

(No Model.)

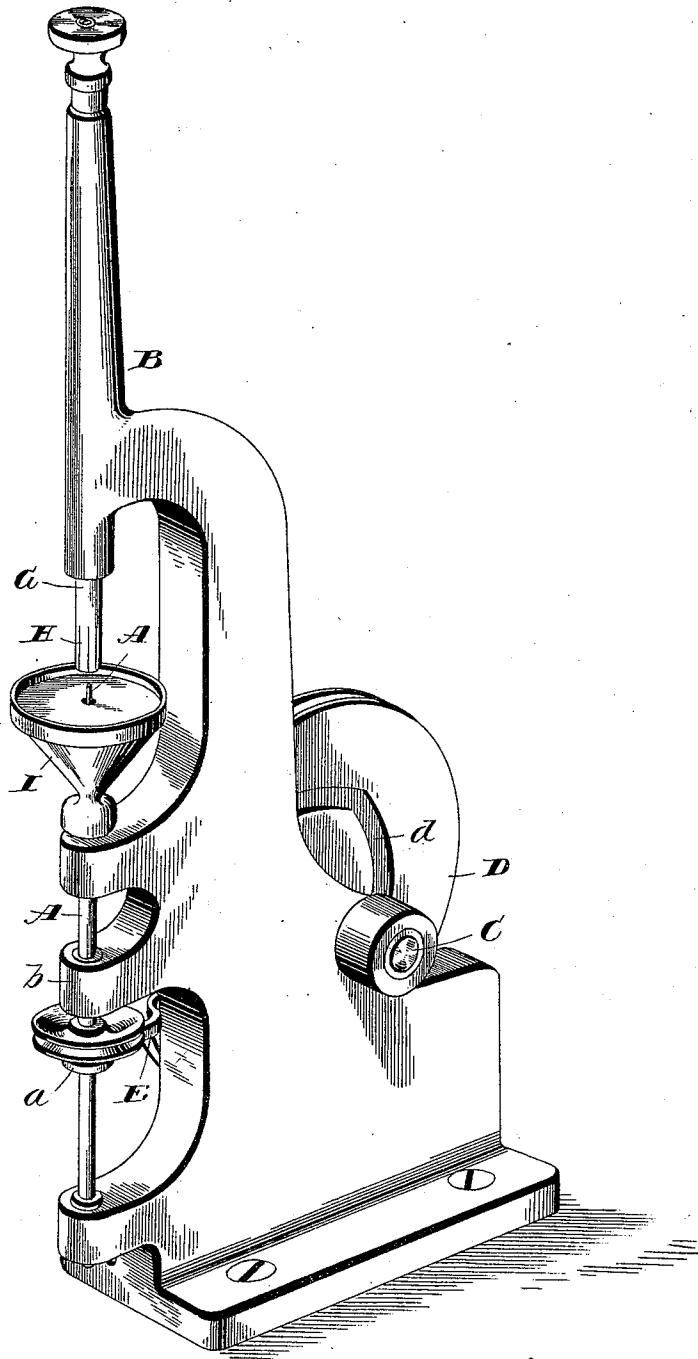
3 Sheets—Sheet 1.

G. E. HUNTER.
MECHANISM FOR LOADING WATCH JEWELS.

No. 520,681.

Patented May 29, 1894.

Fig. 1.



Witnesses
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Henry C. Hazard

Inventor
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(No Model.)

3 Sheets—Sheet 2.

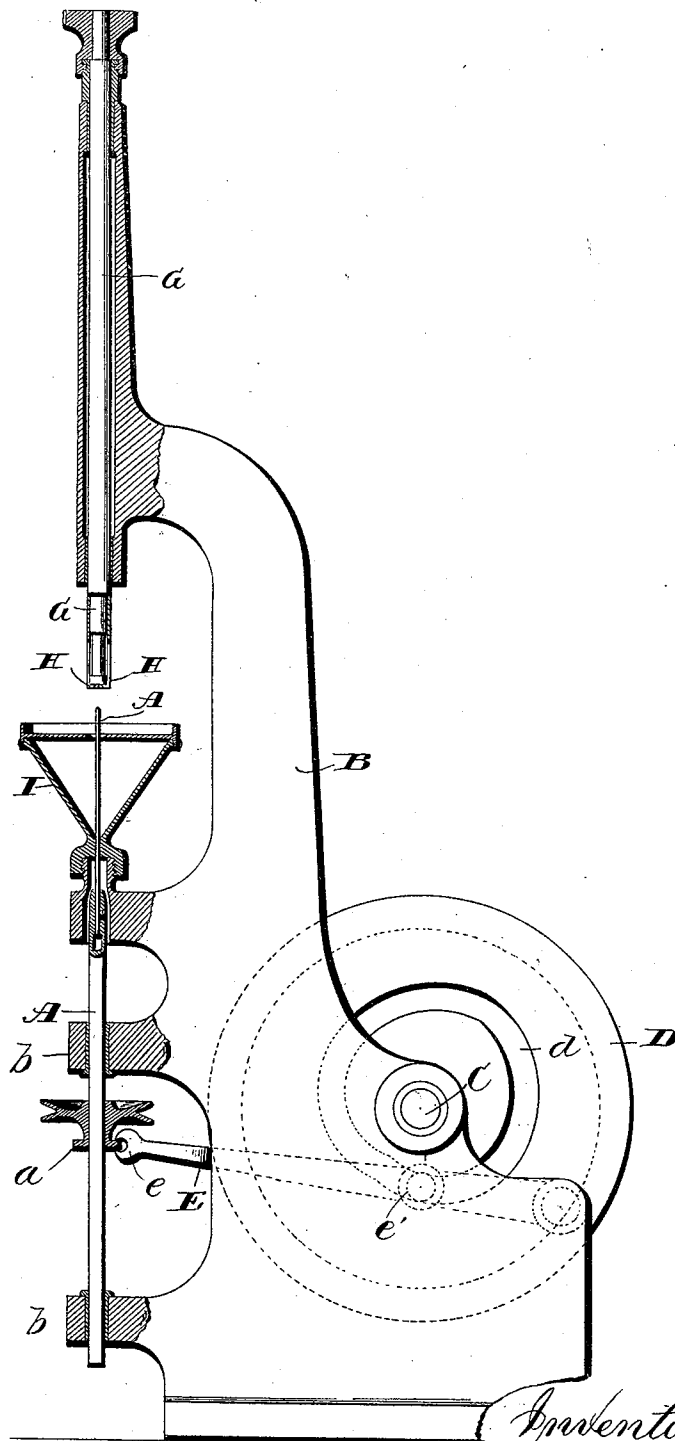
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Fig. 2.



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Fig. 3.



Fig. 4.

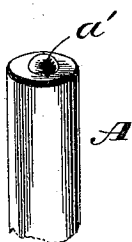


Fig. 5.

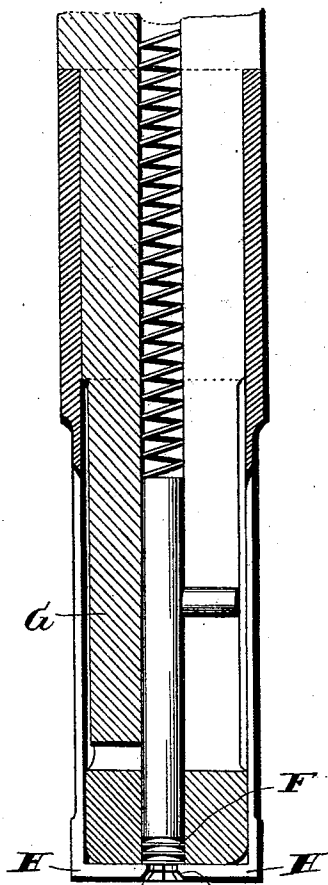
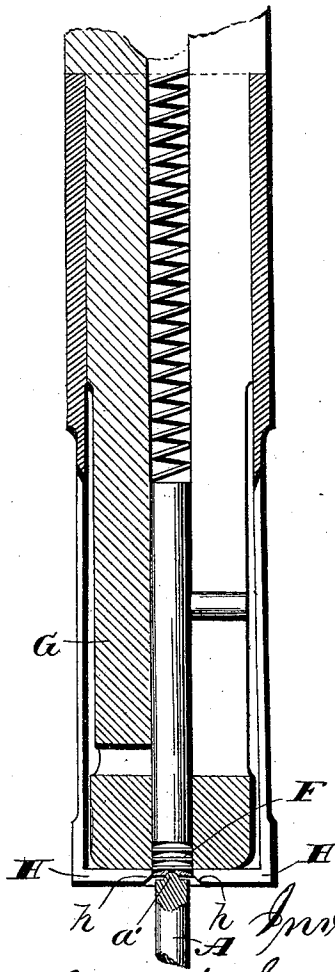


Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE E. HUNTER, OF ELGIN, ASSIGNOR TO THE ELGIN NATIONAL WATCH COMPANY, OF CHICAGO, ILLINOIS.

MECHANISM FOR LOADING WATCH-JEWELS.

SPECIFICATION forming part of Letters Patent No. 520,681, dated May 29, 1894.

Application filed August 22, 1892. Serial No. 443,767. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. HUNTER, of Elgin, in the county of Kane, and in the State of Illinois, have invented certain new and useful Improvements in Mechanism for Loading Watch-Jewels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

10 Figure 1 is a perspective view of my machine as preferably constructed. Fig. 2 is a side elevation, partly in vertical section of the same. Fig. 3 is a perspective view from the lower side of one of the jewels. Fig. 4
15 is a like view of the upper end of the loading spindle. Fig. 5 is an enlarged longitudinal section of said spindle and the jewel holding tube, said parts being shown in the relative positions occupied just before a jewel is
20 placed within said holder; and Fig. 6 is a like view of the same after the jewel has been passed between the detents which operate to inclose the lower end of said holder.

Letters of like name and kind refer to like
25 parts in the several figures.

The object of my invention is to enable jewels to be automatically loaded into the holder employed for setting the same, and such invention consists in the construction and combination of parts, substantially as and for the
30 purpose hereinafter specified.

In the carrying of my invention into practice, a spindle A is journaled vertically within a suitable frame B and by any desired means is adapted to be revolved. Within
35 said frame is journaled horizontally a shaft C that carries a disk D which is provided within one face with a cam groove *d*. A bar E having one end pivoted upon said frame, and its opposite end *e* forked, engages with a collar *a* upon said spindle and at a suitable point is provided with a pin *e'* that projects
40 into said groove so that the rotation of said shaft will cause said bar to be rocked vertically and the motion of its outer end being communicated to said spindle will give to the latter a longitudinally reciprocating motion. The lower portion of the spindle which is contained within the bearings *b* and *b* has such
45 diameter as may be requisite to give to it strength and durability, but the upper portion of said

spindle is slightly smaller in diameter than the diameter of the balance staff jewels F and F' to be handled, and at its upper end is provided with a stud *a'* which corresponds with
55 the semi-spherical recess *f* in the lower side of each jewel.

Supported by the frame B above and in a line, axially, with the spindle A is a jewel holding tube G which interiorly has such diameter as to permit of the ready insertion of
60 the jewels F and F' and at its lower end is nearly closed by means of a number of spring detents H and H, so that when jewels are placed in said tube, they may be prevented
65 from dropping out. Said detents are adapted to be moved in radial lines and have each a beveled edge *h* that enables them to be readily separated by the rounded upper face of a jewel when the latter is pressed upward
70 against said edges.

A hopper I suitably supported at a point below the lower end of the holder G and through which the reduced upper portion of the spindle A projects, completes the apparatus, the operation of which is as follows,
75 viz:—Jewels are placed within the hopper and the spindle caused to rotate and to reciprocate longitudinally as hereinbefore described. At each upward movement of said spindle its
80 upper end passes through the jewels contained in said hopper and one of the same is nearly certain to be caught upon and raised by said end. If the jewel so raised has its lower face downward its recess will engage
85 with the stud upon said spindle end and the rotation of the spindle will not displace it, but if the position of the jewel is reversed, then the rotation of the spindle will cause said jewel to be thrown off. When a jewel
90 is properly engaged the continued upward motion of the spindle will carry it through the detents into the holder, when by the inward motion of such detents it will be held when said spindle descends. There is left
95 between the inner ends of said detents an opening slightly larger than the diameter of said spindle so that there is no interference with the downward movement of the latter nor does it come into contact with said detents
100 should no jewel be carried up. When it is desired to load other kinds of jewels,—known

as bar holes and end-stones—which have semi-spherical upper sides, the upper end of the spindle is made concave and its recess has such depth as to enable one of such jewels to lodge therein when turned bottom side up, but when the lower or flat side is presented to the end of the spindle, said jewel will merely rest upon said end and be readily displaced by rotation.

- 10 I wish it understood that I do not limit myself to the means described for displacing jewels which are not properly arranged upon the upper end of the spindle, as other means besides the rotation of said spindle may be employed, which will not involve a departure from my invention.

Having thus described my invention, what I claim is—

1. In a mechanism for loading jewels into 20 a holder, the combination of a reciprocable plunger or spindle, a holder to which jewels are to be moved directly by the latter and supported in line therewith, and a hopper or receptacle from which the jewels are to be 25 moved, located in the path of the plunger or spindle in moving to the holder, substantially as and for the purpose specified.

2. In a machine for loading jewels into a

holder, the combination of a jewel hopper or receptacle, and a vertically reciprocable 30 plunger movable through the same adapted to support a jewel upon its upper end and convey it to the holder said upper end being formed to fit a certain side of the jewel, substantially as and for the purpose described. 35

3. In a machine for loading jewels into a holder, the combination of a jewel hopper to contain a quantity or mass of jewels, a vertically reciprocable plunger adapted to support a jewel upon its upper end and convey 40 it in a predetermined position to the holder, substantially as and for the purpose set forth.

4. In a machine for loading jewels into a holder, the combination of a hopper, a vertically reciprocable, rotary, spindle movable 45 through the same and adapted to engage and support a jewel in a particular position at its upper end, substantially as and for the purpose specified.

In testimony that I claim the foregoing I 50 have hereunto set my hand this 17th day of June, 1892.

GEORGE E. HUNTER.

Witnesses:

GEO. S. PRINDLE,
CARLOS H. SMITH.