

(No Model.)

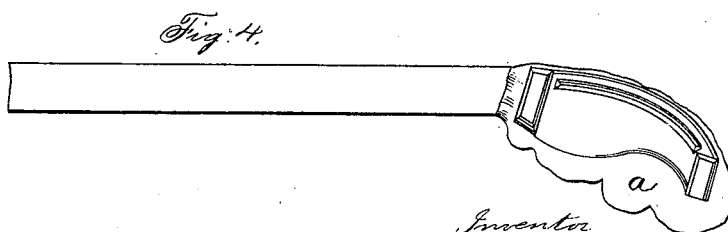
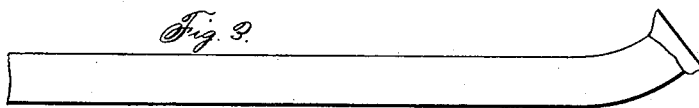
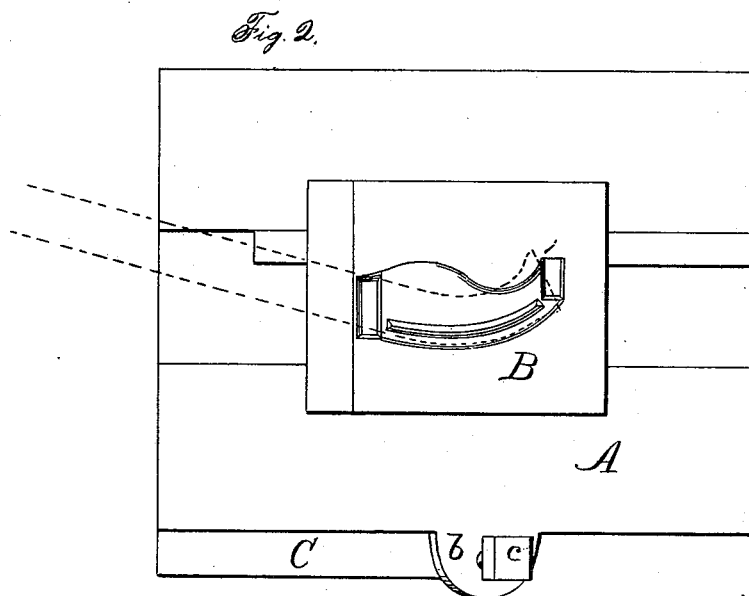
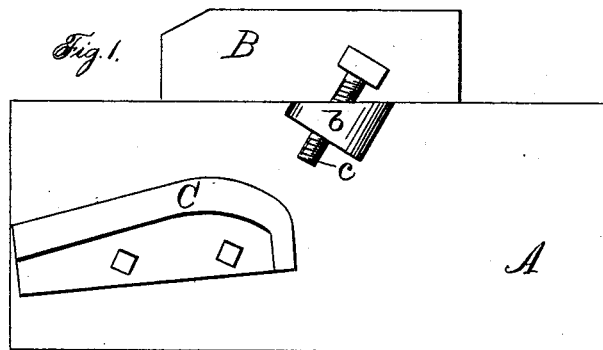
2 Sheets—Sheet 1.

W. PEARCE.

MANUFACTURE OF OX SHOES.

No. 261,254.

Patented July 18, 1882.



Witnesses
John Edwards Jr.
Chas B. Oldenham

Inventor
William Pearce.
By James Shepard atty

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Fig. 5.

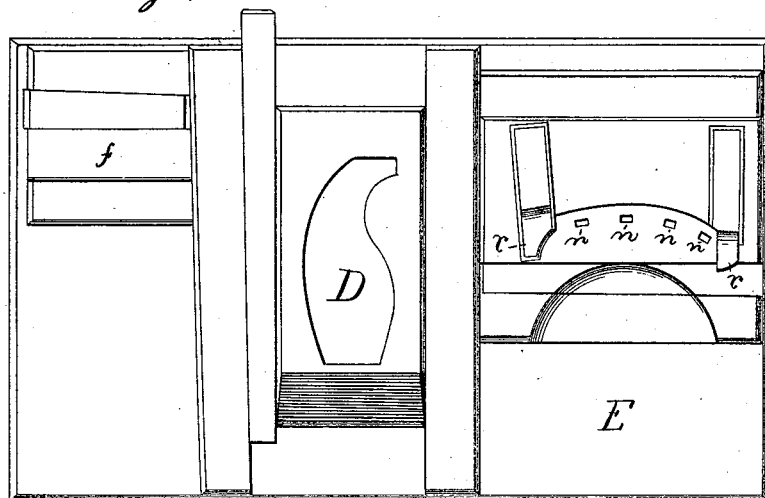
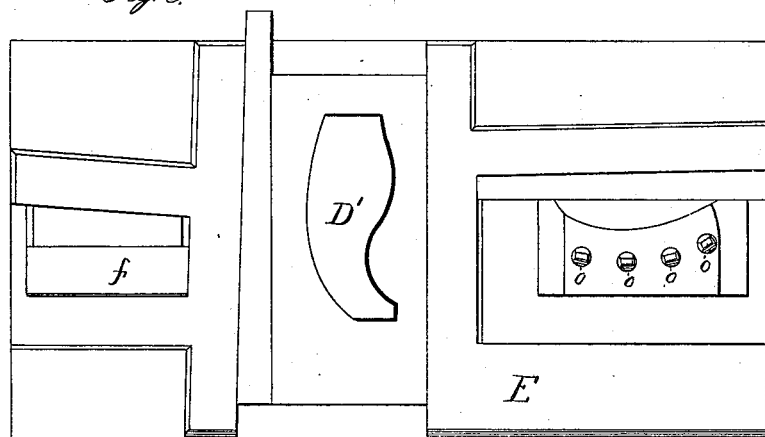


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM PEARCE, OF PLANTSVILLE, CONNECTICUT, ASSIGNOR OF TWO-THIRDS TO M. N. WOODRUFF AND N. A. BARNES, BOTH OF SOUTHTON, CONNECTICUT.

MANUFACTURE OF OX-SHOES.

SPECIFICATION forming part of Letters Patent No. 261,254, dated July 18, 1882.

Application filed February 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PEARCE, of Plantsville, in the county of Hartford and State of Connecticut, have invented certain
5 new and useful Improvements in Dies for Making Ox-Shoes, of which the following is a specification.

My invention relates to improvements in dies for manufacturing ox-shoes, in which a
10 bar of the proper size is first bent over a former into a curved form without otherwise changing the shape of the bar. Then the curved end of the bar is placed over and forced into a die to shape the shoe, which is then forced through
15 a trimming-die to remove the fin or surplus metal, and thus punch the shoe from the bar, and finally the shoe is subjected to a gang of dies and punches for punching the nail-holes at a single blow, all of which steps are performed.
20 successively by means of my dies, while the iron is hot, and at a single heat.

The objects of my invention are to produce ox-shoes with little expenditure of labor and fuel, thereby producing the same faster and
25 at less expense than heretofore. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the former and swaging-die. Fig. 2 is a plan view of the same. Fig. 3 is a side view of the bent bar
30 ready for swaging. Fig. 4 is a side view of the bar with a shoe swaged on the end of the same. Fig. 5 is a plan view of the shearing, trimming, and nail-hole dies; and Fig. 6 is an
35 under side view of the upper members thereof.

Heretofore in the manufacture of machine-forged ox-shoes it has been customary to prepare special blanks, which were reduced in size at the end which was designed to be formed
40 into the toe end of the shoe, and to sever said blanks from the bar before subjecting them to the die which swaged them into the form of a shoe. I propose to do away with all such blanks, and to swage the shoe directly from the bar
45 without first reducing the size of the bar in cross-section.

My dies are applicable to any style of ox-shoes; but I have herein illustrated them as applied to the production of a shoe of my inven-
50 tion with parallel toe and heel calks, for which I have previously obtained Letters Patent.

A designates the block or bed in which the swaging-die B is secured.

In the upper face of the die B is a depression which in form is the counterpart of the shoe intended to be produced. This die is used
55 in connection with a plain-faced drop or hammer, which I consider unnecessary to show.

Upon one side of the block A, I place a forming-block, C, the upper face of which is
60 curved in the form which it is intended to give to the bar from which the shoe is swaged. This forming-block I make attachable and detachable, so that different forming-blocks may be secured to the block A when desired to form
65 a different size or style of shoe.

Just above the end of the forming-block C a lug, *b*, is formed on the side of the block A, through which an adjusting-screw, *c*, passes.

I select a flat bar of the proper size and bring
70 it to the proper heat, and then place the end over the forming-block C and under the adjusting-screw *c*, when the free end of the bar is depressed and the other end bent edgewise to conform to the shape of the forming-block,
75 substantially as shown in Fig. 3. The screw *c* may be adjusted to accommodate bars of different widths, and also to slightly vary the curve at the end of the bar, by letting it up a little away from the face of the forming-block.
80 This screw forms an adjustable mechanism for holding the end of the bar while it is being bent. The bar so bent is then placed over the die B, substantially as indicated by broken lines in Fig. 2, and the plain-faced hammer
85 strikes the bar to force it into the depression in the die, the surplus metal being forced outward and left in the form of a fin, *a*. The bar as it appears when taken from this swaging-die is shown in Fig. 4. The curved bar is not
90 wide enough to cover the die, and its end need not be placed thereon far enough to cover the toe-depression, because when the iron is struck it is drawn out endwise and forced sidewise, so as to fill the die, even though the end of the bar
95 as placed thereon may fall back about half an inch from the toe end of said die. The heading-die B is beveled off upon its upper front corner from near the depression in order to prevent the bar from being struck by said die for any great
100 distance outside of the depression. The front corner of the trimming-die D is beveled in like

manner. The bar, with the shoe swaged thereon, as shown in Fig. 4, is next placed over the trimming-die D, which is the female member of a cutting-die whose contour is substantially the same as that of the shoe and the depression in the die B in which the shoe was formed. Said die D and its punch D' are designed for use in an ordinary power-press, and when the bar, with the shoe swaged thereon, is properly seated over said die the punch is caused to descend and force the shoe through said die, thereby punching it from the bar. If any portion of the fin *a* still remains on the bar it is placed between the shears or cutters *ff* (which are of ordinary form) and cut off by another motion of the press, when the bar is ready to be placed in the fire again for reheating. The shoe which has been passed through the trimming-die is then picked up with a pair of tongs, and the nail-holes are punched at one blow by subjecting the shoe to the gang of dies and punches *nnnn* and *oooo* and giving the press another motion.

By swaging the shoe and punching it from the bar it can be handled much more rapidly and conveniently than could be the case if previously severed blanks were used which had to be picked up with the tongs for such operation, and therefore I am enabled to perform all of the foregoing operations to produce a shoe while the iron is hot and by a single heat.

The cutters *ff*, dies and punches D D' *nn*

nnoooo are all mounted upon the die-blocks E E, so as to secure them all in one and the same press, which is conveniently located with reference to the bending and swaging apparatus. The cutters *ff* can be used to cut off the bar at any time or at any desired point.

The punches *oooo* I set in a punch-box for convenience of making and repairing the same.

The take-offs for the dies *nnnn* are shown at *rr*, Fig. 5.

I claim as my invention—

1. The block A, having the swaging-die B upon its upper side, the attachable and detachable forming-block C, and the confining lug and screw *bc* upon one of its vertical sides, substantially as described, and for the purpose specified.

2. The series of dies for forming ox-shoes, consisting of the die-block A, swaging-die B, and former C, secured thereto, and the die-blocks E E, having the cutters *ff* and dies and punches D D' *nnnnoooo*, substantially as described, and for the purpose specified.

3. The die-blocks E E, having the cutters *ff* and dies and punches D D' *nnnnoooo*, substantially as described, and for the purpose specified.

WILLIAM PEARCE.

Witnesses:

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W. M. HOLCOMB.