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P. R. GLASS.

STOCK FEEDING MECHANISM FOR MACHINES FOR SETTING LACING STUDS, EYELETS, RIVETS, &c.

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Fig. 1.

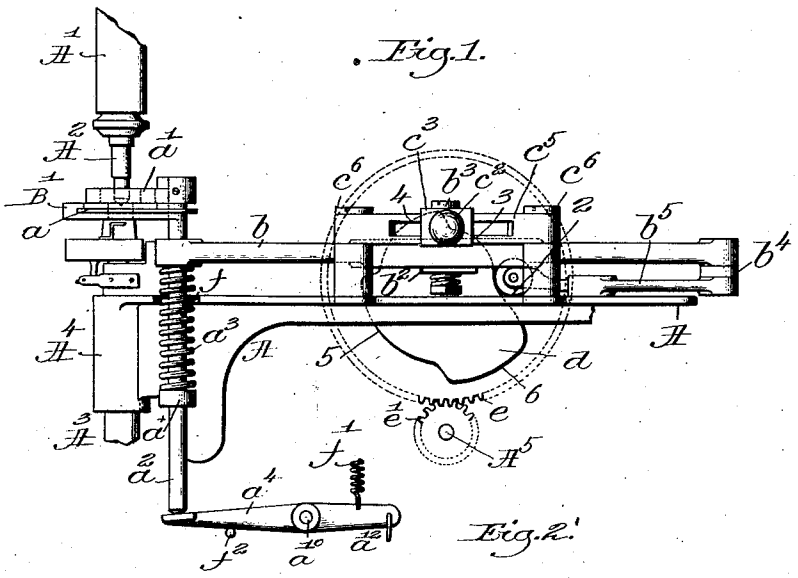


Fig. 2.

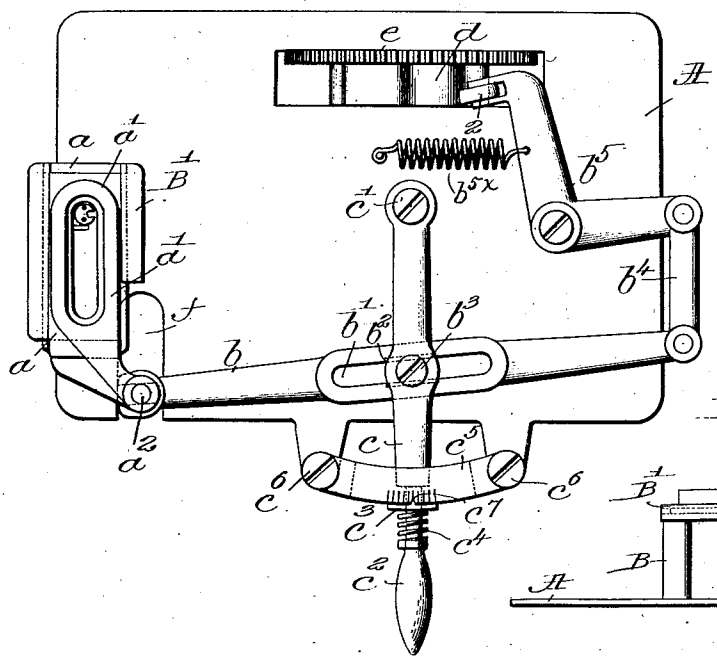


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

PERLEY R. GLASS, OF QUINCY, MASSACHUSETTS, ASSIGNOR TO PEERLESS MACHINERY COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

STOCK-FEEDING MECHANISM FOR MACHINES FOR SETTING LACING-STUDS, EYELETS, RIVETS, &c.

No. 832,606. Specification of Letters Patent. Patented Oct. 9, 1906.

Application filed October 24, 1903. Serial No. 178,327.

To all whom it may concern:

Be it known that I, PERLEY R. GLASS, a citizen of the United States, residing at Quincy, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Stock-Feeding Mechanism for Machines for Setting Lacing-Studs, Eyelets, Rivets, &c., of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

The chief aim of my present invention is to provide a clamp for stock in which eyelets, lacing-studs, or lacing-hooks are to be set, which clamp is adapted to hold the stock clamped throughout the operation of setting a plurality of eyelets, studs, or hooks in succession. The clamp is movably sustained and suitable means are provided for intermittingly moving it forward relative to the setting devices, so that after one eyelet, stud, or hook has been set the clamp and the stock carried thereby is moved forward to position the stock correctly for receiving the next succeeding eyelet, stud, or hook. Suitable means are also provided for regulating the distance that the clamp is fed forward at each step. The clamp will be moved intermittingly or between each setting operation without unclamping the stock and when the proper number of setting operations have taken place the clamp will be returned automatically to its starting position and will be opened by the operator that new stock may be inserted.

In the following description I will refer to the hooks or eyelets which are to be set in the stock as "lacing-studs," though it will be understood that my invention can be used for setting eyelets, hooks, or any similar devices.

Figure 1 of the drawings in side elevation represents my invention in one of the best forms now known to me with sufficient clearness to enable the same to be understood; Fig. 2, a plan view of some of the parts shown in Fig. 1, and Fig. 3 is a left-hand end view of the parts shown in Fig. 2.

The framework or bed A, the overhanging head A′, sustaining the top set A^2, the hook-carrying plunger A^3, guided in a bearing A^4 of the bed or framework, and the main shaft A^5 are and may be as in United States Patent No. 734,823, July 28, 1903; but instead of the parts so far referred to I may use any known equivalent devices for setting lacing-hooks or for setting eyelets or inserting rivets in stock. I have added to machinery of the class described means which I will now particularly describe.

I erect on the bed A through, as shown, two studs B B a work-support B′, represented as grooved longitudinally to constitute a guideway for the reception of the lower member *a* of a stock-clamp, said lower member having coacting with it an upper member *a*′, carried by a rod a^2, surrounded by a spring a^3, that, acting through a nut $a^\times$ on said rod, normally keeps the upper member of the clamp pressed toward the lower member thereof, that the clamp may hold and clamp the stock. To open this clamp, I employ a lever a^4, pivoted at a^{10}, that may be acted upon through a link a^{12} and a treadle (not shown) to move said lever in a direction to raise the rod a^2 preparatory to inserting into the clamp stock and removing stock therefrom.

The upper and lower members of the clamp each have a long slot constituting a throat that the stud-carrying holder may rise in said throat and enable the setting-anvil to act for a plurality of times on successive studs presented in said throat, so that a series of lacing-studs one after the other of any predetermined number may be set in succession in the stock without reclamping the same or without releasing the stock, and in this way greater uniformity of setting and spacing the lacing-studs, eyelets, or other devices may be insured than when the stock to receive the studs or other devices is released after each setting operation and again clamped that the stock may be moved farther for the reception of another stud or device.

I have provided means whereby the clamp may be moved between each setting operation for exactly the same distance, and when the predetermined number of lacing-studs or devices have been set in the stock the clamp will be automatically returned to its starting position that the operator may by his foot open the clamp to receive new stock; but it will be understood that by the employment of usual automatic starting and stopping means controlling the operation of the main shaft, means common in machinery for in-

serting fastenings in shoes, the machine may be stopped automatically and the clamp opened when the latter has been returned to its starting position.

The rod a^2, carrying the upper member of the clamp, enters a hole in the end of a lever b (shown as slotted at b') to receive a fulcrum-block b^2, fitted slidably in said slot, said block being entered by a stud b^3 in a feed-spacing device c, shown as a lever having its fulcrum at c' on the framework. This lever is bored at its outer end and tapped to receive the threaded shank of a handpiece c^2, surrounded loosely by a block c^3, having a point c^7, said block being acted upon at its inner side by a spring c^4, said spring serving to force said block frictionally against a curved index-plate c^5, attached to the framework A by screws c^6. This index-plate will in practice have a series of lines (shown in Fig. 2) that will be properly numbered to indicate where the point c^7 of the block shall stand to insure the insertion of lacing-studs at just the proper distance apart according to the size in length of a shoe-upper.

The lever b with its attached link b^4 and the elbow-lever b^5 constitute one form of means intermediate the clamp and the clamp-actuator to be described, by which to move the clamp intermittingly, a suitable spring $b^{5\times}$ being employed to maintain the elbow-lever b^5 and connected parts in operative relation to the actuator; but instead of the particular devices b b^4 b^5 I may employ any equivalent means controlled by the actuator and moved intermittingly to feed the clamp, as I will now describe.

The actuator is peculiar in its shape and operation, and as I have herein shown the same it consists of a cam d, having, as illustrated, a construction whereby the clamp may be moved intermittingly step by step in such way as to insure the setting of four lacing-studs, each movement being followed by a dwell in the clamp of sufficient length to enable a hook to be set. For instance, while the roller 2, carried by the lever b^5 in the rotation of the actuator, contacts with the point 3 thereof the clamp will occupy a position to insure, say, the setting of the first lacing-stud of a set of four studs, and while the roller is moving from one of said points 3, 4, 5, and 6 to another of said points the clamp will be moved for the predetermined distance and the setting will take place while the roller travels on the circular portion of said parts 3 4 5 6. It will be noticed that the radius of each cam portion 3 4 5 6 is successively longer and that the actuator, shaped as illustrated, gives an additional movement to the clamp in the same direction step after step, and when completing the cycle of operations and the four studs, as herein provided for, have been set the roller 2 again comes onto the part 2 of the actuator.

In setting four eyelets in succession during a movement of the clamp intermittingly in the same direction without releasing the stock the shaft carrying the actuator will be rotated once to four rotations of the main shaft A^5, said main shaft having a pinion e' engaging a toothed gear e on the shaft carrying the actuator.

To vary the distance between the first stud to be set and following studs of the series to be set, I move the feed-spacing device, thus varying the fulcrum of the lever b.

The framework has a slot f, in which the rod a^2 travels under the control of the lever b, and in the travel of the clamp the lower end of the rod a^2 retires from contact with the end of the lever a^4, and to prevent said lever from assuming a wrong position when relieved from the contact with each of said rods I have connected with said lever a spring f' of a strength sufficient to maintain said lever in contact with a stop f^2 at all times, except when said lever is to be moved by an overpowering force applied through the treadle referred to, as when lifting the upper member of the clamp from the lower member thereof for the reception of new stock.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine of the class described, a clamp for engaging opposite sides of the stock, setting devices to set a series of studs in the stock thus clamped, and automatic means to feed the clamp and stock intermittingly as the various studs of the series are set, and means for returning the clamp to its initial position after a predetermined number of lacing-studs have been successively set.

2. In a stud-setting machine, the combination of a clamp for engaging opposite sides of the stock, said clamp being formed of two superposed members, the upper member being provided with a slot of a length greater than the length of the row of studs to be set, means for maintaining the upper and lower members of the clamp in engagement with the stock during the stud-setting operation and means to feed the two members of the clamp together for a predetermined number of steps.

3. In a stud-setting machine, the combination of a clamp for engaging the opposite sides of the stock, said clamp comprising the superimposed members, the upper member being slotted, means to cause the upper and lower members to approach each other to clamp the stock between, means to move the members of the clamp step by step in the same direction while setting a series of studs, means to return the members of the clamp to the original position after the last stud of the series has been set, and means for then separating the members of the clamp.

4. In a machine for setting studs, the combination of a clamp comprising an upper and a lower member, said upper member having a slot the length of which is greater than the length of the row of studs to be set, means for forcing the upper and lower members together to clamp the stock between, a lever connected to said clamp, an adjustable fulcrum for said lever, means to move said lever intermittingly about said fulcrum to cause the members of the clamp to move in the same direction step by step, each step movement spacing a stud with relation to another, and the combined movements carrying the clamp and stock a distance equal to the length of a row of studs.

5. In a machine for setting studs, the combination of a stud-carrying holder, an opposed setting-anvil, a clamp comprising upper and lower members, each having an elongated slot, into which the stud-carrying holder and setting-anvil may pass, means for forcing the upper and lower members of the clamps together to clamp the stock between, and means for moving the two clamping members continuously in the same direction step by step to set successive studs.

6. In a machine for setting studs, the combination of a stud-carrying holder, an opposed setting-anvil, a clamp comprising upper and lower members, each having an elongated slot of greater length than the row of studs to be set and into which the stud-carrying holder and setting-anvil may pass, means for forcing the upper and lower members of the clamp together to clamp the stock between, and means for moving the two clamping members continuously in the same direction step by step to set successive studs.

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

PERLEY R. GLASS.

Witnesses:

GEO. H. MAXWELL,

EDITH M. STODDARD.