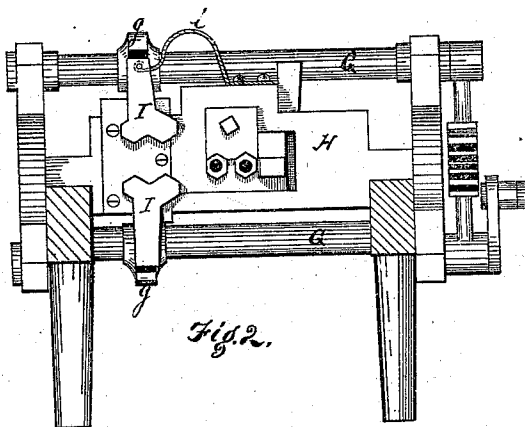
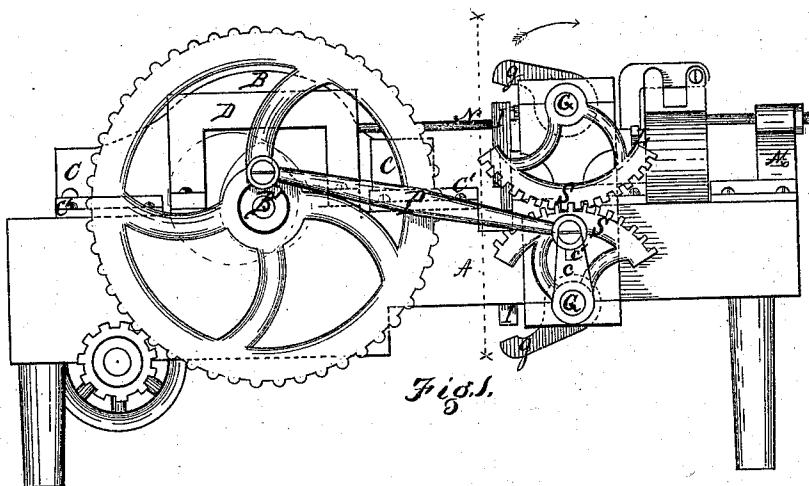


NUT-MACHINE.

No. 173,983.

Patented Feb. 22, 1876.



WITNESSES.

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UNITED STATES PATENT OFFICE.

MATHEW MCKAIN, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN NUT-MACHINES.

Specification forming part of Letters Patent No. **173,983**, dated February 22, 1876; application filed December 18, 1875.

To all whom it may concern:

Be it known that I, MATHEW MCKAIN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Nut-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming a part of this specification, and illustrating those parts of a nut-machine necessary to a full comprehension of the present invention:

In the drawing, Figure 1 is a side elevation of a nut machine embodying my improvements. Fig. 2 is a section on the line *x x*, Fig. 1, looking in the direction of the arrow.

Like letters of reference indicate like parts in each.

My invention relates to the devices for operating the swages of a nut-machine, such as is shown in Letters Patent No. 155,638, granted to William Charles and Mathew McKain, dated October 6th, 1874, and similar machines wherein a blank is partially formed by swaging, and afterward submitted to dies for completion.

I will now proceed to describe the invention, so that others skilled in the art to which it appertains may apply the same.

A is the bed or frame of a nut-machine, B the cam-yoke, provided with T-heads C which move on guides C' of the frame A; D, the brackets of the cam-yokes which operate the punch-head M; H, the die-box; L, the press-screw; M, punch-head for carrying the punch-mandrel and punches, and N the hangers or stretchers for connecting the punch-head and its cam-yokes. The T-head O carries dies which correspond with dies in the die-box, and also a nicking-knife and punches for nicking and partially punching a bar in forming a blank.

The devices so far enumerated correspond with those described in Letters Patent No. 155,638, (to which reference is made for a full description of their construction and operation,) but their existing and well-known equivalents may be employed.

I are swages attached to and movable upon the face of the die-box, arranged in the path

of the feed, and of such shape as will produce a blank of the desired configuration, be it circular, as for washers, or a pentagon, hexagon, or other well-known shape, as for nuts. The upper swage is provided with a retracting-spring, *i*, one end of which is secured to the die-box H, and the other passes under a pin or projection on, or is secured to, the swage; the same device being adopted, if desired, for the lower swage, but is not generally required, as the swage will fall or be retracted by its own weight. Mounted in suitable journals on the frame, at points near the die-box, are the transverse cam-shafts G, provided with cams *g*, so arranged as to operate upon the swages I. On the ends of the transverse shafts G are segments S, one of which is connected by means of a crank, *c*, and pitman, P, to the shaft B', or a gear-wheel thereon, so as to obtain power therefrom through the regular crank-motion. The crank-arm *c* is slotted, as shown at *c'*, so that the motion of the cam-shafts may be regulated at pleasure. Power being applied to drive the cam-yokes, it is transmitted through the pitman and segmental gears, oscillating the cam-shafts G and causing the cam arms *g* to operate the swages I, which, on the reverse motion of shafts G, are withdrawn, by springs or in other suitable manner, as before specified. According to the degree of oscillatory motion imparted to the cam-shaft, and its cam *g*, which, as before specified, can be regulated by the slotted crank *c*, will be the distance through which the swages I move, thus permitting the same mechanism to be used in forming different-sized blanks.

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

In combination with the swages, the cams and cam-shafts, the latter geared to move together, and the slotted crank-arm and pitman, substantially as and for the purpose specified.

In testimony whereof I, the said MATHEW MCKAIN, have hereunto set my hand.

MATHEW MCKAIN.

Witnesses:

T. B. KERR,

F. W. RITTER, JR.