

(No Model.)

G. A. STEINER.  
METHOD OF UTILIZING OLD RAILS.

No. 300,404.

Patented June 17, 1884.

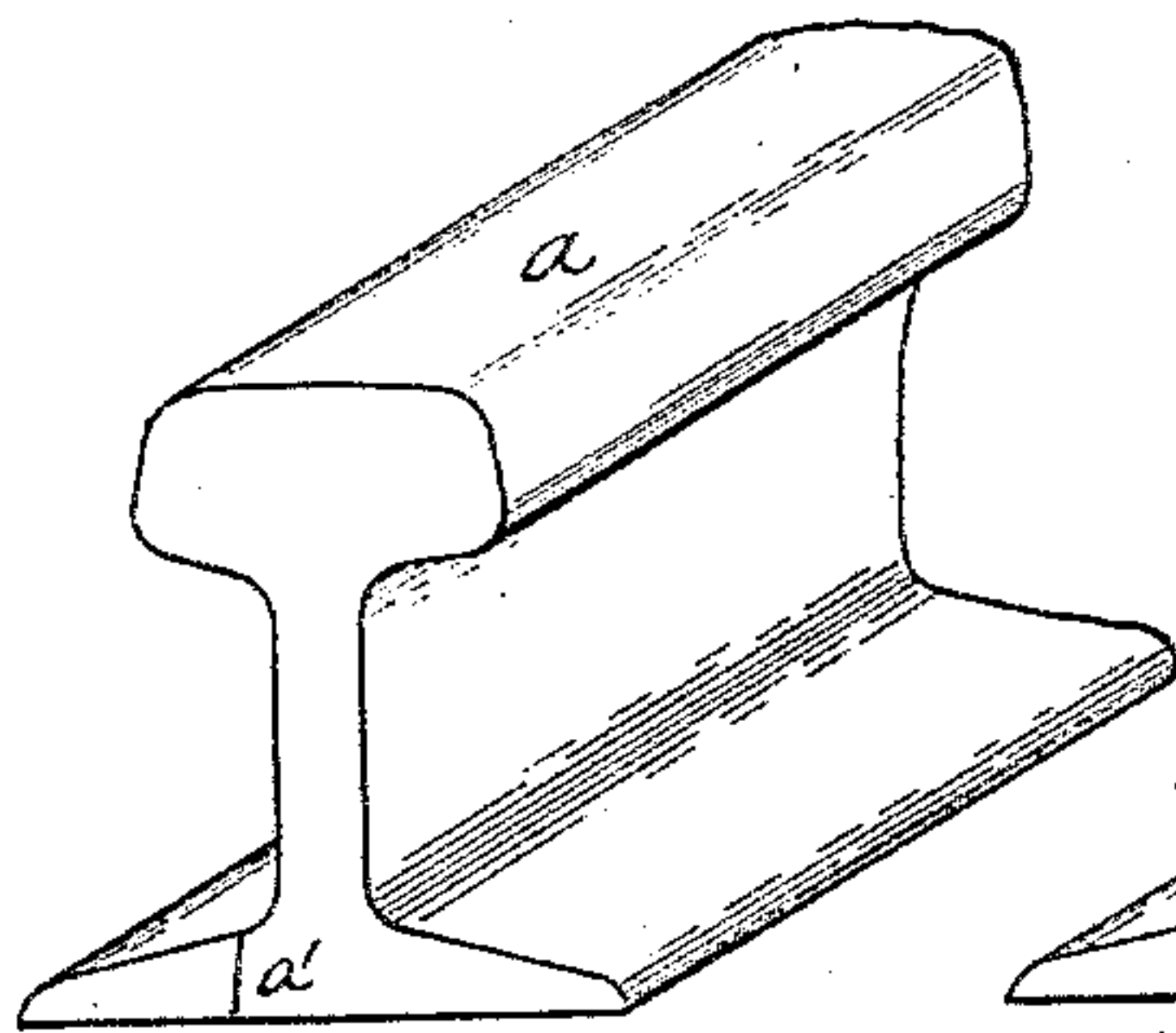


Fig. 1.

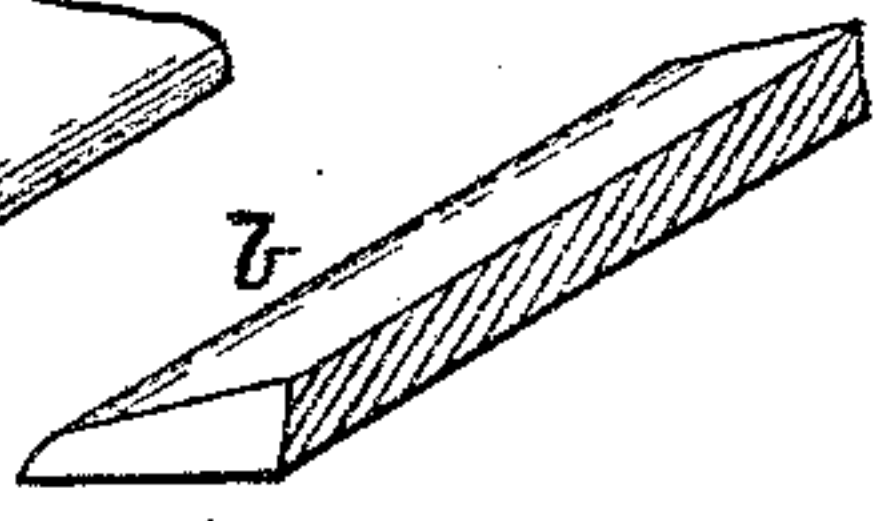


Fig. 2.

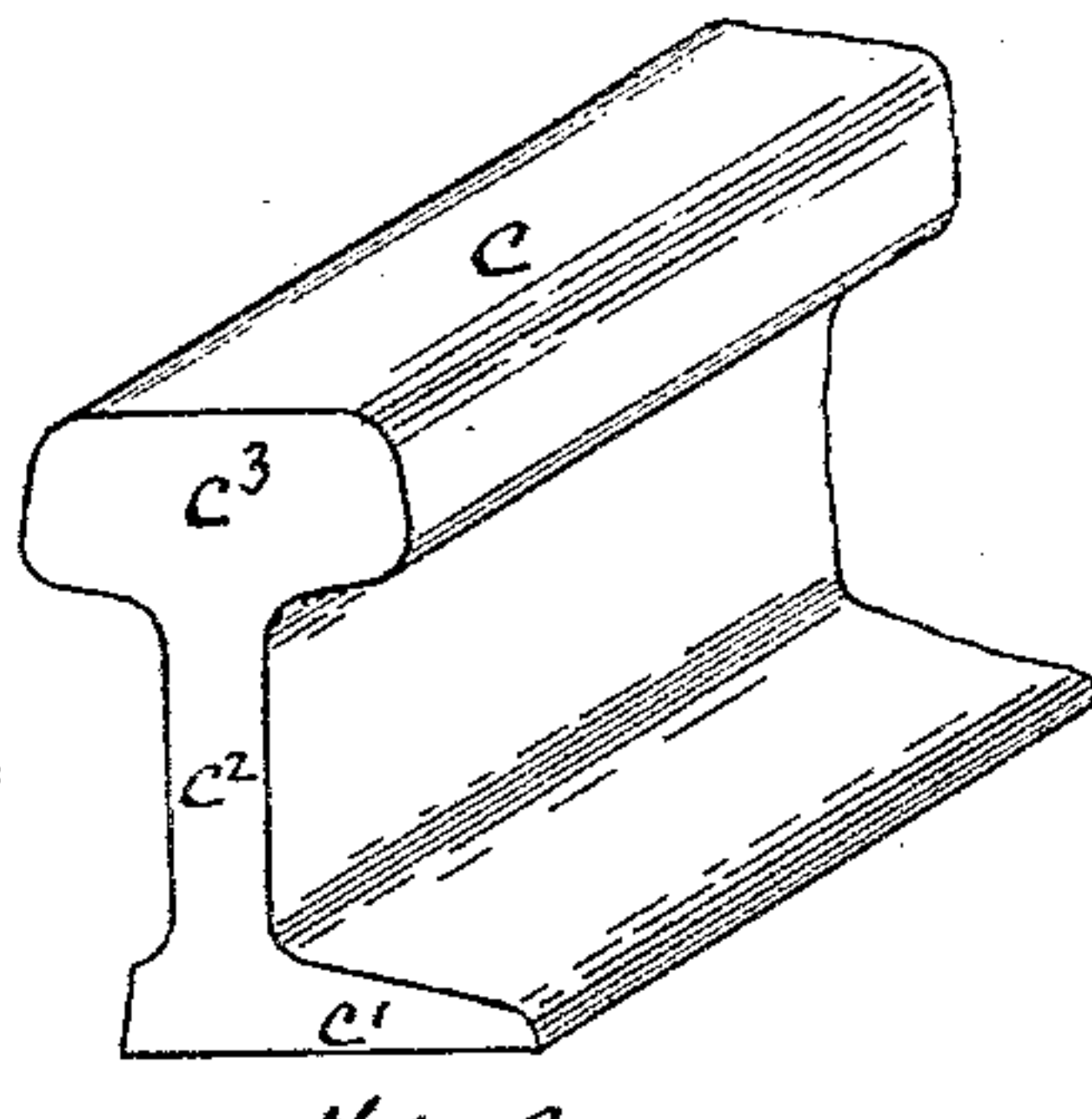


Fig. 3.

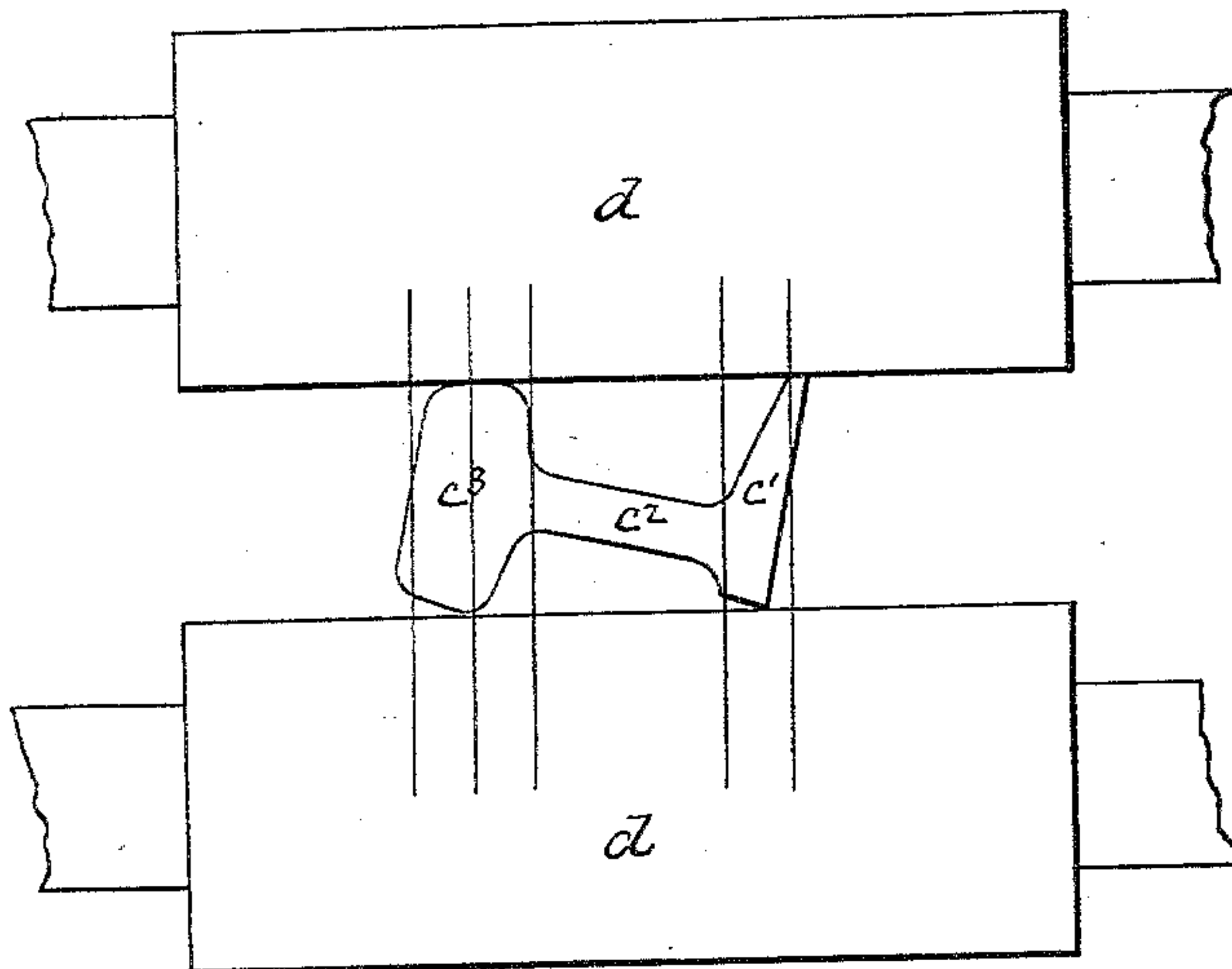


Fig. 4.

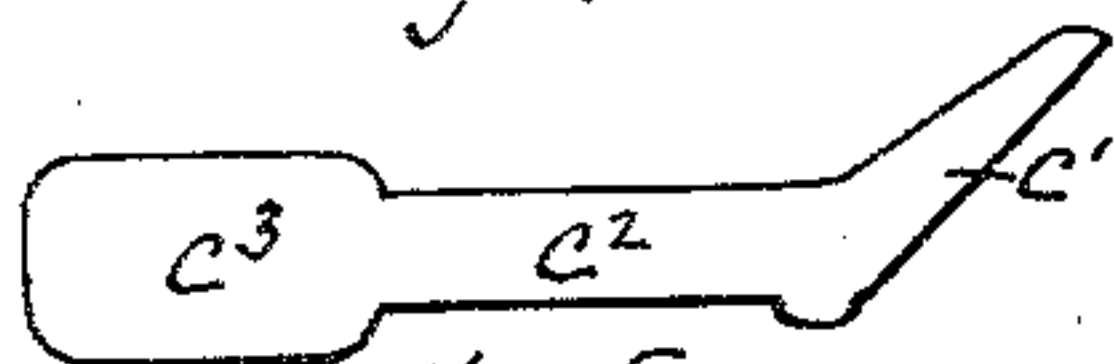


Fig. 5.

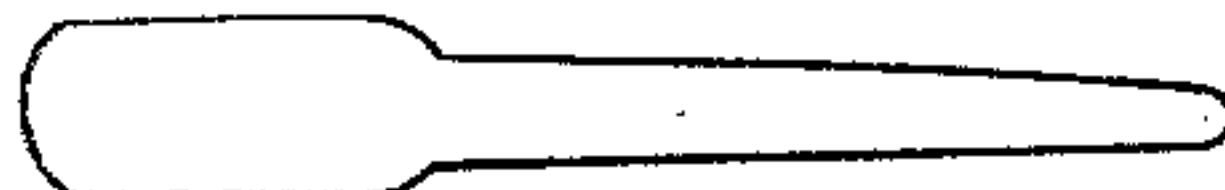


Fig. 6.

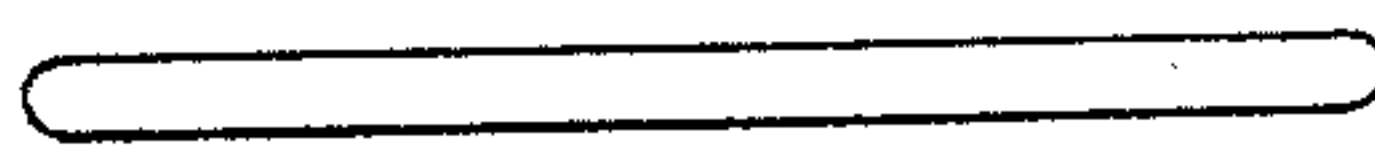


Fig. 7.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## METHOD OF UTILIZING OLD RAILS.

SPECIFICATION forming part of Letters Patent No. 300,404, dated June 17, 1884.

Application filed February 7, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, GOTTLIEB A. STEINER, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Methods of Utilizing Old Rails; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention consists of an improved method of utilizing old railroad-rails and rail ends, and particularly old steel rails.

The special object I have in view is the production of nail-plates; but the invention is also applicable to the production of other forms of sheet and plate manufacture. Old steel rails have been made into nail plates by cutting off the flange, so as to leave the head and web in one piece, then cutting up the two pieces thus made into short lengths, and, lastly, rolling the lengths down into plates by passing them through rolls in a line parallel with the axes of the rolls. This method produces only a narrow plate.

My invention consists in cutting off one side of the flange, and then passing the mutilated rail longitudinally through suitable rolls, for the purpose of laying down the remaining half of the flange until its plane coincides with that of the web, and at the same time breaking the head down flat and elongating the bar. When the rail thus treated is drawn out to a uniform and required gage, it is cut up into nail-plates.

To enable others skilled in the art to make and use my invention, I will now describe it by reference to the accompanying drawings, in which—

Figure 1 is a view of a rail or rail-section, indicating where it is cut. Figs. 2 and 3 are the parts of the rail after being cut. Fig. 4 is a diagram of a pair of rolls. Figs. 5, 6, and 7 are views of the rail after several passes through the rolls.

Like letters of reference indicate like parts in each.

I take an old steel rail or section of rail or rail end, *a*, and cut off one flange on one side, as indicated by the line *a'*. The separate piece *b* thus made can be rolled out for various uses. The mutilated rail *c* is passed lon-

gitudinally through the rolls *d*, as indicated in Fig. 4. The effect of the pass is to flatten down the flange part *c'* more nearly into line with the web *c*, and to break down the head *c''* partially, as well as to elongate the rail. At each subsequent pass the rail is gradually reduced until it is finally brought to a uniform gage of the required thickness. It may then be cut up into nail-plates or otherwise utilized. Steel rails require to be so rolled that no part shall overlap and be laid down on any other part, for the reason that the plicated surfaces cannot be welded at the heat which may safely be given them. If two parts or edges of the bar overlap, a seam or crease is formed, which ruins that part of the finished plate or bar. To enable me to widen out the plate or sheet made from the rail, I use as much of the flange as is possible to lay down without plication on some other part of the rail. If both sides of the flange were used, it is evident that one of them would be laid against the web, or that they would be laid together, that depending on the direction in which they were turned.

It will be noticed by the vertical plane lines shown in Fig. 4 that the reducing pressure of the rolls is only on single parts of the rail, and that no vertical plane bisects any two parts. The result is that the action of the rolls causes simply flattening and drawing of the rail, and no overlapping or plication of its parts.

Where it is desired to obtain a plate or sheet of greater width than can be had from a simple longitudinal drawing, the short rail-section is, after the flattening of the flange, given one or more passes in a transverse direction, as is customary in sheet rolling.

The advantage of my invention consists in preserving a portion of the flange, which has heretofore been cut off when old rails were used for similar purposes, to contribute to giving width and weight to the finished plate. This is very important, because the amount of stock in the cross-section of rails is very small, and it is desirable to preserve as much of it as possible, especially in rolling out sheets which are subsequently to be cut transversely into nail-plates and similar articles.

What I claim as my invention, and desire to secure by Letters Patent, is—

5 The method of utilizing old rails or rail ends in the manufacture of sheet or plate metals, which consists in cutting off one side of the flange, and then forcing the remaining side of the flange into the same plane as that of the web, and drawing out the rail to a plate

of the desired gage, substantially as and for the purposes described. 10

In testimony whereof I have hereunto set my hand this 1st day of February, A. D. 1884.

GOTTLIEB A. STEINER.

Witnesses:

W. B. CORWIN,

THOMAS W. BAKEWELL.