

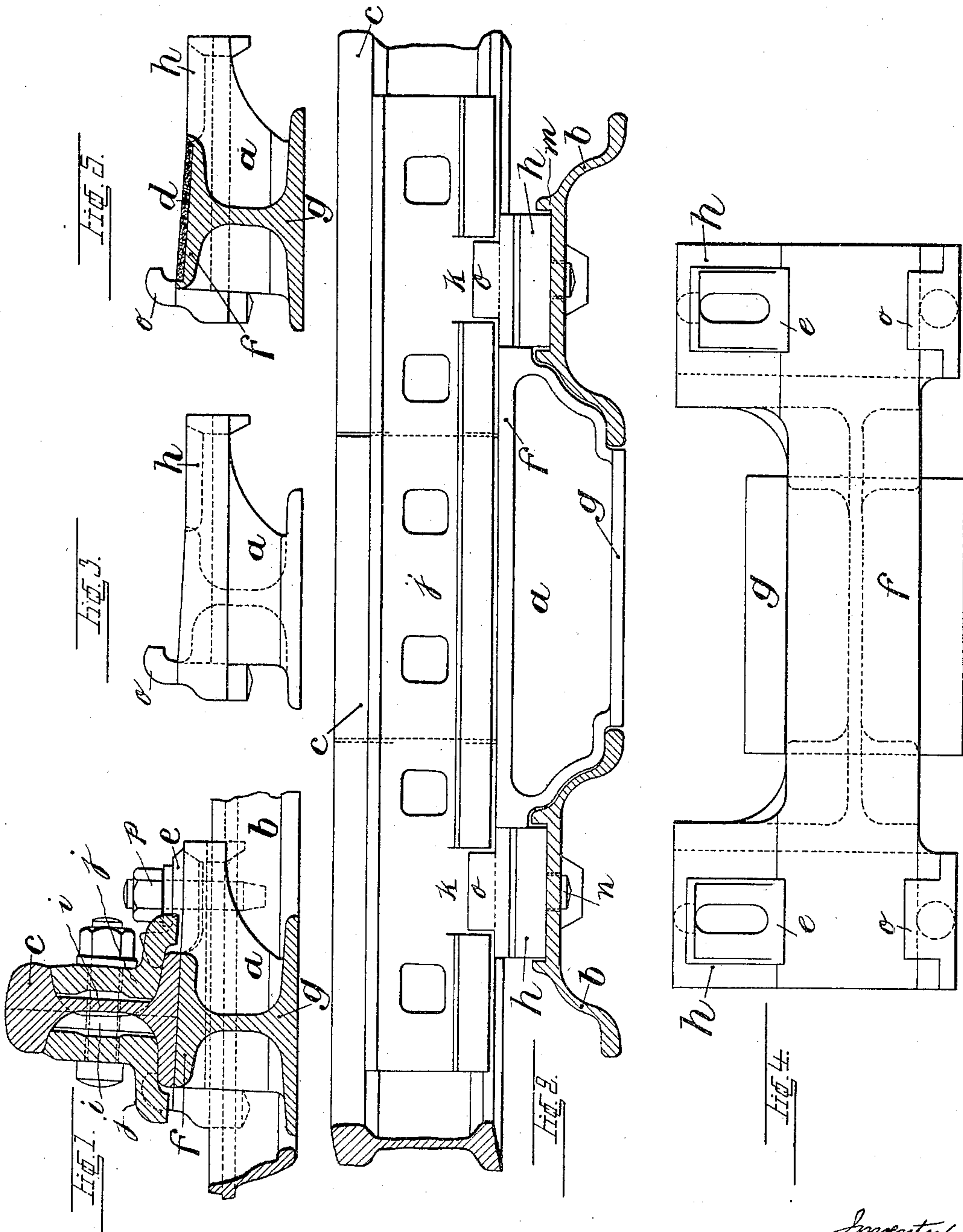
No. 684,687.

Patented Oct. 15, 1901.

A. HAARMANN.  
RAIL JOINT SUPPORT.  
(Application filed Mar. 18, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:  
Attest  
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Inventor:  
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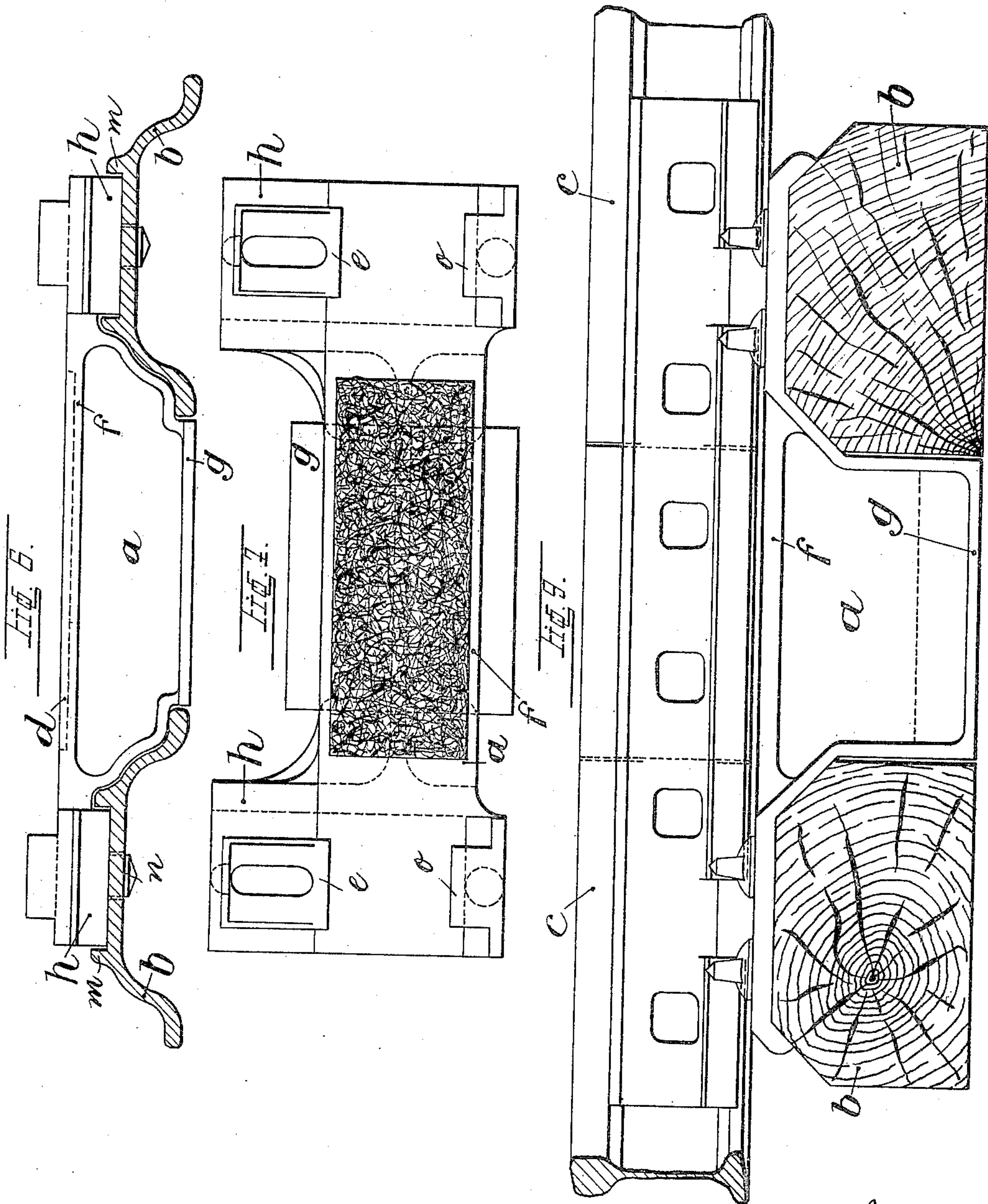
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3 Sheets—Sheet 2.



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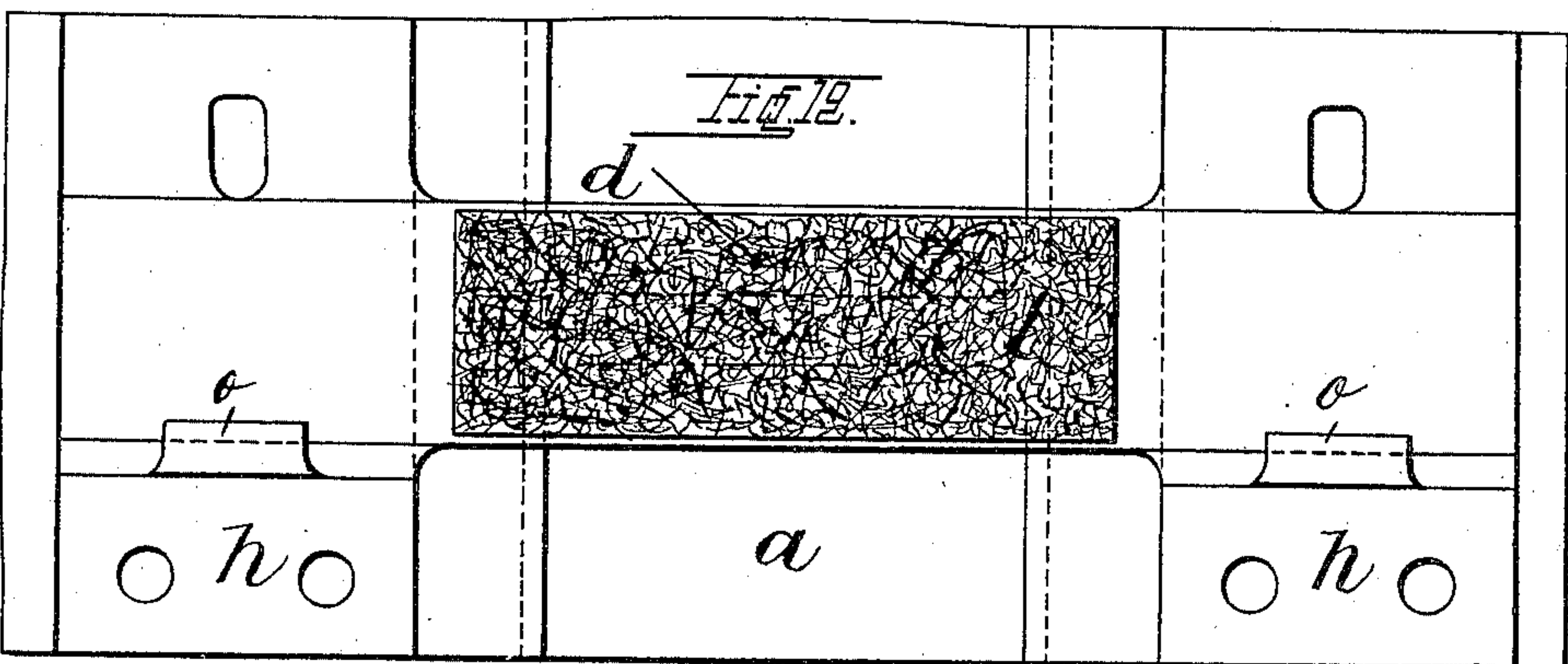
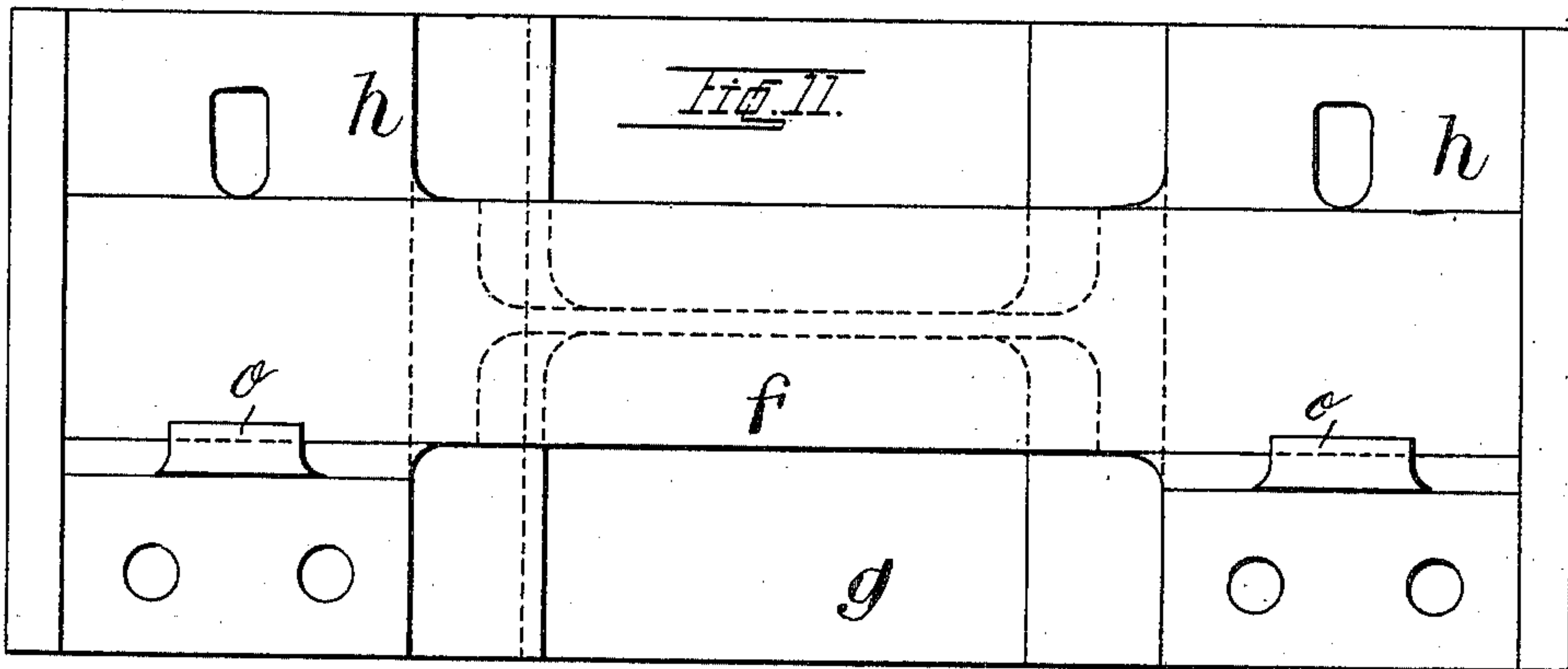
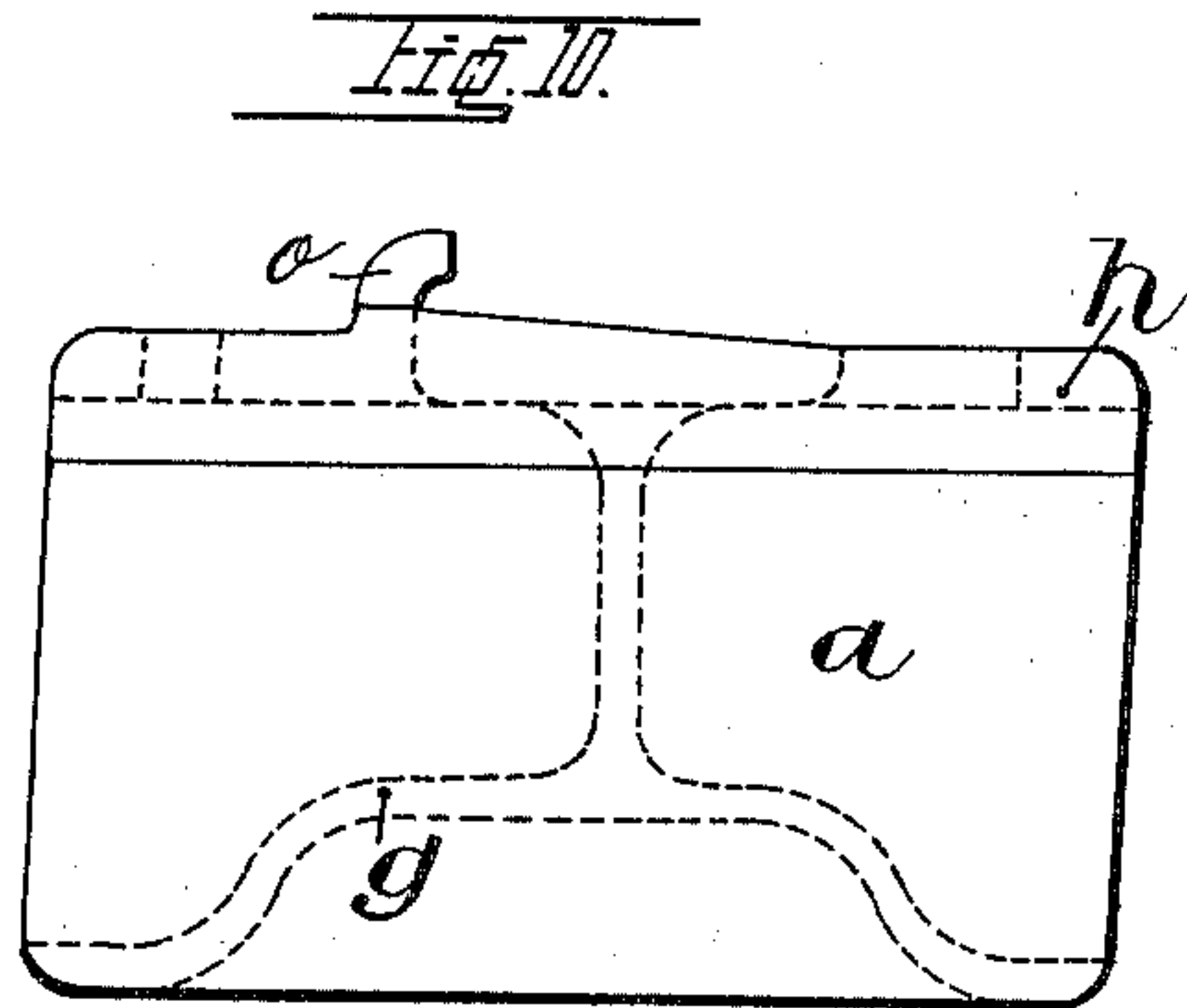
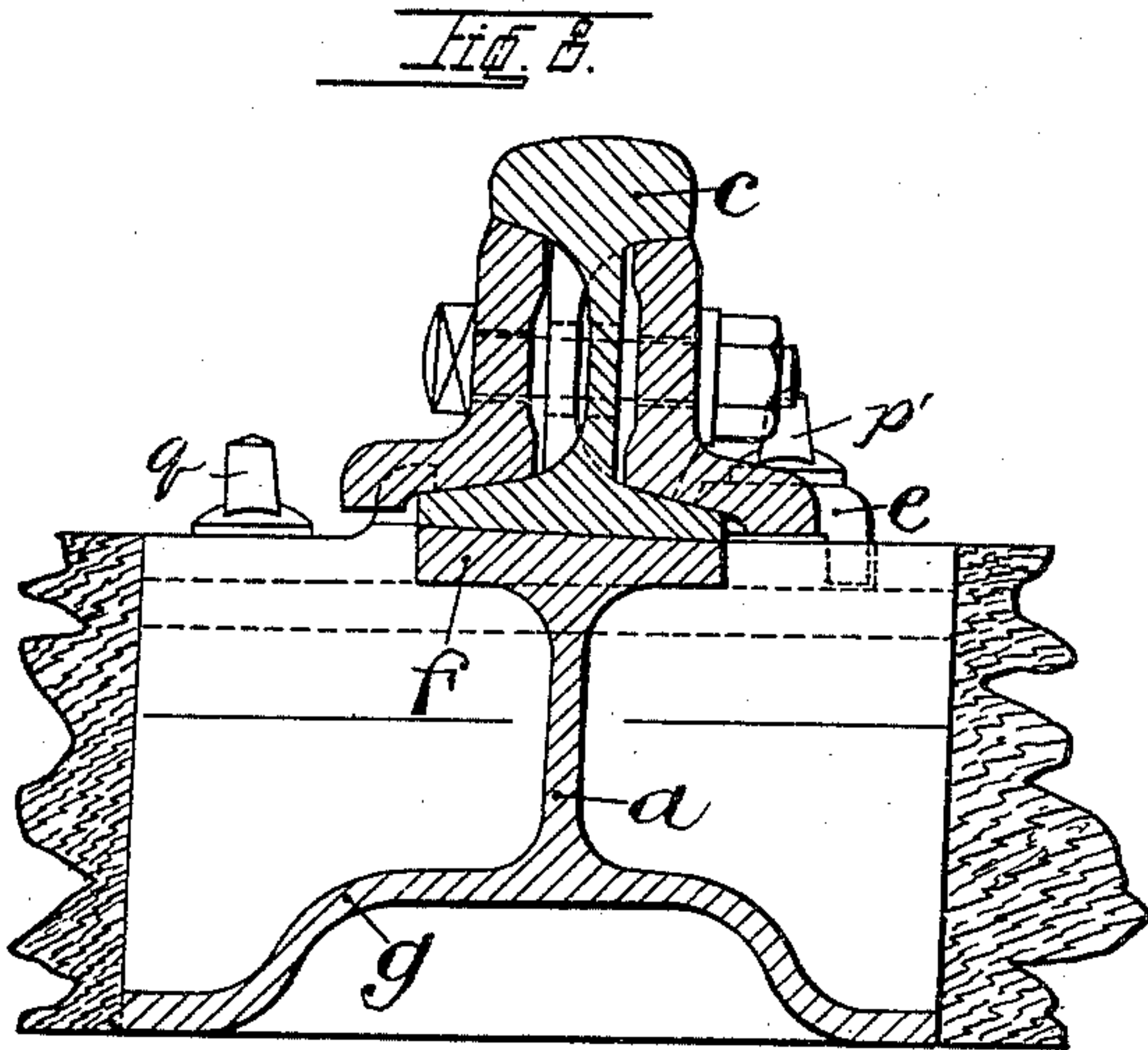
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(No Model.)

3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

AUGUST HAARMANN, OF OSNABRÜCK, GERMANY.

## RAIL-JOINT SUPPORT.

SPECIFICATION forming part of Letters Patent No. 684,687, dated October 15, 1901.

Application filed March 18, 1901. Serial No. 51,720. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST HAARMANN, general director, a subject of the German Emperor, residing at Osnabrück, in the German Empire, have invented certain new and useful Improvements in Rail-Joint Supports; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to rail-joint supports, and has for its object to securely bind together sections of rails at their joints, so as to prevent pounding and to give a tight and rigid joint that will not yield or be displaced during traffic over the road.

Referring to the drawings, in which like parts are similarly designated, Figure 1 is a vertical section through the rail-joint support, rails, and fish-plates; Fig. 2, a section through the cross-sleepers of the support; Fig. 3, an end elevation; Fig. 4, a top view of the support; Fig. 5, a section showing a modification; Fig. 6, a side elevation; Fig. 7, a plan; Fig. 8, a vertical section through the chair, rail, and fish-plates, showing the device used with wooden sleepers. Fig. 9 is a front elevation, Fig. 10 is a side elevation, and Fig. 11 is a plan, of the same; Fig. 12, a plan of a modification similar to Fig. 7.

It will be observed that the rails here shown have an eccentric web, and the joint is made between the two rail-sections by cutting away the head and flanges, whereby the webs will overlap without being required to be bent, as shown in Figs. 1 to 8, the webs of the rails in alternate sections being on opposite sides of the centerline. However, when applying the chair hereinafter described it is not necessary that this particular form of rail be used.

Referring more particularly to Figs. 1 to 7, *c* is a rail having an eccentric web *i*, the head and flanges of one of the rails being cut away at the joint, overlapped, and held together by fish-plates *j* by means of bolts. These fish-plates *j* are L-shaped and have in their flanges cut-away portions *k*, through which suitable retaining lugs, bolts, or the like take directly

on the rail-flange. The joint-support proper, *a*, has a central web, which, together with the top and bottom flanges *f* and *g*, gives this body portion a substantially I shape in cross-section. The top *f* may be inclined, if desired, so as to correspond with the inclined position of the rails or for use with rails having inclined bottoms, or they may be perfectly horizontal, this particular feature of the construction being made to meet exigencies of the case. The bottom flange *g* rests upon the ballast.

In Figs. 1 to 7 a joint-support is shown used in connection with metal cross-sleepers *b*. The body of the support is extended so as to reach over the sleepers and has an end contour to conform to the outline of said sleeper. The particular sleepers *b* shown have lateral ridges *m*, between which the extending portions of the chair fit, depending lugs *n* on the side extension of the support fitting into perforations in the cross-sleepers. Thus it will be seen that the support rests saddlewise between two cross-sleepers, holds them securely in position, and forms with the pair of sleepers under the joint a kind of interlocked rectangular base, which can have neither lateral nor longitudinal spread, thus making a very rigid frame under the rail-joint and distributing the thrust over a large area of the bed. The bottom flange *g* on the chair will preferably be on a line with the bottom of the sleepers. On the upper portion of the extensions of the support—that is, on the saddles—are suitable lugs *o*, (shown in side elevation in Figs. 3 and 5,) that take over the flanges of the rail that are exposed in the cut-away portions *k* of the fish-plate to securely hold the joint. These portions *o* are preferably, though not necessarily, made in one piece with the joint-support and saddles. The opposite side of the rail is similarly held by an adjustable piece *e*, provided with a hook that takes over the rail-flange, slidable to and fro from the rail and held to the joint-support by a bolt *p*. As a modification of this device in order to give a somewhat resilient joint there is provided a recess *d* in the support, into which may be placed felt, impregnated wood, or any other cushioning or resilient material.

Referring to Figs. 8 to 12, the construction is essentially the same as that just described, the form of the saddles at either end of the



joint-support being such as to embrace and rest on wooden sleepers and held thereto by spikes, wood-screws, and similar devices *q* and *p'*, the spike *p'* performing the double  
 5 function of holding the adjustable piece *e* in position and securing both this and the joint-support to the sleeper.

Having now described my invention, what I declare as new therein, and desire to secure  
 10 by Letters Patent, is—

1. A joint-support for rails comprising a body portion of substantially I shape having a foot-flange of greater width than the head-flange, end walls connecting said foot and  
 15 head flanges and conforming to the contour of the proximate sides of two sleepers, said head-flanges extended to seat on said sleepers, for the purpose set forth.

2. A joint-support for rails comprising a  
 20 body portion of substantially I shape in cross-section, end walls connecting the foot and head flanges, and extensions from said end walls and head-flange, said end walls conforming to the contour of the proximate  
 25 sides of two sleepers, and said extensions seating on the upper part of said sleepers and overlapping the opposite side thereof to hold them against lateral displacement, for the purpose set forth.

3. The combination with two sleepers, of a rail-joint support comprising a body portion of substantially I shape in cross-section and having its foot-flange in line with the under  
 30 face and its upper flange extended to straddle said sleepers, and end walls connecting the upper and lower flanges and conforming to the contour of the proximate sides of the sleepers, for the purpose set forth.

4. The combination with a pair of jointed  
 40 rails, fish-plates having cut-away portions

thereon, of a support under said joint of substantially I form in section, saddles at either end thereof taking over and holding a pair of sleepers together, lugs *o*, formed thereon  
 45 adapted to take through the cut-away portions in the fish-plates and engage the rail-flange, substantially as described.

5. The combination with a pair of jointed rails and their fish-plates, of a rail-joint support of substantially I form in section, saddles formed on the end thereof, studs on the  
 50 bottom of the saddles adapted to engage recesses in a pair of sleepers and lugs on the top thereof to pass through the cut-away portions in the fish-plates and engage the rail-  
 55 flange, substantially as described.

6. The combination with a pair of jointed rails, their fish-plates and metal sleepers having longitudinal lateral ribs, of a rail-joint support of substantially I form in section  
 60 and ends conforming to the contour of the sleepers, saddles at each end adapted to rest between the lateral ribs of the sleepers and lugs on the bottom of each saddle adapted to engage the perforations in the sleepers, a  
 65 hook or lug on the upper portion of the saddle adapted to take through the cut-away portions in the fish-plates and engage one flange of the rail and an adjustable sliding member *e* bolted to said saddle and sleepers,  
 70 and adapted to engage the opposite flange of the rail, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of subscribing witnesses.

AUGUST HAARMANN.

Witnesses:

WILHEM LAUPENAU,  
 FREDERICK T. STEPHAN,  
 FR. HAGERMANN.