

J. J. DOIDGE.
GANG EYELETING MACHINE.
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1,036,808.

Patented Aug. 27, 1912.

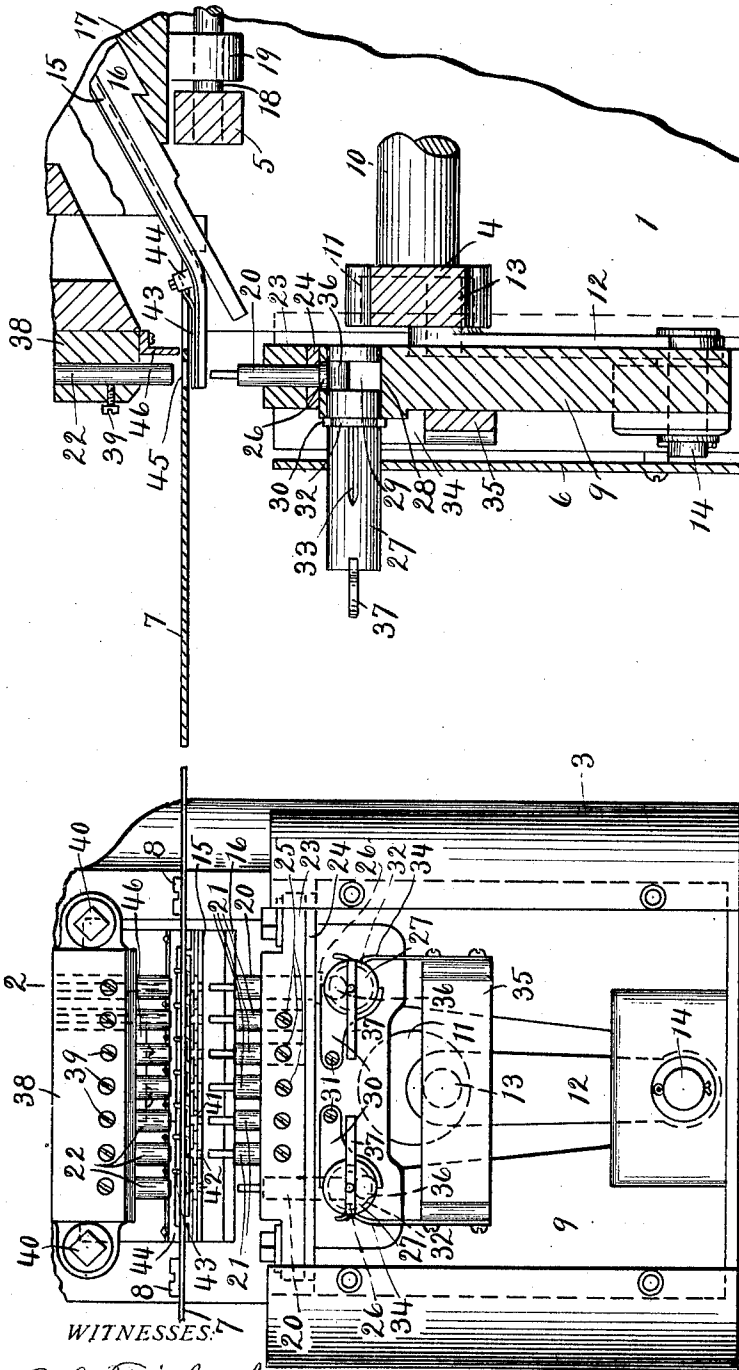


Fig. 1 -

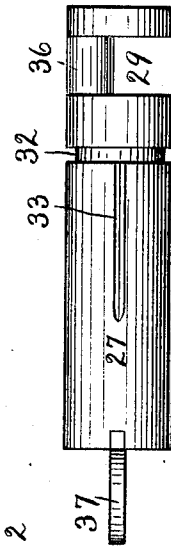


Fig. 2 -

WITNESSES.

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GANG EYELETING-MACHINE.

1,036,808.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN J. DOIDGE, a subject of the King of Great Britain, residing at South Framingham, in the county of Middlesex and State of Massachusetts, have invented a new and useful Gang Eyeletting-Machine, of which the following is a specification.

My invention relates to improvements in machines adapted to set a plurality of eyelets at each cycle of operation, and consists of certain peculiar adjusting or positioning means for one or more of the movable sets in such a machine, as hereinafter set forth in detail; and the object of my invention is to afford practicable, efficient and convenient means for cutting out and rendering inoperative such movable set or sets as are not needed in any case demanding less than the total number of eyelets which the machine is capable of setting at one operation. I attain this object by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a portion of an eyeletting machine having my invention embodied therewith, the front plate being omitted and the extreme left-hand lower or movable set being down in inoperative position; Fig. 2, a vertical section taken on lines 2—2, looking toward the left, in Fig. 1, and, Fig. 3, an enlarged side elevation of one of the movable set drops.

Similar figures refer to similar parts throughout the several views.

Before proceeding with the detailed description of my invention as illustrated in connection herewith, I wish to state that the sets are in the main similar both in construction and operation to sets commonly used in machines of the type now being considered, and that they punch the holes in the stock before setting the eyelets therein, so that they are in reality combined punches and sets although herein termed sets merely.

So much of the frame of the machine as is herein shown comprises side pieces 1 and 3, a cross piece 4 which extends between said side pieces, and a lug 5 which projects from the inside of the side piece 1. A vertical plate 6 is attached to the front ends of the side pieces 1 and 3 to cover the opening therebetween. A horizontal work table 7 is fastened by bolts 8—8 to the upper edges of the side pieces or sides 1 and 3 in front.

So much of the operating mechanism of said machine as is herein shown comprises a vertically-movable slide 9 arranged behind the plate 6 to be reciprocated in grooves in the sides 1 and 3, a portion of a main driving shaft 10 with its front terminal journaled in the cross piece 4, such shaft having an enlargement 11 at its front end, a connecting-rod 12 having its upper end pivoted at 13 to said enlargement eccentrically to the axis of said shaft, and having its lower end pivoted at 14 to said slide, a gang raceway 15 (which coöperates with the movable sets presently to be described) and a bed-plate 16 mounted on a horizontally-reciprocating carriage 17 for said raceway, only the forward portions of the last three members being represented, and a portion of one of two supporting rods 18 for said carriage, such portion being mounted in the lug 5 and carrying thereon a sliding lug 19 which depends from and forms a part of said carriage.

In the present case there are seven lower sets arranged in line side by side with spaces between, the two end sets which can be cut out of active operation being given the reference number 20, and the five intermediate sets which are at all times in operative position being given the reference number 21. These sets coact with a corresponding number of fixed sets 22 above, in the usual manner. There may be more or less than seven sets in each of the two gangs or series, but there must, of course, be the same number in one series that there is in the other series. Moreover, there may be more or less than two drop sets 20 and the arrangement of the same relative to the sets 21 may vary without affecting my invention in any essential particular. The sets 21 are received in vertical openings in a block 23 and rest with their bases on a plate 24, the latter being mounted on the slide 9 and said block being mounted on said plate. Set-screws 25, tapped into the front side of the block 23, hold the sets 21 against upward displacement. Each set 20 is received in a vertical opening in the block 23 and an alining opening in the plate 24, and has a flange 26 at the bottom to prevent it from being withdrawn from these members in an upward direction, and each set 20 is supported by a drop 27, either in or out of operative position according to the arrangement of said drop.

In the first view the left-hand set 20 is represented in its inactive position, and the right-hand set 20 in its active position, an arrangement whereby six eyelets can be set at a time. If the other set 20 be dropped, then the machine will set only five eyelets at once, and when both are elevated the full capacity of seven eyelets at each cycle of the machine is attained. Thus I am able to adapt the machine without difficulty to whatever number of eyelets it is desired to set in each row, some shoes requiring more and some less.

Each of the two drops 27, by means of which the location of each of the sets 20 is changed in the present case, consists of a cylindrical body having its rear terminal portion mounted or journaled in a horizontal opening 28 in the slide 9 near the top, as best shown in Fig. 2, such terminal being recessed at 29. The recess 29 is large enough to receive into it the flanged base of the set 20 above. A lock plate 30, secured by a screw 31 to the face of the slide 9 adjacent to each drop 27 and engaging a grooved part 32 of such drop, holds the latter against endwise movement without preventing the same from being turned in said slide. In each side of the drop is a horizontal groove 33. A spring 34 has the lower terminal secured to one end of a supporting member 35 on the face of the slide 9, while the upper terminal of said spring is adapted to enter one of the grooves 33 in the adjacent drop and so normally prevent said drop from rotating. There is a spring 34 for each drop. The two grooves 33 in each drop are on a plane which is at right-angles to the central plane of the recess 29 which coincides both with the axis of said drop and with that of what may be termed the cam (36) of said drop, therefore, the associated spring 34 either retains the drop so that its cam is in the highest position or retains the drop so that its cam is in the lowest position, according to which of such grooves or of such grooved parts is engaged by the spring, but said spring does not exert force enough to interfere seriously with the operator when he desires to turn the drop so as to carry said cam from one extreme position to the other. At the front end of each drop is a handle 37 to facilitate turning said drop. The slide 9 immediately above the cams 36 and the recesses 29 is pierced to allow the sets 20 to rest on said cams at all times, as is plainly shown in the second view.

From the foregoing it will be clear that, by grasping the handle 37 of either drop 27 and turning the latter half way around, thus carrying the groove 33 engaged by the associated spring 34 out of such engagement and bringing the other groove into engagement with said spring, the cam 36 of such

drop will be raised or lowered accordingly, said cam going up if down and going down if up, and the set 20 bearing on said cam will be elevated or will follow the cam down as the case may be.

The upper sets 22 are secured above the sets 20 and 21 in a series of vertical passages in a block 38, by means of a series of set-screws 39 tapped into the front of said block. The block 38 is on the front of the hood of the frame and is bolted thereto at 40—40.

The raceway 15 is provided with ordinary inverted T-shaped channels 41, there being the same number of such channels as there are sets in each series. At their lower terminals the floor of the channels 41 are recessed at 42 to permit the movable sets to pass through and enter the lowermost eyelets in said channels, it being understood that the latter are so positioned as to intersect at their front ends the paths of travel of said sets. Yielding stops 43 are provided at the mouths of the channels 41, the rear terminals of such stops being attached to a cross-piece 44 that is fastened on top of the raceway a short distance from the front end thereof, and the forward terminals of such stops being bent over or around in front of such mouths. The office of these stops is to prevent normally the eyelets from escaping from the raceway, and to yield when the movable sets have picked the lowermost eyelets and said raceway is retracted.

The carriage 17 for the raceway 15 and the slide 9 for the lower sets are timed to each other's movements and operate in the usual manner. Holes for the passage of the movable sets are formed in the table 7, one such hole appearing at 45 in Fig. 2. An adjustable work guide or gage is represented at 46.

In practice, after seeing that the drops 27 are properly adjusted, the stock is placed in exactly the right position on the table 7, with the edge of said stock against the gage 46, and the sets 20 and 21 are caused to rise, the raceway 15 being at the same time retracted, and to punch the holes and set the eyelets taken by the active movable sets (six by the present arrangement) in said stock. This action or these actions are or may be repeated indefinitely, and whenever a different number of eyelets is required for the work one or both of the drops 27 are adjusted or readjusted as may be necessary before proceeding with the setting operation.

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

1. The combination, in an eyeletting machine, with a set, and a suitable reciprocating supporting member therefor, of a rocking member mounted in such supporting member beneath and in supporting relation to said set and adapted to retain said set in

either an operative or inoperative position according to the adjustment of said rocking member, the latter being held in operative position against endwise movement.

5 2. The combination, in an eyeleting machine, with a reciprocating member, of a rotatable drop mounted in such member and provided with a cam, means to hold said drop against endwise movement, means to
10 retain said drop in either of two normal positions, and a set in said reciprocating member resting on the drop cam.

15 3. The combination, in an eyeleting machine, with a reciprocating member, of a circumferentially and longitudinally-grooved rotatable drop mounted in such

member and provided with a cam, engaging means for the circumferentially-grooved part of said drop to hold the latter against endwise movement, resilient engaging means
20 for the longitudinally-grooved parts of said drop to retain the latter in either of two normal positions, and a set in said reciprocating member resting on the drop cam.

4. In an eyeleting machine, a drop for a
25 set, such drop consisting of a rocking member provided with a set-supporting cam.

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Witnesses:

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