

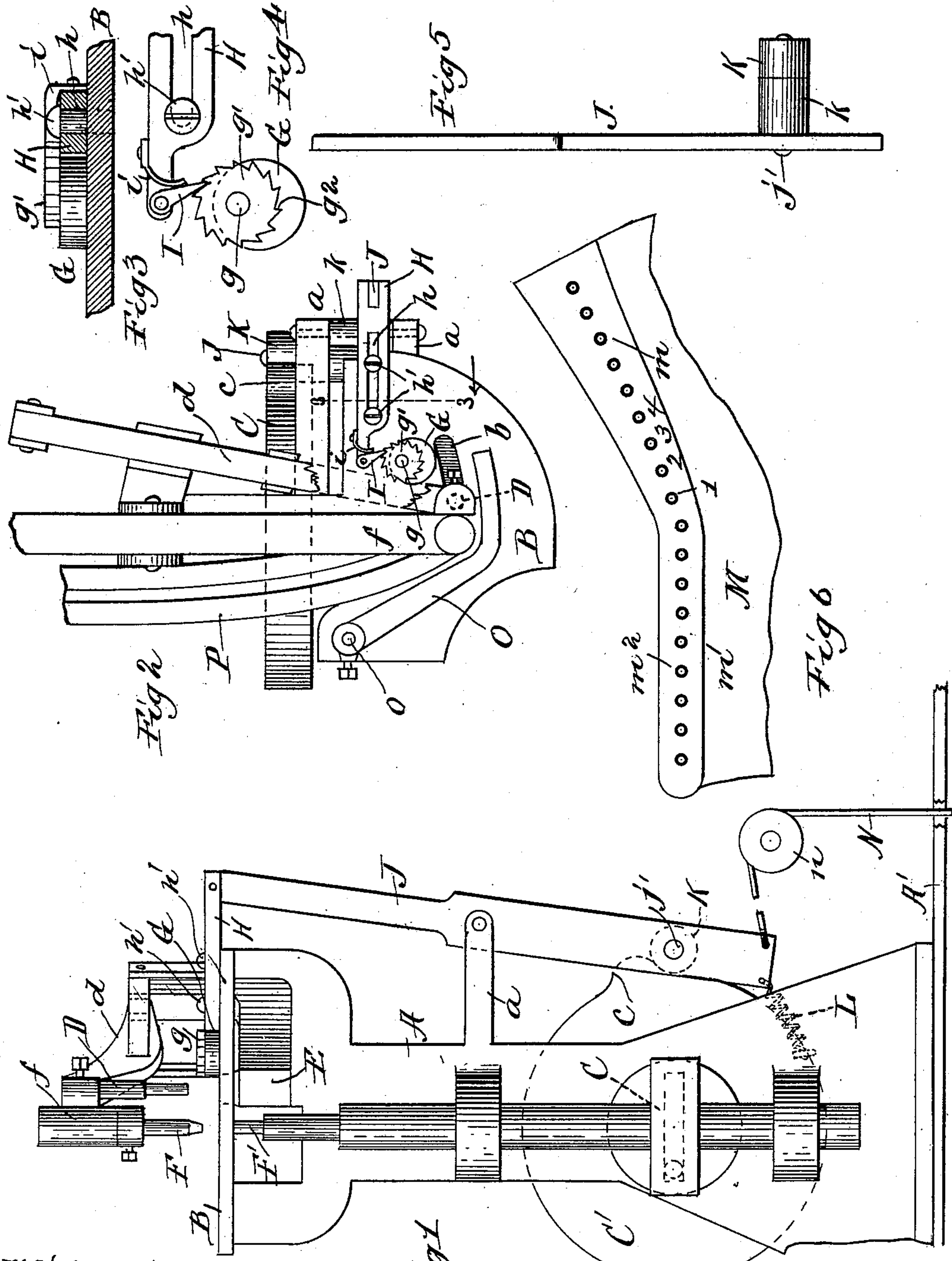
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E. F. SELZ.
MACHINE FOR EYELETING SHOES.

(Application filed Oct. 9, 1893.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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MACHINE FOR EYELETING SHOES.

SPECIFICATION forming part of Letters Patent No. 614,668, dated November 22, 1898.

Application filed October 9, 1893. Serial No. 487,598. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL F. SELZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Eyeletting Shoes, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a front elevation of a machine embodying my invention, the upper portion being mostly broken away; Fig. 2, a detail plan view of the parts shown in Fig. 1, the rear of the machine being broken away; 15 Fig. 3, a detail section taken on the line 3 3 of Fig. 2; Fig. 4, a detail plan of the regulator-gage detached; Fig. 5, an edge elevation of the actuating-lever for the regulator with the upper end broken away; and Fig. 6, 20 a detail plan of a portion of a shoe-upper, showing its eyeleted edge. Figs. 1, 2, 5, and 6 are upon one and the same scale. Figs. 3 and 4 are upon a scale by themselves, enlarged from that of the former.

25 My invention relates to eyeletting-machines, especially such as are used for eyeletting the uppers of shoes for the reception of the laces.

30 The invention consists in a gage or regulator for determining the distance of the eyelet from the edge of the upper in which it is inserted and mechanism for imparting an intermittent movement to this gage, so that its position may be changed step by step, thus 35 securing the arrangement of the line of eyelets at an inclination to the outer edge of the strip and, if desired, on a slight curve.

40 It has been previously proposed to employ a movable gage for the same purpose as the gage of my invention; but this proposed gage was arranged to reciprocate back and forth in a straight line and obtain the varying distance in this manner. In my improved construction I employ a rotary gage, which is 45 preferably a circular disk set eccentrically, so that as the disk is rotated the edge thereof will be moved to varying distances from the eyeletting mechanism, and thereby get the desired offsetting of the eyelets. With my 50 improved invention I am enabled to make an

extremely simple and easily-operated gage for the purpose described.

The eyeletting-machine may be of any known construction and complete in all its parts for eyeletting work the same as machines now in use. 55

My invention is an attachment which is applied to one of these machines for the purposes described above. There is no necessity, therefore, of showing and describing a 60 complete eyeletting-machine here, and in the drawings I have shown only such parts of a machine as are necessary to an understanding of the construction and operation of my invention. The illustrations in the drawings 65 show parts of a machine such as described and shown in Letters Patent of L. D. Hawkins, No. 272,382, dated February 13, 1883, to which reference is made for a full description of the machine; but this is simply for illustration, and I wish it distinctly understood 70 that I do not limit my invention to its application on this particular machine.

In the drawings, A represents the front standard of the machine, on the upper end of 75 which is mounted the working bed or table B, and at the lower end of the standard is journaled one end of the main shaft C. The punch D is on a lever *d* and is arranged to work through a slot *b* in the table, below 80 which is arranged the anvil E, and both punch and anvil have a slight lateral reciprocation to effect the feed, this movement being permitted by the said slot in the table. An eyeletting-punch F is carried by a lever *f*, by 85 which it is worked over the eyeletting-bed F', in connection with the other devices for presenting and securing the eyelets, which need not be here described, as they constitute no part of my invention. 90

Heretofore in the operation of these machines the edge of the material to be eyeleted has been placed upon the bed in proper position under the punching and eyeletting devices and carried straight across thereunder, 95 so that the eyelets have appeared in a straight line along the edge of the material and at a uniform distance from the margin. In my improvement I provide a regulator-gage, against which the edge of the material is 100

placed and which in its movements changes the position of the edge of the latter with reference to the eyeleting devices, so that the eyelets will be inserted at different distances 5 from the margin. This device, as shown in the drawings, consists of a disk G, which is fixed on a short journal-shaft g eccentrically, so that this disk appears like an ordinary eccentric. A ratchet-wheel g' is fastened to the 10 same shaft concentrically, as seen in Figs. 2 and 4, and is provided with ordinary ratchet-teeth g^2 on its peripheral edge adapted for the action of a suitable pawl. This ratchet may be secured to the eccentric and either 15 one or the other fastened to the shaft, or each may be fastened to the latter separately, or both may be loose on the shaft. It is immaterial just how the attachment is made, provided only that it is such that the rotation of 20 the ratchet will carry the eccentric with it. A slide H is secured to the table B at one side and a little in rear of the eccentric by means of a slot h therein, through which screw-bolts h' are passed into the bed. This slide, as 25 shown in the drawings, is arranged to move lengthwise of the bed or about in the same direction as the travel of the material to be eyeleted, and its inner end passes just back of the ratchet and carries a pawl I, pivoted 30 thereto and adapted to engage with the ratchet-teeth, as seen in Figs. 2 and 4, a spring i on the slide being arranged to act upon the back of the pawl to hold it in engagement with the ratchet. Now, obviously, the recip- 35 rocation of this pawl-slide will impart an intermittent rotation to the ratchet and eccentric with which it is connected. This reciprocation is effected by means of a vertical lever J, which is pivoted near its center to an 40 arm a , projecting out at one side of the standard. The upper end of this lever is pivoted to the outer end of the pawl-slide, as also seen in Fig. 1, so that the vibration of the lever upon its pivotal support will reciprocate the 45 slide. Any suitable device may be provided for vibrating this lever. As here shown, it is effected by an addition to the cam on the front end of the main shaft. (Shown in the said Hawkins patent.) This cam C' is secured to 50 the main shaft C, as in the said patent, but is provided on its periphery with a radially-projecting cam lug or enlargement c . This cam stands a little inward and back of the plane of the lever J, and near the lower end 55 of the latter there is provided a fixed pin j , extending inward or backward to the plane of the said cam. An antifriction-roller K is loosely mounted on the outer end of this pin and in the same plane with the cam C' . This 60 roller may be the length of the pin on which it is journaled; but I prefer to make it shorter or only about the same as the width of the cam, as seen in the drawings, and in this construction a separate cylinder k is arranged on 65 the pin between the roller and the lever, being secured to the pin. This roller is held up

into contact with the cam by means of a spring L, fastened at one end to the lower end of the pawl-lever and at the other to the standard, 70 as seen in Fig. 1. Obviously under the construction and arrangement of these parts described above at every revolution of the main shaft there will be a vibration of the lever J by the combined action of the cam-lug and the retracting-spring, and this movement will 75 of course produce a reciprocation of the pawl-slide, thereby giving a step movement to the ratchet of one tooth and a similar rotary movement to the eccentric.

Now in operation the material to which the 80 eyelets are to be applied is held up against the eccentric, which lies upon the surface of the table, as seen in Figs. 1 and 3. It is obvious then that as the eccentric is rotated by a step-by-step movement, as described, the 85 edge of the material will be changed at each step in its relation to the eyeleting devices. This will be understood by reference to the drawings, in which M represents a section of a shoe-upper, and m the stitched margin, along 90 which the eyelets are to be inserted for the accommodation of the usual laces. In Fig. 2 of the drawings the devices are shown in position for starting, and it will be seen that the eccentric stands with its widest portion ex- 95 tending directly to the front. The upper M is placed upon the table B with the edge resting against this eccentric and the usual stationary guide, and the machine is started. By the action of the punches a hole is punched 100 in the leather and an eyelet inserted, and immediately thereafter the eccentric is moved around one step by the action of the ratchet devices already described. Evidently this 105 carries the outer projecting edge of the eccentric just a little inward from its former position, and the edge of the upper being held up against it it will of course follow. This carries the edge slightly inward, and the 110 next eyelet, which is immediately set, will of course be set a little farther in on the edge of the upper. The action is repeated, and it is obvious that at each successive operation the eyelet will be set farther and farther inward on the upper until the eccentric 115 portion of the gage is exhausted. This effects an arrangement of the eyelets on a line gradually extending inward toward the lower end of the edge of the upper, as seen in Fig. 6, and this line will be slightly curved, so 120 that the eyelets will be set in the arrangement which has been found desirable and is now generally used for eyeleting the uppers of shoes. In men's shoes, however, hooks are 125 generally used for the upper half of the lacing, and so this eyeleting will begin about midway of the length of the margin—say at the eyelet marked 1 in Fig. 6 of the drawings—and thence to the lower end the eyelets will stand in progression 2 3 4, &c., set inward 130 step by step to the lower end of this edge, as seen in Fig. 6, on the lower section m' of the

eyelets. In ladies' shoes the eyeleting of the uppers is usually extended along the entire margin; but the upper portion is preferably eyeleted on a straight line at a uniform distance from the extreme edge, as seen at the outer or upper section m^2 of the eyelets in Fig. 6, this figure being here drawn to illustrate the upper of a lady's shoe. From the description above it will be understood that in men's shoes hooks will be substituted for this section m^2 of the eyelets.

Now it is obvious that in applying the straight section of eyelets m^2 it will be necessary to suspend the operation of the regulator-gage. This may be effected in various ways; but one of the simplest is to withdraw the roller on the ratchet-lever from contact with its operative cam. For this purpose I have shown in the drawings a cord N, secured at one end to the lower end of said lever and extending thence outward, running over a pulley n , and thence downward through the table A', on which the machine is set. The other end of the cord is intended to be attached to a treadle, by means of which a pull may be made upon the cord, thereby drawing the ratchet-lever away from its operative cam, when of course the mechanism for operating the regulator-gage will be suspended from action. As soon as released the retracting-spring will at once bring the lever again into operative connection with the cam. The machine is also provided with a presser-foot O, which is fixed to the upper end of a vertically-reciprocating rod o , as in the Hawkins patent, and there is also shown a chute P, by which the eyelets are conveyed from the receiver or holder to the eyeleting-anvil.

Some of the special operating devices obviously may be changed or modified in various ways, and therefore I do not wish to be understood as limiting my invention to all of the specific devices constructed and organized as herein shown and described, as the gist of my invention is the adjustable regulator device, however the required movement may be produced.

Having thus described my invention, what

I claim to be new, and desire to secure by Letters Patent, is—

1. In an eyeleting-machine, a movable regulator-gage for the material, in combination with mechanism constructed and operating to automatically and continuously turn the gage laterally by successive steps in the same direction to change its alinement with the eyelet-punch, whereby the alinement of the gage-surface with the eyeleting devices may be changed for each eyelet, precisely as described.

2. In an eyeleting-machine, the eyeleting devices, in combination with mechanism for feeding the material to the eyeleting devices, a revoluble gage-eccentric, G, and mechanism adapted to give an intermittent movement to said eccentric, whereby the alinement of the eccentric-gage face with the eyeleting devices is automatically changed at each operation of the eyeleting devices, substantially as described.

3. In an eyeleting-machine, the eyeleting devices, in combination with the revoluble gage-eccentric, G, ratchet-wheel, g' , connected therewith, pawl-carrier and pawl thereon adapted to engage with said ratchet, and mechanism adapted to operate the pawl-carrier to engage the pawl successively with the teeth of the ratchet to impart a step movement thereto, substantially as described.

4. In an eyeleting-machine, the eyeleting devices, in combination with the revoluble gage-eccentric, G, ratchet, g' , connected therewith, slide, H, pawl, I, mounted thereon and adapted to engage with the ratchet, actuating-lever, J, and cam, C', provided with cam-lug, c , substantially as described.

5. In an eyeleting-machine, the eyeleting devices, in combination with the revoluble gage-eccentric, G, ratchet-wheel, g' , connected therewith, slide, H, pawl, I, mounted thereon, lever, J, cam, C', provided with lug, c , and spring, L, substantially as described.

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