

(No Model.)

J. W. RAPP.  
T-BAR.

No. 557,147.

Patented Mar. 31, 1896.

Fig. 1

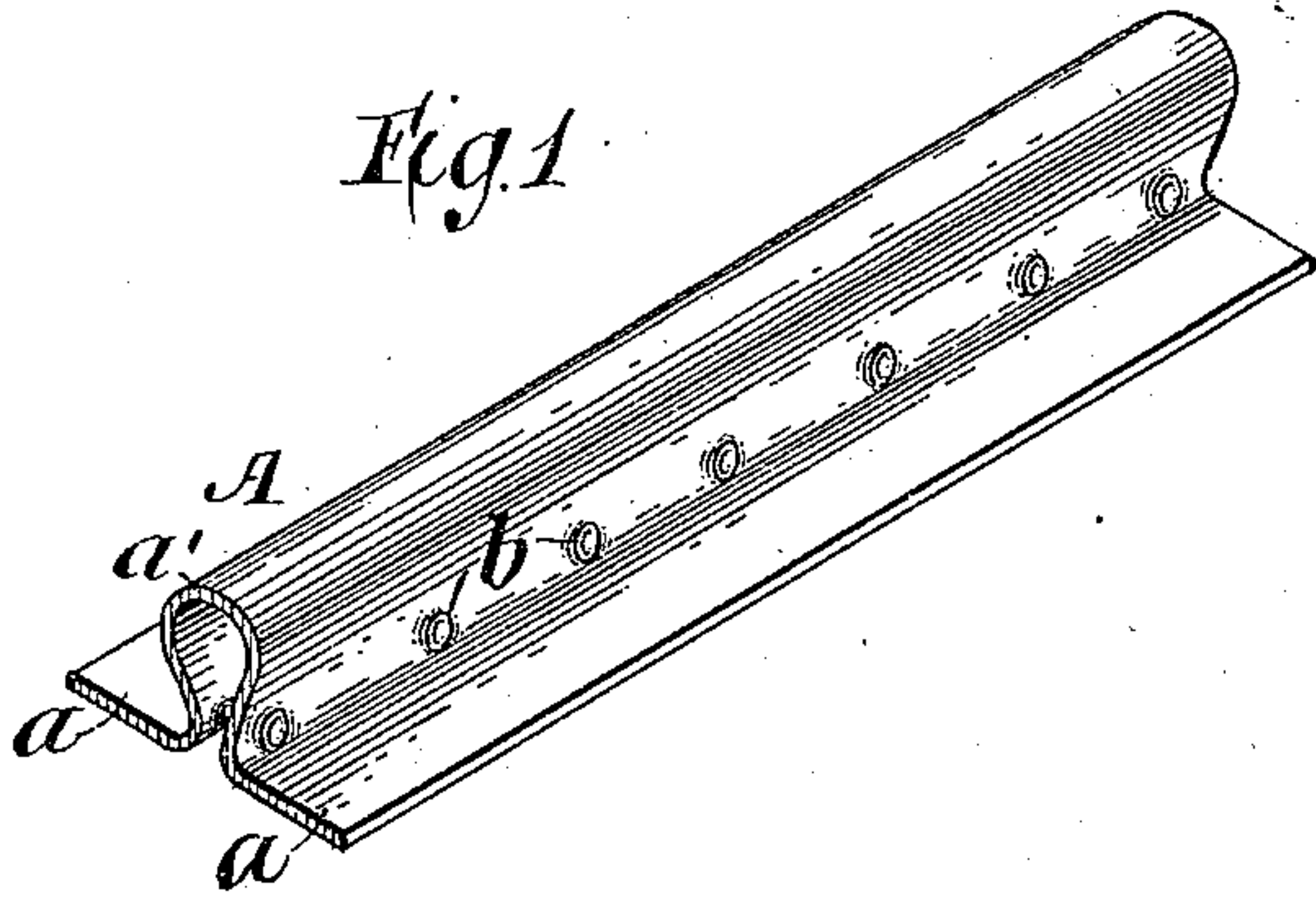


Fig. 4

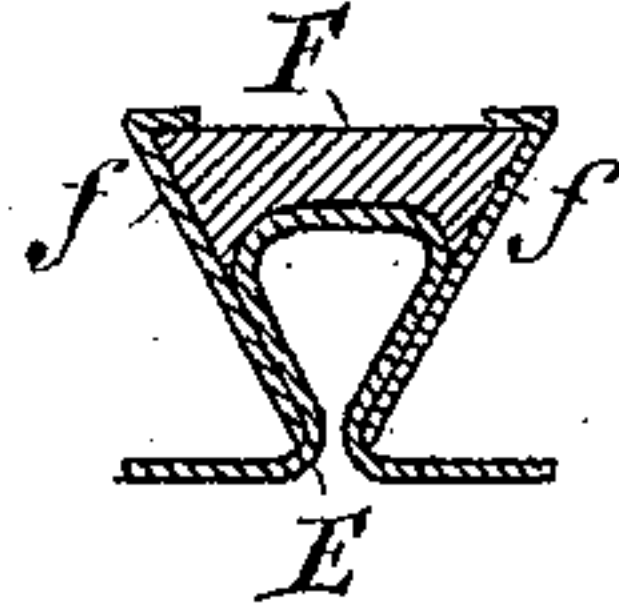


Fig. 2

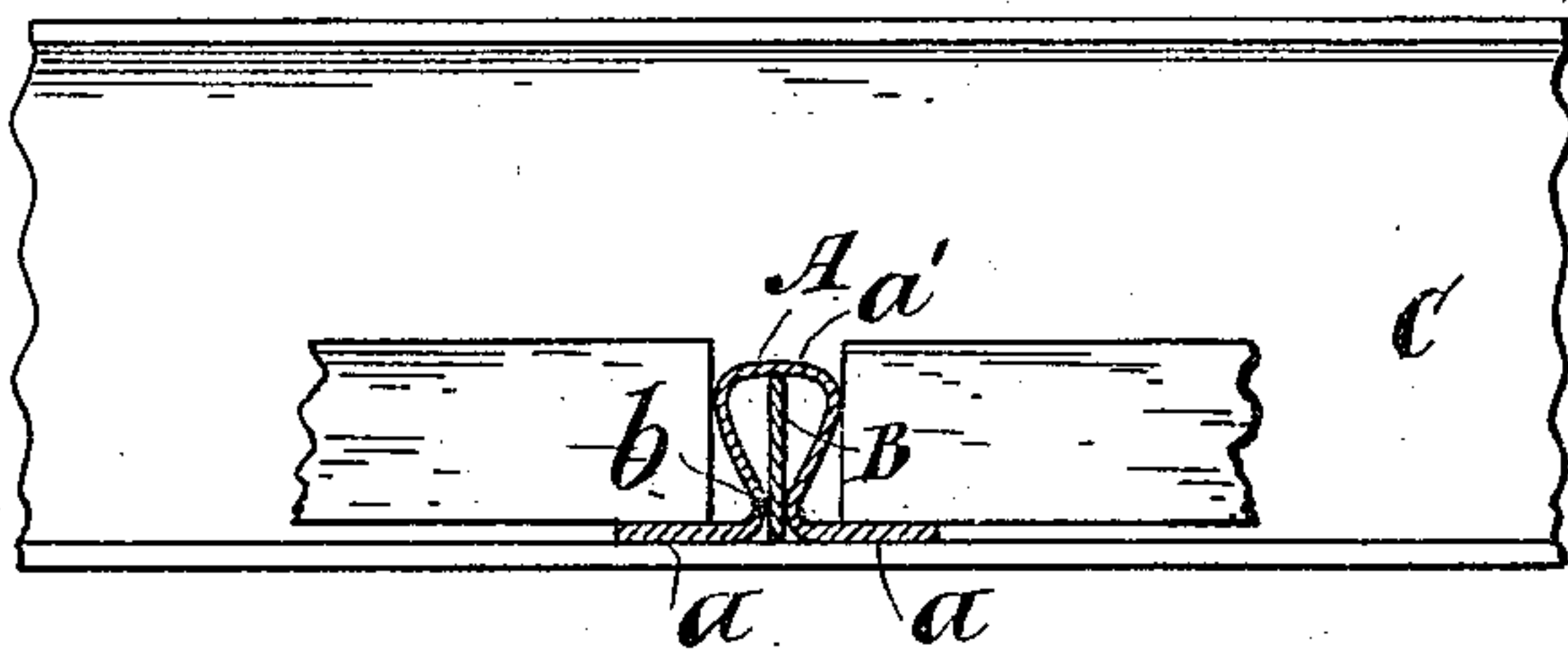


Fig. 5

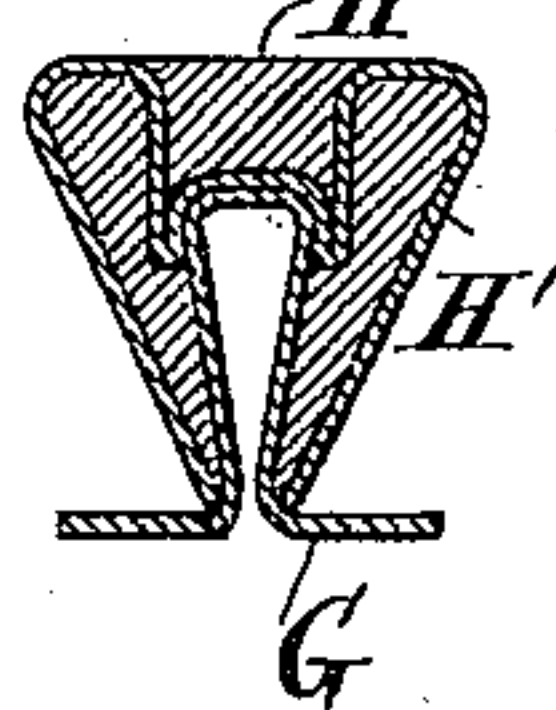
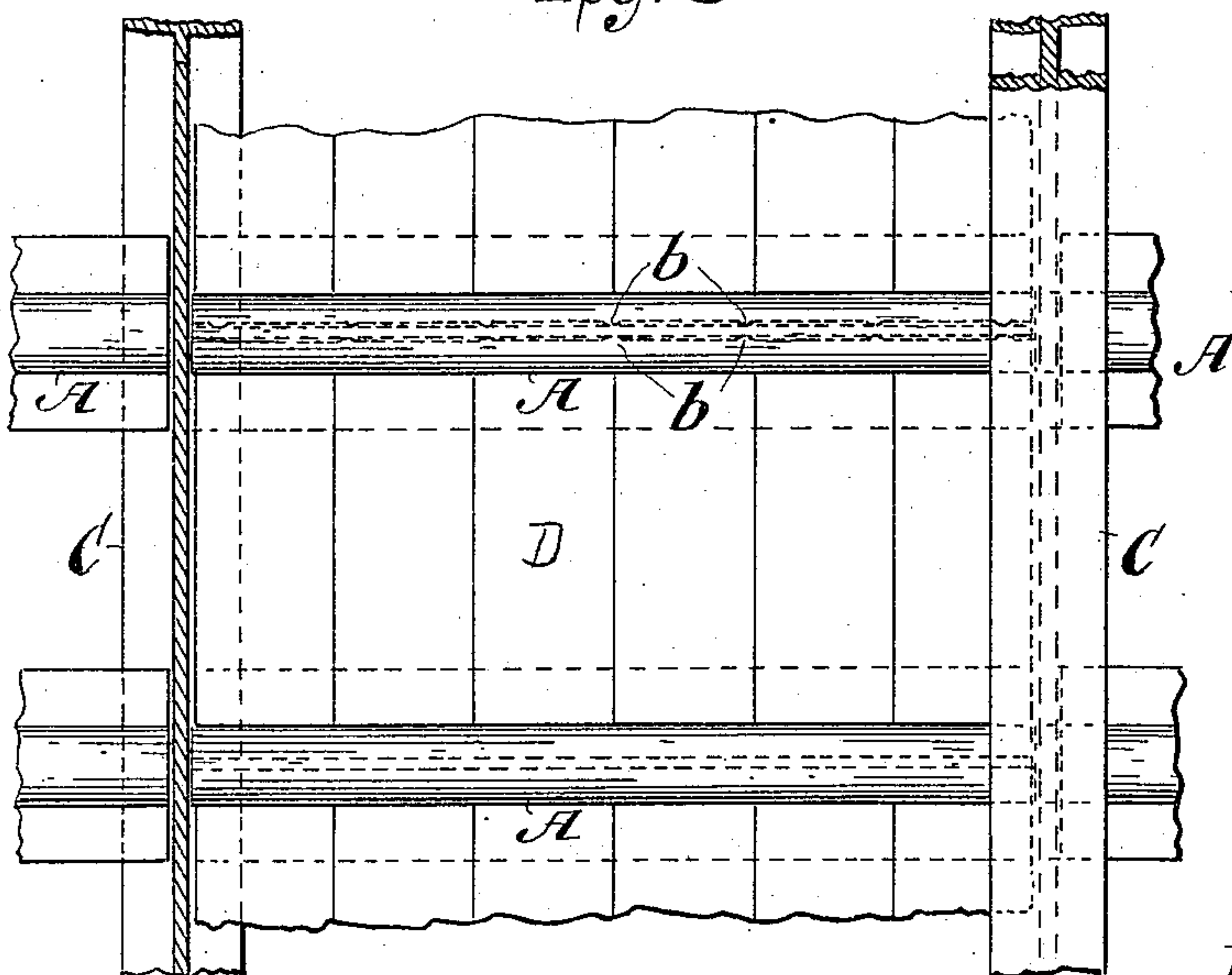


Fig. 3



Witnesses  
Geo. Wadman  
Clerk L. Wells.

Inventor,  
John W. Rapp,  
by his attorney,  
Edwin H. Brown



# UNITED STATES PATENT OFFICE.

JOHN W. RAPP, OF NEW YORK, N. Y.

## T-BAR.

SPECIFICATION forming part of Letters Patent No. 557,147, dated March 31, 1896.

Application filed May 18, 1895. Serial No. 549,745. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. RAPP, of New York, in the county and State of New York, have invented a certain new and useful Improvement in T-Bars, of which the following is a specification.

I will describe a T-bar embodying the features of my improvement and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is an isometric view of a T-bar embodying my improvement. Fig. 2 is a cross-sectional view of the same, showing a strengthening-bar which has been combined with the T-bar. Fig. 3 is a plan view of a portion of a floor, showing a manner of using the improvement. Figs. 4 and 5 show methods of combining wooden nailing-strips with the bars.

Similar letters of reference designate corresponding parts in all the figures.

At the present day it is a common practice to construct the framework of buildings—that is, the groundwork of the floors, ceilings, partitions, &c.—of rolled iron or “steel shapes,” as they are called. The use of I-beams is involved in this construction, supported on columns or other I-beams, while oftentimes the support for the floor between the beams is formed by arches of masonry sprung between the beams. Another construction is that in which tiling or bricks are supported at their ends upon bars resting upon the lower flanges of the I-beams. The so-called “T-bars” are utilized for this purpose, the flanges of the bar being used as the supports for the ends of the tiling or bricks. The T-bars are not only applied to this purpose in floor construction, but in roof and ceiling construction as well. T-bars thus employed are in the condition of loaded beams and require to be very strong to resist an undue amount of deflection. Ordinary bars of this form are usually weak in the longitudinal web portion of the bar, this portion buckling and being displaced at the first sign of weakness in the bar.

My invention is particularly directed toward the strengthening of this portion of the bar. In forming my improved T-bar I use sheet metal and bend the same approximately to the form of the ordinary T-bar, giving to the web portion of the bar, instead of a simple flat strip, as in the ordinary form, a shape

much resembling that of a flattened horse-shoe, thus giving a breadth of metal where it will be most serviceable in resisting a compressive stress.

In the accompanying drawings, A represents my improved T-bar. It will be seen to have laterally-extending flanges *a a* and a yoke-piece *a'* connecting them. The distance between the sides of the yoke where it joins the flanges *a a* is less than the distance between the same at a point nearer to the bight of the yoke.

To further strengthen the T-bar, I may interpose between the two sides of the yoke an upright strip B, extending lengthwise of the T-bar. The strip B may be secured in the T-bar A by indenting the latter, as shown at *b*.

Fig. 3 represents a method of applying the T-bars. CC are I-beams, suitably supported, upon whose lower flanges rest the T-bars A A. D represents bricks or tiling whose extremities rest upon these T-bars.

In Figs. 4 and 5 there is represented a construction of combined nailing-strip and my improved T-bar for securing the flooring-boards where a flooring is applied immediately over the T-bars.

In Fig. 4, E is the T-bar, to the top portion of which there is fitted a longitudinal wooden strip F, which serves as a nailing-strip to secure the wooden flooring. The strip F is held in place by side plates of sheet metal *f*, riveted or otherwise secured to the T-bar.

In Fig. 5, G is the T-bar; H, the nailing-strip; H', a metallic plate whose edges rest upon the flanges of the T-bar and which is bent between its edges to conform to the top of the T-bar, as shown.

A T-bar made according to my invention—that is, of sheet metal and of the form described—offers decided advantages as regards ease and economy of production, as well as desirable qualities in the product. First, the material, consisting of sheet or plate metal, an almost universal commodity, simpler and less expensive machinery and tools are necessary to form the T-bar than if the same were rolled to form from the ingot. Especially is this true when the shape of the T-bar is borne in mind—a shape which does not lend itself readily to direct formation from the ingot by rolling processes. Second, the strength



of the T-bar is a maximum, since a great part of the material is placed at that portion of the bar where it will best resist the deformation of the same—namely, that portion which  
5 is in compression under the action of a load.

Having described my invention, what I consider as new, and desire to secure by Letters Patent, is—

1. A T-bar made from sheet metal, comprising  
10 ing bottom flanges and a yoke-piece connecting the flanges, the yoke-piece consisting of a curved or arched portion and inclined sides converging toward the points from which the bottom flanges extend, substantially as specified.  
15

2. A T-bar made from sheet metal comprising bottom flanges and a yoke-piece connecting the same combined with a longitudinal strengthening-strip held between the sides of  
20 the yoke, substantially as specified.

3. A T-bar made from sheet metal comprising

ing bottom flanges and a yoke-piece connecting the same, the distance between the sides of the yoke being less where the same joins the bottom flanges than it is at a point nearer  
25 the bight of the yoke, combined with a wooden nailing-strip fitted to the bar, substantially as specified.

4. A T-bar made from sheet metal comprising bottom flanges and a yoke-piece connecting the same, combined with a wooden nailing-strip fitted to the bar and a metal plate contacting with the bar and nailing-strip, substantially as specified.  
30

In testimony whereof I have signed my  
35 name to this specification in the presence of two subscribing witnesses.

JOHN W. RAPP.

Witnesses:

PIERSON L. WELLS,  
JAC. KLEMANN, Jr.