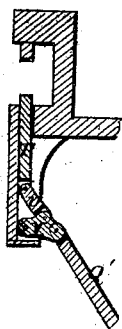


Patented Feb. 14, 1871.



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# United States Patent Office.

CHARLES H. MORSE, OF BOSTON, ASSIGNOR TO HIMSELF AND WILLIAM A. BROWN, OF LYNN, MASSACHUSETTS.

Letters Patent No. 111,865, dated February 14, 1871.

## IMPROVEMENT IN MECHANISMS FOR OPERATING PUNCHING AND EYELETING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, CHARLES H. MORSE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Mechanism for Operating Punching and Eyeletting Machinery, &c., of which the following is a specification.

Figure 1 is a perspective view of my invention;

Figures 2 and 3, sectional elevations; and

Figure 4, a sectional elevation of parts detached.

The object of this invention is to produce a machine wherein the separate devices for punching and eyeletting shoes, &c., shall be in close proximity, and under the control of a single operator; and

It consists mainly of pendent rods suspended from the punching and eyeletting devices, and provided at their lower ends with catches; also a series of levers, operated by treadles, against the ends of which levers bear the lower ends of the suspended rods; also of a series of levers pivoted at one end, their opposite ends bearing on the peripheries of a corresponding series of cams on the driving-shaft, whereby a reciprocating motion is imparted to said levers, which are provided with orifices in their free ends, through which pass the lower ends of the pendent rods, the whole operating in such manner that when one of the treadles is depressed its lever allows one of the pendent rods to swing downward, thereby bringing its catch into connection with one of the reciprocating levers, whereby the motion of the latter is imparted to the punching or eyeletting devices, as will herein-after more fully appear.

In the drawing—

A represents the box or case in which the mechanism is contained, through which runs the driving-shaft B, on which are the cams B<sup>1</sup> B<sup>2</sup> B<sup>3</sup>.

C represents the punching device, and

D E the eyeletting devices, all of which are located on the front of case A.

F G represent levers, pivoted at their outer ends between standards I I, &c.

The levers F G bear upon the upper peripheries of cams B<sup>1</sup> B<sup>2</sup>, being held in position by springs J, and are enlarged at their inner ends and provided with orifices K.

The punching mechanism consists of the punch L, which is attached to the arm M of vertical rod N, which passes through the front of casing A, and is attached at its lower end to the lever O, which is pivoted at the center to the standard P; and to its opposite end is attached the rod Q, which swings freely, and is provided at its lower end with a curved arm, R, on which is a projection or catch, S.

The eyeletting device D consists of a vertical hammer, T, connected by links U V with the rod Q<sup>1</sup>, which is similar in construction to rod Q.

The eyeletting device E consists of a hammer, W, the lower end of which is attached to lever X, which is pivoted in standard X', and pivoted at its opposite end to rod Q<sup>2</sup>, which is also similar in construction to rod Q, and is provided with an arm, Z, and catch Z'.

a a represent levers pivoted between standards I, which levers are provided with treadles b b at their outer ends, while their inner ends are curved upward, and are in contact with the lower ends of arms R, said arms bearing against said levers.

c represents a treadle, which is pivoted by the projection c' to standards I', and pivoted at its lower end to rod d, the rear end of which is curved upward slightly and in contact with the lower end of arm Z of rod Q<sup>3</sup>.

H represents a lever similar to levers F G, and pivoted between standards I', above rod d, which lever bears against the lower periphery of cam B<sup>3</sup> and is held in position by spring e.

It will be seen that the levers a a and rod d hold the arms Q Q<sup>1</sup> Q<sup>2</sup> in such a position that the catches S and Z' will not engage with the levers F, G, and H, to which a reciprocating motion is imparted by cams B<sup>1</sup> B<sup>2</sup> B<sup>3</sup>; but upon the depression of either of the treadles b b c either of the levers a a or rod d will release arms Q Q<sup>1</sup> Q<sup>2</sup>, and the catches S and Z', engaging with levers F G H, impart the motion of the latter to the devices C D E singly, or to them all, at the will of the operator.

This arrangement requires but one attendant to perform the two operations of punching and eyeletting.

The devices are simple and efficient, the arms R and Z passing freely through the orifices K of levers F G H until allowed to swing downward by the depression of levers a a or withdrawal of rod d.

The catch Z' of arm Z engages with the lower side of lever H, as shown in fig. 3.

P P are adjustable plates, upon which are standards I I I', &c.

The office of these plates is to adjust the throw of levers F G H as necessity may require, either from wear, tension, or other cause.

This adjustment also acts upon the punch or eyeletting-hammers through arms Q Q<sup>1</sup> Q<sup>2</sup>, so that an accurate adjustment of the punching or eyeletting devices may be secured.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The levers F G H, in combination with cams B<sup>1</sup> B<sup>2</sup> B<sup>3</sup> and arms Q Q<sup>1</sup> Q<sup>2</sup>, having arms R Z and catches S Z', substantially as described.

2. The levers *a* and treadles *b*, or their equivalent treadle, *c*, and rod *d*, in combination with arms *Q* *Q*<sup>1</sup> *Q*<sup>2</sup>, substantially as described.

3. The combination of the adjustable plates *P*, treadles *b* *c*, and levers *F* *G* *H*, by which the throw of levers *F* *G* *H* is adjusted, substantially as described.

4. The arrangement of levers *F* *G* *H*, arms *R* *Z*, and rods or arms *Q* *Q*<sup>1</sup> *Q*<sup>2</sup>, so that, by the throw

given levers *F* *G* *H*, the same lock with catches *S* *Z'* upon arms *R* *Z*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. MORSE.

Witnesses:

CARROLL D. WRIGHT,

C. F. BROWN.