

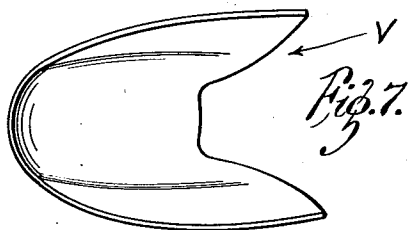
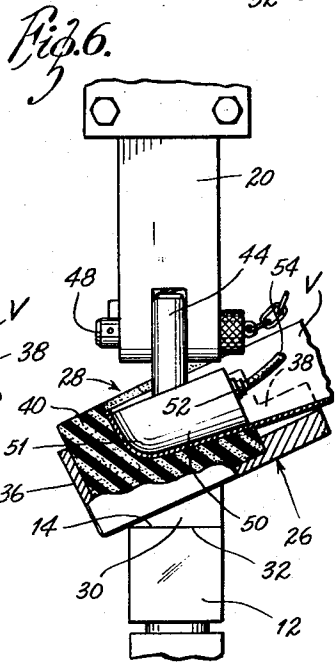
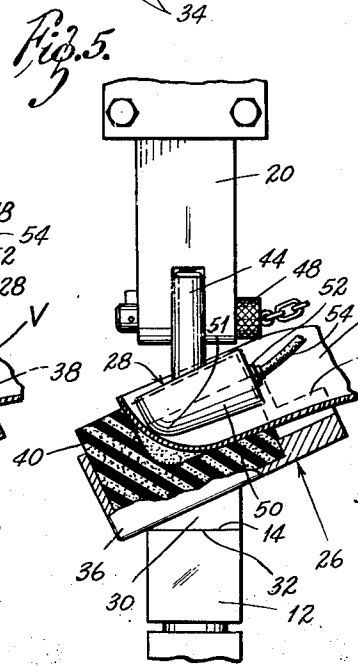
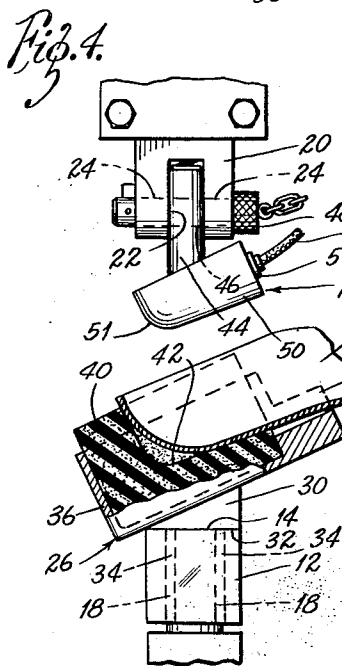
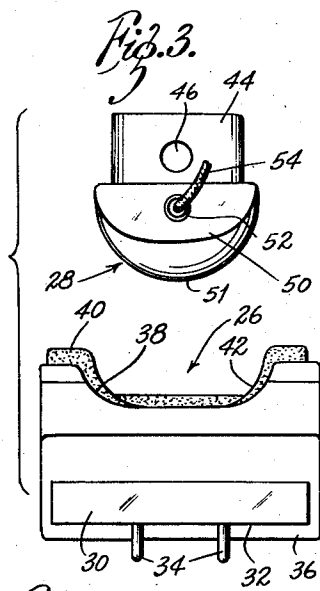
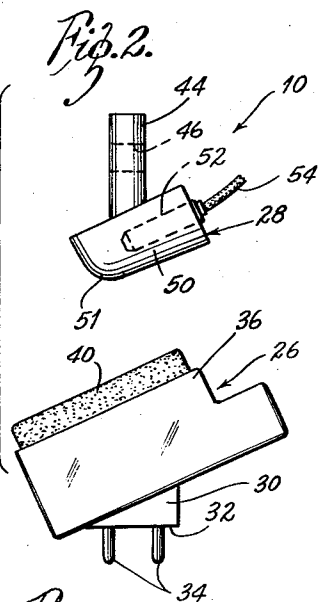
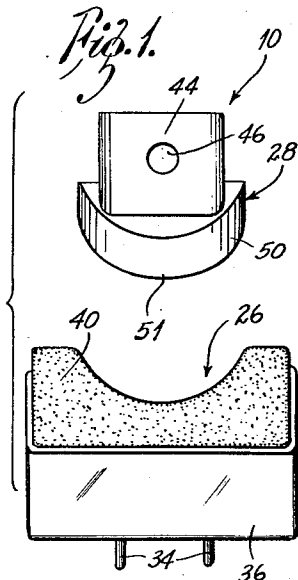
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2,692,400

DIE SET FOR SHAPING VAMPS

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DIE SET FOR SHAPING VAMPS

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2 Claims. (Cl. 12—97)

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The present invention relates generally to the shoe manufacturing art, and more particularly to a novel die set.

This is a divisional application derived from my copending application Serial No. 123,951, filed October 27, 1949, which issued as Patent No. 2,656,554 on October 27, 1953.

It is an object of the present invention to provide a die set which will properly shape the toe portion of a vamp so that it will be preshaped prior to its incorporation into a shoe. More particularly, it is an object to provide a die set and method in which the blank vamp material is drawn around a tip portion of one of the die elements by a stroking action so as to properly shape the toe portion thereof.

Another object is to provide a die set for pre-shaping the toe portion of a vamp in a single operation.

Further objects and advantages of the present invention will be apparent from the detailed description, reference being had to the accompanying drawing wherein a preferred embodiment of the present invention is shown.

In the preferred construction, a first die member is provided which is rigid and which is shaped like the toe portion of a shaped vamp. This first die member is convex shaped and includes a tip portion which is at the lower end of the die when it is positioned on the pressing machine. A second die member is provided which is of resilient material, such as rubber, and which contains a recess of a shape complementary to the shape of the first die member. The die members are adapted to be mounted on a machine for bringing them together to shape a blank vamp, one of the die members being mounted on the bed of the machine and the other on a ram which reciprocates relative to the bed. The major surfaces of both of the die members are disposed at an angle to the direction of travel of the ram member so that the tip portion of the rigid first die member is closest to the second die member, whereby, when a blank vamp is disposed in the recess of the second die and the die members are forced together, the tip portion of the first die member will contact the blank vamp initially so that the latter will be drawn around the tip portion as the closing movement continues, until ultimately, the entire toe portion will be clamped tightly between the die members.

In the drawing:

Fig. 1 is an end elevational view of a die set constructed in accordance with the teachings of the present invention;

Fig. 2 is a front elevational view of the die set;

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Fig. 3 is an end elevational view of the die set, as viewed from the right side of Fig. 2;

Figs. 4-6 are front elevational views of the die set shown mounted on a machine for forcing the die members together and illustrating the sequence of the shaping operation progressively from Figs. 4 to 6, the bed die being shown partially in section to better illustrate the construction; and

Fig. 7 is a plan view of a shaped vamp.

Referring to the drawing more particularly by reference numerals, 10 indicates generally a set of die members embodying the teachings of the present invention which are used preferably with a machine of the type described in my copending application Serial No. 123,951, filed October 27, 1949. This machine includes a base (not shown) on which is mounted a die supporting block 12 (Figs. 4-6). The upper surface 14 of the supporting block 12 is flat and contains two spaced cylindrical openings 18 which are particularly positioned for a purpose to appear.

Also mounted on the machine base is a ram member 20 (Figs. 4-6) which is disposed above the supporting block 12 and adapted to be reciprocated relative to it. The bottom of the ram member 20 contains a vertically extending slot 22 and a pair of aligned openings 24 which extend transversely through the two flange portions formed by the slot 22.

As shown more particularly in Figs. 1-3, the die set 10 includes a bed die 26 and a plunger die 28.

The bed die 26 contains a bottom portion 30 which may be of metal or the like, and which includes a horizontal flat bottom surface 32. Pins 34 depend from this surface 32 and are positioned and shaped to fit into the openings 18 contained in the supporting block 12. A box-like casing 36 of metal or the like is fastened at an angle to the top of the bottom portion 30. As shown more particularly in Figs. 1 and 3, the top of the casing is open, and the upper end wall contains an arcuate groove 38. Disposed in the casing 36 is a resilient cushion type die element 40 which is preferably made of rubber so that it does not injure the outer surface of the material being shaped, and which contains a recess 42 shaped like the desired shape of the toe portion of a shoe vamp. It will be noted that the die element 40 is disposed at an angle to the bottom portion 30 so that when mounted on the die supporting block 12 (Figs. 4-6), as will more fully appear, it will be disposed at an angle to the direction of movement of the ram member 20.

The plunger die 28 has an upstanding flat

tongue 44 which is of a thickness to slidably fit in the slot 22. The tongue 44 contains an opening 46 adjacent its center which may be aligned with the openings 24 so that a retaining pin 48 can be inserted through them to hold the plunger die 28 on the ram member 20. Fastened to the bottom of the tongue 44 is a rigid pressure element 50 which includes a tip portion 51, and which has a shape complementary to the recess 42 but slightly smaller so that a shoe vamp can be received between them. It will be noted that the pressure element 50 is also disposed at an angle to the tongue 44 and to the direction of movement of the ram member 20, so that the various portions of its bottom surface are substantially equi-distant from the complementary portions of the recess 42.

The pressure element 50 preferably contains a heater member 52 which can be connected to a source of electric power by means of wires 54.

Operation

As shown in Figs. 4-6, the bed die 26 is positioned on the supporting block 12 with the pins 34 disposed in the openings 18 so that the toe portion of the cushion type die element 40 is on the operator's left and the bottom of the recess 42 extends upwardly to the right of the operator. The plunger die 28 is mounted on the ram member 20 by means of the retaining pin 48 so that the pressure element 50 extends crosswise of the operator and upwardly from the operator's left toward his right.

As shown in Fig. 4, a blank shoe vamp V, cut to the desired size, is positioned on the die element 40, and hand pressed partially into the recess 42. It will be noted that in this position the vamp V is spaced upwardly from the toe portion of the recess 42. Positioning the die members sidewise enables the operator to conveniently slip the work between the dies and to have maximum vision of the work during the cycle of operation, as well as facilitating the shaping of the vamp, as will more fully appear.

When the plunger die 28 is lowered, the tip portion 51 of the pressure element 50 will be the first to contact the vamp V, as shown in Fig. 5. As the downward movement of the plunger die 28 continues under pressure, the vamp V will be pressed into the recess 42 with a sort of sliding or wiping action between the vamp V and the surface of the recess 42. This wiping action is in directions which are away from the toe portion of the vamp V due to the fact that the die members are disposed at an angle to the direction of movement of the ram member 20. This tends to draw the material about the tip portion 51 of the pressure element 50.

Heat is preferably applied to the plunger die 28, which is of metal, instead of to the bed die 26, because the die element 40, being made of rubber, is a poor transmitter of heat.

After heat and pressure have been applied for a necessary length of time (Fig. 6), the ram member 20 is withdrawn, and the vamp V will be found to have been preformed to a shape such as is indicated in Fig. 7.

When the present device is used with vamps which have previously been crimped on a Kamborian crimping machine, it shapes them by rounding the top part and smoothes out the wrinkles caused by the shrinking and crimping operation.

Thus, it is apparent that there has been provided a novel die set and method of shaping vamps which fulfill all of the objects and advan-

tages sought therefor. The toe portion of the blank vamp is shaped in a single operation, and the drawing of the material around the tip portion of the rigid die member results in a sharper, more permanently shaped vamp member.

It is to be understood that the foregoing description and the accompanying drawing have been given only by way of illustration and example, and that changes and alterations in the present disclosure, which will be readily apparent to one skilled in the art, are contemplated as within the scope of the present invention, which is limited only by the claims which follow.

What is claimed is:

1. In a die set for use in forming blank shoe vamps to shape the toe portions thereof, a first die having a concave recess corresponding to the shape of the toe of the vamp, said recess having lateral and front sides disposed at substantially right angles to the side corresponding to the top side of the toe portion; a second convex die having a shape complementary to said recess; the two dies being adapted to be mounted on a machine having a bed and a ram movable in a line toward and away from the bed; and means on the first die to dispose it at an angle to the line of movement of the ram such that the lateral and front sides of the first die are more nearly parallel to said line of movement than said side corresponding to the top side of said toe portion to assure pressure at an angle to all sides of the vamp with the pressure on the front and lateral sides of the vamp being of a stroking nature whereas the pressure on the top side is relatively more normal, and means on the second die to dispose it at a corresponding angle to that of said first die member.

2. In a die set for use in forming blank shoe vamps to shape the toe portions thereof, a first die having a concave recess corresponding to the shape of the toe of the vamp, said recess having lateral and front sides disposed at substantially right angles to the side corresponding to the top side of the toe portion, and said die being made of resilient material; a second convex die having a shape complementary to said recess; the two dies being adapted to be mounted on a machine having a bed and a ram movable in a line toward and away from the bed; and means on the first die to dispose it at an angle to the line of movement of the ram such that the lateral and front sides of the first die are more nearly parallel to said line of movement than said side corresponding to the top side of said toe portion to assure pressure at an angle to all sides of the vamp with the pressure on the front and lateral sides of the vamp being of a stroking nature whereas the pressure on the top side is relatively more normal, and means on the second die to dispose it on the ram at a corresponding angle to that of said first die member.

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