

No. 773,204.

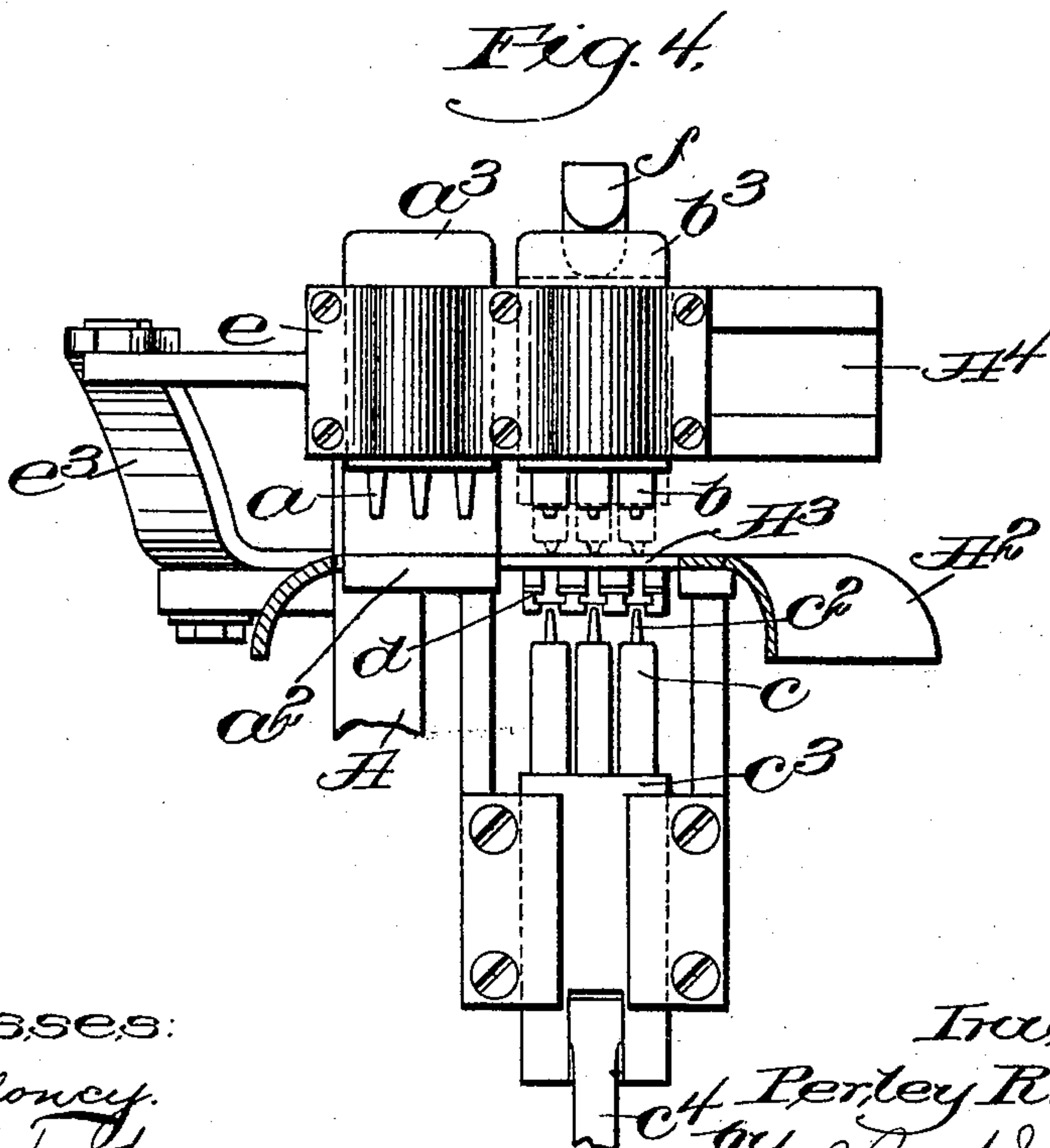
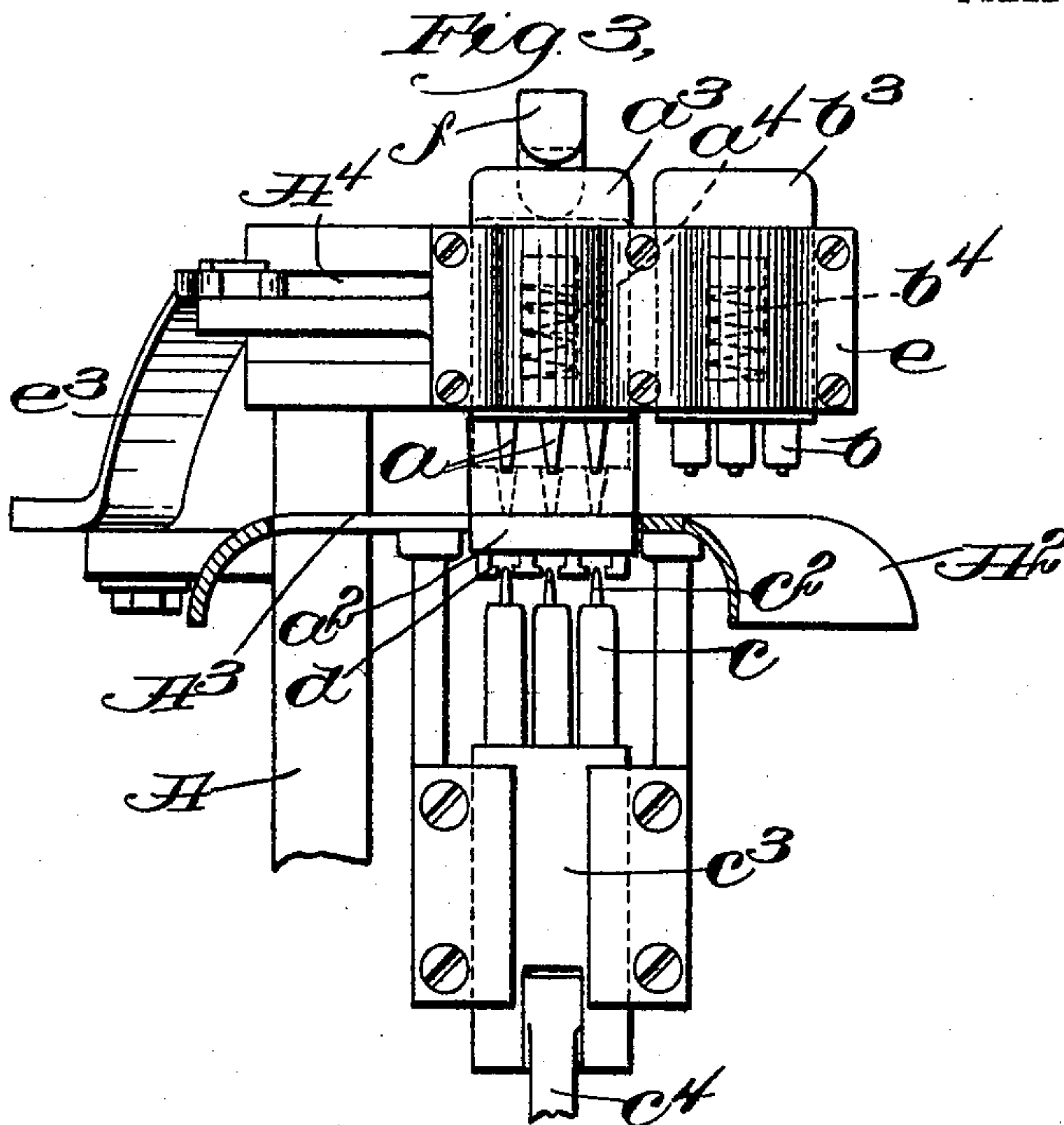
PATENTED OCT. 25, 1904.

P. R. GLASS.
EYELETING MACHINE.

APPLICATION FILED APR. 6, 1901.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

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EYELETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 773,204, dated October 25, 1904.

Application filed April 6, 1901. Serial No. 54,658. (No model.)

To all whom it may concern:

Be it known that I, PERLEY R. GLASS, of Quincy, county of Norfolk, and State of Massachusetts, have invented an Improvement in Eyeletting-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to an eyeletting-machine, and is embodied in a machine in which a row of holes may be punched and supplied with eyelets at one operation of the machine, so that the feeding of the material which is necessary in a machine operating step by step is dispensed with.

In accordance with the invention the machine is provided with a gang of punches co-operating with a suitable anvil to perforate the material and two corresponding sets of clenching devices adapted to supply eyelets to the holes previously punched and upset or clench the same in the said holes, the machine being provided with means for removing the punches and anvil from the material after the punching operation and bringing the setting devices to such position that eyelets may be set in the previously-punched holes without moving the material. As herein shown, the punches and one set of clenching devices are carried by a movable frame or carrier, the other set of clenching devices remaining in the same place and being adapted to coact with a feed-chute having a number of raceways to supply eyelets to the said setting devices. The anvil is stationary with relation to the punches and is moved out of the way when the said punches are moved, the said punches normally standing in line with one set of clenching devices, so that after the material is punched and the punches moved away the material is left in position to receive eyelets from said clenching devices. The same movement which carries the punches and anvil out of the way brings the other set of clenching devices into line with the set which has been supplied with eyelets, and the two gangs of clenching devices are then caused to

come together to insert and clench the eyelets in the material. The clenching devices which pick up the eyelets from the chute are preferably below the material and mounted on a vertically-reciprocating carriage, in the upward movement of which they are carried toward the material, picking the eyelets from the eyelet-chutes in the usual way by means of yielding fingers and inserting the eyelets in the previously-punched holes ready to be operated upon by the other setting devices, which are above and adapted to be forced down upon the open ends of the eyelets. With this construction the gang of punches and the gang of upper setting devices are connected, respectively, with vertically-reciprocating members mounted in a laterally-movable carrier or frame, being normally spring-pressed upward and adapted to be acted upon consecutively by a common lever which is adapted to make two downward movements at each cycle of operations, thus dispensing with a swinging pivotal support for the lever, which would be necessary if the said lever were swung laterally as well as on its normal fulcrum. The said carrier or frame normally stands with the punches and anvil directly over the lower setting devices, the punches being forced downward to punch the material prior to the lateral movement of the carrier and the upper setting devices being forced downward to clench the eyelets after the said lateral movement.

Figure 1 is a side elevation, with parts broken away and parts shown in section, of a machine embodying the invention. Fig. 2 is a partial top plan view of the same. Fig. 3 is a partial front elevation, a portion of the work-support being broken away and shown in section; and Fig. 4 is a similar front elevation showing the parts in a different position.

The machine is provided with a work support or table A^2 , upon which the work is supported during the operation, there being above the said table a gang of punches a and a gang of clenching devices b and below the table another gang of clenching devices c , which are

provided in the usual way with depressible fingers c^2 , adapted to pick eyelets from a reciprocating feed member d , having a number of chutes corresponding to the number of
 5 clenching devices. The operation of the lower clenching devices is substantially the same as in machines heretofore constructed, the said clenching devices being mounted on a vertically-reciprocating carrier e^3 , connected, by
 10 means of a link e^4 , with a lever e^5 , adapted to be operated by an eccentric-strap e^6 , cooperating with an eccentric C on the shaft D. The construction is such that the said lower clenching devices reciprocate once at each operation
 15 of the machine in order to pick up the eyelets and present them to the previously-punched material and to cooperate with the clenching devices b in the final setting operation.

The feed member d may be reciprocated in
 20 any suitable or usual way, as by a lever d^2 and cam d^3 , it being necessary only that the said member should be so timed as to lie in the path of the clenching devices c during the first part of their upward movement and to
 25 recede therefrom as soon as the eyelets are engaged by the fingers c^2 .

In accordance with the invention the punches a are adapted to cooperate with the anvil a^2 when the machine is first started in order to
 30 punch the holes in the material, the said punches and anvil then being arranged to move laterally out of the way of the clenching devices c , the clenching devices b at the same time being moved into line with the said
 35 clenching devices c . As herein shown, the said punches a are mounted on a vertically-reciprocating punch member a^3 , mounted in a laterally-movable carrier e , and the said punch member is shown as normally yieldingly held
 40 in its upward position by means of a spring a^4 , the said member and the punches being depressed for the punching operation by means of a lever f . The said lever f is not connected with the punch member a^3 , but is arranged
 45 merely to engage the said member to force the punches downward toward the anvil a^2 against the stress of the spring a^4 , which restores the said punches to normal position as soon as the lever f recedes. By this construction it is practicable to utilize the same lever
 50 f to operate the upper clenching devices b , which are similarly mounted in the carrier e upon a clenching device member b^3 and held in normal position by means of a spring b^4 .
 55 The carrier e is shown as provided with a flanged projection e^2 , which travels in an undercut guide-groove A^1 in the frame A. (See Figs. 1 and 3.) After the lever f has been depressed to punch the material the carrier e
 60 is arranged to be moved laterally, as by a lever e^3 , which is acted upon by a spring e^4 and cam E on the shaft D, the preferred shape of the cam being shown in Fig. 2 and being such that the spring e^4 causes a rapid throw or move-

ment of the carrier e after the punching operation has taken place. The anvil a^2 is connected
 65 with the carrier e and travels laterally with the punches a , the table A^2 being provided with a slot or channel A^3 for the said anvil, the surface of which anvil lies level with the table to
 70 support the material in the punching operation. The material being held stationary after the punching operation, the holes therein will be directly over the clenching devices c , so as
 75 to receive eyelets from the pins c^2 as the said clenching devices rise, and the movement of the carrier e brings the clenching devices b over and in line with the clenching devices c , the lever f then operating to force the clenching devices b downward and set the eyelets.
 80 At the end of these operations the lever e^3 is restored by the cam E, which is properly shaped for the purpose, and the machine is ready for another cycle of operations.

In order that the lever f may be utilized as
 85 described to operate both the member a^3 and the member b^3 , the said lever is arranged to have two movements for each revolution of the main shaft D, the said lever being shown
 90 as pivoted at f^2 on the frame A and connected by a link f^3 with an eccentric-strap f^4 , surrounding an eccentric F on the shaft D, the said eccentric being in line with the eccentric C, a part of which is broken away in Fig. 1 to
 95 show the said eccentric F. The said eccentric F is also connected with a link f^5 , thus constituting a toggle-joint, the downward movement of the lever f being completed when the said links are in line with each other, as
 100 indicated in dotted lines, Fig. 1. The movement of the eccentric F is such, however, as to continue the movement of said links in the opposite direction a distance substantially
 105 equal to that required to straighten the said links, so that the punch-lever f again rises and in the return movement of the links is once more depressed, the said lever thus being
 110 caused to operate twice at each revolution of the shaft D. This construction not only dispenses with a swinging support for the lever f , which would be necessary if the lever
 115 were connected with the carrier e , but also affords a powerful operating movement for the punching and clenching operations.

I claim—

In an eyeleting-machine, the combination
 120 with a work-supporting table provided with an opening; of a gang of lower setting devices below said opening; a guide member projecting over the table above said opening,
 125 said member being provided with a channel extending laterally across the machine; a carrier movable in said channel, and provided with an anvil; a gang of reciprocating punches in said carrier movable toward and from said
 130 anvil; a gang of upper setting devices also arranged to reciprocate in said carrier; means for producing a reciprocating movement of

said carrier in said channel to move the punches and the anvil out of alinement with the lower setting devices, and the upper setting devices into alinement with said lower
5 setting devices; and an actuating device common to said gang of punches and said gang of upper setting devices, substantially as described.

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

PERLEY R. GLASS

Witnesses:

HENRY J. LIVERMORE,
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