

(No Model.)

W. F. GOULD.

RAILROAD RAIL CUSHION AND JOINT.

No. 280,030.

Patented June 26, 1883.

Fig. 1

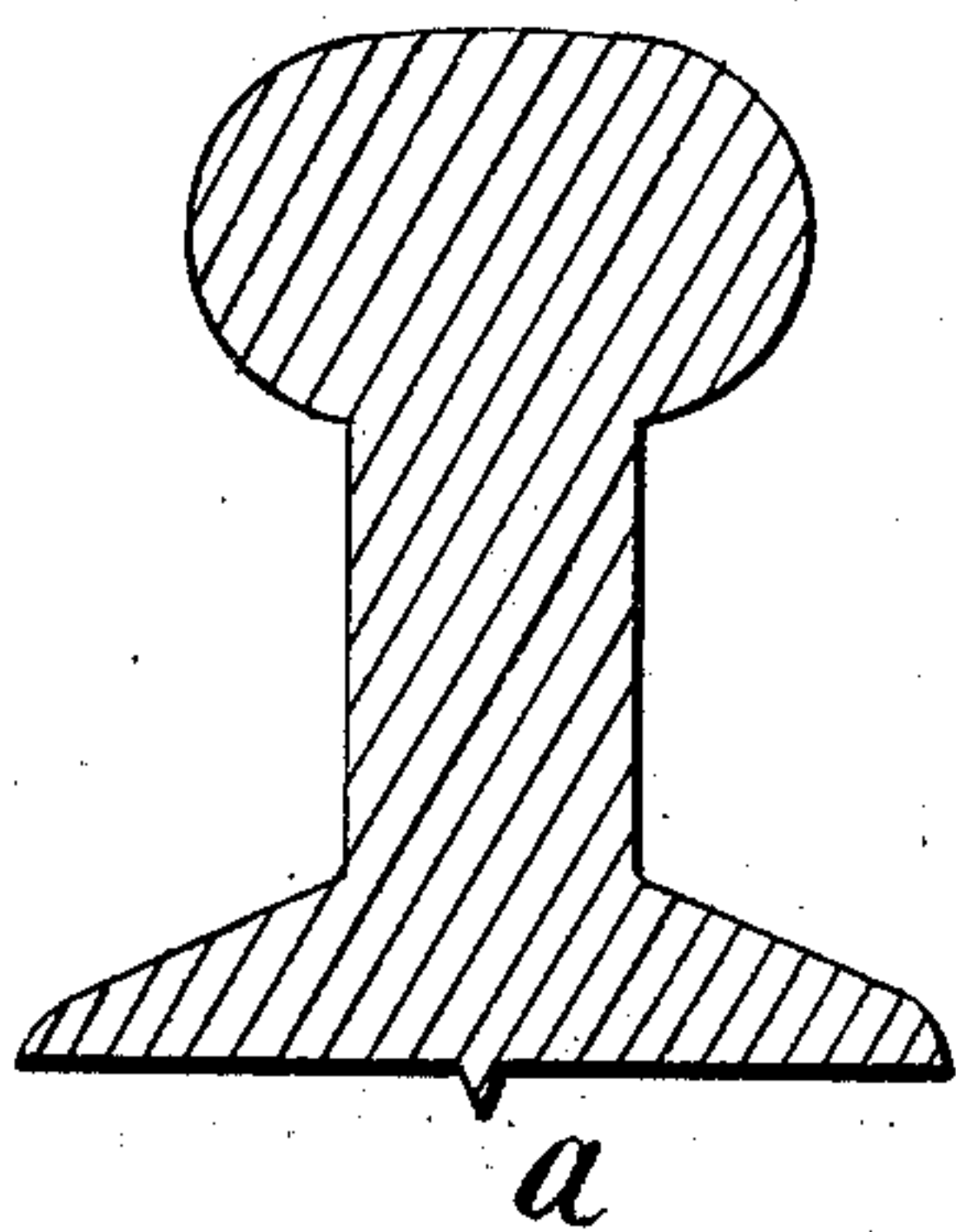


Fig. 2

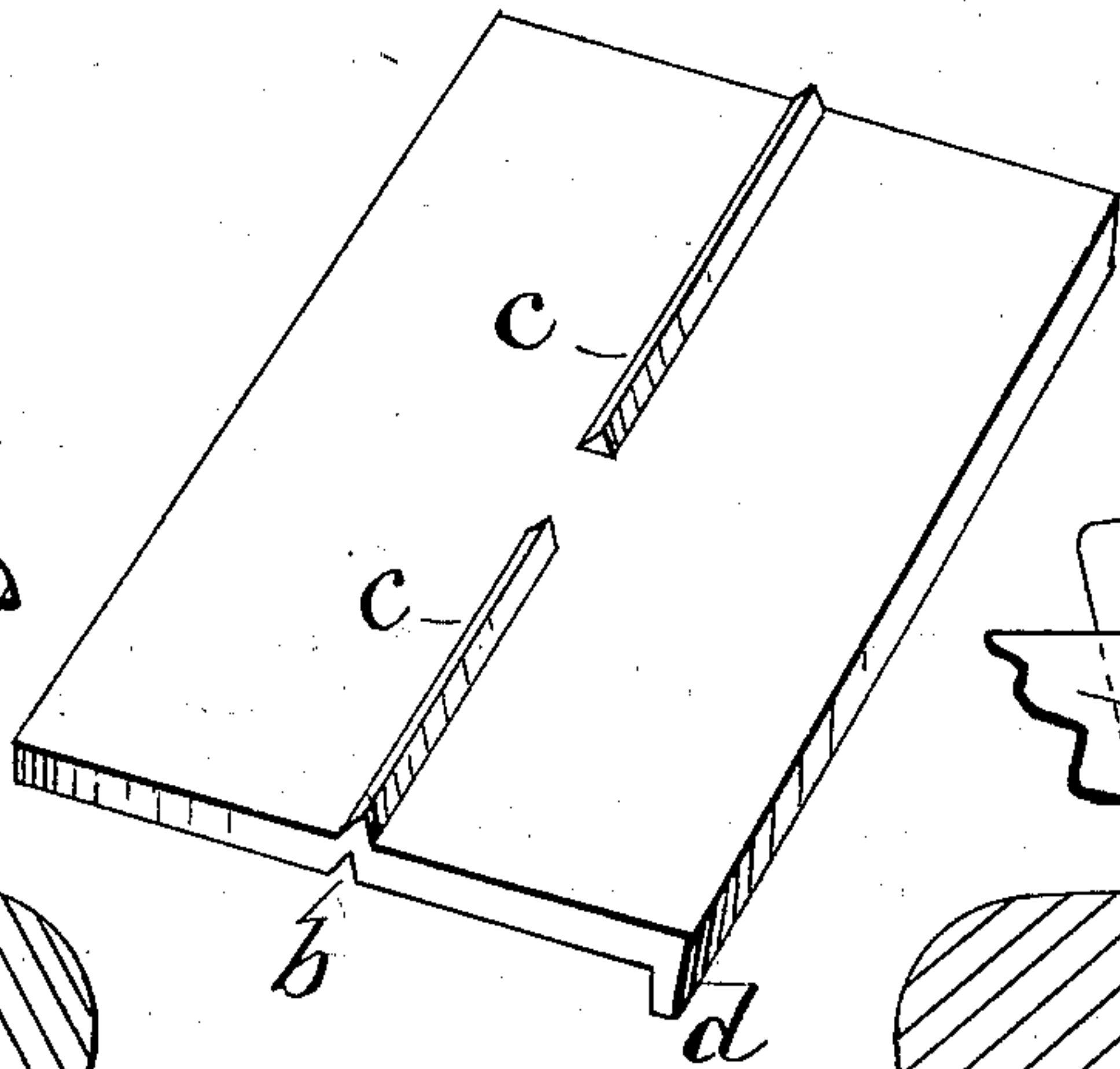


Fig. 3

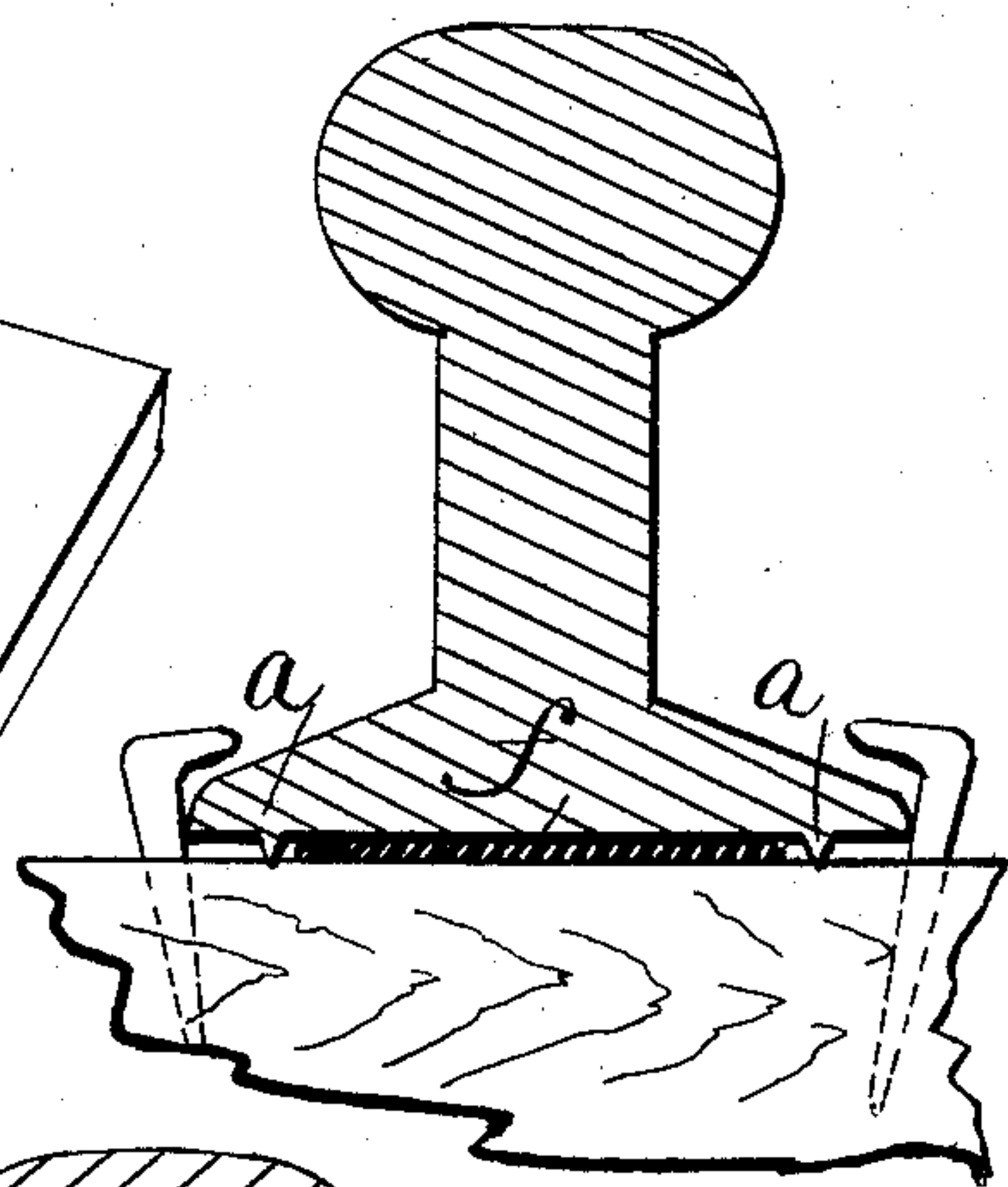


Fig. 4

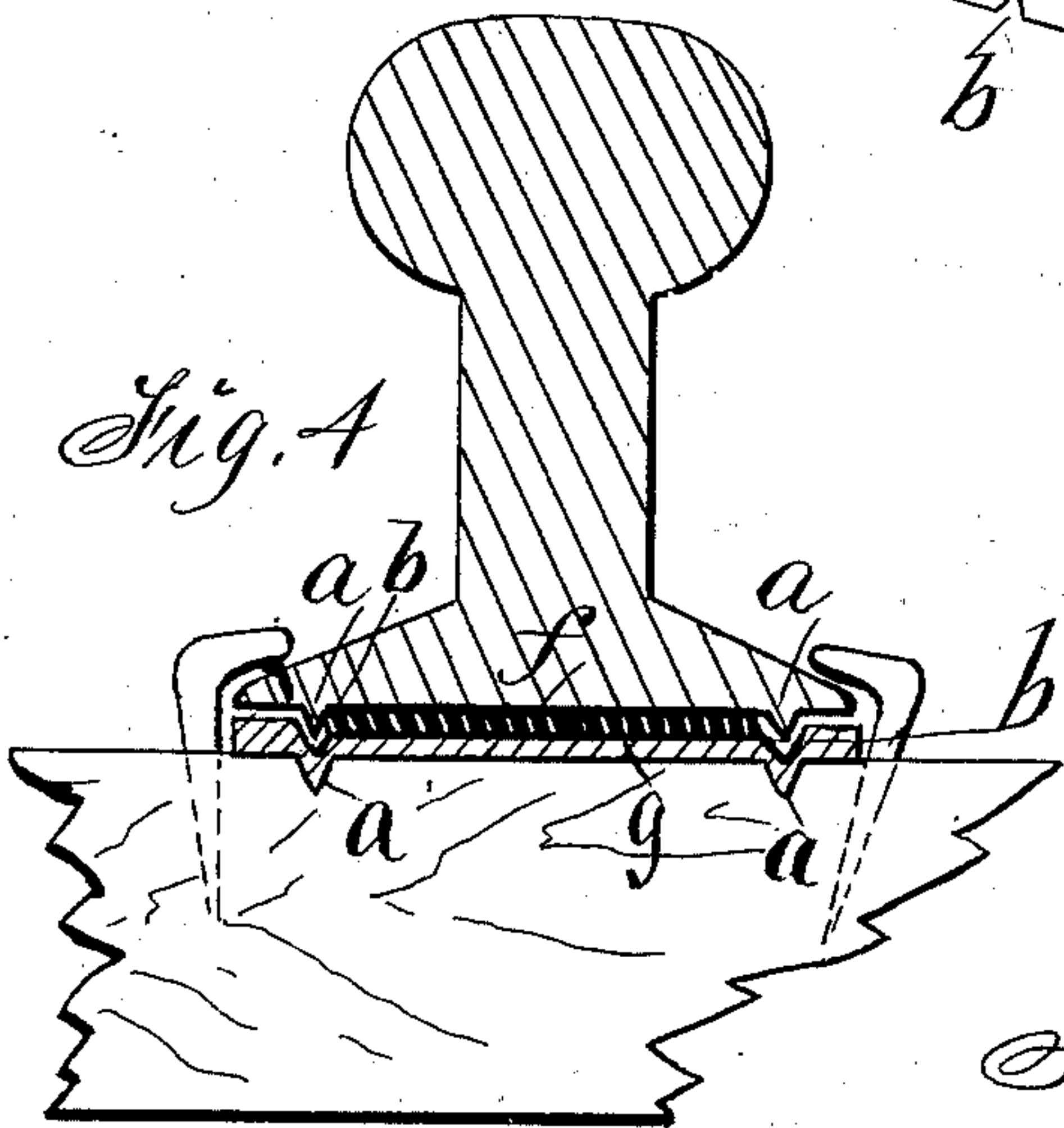


Fig. 5

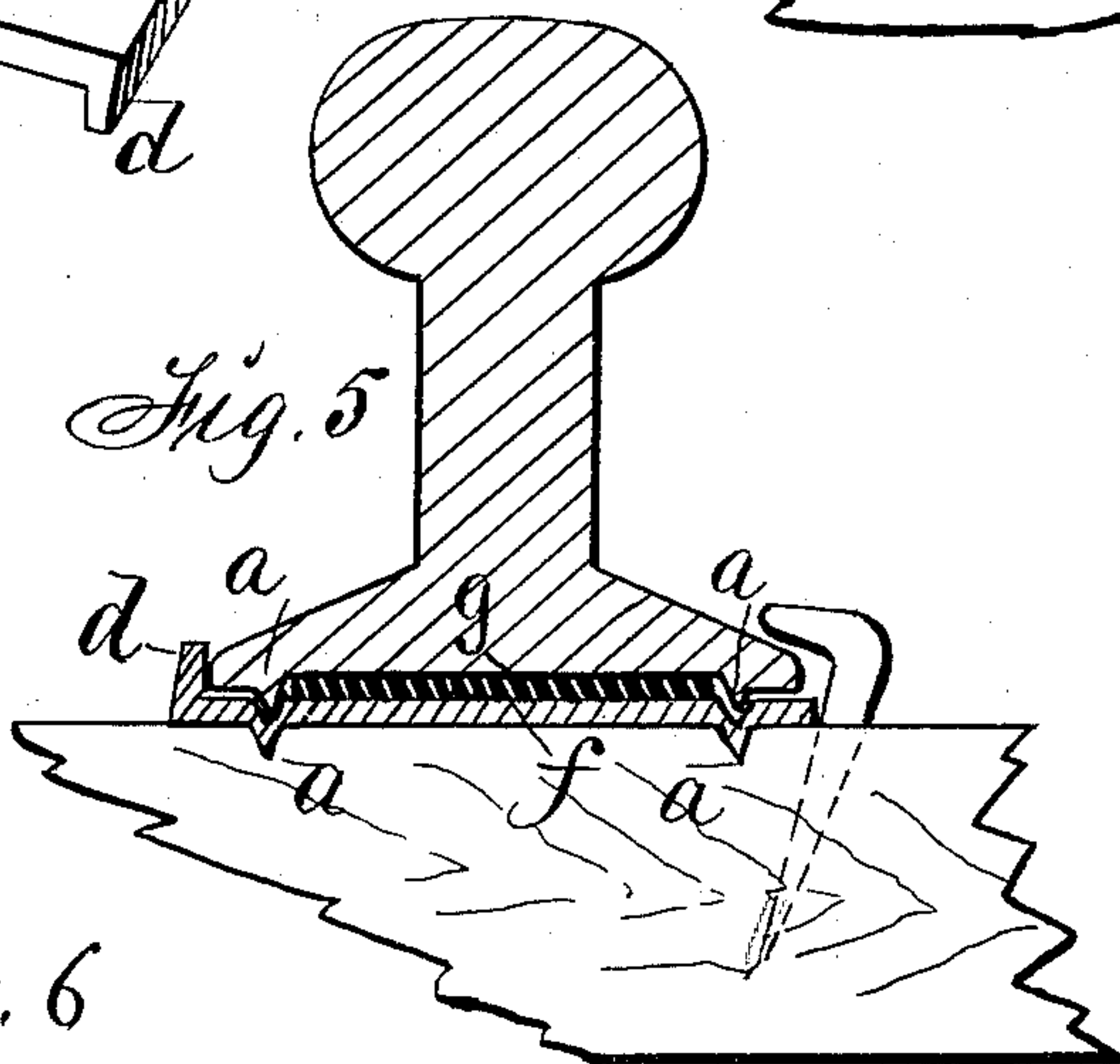
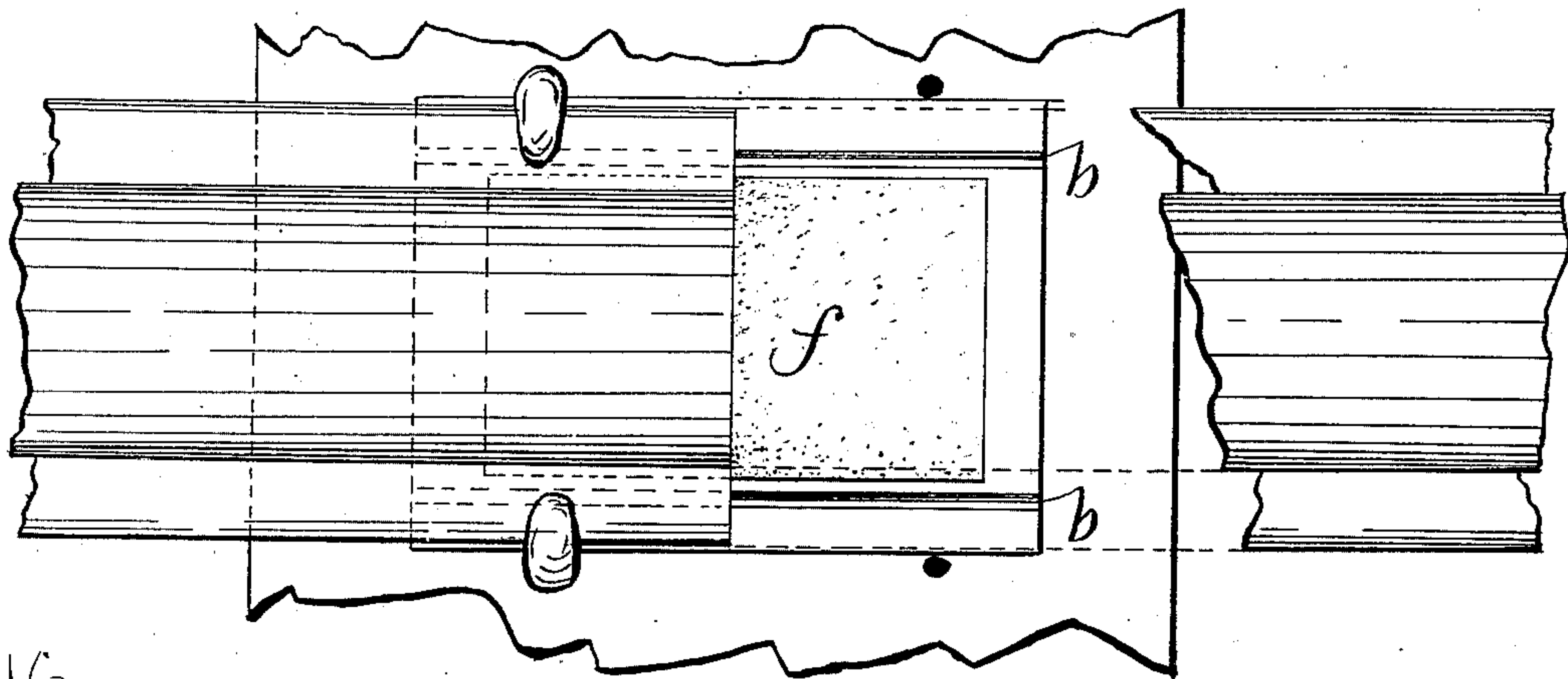


Fig. 6



Witnesses:
W. E. Dyppert
A. C. Guthrie,

Inventor:
William F. Gould,
By Thomas G. Orwig, atty.

UNITED STATES PATENT OFFICE.

WILLIAM F. GOULD, OF STUART, IOWA.

RAILROAD-RAIL CUSHION AND JOINT.

SPECIFICATION forming part of Letters Patent No. 280,030, dated June 26, 1883.

Application filed August 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. GOULD, of Stuart, in the county of Guthrie and State of Iowa, have invented an Improved Railroad-
5 Rail Cushion and Joint, of which the following is a specification.

The object of my invention is to save time and labor in fixing metal rails to wooden cross-ties, so as to prevent any lateral movement of
10 the rails and spreading of the track, and without interfering with the longitudinal expansion and contraction of the rails; to prevent the slipping and displacement of packing or or cushioning material from under the rails,
15 and to improve the construction and durability of rail-joints and complete railway-tracks.

Heretofore flanges have been formed integral with the bottom edges of metal rails in such a manner as to be adapted to overlap the longitudinal top edges of wooden rails upon which
20 they were fixed in the construction of tramways or street-car railways. Continuous ribs have also been formed integral with the under sides of locomotive railway-rails to enter corresponding grooves formed transversely in the
25 upper faces of wooden cross-ties for the purpose of preventing lateral movement of the rails relative to the ties and complete track; but flanges on the edges of rails, when let into
30 wooden cross-ties, will conduct water into the grooves and facilitate the soaking and decay of the ties at the points where they are subjected to the greatest pressure and wear by passing trains; and cutting away wood by
35 chamfering or grooving ties across their top surfaces, to admit the insertion of ribs formed on the bottoms of metal rails, impairs the strength and durability of the ties, and requires much time and labor. To avoid these objections and
40 to attain the advantages desired, I form V-shaped beads on the bottoms of rails and plates, and combine rails, ties, cushions; and plates, as hereinafter fully set forth, in such a manner that the metal beads can be readily
45 embedded into the top faces of wooden cross-ties by the weight of a locomotive or construction-train, and to thereby facilitate the laying, cushioning, and jointing of rails, and the building of improved tracks and complete rail-
50 roads.

Figure 1 of my accompanying drawings is a

cross-section view of a metal rail having a single longitudinal and continuous bead, *a*, formed integral with its under side. Fig. 2 is a perspective view of my improved railway chair
55 or plate in an inverted position. It has a continuous groove, *b*, in its top surface to admit the bead *a* on the bottom of the rail, and two sections or distinct sharp-edged beads, *c c*, immediately under the groove *b*, and a vertical
60 flange, *d*, at one of its sides and top edges. The inner ends of the beads *c* form shoulders to engage the wooden ties, and to thereby prevent the longitudinal movement of the plate relative to the tie and track. Fig. 3 is a sectional
65 view showing a rail having two parallel and continuous sharp-edged beads, *a*, on its bottom, resting upon the top surface of a wooden cross-tie, and a rubber plate or cushion, *f*, inclosed between the beads *a*. Fig. 4 is a
70 sectional view showing a rail having two parallel beads, *a*, a chair or joint plate having two corresponding beads, *a*, on its bottom, and two grooves, *b*, and a sunken panel, *g*, between said grooves in its top, a cushion, *f*,
75 and a wooden cross-tie, combined and fastened together by means of common spikes. Fig. 5 is a sectional view showing a sunken panel, *g*, between the two parallel beads *a* on the bottom of the rail, for the reception of a rubber
80 plate or cushion in such a manner that the sides of the bottom of the rail will be allowed to come in contact with the top surface of my improved metal plate, having beads *a*, grooves *c*, and a flange, *d*. Fig. 6 is a top view of my
85 improved rail-joint, showing the end of one of the rails broken away to uncover sections of the cushioning and binding plates. Jointly considered, these figures clearly illustrate the construction, operation, and utility of my com-
90 plete invention.

My improved rails and plates, having beads adapted to be pressed down and embedded in the top surfaces of wooden cross-ties without removing any wood, may be formed by means
95 of suitable rollers and dies in the way rails are generally made, and may vary in shape, size, and weight as desired. The beads designed to be embedded into the wood by pressure may also vary in configuration, size, and
100 number. It is not essential that they should be V-shaped and sharp-edged, but sufficiently

small and thin so as to be adapted to be sunken into the wood by the pressure of a locomotive as a construction-train is advanced upon the rails when placed in proper position upon the ties, as indicated by Figs. 3, 4, 5, and 6.

I am aware that rails having continuous strengthening-ribs on their under sides have been pressed into the tops of posts or piles, and therefore do not claim that forming ribs on the bottoms of rails and pressing the ribs into wood is new; but shaping ribs or fins that are continuous on the bottoms of rails in the manner set forth, to adapt them to be pressed into the top surfaces of a series of ties, and then uniting them with a series of ties, in the manner specified, by advancing a locomotive, car, or construction-train upon the rails to press the ribs of the rails into the ties, is novel and greatly advantageous.

I claim as my invention—

1. The hereinbefore - described method of combining railway-rails with a series of cross-ties, to prevent any lateral movements of the rails and ties relative to each other, and to economize time and labor in constructing a track, which method consists, essentially, in forming continuous small and sharp-edged ribs on the under sides of rails and then plac-

ing and fastening them upon a series of cross-ties and advancing a locomotive, car, or train upon the rails to press the ribs on the rails into the top surfaces of the ties, substantially as set forth.

2. The improved railway chair or plate, illustrated by Fig. 2, having one or more longitudinal grooves in its top surface, and two or more distinct beads and shoulders on its under surface, substantially as and for the purposes specified.

3. The combination of a metal rail having two or more parallel longitudinal beads on its bottom, a rubber plate or cushion, and a cross-tie, substantially as shown and described, for the purposes specified.

4. The combination of two metal rails, each having two or more beads on its bottom, a rubber plate or cushion, a metal plate having grooves in its top surface corresponding with the beads on the rail, and one or more beads on its under side, and a cross-tie, substantially as and for the purposes specified.

WILLIAM F. GOULD.

Witnesses:

THOMAS G. ORWIG,
S. J. COPE.