(No Model.) 3 Sheets—Sheet 1.

# W. H. BUSTIN.

## DIE FOR MANUFACTURING METALLIC HARNESS SADDLE TREES.

No. 505,079. Patented Sept. 12, 1893.

Fig. 1.

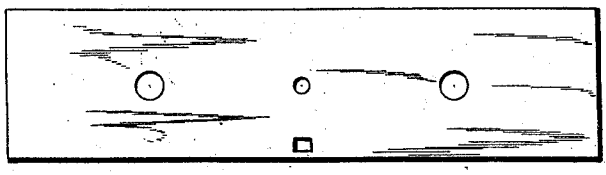


Fig. 2.

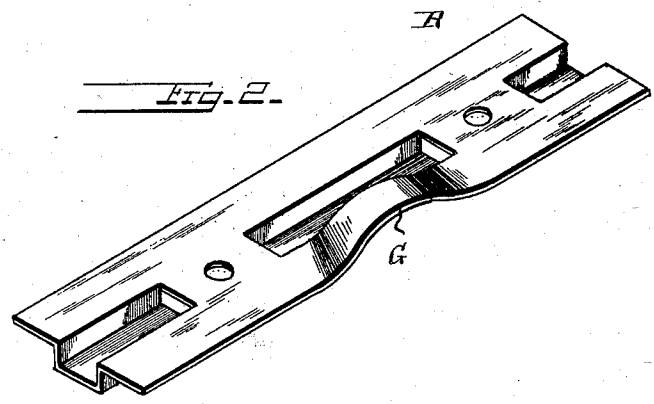


Fig. 3.

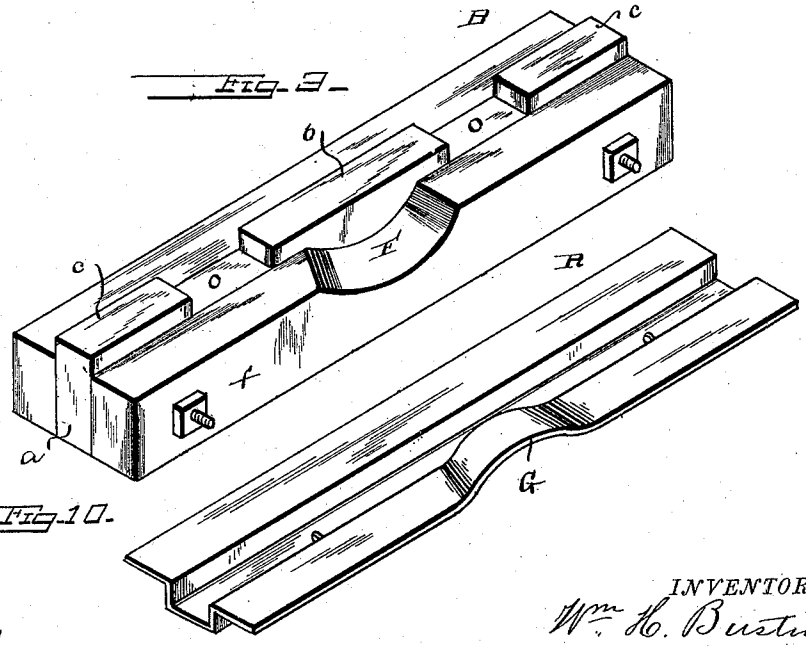


Fig. 10.

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(No Model.) 3 Sheets—Sheet 2.

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Fig. 4.

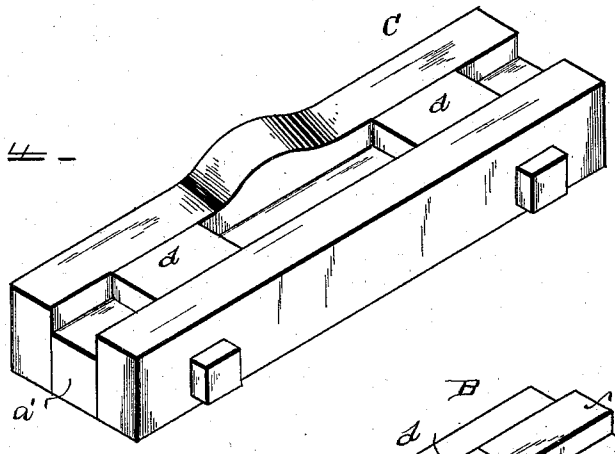



Fig. 5.

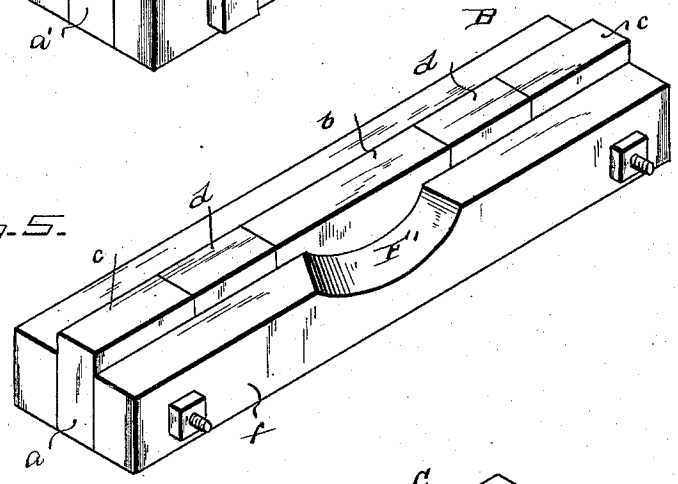
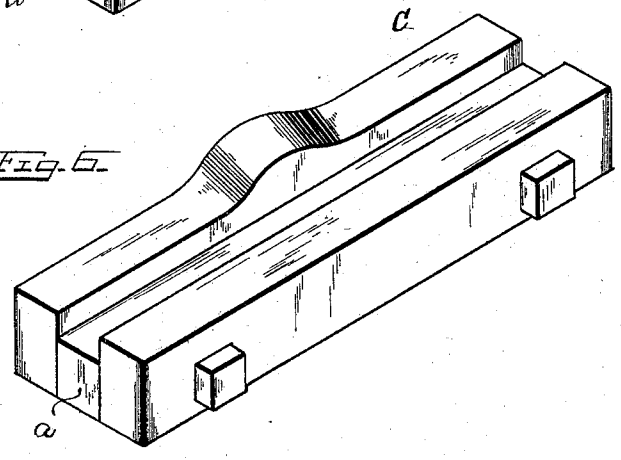



Fig. 6.

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(No Model.) 3 Sheets—Sheet 3.

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## DIE FOR MANUFACTURING METALLIC HARNESS SADDLE TREES.

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Fig. 7.

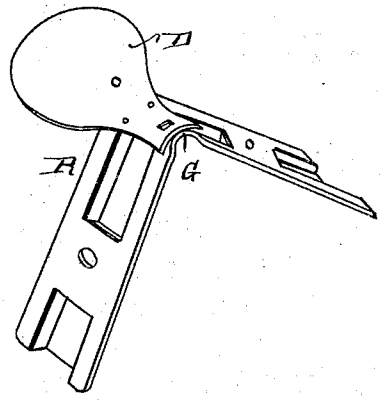



Fig. 8.

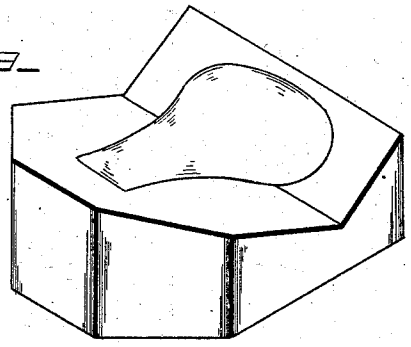



Fig. 11.

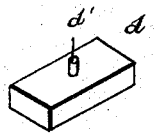
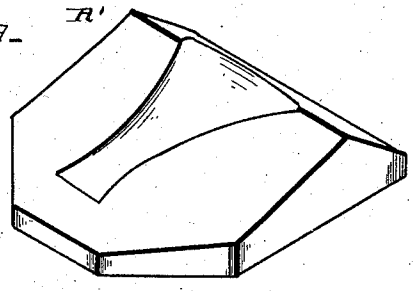



Fig. 9.

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# UNITED STATES PATENT OFFICE.

WILLIAM H. BUSTIN, OF BOSTON, MASSACHUSETTS.

## DIE FOR MANUFACTURING METALLIC HARNESS-SADDLE TREES.

SPECIFICATION forming part of Letters Patent No. 505,079, dated September 12, 1893.

Application filed December 31, 1892. Serial No. 456,852. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. BUSTIN, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Dies for the Manufacture of Metallic Harness-Saddle Trees, &c.; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a plan view of the saddle tree blank. Fig. 2 is a perspective view of the blank before being bent into its completed form. Fig. 3 is a perspective view of the male die. Fig. 4 is a perspective view of the female die. Fig. 5 is a perspective of the male die in modified form. Fig. 6 is a perspective view of the female die in modified form. Fig. 7 is a perspective view of the completed tree. Figs. 8 and 9 are perspective views of the dies for forming the seat. Fig. 10 is a perspective view of a modified form of tree before it is bent into completed form, and Fig. 11 is a detail view in perspective of one of the removable die blocks.

This invention has relation to certain new and useful improvements in the manufacture of metallic saddle trees for harness, and it consists in the novel method of manufacture, and the means employed for carrying out certain steps of the manufacture, all as hereinafter described and pointed out in the accompanying claims.

The object I have in view is to provide for the production of metallic saddle trees in a new and improved manner; and, further, to provide a pair of dies for forging or stamping out the tree, which dies will be capable of forming several different styles and forms of trees, as may be desired.

In carrying out my invention, I first take a sheet of suitable metal, from which I cut the elongated blank R, Fig. 1, of the proper form and size, and by the same operation form therein the necessary attaching perforations. This blank is then placed in the dies B and C, and is stamped or forged into the form shown in Fig. 2 as will be hereinafter fully described. After being stamped, the blank is placed between suitable angular dies and bent into the completed annular form shown in Fig. 7, and the seat D is attached thereto by screws, or other suitable means.

B designates the lower male die, and C the upper female die. Each of said dies is of oblong quadrangular form, and consists of three longitudinal pieces, a center piece *a*, and two side pieces, all held together by suitable bolts or clamps. By this construction, I provide for the removal and interchange of the center-pieces, so that a single pair of dies can be used to form various styles and sizes of trees.

The center piece *a* of the male die is formed with the angular raised central portion *b*, and with the angular raised end portions *c*, *c*. The center piece *a'* of the female die is depressed below the side portions, and at each side of the central portion has removable blocks *d*, *d*, the upper faces of which are flush with the surfaces of said side pieces. This form of center piece co-acts with the center piece *a* to form the tree blank shown in Fig. 2, having the depressed central portion, and end portions. By removing the blocks *d*, *d*, from the center piece *a'*, and placing them in the spaces between the central portion *b*, and the end portions *c*, *c*, of the center piece *a*, the tree is formed with the continuous groove or depression shown in Figs. 5 and 6. On the side piece *f* of the male die is a beveled concavity F at the central portion, the side piece *f'* of the female die having a corresponding projection F', which acts therewith to form the raised front G of the tree. By substituting a plain centerpiece in each die, a tree may be formed, as in Fig. 10, having a plane surface with the raised front G.

By the use of centerpieces of different lengths and widths, I may make the trees of different lengths and widths, and other styles of centerpieces than those illustrated may be used. After being stamped in the dies, the blank is bent by dies into the completed form, and the seat D is secured thereto by screws or rivets. Said seat is also formed from sheet metal by the dies R'.

The removable die blocks *d*, *d*, are usually held in place by pins *d'* therein, which enter sockets in the center pieces.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a pair of dies for forming metallic saddle trees, the combination with a male die having an angular raised central portion *b*, and the raised end portions *c*, *c*, of the female die having the depressed central portion, and the blanks *d*, *d*, one at each side of said depressed central portion, the upper faces of said blanks seating flush with the upper face of the side portions of said male die, and means whereby said blanks may be removed from one die and applied to the other, substantially as specified.

2. The dies for forming metallic saddle trees, said dies having the interchangeable center pieces, said center pieces having seats to receive removable die blocks, in combination with said blocks, substantially as specified.

3. A pair of dies for forming metallic saddle trees, consisting each of three pieces, clamped or bolted together, and separable, the side pieces of said dies being adapted to form the raised front of the tree, and the interchangeable center pieces the central portion of the tree, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. BUSTIN.

Witnesses:

WILLIAM E. SPEAR,

FRED E. CRAWFORD.