

No. 753,801.

PATENTED MAR. 1, 1904.

J. F. MARTIN.  
BENDING MACHINE.  
APPLICATION FILED OCT. 28, 1903.

NO MODEL.

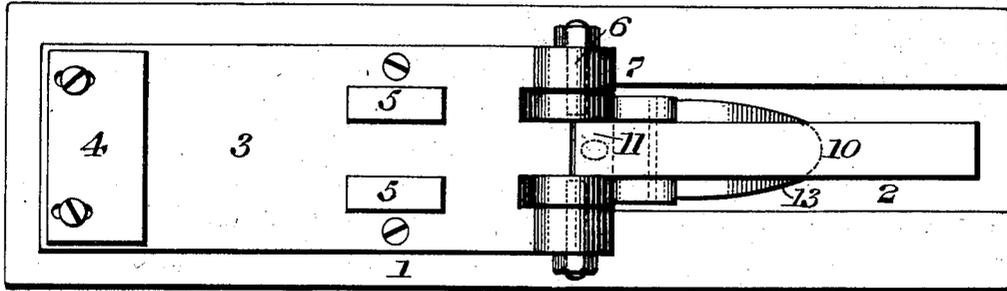


Fig. 1.

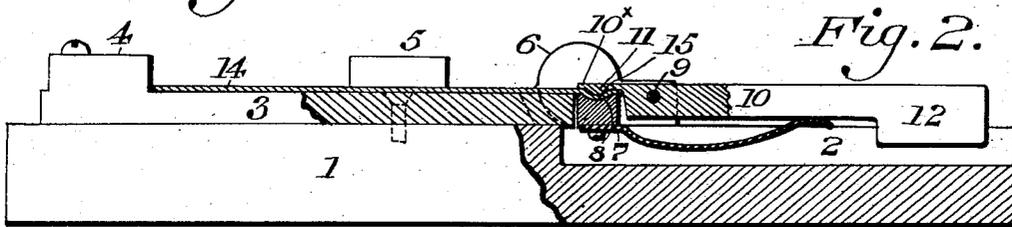


Fig. 2.

Fig. 3.

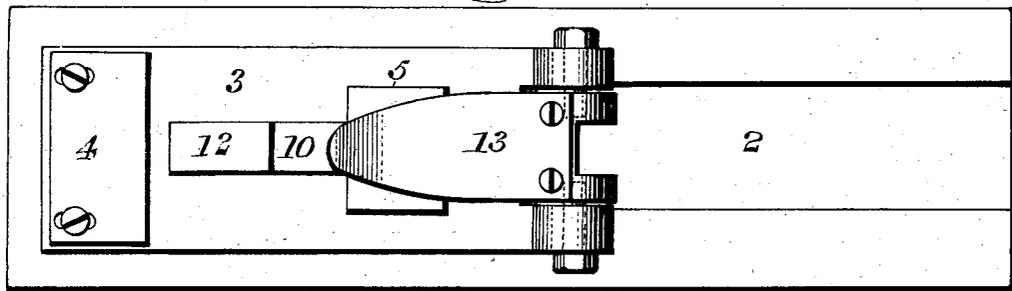


Fig. 4.

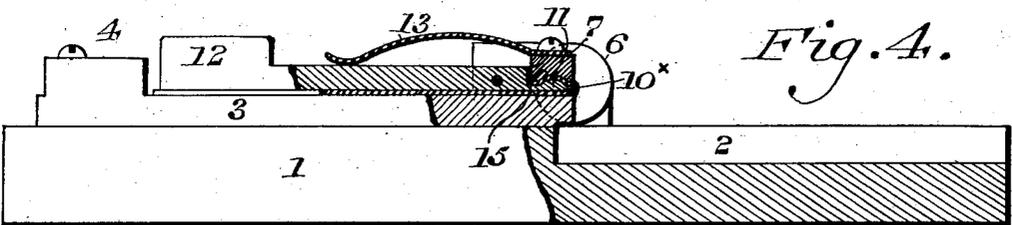
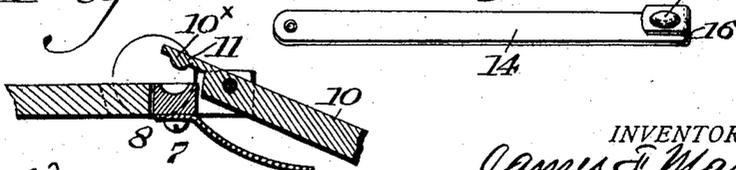


Fig. 5

Fig. 6



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## BENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 753,801, dated March 1, 1904.

Application filed October 28, 1903. Serial No. 178,865. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES F. MARTIN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Bending - Machines, of which the following is a specification.

My invention relates to bending-machines, and particularly to small hand-machines in which is operated on a piece of horn or like semiplastic material when it is desired to change the form of a portion and at the same time to bend it. It consists of means to this end.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

In the drawings, Figures 1 and 3 are top plan views of my device in different positions. Fig. 2 and 4 represent in elevation and partly in vertical section the same device in the forms shown, respectively, in Figs. 1 and 3. Fig. 5 is a fragmentary view of a portion of the device shown in a still different position. Fig. 6 represents in perspective the article operated on in its completed condition.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates a base provided with a depressed portion 2 at one end. 3 designates a block thereon having at one end an adjustable stop 4 and also provided with a pair of guide-pieces 5 5. Pivotaly attached at 6 to the block 3 is a portion 7, in which is formed a depression 8. Pivoted at 9 to the portion 7 is a lever 10, provided at one end with a projection 11, adapted to enter the recess 8, and at the other end with a weight 12. A spring 13, attached to the portion 7, normally holds the lever 10 in the position shown in Figs. 2 and 4 of the drawings.

The operation of the device is as follows: A strip of horn or like material 14 is placed on the block 3 between the guides 5, with one end abutting against the stop 4 and the other between the portion 7 and the lever 10, which is depressed for the purpose of the inserting of the strip, as shown in Fig. 5. When the depressions and projections on the portions 7

and 10 are relatively shallow, the strip may be forced between them, the spring 13 yielding sufficiently for that purpose. It is understood that this end of the horn strip 14 has been heated sufficiently to render it semiplastic. By means of the lever 10 the portion 7 is then rotated on its pivot 6, thereby bending the strip of horn over the tongue 10<sup>x</sup> of the lever. At the same time a depression 15 has been made in the end of the strip by its engagement between the portions 8 and 11 when the lever 10 is moved to the position shown in Figs. 3 and 4. It is left there for a few moments until the horn cools and resumes its hard and resilient condition. The weight 12 operates to hold the lever 10 in position while the spring 13 is sufficiently strong to hold the projection 11 engaged in the recess 8, as shown in Fig. 2. After a sufficient time has been allowed for cooling the lever 10 is returned to the position shown in Figs. 1 and 2 and then sufficiently lowered, as shown in Fig. 5, to permit the removal of the strip 14, which then has received the depression 15 and has been bent at 16, as clearly shown in Fig. 6.

It is obvious that the particular form of depression or bending at the end of the strip 14 forms no essential part of my invention. By appropriate changes in the form of the lever and in the angle at which it is supported at either end of its movement various distortions of the form of the end of the strip 14 and bends at various angles may be made.

It is evident that various changes may be made by those skilled in the art which will come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A bending-machine comprising means for distorting the end of a strip and at the same time bending such end over upon itself.

2. A bending-machine comprising a block, a pivoted portion attached thereto and a lever attached to said pivoted portion, said lever and said pivoted portion having coacting dis-

torting-surfaces adapted to receive the end of a strip therebetween, said lever and said pivoted portion being adapted to simultaneous pivotal movement whereby the end of such strip is bent over upon itself.

3. In a bending-machine, a block, a portion pivoted thereto, a lever pivotally attached to said pivoted portion, said pivoted portion and said lever having coacting distorting-surfaces adapted to receive the end of a strip therebetween and a spring acting upon said lever to maintain said distorting-surfaces in their operative position, said lever and said pivoted portion being adapted to simultaneous movement whereby the end of such strip is bent over upon itself.

4. A bending-machine comprising means for receiving the end of a strip, and means cooperating therewith for distorting said end said last-named means being invertible to bend said end.

5. A bending-machine comprising means to receive and hold the end of a strip, and invertible pivoted means cooperating therewith

for simultaneously distorting and bending the end of said strip.

6. A bending-machine comprising means for receiving the end of a strip, and means constructed to cooperate therewith to be moved to first distort the end of the strip, and then, by continued movement, to bend said end adjacent its distorted portion.

7. In a bending-machine, male and female members mounted for cooperation, with one member stationary to distort the end of a strip, and then both movable together to bend the same.

8. In a bending-machine, a block, a pivoted portion thereon, and a lever pivoted on said portion and mounted for movement during a portion of its travel independent of said portion, and then adapted to move said portion with it in its continued movement.

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Witnesses:

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