be mounted upon the shaft 48, with the result that the number of blows delivered by the hammer would be doubled.

The operation of the device is as follows: The tool holder 19 is set by means of the screw 20 to a desired height and the motor 51 started. As the shaft 48 rotates in the direction of the arrow shown in Fig. 1 of the drawings, it will act upon the enlarged end 50 of the handle 39 of the hammer, raising the head 38 of the same, which latter will act upon the upper end 27 of the tool, as soon as the handle is disengaged from the cam in the rotation of the latter. The spring 26 brings the tool back to its normal position, after which the play now described is repeated as long as the motor is in operation. The ring or other ornament, into which the precious stone is to be set, is held by the operator in one hand below the pointed end 23 of the tool, which latter is shifted by the other hand of the operator in a horizontal plane around the pivot 14 as the work proceeds, that is as the edge or edges of the opening wherein the precious stone is placed is worked over the edge or edges of the said stone. The speed of the motor and thus the number of blows delivered against the tool in a given time interval is varied by adjusting the resistance 57, while the force of the blows is predetermined at will by varying the tension of the spring 46 in setting the screw bolt 47. It will be observed that, since the ring or other ornament is held in the hands of the operator, the blows of the hammer will be cushioned, as it were, so that the precious stone will not be injured by the tool.

What I claim is:—

1. In a stone setting tool, the combination with a support, of a bracket attached thereto so as to be movable around a vertical pivot, a vertical tubular tool holder carried by said bracket provided with an aperture in its bottom, a tool shiftably arranged in said tool holder having a pointed end projecting through said aperture, a hammer pivotally attached to said support capable of movement in a vertical plane and in a horizontal plane, the head of said hammer normally resting upon said tool, a bar connecting said bracket with the handle of said hammer, whereby upon shifting of said bracket the handle of said hammer is moved in a horizontal plane correspondingly, a rotary shaft, and a cam fixedly attached to said shaft and adapted to act upon the handle of said hammer, substantially as and for the purpose specified.

2. In a stone setting tool, the combination with a support, of a vertical tubular tool holder fulcrumed thereto so as to be movable in a horizontal plane and being provided with an aperture in its bottom portion, a tool shiftably arranged in said tool holder having a pointed end projecting through said aperture, a hammer pivotally attached to said support capable of movement in a vertical plane and in a horizontal plane, the head of said hammer normally resting upon said tool, a connection between said tool

holder and the handle of said hammer, whereby upon shifting of said tool holder the handle of said hammer is moved in a horizontal plane correspondingly, a rotary shaft, and a cam fixedly attached to said shaft and adapted to act upon the handle of said hammer, substantially as and for the purpose specified.

Signed at New York, in the county of New York, and State of New York, this 8th day of June, A. D. 1911.

MIKLÓS ROTTENTHALER.

Witnesses:
SIGMUND HERZOG,
S. BIRNBAUM.