

S. H. WRIGHT.
Nut-Machines.

No. 146,302.

Patented Jan. 6, 1874.

Fig. 1.

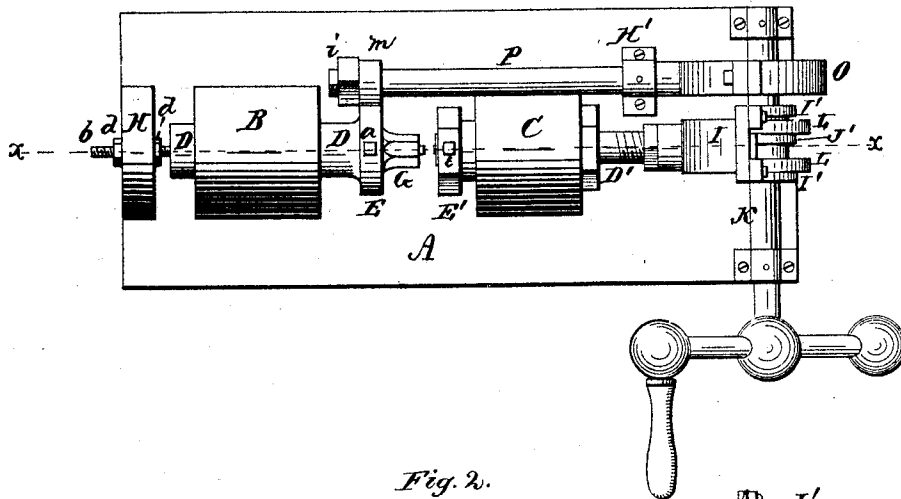


Fig. 2.

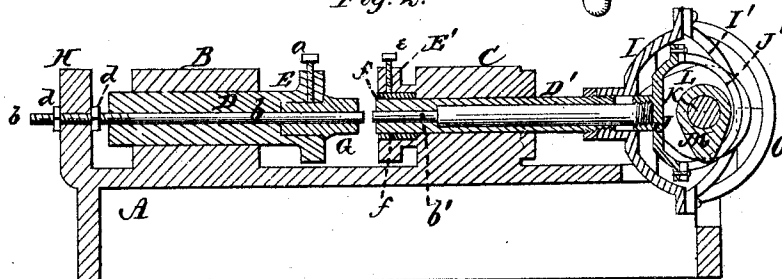


Fig. 3.

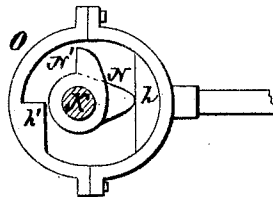
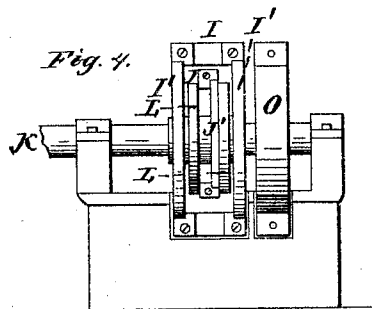


Fig. 4.



WITNESSES.

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IMPROVEMENT IN NUT-MACHINES.

Specification forming part of Letters Patent No. 146,302, dated January 6, 1874; application filed December 17, 1873.

To all whom it may concern:

Be it known that I, SHEFFIELD H. WRIGHT, of Indianapolis, in the county of Marion and in the State of Indiana, have invented certain new and useful Improvements in Nut-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a machine for making nuts, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view, and Fig. 2 a longitudinal vertical section, of my machine. Fig. 3 is a side view of part of the operating mechanism, and Fig. 4 is an end elevation of the machine.

A represents the bed of the machine, upon which are formed or attached two large hollow bearings, B and C, placed on a line with each other and a suitable distance apart. Through the bearing B passes a round shaft, D, of suitable thickness, provided at its inner end with a head, E, and in this end of the shaft is a recess for the insertion of a punch, G, which is held in place by means of a set-screw, a, passing through the head E. The shaft D and punch G have a longitudinal hole through their centers for the passage of a rod, b, the rear end of which is held in a standard, H, on the bed by means of nuts d d, as shown. By means of these nuts the rod b may be adjusted longitudinally, as desired. The punch G is formed in any desired manner to make, in conjunction with a die hereinafter described, the nut of the desired size, and, being removable in the end of the shaft D, it can readily be exchanged for a larger or smaller die, as required. On the rear or inner end of the bearing C is formed a head, E', which is made with a central recess for the insertion of the die f, said die being held in place by a set-screw, c. This die should correspond in size and shape with the punch G, and hence when the punch is

changed to make larger or smaller nuts the die must also be changed to correspond. Through the bearing C and the die f is passed a plunger or ejector, D', which is forced back by the punch G as the nut is being made, and as the punch is being withdrawn the plunger moves forward, ejecting the nut from the die. Through the ejector D' passes a punch, b', for making the center hole in the nut, the punch G forming the die for this operation. The ejector D' is adjustably attached to a cam-strap, I, and the punch b' is also adjustably attached to a cam-strap, J. This adjustability may be effected by screwing said parts into nuts formed on their respective cam-straps, or by any other suitable means, the object being to adjust the parts D' and b' according to the thickness of the nut wanted. K represents the driving-shaft, upon which are secured cams for operating the various parts of the machine. L L are the two cams which operate against the cam-strap to move the ejector D' forward and eject the nut. These cams are perfectly circular for more than one-half of their circumference, then forming a projection with nearly straight sides and a rounded end, so that the movement of the ejector will be rapid to eject the nut, and then remain at rest for a comparatively considerable length of time, thereby allowing the parts to become cooled off by passing water over the same. To the back of the cam-strap I are attached two other straps, I' I', which bear against the hubs of the cams L L, when the ejector has been moved forward to eject the nut, for the purpose of preventing the ejector from moving out too far, and when the ejector has been moved inward by the punch G the cam-strap I bears against the circular portions of the cams L L, holding the ejector steady in this position. M represents the cam to operate against the cam-strap J for moving the plunger b'. This cam is constructed in the same manner as described for the cams L L, and operates against the cam-strap J and the strap J', attached to the rear thereof, in the same manner and for the same purpose as described for the cams L and straps I I'. N and N' represent two cams, also attached to the driving-shaft K, and working within a cam-strap, O, having two internal cam-surfaces, h

and *h'*. Into the cam-strap *O* is screwed a shaft, *P*, which passes through a bearing, *H'*, and its other end passes through an ear, *m*, on the side of the head *E*, where it is adjusted by means of a nut, *i*, so that by the revolutions of the cams *N N'* the punch *G* will be moved back and forth.

The bar from which the nuts are to be made is taken from the furnace, and while hot placed against the face of the head *E'*. The punch *G*, now advancing, by the operation of the cam *N'*, against the cam-surface *h'*, punches the nut out of the bar into the die *f*; the punch *G* and the nut thus cut forcing the ejector *D'* and punch *b'* backward. The cam *M*, then operating against the cam-strap *J*, forces the punch *b'* forward to punch the center hole in the nut, the piece thus punched out entering the hole in the punch and die *G*. The cam *N*, now operating on the cam-surface *h*, moves the punch *G* back again, and at the same time the cams *L L*, operating against the cam-strap *I*, force the ejector *D'* outward, ejecting the nut. As the punch *G* moves backward, the rod *b* pushes out the piece punched out of the center of the nut. The parts remain in this position sufficiently long to allow of water being admitted on them for cooling the same.

When it is desired to cup or chamfer the nut, the cams *L L* should have a slight rise on one side, to cause the ejector *D'* to move forward a very slight distance an instant before the punch *G* commences to move back.

It will be seen that the two punches *G* and *b'*, which make the nut, move through the metal in opposite directions, whereby the burrs which the punches are liable to make will be all on one side of the nut, and hence can be easier trimmed off than if they were, as usual, on both sides of the nut. Metal washers of various sizes may be made with the same machine and in precisely the same manner.

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

1. As an improvement of the combination composed of the ejector *D'*, punch *b'*, stirrups, and actuating-cams, the screw-threaded connections of the ejector and punch to the stirrups to facilitate adjustment, substantially as described.

2. The device composed of the ejector *D'*, punch *b'*, the stirrups, and the actuating-cams, improved by the screw-threaded connections of the ejector and punch to the stirrups, in combination with the punch *G*, holder *E*, and punch *b'*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of December, 1873.

SHEFFIELD H. WRIGHT.

Witnesses:

A. N. MARR,
J. M. MASON.