

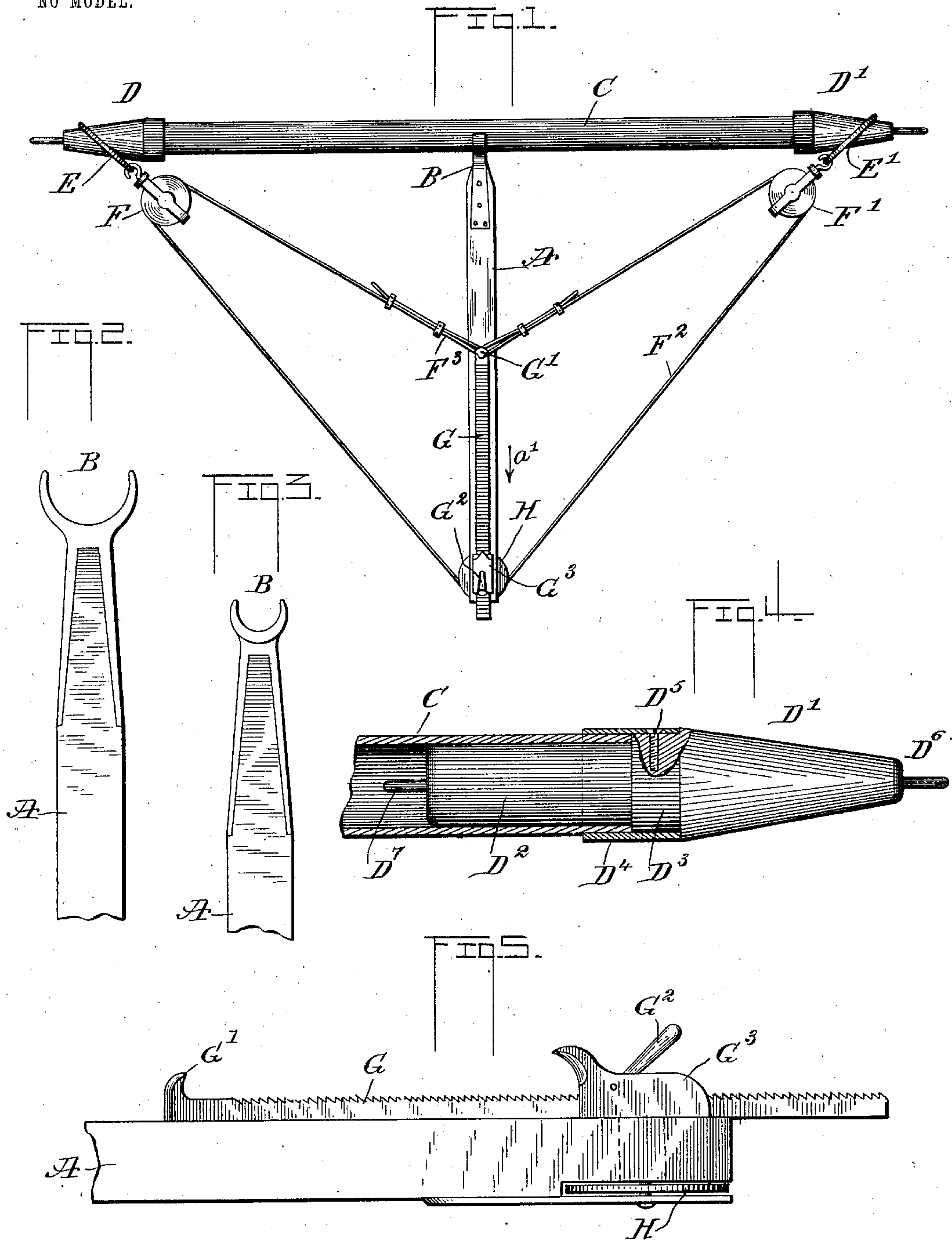
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PATENTED MAR. 1, 1904.

T. DAMM.  
BENDING DEVICE.

APPLICATION FILED NOV. 14, 1903.

NO MODEL.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## BENDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 753,553, dated March 1, 1904.

Application filed November 14, 1903. Serial No. 181,186. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE DAMM, a citizen of the United States, and a resident of Warren, in the county of Warren and State of Pennsylvania, have invented a new and Improved Bending Device, of which the following is a full, clear, and exact description.

The invention relates to bending metal while in a cold state; and its object is to provide a new and improved bending device more especially designed for bending wrought-iron and steel pipes, such as are used for conveying gas or fluids between distant points, the bending device being portable and easily operated, so that the pipe or other article can be readily bent along the route of the pipe-line.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement as applied. Fig. 2 is an enlarged side elevation of the supporting-fork for the pipe. Fig. 3 is a like view of the same as arranged for a smaller pipe. Fig. 4 is an enlarged sectional side elevation of one end of the pipe and the plug removably held therein, and Fig. 5 is an enlarged side elevation of the jack on the beam.

A beam or post A of suitable length and strength is provided at one end with a fork B for receiving the portion of the pipe C at which the bend is to be made, and in the outer ends of the said pipe C are removably secured conical plugs D D', engaged by loops or rings E E', for supporting sheaves F F', over which passes a cable or rope F<sup>2</sup>, formed at its ends into loops F<sup>3</sup>, adapted to hook onto a horn G' on a rack G, mounted to slide lengthwise on the beam or post A. The rack G is adapted to be moved lengthwise of the post or beam by a suitable lever device G<sup>2</sup>, held on a frame G<sup>3</sup>, secured to the end of the beam A opposite the one carrying the fork B, and on the frame G<sup>3</sup> is arranged a sheave H, around which

passes the rope or cable F<sup>2</sup>. When the several parts are in the position shown in Fig. 1 and the operator works the lever device G<sup>2</sup>, then a sliding motion is given to the rack G in the direction of the arrow a', so that the rope or cable F<sup>2</sup>, by the sheaves F and F' and rings E and E', exerts a pull on the plugs D and D' to bend the pipe C until the desired curvature is reached.

By the arrangement described it will be seen that the pipe C may be placed at any point of its length on the fork B, so as to bend the pipe at the desired point, according to the curvature in the pipe-line.

Each of the plugs D and D' is preferably of the construction more fully shown in detail in Fig. 4—that is, the plug is provided with reduced portions D<sup>2</sup> D<sup>3</sup>, of which the portion D<sup>2</sup> fits a distance into the inside of the pipe C, while the end of the latter abuts against the reduced portion D<sup>3</sup>, the diameter of which corresponds approximately to the external diameter of the pipe C. On the reduced portion D<sup>3</sup> is secured a ring D<sup>4</sup> by screws or other fastening devices D<sup>5</sup>, and the ring D<sup>4</sup> extends over a portion of the outside of the pipe C, so that the plug is securely held at the end of the pipe, and when the plug is subjected to strain then the end of the pipe is not liable to be injured, as the pipe is engaged both at the inside and outside, and hence does not lose its shape during the bending operation, as above described. The ends of the plugs D and D' are provided with handles D<sup>6</sup> D<sup>7</sup> for conveniently carrying the plugs about and inserting the same on removing the plugs from the ends of the pipes.

The fork B is of a size corresponding to that of the pipe C, so as to snugly fit against the inner half portion thereof at the point at which the pipe is to be bent.

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

1. A bending device comprising a support for engagement by the article to be bent, removable plugs for engagement with the ends of the article, a tackle for connection with the plugs, and a jack on the support, for engagement by the tackle, as set forth.

2. A bending device comprising a support,



provided at one end with a fork for engaging the article to be bent at the desired point, plugs for removable attachment to the ends of the article to be bent, rings held on the said  
5 plugs, sheaves connected with the said rings, a sheave on the said support, and a jack on the said support, connected with the rope or cable passing over the said sheaves, as set forth.

3. A bending device comprising a support  
10 having a fork at one end and carrying a sheave at the other end, plugs for removable engagement with the ends of the pipe to be bent, the said plugs being conical, rings hung on the said plugs, sheaves connected with the said rings,  
15 a cable or rope passing over the said sheaves and provided at its ends with loops, a rack mounted to slide on the said support and having a horn engaged by the said loops, and a

manually-controlled lever device held on the said support and engaging the said rack, to impart a sliding motion to the latter, as set forth. 20

4. A bending device provided with a plug for engaging the end of the pipe to be bent, the said plug being conical and having reduced portions, one of which fits into the inside of the pipe, and a ring secured on the  
25 other reduced portion and projecting beyond the same, to engage the outside of the pipe to be bent, as set forth.

In testimony whereof I have signed my name  
30 to this specification in the presence of two subscribing witnesses.

THEODORE DAMM.

Witnesses:

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