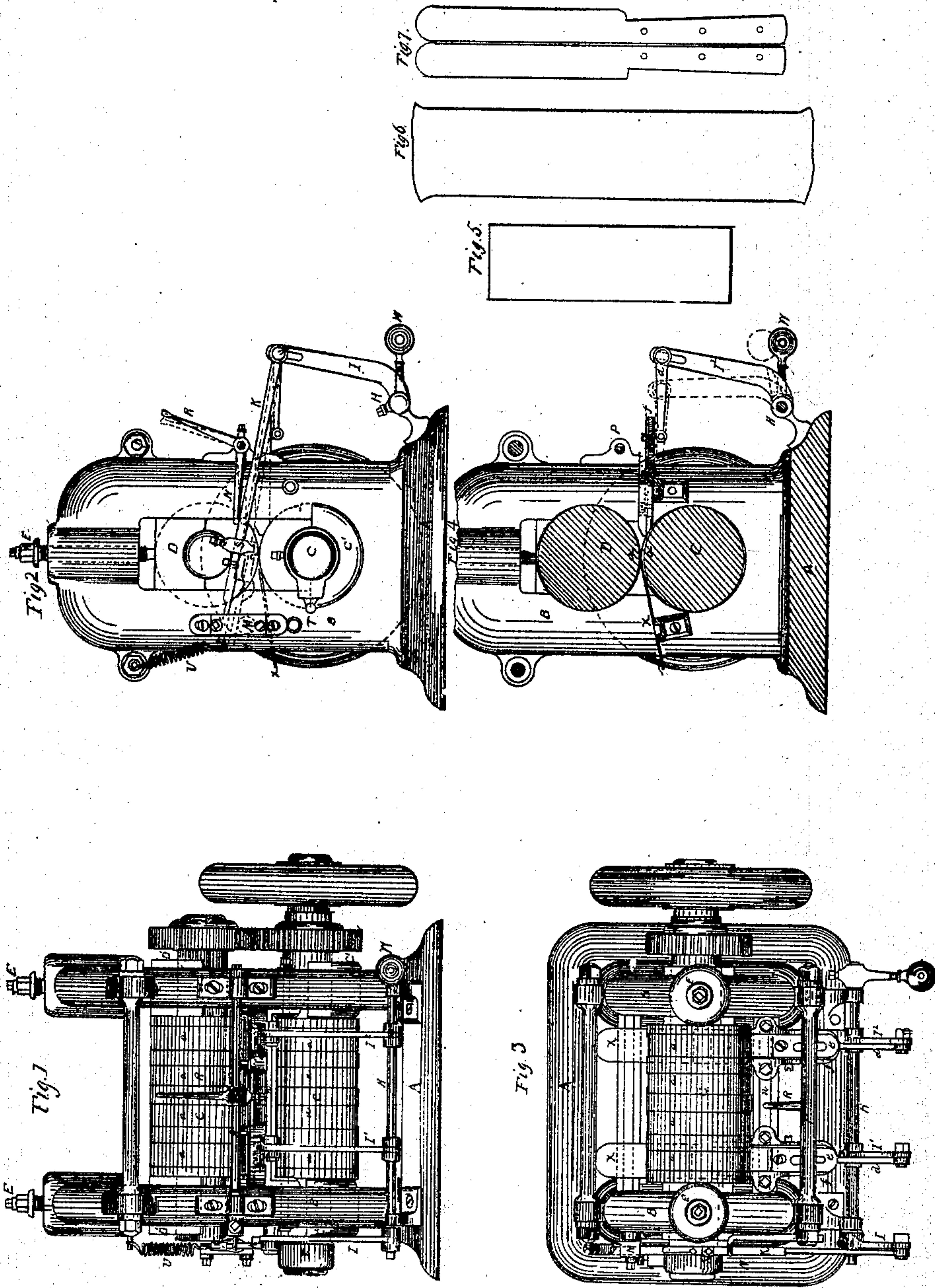


H. B. Harvey.
Forging Cutlery.

Nº 71482

Patented Nov. 26, 1867.



Witnesses

John H. Harvey
at test

Inventor:

H. B. Harvey
By his Attorney
John E. Earle

United States Patent Office.

HOSEA B. HARVEY, OF WEST MERIDEN, CONNECTICUT.

Letters Patent No. 71,482, dated November 26, 1867.

IMPROVEMENT IN FORGING CUTLERY.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, HOSEA B. HARVEY, of West Meriden, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Apparatus for Forging Cutlery; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view.

Figure 2, an end view.

Figure 3, a top view.

Figure 4, a transverse sectional view; and in

Figures 5, 6, and 7, illustrations of the work of the machine.

This invention relates to an improvement in machinery for forging knives and forks, and particularly that class known as riveted, that is to say, such as have a broad tang and a divided handle, one-half being placed upon each side of the tang, and the parts riveted together through the tang, the blank knife such as is shown in fig. 7; and the invention consists in the peculiar formation or construction of rolls, whereby the material introduced is drawn to precisely the form desired, so that all the blanks operated upon by the rolls are alike, and perfect in every particular; also, in combining with the said rolls an automatic feeding-device, which will, at the proper time, introduce material to be drawn.

In order to the clear understanding of my invention, as well as to enable others to construct and use the same, I will proceed to a description thereof, as illustrated in the accompanying drawings.

A is the bed-plate, from which rise two uprights B B, supporting the operative mechanism of the machine. C is the lower roll; and D the upper roll, each arranged in its proper bearing C' and D', the upper bearings adjusted by screws E in the usual manner for press-rolls. The face of each roll has, at a given point upon its surface, a portion cut away, as seen at *a*, fig. 4, so that, the two rolls revolving, the space cut away is formed so as to draw the material to the proper form, beginning thin at one end, say the point, and increasing in thickness to the tang, then diminishing to the heel; and the said space is made concave longitudinally, as seen in sections *a*, figs. 1 and 2, so that, dividing the blank after it has been rolled longitudinally, the outer edges are thin, for the edge of the knife, while the centre is thick, for the back of it, as, in fig. 5, is represented the material cut to the proper length from a bar of steel, to form the blank, as seen in fig. 6. This material (fig. 5) is at the proper time (that is, when the two ends of the recess cut in the rolls meet) inserted, and the rolls continuing to revolve, draw out the material to form the blank, as seen in fig. 6, a transverse section of which is denoted in heavy black. Then, under properly-prepared dies, the blank in fig. 6 is divided, and two knife-blades formed, as seen in fig. 7. Thus the blades are drawn all alike, even, true, and perfect, which cannot be done by the common devices for forging cutlery.

In manufactories, generally, dependence is had upon the process of grinding to reduce and equalize the blades; but coming from rolls thus formed, the blades are so alike and perfect as to leave very little for the grindstone to do, thus saving a large percentage in the cost of manufacture.

The spaces formed in the rolls, as before described, are formed by turning into the chilled roll, in a lathe constructed and arranged for the purpose, so that it is no more labor to turn or form the space than turning an ordinary cylindrical roll. More than one space may be formed in the circumference of the roll, so that the blanks may be introduced to each pair of spaces; and the number of spaces in the length of the roll depends only upon the length of the roll.

As it is important and necessary that the material should be introduced at the proper time, I will proceed to describe the automatic feeding-device, which I have combined with the said rolls, for so introducing the material.

I represent the arrangement as for feeding two blanks at the same time. H is a shaft, arranged across the front of the machine, in proper bearings, from which extends upwards a lever, I, and from which a rod, K, extends across the end of the machine into a guide, M, so as to be depressed, as from the position in black to that denoted in red, fig. 2, and is so depressed by an arm, N, on a shaft, P, the said shaft being turned by a

hand-lever, R, as from the position in black to that in red, fig. 2. On the rod K is fixed a trip, S, (see fig. 2,) and on the shaft of the cylinder C is fixed a cam, T, so that when the bar is depressed, as denoted in red, the revolving cam will strike the trip S, and draw forward the lever I to the position in red, fig. 4, or until the cam escapes from the trip. The said bar K is held up, when free, by a spring, U, or other device, and a weight, W, on the shaft H, or other device, serves to draw back the lever I when freed from the action of the cam. From the shaft H arms I¹ and I² extend up, corresponding to the arm I before referred to, and from each of which a connecting-rod, d, extends inward to a slide, e, (see figs. 3 and 4,) arranged in proper guides f, so as to move forward in the said guides from the position in black to that denoted in red, fig. 4; and the said slides are arranged in line with one of the spaces a, cut from the surface of the cylinder; and the cam T is arranged so that when the corresponding spaces upon the two rolls are in the proper position, the said slide will, by the action of the cam upon the trip, move quickly inward toward the rolls.

The blank, as in fig. 5, is laid upon the guides, between the slide and the rolls. Then the operator, with his hand upon the lever R, depresses the rod K, as denoted in red, fig. 2, so that at the proper time the cam T will strike the trip, and throw the blank between the rolls when they have arrived at precisely the right position to receive the blank. The blank, having been previously heated, is drawn between the rolls, and passes out over the conductor X finished and complete, as in fig. 6, from whence it is taken to the dies, and cut into the proper form, as before described, whether for blades or forks.

Two or more slides may be arranged, according to the length of the rolls, to operate simultaneously; and when, from constant wear in one place, or to produce a different form, it may be desirable to insert the blanks at a different point, the said guides, with their respective slides, are adjusted to such points upon the bar n. Thus, several forms may be produced from the same rolls by simply adjusting the feed to the required point.

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

1. The combination of the two rolls C and D, each having a recess or die formed in its face, the one corresponding to the other, and arranged so as to receive and form the blank for cutlery, substantially as herein set forth.

2. In combination with the above, I claim an automatic feeding-device, constructed and arranged substantially as described, so as to introduce the blanks to the rolls at the proper time.

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Witnesses:

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