

(No Model.)

C. H. PERKINS.
ROLLS FOR MAKING HORSESHOE BLANKS.

No. 470,353.

Patented Mar. 8, 1892.

Fig. 2.

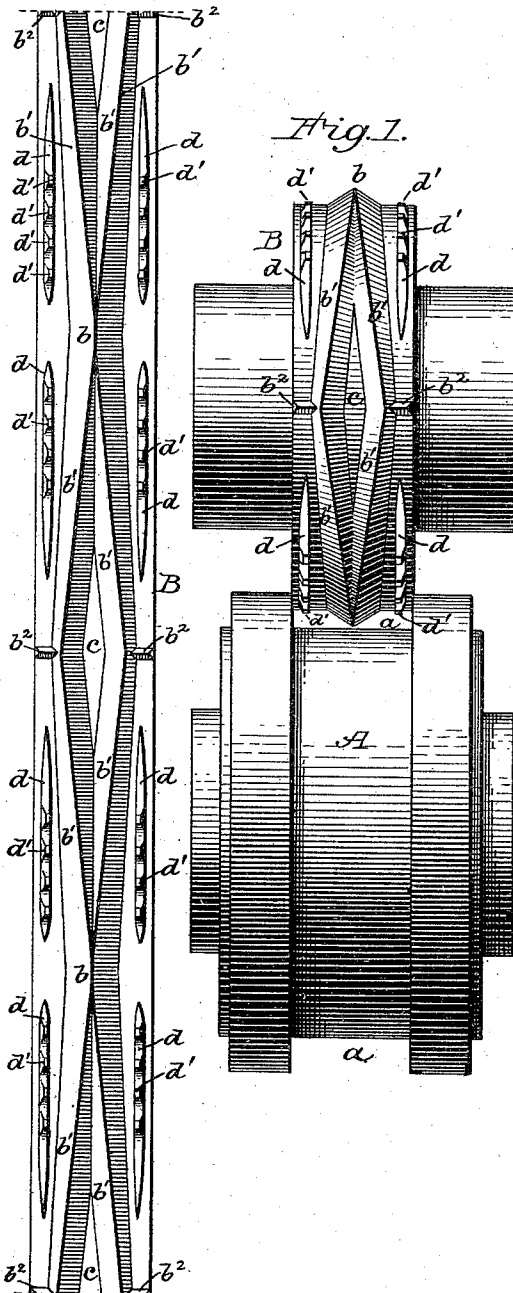


Fig. 1.

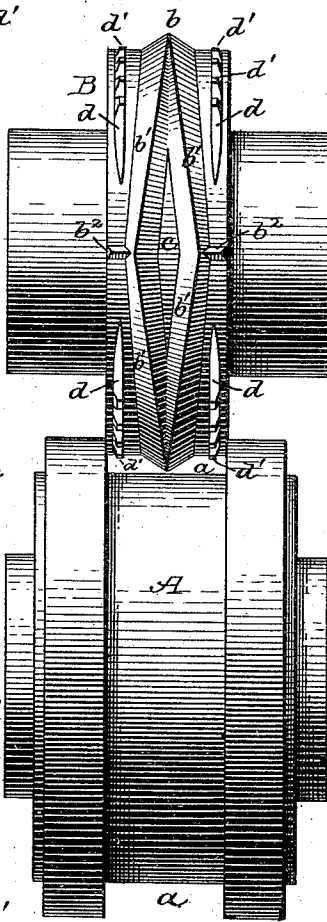


Fig. 3.

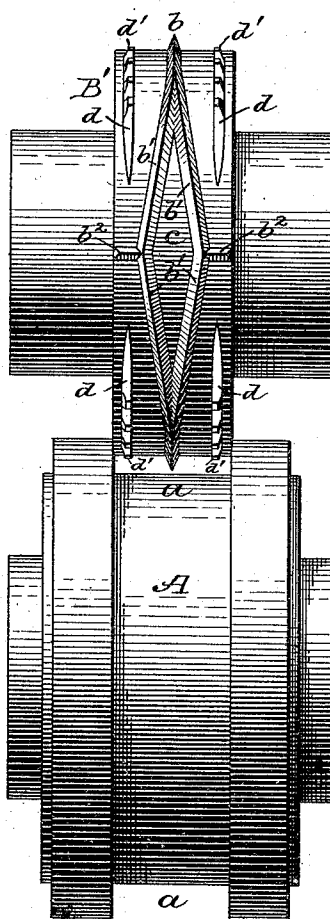
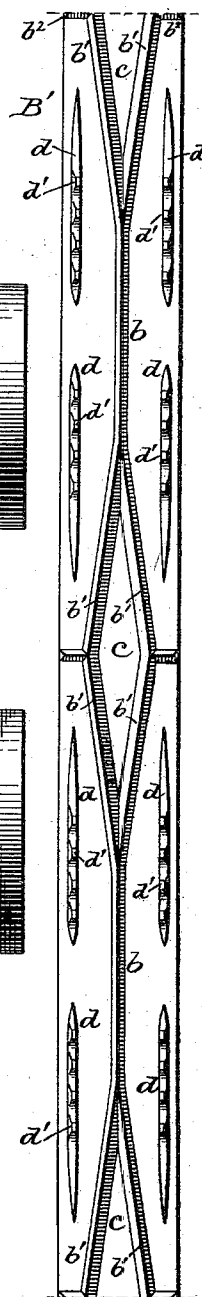


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ROLL FOR MAKING HORSESHOE-BLANKS.

SPECIFICATION forming part of Letters Patent No. 470,353, dated March 8, 1892.

Application filed December 19, 1891. Serial No. 415,654. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HENRY PERKINS, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Rolls for Use in the Manufacture of Toe-Weighted-Horseshoe Blanks; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of my invention.

In my application for Letters Patent filed March 30, 1891, Serial No. 386,991, I disclosed certain novel bars containing toe-weighted-horseshoe blanks in double lines, and the rolls devised by me for their production constitute the subject of my present specification. After describing my said rolls in connection with the drawings herewith the features deemed novel will be duly specified in the several clauses of claims hereunto annexed.

Referring to the drawings, Figure 1 illustrates in front view a pair of rolls, one of which is a die-roll constructed in accordance with my invention and adapted to produce specially-beveled blanks for use in making light or fancy shoes. Fig. 2 illustrates said die-roll in plane projection. Figs. 3 and 4 in like manner illustrate similar rolls adapted to produce plain toe-weighted blanks for heavy shoes.

The roll A usually employed as a bed-roll has a plain guiding-groove *a*, considerably deeper than the thickness of the blank-bars to be produced, but corresponding therewith in width. The die-rolls B and B' possess in common certain characteristic features, and these will be first described. Each die-roll has a peripheral working face, which is enough narrower than the groove *a* in the lower roll to enable said groove to freely receive a portion of the die-roll. Upon this working face there is a grooving-tongue, which is practically continuous on the periphery of the roll. Within the length of a blank said grooving-tongue has a straight central portion *b*, which is parallel with the edges of the working face. This central portion *b* is quite short in the tongue of the roll B and of somewhat greater length in the tongue of the roll B', these varia-

tions being incident to the differences between light or fancy shoes and heavy shoes. At both ends each central portion *b* is symmetrically branched or furcated, each branch *b'* *b'* *b'* *b'* being straight, but inclined laterally toward the appropriate adjacent edges of the working face. The spaces between said edges and the outer ends of said branches are equal to the width of the narrower ends or heel portions of a blank, and the spaces opposite the central portion of the tongue are as wide as the wide central or toe portion of a blank. Each complete working section of the tongue is equal to the length of a blank, and it includes the central portion *b* and its four branches *b'* *b'* *b'* *b'*, and although a roll might have but one of these complete tongue-sections they are duplicated in the rolls shown, and the outer ends of each pair of branches unite with the outer ends of another pair, the lateral parting-lines between them being indicated by suitable shallow cuts made by lateral parting-spurs *b²*, located at the junctions of said outer ends. With this duplication of the tongue the roll during each revolution will form four blanks in two rows or lines; but larger rolls having a greater number of complete tongue-sections may be employed without departure from my invention. So, also, for working short lengths of metal may the die-rolls be employed with a sliding grooved bed arranged to afford a suitable "pass" for the metal, although in no case can such a bed operate as advantageously as the grooved bed-rolls.

The double angular recessed spaces, as at *c*, which are inclosed by the branched portions *b'* of the furcated grooving-tongue are here shown to have a depth equal to the projection of the grooving-tongue beyond the plain working surface of the roll, and I prefer this arrangement as to depth because of the easy operation of such rolls. It will be obvious, however, that the bottoms of said spaces may be elevated more or less without in any manner departing from my invention, inasmuch as it is the outer side only of each inclined portion *b'* of the grooving-tongue that performs duty in the formation of a blank. The two sides of each central portion *b* of the

tongue are in substance extended, and, being divergent or inclined outwardly in the branches *b'*, said extended sides will perform their duty just the same regardless of whether
 5 said portions *b'* have any inner sides or not; but in proportion to the development of said inner sides the depth of said recess will be varied, and as its depth is lessened so will the bulk of waste metal between each pair of
 10 blanks be decreased; but that is a matter of little consequence compared with the greater ease and decreased wear and tear with which the rolls can be rapidly operated when the central portions of the bottoms of said recesses are substantially on a line with the
 15 plain portion of the working face of the roll, as shown.

As so far described the rolls B and B' are substantially alike; but it will be observed
 20 that the several portions of the grooving-tongue of the roll B have outer sides which are broadly and quite flatly beveled at the central portions *b*, and from thence to the end of each outwardly-inclined portion *b'* said
 25 bevel is gradually narrowed, as is clearly indicated. This broad beveling of the working faces or sides of the tongue is only desirable on rolls adapted to form blanks for fancy or comparatively light shoes. Now referring
 30 to the roll B', it will be seen that the central portion *b* of the grooving-tongue has working sides which are intentionally only so far beveled as will enable the tongue to be of sufficient strength to form the division-groove between each pair of blanks, and the same is
 35 true of the portions *b'* of said tongue. In both cases the rolls are so set with relation to their co-operating grooved rolls or other guiding support for the metal that the grooving-tongue
 40 will cut sufficiently through the blank-bar to enable the two lines of blanks to be readily separated not only from each other, but also from the waste metal located between the blanks.

Both rolls B and B' are each provided with
 45 eight nail-head creasers or scorers *d*, all of equal length and each having four nail-head points *d'*, these creasers being appropriately located with reference to the straight and inclined portions of the grooving-tongue adjacent to and parallel with the edges of the
 50 working face of the roll, and, while the best

results will accrue from the use of rolls provided with these creasers, it is to be understood that they may be omitted without departure from the main feature of my invention.

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

1. A die-roll, substantially as hereinbefore described, for forming blank-bars containing two lines of toe-weighted-horseshoe blanks, said roll having a working face provided with a grooving-tongue, which within the length
 65 of a blank has a central portion which is substantially parallel with the edges of the working face, and which at both ends of said central portion is branched or furcated, each branch being inclined toward the adjacent
 70 edge of said working face.

2. A die-roll, substantially as hereinbefore described, for forming blank-bars containing two lines of toe-weighted-horseshoe blanks, said roll having a working-face provided with
 75 a grooving-tongue, portions of which are centrally located at intervals and are parallel with the edges of the working face and are branched at both ends and inclined toward the edges of said face, each central portion
 80 and its four outwardly-inclined portions being within the length of a blank.

3. A die-roll, substantially as hereinbefore described, provided on its working face with nail-head creasers and also with a grooving-tongue, which within the length of a horse-
 85 shoe-blank consists of one central portion parallel with the edges of the working face and four branched or outwardly-inclined portions.

4. The combination, with a roll provided with a guiding-groove, of a die-roll having a working face adapted to enter said groove and provided on said face with a grooving-tongue, which within the length of a horse-
 90 shoe-blank consists of one central portion and four branched or outwardly-inclined portions, substantially as described, said rolls being adapted to produce blank-bars containing two
 95 lines of toe-weighted-horseshoe blanks.

CHARLES HENRY PERKINS.

Witnesses:

R. W. COMSTOCK,
 CHARLES R. STARK.