S. O'BRIEN.

MACHINE FOR ASSEMBLING PARTS OF SHOE ORNAMENTS, &c.

APPLICATION FILED MAR. 31, 1913.

1,094,588. Patented Apr. 28, 1914.

Fig. 1.

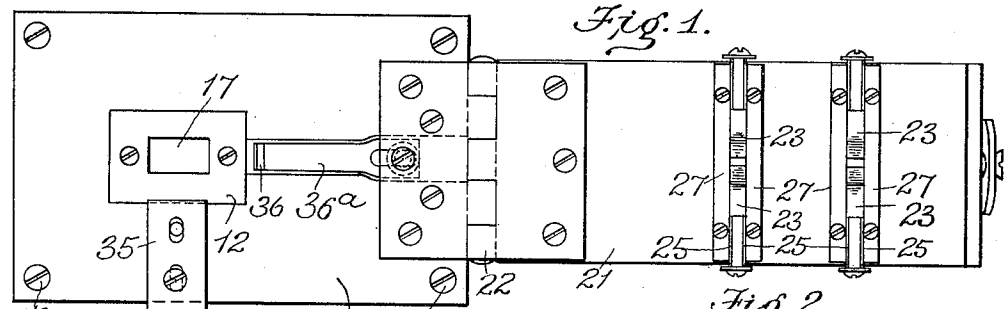


Fig. 2.

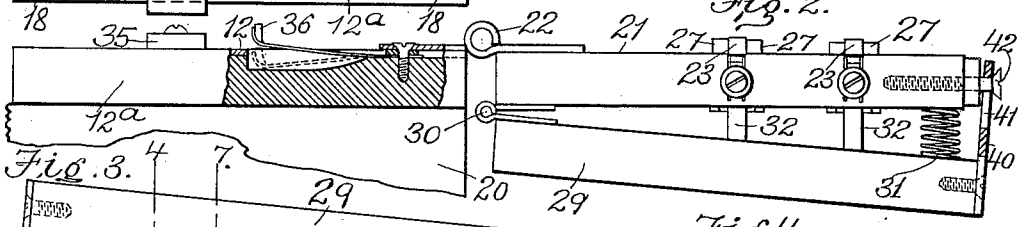


Fig. 3.

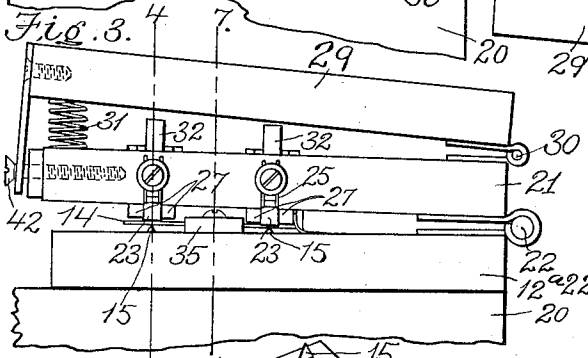


Fig. 4.

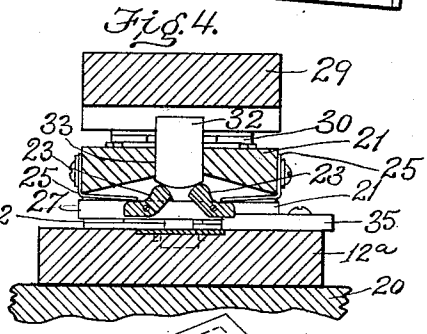


Fig. 5.

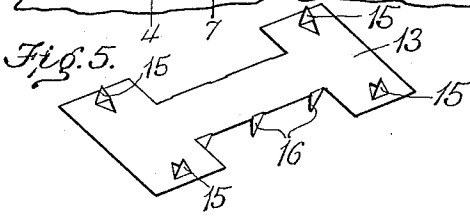


Fig. 6.

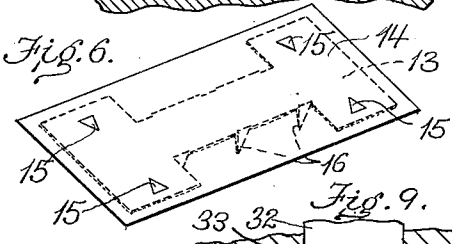


Fig. 7.

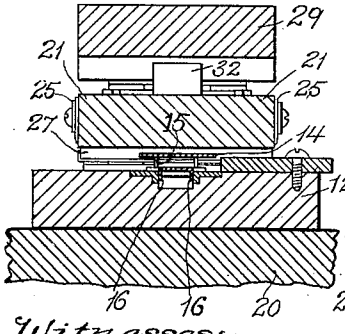


Fig. 8.

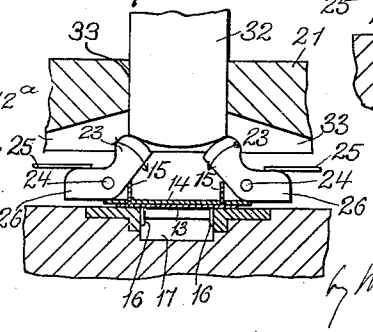
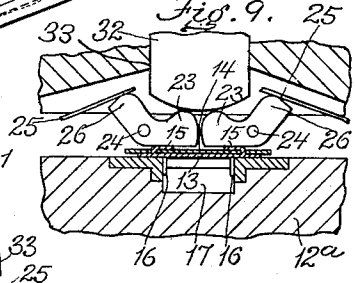


Fig. 9.



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UNITED STATES PATENT OFFICE.

SIMON O'BRIEN, OF LYNN, MASSACHUSETTS, ASSIGNOR TO CHARLES S. CLINCH, OF LYNN, MASSACHUSETTS.

MACHINE FOR ASSEMBLING PARTS OF SHOE-ORNAMENTS, &c.

1,094,588. Specification of Letters Patent. **Patented Apr. 28, 1914.**

Application filed March 31, 1913. Serial No. 757,802.

To all whom it may concern:

Be it known that I, SIMON O'BRIEN, a citizen of the United States, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Assembling Parts of Shoe-Ornaments, &c., of which the following is a specification.

This invention relates to machines for assembling and securing together a plurality of thin layers, one of which is of penetrable material such as cloth, while the other is of material such as sheet metal and provided with prongs adapted to penetrate the cloth layer and to be clenched upon the outer surface of the same to unite the layers, the machine of my invention being intended particularly to unite layers which form parts of imitation bows used for ornamenting shoes.

The invention has for its object to provide a simple and effective machine adapted to assemble the layers by pressing the penetrable layer upon the prongs of the other layer, and to simultaneously clench said prongs to unite the layers.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings:—Figure 1 represents a top plan view of an assembling machine embodying my invention, the part called the carrier being swung back to expose the part called the anvil. Fig. 2 represents an edge view of the machine in the condition represented by Fig. 1. Fig. 3 represents a view similar to Fig. 2 showing the carrier swung over the anvil. Fig. 4 represents a section on line 4—4 of Fig. 3. Fig. 5 represents a perspective view of one of the layers to be assembled. Fig. 6 represents a perspective view showing two assembled and united layers. Fig. 7 represents a section on line 7—7 of Fig. 3. Figs. 8 and 9 are enlargements of portions of Fig. 4 and illustrate different stages of the operation.

The same reference characters indicate the same parts in all the figures.

In the drawings:—12 represents a work-supporting anvil adapted to support a layer 13, which is to be united to a layer 14, the layer 13 being of sheet metal and provided with upwardly projecting prongs 15 which are to be caused by the machine to penetrate the layer 13 and to be clenched down upon the upper surface of said layer as shown by Fig. 6. The layer 13 is in this case provided with downwardly projecting prongs 16 which are not intended to be clenched by the machine, the anvil being provided with a recess 17 adapted to receive the prongs 16 as shown by Figs. 8 and 9. The anvil is preferably a metal block inserted in the bed piece 12^a which, for the purposes of this invention, may be considered as a part of the anvil. Said bed piece is secured by screws 18 to a fixed support such as a bench 20.

21 represents a carrier connected by a hinge 22 with the bed 12^a and adapted to be swung outwardly to expose the anvil as shown by Figs. 1 and 2, and to be swung inwardly over the anvil as shown by Fig. 3. The carrier 21 is provided with two pairs of prong-clenching hammers 23, each adapted to bend one of the prongs 15 inwardly toward the opposite prong as indicated by Fig. 9. Each pair of hammers is identical in construction and description with the other pair, so that a description of one pair will suffice. The hammers 23 are pivoted at 24 to the carrier and each hammer is normally held in inclined position relative to the face of the anvil by a spring 25 bearing on an arm 26 formed on the hammer and extending at an obtuse angle therewith. The hammers are arranged so that when normally inclined they bear against the prongs 15 as indicated by Fig. 8, the hammers being adapted to be swung downwardly in different directions as indicated by arrows in Fig. 8 to bend the prongs inwardly toward each other as shown by Fig. 9. The carrier is provided with means for pressing the layer 14 downwardly upon the prongs 15 so that when the layer 14 has been laid upon the points of the prongs as indicated by Figs. 3 and 7, and the carrier is swung toward the anvil, the pressing means force the layer downwardly upon the prongs 15 so that said layer is impaled upon the prongs, this being accomplished before the prongs are clenched. The pressing means in this embodiment of the invention comprise two pressing bars 27 located at opposite sides of the hammers 23 and adapted to bear on the layer 14 at opposite sides of the portions of said layer which bear on the prongs 15, so that when the carrier is pressed downwardly toward the anvil, the pressing bars 27 will force the layer 14 on to the prongs 15. The

carrier is provided with means for swinging the hammers from the position shown in Fig. 8 to that shown in Fig. 9, said means in this embodiment of my invention comprising a striker 29 connected by hinge 30 with the carrier and yieldingly spaced apart therefrom by a spring 31, and loose power-transmitting members 32 interposed between the striker and the hammers 23, the members 32 being adapted to slide in slots 33, Fig. 4, in the carrier 21.

The anvil bed 12 is provided with gages 35, 36, arranged to properly position the layer 14 relatively to the anvil, the gage 36 being yieldingly supported and adapted to be displaced by one of the pressing bars 27.

The machine is operated as follows:—The carrier 21 being swung outwardly as shown by Figs. 1 and 2, the operator places a layer 13 on the anvil with its prongs 15 projecting upwardly, and its prongs 16 projecting downwardly into the recess 17. The layer 14 is then laid upon the points of the prong 15 and positioned by the gages 35, 36. The operator next grasps the striker 29 and swings the striker and carrier over the anvil. As the carrier approaches the anvil, the pressing bars 27 first impale the layer 14 upon the prongs 15, the movement of the carrier toward the anvil being then arrested. The hammers 23 at the same time come in contact with the prongs 15 as shown in Fig. 8, and are swung inwardly by the striker 29 through the members 32, the striker continuing to move toward the anvil after the movement of the carrier has ceased. The swinging movement of the hammers causes them to bend the prongs 15 in opposite directions toward each other, as shown by Fig. 9, thus clenching the prongs and securing the layers 13 and 14. The carrier and striker are then displaced and the united layers removed from the anvil.

The gage 36 is supported by a resilient shank 36^a so that it is adapted to yield as indicated by dotted lines in Fig. 2, said gage being in the path of one of the pressing bars 27.

The swinging ends of the carrier 21 and striker 29 are loosely connected to limit the separation of the striker from the carrier by the spring 31. To this end the striker is provided with an ear 40 having a slot 41 which receives a stud 42 on one end of the carrier. This connection permits the striker to move inwardly toward the carrier.

What I claim and desire to secure by Letters Patent is:—

1. A fastener setting machine comprising a work supporting anvil, a carrier movable toward and away from said anvil, pivoted clenching hammers supported by said carrier, a striker pivotally connected with said carrier, means for transmitting pressure from said striker to said carrier to press the fastener through the material to be united, and means actuated by the movement of said striker toward said carrier for operating said clenching hammers.

2. A fastener setting machine comprising a work supporting anvil, a carrier movable toward and away from said anvil, pivoted clenching hammers supported by said carrier, pressing bars also supported by said carrier, a striker, means for transmitting pressure from said striker to said carrier to cause the pressing bars to force the fastener through the material to be united, and means actuated by the movement of said striker toward said carrier for operating said clenching hammers.

3. A fastener setting machine comprising a work supporting anvil, a carrier movable toward and away from said anvil, pivoted clenching hammers supported by said carrier, spaced pressing bars, said clenching hammers being located between said pressing bars, a striker pivotally connected with said carrier, means for transmitting pressure from said striker to said carrier to cause the pressing bars to force the fastener through the material to be united, and means actuated by the movement of said striker toward said carrier for operating said clenching hammers.

4. A fastener setting machine comprising a work supporting anvil, a carrier movable toward and away from said anvil, pivoted clenching hammers supported by said carrier, a striker pivotally connected with said carrier, a spring interposed between said striker and said carrier for yieldingly transmitting pressure to the carrier to press the fastener through the material to be united, means for limiting the separating movement of said striker and said carrier, and means operated by the movement of the striker toward said carrier for operating the clenching hammers.

5. A fastener setting machine comprising a work supporting anvil, a carrier movable toward and away from said anvil, pivoted clenching hammers supported by said carrier, a striker pivotally connected with said carrier, a spring interposed between said striker and said carrier for yieldingly transmitting pressure to the carrier to force the fastener through the material to be united, a slotted ear secured to said striker, a stop secured to the carrier and coöperating with said ear, and means actuated by the movement of the striker toward the carrier for operating said clenching hammers.

6. A fastener setting machine comprising a work supporting anvil, a carrier movable toward and away from said anvil, pivoted clenching hammers supported by said carrier, a striker pivotally connected with said carrier, means for transmitting pressure from said striker to said carrier to press the

fastener through the material to be united, and power transmitting members mounted in said carrier and operated by the movement of said striker toward said carrier, said power transmitting members engaging said clenching hammers.

7. A fastener setting machine comprising a work supporting anvil, a carrier movable toward and away from said anvil, pivoted clenching hammers supported by said carrier, a striker pivotally connected with the carrier, pressing bars also supported by said carrier, means for transmitting pressure from said striker to said carrier to cause the pressing bars to force the fastener through the material to be united, means actuated by the movement of said striker toward said carrier for operating said clenching hammers, a yielding gage secured to said anvil and depressible by one of said presser bars.

8. A fastener setting machine comprising a work supporting anvil, a carrier, a hinge connection between the contiguous ends of said anvil and said carrier, clenching mechanism supported by said carrier, a striker, a hinge connection between said striker and said carrier adjacent to the first mentioned hinge connection, and means operated by the movement of the striker toward said carrier for actuating said clenching mechanism.

9. A fastener setting machine comprising a work-supporting anvil having a recess arranged to receive downwardly projecting prongs on one of the parts to be assembled, two gages adjacent to said recess, a carrier movable toward and from the anvil, a pair of clenching hammers pivoted to the carrier, said hammers being yieldingly held inclined to the face of the anvil and arranged to be swung in different directions toward said face, means for simultaneously swinging the hammers toward the anvil, and pressing means on the carrier adjacent to the hammers, one of said gages being yieldingly supported in the path of the pressing means and arranged to be displaced thereby.

In testimony whereof I have affixed my signature, in presence of two witnesses.

SIMON O'BRIEN.

Witnesses:
ABBIE E. ROBERTS,
ISRAEL AUGUSTUS NEWHALL.

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