

J. Thomas.

Pile for Railroad Rails.

N^o 35,281.

Patented May 13, 1862.

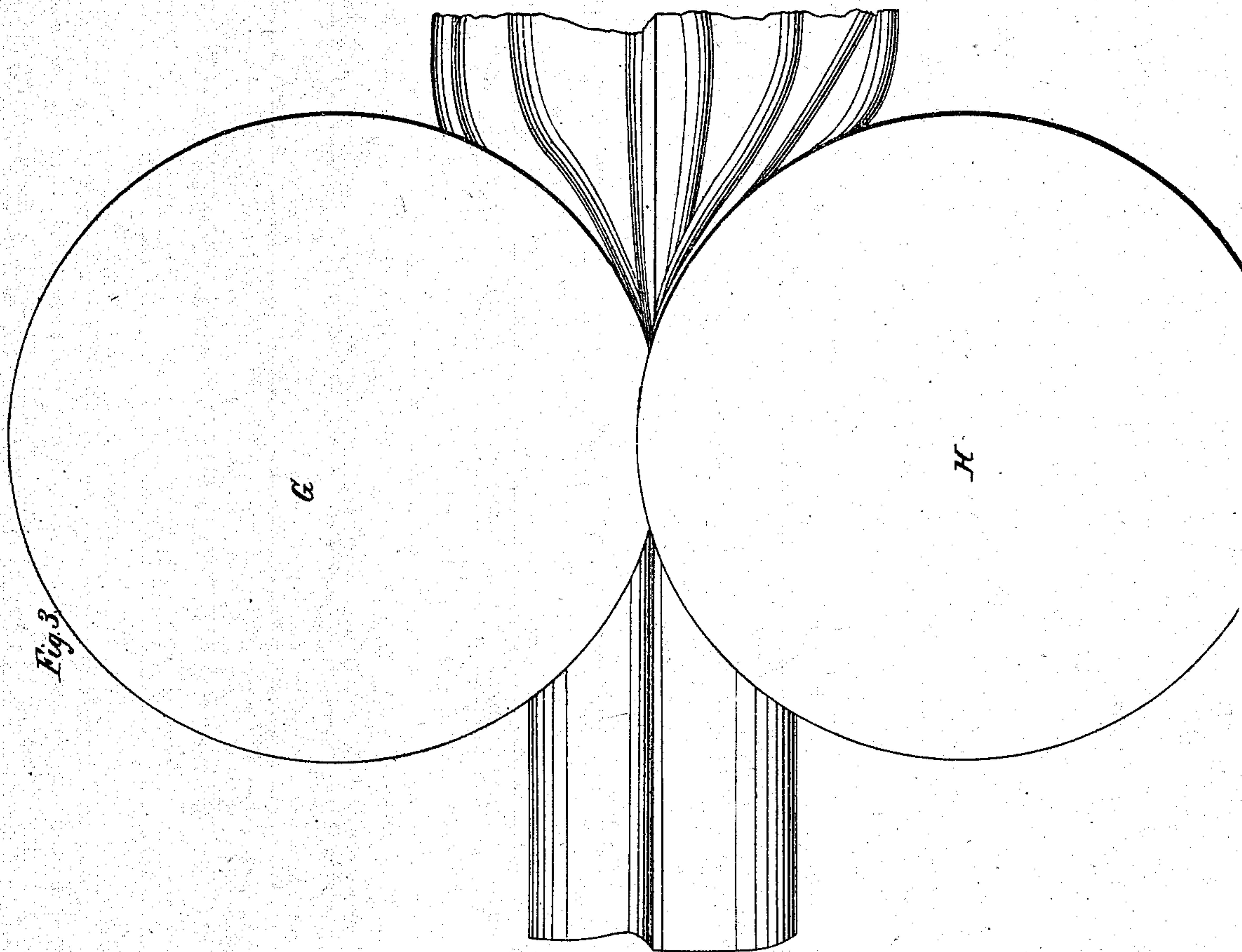


Fig. 3.

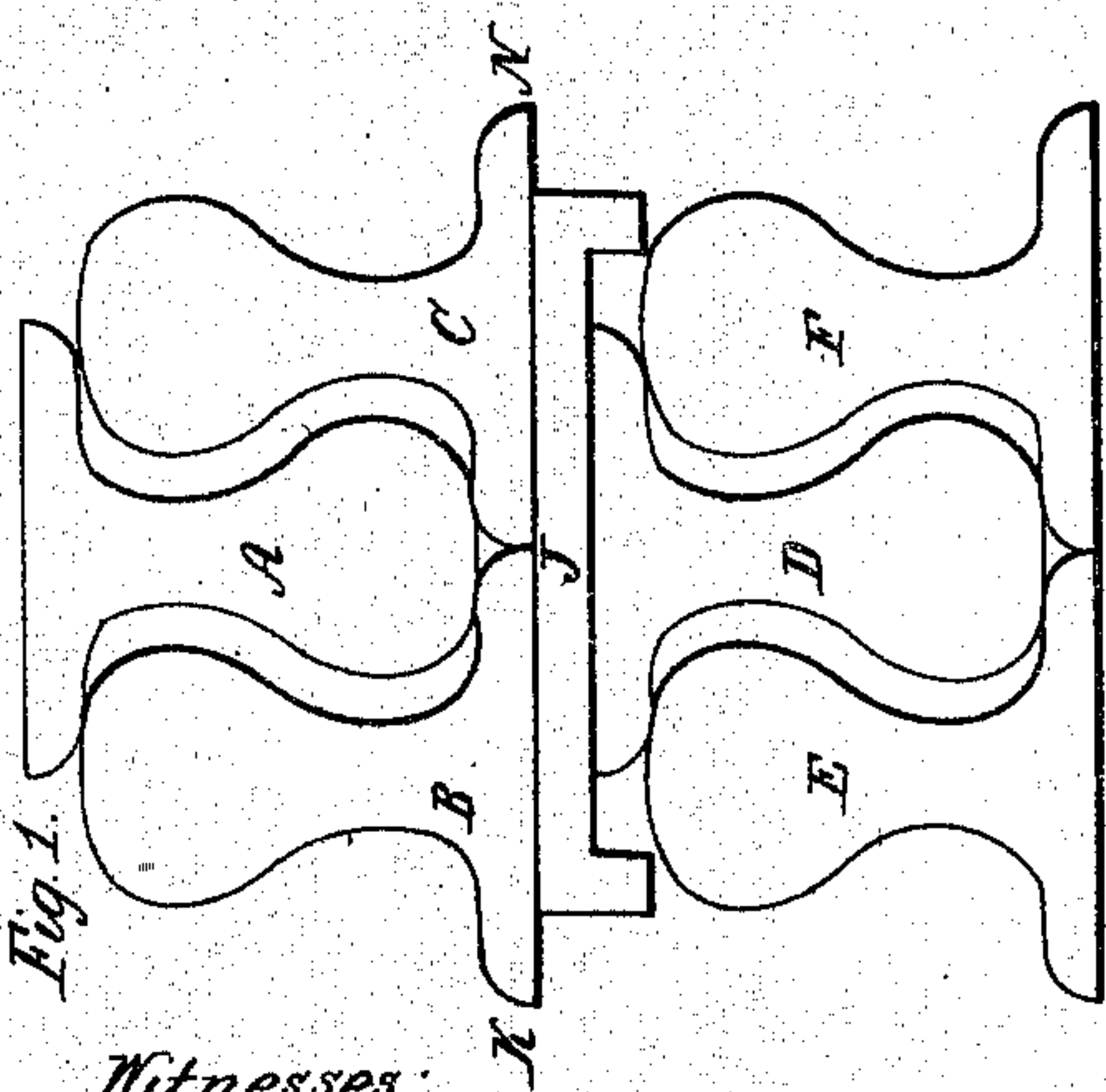
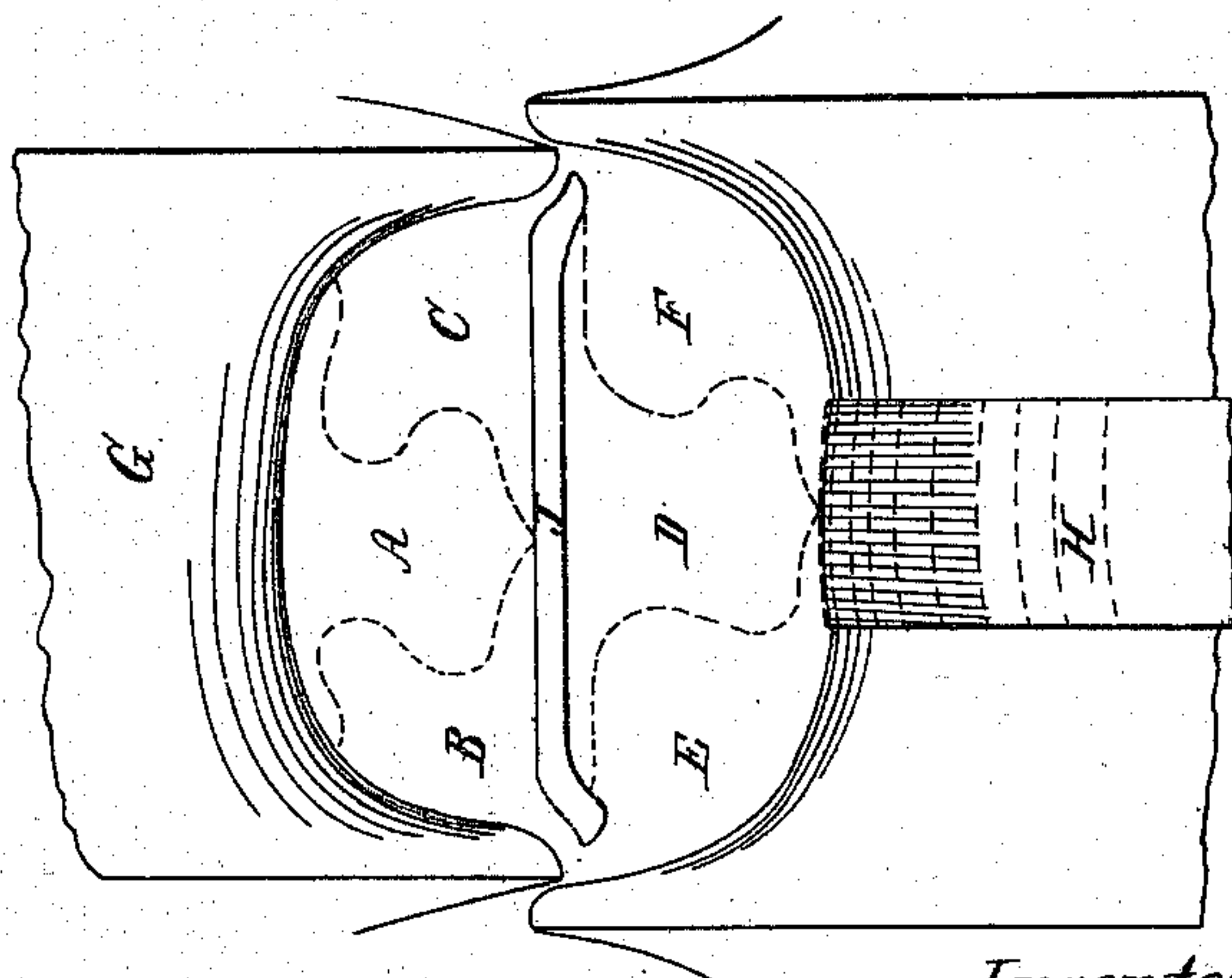


Fig. 1.

Witnesses;
John H. Bristow
Richard H. Newcomb

Fig. 2.



Inventor;
John Thomas

UNITED STATES PATENT OFFICE.

JOHN THOMAS, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO HIMSELF AND JOHN M. LORD.

IMPROVEMENT IN ROLLS FOR ROLLING PILES OF RAILROAD-IRON.

Specification forming part of Letters Patent No. 35,281, dated May 13, 1862.

To all whom it may concern:

Be it known that I, JOHN THOMAS, of Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in the Construction and Arrangement of Rolls for Rerolling Railroad-Bars and other Old Iron; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and the letters marked thereon.

Figure 1 shows the end of a pile of six rails arranged for rerolling. J is a tie-bar extending the length of the rails B, A, C, E, D, and F. The tie-bar J is designed to secure the stability of the pile and aid in the control of the flux used in the process of welding.

Fig. 2 shows the end of the rails as they are passed between the rolls G and H and welded into a single bar.

Fig. 3 shows an end section of the rolls G and H, with a side view of the pile, showing its condition before and after passing through the rolls.

The object sought in the construction of the rolls G and H is to completely confine and control the flux used in the process of welding and to concentrate the force upon the pile in such a way as to preserve its compactness and prevent its spreading.

It will be seen that as the pile is passed between the rolls the deep flanges of the roll G press the flanges of the rails B and C against the tie-bar J, the flanges of which rest upon the heads of the rails E and F, while the arch of the roll G holds the heads of the rails B and C inward, securing the pile from spreading. The roll H presses the flanges of the rails E and F and binds them to the sides of the rails. As the bar or pile advances, before it reaches the center of the rolls in its passage across them, K and L and M and N are brought together, and the flanges of the roll G press the flanges of the rails B and C, completely welding them to the flanges of the rails E and F, so that when the full force of the rolls is brought to bear upon the pile the flux employed in welding or uniting the seams between the rails is prevented from escaping and forced along the seams, thereby insuring a perfect weld or union of the iron. This is most

essential and important when different qualities of iron are to be united, as is the case when railroad-bars are rolled. It is a fact well known to iron-workers that hard crystallized iron cannot be perfectly united with soft fibrous iron unless effected by an ample supply of flux for communication of the surfaces as they are pressed together. In rolling rails by the old plan of rolling into flats and then piling and rerolling into rails the dry surfaces of iron of different crystal, fiber, or structure and possessing little affinity appear to solder or weld, but when tested by use it proves to separate; hence the splintered and laminated rails upon the most of our roads where the rails have been subjected to any considerable amount of wear.

The advantages of this construction and operation of rolls are seen in the arrangement of the flanges in connection with any suitable form of rolls, substantially as described, so as to weld the sides of the pile, effectually closing all escape of the flux before the full force of the rolls comes upon the body of the pile, thereby securing a perfect weld of the iron and securing a superior strength to the rail, as follows: The discharge of the flux and cinder from the sides of the pile as constructed and operated by the old process cuts the fiber of the iron and arranges it transversely, as may be easily seen, by bending such rail so as to stretch the flange, thereby checking the same and increasing their liability to break. This is avoided by my invention and discovery. This is no theory which may not be established by the experience of thousands who have witnessed the operation and the wear of the rails from bars so produced, and though the process seems simple in its operation it effects much and is the result of years of thought and experiment, and is the seeming perfection of a process for which Letters Patent of the United States were granted to me bearing date the 22d day of November, A. D. 1859, and by virtue of an assignment issued to John Thomas and John M. Lord.

The advantages of this process complete are seen, first, in the saving of labor, reducing the old process of rolling into flats so that one-third more work is accomplished in the same time than is produced by the old plan;

secondly, the superiority of the iron, which is the result of the superior weld and perfect soldering of the iron when so produced and operated.

I am aware that rolls have been used for re-rolling piles of railroad-rails which to a certain extent, though imperfectly, accomplished the purpose for which my improved rolls are intended—viz., to bend the flanges so as to close the external joints before the body of the pile receives the direct pressure of the rolls, and to some extent preventing the escape of the flux; and I am also aware that rolls with flanges overlapping each other are in common use for rolling railroad-iron. My

present invention is for rolling piles composed, as set forth, of rails arranged in such manner that the flanges of said rails shall be compressed and forced into the body of the pile instead of being simply bent over, as is done by the rolls used in my patent of 1859 under date of November 22.

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

The rolls G and H, constructed and arranged as and for the purposes set forth.

JOHN THOMAS.

Witnesses:

JOHN H. REDSTONE,

R. H. NEWCOMB.