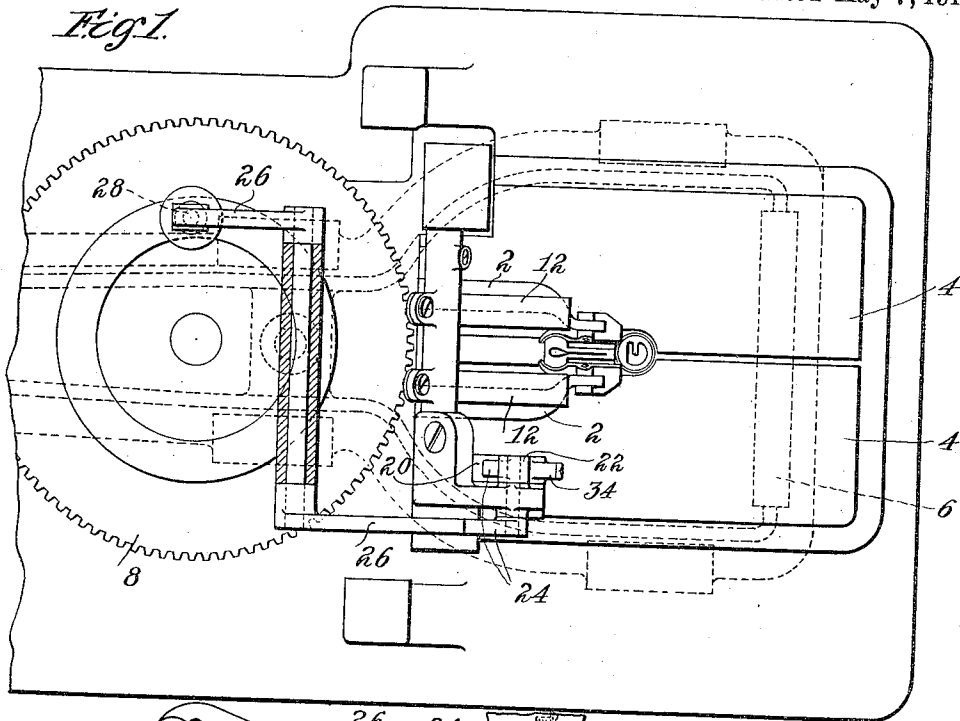


E. J. RAY.  
 WORK HOLDING CLAMP.  
 APPLICATION FILED SEPT. 18, 1914.

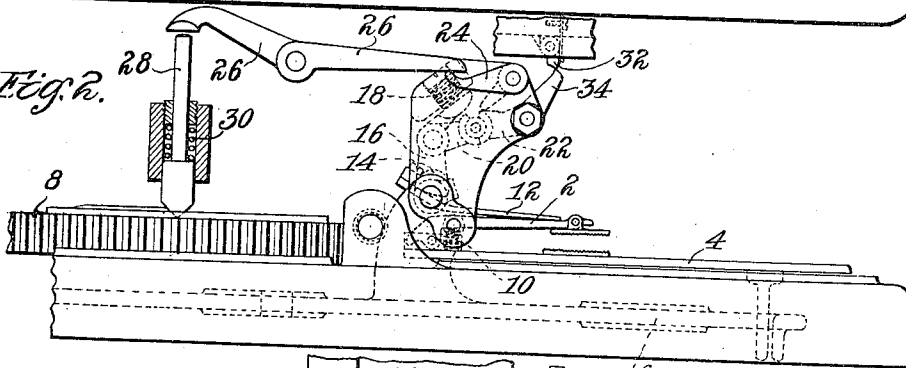
1,265,382.

Patented May 7, 1918.

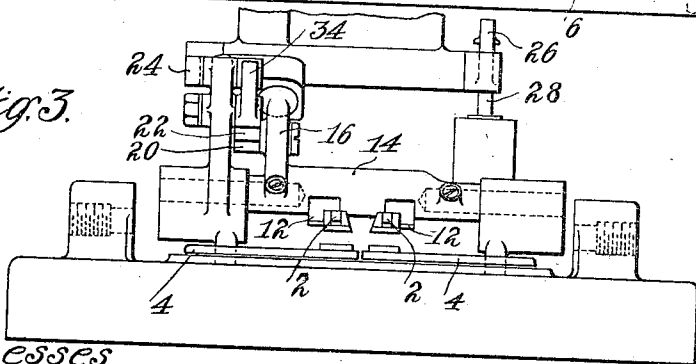
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses*  
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# UNITED STATES PATENT OFFICE.

EUGENE J. RAY, OF BEVERLY, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## WORK-HOLDING CLAMP.

1,265,382.

Specification of Letters Patent.

Patented May 7, 1918.

Application filed September 18, 1914. Serial No. 362,299.

*To all whom it may concern:*

Be it known that I, EUGENE J. RAY, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Work-Holding Clamps; and I do hereby 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.

The present invention relates to work holding clamps for buttonhole sewing or other machines. The invention is intended primarily as an improvement in the work clamp actuating and locking mechanism of buttonhole sewing machines and the primary object of the invention is to provide an improved mechanism of simple and compact construction by which the work holding clamp of a buttonhole sewing machine may be opened and closed in a reliable and satisfactory manner and held in these two positions for the required time during the operation of the machine. It is to be understood, however, that the invention is applicable to analogous machines and also that except as defined in the claims the invention is not limited to any specific construction or arrangement of parts.

In the drawings accompanying this application the preferred form of the invention is illustrated as applied to the buttonhole sewing machine fully disclosed in the patent to Hill, No. 1,063,880, dated June 3, 1913.

In the drawings, Figure 1 is a partial plan view of so much of the machine of the Hill patent as is necessary to illustrate the application of the present invention thereto; Fig. 2 is a view in side elevation partly in section of the parts illustrated in Fig. 1; and Fig. 3 is a view in front elevation of the parts illustrated in Fig. 1.

The work holding clamps of the machine illustrated in the drawing are indicated at 2. These clamps are pivotally supported upon work plates 4 which in turn are mounted upon the clamp carriage 6. The clamp carriage 6 is constructed, arranged and operated as in the machine of the Hill patent, being moved longitudinally at the proper times during the operation of the machine by suitable connections from the cam carrying gear 8. The work clamps 2 are pivotally mounted

upon the plates 4 so as to move with the 55 plates and with the clamp carriage 6. A spring 10 acts upon each clamp and tends to raise the clamp into open position. For operating the clamps, two leaf springs 12 are provided which rest at their free ends upon 60 the upper sides of the clamps 2 and at their rear ends are secured in a rock shaft 14 pivotally mounted in brackets projecting upwardly from the clamp carriage 6. From the rock shaft 14 an arm 16 extends upwardly 65 and the upper end of this arm extends into a position to be acted upon by a spring pressed plunger 18 mounted in one of the arms projecting from the clamp carriage. The tendency of the spring plunger 18 is to 70 move the rock shaft 14 in a direction to close the clamps 2 upon the work. For locking the clamps in open position against the force of the spring plunger 18 a locking toggle is provided consisting of the members 75 20 and 22, which members are pivotally connected together and are pivotally mounted respectively upon the arm 16 and upon the bracket extending from the clamp carriage 6. When this locking toggle is in the position 80 indicated in Fig. 2 the work clamp is in open position and is held in open position until the toggle is broken. As soon as the toggle is broken the spring plunger 18 acts to close 85 the clamp and the clamp remains in closed position until the toggle is again returned to locking position indicated in Fig. 2. For breaking the toggle to release and close the clamp a two armed lever 24 is provided, pivotally mounted upon the bracket projecting 90 from the clamp carriage 6. One arm of this lever 24 is arranged to rest upon the upper surface of the member 22 of the toggle and the other arm extends beneath the forward end of a lever 26 mounted on the frame of 95 the machine. The rear end of the lever 26 extends over a plunger 28 which is pressed downwardly by a spring 30 and which is raised against the force of the spring by a cam on the cam gear 8 arranged to pass be- 100 neath the lower end of the plunger at the proper times during the operation of the machine. For restoring the toggle to locking position and allowing the work clamp to open, a stationary cam 32 is provided similar to the latch operating cam of the work clamping mechanism of the Hill machine. 105 This cam is so arranged that during the re-

turn longitudinal movement of the clamp carriage 6 at the completion of the buttonhole sewing operation it engages an arm 34 projecting upwardly from the toggle member 5 22 and returns the toggle into locking position, as indicated in Fig. 2.

The nature and object of the present invention having been indicated and the preferred embodiment of the invention having 10 been specifically described, what is claimed is:

1. A buttonhole sewing machine, having in combination, a work holding clamp, a spring tending to close the clamp, a toggle for restraining the spring, and means for actuating the toggle to release and open the clamp. 15

2. A buttonhole sewing machine, having in combination, a movable clamp carriage, a work clamp mounted on the carriage, a spring tending to close the clamp, a toggle 20 for restraining the spring, a cam carrying gear for moving the clamp carriage, a cam on said gear and suitable connections for breaking the toggle to close the clamp, and a stationary cam for actuating the toggle to 25 cause the clamp to open during the movement of the carriage.

3. A buttonhole sewing machine, having in

combination, a work holding clamp, a spring tending to close the clamp, a locking device for restraining the spring, means for automatically operating the locking device to 30 allow the clamp to close, and means for opening the clamp.

4. A buttonhole sewing machine, having, in combination, a clamp carriage, a work clamp on the carriage, a spring on the carriage tending to close the clamp, means on the carriage for restraining the spring, mechanism for opening the clamp, and mechanism 40 for automatically releasing the restraining means to close the clamp.

5. A buttonhole sewing machine, having, in combination, a clamp carriage, work clamps pivotally mounted on the carriage, a rock shaft carrying leaf springs bearing on the clamps, a spring for operating the shaft 45 to close the clamps, means for opening the clamps and for restraining the spring, and means for releasing the spring to close the clamps.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."