

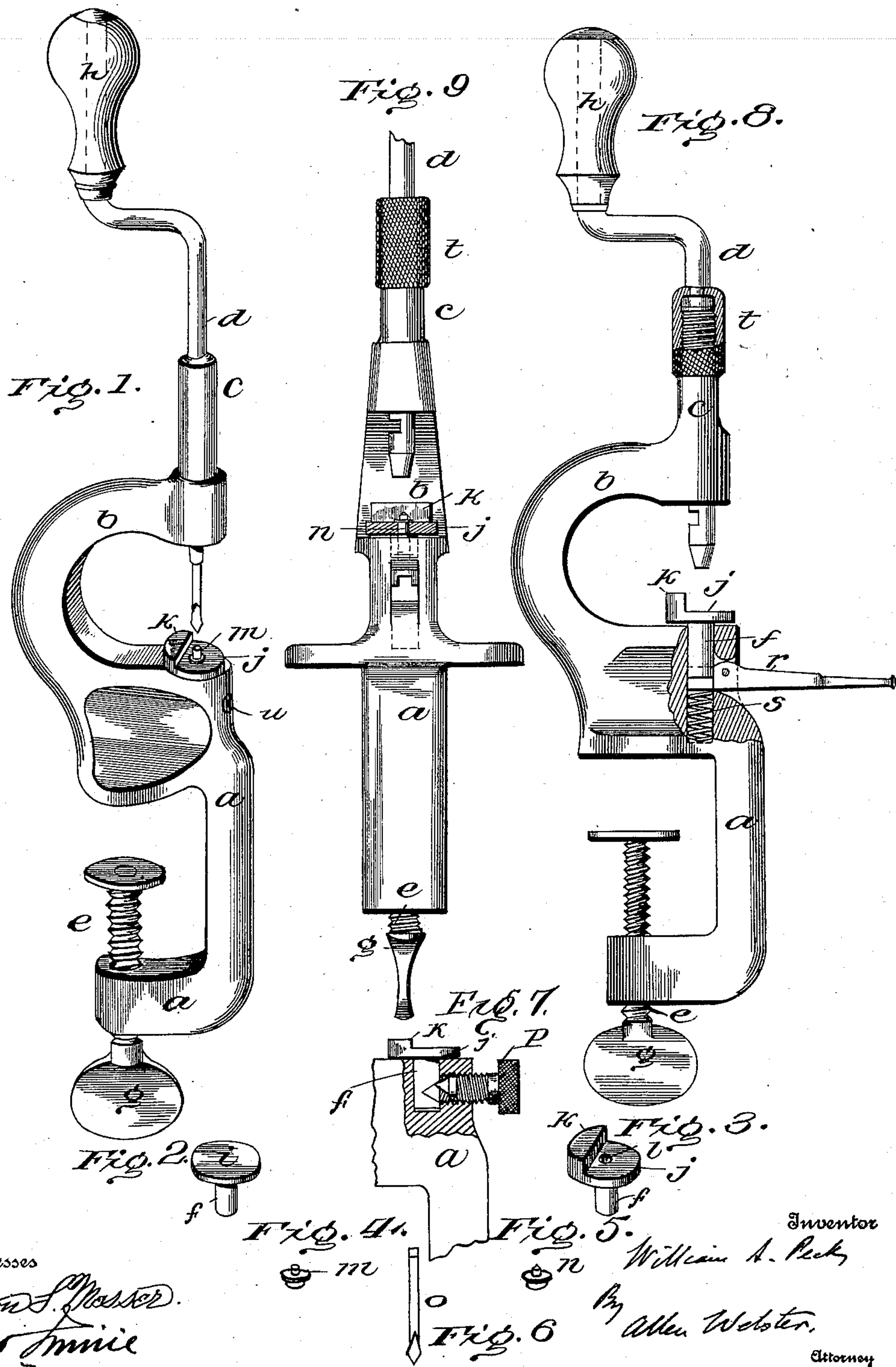
(No Model.)

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MACHINE FOR DRILLING EYEGGLASS LENSES.

No. 596,537.

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MACHINE FOR DRILLING EYEGGLASS-LENSES.

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To all whom it may concern:

Be it known that I, WILLIAM A. PECK, a citizen of the United States of America, residing in Chicopee, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Machines for Drilling Eyeglass-Lenses, of which the following is a specification, reference being had to the accompanying drawings and letters of reference marked thereon.

Machines heretofore used for drilling lenses have been defective because of not being convenient to use and because no provision has been made whereby the delicate touch or feel requisite for the proper drilling of an opening in glass could be had.

The object of my invention is to provide an apparatus which while overcoming the objectionable features which have heretofore obtained will be convenient to use, readily adjustable, and a device by which the work can be rapidly, easily, and accurately performed without danger of splintering or cracking the glass; and my invention consists in the construction and arrangement herein described and referred to by which the objects of my invention are obtained.

In the accompanying drawings, in which like letters of reference indicate like parts, Figure 1 is a perspective view of one of the simplest forms of construction of my device. Figs. 2 and 3 are perspective views of the interchangeable tables. Figs. 4 and 5 are views of removable posts or stumps; Fig. 6, a view of a drill; Fig. 7, a side view of a portion of the frame, illustrating a means of adjusting the table vertically. Fig. 8 is a side view of the frame, illustrating another means of adjusting or moving the table toward the drill and illustrating also a means of feeding the drill-stem toward the table; and Fig. 9 is an edge view of the same with the lever, however, removed.

In detail, *a* indicates the lower portion of the frame supporting a clamping-screw, by which the frame is secured to the bench.

b indicates the upper portion of the frame, in which is supported the table and the drill-carrying stem.

c indicates a vertical projection through

which the drill-stem or spindle passes; *d*, the drill-stem or spindle; *e*, clamping-screw; *h*, crank-handle; *i*, plane-faced table; *j*, table provided with a ledge; *k*, ledge on table *j*; *l*, an opening in the table; *m* and *n*, interchangeable posts or stumps; *o*, a drill; *p*, adjusting-screw; *r*, lever; *s*, a spring mounted below the table-stem, and *t* an interiorly-threaded collar.

The construction and operation of my device will be readily understood on reference to the drawings, wherein is shown in Fig. 1 one of the simplest forms of construction, the body consisting of a lower part *a*, provided with clamping-screw *e*, having a finger-piece *g*, and the upper part *b* being shaped to overhang, as shown, and having an upward extension *c*, provided with an opening to form a bearing for the drill-stem or spindle *d*. An opening is formed in the frame below in the line of the drill for the reception of a table-stem, so that the table may be readily placed in position or removed and another substituted.

The table which is especially designed and adapted for the drilling of openings in eyeglass-lenses, as illustrated in Figs. 2 and 3, shows a table having a plane top. The table *j* is provided with a ledge or abutment *k*, the vertical face of which ledge is at the proper distance from the center line, so that if the eyeglass-lens be placed with its end bearing against the ledge and the drilling operation on one side be commenced the hole will be located at the proper point to fit the standard make of holders without the inconvenient measurement and location heretofore found necessary. In starting I prefer that the post or stump *m* be inserted in the opening *l* in the table *j*, thus giving a bearing-surface of small area below the drill, and after the opening has been formed sufficiently to carry the heel of the cutting-face of the drill a trifle below the surface the lens is removed, the stump *m* taken out, and the stump *n* substituted, the latter being provided with a cone-shaped or tapering point which, of course, bearing in the opening already formed by the drill, brings this opening in exact alinement with the drill, so that as the drilling operation is continued from the opposite side of the

lens the two openings will meet and register with great exactness and all danger of splintering the glass will be entirely avoided.

To provide for other drilling operations which may be required, I provide a plane-faced table *i*, having a stem *f*, adapted to fit within the opening in the frame, so that it may be substituted for the first-described table, if desired. In drilling the hole in the glass the handle *h* is revolved, at the same time bearing down gently but steadily to give feed to the drill-bit. The supporting-stump *m* referred to being under the point of the drill-bit only furnishes a bed less liable to cause breaking of the glass than it would if it covered more surface. The shape of the lens being oval and varying it would be difficult to form any bed or support which would fit the varying curvature of lenses. If, however, the lens were flat, then a bed larger than the drill-bit might be employed.

To prevent all danger of rotation of the tables in the frame, I provide a set-screw *u*, the end of which bears against the table-stem.

For the purposes of accurate vertical adjustment and to move the table toward or from the drill a minute distance I provide a construction as illustrated in Fig. 7, the table-stem being provided with an inclined lateral recess or countersink, and an adjusting-screw *p* being provided with a cone-shaped point engaging the inclined recess in the stem, so that as the adjusting-screw is turned its tapering point bears against the incline in the table-stem and forces the stem and table upwardly. It will be observed, however, that the movement of the table will be extremely slight, notwithstanding the fact that a considerable turn may be given to the screw.

It will be observed that as the crank is revolved by hand the cutting of the drill will be readily communicated to the hand and that the pressure may be regulated so as to avoid danger of splintering or breaking of the glass.

For the purpose of providing another means of feeding and also of vertically adjusting the drill-spindle to the desired position I provide a construction as illustrated in Fig. 8, wherein a collar *t* engages an annular recess in the spindle *d*, and the collar is interiorly threaded to engage a like exterior thread upon the part *c* of the stem, and it will be readily seen that as this collar is revolved it, together with the stem *d*, will be moved in a direction dependent upon the direction of revolution of the collar. In the said figure I illustrate a means of moving the table by the employment of a lever *r*, the same being pivotally mounted in the frame, as shown, and the inner end engaging the table-stem in a slot,

and a spring *s* being arranged below the inner end of the lever to throw the same upwardly. The spring, however, it will be observed, is not a necessary element to the operation of the lever.

Fig. 9 is an edge view of the construction shown in Fig. 8, wherein the slotted stem is seen through the opening; the lever being removed. It will be seen that if desired a pulley may be mounted on the drill-spindle *d* and the feed operate as illustrated.

Having therefore described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a lens-drilling apparatus, a suitable frame, a drill-stem mounted revolubly in the frame; a removable table arranged in the frame below the drill-stem; and a removable post in the table, substantially as shown.

2. In a lens-drilling apparatus, the combination of a suitable frame, a drill-spindle mounted therein, means for revolving the spindle, a table toward which the spindle can be advanced, a square-faced post removably mounted in the table, and a cone-shaped post adapted to be substituted for the first-named post, substantially as described.

3. The combination of a suitable frame adapted to be clamped to a bench; a drill-spindle mounted therein; a removable table mounted in the frame; a square-faced post removably mounted in the table; a cone-shaped post adapted to be substituted for the first-named post, and means to feed the drill and table toward each other, substantially as shown.

4. In a lens-drilling apparatus, the combination of a frame, a drill-spindle revolubly mounted therein, said frame having a socket in line with said spindle, a table having a post in said socket, and a spring in said socket below said post arranged to normally sustain said table a short distance above said frame, substantially as described.

5. In a lens-drilling apparatus, the combination of a frame, a drill-spindle revolubly mounted therein, said frame having a socket in line with said spindle, and a lateral aperture opening from said socket to the side of the frame, a table having a post in said socket, a lever extending through said aperture into said socket below said post, and a spring in said socket below said post arranged to normally sustain said table a short distance above said frame, substantially as described.

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Witnesses:

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