(No Model.)

F. E. HERSEY.

MACHINE FOR PUNCHING AND TRIMMING BELTS.

No. 483,555. Patented Oct. 4, 1892.

Fig. 1.

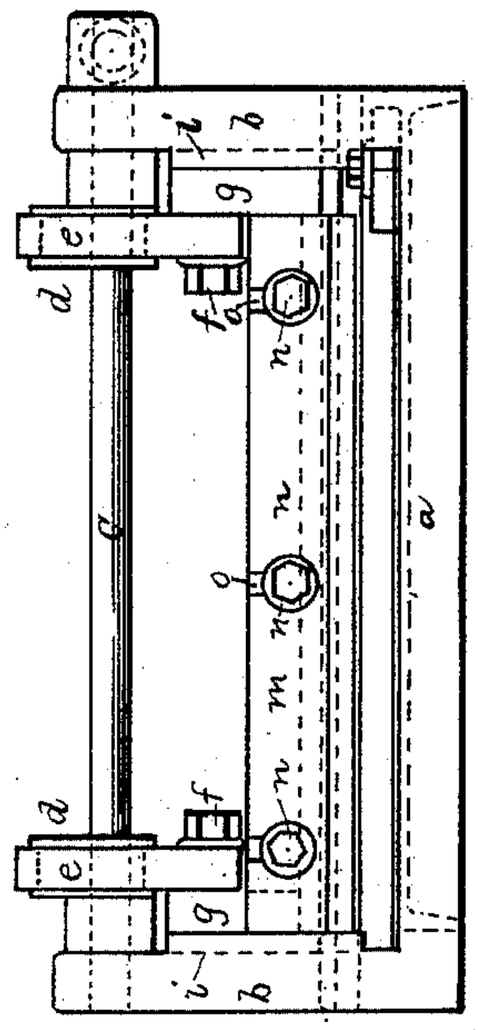


Fig. 2.

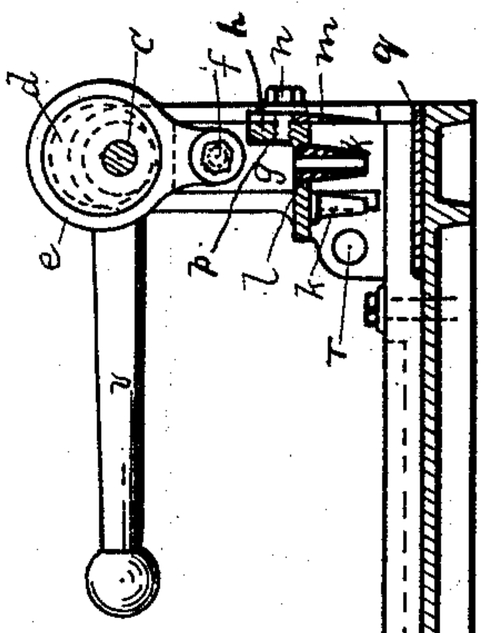


Fig. 3.

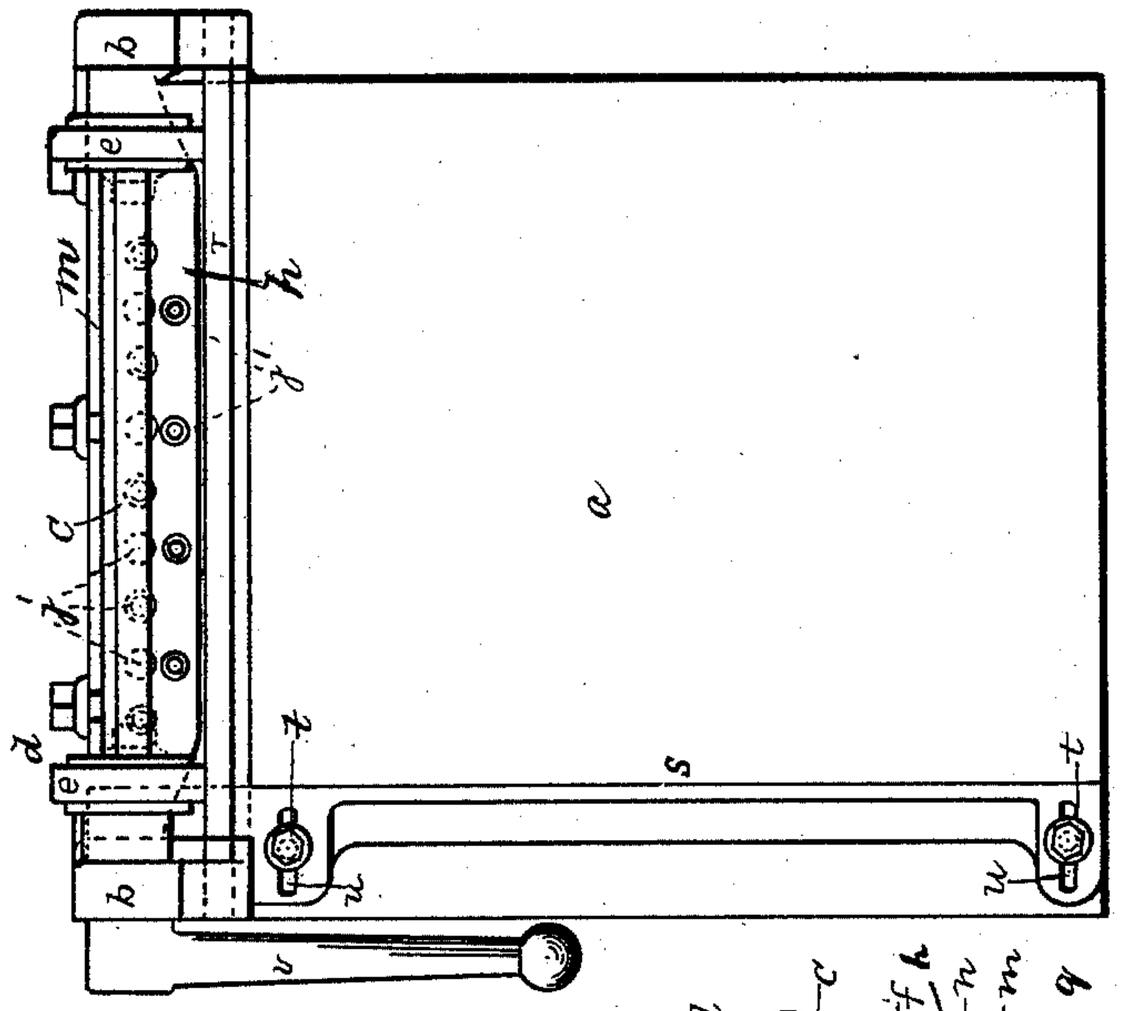
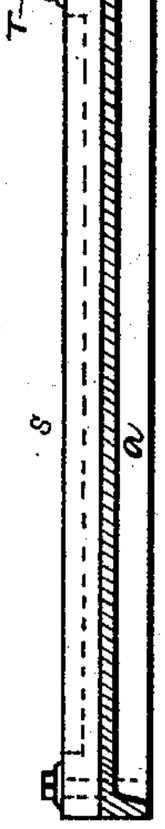


Fig. 4.



WITNESSES—

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MACHINE FOR PUNCHING AND TRIMMING BELTS.

SPECIFICATION forming part of Letters Patent No. 483,555, dated October 4, 1892.

Application filed November 13, 1891. Serial No. 411,816. (No model.)

To all whom it may concern:

Be it known that I, FRED E. HERSEY, a citizen of the United States, residing at Wolfborough, in the county of Carroll and State of New Hampshire, have invented certain new and useful Improvements in Machines for Punching and Trimming Belts, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to devices for punching lacing-holes in the ends of belts and bands; and it consists in an improved machine comprising a novel and useful construction and combination of parts providing for the punching of a single or double series of lacing-holes in proper position relatively to the side edges of the belt, whatever may be the width of the belt, and for simultaneously trimming off the extreme end portion of the belt adjacent to the series of holes which is punched therein.

By my machine I am enabled to readily punch the lacing-holes required at the ends of belts and insure the correct placing of the said holes in the belt whatever may be the width of the latter, and at the same time trim the extreme ends thereof.

My invention will first be described with reference to the accompanying drawings, and will then be particularly pointed out and defined in the claims at the close of this specification.

In the accompanying drawings, Figure 1 is a view in end elevation of a machine embodying my invention. Fig. 2 is a view thereof in longitudinal section. Fig. 3 is a view thereof in plan.

In the drawings, *a* is the bed-plate of my machine, it having or being formed with uprights *b b* at the opposite corners of one end thereof. The upper surface of the bed-plate *a* is intended to support a portion of the length of the belt which is to be punched. The uprights *b b* have bearings therein for the cross-shaft *c*. Upon the shaft *c* are mounted eccentrics *d d*, one near each end thereof. To the exteriors of these eccentrics are fitted the straps *e e*, the lower portions of which are pivotally connected by screws *f f* to the heads or enlarged ends *g g* of the cross-wise-extending beam or bar *h*. The heads or ends *g g* slide in vertical grooves or ways *i i*, which are formed in the inner faces of the uprights *b b*. The beam or bar *h* is formed with two parallel lines of vertical internally-threaded holes *j j j′ j′* therethrough, the holes *j j* forming one line extending the length of the beam or bar and the holes *j′ j′* forming a second line, also extending lengthwise of the bar, these holes *j′* being less in number than the holes *j* and being arranged with one thereof opposite to each alternate one of the holes *j*, beginning with the second hole at each end of those lettered *j*. A series of punches *k* is provided, these having screw-threaded upper ends *l* fitting the holes *j j j′ j′*. To the forward side of the bar *h* is applied a cutting blade or knife *m*, which is secured to the bar by screws *n n*, that pass through slots *o o* in the blade or knife and enter threaded holes *p p* in the bar *h*. The slots *o o* provide for vertical adjustment of the blade or knife *m* upon the bar *h*. Across the forward end of the bed-plate *a* is placed a strip of soft metal *q*, which lies upon the upper surface of the bed-plate beneath the punches and knife, this plate affording a suitable surface for receiving the cutting-edges of the latter. A stripping-rod *r* is supported in the uprights *b* at the rear of the punches and serves to prevent the belt from being lifted as the punches rise. A straight-edge *s* is mounted upon the bed-plate *a* at one side thereof and extended at right angles to the series of punches and the knife, this straight-edge being held to the upper surface of the bed-plate by screws *t t*, which pass through slots *u u* in the straight-edge and into threaded holes in the bed-plate. The inner face of the straight-edge serves as a guide, against which one edge of the belt is caused to bear at the time when the end of the belt is being placed in position under the punches.

In Fig. 3 of the drawings the punches are shown applied in double series to the holes *j j j′ j′*, alternate holes *j j* being left without punches and the latter being disposed in quincunxial or staggered order. This arrangement is one which is employed where the ends of wide or comparatively-wide belts are to be punched. When narrower belts are to be punched, the punches in the holes *j′* are removed therefrom and applied to the holes *j*, which are now shown empty. The straight-edge or gage *s* is adjusted laterally to suit the

width of the belt and for the purpose of causing the series of holes punched in the belt to be disposed properly with relation to the side edges of the belt. When in the use of the machine a partial rotation is given to the shaft *c* by power applied to the arm or lever *v*, fixed to the said shaft, the punches and knife are carried down and caused to act simultaneously upon the end of the belt extending under the same, thereby at one and the same time punching a properly-placed series of lacing-holes therein and trimming off the extreme end portion at a proper distance from the lacing-holes. The punches and knife are raised by a movement of the arm *v* in the reverse direction.

I have herein shown and described the cross-bar *h* formed with threaded holes for the reception of the threaded portions of the punches. I would have it understood, however, that any other simple known or equivalent means of conveniently connecting the punches to the cross-bar may be employed without departing from the spirit of my invention.

I claim as my invention—

1. The belt trimming and punching machine comprising the combination, with the bed-plate and the straight-edge at one side thereof, of the cross-bar *h*, extending across the bed-plate at a right angle to the line of the straight-edge, a series of punches carried by the said bar, the trimming-knife applied to and carried by the cross-bar, the said series of punches and trimming-knife extending in the direction of the length of the bar, and means whereby the cross-bar may be reciprocated, and thereby caused to simultaneously punch a series of holes across the end of the belt and trim off the end portion beyond said holes, substantially as described.

2. The belt trimming and punching machine comprising the combination, with the bed-plate and the straight-edge at one side thereof, of the cross-bar *h*, extending across the bed-plate at a right angle to the line of the straight-edge, the said cross-bar having the two lines of holes, the holes in one line being placed opposite alternate holes in the other line, the punches applied to the said holes, the knife carried by the said bar at one side of the series of punches, and means whereby the cross-bar may be reciprocated, and thereby caused to simultaneously punch a staggered series of holes across the end of a belt and trim off the end portion beyond such holes, substantially as described.

3. The belt trimming and punching machine comprising the combination, with the bed-plate and the straight-edge adjustably mounted thereon, of the cross-bar having the two lines of holes with the holes in one line opposite alternate holes in the other line, the punches applied to the said holes, the knife carried by the said bar, and means whereby the cross-bar may be reciprocated, substantially as described.

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

FRED E. HERSEY.

Witnesses:
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