No. 614,716. Patented Nov. 22, 1898.

O. O. HATLELI.

PUNCHING AND SHEARING MACHINE.

(Application filed Apr. 22, 1898.)

(No Model.)

Fig. 1.

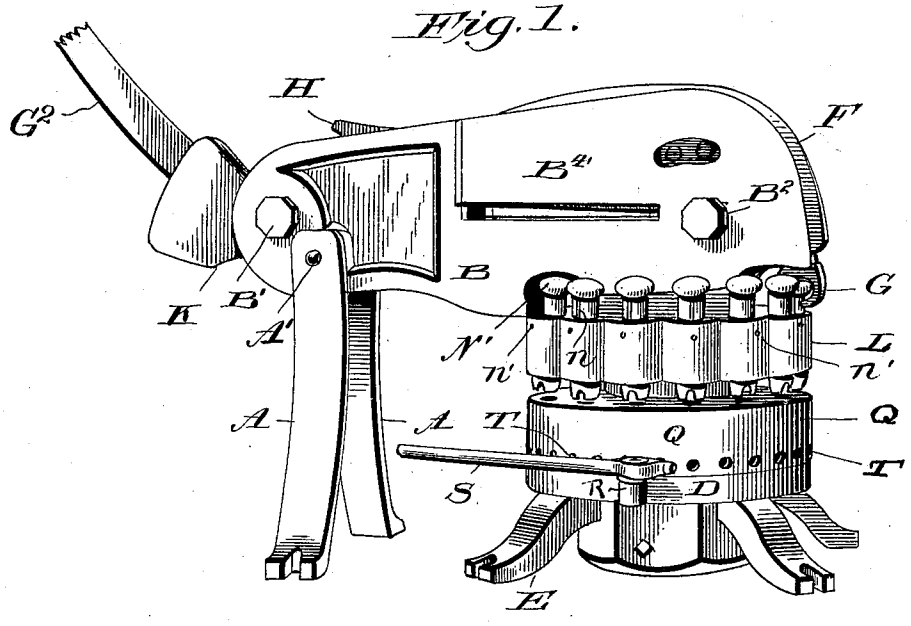
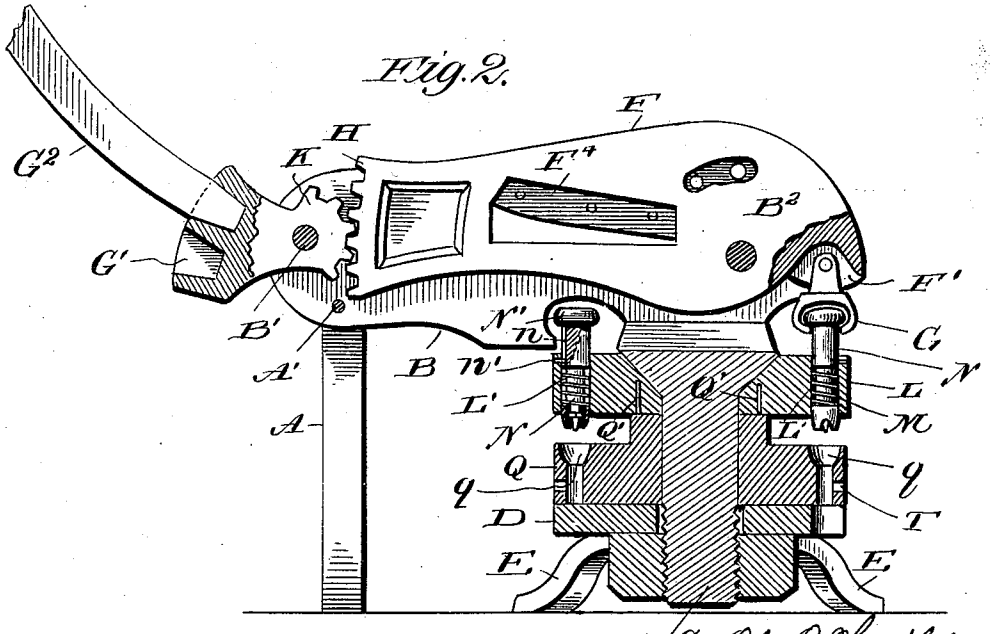


Fig. 2.



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UNITED STATES PATENT OFFICE.

OLE OLSEN HATLELI, OF FOSSTON, MINNESOTA, ASSIGNOR OF ONE-THIRD TO S. N. SORENSEN, OF SAME PLACE.

PUNCHING AND SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 614,716, dated November 22, 1898.

Application filed April 22, 1898. Serial No. 678,492. (No model.)

To all whom it may concern:

Be it known that I, OLE OLSEN HATLELI, a citizen of the United States, residing at Fosston, in the county of Polk and State of Minnesota, have invented certain new and useful Improvements in Punching and Shearing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in punching and shearing machines, and especially to a device of this character in which a series of different-sized punches are utilized, which are arranged in a circular series on a rotary disk, in connection with which is a die, also rotatable on a suitable standard, means being provided whereby the die and the disk carrying the punches may be rotated, the power which is applied to the punch being through a toggle-joint.

Another part of the invention resides in the provision of means for drawing the punch out of the aperture which it has made, said means consisting of a pair of jaws which engage over the head of the punch and withdraw the latter when pressure is removed and the operating-handle thrown back to its starting position.

To these ends and to such others as the invention may pertain the same consists, further, in the novel construction, combination, and the adaptation of parts, as will be hereinafter more fully described and then specifically defined in the appended claims.

My invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts throughout both views, in which—

Figure 1 is a perspective view of my improved punching-machine; and Fig. 2 is a central, longitudinal, and vertical section through the punching-machine, showing the relative arrangement of parts.

Reference now being had to the details of the drawings by letter, A A designate the legs supporting the frame B. This frame B is made up of two complemental sections held together by means of bolts A′, B′, and B^2. The forward ends of these jaws are mounted on a bolt C, which bolt has screw-threaded connection with the block D, which is mounted on the legs E. Journaled on the said bolt B^2 is the lever F, which has a recess F′ at one end near its pivotal portion, which recess is adapted to receive the jaws G. The opposite end of the said lever has segment-teeth H, which are adapted to mesh with the teeth of the segment K, which segment is pivoted on the bolt B′. The opposite end of the said segment has recesses G′, in which an operating-lever G^2 is adapted to engage when it is desired to operate the levers.

Loosely journaled on the shank of the bolt C is the disk L, having a circular series of apertures L′ therein, each aperture in which series is adapted to receive a punch N. These punches N have heads N′ and are guided vertically by means of slots *n*, engaging with screws *n*′, located opposite each aperture in the cirumference of the said disk. A spring M is mounted on the shaft of each punch and is provided to assist each punch in returning to its starting position after pressure has been applied to the same in the act of punching a hole through a piece of metal. Loosely mounted also on the shank of the bolt C is the disk Q, which has pins Q′, adapted to engage with the perforated disk L, so that the two disks will move together in unison. This disk Q has a series of apertures *q*, adapted to allow the end of the punch to pass therein as it is depressed by the lever above. Pivoted on a bracket R on the circmference of the said disk Q is the lever S, the inner end of which is adapted to engage in the various depressions T about the circumference of the said disk for the purpose of causing the latter to rotate upon its axis when it is desired to bring one or another of the punches under the levers provided to force the punch through the metal, as will be readily understood.

It will be noted that the jaws which are pivoted to the end of the lever F are of such a shape as to allow the head of any one of

the punches to freely pass through the same, and as a particular punch comes within the jaws and the lever is depressed on the return movement of the lever to its starting position the jaws will engage with the head of the punch and withdraw the same from the aperture that it has made.

Mounted on a recessed shoulder, one on either side of the said lever, is a blade F^4, disposed at an angle, as shown, and is provided to form a shear. The walls of the frame B are provided with elongated apertures B^4, which register with an aperture in the lever F, adjacent to the edges of the cutting-knives F^4, whereby pieces of metal may be severed by placing the same in the apertures and causing pressure to be applied to the operating-lever.

I am aware that it is common in the art to construct punching-machines in which toggle-lever joints are utilized; also, punching-machines in which shear-blades are employed. Hence I make no claim for such construction.

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

1. A punching-machine, consisting of a framework made up of two complemental sections, segment-levers pivoted between the same, the adjacent ends of which mesh with each other, an operating-handle connected with one of the said levers, combined with a series of punches mounted in a rotary disk, and adapted to be operated by one of the segment-levers, as shown and described.

2. In a punching-machine, the framework made up of complemental sections, the segment-levers pivoted between the same and having their adjacent meeting edges intermeshing, the operating-handle connected with one of the levers, combined with a disk carrying a series of punches in apertures therein, adapted to rotate underneath the end of one of the said levers, and the jaws pivoted to the lever under which the punches travel, said jaws being adapted to depress and withdraw the punch, as set forth.

3. In a punching-machine, the levers mounted as described, the jaws pivoted to one of the said levers, combined with a rotary disk carrying a circular series of headed punches, adapted to travel through the said jaws as the disk is rotated, and the die underneath the said disk, as set forth.

4. In a punching-machine, the levers as described, the jaws pivoted to one of the same, the rotary disk having a circular series of headed punches, which are spring-actuated, the rotary die adapted to move with the disk carrying the punches, and an operating-lever adapted to rotate the said die, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

OLE OLSEN HATLELI.

Witnesses:

ALBERT KAISER,

N. J. ANDERSON.