C. A. CORMAN.

Punching-Machine.

No. 163,579. Patented May 25, 1875.

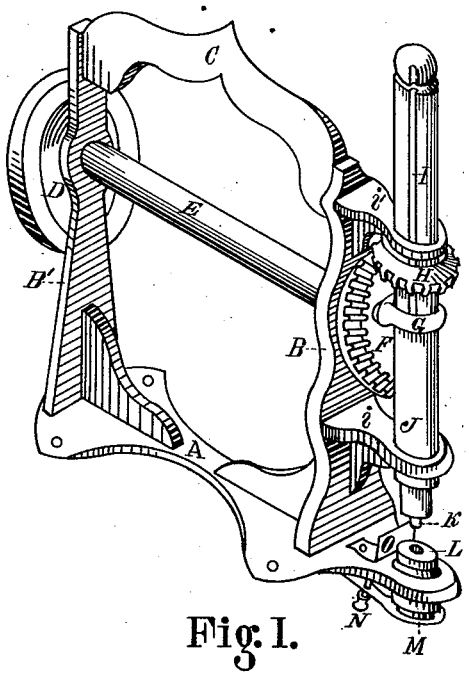


Fig. 1.

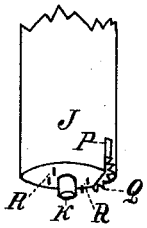


Fig. 2.

Witnesses:
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# UNITED STATES PATENT OFFICE.

CHARLES A. CORMAN, OF WAYLAND, MASSACHUSETTS.

## IMPROVEMENT IN PUNCHING-MACHINES.

Specification forming part of Letters Patent No. **163,579**, dated May 25, 1875; application filed April 23, 1875.

*To all whom it may concern:*

Be it known that I, CHARLES A. CORMAN, of Wayland, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Punching-Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is an isometrical perspective view, and Fig. 2 a sectional view.

Like letters of reference indicate corresponding parts in the different figures of the drawing.

My invention relates to that class of punching-machines which are employed in making the eyelet-holes of boots and shoes; and consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a very simple and effective device is produced, which not only forms the eyelet-hole, but creases and ornaments it at the same time.

It is well known that in the manufacture of boots and shoes the eyelet-holes are sometimes punched, and then ornamented by creasing, imitation stitching, &c., requiring the use of a separate tool or implement to perform the punching and each style of ornamentation, making the work laborious and expensive.

My improvement is designed to obviate these objections, and to that end I make use of mechanism the nature and operation of which will be readily understood by all conversant with such matters from the following description:

In the drawing, A is the bed-piece, B B′ the standards, and C the cross-bar or top, of the machine. Journaled horizontally in the standards there is a shaft, E, provided at one end with the driving-wheel D, and at the other with the bevel-gear F. Two brackets or arms, *i i′*, project horizontally from the outer face of the standard B, and arranged to slide vertically therein is a punch-bar, J, provided with the collet or strap G, which fits into a groove cut around the bar, in such a manner as to permit the bar to rotate, but not to move longitudinally. A bevel-gear, H, intersecting with the gear F, is disposed on the bar J, and provided with a spline, (not shown,) working in a groove, I, the gear H being so constructed and arranged as to permit the bar to slide freely in a vertical direction, while causing it to rotate conjointly therewith. A stud projecting from the inner side of the collet G works in a hole in the face of the gear F, and to the lower end of the bar J there is attached a punch, K, fitted to work in a hole or matrix in the bed L. Projecting vertically from the lower end of the bar are a series of studs, R, arranged in a circle around the punch, and disposed vertically in the slot P there is a small spur-wheel, Q, the studs operating to crease the leather, and the wheel to indent it and produce imitation stitching as the bar rotates. The matrix-bed L is fitted to slide vertically in the bed-piece A, and is rendered yielding and adjustable by means of the spring M and thumb-screw N, to prevent the studs and wheel from tearing or injuring the leather.

In the use of my improved machine the leather to be punched is placed properly on the bed L, and power applied to the wheel D, the bar J being caused to rotate by means of the gear H, and to receive reciprocating vertical movements by means of the gear F and collet G. As the punch K descends to form the eyelet-hole, the studs R and wheel Q are brought forcibly into contact with the leather, and, as the bar revolves, crease and indent it in a manner which will be apparent without a more detailed explanation.

A heart-shaped or any other desired form of groove may be cut in the face of the gear F, in which the stud on the collet may work, and thus control the period of contact of the studs R and wheel Q with the leather.

It will be obvious that one or more of the studs R may be employed; also, that either the studs or wheel Q may be omitted, or other devices added to or substituted therefor, without departing from the spirit of my invention, which having thus described,

What I claim is—

1. In a punching mechanism, constructed and

operating substantially as described, the combination of the punch K and studs R, substantially as and for the purpose specified.

2. In a punching mechanism, substantially such as described, the combination of the punch K, studs R, and wheel Q, substantially as set forth.

3. The combination of gears F H, collet G, bar J, punch K, and yielding bed L, substantially as set forth and specified.

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Witnesses:

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