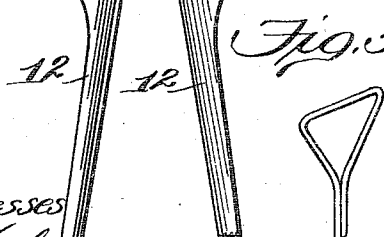
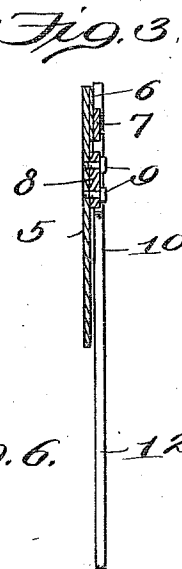
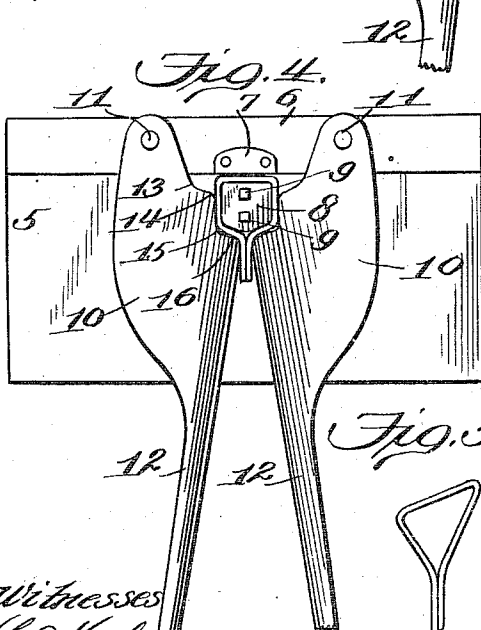
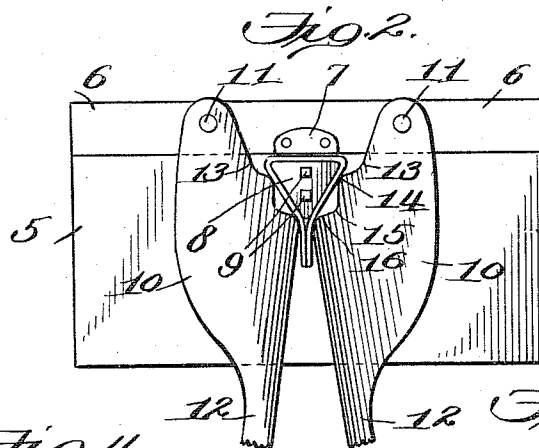
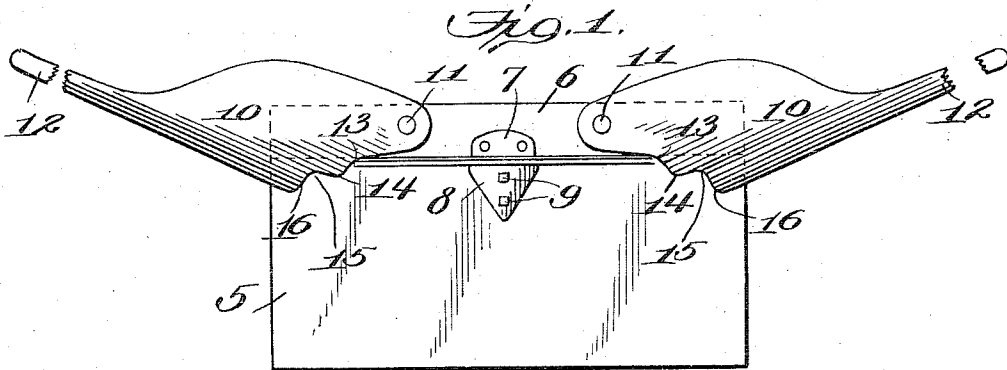


J. H. KIMBELL.
BENDING MACHINE.
APPLICATION FILED MAR. 22, 1910.

973,279.

Patented Oct. 18, 1910.



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UNITED STATES PATENT OFFICE.

JOHN HARRIESS KIMBELL, OF WHITESBURG, GEORGIA.

BENDING-MACHINE.

973,279.

Specification of Letters Patent.

Patented Oct. 18, 1910.

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To all whom it may concern:

Be it known that I, JOHN H. KIMBELL, a citizen of the United States, residing at Whitesburg, in the county of Carroll and State of Georgia, have invented new and useful Improvements in Bending-Machines, of which the following is a specification.

This invention relates to bending machines, and particularly that class of machines adapted for bending the hooks or trace carriers for the back bands of harness, and the primary object of the same is to provide a simplified organization of cooperating elements for producing different forms of back band hooks or carriers from rods or heavy wire stock.

The invention consists essentially of a support or body carrying an anvil or shaper and having bending members or jaws disposed on opposite sides of the anvil and provided with edge portions shaped to cooperate with the anvil to produce the form of hook or carrier desired in such condition that it may be expeditiously finished. The bending members or jaws are so constructed that they will efficiently cooperate with anvils or shapers of different contours, thus rendering it possible by simple change of the anvil or shaper with the same pair of bending members or jaws to produce back band hooks or carriers of different forms.

In the drawing: Figure 1 is a front elevation of a bending machine embodying the features of the invention and showing the bending members or jaws open and in engagement with the stock. Fig. 2 is a similar view showing the bending members or jaws closed and the stock as having been bent thereby around the anvil. Fig. 3 is a transverse vertical section through the center of the machine as shown by Fig. 2, the bent stock having been removed. Fig. 4 is a view similar to Fig. 2 showing the use of a different form of anvil and the formation of a correspondingly different contoured carrier or hook. Figs. 5 and 6 illustrate the angular forms of back band hooks or trace carriers which are shaped in blank by the mechanism.

The numeral 5 designates the support or body which may be of any suitable dimensions and material, metal being preferably used in its construction. Along the upper edge a thin strip or bar 6 is secured and on the center of said bar is fastened a guard 7 having its lower edge coincident with the

adjacent portion of the lower edge of the said strip or bar 6.

On the center of the face of the support or body 5 below the guard 7, an anvil 8 is removably applied by means of suitable fastenings, such as bolts 9. This anvil constitutes a shaper, and as shown by Figs. 1 and 2 it is of inverted triangular form, and as illustrated by Fig. 4 is approximately rectangular or square. The upper edge of the anvil 8 is spaced from the lower edge of the guard 7 a sufficient distance to permit the ready insertion of the stock to be bent, and when it is desired to substitute one form of anvil for another it is only necessary to remove the fastenings 9 and replace one anvil by another and secure it with the same fastenings. It is proposed to equip the machine or bending device with a number of anvils of different shapes so that the blank that is formed by bending the same around the anvil may be varied in contour.

At suitable points on opposite sides of the vertical center of the support or body are bending members or jaws 10 fulcrumed at their upper ends above the guard 7 and anvil 8, as at 11, and having suitable handles or grips 12 for manipulating the same. The bending members or jaws 10 are applied against the outer surface of the strip or bar 6 and are thereby prevented from having frictional binding on the face of the support or body 5 below the anvil and the said strip or bar. The upper portions of the inner edges of the bending members or jaws are constructed to render them effective in performing the bending operation in relation to the anvil and to insure bending of the stock without buckling or irregular movement to produce the shape of back band hook, trace carrier or analogous device that may be desired to be formed. Adjacent to the upper end of each jaw a concaved recess 13 is formed and merges into a convex projection 14, the latter continuing into an abrupt concaved recess 15 which in turn merges into an angular wall 16 running to the inner edge of the member or jaw. The recess 13 of each jaw may be termed the initial bending medium because it starts the stock in a downward direction when the member or jaw is drawn downwardly over the support or body, the two members or jaws being drawn equally in a downward direction toward each other in the operation of the machine. The bending members or

jaws 10 have considerable width at their upper extremities to render them strong and to reinforce them adjacent to the points where the inner bending edges are constructed. This increased width of the bending members or jaws also gives weight to the latter to assist in their downward movement toward each other.

The stock to be bent is cut in lengths equal to the distance between the maximum depths of the recesses 13 when the bending members or jaws are fully open or elevated as shown by Fig. 1, and each length is inserted between the guard 7 and anvil 8 with the terminals thereof engaging about the central portions of the recesses 13. If the inverted triangular anvil 8, as shown by Figs. 1 and 2, is used, the stock is bent downwardly around the same and the ends projected in close relation below the anvil, as shown by Fig. 2, the projection 14 as well as the projection formed by the intersection of the wall 16 and the inner edge of each jaw operating to force the stock inwardly against the anvil and to draw the two ends of the stock closely together below the anvil. The opposing projections 14, when the jaws are fully closed, force the stock gradually around the upper portion of the anvil and rest against said stock at points slightly below the upper edge of the anvil, and when the stock moves over the projections 14 to and over the projections formed at the intersections of the walls 16 with the inner edges of the members or jaws 10, the latter projections assist in the inward and downward movement of the stock and insure the parallel contiguous association of the ends of the stock below the anvil. When a rectangular or square anvil is applied to the machine the operation of the bending members or jaws is practically the same as just described except that the recesses 15 come into play and receive portions of the stock and crowd the latter up against the lower extremity of the anvil on opposite sides of the center to produce the desired contour at the lower part of the body of the blank back band hook or trace carrier, as clearly shown by Fig. 4. After the blanks have been formed as shown by Figs. 1, 2 and 4 the ends are turned upwardly in hook form, as shown particularly by Fig. 6 and illustrating the inverted triangular blank in finished condition.

By means of the machine described, blanks for back band hooks or trace carriers of different forms may be expeditiously and

cheaply produced, and it will be understood that the dimensions of the several parts may be varied and the proportions modified to accommodate the production of blanks of different sizes.

What is claimed is:

1. In a machine of the class described, the combination of a support, an anvil secured on the support and consisting of a single flat member having an upper horizontally straight edge and unbroken side edges, a guard disposed over the anvil and spaced from the latter, the lower edge of the guard being parallel with the upper edge of the anvil, and inwardly movable bending members fulcrumed on the support above the guard and anvil and having their upper extremities increased in width and their inner edge portions at a short distance from the fulcrumed extremities alternately formed with recesses and projections to adapt them for bending stock into different shapes, the stock prior to the bending being supported at an intermediate point on the anvil and the ends thereof engaged by a portion of the recesses of the bending members.

2. In a machine of the class described, the combination of a support having a strip secured along one edge thereof, an anvil secured on the support below the strip and having an upper edge parallel with the lower edge of said strip, a guard over the anvil and spaced from the latter, the guard being secured on the strip directly over the anvil and having its lower edge parallel with the upper edge of the said anvil, the anvil having unbroken side edge portions, and bending members fulcrumed on the strip above the anvil and guard and provided with alternately arranged recesses and projections in a portion of the inner edges adjacent to the fulcrumed extremities, the said bending members being also disposed at equal distances on opposite sides of the center of the support and of the anvil and held elevated during the bending operation by the ends of the stock engaging a portion of the recesses thereof and also immediately bearing on the upper edge of the anvil, the anvil being freely removable and replaceable.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN HARRIESS KIMBELL.

Witnesses:

H. GRADY JONES,
JAMES WHITE.