

No. 774,818.

PATENTED NOV. 15, 1904.

J. H. BARR.  
BENDING DIES.

APPLICATION FILED DEC. 5, 1903.

NO MODEL.

FIG. 1.

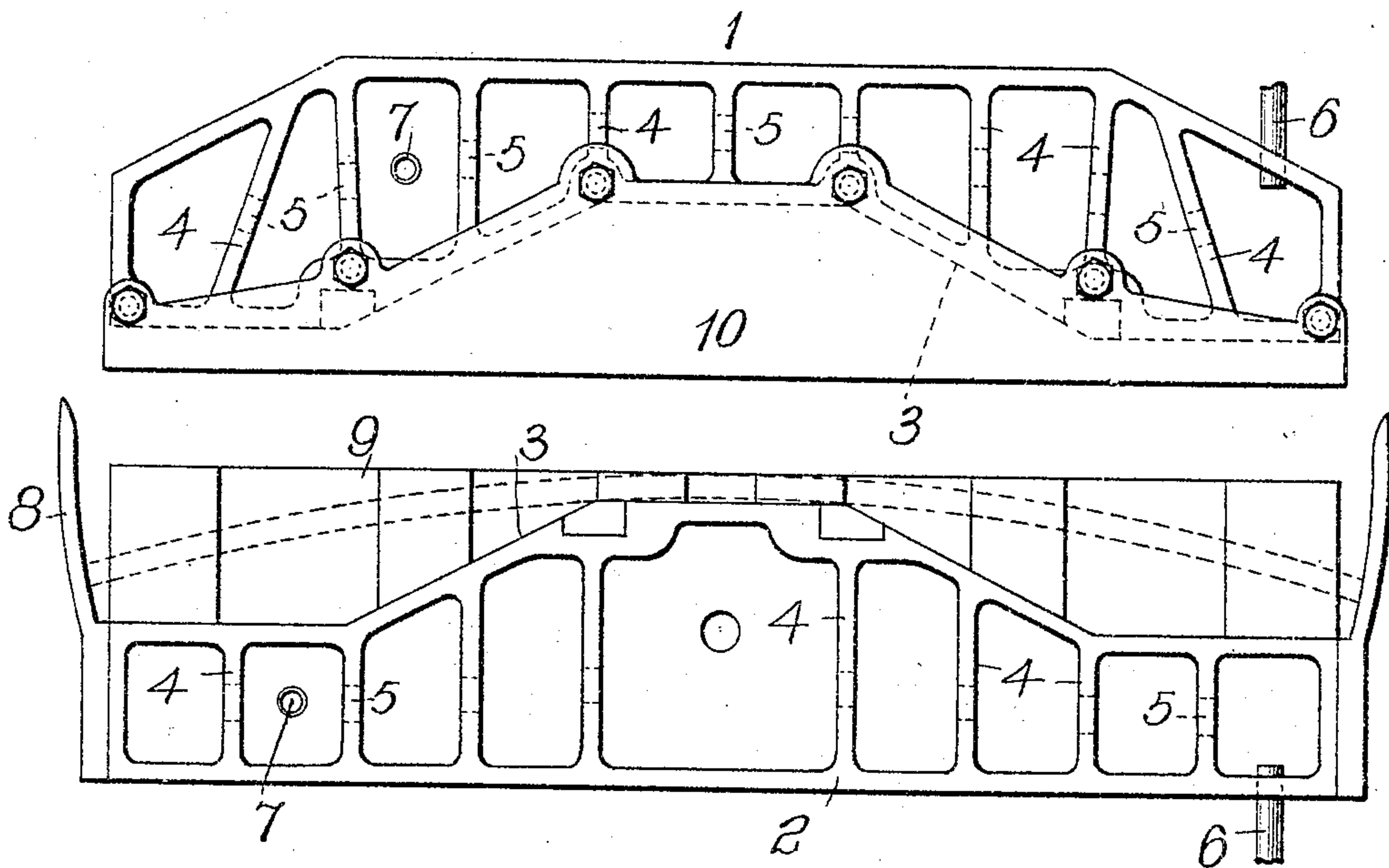
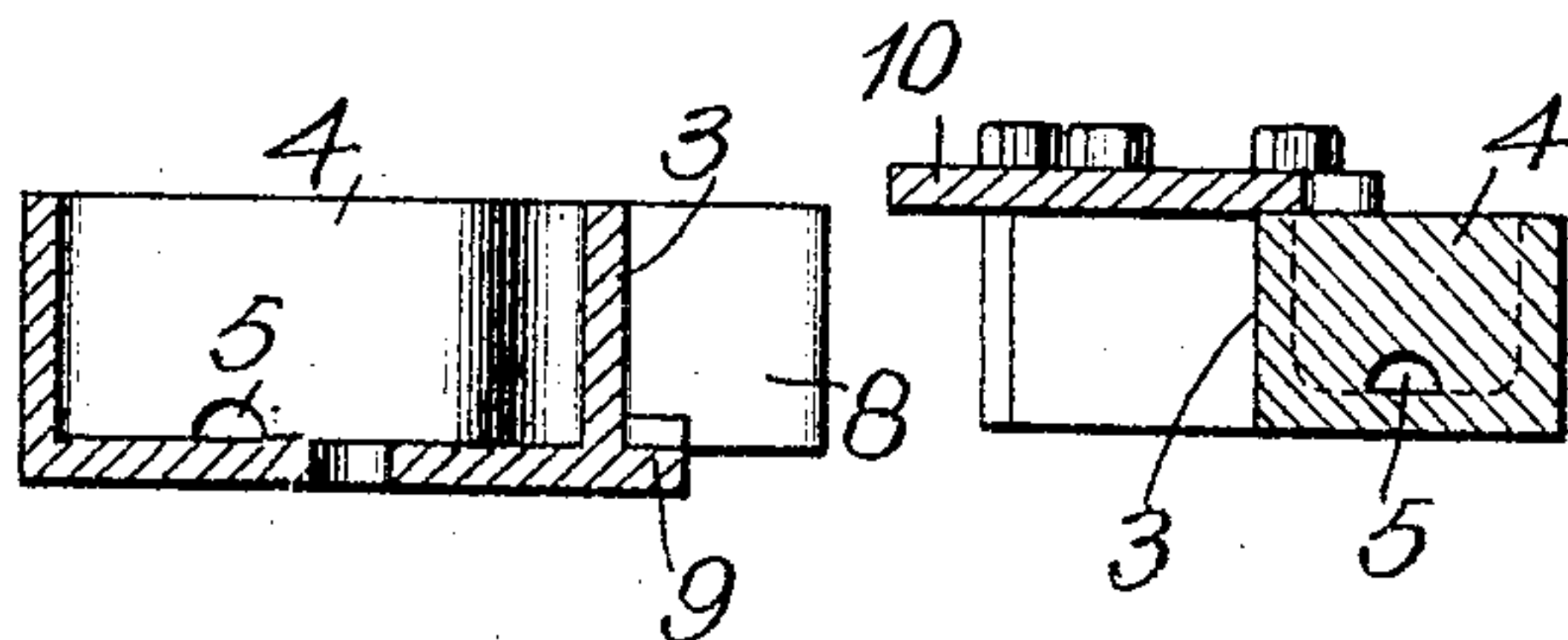


FIG. 2.



WITNESSES:

*Herbert Bradley.*  
*Fred H. Kirchner.*

INVENTOR

*John H. Barr*  
*by Christy & Christy Att'ys.*

# UNITED STATES PATENT OFFICE.

JOHN H. BARR, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO PITTSBURG FORGE AND IRON COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## BENDING-DIE.

SPECIFICATION forming part of Letters Patent No. 774,818, dated November 15, 1904.

Application filed December 5, 1903. Serial No. 183,889. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. BARR, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Bending-Dies, of which improvements the following is a specification.

The invention described herein relates to certain improvements in dies for bending arch-bars, &c., for railway-trucks, and has for its object a construction of dies whereby they are maintained at a uniform temperature during the bending of a number of bars.

It is a further object of the invention to provide for holding the blank in proper central position during the bending operation.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan of my improved dies; and Fig. 2 is a sectional elevation, the plane of section being indicated by the line II II, Fig. 1.

In the practice of my invention the dies 1 and 2 are made in the form of open-topped boxes, as shown. One wall, as 3, of each of the box-like structures is constructed to impart the desired shape or contour to the article. The necessary rigidity is given to the wall by transverse partition-walls 4. The chambers or pockets into which the dies are divided by the partitions are connected by passages 5, formed through the partitions, as shown. Water is supplied to the dies by pipes 6 and escapes through pipes 7, which are arranged vertically in one of the pockets. These pipes extend up a distance equal to the height of water desired in the dies.

The male die 2 is provided at its ends with stop-plates 8, which have their inner faces so curved that the ends of the bar to be shaped will bear against said stops during the entire bending operation, thereby preventing any longitudinal movement of the bar. Without these centering-stops the bar is liable, especially if one end is hotter than the other, to move longitudinally during the bending operation. The die 2 is provided with a supporting or plate ledge 9, on which the article is

placed, and the other die 1 is provided with a holding-plate which will pass over the upper edge of the article as the dies are moved toward each other. These two supporting and holding plates will prevent any edgewise bending of the bar and in conjunction with the stops 8 hold the bar in such manner as to insure that a series of bars will be bent uniformly. The maintenance of the dies at or approximately the same temperature is necessary to uniformity of product, as if the dies should expand or vary in length the ends of the bars would not bear on the stops and the bar could shift more or less longitudinally.

In order to prevent a rapid destruction of the dies, provision is made to form the portions most subjected to wear of hardened-steel pieces 10, which are removably inserted into recesses formed in the wall 3 of the dies. In the construction shown these hardened wearing-pieces are arranged at angles or male portions of the dies.

I claim herein as my invention—

1. Bending-dies consisting of box-like structures, the shaping-faces being formed by one of the sides of the boxes in combination with stop-plates at the ends of the male die constructed to bear on both ends of the article operated on during the bending operation, the operative or inner faces of the stop-plates being curved to correspond to the arcs described by the ends of the article during the bending operation, substantially as set forth.

2. Bending-dies consisting of box-like structures, the shaping-faces thereof being formed by the sides of the boxes, in combination with stop-plates constructed to bear on both ends of the article operated on during the bending operation, and having their operative or inner faces curved to correspond to the arcs described by the ends of the article during the bending operation, and supporting and holding plates, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOHN H. BARR.

Witnesses:

DARWIN S. WOLCOTT,  
F. E. GATHER.