(No Model.)

A. C. ESTABROOK.

ASSEMBLING AND TRANSFERRING MECHANISM FOR EYELETS.

No. 572,340. Patented Dec. 1, 1896.

Fig. 1.

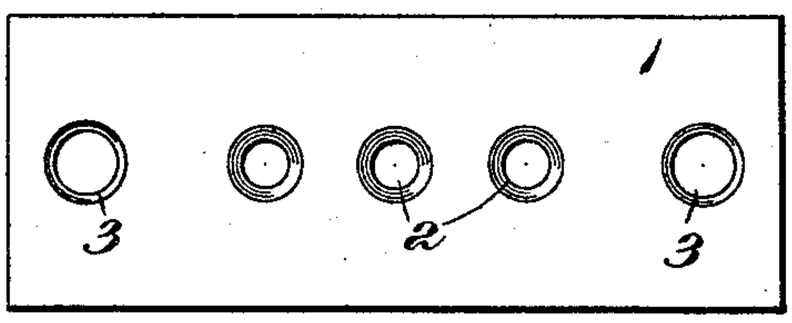


Fig. 2.

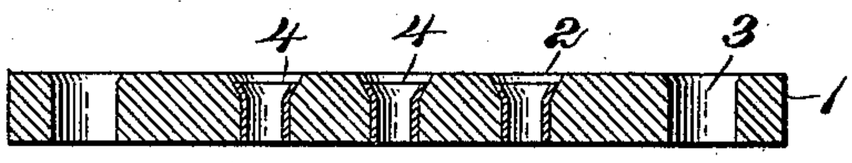


Fig. 3

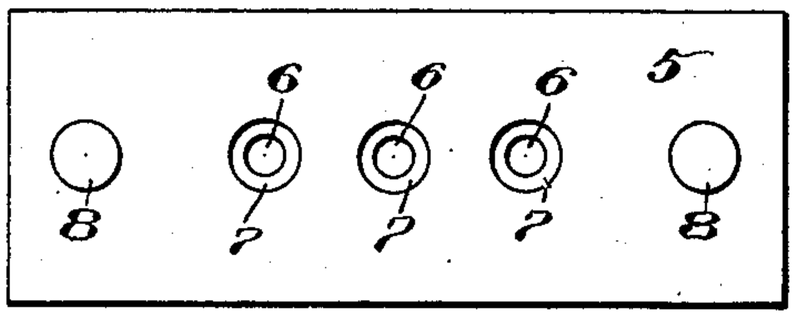


Fig. 4.

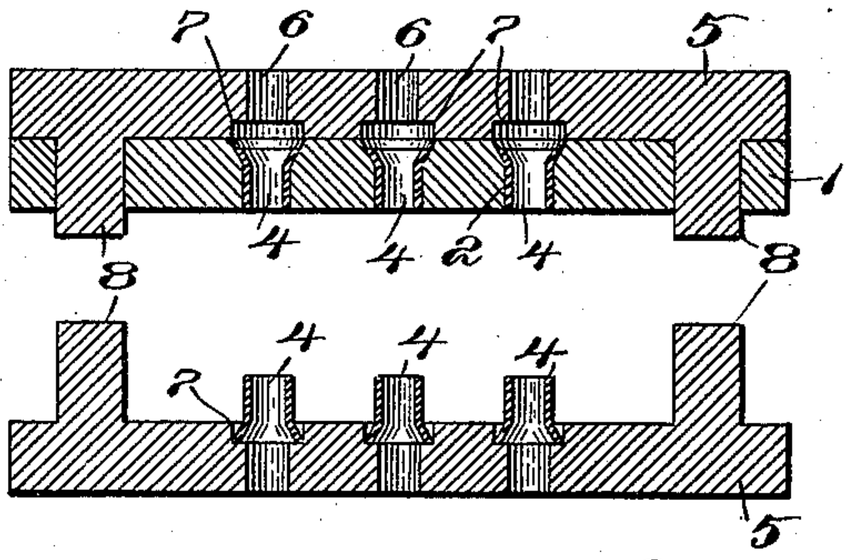


Fig. 5.

Fig. 6.

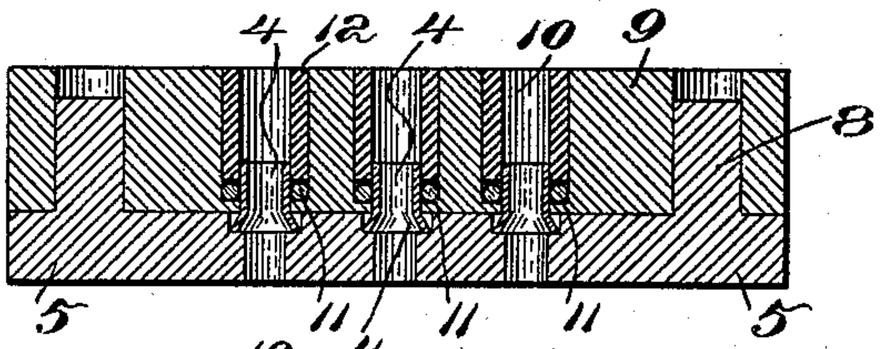
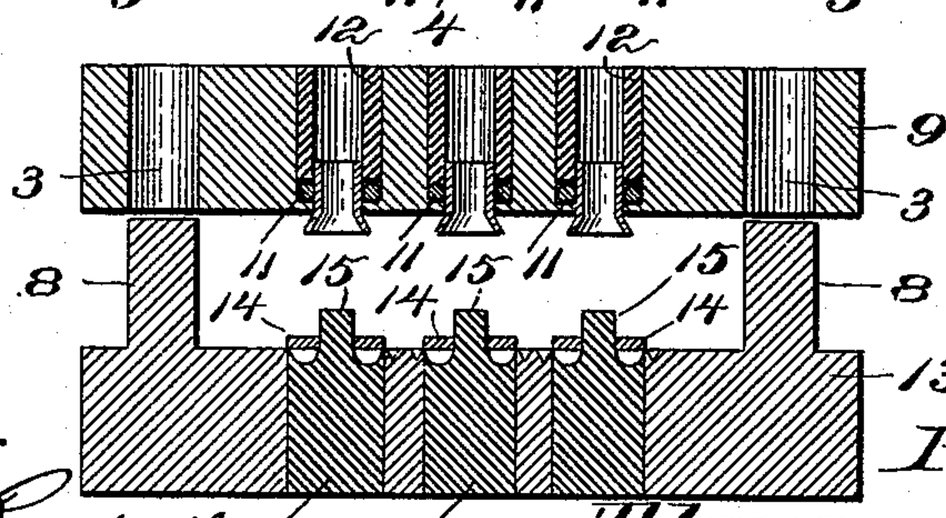


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALANSON C. ESTABROOK, OF NORTHAMPTON, MASSACHUSETTS.

ASSEMBLING AND TRANSFERRING MECHANISM FOR EYELETS.

SPECIFICATION forming part of Letters Patent No. 572,340, dated December 1, 1896.

Application filed November 20, 1895. Serial No. 569,598. (No model.)

To all whom it may concern:

Be it known that I, ALANSON C. ESTABROOK, a citizen of the United States, residing at Northampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Assembling and Transferring Mechanism for Eyelets, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

In the manufacture of what are termed "covered" eyelets, which are used on boots and shoes and the like, and which are provided at the flanged ends thereof with heads or coverings of plastic material or the like, it is usual to employ a perforated mold-plate which is constructed to receive a series of eyelets, the latter being placed therein with the flanged ends thereof, which are to be covered, exposed in position to receive the covering. Each perforation in the said plate is adapted to receive one eyelet at a time, and the whole series of eyelets is covered at one operation.

My present invention has for its object to provide improved means whereby a series of eyelets which has been assembled in proper position may be transferred to the perforated mold-plate or to the like device.

The invention consists in devices of novel character and construction for performing this work, all as will first be described with reference to the accompanying drawings, and afterward will be more particularly pointed out and clearly defined in the claim at the close of this specification.

Referring to the accompanying drawings, Figure 1 thereof is a plan view of an assembling-plate, the plate shown having only three eyelet-receiving holes or recesses, although, as will be obvious, a much larger number may be employed. Fig. 2 is a view in central lengthwise section of the plate shown in Fig. 1, with eyelets in the holes or recesses therein. Fig. 3 is a plan view of the transferring-plate. Fig. 4 is a view in central lengthwise section showing the transferring-plate applied to the assembling-plate in readiness to have the said plates inverted and the eyelets which are in the holes or recesses of the assembling-plate dropped into the holes or recesses in the transferring-plate. Fig. 5 is a similar view of the transferring-plate detached, showing the eyelets resting in the holes or recesses therein. Fig. 6 is a similar view showing the transferring-plate and the perforated mold-plate brought together for the purpose of inserting the eyelets which are resting in the recesses in the transferring-plate into the holes in the said mold-plate, and showing also a split-ring-retaining device in each of the holes in the said mold-plate, whereby the eyelets are retained in place therein. Fig. 7 is a view in section showing the two mold-plates in juxtaposition, but separated somewhat, the perforated mold having an eyelet in each of the holes therein.

At 1, Figs. 1 and 2, is shown what I have termed the "assembling-plate." It is formed with a series of eyelet-receiving holes 2 therein, which preferably are placed at regular distances apart, and it is also provided at each end with a hole 3 to receive a guide-pin, so that the said assembling-plate, when the holes therein have been filled with eyelets, may have applied thereto a transferring-plate, to recesses or cavities in which the eyelets in said assembling-plate are to be transferred. Eyelets (shown at 4, Fig. 2) are placed in each of the holes or perforations 2 in the assembling-plate, as shown in said figure, the said holes or perforations being shaped to correspond with the shape of the eyelets, that is, the upper end of each hole is countersunk or provided with a flaring mouth for the reception of the flanged end of the eyelet. The eyelets may be placed in the holes 2 in said assembling-plate in any well-known manner. I have found that these holes may be each filled with an eyelet easily and conveniently by placing a mass of eyelets on the top of the plate and either shaking the plate or agitating the eyelets, so as to cause the eyelets to drop into the holes. As an eyelet cannot enter one of the holes 2 with the flanged end downward it is not possible to fill the holes 2 in said plate 1 other than with eyelets which are in proper position. The surplus of eyelets on the plate may be brushed or poured off.

For the purpose of transferring the eyelets from the assembling-plate 1 to the perforated mold-plate I provide a transferring-plate 5. The latter is provided with holes or perforations 6, which are enlarged or counterbored

at one end, as shown at 7, sufficiently to receive the enlarged or flanged end of an eyelet. The perforation or hole 6 is not essential to the operation of the device, but is desirable, inasmuch as it lessens the weight of the plate and the amount of metal used. It will be clear that the plate may be provided simply with the cavities 7 without in any way interfering with its operation. The recesses or cavities 7 are arranged in the plate 5 in such manner as to register or coincide exactly with the holes 2 in the assembling-plate 1, and the said plate 5 is provided with guide-pins 8, which are arranged to register with the holes 3 in the said plate 1. By means of these guide-pins the plates 1 and 5 may be brought together in such manner that the holes and cavities in each will coincide, as shown in Fig. 4. When the said plates are brought together, the transferring-plate 5 is uppermost, but upon inverting the two plates the eyelets in the holes 2 in said plate 1 will drop into the cavities or recesses 7 in the said plate 5, the enlarged or flanged ends of said eyelets being received in said cavities or recesses 7. As the enlarged or flanged end of each eyelet fits accurately within a recess or cavity 7 the said recesses or cavities serve to hold the eyelets positively and firmly enough to prevent displacement in handling the plate.

After removing the assembling-plate 1 from the transferring-plate 5, the said plates having been first inverted, the eyelets which were in the holes in the said assembling-plate will be found in the corresponding cavities in the transferring-plate, the flanged end of each lying within its cavity or recess and the tubular body portion projecting upwardly above the surface of the said plate 5, as shown in Fig. 5. The eyelets are then in position to be transferred to the perforated mold-plate 9. The mold-plate is also provided with a series of holes 10, one to receive each eyelet in the transferring-plate, the said holes being so located as to register with the cavities or recesses in the transferring-plate when the said mold-plate is applied to the transferring-plate, as in Fig. 6. To enable the mold-plate 9 to be properly applied to the transferring-plate 5, the plate 9 is provided with holes, which register with the pins 8 on the transferring-plate 5. The holes 10 in the mold-plate 9 are each made of a diameter sufficient to receive the shank or body portion of an eyelet. To the end that repeated eyelets shall be held firmly in the holes 10, but in such manner that they may be withdrawn readily from said holes after the molding operation is completed, I preferably employ retaining devices on the order of those which are presented in my application for United States Letters Patent filed November 18, 1895, Serial No. 569,292. For example, I enlarge the diameter of each hole throughout the greater portion of the thickness of the plate, as in Figs. 6 and 7, and place therein a split ring 11, which latter is located near to the surface of the plate 9, from which the flanged ends of the eyelets project. The hole 10 above the ring (see Fig. 6) has introduced into it a sleeve or lining 12, which latter fits the hole 10 snugly and is forced into the same and serves to hold the split ring 11 securely in place. The said ring 11 will engage the body or shank of the eyelet when the eyelet is forced into the hole 10 by the transferring-plate 5.

After the mold-plate 9 and transferring-plate 5 are brought together, thereby forcing the eyelets into position in the holes in the said mold-plate, the mold-plate may be raised or detached from the transferring-plate, and each of the holes in said mold-plate will be filled with an eyelet firmly held therein by the split ring 11, as shown in Fig. 7. The eyelets in the said mold-plate are then in readiness to be applied to the other mold-plate, which I have shown at 13, or to any similar device by means of which they are covered or have their flanged or enlarged ends finished by a covering or jacket of plastic material or the like, which is molded thereon.

The depth of the cavities or recesses 7 7 is equal to or slightly greater than that of the flanges of the eyelets. After the transfer of the eyelets from the assembling-plate 1 to the said cavities or recesses the said flanges are entirely contained in the latter. (See Figs. 5 and 6.) When the plate 9 is applied to the plate 5, as in Fig. 6, and is pressed down into place, so as to receive the barrels of the eyelets into its holes 10 10, the flanges of the eyelets cannot by any possibility become crushed, inasmuch as the two plates come into contact with each other, as in Fig. 6, before the taper of the flanges enters the holes 10 10. This guards against any tendency to flatten down the flanges by compression between the plates 5 and 9.

At 14, Fig. 7, are shown washers of plastic material surrounding the center pins 15 of the dies 16, which are applied to the mold-plate 13. These washers, when the mold-plates are brought together, are molded upon the flanged ends of the eyelets to form the heads or coverings, as will be understood by those skilled in the art.

I do not claim, broadly, a transferring-plate having a series of pockets with bottoms to receive bodily therewithin circular or annular objects in combination with a die constructed to receive said objects as transferred thereto from the pockets of the plate. My invention resides more particularly in the described construction of the transferring-plate, by which construction I provide for protecting the flanges of the eyelets and also for forcing the barrels or bodies of the eyelets into the recesses of the mold-plate. As will be apparent, the eyelet-retaining devices which are applied to the said mold-plate offer resistance to the entrance of the barrels or bod-

ies of the eyelets into such recesses and render it necessary to force the eyelets positively into place by means of pressure applied to their flanged ends. This pressure I apply by means of the transferring-plate.

What I claim is—

The combination with a mold-plate constructed to receive the bodies of a series of eyelets and hold them with the flanged ends thereof exposed, of a transferring-plate for applying the eyelets to the said mold-plate, the said transferring-plate having a series of recesses or cavities, each of a diameter and depth to receive and retain the flanged end of an eyelet with its body or shank portion projecting above the surface of the plate, whereby to protect the flange from injury when the said plates are brought together, the sides of the cavity holding the eyelet against lateral displacement or overturning, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALANSON C. ESTABROOK.

Witnesses:
HANK N. LOOK,
JANET L. ELLIOT.