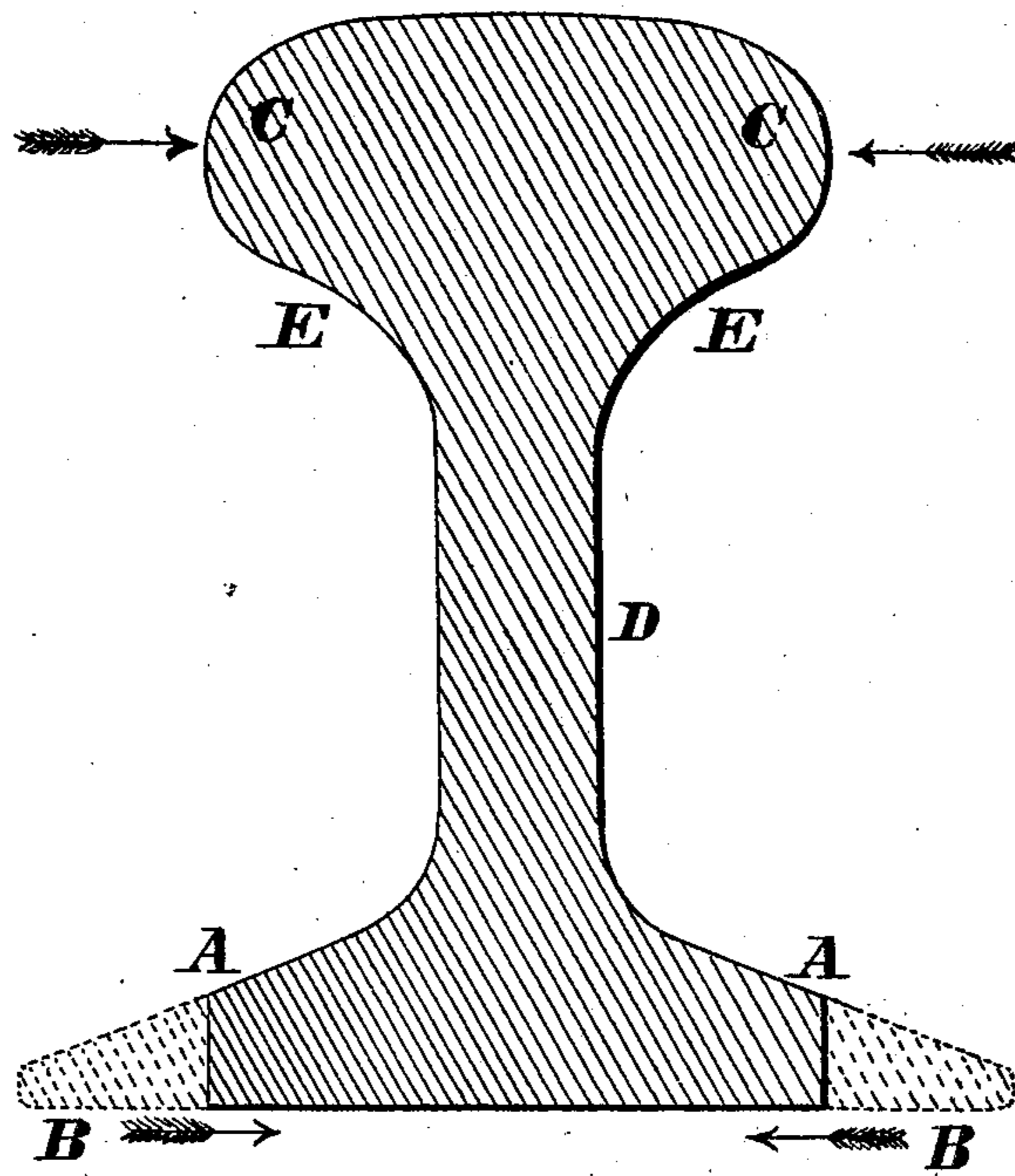


G. FRITZ.

Processes of Utilizing Old Railroad-Rails.

No. 145,166.

Patented Dec. 2, 1873.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE FRITZ, DECEASED, OF JOHNSTOWN, PENNSYLVANIA; JOHN FRITZ,
JAMES McMILLER, AND WILLIAM R. TUCKER, EXECUTORS.

IMPROVEMENT IN THE PROCESSES OF UTILIZING OLD RAILROAD-RAILS.

Specification forming part of Letters Patent No. **145,166**, dated December 2, 1873; application filed
July 17, 1873.

To all whom it may concern:

Be it known that I, GEORGE FRITZ, of the city of Johnstown, county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Utilizing Old and Imperfect Rails and Rail Ends of Steel and Homogeneous Iron; and that the following is a true, full, and exact description thereof, reference being had to the accompanying drawing.

In the manufacture of the crop-ends of railway-bars and other similar products, when made of steel or homogeneous iron, it has heretofore been attempted, without uniform success, to roll the said crop-ends into flat bars of smaller section by means of rolling-mill-rolls, so grooved as to compress the flanges B B of a railway-bar and the sides C C of the head into the stem D, the whole mass being, at the same time, elongated and reduced in section. The grooves employed for this purpose have been so arranged as to compress, at successive passes, the flanges B B and the head C C in the direction of the arrows, and at the same time to hold up the metal at the points E E A A, so that it would not fold over upon the stem D, for any such folds would leave seams or cold-shuts in the finished bar, or else such folds would have to be united by welding, and the object is to utilize such metals as are not readily welded by rolling.

The process by which railway-bars have been thus reduced to flat bars by means of grooves of gradually-decreasing depth will be readily understood by persons skilled in the art, and the said means and process of rolling crop-ends form no part of my present invention.

It will be obvious that, while rails with thick, narrow flanges may be reduced in this manner to sound, flat bars, thin and wide flanges, like those shown in the drawing, will have a strong tendency to fold over during the process; and, also, that while the flange and head are very much elongated by the compression of the rolls upon them, the stem D receives little or no elongation from the

compression of the rolls, as the rolls barely touch it, but has to be stretched lengthwise by the pull of the elongating head and flange upon it. This action obviously tends to buckle and wrinkle the bar and to form cold-shuts in it at the points where the flange joins the stem.

My improvements consist in preparing old and imperfect rails and rail ends of steel or homogeneous iron for being rolled by the means described into sound bars of smaller section, by removing the exterior parts of the flanges B B at or about the lines A A, so that the remaining parts of the flanges shall be about the width of the head of the rail.

The exterior of the flange can be readily slitted off in a modification of the ordinary slitting-rolls, as commonly used for iron and steel. The flange may, however, be cut off by a press, or by shears, either hot or cold.

The method and means of removing the flange forms no part of my invention.

It is obvious, for the reasons already mentioned, that the greater number of old and imperfect steel rails and rail ends are of such shape as to be incapable of being utilized by the rerolling process described.

The process of slitting apart the head, stem, and flange, so as to form three small bars, which may subsequently be rerolled, is very wasteful, in the case of short rail ends especially, as the bars thus formed are too light to be rolled into the usual sizes of bar-steel.

Homogeneous iron and steel rails are not, and cannot be, as far as I am aware, manufactured into sound bars by piling and welding. My improvement is, therefore, of much value to iron-masters and railway companies.

I am aware that the flanges of iron rails have been trimmed off for the purpose of getting the rails into such shape that they would lie flat in a pile for welding, while my invention is especially designed to obviate welding.

I do not claim the cutting off of the flange

by itself, nor the rerolling of the rail; but my improvement consists in the aggregate operations I perform for the definite purpose I have mentioned.

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

The process herein described of utilizing

old rails and rail ends of steel or homogeneous iron by removing the prominent edges of the flanges and subsequently rolling.

GEORGE FRITZ.

Witnesses:

JNO. GOURNER,
JAMES POTTS.