

(No Model.)

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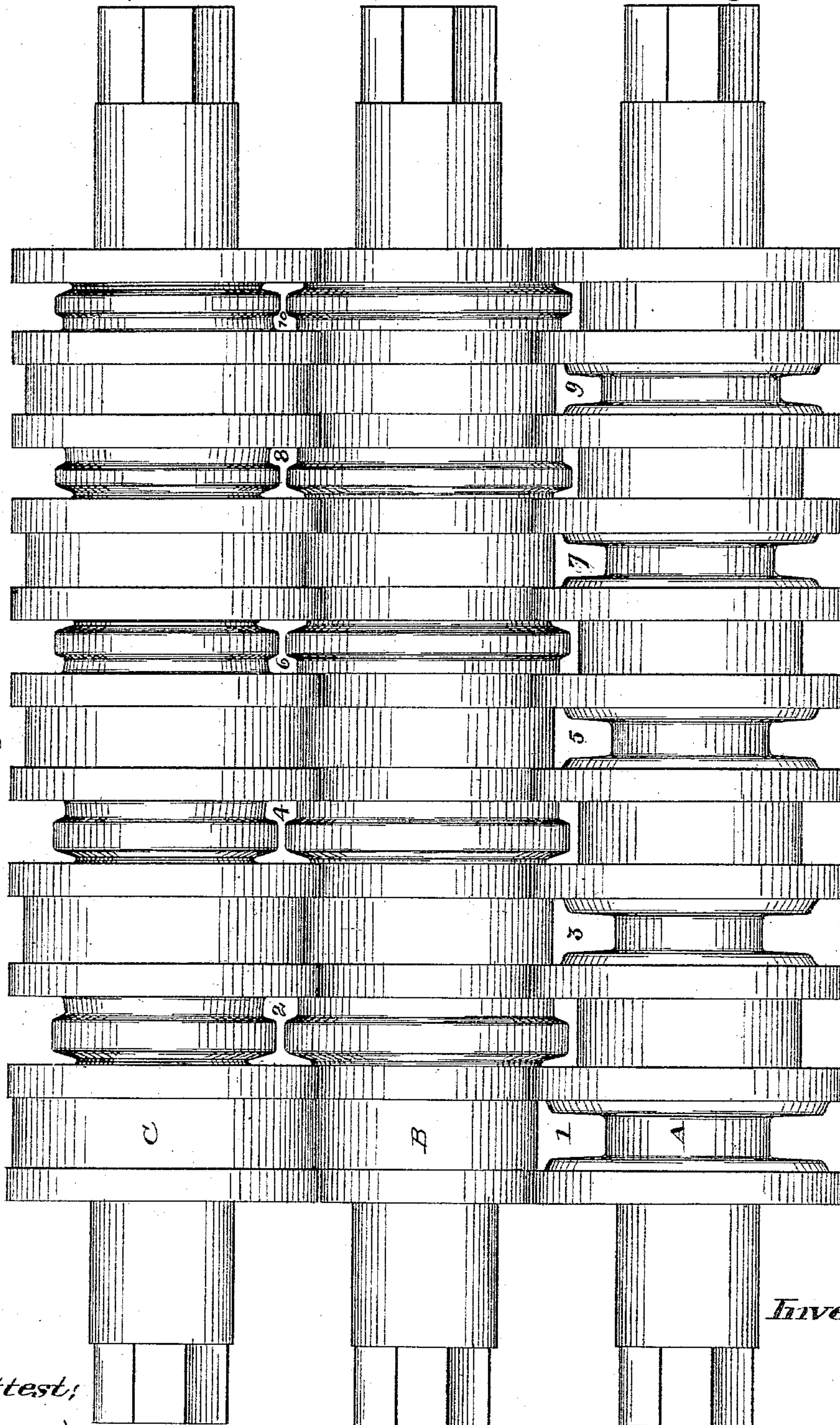
T. A. MEYSENBURG & G. WOSTENHOLM.

MANUFACTURE OF RAILROAD RAILS.

No. 387,797.

Patented Aug. 14, 1888.

*Fig. 1.*



*Inventors.*

*Attest;*  
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(No Model.)

2 Sheets—Sheet 2.

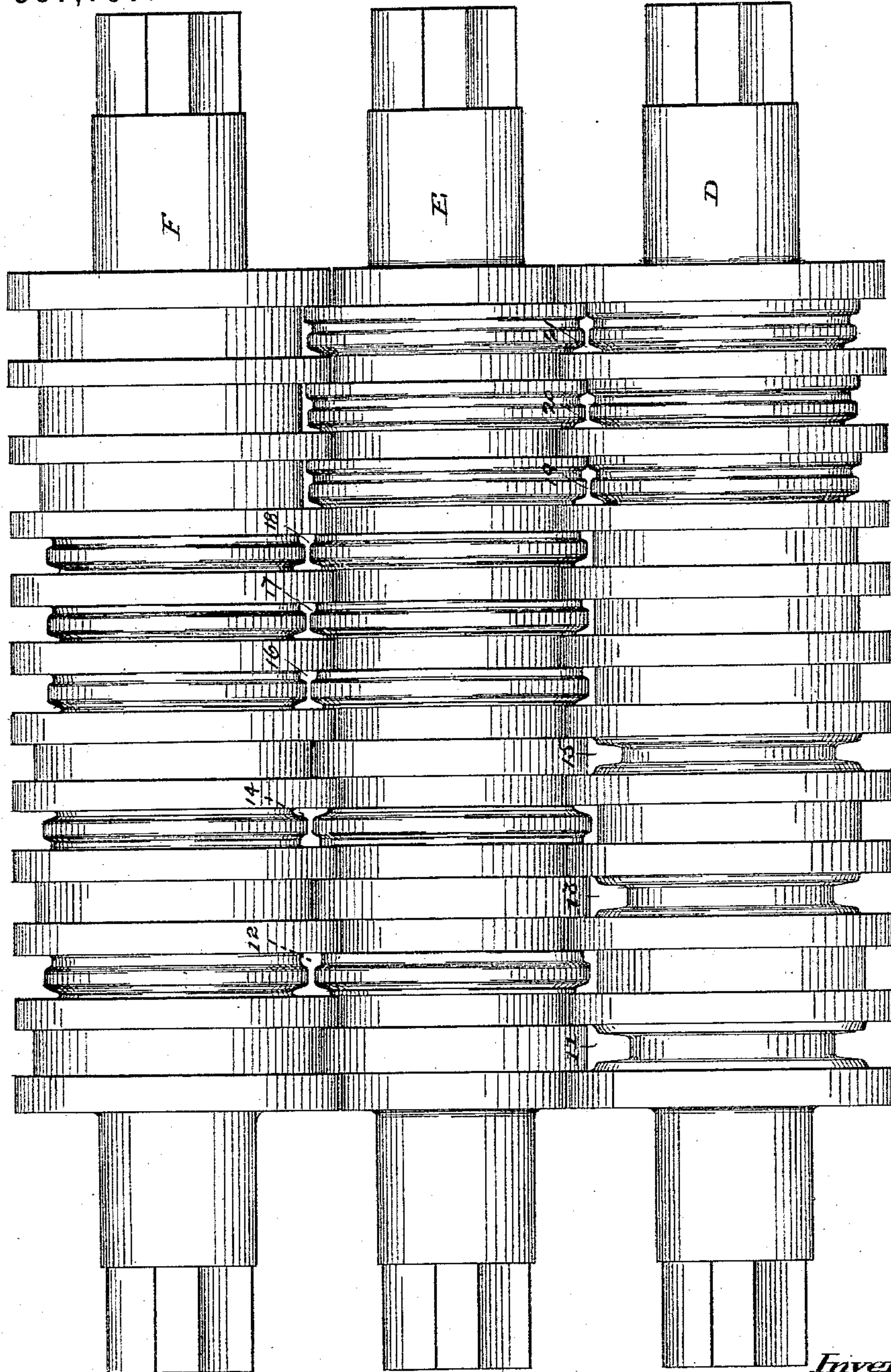
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Fig. 2



Attest;  
D. M. Brown.

Fig. 3.

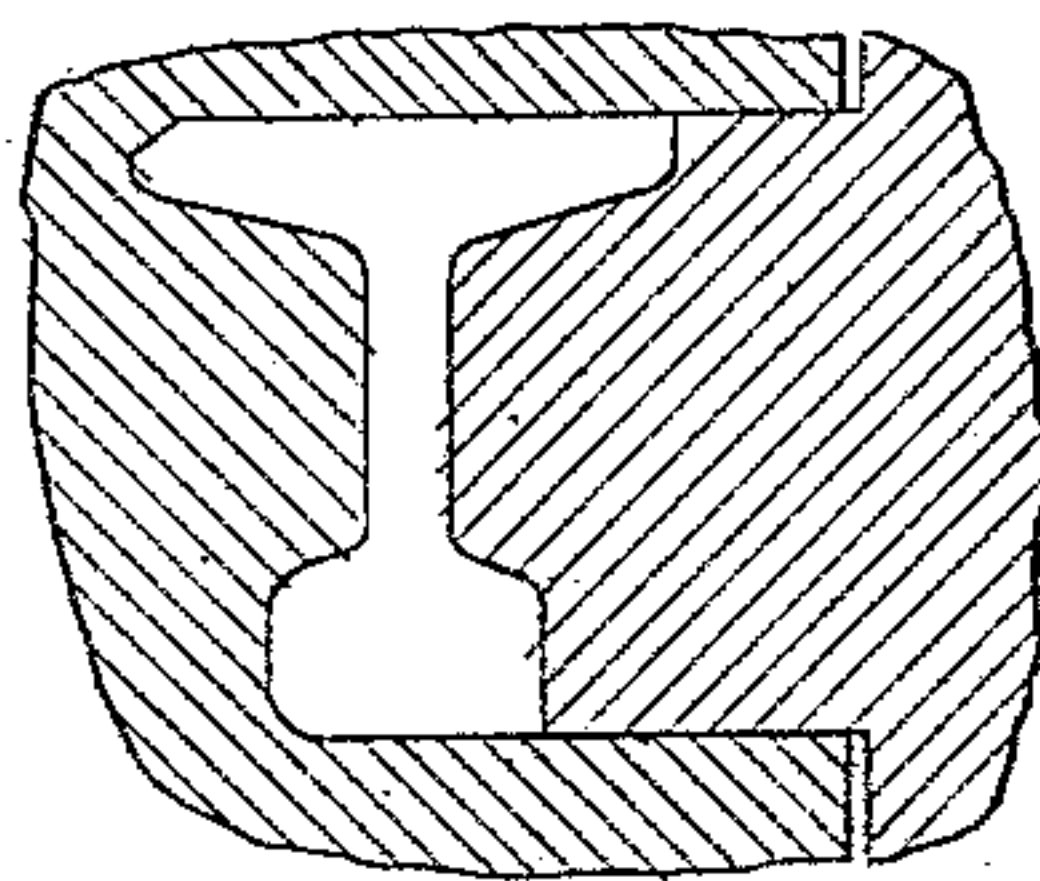
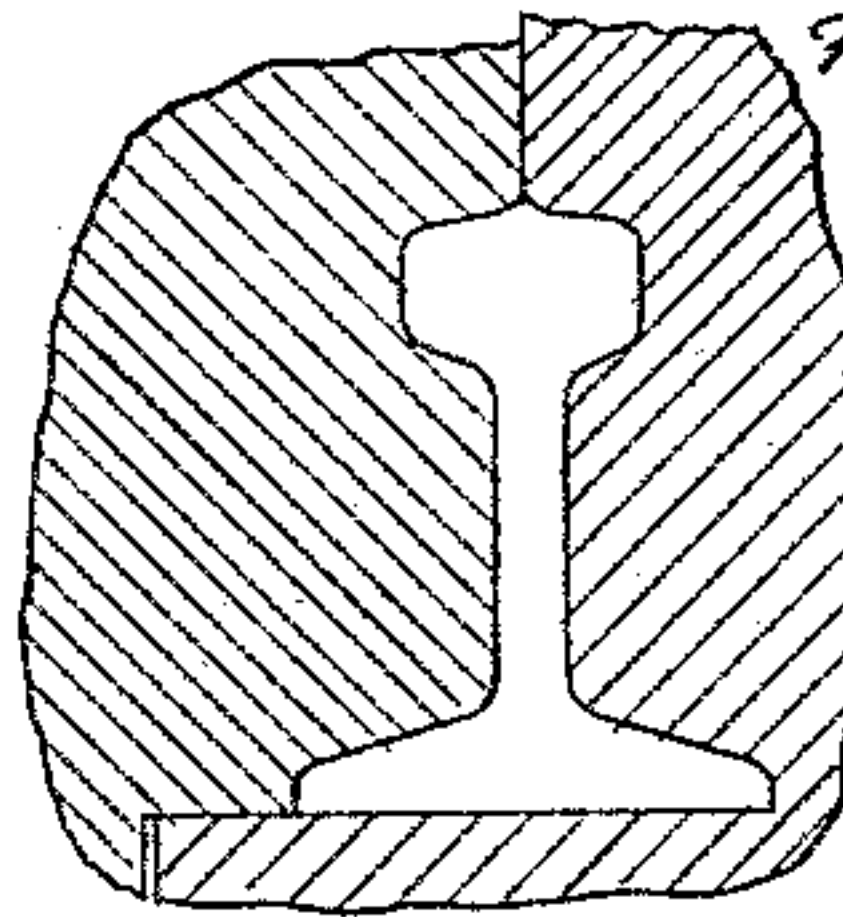


Fig. 4.



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# UNITED STATES PATENT OFFICE.

THEODORE A. MEYSENBURG, OF ST. LOUIS, MISSOURI, AND GEORGE  
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## MANUFACTURE OF RAILROAD-RAILS.

SPECIFICATION forming part of Letters Patent No. 327,797, dated August 14, 1888.

Application filed May 11, 1888. Serial No. 273,600. (No model.)

*To all whom it may concern:*

Be it known that we, THEODORE A. MEYSENBURG, of St. Louis, Missouri, and GEORGE WOSTENHOLM, of Jeffersonville, Wayne county, Illinois, have jointly invented a new and useful Improvement in the Manufacture of Railroad-Rails, of which the following is a specification.

The object of said improvement is to provide for the economical conversion of old steel railroad-rails of standard weight into merchantable railroad-rails of lighter weight—say of twenty-four pounds to eight pounds per yard.

The said improvement by means of which said object is accomplished consists of one or more sets of iron rolls or rollers, said rolls being encircled by a series of grooves, forming passes of such shapes and dimensions that by passing a rail of the kind first named through said passes, in the order hereinafter described, the rail is compressed, transversely, alternately in directions at right angles to each other—that is, alternately vertically and horizontally with relation to the rail—whereby its area of cross-section is reduced in size and changed in shape and the rail elongated, substantially as hereinafter described and claimed, and as illustrated by the annexed drawings, making part of this specification.

In the drawings referred to, Figure 1 represents a side elevation of a set of “three-high” rolls, A B C, Fig. 2 representing a similar elevation of a second set of “three-high” rolls, D E F. Figs. 3 and 4 are sectional views of parts of the rolls.

The following is a full description of said construction embodying said improvement and the manner of employing it to produce the hereinbefore described results.

Similar letters and figures on the drawings refer to the same parts.

The rolls of the respective sets are supposed to be arranged so as to revolve in the usual manner—that is, in alternately reverse directions—for instance, the lowest roll, A, Fig. 1, turning upward, roll B downward, and roll C upward, and those of the second set, Fig. 2, revolving in respectively similar directions.

The following-described peculiar respective

shapes, dimensions, and order of arrangement of the before-mentioned passes between the rolls constitute the distinguishing and valuable feature of the present improvement. 55

Referring to Fig. 1, the said passes are numbered consecutively from 1 to 10, through which passes, in the successive order of their numbers, the rails are passed and rolled when the rolls are in motion. The lower series of passes are constructed with a gradual reduction from No. 1, in the order of their numbers, of their respective vertical dimensions, for the purpose of correspondingly compressing the rails in a vertical direction at each successive passage of them through said passes in the order named, ample space being allowed in said passes for any horizontal expansion that may be produced in the cross-section of the rail by reason of the aforesaid vertical compression. The upper series of passes are constructed and used for the purpose of compressing the rails in a direction at right angles to that to which they are subjected to in the lower series of passes—that is, in a horizontal direction, (relating to the rail.) The horizontal dimensions of the upper series of passes are constructed to correspond respectively with the vertical dimensions of the lower series and are respectively equal in said dimensions—that is, the vertical dimension of pass 1 (lower series) and the horizontal dimension of pass 2 (upper series) are equal—and so with pass 3 (lower series) and pass 4, (upper series,) and so on through the entire series of passes; and hence there is a gradual reduction in the horizontal dimensions of the passes of the upper series corresponding with that of the vertical dimensions of the lower series. There is also a gradual reduction in the general dimensions of both series of passes in addition to that above mentioned, for the purpose of reducing the area of cross-section of the rail and thereby elongating the rail. 60 65 70 75 80 85 90

The mode of operating the said improvement is as follows: The end of a standard steel T-rail, being presented to the pass 1, (lower series,) is drawn in and rolled through between the rolls A and B, whereby the rail is compressed vertically and its vertical part is bent and thickened. The rail is then returned by being rolled through pass 2 (upper series) 95 100



between the rolls B and C. By this second rolling the rail is compressed in a direction at right angles to the compression it was subjected to by its first rolling; but, as the horizontal dimension of the pass 2 (upper series) and the vertical dimension of pass 1 (lower series) are constructed practically equal, an increase in vertical dimension of the rail is not permitted, and hence the effect of this second rolling is to straighten the vertical part of the rail, reduce the area of cross section of the rail by compressing it to the form and dimensions of pass 2, (upper series,) and hence to elongate the rail. The rail is then rolled through the pass 3, (lower series,) the vertical dimension of which is less than that of pass 1 (lower series) and also of the horizontal dimension of pass 2, (upper series,) whereby the rail is compressed vertically in the same manner it was compressed in pass 1. Then the rail is returned through the pass 4, (upper series,) the horizontal dimension of which is practically equal to the vertical dimension of pass 3, (lower series,) and the effect on the rail is relatively similar to that of its described passage through the pass 2. Thus by a continued succession of similar steps, producing similar effects, the rail is rolled through all the passes of the rolls, or through as many of them as is necessary to reduce the sectional area of the rail as much as may be desired.

The object and effect of the successive steps may be described as, first, compressing the height of the vertical thickness of the rail, then, while retaining that reduced height, compressing and reducing its cross-section horizontally and at the same time elongating the rail, then compressing it vertically again, and so on, by sectional compressions alternat-

ing in directions at right angles to each other, diminishing the area of cross-section of the rail, and increasing its length.

As it is not advisable to have the rolls longer than those represented in the drawings, if it is desired to reduce the size of the rail more than is practicable on one set of rolls, as those of Fig. 1, then it will be necessary to employ another set of rolls, as that of Fig. 2, the grooves and passes of which are smaller than those of the first set, and proceed in a manner similar to that above described until the desired shape and size are obtained.

We claim—

In the manufacture of railroad-rails from old steel railroad-rails, the herein-described double series of passes, the vertical dimensions of the passes forming one of said series being equal, or thereabout, to the horizontal dimensions of the passes forming the other of said series, said dimensions of said passes of both of said series being gradually and consecutively diminished in respectively corresponding order and degree, thereby maintaining throughout said series the respective equality of said dimensions of said passes, wherein, consecutively, the rail is compressed transversely, alternately vertically and horizontally, and its cross-sectional area reduced and the rail elongated, substantially as and for the purpose herein set forth.

Witness our hands this 18th day of April, 1888.

THEODORE A. MEYSENBERG.  
GEORGE WOSTENHOLM.

Witnesses:

EMILE W. EGGMANN,  
E. L. EGGMANN.