

(No Model.)

H. GREER.

SPIKE BLANK.

No. 312,840.

Patented Feb. 24, 1885.

Fig. 1.

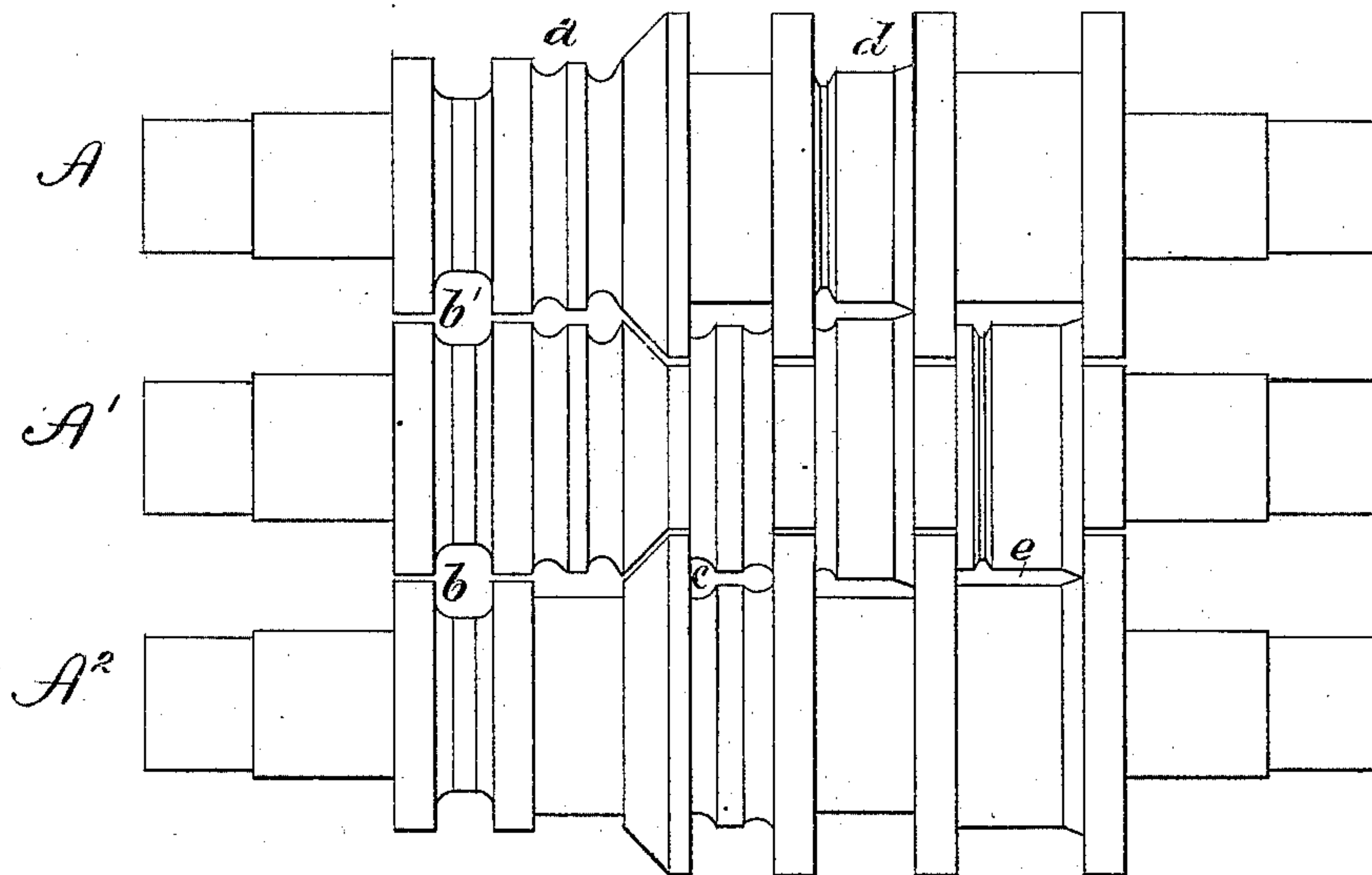


Fig. 3.

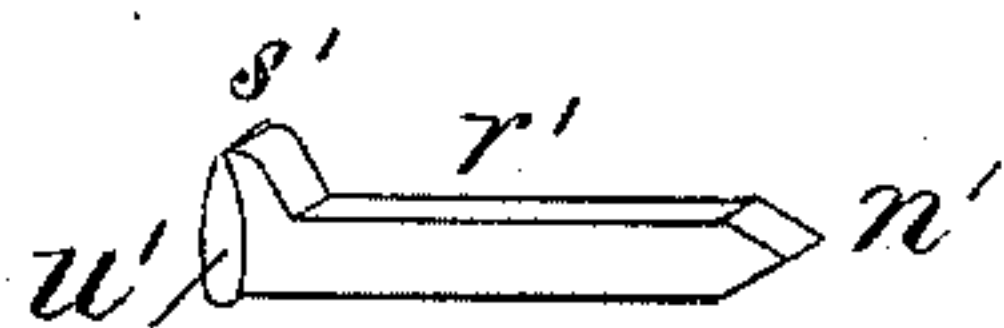


Fig. 2.

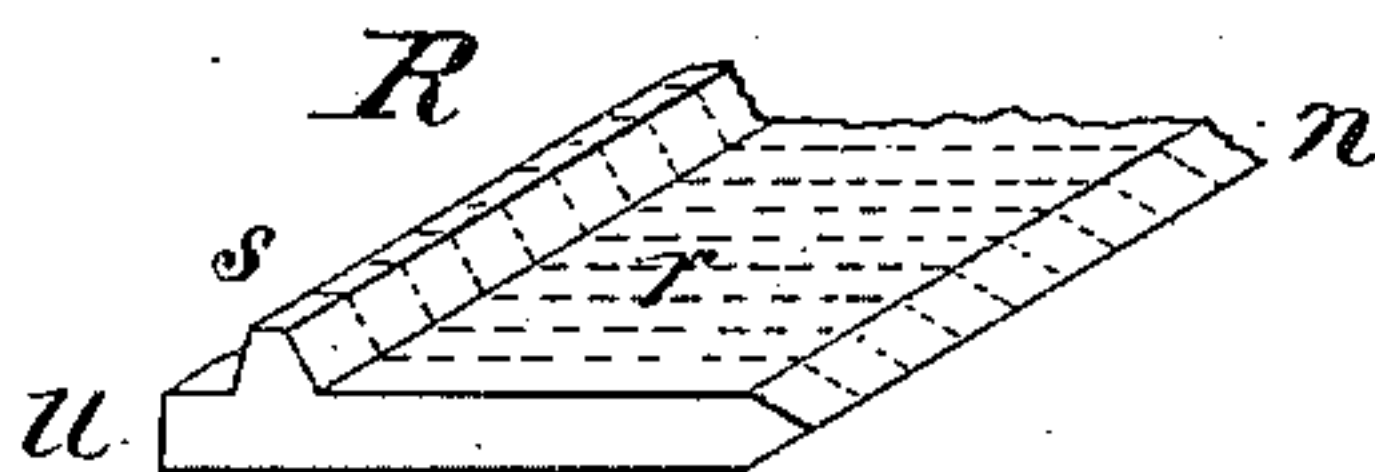
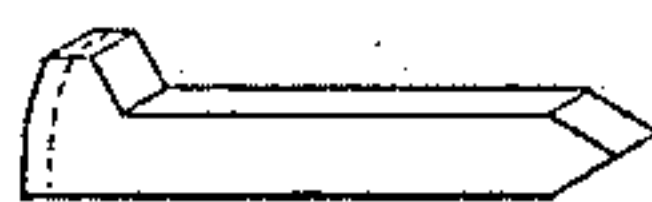


Fig. 4.



WITNESSES:

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HOWARD GREER, OF CHICAGO, ILLINOIS.

SPIKE-BLANK.

SPECIFICATION forming part of Letters Patent No. 312,840, dated February 24, 1885.

Application filed April 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, HOWARD GREER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented or discovered certain new and useful Improvements in Spike-Blanks, of which improvements the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a front view of a three-high rolling-mill. Fig. 2 is a perspective view of a blank produced in the mill shown in Fig. 1. Fig. 3 is a perspective view of a completed spike. Fig. 4 is a view of a modified form of blank.

The present invention relates to a spike blank or bar produced by rolling in suitably-grooved rolls the fag or crop ends of rails or suitably-shaped billets, and adapted to be formed into spikes in a suitable shearing and shaping machine.

So much of the operation above referred to as relates to the rolling and the transverse shearing or cutting of the bar into separate spike-blanks and the finishing or completing the same is included in the subject-matter of applications Nos. 114,799 and 113,387, already filed by me; and the present invention relates to the blank or bar as produced and ready for cutting.

In the drawings, A A' A² represent the rolls of a three-high mill, and provided with a suitable arrangement of grooves for the working of the present invention. The rail or crop or fag end thereof to be worked is first passed, after being properly heated, through the grooves *a* of the two upper rolls, which grooves are suitably formed and proportioned for the reduction of the head and flange of the rail, and also for forcing a portion or all of the metal displaced by such reduction into the web portion of the rail.

In order still further to thicken up the web portion, the bar, after leaving the pass *a*, is given a quarter-turn and passed through the grooves *b* of the two lower rolls, which grooves are suitably proportioned for giving this result, and a like but reverse pass may be made through the grooves *b'* for the purpose of effecting a further thickening of the web, as may be desired, and also so as to bring the bar back

for a pass through the grooves *c*, which grooves are properly shaped and proportioned for further reducing the thickness of the edge portions of the bar, and also with reference to so disposing the metal that in subsequent working, and especially in the finishing-pass, the desired uniform reduction and elongation will be secured.

The form of bar or blank sought for in this invention is that represented at R in Fig. 2. One edge of this bar or blank has a double bevel, *n*, such as is desired in the point *n'*, Fig. 3, of the finished spike. The body portion *r* of the blank R is made of the width equal, or about equal, to the length of the shank *n'* of the finished spike, and a rib, *s*, is made at or along near the opposite edge of the bar R, and of proper form and size to give the necessary metal for the overhanging lip *s'* of the finished spike.

In the preferred form of my invention I make a rib, *u*, in the plane of the body portion *r* and outside of the rib *s*, and in this rib *u* I provide a sufficient quantity of metal from which, by an upsetting or swaging blow given by a suitable heading-die, as described in the application above referred to, I secure on each side of the spike-head, when it is finished, an ear, *u'*, of proper form to be engaged by a claw-bar; and while I prefer the disposition of the metal which is thus secured by making the bead *u* in the same plane with the body *r*, I do not limit myself specifically to such form of bead, as the necessary amount of metal to form the ears *u'* may be distributed along the edge of the bar R on the rib *s* and back of said rib, as represented in Fig. 4, where the dotted line may, for purposes of illustration, indicate the outside plane of the finished head, and the metal to the left thereof may represent the excess of metal from which by a swaging action to form the ears *u'* on the sides of the spike-head.

Returning now to the rolls, in which I have represented the proper grooves for producing the bar R with the bead *u*, the bar after leaving the grooves *c* is passed through a pair of grooves, *d*, or through one or more sets of grooves suitable for the further working of the bar, whereby to make it ready for a finishing-pass through the final groove, *e*, and from which grooves last named it is delivered in the form substantially as represented at R. The bar

thus produced is then ready for cutting, compressing, and swaging in the manner described in the application above referred to. The number of passes which the bar should receive
5 from *a* to *e* may be increased, if desired, so that a less amount of work shall be done at each pass; but the proportioning of such grooves with reference to the final product will in any case be made in accordance with
10 rules well understood in the art of rolling metals; but I do not limit myself to the necessary use of rails or their crop or fag ends, since a properly-shaped billet prepared for the purpose may receive its first pass through the
15 grooves *a* and be operated upon by subsequent passes in the manner substantially as described with reference to the end here in view; or the billet may be of rectangular shape in cross-section and be brought to the form desired as
20 a preliminary step in its working by being passed through the grooves *a*, and in such

case the use of the grooves *b b'* will not ordinarily be necessary.

Although I have herein shown and described the rolls for producing the blank with some 25 particularity, I make no claim thereto, as they form the subject-matter of an application, No. 114,799, filed December 17, 1883.

I claim herein as my invention—

A bar or blank, *R*, for the production of 30 separate spike-blanks therefrom by transverse cuts in parallel lines, such bar having the double-beveled edge *n*, the body *r*, a rib, *s*, and a bead, *u*, in the plane of the body *r*, substantially as set forth. 5

In testimony whereof I have hereunto set my hand.

HOWARD GREER.

Witnesses:

FRANK J. LOESCH,
W. C. DAYTON.