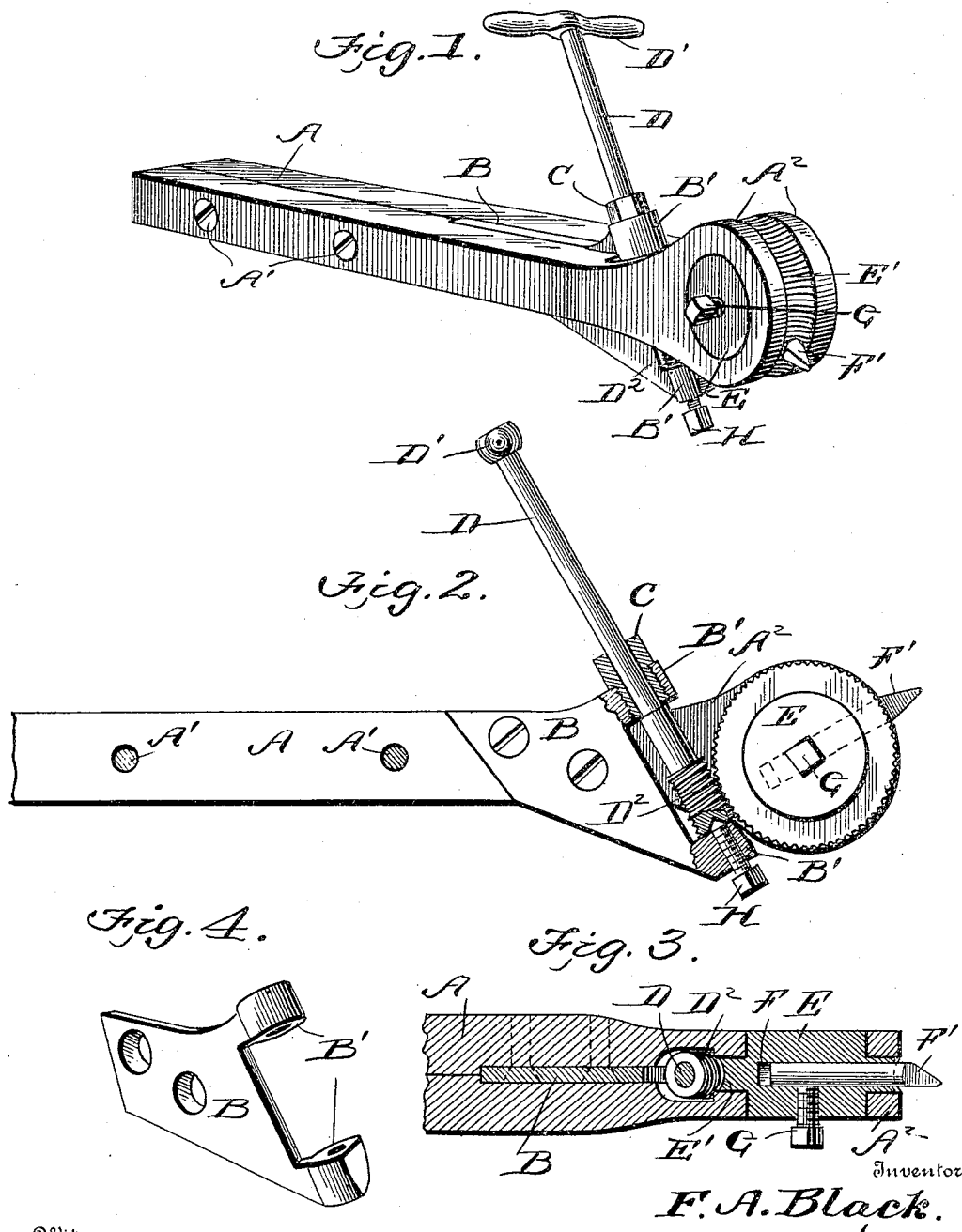


F. A. BLACK.
FINISHING TOOL.
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FINISHING-TOOL.

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To all whom it may concern:

Be it known that I, FORREST ANGUS BLACK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Finishing-Tools, of which the following is a specification.

This invention relates to machine-tools, and especially to a combination shaper and lathe tool adapted to perform a number of finishing operations usually completed by hand. The object of my invention is the cutting of angular and semicircular grooves and semispherical balls, projections, or recesses. The cutting of impressions of this character, as in dies, when not completed and finished by hand is performed by cutters made especially for each piece of work, and the work is gaged by templets or type, the construction of which takes considerable time. The object of my invention is an adjustable tool performing this finishing work smoothly and accurately.

The invention consists of a bifurcated handle adapted to be held in a lathe or shaper and carrying a worm-gear and a coacting pinion journaled in the bifurcation of the handle, the said pinion carrying an adjustable cutting-tool.

The invention also consists of the novel features of construction hereinafter described, pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of the device. Fig. 2 is a view partly in side elevation and partly in section. Fig. 3 is a partial longitudinal and horizontal section. Fig. 4 is a detail view of a bearing-plate.

In the drawings, A represents the tool-shank, formed in two parallel longitudinal sections secured together by screws A'. Adjacent the forward end the inner faces of the sections are cut away, whereby a recess or bifurcation is formed. The forward end of the handle A terminates in the rounded disks A², slightly spaced apart and centrally cut out. In the inner end portion of the recess or bifurcation is placed a plate B, having upwardly and forwardly angled lugs B' in alinement with each other and perforated and threaded. A plug C is threaded into the upper of the lugs B' and has a bore which forms a bearing for a rotatable rod D, which carries a handle D' at its upper end. Adjacent its lower end

and intermediate the lugs B' the rod D carries a worm-gear D². A disk E is journaled in the central cut-out portions of the disks A², and the disk E, which will be termed the "worm-wheel," has a central peripheral flange E', the periphery of which is slightly concave and toothed to mesh with the worm-gear D². A bore F is formed diametrically in the worm-wheel E, and the cutter F' is held therein by means of a set-screw G working through a transverse threaded bore in the axial center of the worm-wheel E. A set-screw H works upwardly through the lower lug B' and serves to adjust the worm-gear D² and also provides a bearing for the lower end of the rod D.

In operation the shank A is held in the usual manner in a lathe or shaper. The cutter F' is given the proper adjustment in the bore F and locked by the set-screw G, and during the cutting process the handle D' is rotated, rotating the rod D, worm-gear D², worm-wheel E, and moving the cutter F' laterally as the nature of the work may require.

The advantages of my device will be obvious to those skilled in the handling of machine-tools and the sinking of dies.

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

1. A shank having a bifurcated end portion, a worm-gear carried by the bifurcated portion, a worm-wheel in engagement with the worm-gear, means for rotating the worm-gear, and an adjustable cutter carried by the periphery of the worm-wheel.

2. A sectional shank, the said sections being parallel to each other and cut away on their inner faces adjacent the front end, a plate between the said sections, alining upper and lower lugs on the plate, a set-screw working through the lower lug, a rotatable rod journaled in the upper lug and bearing on the inner end of the set-screw, a handle on the rod, a worm-gear carried by the rod, a worm-wheel journaled in the sections and having a peripheral flange working between the sections and a diametrically-extending bore, and a cutter adjustably held in said bore.

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