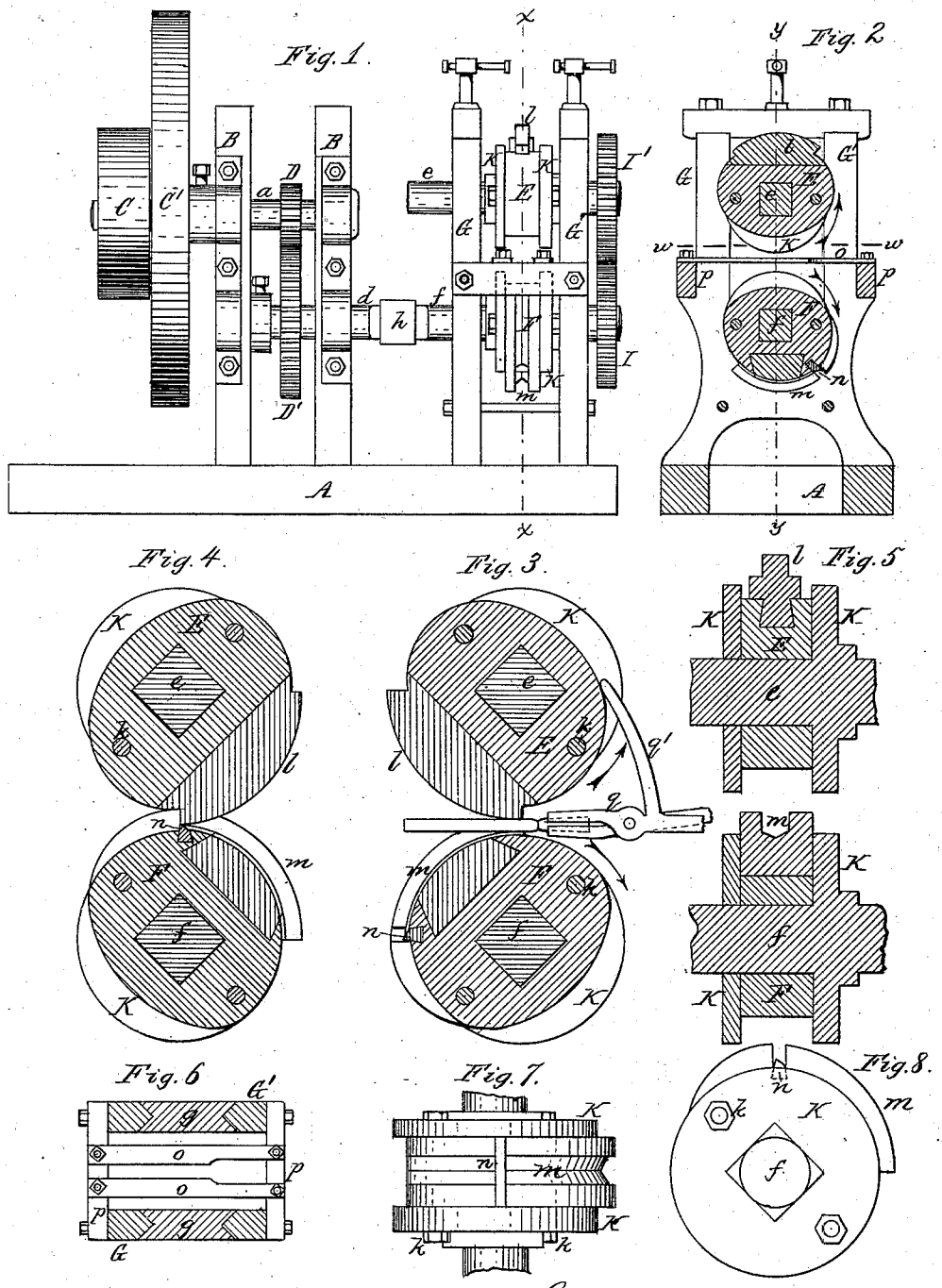
G. PARR.

Machine for Rolling Chisels.

No. 216,969. **Patented July 1, 1879.**



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IMPROVEMENT IN MACHINES FOR ROLLING CHISELS.

Specification forming part of Letters Patent No. **216,969**, dated July 1, 1879; application filed September 6, 1878.

To all whom it may concern:

Be it known that I, GEORGE PARR, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Machines for Rolling Chisels, of which the following is a specification, reference being had to the accompanying drawings.

Chisels are ordinarily made by cutting a blank of suitable length from a flat bar of steel, then forging the tang or socket, as the case may be, on one end of the blank, and then drawing out the other end of the blank to the required tapering shape upon an anvil, either by hand or under a trip-hammer, and finally forming the bevel and cutting-edge on the chisel.

The object of my invention is to dispense with the manual labor in drawing out the blank and forming the bevel and cutting-edge on the chisel, whereby a tool of high finish is produced in a fraction of the time ordinarily required and at much less expense.

My invention consists of the particular construction of a machine for drawing out chisels by rolling and forming the cutting-edge at same time, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is an elevation of my improved machine. Fig. 2 is a vertical section in line *x x*, Fig. 1. Fig. 3 is a sectional view of the rollers in the position in which the drawing out of the chisel-blank commences. Fig. 4 is a similar view, showing the rollers in the position in which the drawing out is finished and the end beveled. Fig. 5 is a section in line *y y*, Fig. 2, at right angles to that figure, on an enlarged scale. Fig. 6 is a horizontal section in line *w w*, Fig. 2. Fig. 7 is a plan view of the lower roller. Fig. 8 is a side elevation thereof.

Like letters of reference designate like parts in each of the figures.

A represents the bed-frame of the machine, and *a* the driving-shaft, journaled in standards B B, supported on the bed-frame A. C is the driving-pulley, and C′ the fly-wheel, mounted on the shaft *a*; and *d*, a counter-shaft, geared with the driving-shaft *a* by means of cog-wheels D D′. E F are the drawing-out rolls, mounted on horizontal shafts *e f*, which revolve in journal-boxes *g g*, arranged in the vertical frames G G′. The lower shaft, *f*, is connected with the counter-shaft *d* by means of a sleeve-coupling, *h*.

I is a gear-wheel, mounted on the lower shaft, *f*, and meshing with a gear-wheel, I′, secured to the upper shaft, *e*, for driving the upper roll. Each roll is composed of an eccentric body or stock, E F, clamped between two circular heads, K K, by bolts *k*. Those portions of the shafts *e f* which pass through the rolls are made square; or, if preferred, the shafts may be made round, and provided with suitable keys for securing the rolls thereto.

l is a male die, secured to the stock E of the upper roll; and *m* is a female die, secured to the stock F of the lower roll, so as to register with the upper die. These dies are made in the form of circular segments, and of a length suitable to produce a chisel of the desired length. The faces of the dies *l m* are farthest apart at their heads, or at the points where they first seize the blank, as shown in Fig. 3, and gradually approach each other according to the taper required for the particular kind of chisel to be produced. As shown in the drawings, the face of the upper die, *l*, is flat, while that of the lower die, *m*, is concave, whereby a chisel is produced which is flat on one side and convex on the other.

It is obvious that the faces of the dies and their dimensions may be varied in accordance with the different kinds of chisels intended to be made.

The dies *l m* are secured in dovetail grooves arranged in the stocks E F, either longitudinally or transversely, so as to be readily removable from the stocks when it is required to change the dies. The stocks E F are also readily removed from the shafts when it is required to exchange them.

n is a beveled knife, arranged transversely at the rear end of the lower die, for forming the bevel at the end of the chisel and cutting off the rest of the blank from the finished chisel. The knife *n* is arranged in a transverse groove formed in the stock, and held in place by any suitable means, so as to be readily removable.

o o are two parallel guide-bars, arranged between the rolls E F, and resting with their ends upon cross-pieces *p* secured to the frames G G′. The guide-bars *o o* are arranged on opposite sides of the dies *l m*, so as to leave between them a space of sufficient width to insert the blank between the rolls, thereby enabling the operator to place the blank quickly in the proper position.

In operating the machine the rolls are rotated in the direction of the arrows. A blank of suitable size and properly heated is seized with the tongs *q* and pushed through between the rolls when the depressed portions of the stocks E F are opposite each other. As the dies *l m* approach each other their front ends, which are farthest apart, seize the blank, as shown in Fig. 3. The blank is now moved backward by the rolls, and at the same time is rolled out to the proper taper by the eccentric form of the dies until the knife *n* comes in contact with the drawn-out blank, when the bevel is formed on the end of the chisel and the latter severed from the remaining portion of the blank. A chisel is formed in this manner at every revolution of the rolls, without requiring any particular skill in the operator, whereby the cost of production is greatly lessened and a more uniform and better article is produced.

The tongs *q* are preferably provided with a projecting bar or stop, *q′*, which strikes against the body of the roll when the blank has been arranged in the proper place and prevents the further movement of the tongs.

I claim as my invention—

In a machine for rolling chisels, the combination, with the eccentric rolls E F, provided with segmental dies *l m*, arranged in the largest portion of the rolls, and beveled cutter *n*, of the guide-bars *o o*, located between the rolls, the whole being arranged to permit the introduction of the chisel-blank from the same side on which the finished chisel is delivered, substantially as set forth.

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