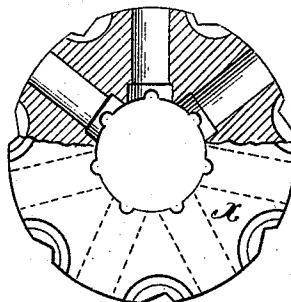
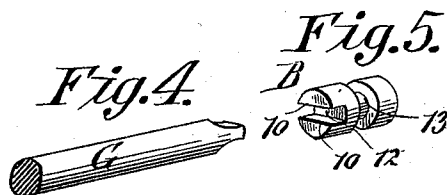
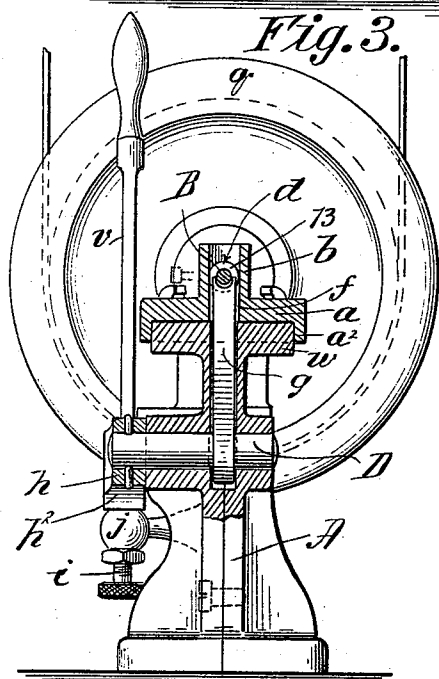


E. M. COUCH.

MACHINE FOR COUNTERBORING CHAMBERS OF REVOLVER CYLINDERS.

No. 530,824. Patented Dec. 11, 1894.

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UNITED STATES PATENT OFFICE.

ELBERT M. COUCH, OF NORTHAMPTON, MASSACHUSETTS.

MACHINE FOR COUNTERBORING CHAMBERS OF REVOLVER-CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 530,824, dated December 11, 1894.

Application filed August 23, 1894. Serial No. 521,065. (No model.)

To all whom it may concern:

Be it known that I, ELBERT M. COUCH, a citizen of the United States of America, residing at Northampton, in the county of Hampshire and State of Massachusetts, have invented new and useful Improvements in Machines for Counterboring the Chambers of Revolver-Cylinders, of which the following is a specification.

10 This invention relates to machines for counterboring at the inner ends of the radial holes of annular objects, the purpose being to devise a machine by which may be overcome the difficulty of effecting the entrance
15 of the tool having a radial disposition within the annular part for the counterboring at the inner orifice of the radial hole of such annular part, and of rotating such peculiarly placed tool.

20 The machine is particularly designed for counterboring the chambers of the annular magazine or cylinders comprised in the revolver, or magazine fire-arm, of the character shown in the Letters Patent granted to me
25 March 13, 1894, No. 516,476.

In the revolving magazine of such a fire-arm, the radial holes or chambers extending from the inner to the outer peripheries of the annular magazine or cylinder are to have the
30 internal enlarged or counterbored orifices for the reception of the flanged head of the cartridge.

The invention consists in the combination and arrangement of parts comprised in the
35 machine for performing the internal counterboring, all substantially as will hereinafter fully appear and be set forth in the claims.

The improved machine is fully and clearly illustrated in the accompanying drawings, in
40 which—

Figure 1 is a side elevation of the machine with some parts in section. Fig. 2 is a partial horizontal section taken on the line 2—2, Fig. 1. Fig. 3 is a vertical cross section on
45 line 3—3, Fig. 1. Figs. 4 and 5 are perspective views of the shaft and counterboring tool shown as adapted to have endwise interlocking engagements. Fig. 6 is a plan and partial central horizontal section of the annular
50 magazine.

In the drawings, A represents the stand, or bed, of the machine having at its top at one end the circular rest, *a*, with the central vertical hub-like projection, *b*. This hub-like projection has the transverse aperture, *d*, horizontally and longitudinally of the machine and the hub and rest, as a whole, have the vertical axial aperture, *f*. The said hub-like projection is of somewhat less diameter than the circular hole within the magazine, *x*,
55 so that said magazine may lie upon the rest and surround the hub.

B represents the counterbore tool which is of a length approximately,—or less than,—the diameter of the hub, *b*, this having its forward end formed with suitable cutting lips,
60 10, 10, which may be constituted by the edges of the cross-slot, 12, which quite deeply penetrates the said end portion of the tool. The tool also has the peripheral groove, 13, intermediate between its ends which groove lies within the vertical hole, *f*, through the rest.

The stand is of suitable hollow construction so that the radial arm, *g*, of the transversely journaled rock-shaft, D, may have
75 freedom of play in its extension from its junction with the rock-shaft to its engagement within the peripheral groove of the counterboring tool. Upon the extremity of said rock-shaft is rigidly affixed the lever, one extremity, *h*, of which constitutes the handle-arm while the other extremity, *h*², may be brought to a limiting abutment against the adjustable stop constituted by the screw, *i*, which has a screw-engagement through the boss, *j*, at the side of
80 the stand, A. The adjustment of this stop controls the working throw of the tool and correspondingly the depth of countersinking the enlarged inner orifice of the magazine chambers. A spring, *k*, set between a shoulder of
90 the cored out stand and the arm, *g*, insures the retreat of the tool and the back swing of the lever, after a counterboring operation has been performed.

The shaft, G, which causes the rotation of
95 the tool, reaches its engagement with the forward end of the tool through the chamber of the magazine, its forward end being flattened at opposite sides in the manner of a screw-driver to engage in the slot of the tool. This
100

shaft, G, or another shaft, G², which carries it as a fixed extension, is mounted to rotate and also to slide in the journals, n, n, of the stand, and the slide shaft has the two collars, o, o, in separation fixed thereupon, and also the driving pulley, q. Upon the top of the stand, under the said shaft, is a slide, H, having an upwardly projecting yoke member, s, which has an engagement to move the slide shaft endwise as the slide moves, but without interfering with the rotation of the said shaft. This slide has in its under side the socket, t, in which engages the upper end of a radial arm, u, supported as a fixed extension of a rock-shaft, J.

The rock-shaft has the operating handle-lever, v, all so that after the annular magazine has been placed about the hub, b, of the rest, a, with its chamber to be counterbored in axial alignment with the tool and the tool rotating shaft, the shaft may be given its endwise movement to bring the shaft into its rotating engagement with the tool. The operator has merely then to force the hand-lever, h, to advance the tool to its maximum depth as regulated by the adjustable stop, during which advancing of the tool, the other hand-controlling lever, v, permits the endwise yield of the shaft, G. The retracting movements of the hand-levers, h and v, are given to such levers, consequently leaving the machine clear to permit the change of position of the magazine for the counterboring action upon the next chamber.

In order to render the machine applicable for work on magazines of different sizes or having different sized central openings, the rest with the axially and also transversely apertured central upstanding hub is detachably fitted upon the stand. This is shown as effected by forming the upper end portion of the stand with the circular platform, w, and constructing the circular rest, a, with the depending flange, a², to set down over the edge of the platform and to be secured to the latter by the screw, y.

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

1. The combination with the stand having a rest with a vertical projection which is vertically apertured and also transversely horizontally apertured, which rest is adapted to receive about the said apertured projection the annular radially bored work, a counterbore tool rotatably located in the said transverse aperture, a lever projected within the vertical aperture and having an endwise forcing engagement with an intermediate part

of the tool, and an endwise movable shaft adapted to be entered through the bore of the work at its outer end and to engage the outer end of the tool, substantially as described.

2. The combination with the vertically projecting part which is vertically and also transversely apertured, of a rotary counterboring tool set in said transverse aperture, means for imparting an endwise movement to the tool, and a shaft mounted in alignment with the tool and adapted by entrance through the radially bored work to engage said tool whereby the latter may receive its rotary movement, substantially as described.

3. In a machine of the character described, the combination with the vertically hubbed rest having the vertical aperture and the transverse aperture through the hub, of the counterbore tool located to rotate in said transverse aperture and having intermediately the peripheral groove, the rock-shaft having the handle-lever and a lever-arm the extremity of which enters the said vertical aperture of the rest and engages in the peripheral groove of the said tool, and the endwise movable shaft mounted in axial alignment with said tool, and adapted to have, endwise, a temporary engagement therewith, substantially as described.

4. In a machine of the character described, the combination with the stand having the vertically projecting part which is vertically and also transversely apertured, of a rotary counterboring tool set in said transverse aperture, means for imparting an endwise movement to the tool, a shaft supported to rotate and to slide endwise in bearings of said stand to engage and disengage the forward end of the tool, and having the fixed collars, o, o, a slide on said stand having the projection to engage said collars, and an operating lever for the slide, all substantially as and for the purpose set forth.

5. In a machine of the character described, the combination with the stand and the rest removably secured upon said stand and having the upstanding hub-like projection which has the transverse aperture, of a counterboring tool set for rotation in the said aperture, a shaft mounted in alignment with the tool and adapted to have a longitudinal movement to endwise engage the tool and means for imparting to the tool its endwise advancing movement, substantially as and for the purpose set forth.

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Witnesses:

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