

(No Model.)

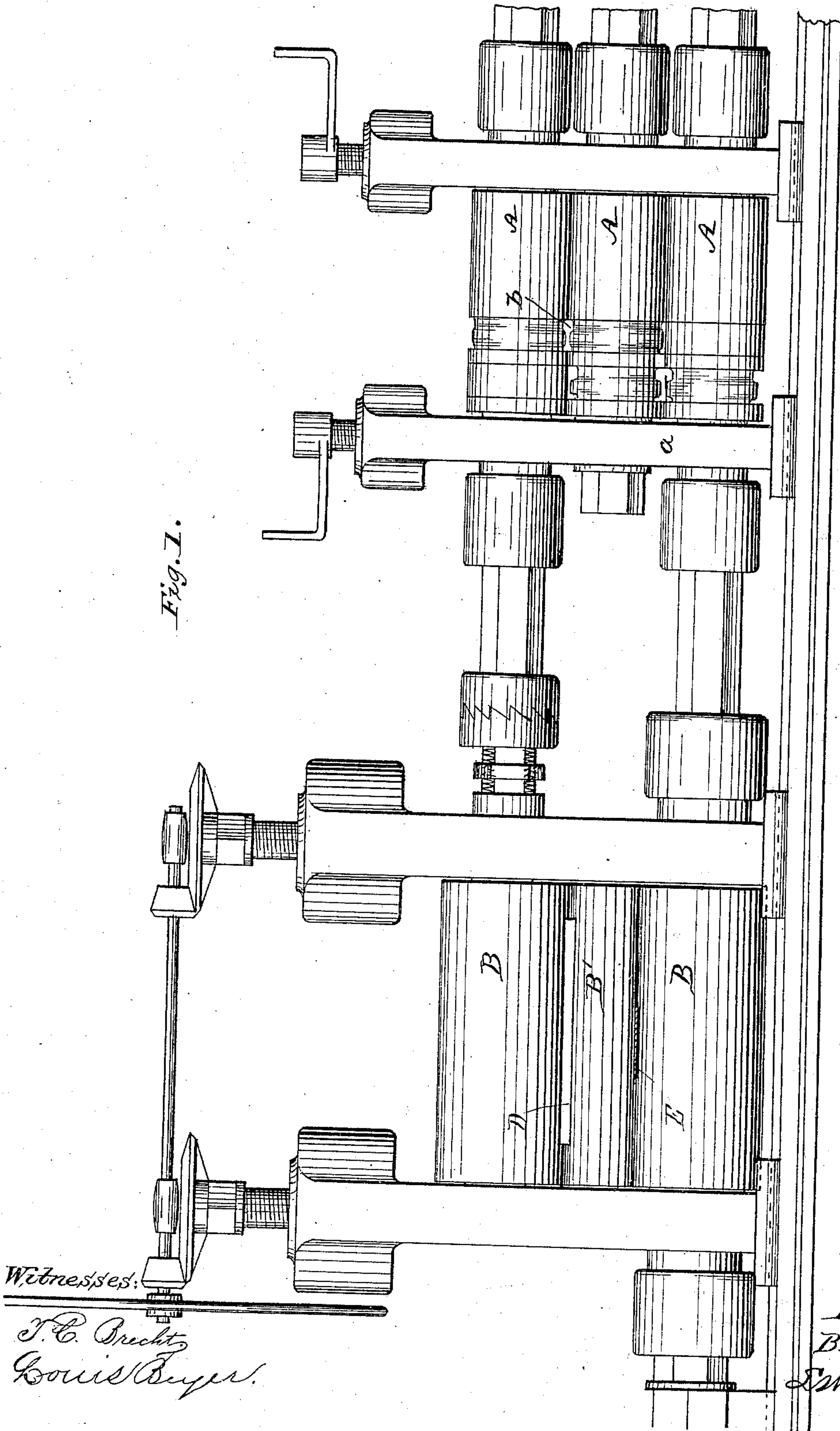
2 Sheets—Sheet 1.

B. LAUTH.
METHOD OF REDUCING OLD STEEL RAILROAD RAILS TO STEEL PLATES.

No. 335,938.

Patented Feb. 9, 1886.

Fig. 1.



Witnesses:

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(No Model.)

2 Sheets—Sheet 2.

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METHOD OF REDUCING OLD STEEL RAILROAD RAILS TO STEEL PLATES.

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Fig. 2.

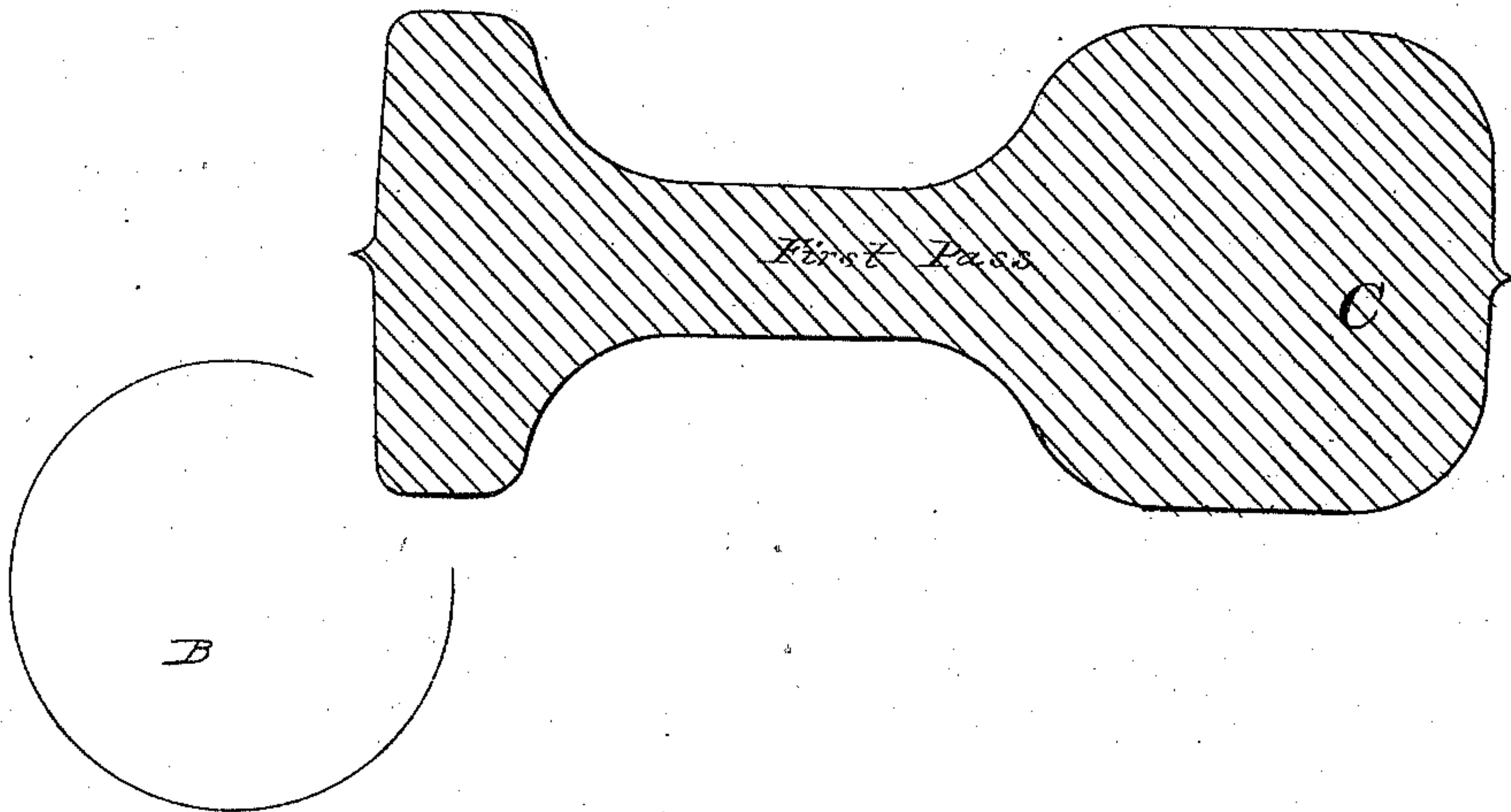


Fig. 3.

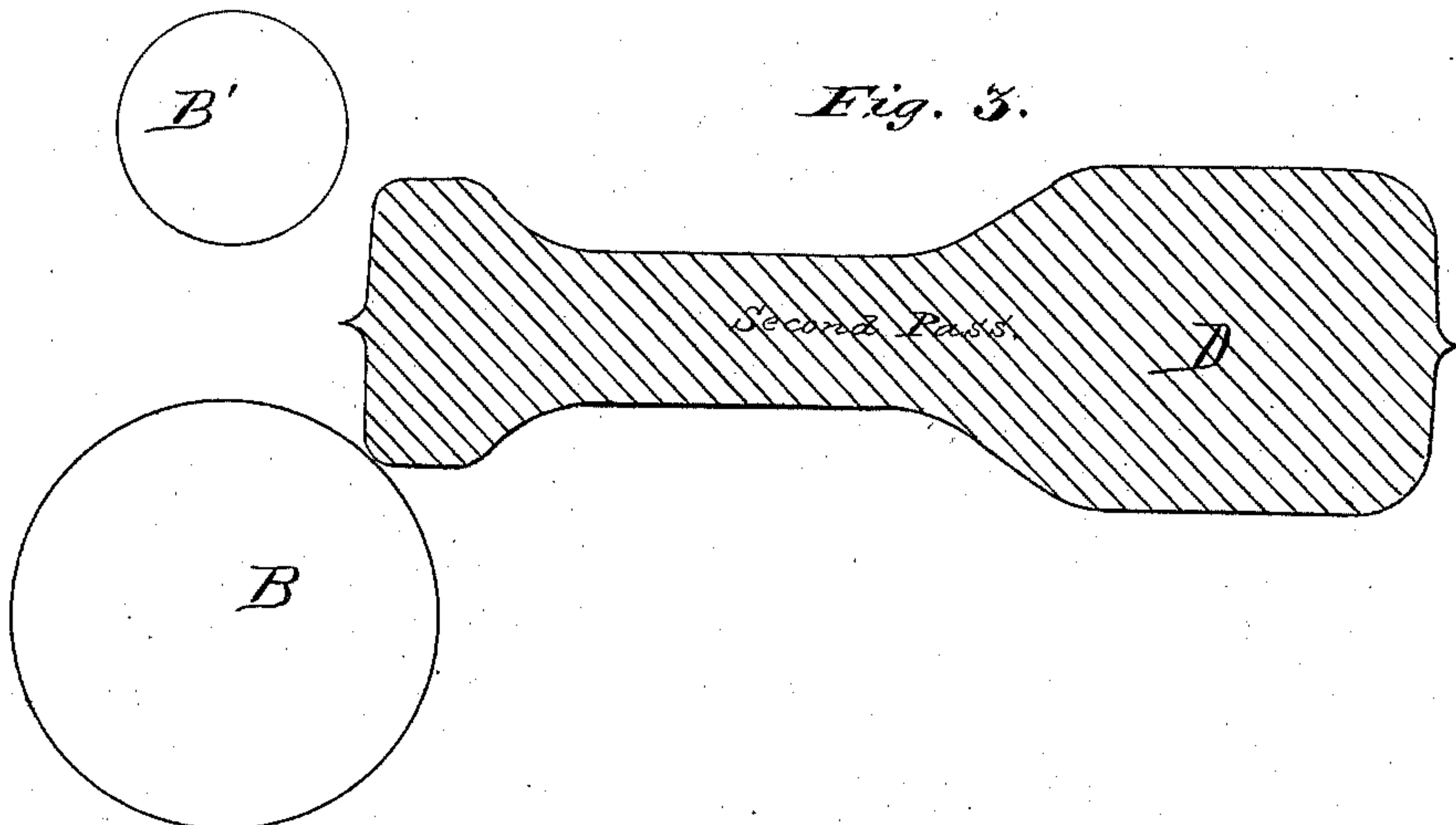
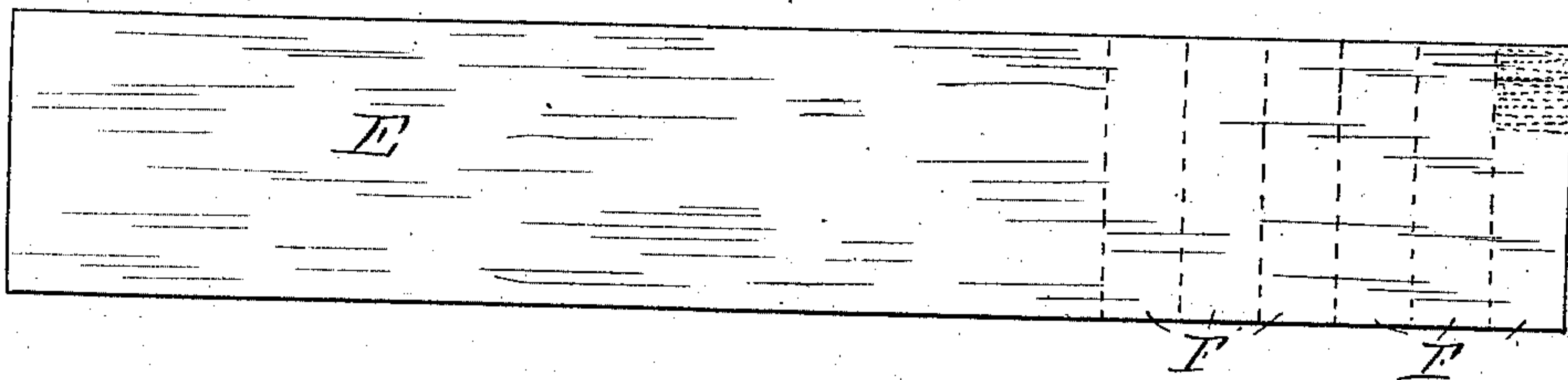


Fig. 4.



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UNITED STATES PATENT OFFICE.

BERNARD LAUTH, OF HOWARD, PENNSYLVANIA.

METHOD OF REDUCING OLD STEEL RAILROAD-RAILS TO STEEL PLATES.

SPECIFICATION forming part of Letters Patent No. 335,938, dated February 9, 1886.

Application filed August 27, 1885. Serial No. 175,434. (No model.)

To all whom it may concern:

Be it known that I, BERNARD LAUTH, a citizen of the United States, residing at Howard, in the county of Centre and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Reducing Old Railroad-Rails to Steel Plates for the Manufacture of Nails, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved method of reducing steel railroad-rails to plate metal.

The object of my invention is to produce plates for the manufacture of nails and other purposes from old steel railroad-rails.

My invention therefore consists in the method hereinafter described of rolling said rails, so as to reduce the head and flange without lapping the same onto the web of the rail, as will more fully appear.

Referring to the drawings, Figure 1 is a front view of the rolls which I use in carrying out my invention. Fig. 2 is a sectional end view of an ordinary T-rail after having passed once through the grooved rolls. Fig. 3 is also a sectional end view of the rail or blank after it has passed through the grooved rolls a second time. Fig. 4 is a top or plan view of the finished plate or nail-blank.

A indicates a series of three grooved rolls, through which the rail-section is caused to make a double pass for reducing the head and flange of the rail preparatory to being passed through the rolls B B'.

B B' are the rolls for widening and lengthening the blanks into plates, said rolls being what are known as "three-high rolls," the rolls B B being of larger diameter than the intermediate roll, B'. The large rolls B B act mainly as supports or in the capacity of anvils, while the small roll serves to draw the metal so as to prevent the head and flange from lapping or folding down on the web of the rail.

In carrying out my invention I take old steel railroad-rails and cut them into short pieces, preferably about three feet in length, which are heated to the proper working-point and passed through the rolls A at a, Fig. 1, thus slightly reducing the flange and head of the rail and producing the blank C, as shown in Fig. 2. The blank thus formed is passed

back through the rolls A at b, making a double pass through these rolls, which reduces the flange and head of the rail still further and brings it to the form of the blank D, (shown in Fig. 3,) or, if the double pass fails to do so, another pass may be made, care being had, however, to avoid reducing so far as to crowd the metal over onto the web. The blank D is now moved over to the plain rolls B B' and caused to make a series of double passes sideways therethrough, first below the small roll B' and then back above it, which draws and widens out the head and flange of the rail and ultimately brings them to the thickness of the web, after which the blank is passed endwise through the rolls B B' until it is brought to the proper thickness, all the passes being made and the rolling of the rail into plate metal being accomplished at one heating of the metal.

In making the series of double passes of the blank through the rolls B B' sideways the small roller tends to press the front of the blank, whether it be the flange or head of the rail, back onto the web, the rear portion being drawn out in a direction from the web, while the return pass brings the other side of the rail-section into contact with the small roll, which then produces the same effects on that side of the section of rail that it had produced in the last preceding pass on the other. After this double pass there will be found evidences of a slight crowding of the metal over onto the web, the metal of the head having been slightly forced onto the web on one side of the rail-section, and the metal of the flange slightly forced over on the web on the other side of the section; but for the next succeeding double pass the section is turned over, and its other edge presented first to the rolls, and in the succeeding double passes the metal that was found crowded over onto the web is driven back into the body of the head or flange from which it had been forced, and similar crowdings, but constantly diminishing in extent, will be produced and as often obliterated at each double pass, until after repeated double passes, care being taken to reverse the section after each double pass, so that the edge that last emerged from the rolls on one double pass shall be the first to enter the rolls on the next succeeding double pass, the projections of the rail-section will be drawn out and rolled down

to the level of the web, and thus all objection-
able folding or plication practically avoided.
The blank is caused to make any desired num-
ber of double passes sidewise through the rolls,
5 so as to bring it to the desired width, after
which it is passed lengthwise back and forth
through the rolls any desired number of times
to bring it to the proper thickness. The small
roll B', drawing alternately on both sides of
10 the plate, compacts the metal more firmly and
gives it a smooth finish. It is of course un-
derstood that the rolls are set up after each
pass by means of any suitable adjusting de-
vices, so as to regulate the distance between
15 the rolls. After the metal sheet or plate E is
formed, as shown in Fig. 4, it is ready to be
cut into nail-plates F, from which the nails
can be cut in the usual manner, as indicated
by dotted lines in Fig. 4, which will produce
20 nails having the fiber of the metal running in
the direction of their length, thus producing
an article which will not break under the
blow of the hammer.

Having thus described my invention, what I

claim, and desire to secure by Letters Patent, 25
is—

The method, substantially as hereinbefore
described, of reducing railroad-rails to plate
metal, the same consisting in the presentation
of a section of an old rail to grooved rolls in 30
order to reduce to a limited extent the head
and the flange thereof, then presenting said
section sidewise to plain-surfaced rolls of un-
equal diameters and giving to it a succession
of passes accompanied by reversals of the sec- 35
tion so as to present to the rolls first one
edge and then the other, and to the small roll
first one side and then the other, until, finally,
after so rolling until the proper width of plate
has been attained, passing said plate endwise 40
through the rolls to reduce it to the desired
thickness, as set forth.

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

BERNARD LAUTH.

Witnesses:

GEO. M. LOCKWOOD,
WM. H. DELACY.