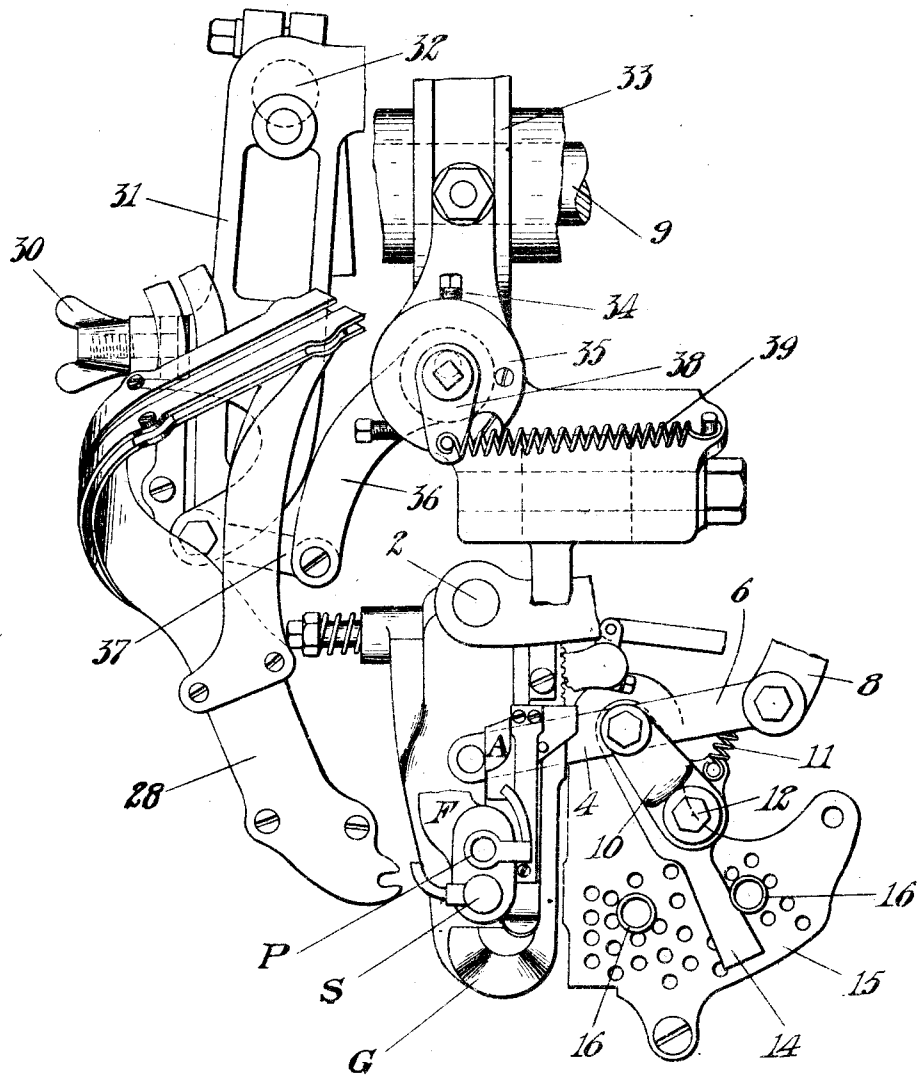


C. C. LIKE.
EYELETING MACHINE.
APPLICATION FILED JUNE 23, 1909.

1,057,068.

Patented Mar. 25, 1913.

2 SHEETS—SHEET 1.



WITNESSES:

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Fig. 1.

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2 SHEETS--SHEET 2.

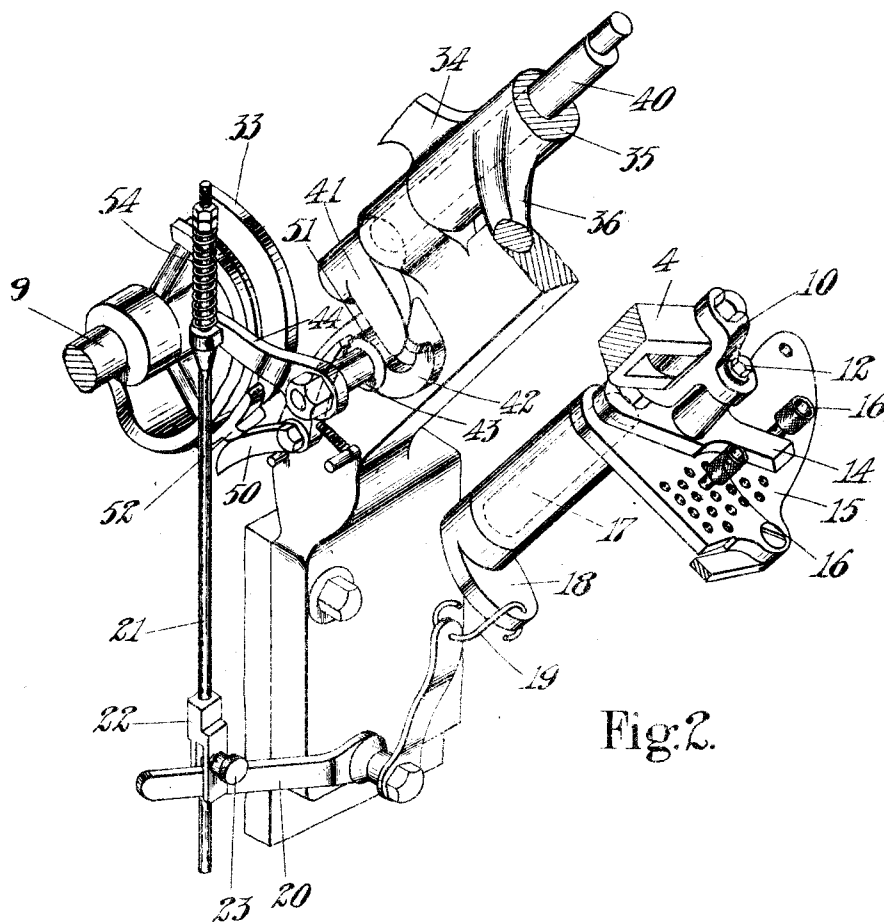


Fig. 2.

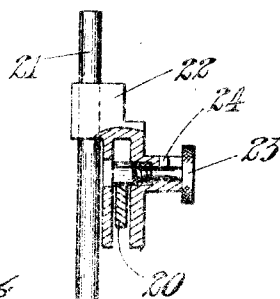


Fig. 3.

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UNITED STATES PATENT OFFICE.

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EYELETING-MACHINE.

1,057,068.

Specification of Letters Patent.

Patented Mar. 25, 1913.

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To all whom it may concern:

Be it known that I, CLARK C. LIKE, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented certain Improvements in Eyeletting-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for setting eyelets, hooks, or the like, and pertains more particularly to that type of machines which has a movable raceway for supplying eyelets to setting devices, which raceway can be moved to or held in an inoperative position when it is desired to operate the machine without inserting eyelets, for example, to punch holes for lacing hooks above the eyelets in a shoe upper.

The invention is herein disclosed as embodied in a duplex eyeletting machine but its application is not limited to this or any particular machine.

In operating upon a shoe upper it is usually the practice to set the lower eyelets in each side of the lacing-slit somewhat closer together than the succeeding ones, or in the case of men's work to set the eyelets closer together than the lacing hooks. In the machine disclosed in Letters Patent of the United States, No. 934,066, granted September 14, 1909, means are provided whereby the operator may increase the distance between successive eyelets by swinging the spacing lever through the medium of a treadle and suitable connections. In the same machine means are also provided for throwing the eyelet raceway out of operation so as to prevent the setting of eyelets in the sides of the upper part of the lacing slit, the machine continuing, however, to punch holes in this part of the upper to receive lacing hooks.

It is an object of the present invention to provide, for a machine of the type referred to, a simple and direct acting mechanism for moving the eyelet raceway into an inoperative position when it is desired to operate the machine without setting eyelets.

It is a further object of the invention to provide a mechanism for this purpose which may be directly operated by a treadle, whereby the operator, if sufficiently skilled,

need not stop the machine to throw in or out the raceway, but, by actuating a treadle at the proper time, may effect such result without interrupting the operation of the machine. In running a high speed eyeletting machine the operator finds it difficult to actuate the mechanism for throwing the eyelet raceway out of operation at exactly the proper point in the cycle of the machine, with the result that more or less than the desired number of eyelets are set in the work. With this in view an important feature of the present invention consists in the provision of an automatic throw-out preventer which is operated by the machine in a timed relation to its operations to prevent the throwing out of the raceway at any other than a predetermined point in the cycle of the machine.

Another object of the invention is to provide mechanism for altering the relative spacing of the eyelets, or of the holes punched by the machine in case no eyelets are set therein, which mechanism is constructed and arranged to be operated from a common actuating means with the raceway throwing out mechanism, whereby, in the case of men's work the operations of altering the spacing of the machine and cutting off the supply of eyelets may be performed by a single motion of the operator.

In the case of women's work, where no hooks are to be set but merely the spacing of the eyelets varied, the supply of eyelets need not be cut off and to meet these conditions, a further feature of the present invention consists in providing an adjustable connection between the common actuating means and the spacing mechanism of the machine whereby at one time the spacing may be varied and the supply of eyelets cut off and at another time the spacing may be varied and the supply of eyelets remain unaffected.

A preferred embodiment of the invention comprises coöperating cam members, the relative movement of which causes a bodily displacement of the raceway, a ratchet for preventing the relative movement of said members except at a proper point in the cycle of the machine, and a treadle rod whereby the cam members may be shifted when the ratchet is unlocked. For varying the spacing, suitable levers and links are in-

terposed between the spacing lever of the machine and said treadle rod and an adjustable pin and slot connection between a bell crank lever and the treadle rod constitutes means whereby the depression of the treadle rod may effect either the spacing alone or the spacing and the eyelet supply.

A device of the character described is particularly advantageous since, after having been once adjusted to the type of work in hand, the operator may actuate it from a treadle using both hands for the manipulation of the work alone. This advantage and others incident to the invention will be better understood and appreciated from the following description of a preferred embodiment thereof selected for purposes of illustration together with the accompanying drawings in which:—

Figure 1 is a plan view of so much of the machine disclosed in the patent above referred to as is necessary for the understanding of the present invention. Fig. 2 is a view in perspective of mechanism embodying the present invention. Fig. 3 is a detail.

The present machine, as fully disclosed in said patent, is organized to punch two holes in the opposite sides of the upper of a shoe and then set two eyelets in those holes and feed the work. As shown in Fig. 1 a punch P and set S, comprising the upper punch and set of oppositely disposed pairs, are arranged in bearings in a support or feed frame F with the anvil or die plate A, also supported by said support or feed frame, arranged between the oppositely disposed punches and sets. A guide plate G serves to separate the two quarters of a shoe and guide them to the setting devices.

The frame F carrying the punches and setting devices is pivoted at 2 and actuated for feeding the work through the links 4 and 6 by a cam lever 8 from a cam (not shown) on the main shaft 9 of the machine. At the pivotal point of the links 4 and 6 is secured the link 10 which is pivoted at 12 upon the spacing arm 14 which moves over the face of the quadrant plate 15, stop pins 16 being provided to limit its movement. The spring 11 tends normally to maintain the spacing arm 14 in the position for minimum spacing. The arm is mounted upon a shaft 17 (see Fig. 2) which is supported in bearings in the frame of the machine and carries upon its lower end an arm 18 which is connected by means of a link 19 and bell crank lever 20 with the treadle rod 21. By depressing the treadle, the arm 14 is swung over the surface of the quadrant plate to increase the distance between the successive eyelets substantially as in the machine disclosed in said patent.

An adjustable connection is provided between the bell crank lever 20 and the treadle rod 21 for a purpose to be hereinafter set

forth. As shown in Fig. 3, the bifurcated member 22 is rigidly attached to the treadle rod 21 and the horizontal arm of the bell crank lever is engaged between the arms of said member. A spring actuated pin 23 projects across between these arms and in the position shown in Fig. 3 will transmit to said lever the movement of the treadle rod 21 without lost motion. The pin 23 may be removed from the path of the lever 20 by being retracted and turned, in which position the stop pin 24 prevents it from entering the bifurcation. Under these conditions the treadle rod 21 may be depressed until the member 22 has been moved to the end of the bifurcation before motion is transmitted to the lever 20.

The means for delivering eyelets to the setting devices comprise the raceways 28, carrying any suitable eyelet hopper (not shown). The raceways are mounted, by means of a clamp 30, upon a raceway bracket 31 pivoted at 32, and are oscillated to and from the setting devices by the cam 33 acting through the arm 34, the sleeve 35, the arm 36 and link 37 which is pivoted to the raceway bracket 31.

The sleeve 35 is mounted upon a spindle 40 having eccentric journals whereby it is movably mounted in the frame of the machine, the spindle being yieldingly held in its normal position against a stop screw by the arm 38 and spring 39. It will be seen that a rotation of the spindle 40 will cause a bodily displacement of the sleeve 35 and a consequent movement of the raceways away from the setting devices. This movement of the raceways is independent of the regular oscillation thereof for delivering eyelets, which is the result of oscillatory movement of the sleeve about the spindle.

In order to effect the bodily displacement of the sleeve 35 for throwing out the raceway the following mechanism has been devised. Upon the lower end of the spindle is provided an arm 41 having a cam surface upon a wedge shaped end and mounted for cooperation with said cam surface is a cam arm 42, also wedge shaped. The cam arm 42 is fast upon a short shaft or stud 43 journaled in the frame of the machine and rotatably connected with the treadle rod 21 by the arm 44. It will be apparent from inspection of Fig. 2 that by depressing the treadle rod the shaft 43 and cam 42 are rotated and through the cam arm 41 the spindle 40 will be turned upon its eccentric journals, carrying the sleeve bodily toward the left and so throwing the raceways out of operation.

In order to prevent the throwing out of the raceways except at a predetermined point in the cycle of the machine, ratchet mechanism is provided comprising a pawl 50 which engages and locks a notched collar 130

51 on the shaft 43 and prevents rotation of the said shaft under the actuation of the treadle rod 21 except when the parts are in the same relative position which they occupy initially. For tripping the pawl 50 to release the cam shaft 43, there is provided a projection 52 upon the cam 33 which engages the tail of the pawl at the proper time and allows the operation of throwing out the raceway to take place. Pressure is transmitted from the treadle rod 21 to the lever arm 44 through the spring 54 whereby the lever 44 is subjected to an actuating pressure when the treadle rod is depressed although it is not permitted to move until the pawl is tripped in the manner just described. As the pawl 50 is held in its disengaged position when the machine is at rest it is possible to throw out the raceways before starting the machine, if desired, holding the raceways in inoperative position while the first eyelet holes are punched.

In operation, when it is desired to increase the spacing without throwing the raceways out of operation, the pin 23 is allowed to project across the bifurcated member 22 above the horizontal arm of the bell crank lever 20. Under these conditions depressing the treadle rod 21 immediately operates to move the spacing lever 14 to the left and increase the spacing of the eyelets. The spring 54 is also placed under compression but as the movement of the treadle rod 21 is limited by the movement of the bell crank lever 20, the slight compression transmitted to the spring 54 is not enough to overcome the tension of spring 39 which tends to keep the spindle 40 from moving.

When it is desired to increase the spacing and at the same time throw the raceways out of operation, the pin 23 is retracted and a greater movement of the treadle rod 21 is thus permitted before the bell crank lever 20 is encountered. The lever arm 44 is thereby placed under an actuating pressure sufficient to overcome the tension of the spring 39 and when the throw-out preventer releases the cam the raceway is moved to an inoperative position.

Having described my invention what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A machine of the class described having, in combination, a normally stationary spindle, an oscillatory raceway bracket mounted thereon, automatic mechanism for oscillating the bracket, and independent manually controlled means for moving the spindle, said means including a cam fast to the spindle and a cooperating cam arranged to be moved about an axis disposed at right angles to the spindle.

2. An eyeletting machine, having in combination, eyelet setting devices, a raceway for delivering eyelets to the setting devices, a

raceway bracket upon which said raceway is mounted, mechanism for oscillating the raceway bracket to present the raceway to the setting devices, an eccentric pivot connected with said bracket independently of the bracket oscillating mechanism, and a treadle actuated cam for turning said pivot to move the raceway so as to prevent it from delivering eyelets to the setting devices substantially as described.

3. An eyeletting machine, having, in combination, eyelet setting devices, a raceway for delivering eyelets to the setting devices, a rotatable member with which said raceway is connected, treadle actuated means for moving said rotatable member for preventing the delivery of eyelets to the setting devices, a pawl for preventing the operation of said treadle actuated means, and means for tripping said pawl to allow the operation of said treadle actuated means at the proper point in the cycle of the machine.

4. An eyeletting machine, having, in combination, eyelet setting devices, a raceway for delivering eyelets to the setting devices, a raceway bracket upon which said raceway is mounted, an eccentric pivot connected with said bracket, treadle actuated means for turning said pivot to move the raceway so as to prevent it from delivering eyelets to the setting devices, and means for preventing the operation of said treadle actuated means except at one point in the cycle of the machine, substantially as described.

5. An eyeletting machine, having, in combination, eyelet setting devices, a raceway for delivering eyelets to the setting devices, a movable mounting for said raceway, a lever for moving said mounting to throw out the raceway, a throw-out preventer, means for transmitting to said lever an impulse tending to throw out the raceway, and means for releasing the throw-out preventer at a predetermined point in the cycle of the machine.

6. An eyeletting machine, having, in combination, eyelet setting devices, a raceway for delivering eyelets to the setting devices, a movable mounting for said raceway, a lever for moving said mounting to throw out the raceway, a throw-out preventer, a treadle rod having a yielding connection with said lever whereby an impulse tending to throw out the raceway may be transmitted to said lever, and means for releasing the throw-out preventer at a predetermined point in the cycle of the machine.

7. An eyeletting machine, having, in combination, eyelet setting devices, a raceway, means for moving said raceway to deliver eyelets to the setting devices, means for moving said raceway into an inoperative position for cutting off the supply of eyelets, and means for feeding the work, together with means, operated from the above

mentioned means for moving the raceway into an inoperative position, for varying the extent of the feeding motion of the work.

8. An eyeletting machine, having, in combination, eyelet setting devices, a spacing lever for regulating the spacing of the eyelets set in the work, means for moving said lever, a movable raceway, and means for moving the raceway to cut off the supply of eyelets, together with a treadle rod yieldingly connected with the latter and having an adjustable connection with said means for moving the spacing lever.

9. An eyeletting machine, having, in combination, eyelet setting devices, a raceway for delivering eyelets to said setting devices, means for moving said raceway for cutting off the supply of eyelets, and a throw-out preventer, operating to prevent the actuation of said means for moving the raceway except at a predetermined point in the cycle of the machine.

10. A machine of the class described having, in combination, a machine frame, a spindle journaled in the frame to turn about a stationary axis eccentric with respect to its own axis, an oscillatory raceway bracket mounted upon the spindle, a raceway carried by the bracket, an arm secured to the spindle and having an oblique cam surface at its outer end, and a manually controlled member movable toward and from the spindle and having a cooperating oblique cam surface arranged to act upon the arm and to turn the spindle out of its initial position and to hold the spindle at rest until released by the operator.

11. A machine of the class described, having in combination, setting devices, a raceway, a raceway supporting member, means for oscillating the latter to present the raceway to the setting devices, a spindle for said member, a rock shaft extending substantially at right angles thereto, and connec-

tions between said spindle and rock shaft for effecting bodily shifting of the spindle to render the raceway inoperative.

12. A machine of the class described, having in combination, setting devices, a raceway, a movable mounting therefor, means for moving said mounting to throw out the raceway, a throw-out preventer, means for transmitting to said mounting an impulse tending to throw out the raceway, and means for releasing the throw out preventer at a predetermined time.

13. A machine of the class described, having in combination, setting devices, a raceway, means for throwing the raceway out of operative relation with said devices, a throw-out preventer, and means for rendering the latter inoperative at a predetermined point in the cycle of the machine.

14. A machine of the class described having, in combination, a setting device, a raceway, manually operated means for throwing the raceway out of operative relation with the setting device, and automatic mechanism for preventing the actuation of the manually operated means except at a predetermined point in the cycle of the machine.

15. A machine of the class described having, in combination, setting devices, a raceway, manually operated means for throwing the raceway out of operative relation with the setting devices, and automatic mechanism for preventing the actuation of the manually operated means except when the setting devices occupy their initial position in the machine.

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

CLARK C. LIKE.

Witnesses:

A. J. LULLACK,
W. T. GORDON.