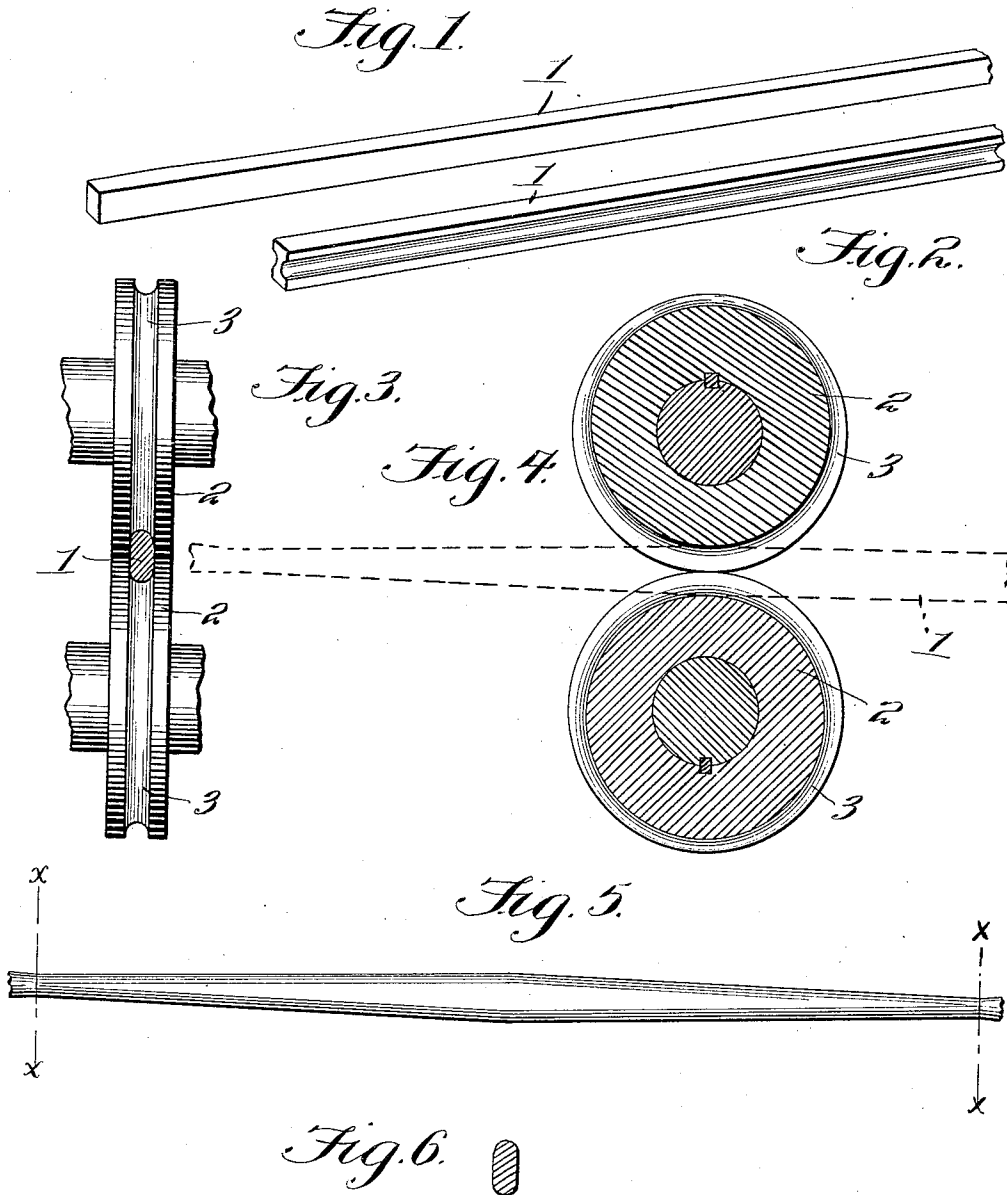


H. C. OSTERBIND.
 PROCESS FOR PRODUCING BRAKE SHOE KEYS.
 APPLICATION FILED AUG. 21, 1912.

1,065,267.

Patented June 17, 1913.

2 SHEETS-SHEET 1.



Witnesses

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Inventor

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By *Victor J. Evans*,

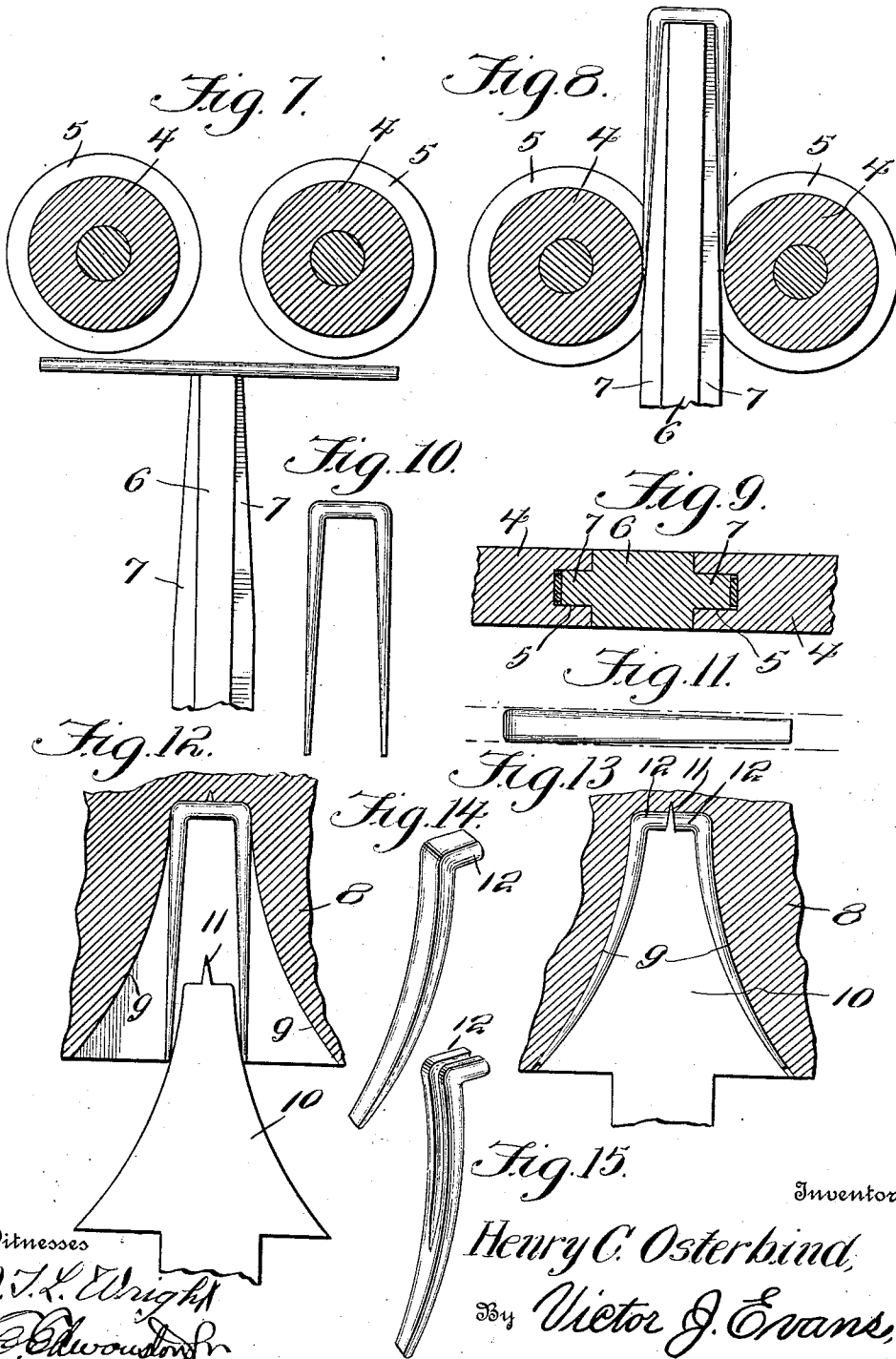
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UNITED STATES PATENT OFFICE.

HENRY C. OSTERBIND, OF RICHMOND, VIRGINIA.

PROCESS FOR PRODUCING BRAKE-SHOE KEYS.

1,065,267.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed August 21, 1912. Serial No. 716,248.

To all whom it may concern:

Be it known that I, HENRY CARTER OSTERBIND, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented new and useful Improvements in Processes for Producing Brake-Shoe Keys, of which the following is a specification.

This invention relates to processes for producing brake shoe keys and the object of the invention is to construct these keys cheaply and expeditiously.

Heretofore, the keys have been made by hammering the keys with a taper both laterally and longitudinally after they have been severed into required lengths. This operation was not only a tedious one but the keys were not uniform in size or taper.

It is the object of this invention to avoid the difficulties common in previous processes of producing these keys and, broadly speaking, consists in constructing the keys in duplicate from straight lengths of bar steel or iron by first tapering the bar longitudinally toward both ends, then forming the bar into staple form, and tapering the ends or legs longitudinally and at right angles to the taper first given and finally curving the legs to conform to the brake shoe and simultaneously severing the staple in the center so as to produce two independent wedges of corresponding outline.

In the drawings, which form a part of this invention, Figure 1 is a perspective view of the bar used in producing the keys. Fig. 2 is a similar view of a modified form of bar. Fig. 3 is an end view of the bar between the shaping rolls. Fig. 4 is a central vertical section through Fig. 3. Fig. 5 is a detail elevation of the bar after being formed. Fig. 6 is a sectional view of the same. Figs. 7 and 8 are plan views showing the manner of bending the bar into staple form and tapering the ends thereof. Fig. 9 is a vertical sectional view through Fig. 8. Fig. 10 is a side elevation of the staple formed. Fig. 11 is a side elevation of the same. Figs. 12 and 13 are views showing the manner of curving the legs of the staple and severing the said staple into two parts. Fig. 14 is a perspective view of a staple formed from the bar, as shown in Fig. 1. Fig. 15 is a similar view of a staple formed from the bar shown in Fig. 2.

In carrying out this process, I take a length of bar 1 which is rectangular in cross

section and pass the same through forming rolls 2 which are provided with eccentric grooves 3 rounded in cross section so as to form a rod with curved upper and lower edges, as shown in Figs. 3 and 6. The grooves 3 being of greater depth at one position upon the roll than at the opposite position and being caused to travel at equal speeds in any suitable manner produce a rod such as is shown in Fig. 5 from which separate lengths may be cut upon the lines $x-x$ so as to obtain staple lengths tapered from the center toward both ends. In order to form this rod into staple formation, there is provided separated die rollers 4 having grooves 5 formed in their peripheries. The rod or strip is placed with one of its sides against the base or bottom of the grooves 5 of each roller and with its ends extending equal distance on opposite sides of a center point between said rollers. A suitable plunger is then engaged with the center of the strip or bar and the same is forced between the rollers so as to produce the staple, as shown in Fig. 8. The plunger in this instance is shown to be a straight bar of steel or other similar material 6 having ribs 7 projecting from its side, which are inclined or tapered from the end toward the end of the plunger. The width of the bar 6 is practically of the same dimensions as the width of the space between the peripheries of the rolls 4, while the width of the plunger including the ribs is practically the same dimension as the distance between the bases of the grooves of each roller, the ribs being tapered off in order that the metal in the legs of the staple will be displaced and drawn out in the form shown in Fig. 10. In this stage, the strip is so formed of an ordinary staple with legs that taper in two directions, as shown in Figs. 10 and 11, the width of the legs at the top or yoke portion of the staple being approximately seven-eighths of an inch, while the width of the end of the legs is only approximately three-quarters of an inch. The thickness of the legs at the upper or yoke end of the staple will be approximately seven-sixteenths of an inch, while the lower or terminal ends of the legs will be approximately one-eighth of an inch. The staple is now taken and placed in a die 8 having flaring sides 9 and a plunger 10 is inserted between the legs of the staple and corresponds with the sides of the die, as shown. When this plunger is forced

into position between the legs of the staple, the said legs will be bent to the position shown in Fig. 13 and in order to consolidate the operations, the plunger 10 carries a knife 11 which severs the staple immediately in the center of the yoke portion, thus leaving a driving head 12 on each section. The process for producing keys shown in Fig. 15 out of the bars shown in Fig. 5 follows the process just described and the key is in every way the same when completed except that its upper portion is considerably lightened by the groove therein which is merged into or obliterated in the end of the device by the drawing out process before described.

It will be noticed that in the first step of the operation, a plurality of bars are formed in a continuous operation, that is, one long bar is drawn out into the form shown in Fig. 5 and cut off at the points $x-x$ into several sections. It will be also noticed that there are only three operations or steps in the process to complete the article, giving the article the proper taper in both directions, producing the head, and curving the same to fit the brake shoe. Prior to drawing out the bars or sections into staple form, the ends of the bars or sections have a width approximately the same dimensions as the thickness of the bar. The drawing of the sections into staples, as shown in Figs. 7 to 10, not only tapers the legs, as shown, but also slightly increases the width of the ends so that when the staple is complete, the

width of the ends is only about one-eighth of an inch less than the width of the staple at the yoke portion thereof.

What is claimed is:—

1. The process of forming brake shoe keys which consists in tapering the bar from the center toward both ends in a direction of its width, simultaneously forming said bar into a staple, and tapering the legs thereof in a direction of their thickness, curving the legs of the staple outwardly in opposite directions, and finally severing the staple centrally of the connecting portion of the legs.

2. The method of forming brake shoe keys which consists in forming a staple tapered toward the end of its legs in a direction of its width, and simultaneously tapering the legs toward the ends in a direction at right angles to the original taper.

3. The process of forming brake shoe keys which consists in tapering the bar toward both ends in the direction of its width and simultaneously rounding the edges thereof, forming the bar into staple form, and simultaneously tapering the legs of the staple in the direction of their thickness, and simultaneously spreading the legs on a curve, and severing the staple into equal parts.

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

HENRY C. OSTERBIND.

Witnesses:

E. F. SCHMIDT,

H. LAURIE SMITH.