Aug. 9, 1927. 1,638,117

W. FOLEY

STAPLING MACHINE

Filed Aug. 14, 1926

Fig. 1.

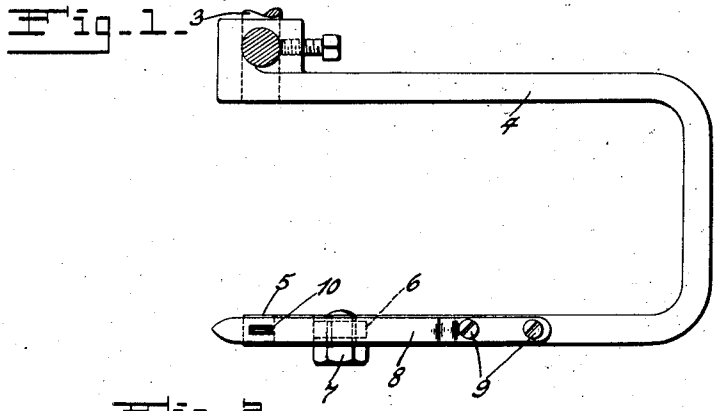


Fig. 2.

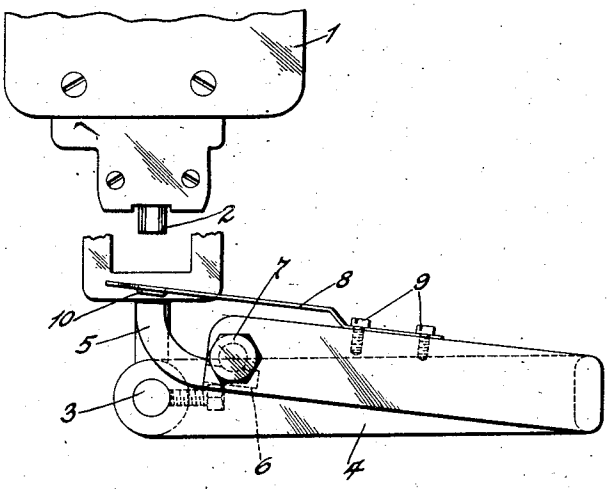


Fig. 3.

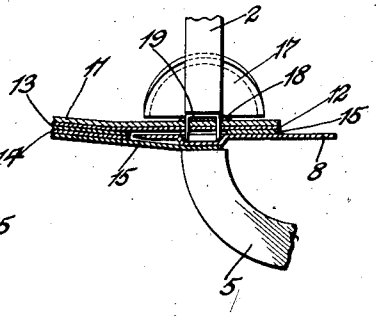


Fig. 5.

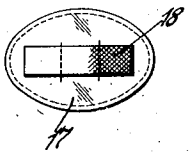
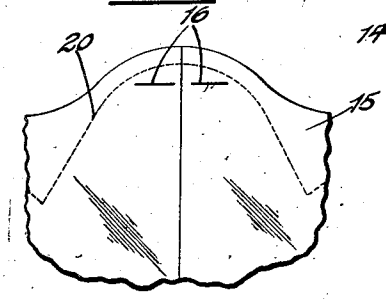


Fig. 4.



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UNITED STATES PATENT OFFICE.

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STAPLING MACHINE.

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This invention relates to stapling machines, and has special reference to stapling machines for use in the manufacture of shoes, whereby superimposed parts or layers of material may be secured together by staples.

An object of the invention is to provide an improvement in stapling machines for use in the manufacture of shoes whereby superimposed parts or layers of material may be secured together by wire staples, thus obtaining a stronger connection between the parts than has heretofore been obtained. Heretofore it has been a common practice to secure together by stitching the parts or layers of material in shoes upon which the present invention is designed and constructed to operate. The stitching operations have been slow and tedious and the connections obtained did not possess the desired strength to resist the strains to which the parts are subjected when shoes are worn. By the previous practice of stitching the parts together the cost was large.

My present invention overcomes these objections and affords means whereby the parts or layers of material in shoes may be firmly connected by wire staples, and whereby the wire staples are covered or protected on the inside, so that they will not injure the stockings or feet of the wearer, and will also afford a strong and durable connection that will not separate under the strains and stresses to which the shoes are subjected when worn.

The specific advantageous uses of the present invention is in the attachment of bows or other ornamental attachments to shoes and, as herein illustrated and described, it will be seen that the invention possesses all of the advantages and overcomes all of the difficulties mentioned and greatly reduces the cost of manufacture of shoes.

Other objects of the invention will be apparent from the following description, taken in connection with the accompanying drawing, in which

Fig. 1 is a plan view of the present invention attached to an operating part of a stapling machine of known make, but which heretofore has not been provided with any mechanism or device capable of application to the uses of the present invention.

Fig. 2 is a side elevation showing also a part of the staple forming and driving mechanism.

Fig. 3 is a view showing in section a part of a shoe in connection with the invention and a staple being driven through the superimposed parts or layers of material.

Fig. 4 is a view showing the lining of the shoe slit for operation of the stapling machine.

Fig. 5 is a bottom or reverse plan view of a shoe ornament constructed to be stapled to the shoe by the present invention.

The known and existing stapling machine, on which the present invention is an improvement and parts of which are shown, comprises a staple forming and driving mechanism 1 from which the staples are successively discharged and driven through the material, through which the staples are applied, by a driver 2. The machine also comprises a supporting element 3 and, in the usual familiar operation of the machine, the driver 2 moves downwardly at the proper time to force the staples through the material and to clamp the staples against an anvil.

My present invention is designed and adapted to cooperate with these parts of the stapling machine and, as shown, comprises an anvil supporting element 4 having one end attached to the part 3 of the stapling machine and the other end provided with an anvil portion 5 in alinement with the driver 2.

The element 4 is bifurcated, approximately U-shaped in the specific form shown, having one arm attached to the support 3 and the anvil 5 attached to the end of the other arm. The anvil 5 has a reduced portion 6 extending into a hole in the end of the arm of the element 4 to which it is con-

nected and is releasably secured thereto by a screw 7. This permits removal and replacement and substitution of anvils 5, as may be desired.

A resilient plate 8 has one end releasably connected by screws 9 to the upper side of that arm of the support 4 to which the anvil 5 is connected. The plate 8 extends above the upper end of the anvil 5 and is shaped to provide a narrow and elongated depression 10 above the end of the anvil 5. The side and end walls, respectively, of the depression 10 converge downwardly, so that when the ends of the staple passing through the parts or layers of material enter the depression and contact with the inclined walls thereof, the ends of the staple are bent toward each other and clamped against the material. The free end of the plate 8 is pointed to facilitate the operation of passing the same through the slits in a shoe lining.

Sufficient shoe structure is illustrated to make clear a use of the invention in manufacture of shoes. As shown, the shoe comprises a vamp 11, a vamp double 12, a tongue 13, a stay 14 and a lining 15; a number of which parts or layers of material are designed and arranged to have an ornament attached thereto by stapling, and the clamped ends of the staples covered and shielded by the lining. The lining is provided with a pair of slits 16.

A bow ornament 17, of conventional design, is shown in Figs. 3 and 5 and has an attached bow backing 18. In using the machine to staple the ornament to the shoe the plate 8 is passed through one of the slits 16, the ornament backing 18 is placed upon the vamp 11 of the shoe across the plane of the slits 16, and the machine is then operated in the familiar manner of a stapling operation forcing the wire staple 19 through the backing 18 and the superimposed vamp 11 and vamp double 12, causing the ends of the staple to enter the clamping depression 10, the inclined walls of which bend the ends of the staple toward each other and clamp them upon the vamp double. The shoe is then withdrawn and the end of the plate 8 is passed through the adjacent slit 16, and the operation repeated. This securely fastens the ornament to the shoe, so that the ornament will not work loose or become detached when subjected to the strains and stresses of wear, and provides a construction in which the lining shields and covers the clamped ends of the staples so that the staples will not damage or injure the foot or hosiery of the wearer. This operation may be performed quite rapidly, and in much less time than it has been possible heretofore to secure the bows or ornaments to the shoes, resulting in a large saving of time and cost. The lining and the vamp and vamp double may be attached above the slits 16, before securing the ornament 17 to the shoe, by a line of stitching 20.

From the foregoing it will be seen that my invention accomplishes all of its intended objects and purposes in a very satisfactory manner; that the cost of manufacture is greatly reduced due to the considerable saving of time; that a better and more durable attachment of the ornament to the shoe is obtained, and that the usual lining is made to serve the function of a shield and protector to prevent injury to the foot and hosiery of the wearer.

The specific construction, arrangement and relationship of parts may be varied within equivalent elements, determined by the needs of the user and the operations to be performed. I contemplate such variations as may be needed and do not restrict myself unessentially, but what I claim and desire to secure by Letters Patent is:—

1. In a stapling machine, an anvil, a resilient plate extending above the anvil and spaced therefrom and arranged to be extended through a slit in a piece of material, and inclined staple clamping walls on said plate.

2. In a stapling machine, the combination with a staple driver, of an anvil opposite said driver, and a resilient plate extending between said anvil and said driver and having converging staple bending walls.

3. In a stapling machine, the combination with a staple driver, of an anvil opposite said driver, a resilient plate extending between said anvil and said driver, and inclined staple clamping walls on said plate between said anvil and said driver.

4. In a stapling machine, the combination with a staple driver, of a bifurcated support, an anvil attached to one arm of said support opposite said driver, and a resilient staple clamping device extending between said anvil and driver and spaced from the anvil.

5. In a stapling machine, the combination with a staple driver, of a bifurcated support, an anvil attached to said support opposite said driver, a resilient staple clamping device attached to said support and extending between said anvil and driver and spaced from the anvil, and inclined walls on said device between said anvil and driver.

6. In a stapling machine of the character mentioned, the combination with a staple driver and an anvil supported opposite said driver, of a resilient plate extending between said anvil and said driver in spaced relationship to both, and means supported by said plate for bending the legs of staples.

7. In a stapling machine of the character mentioned, the combination with a staple driver and an anvil supported opposite said driver, of a resilient plate extending between

said anvil and said driver in spaced relationship to both, and inclined walls on said plate forming a depression arranged to receive and clamp the legs of staples under pressure of said driver.

8. In a stapling machine of the character mentioned, the combination with a staple driver, of a bifurcated support, an anvil attached to one end of said support, a resilient plate attached to said support and extending between said anvil and said driver and out of contact with both, and a trough-shaped part on said plate extending toward said anvil and provided with inclined walls opposite said driver.

WILLIAM FOLEY.