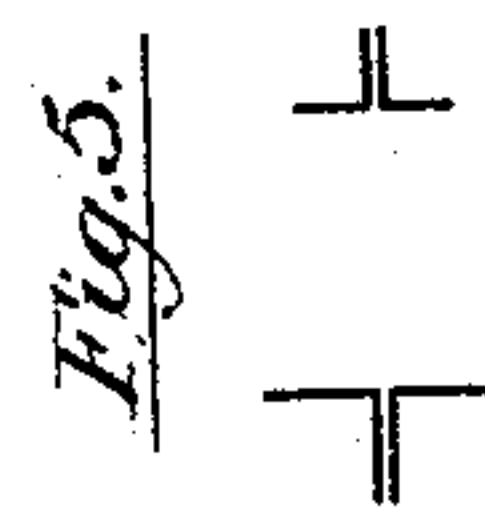
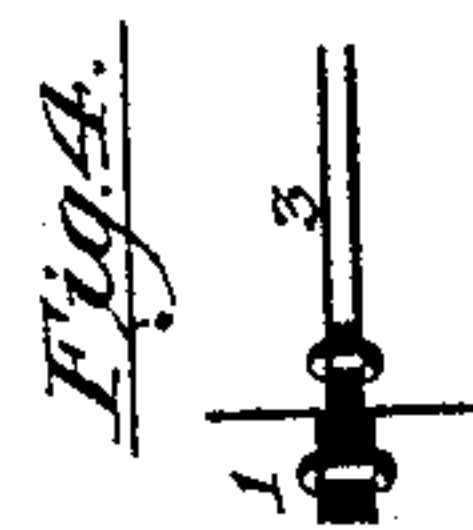
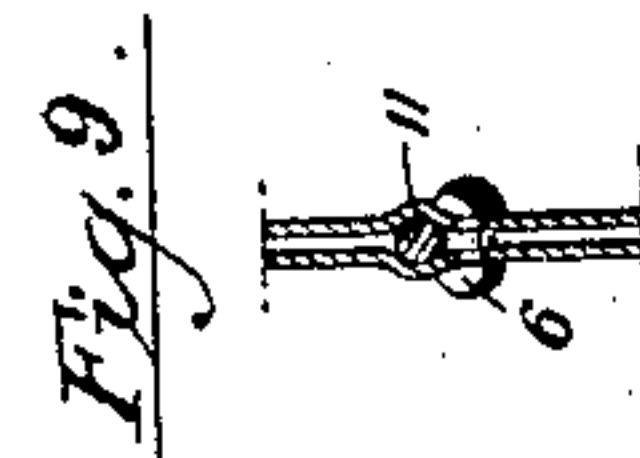
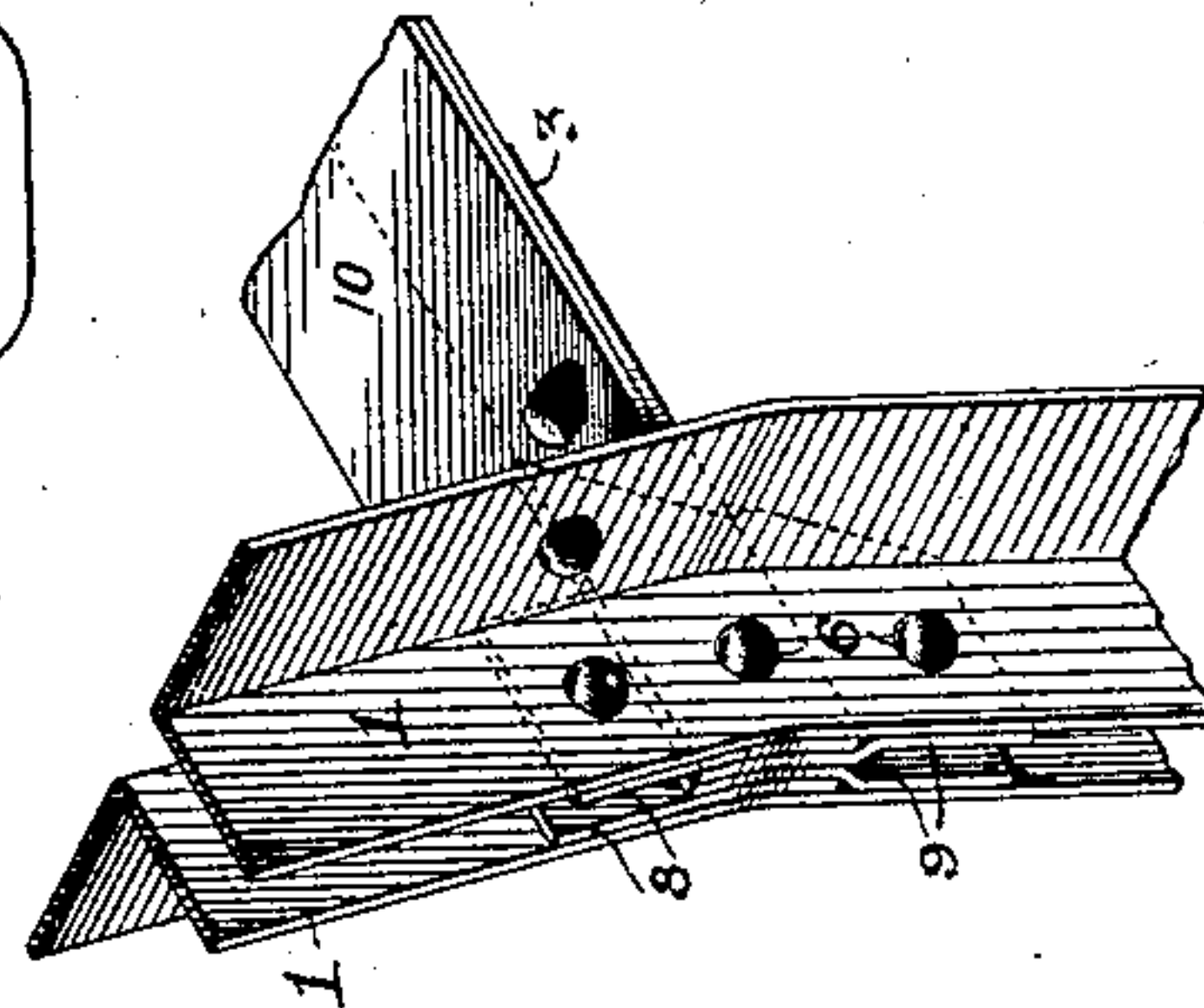
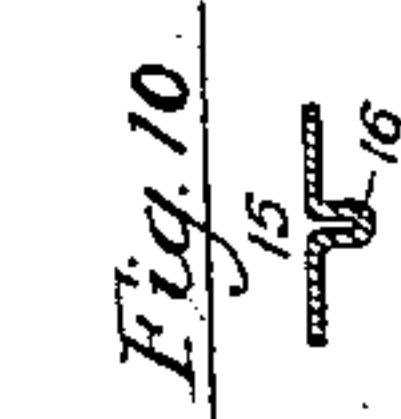
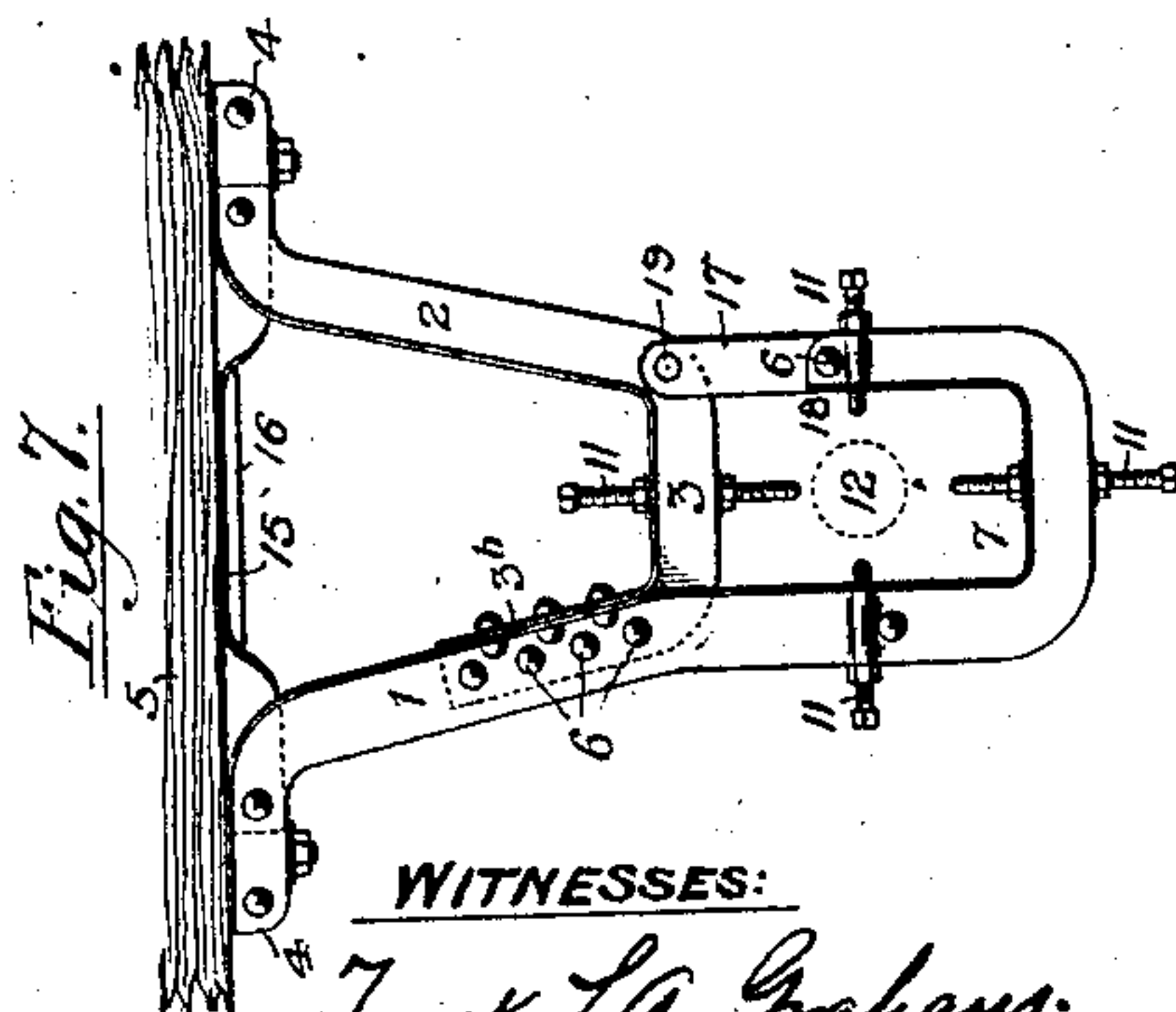
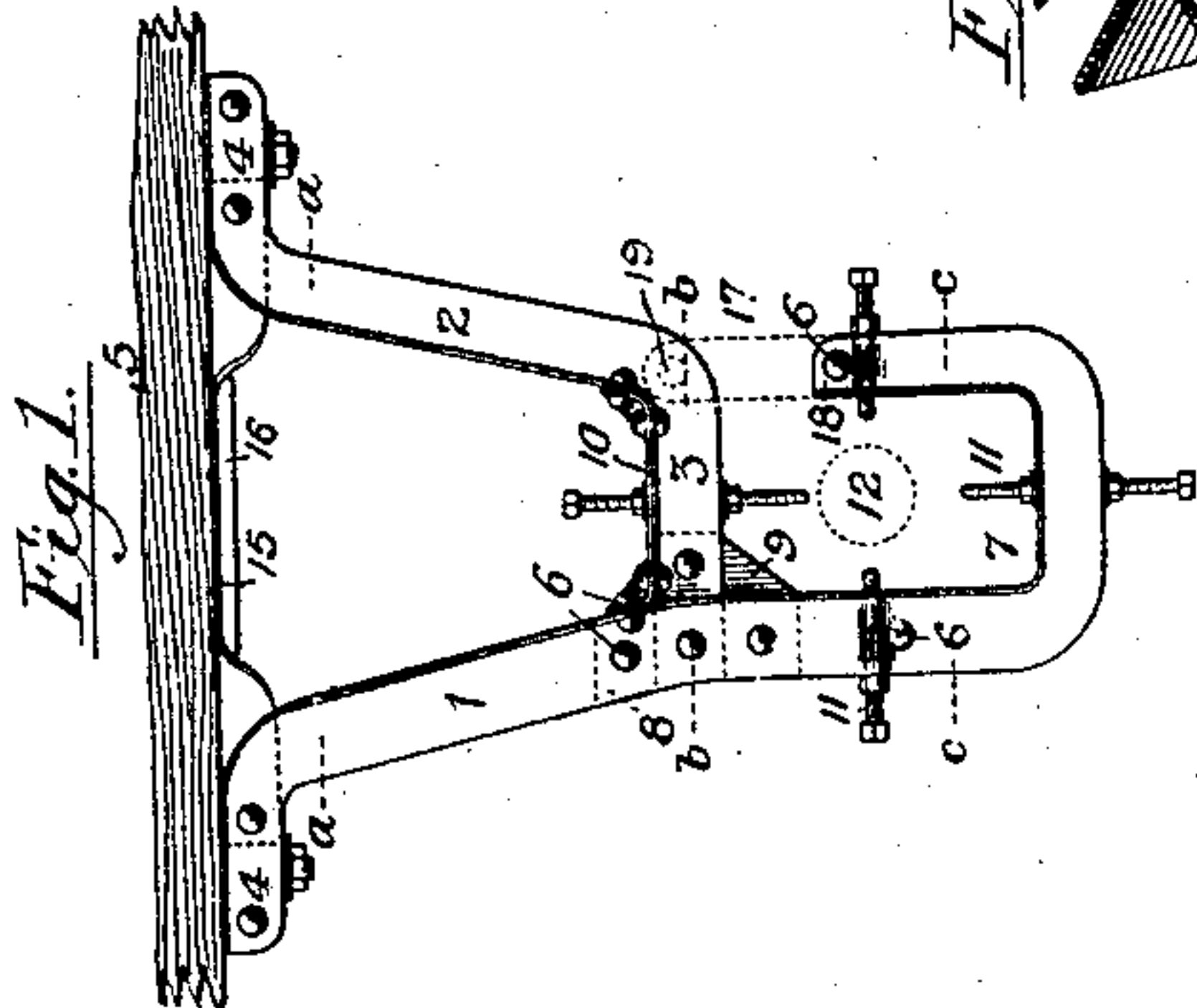
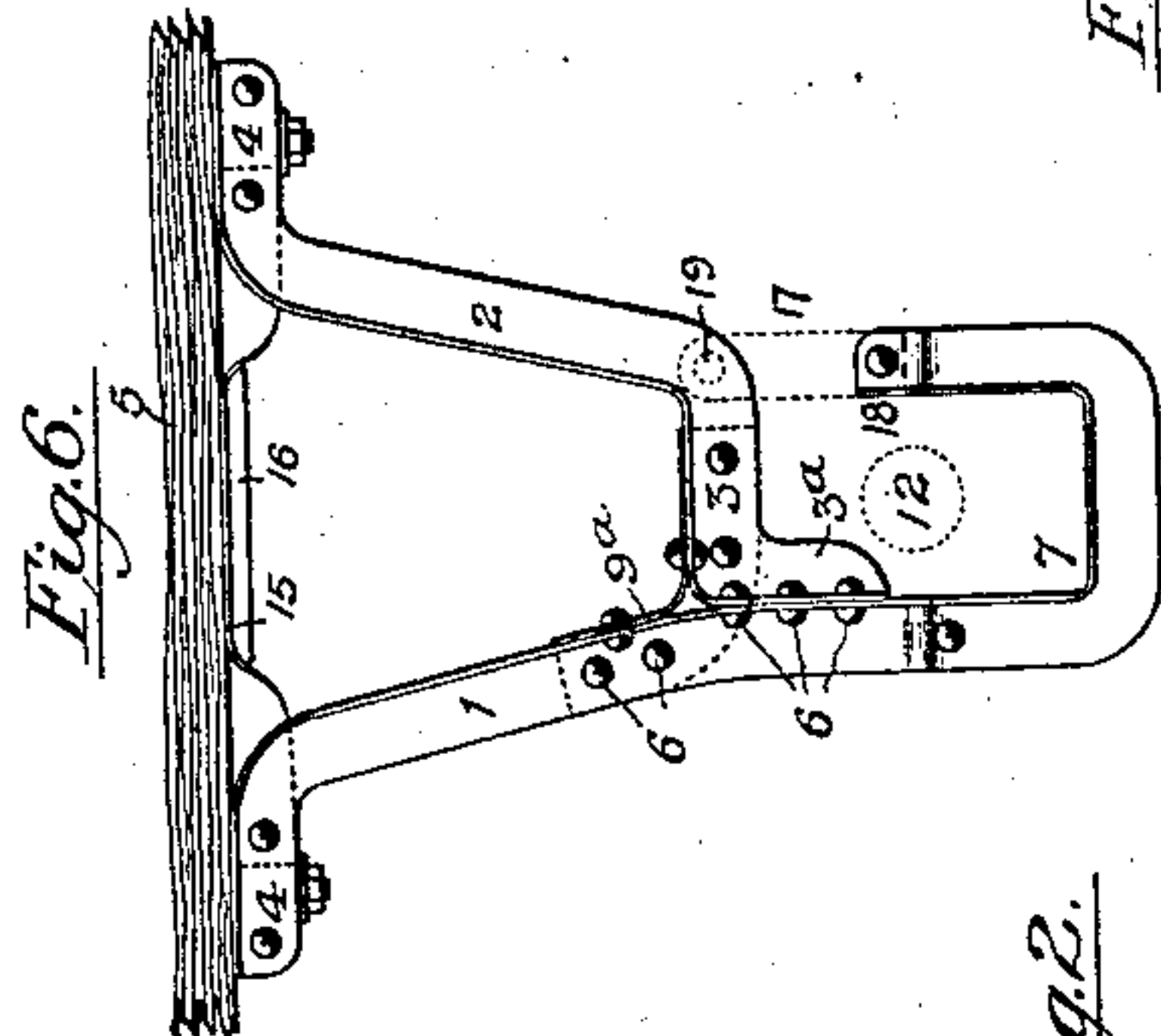
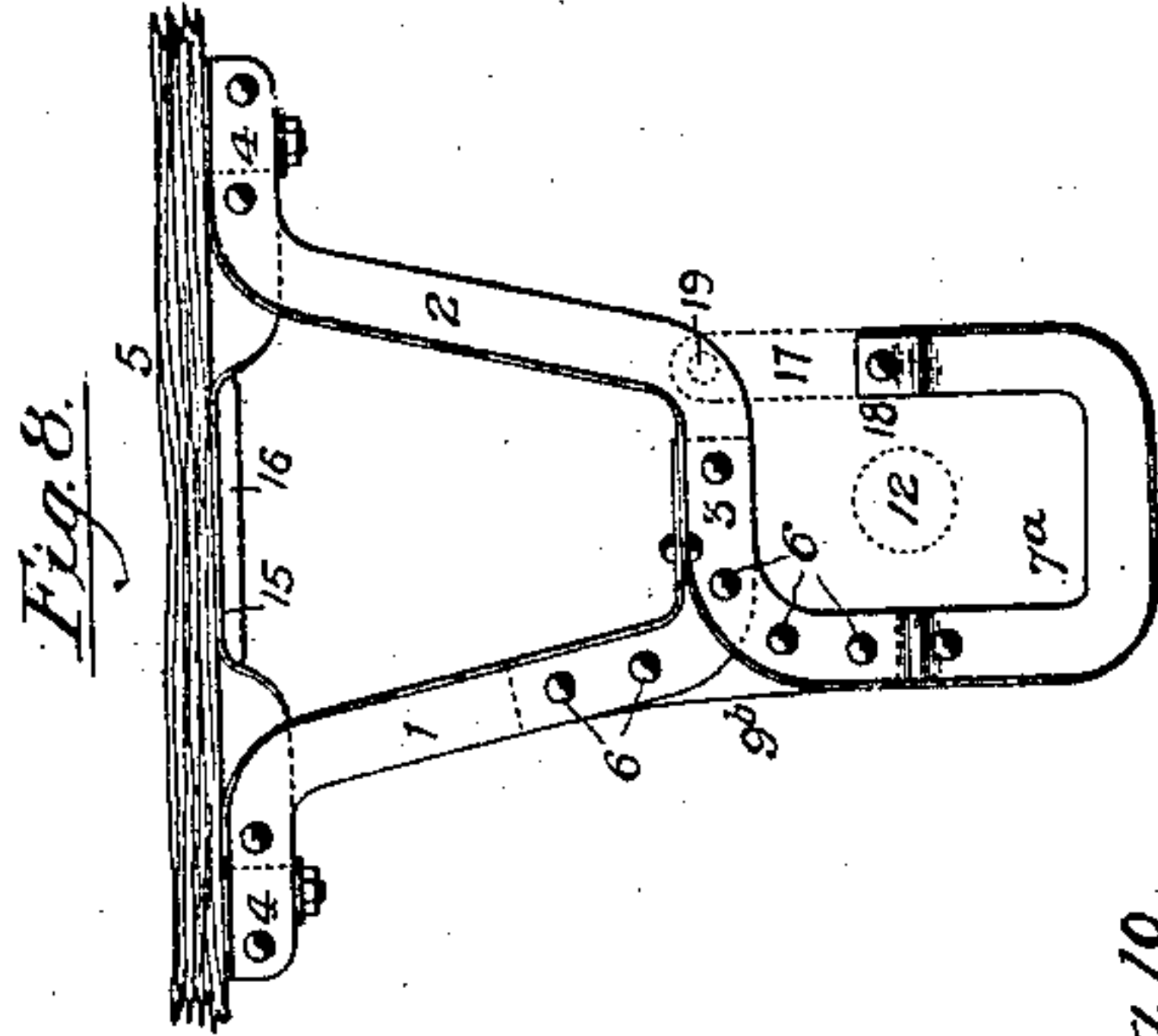


No. 874,319.

PATENTED DEC. 17, 1907.

H. F. GADE.  
SHAFT HANGER.

APPLICATION FILED JAN. 2, 1904.



WITNESSES:

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Howson & Howson



# UNITED STATES PATENT OFFICE.

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## SHAFT-HANGER.

No. 874,319.

Specification of Letters Patent.

Patented Dec. 17, 1907.

Application filed January 2, 1904. Serial No. 187,597.

*To all whom it may concern:*

Be it known that I, HARALD F. GADE, a subject of the King of Norway and Sweden, (having declared my intention of becoming a citizen of the United States,) residing in Philadelphia, Pennsylvania, have invented certain Improvements in Shaft-Hangers, of which the following is a specification.

My invention relates to shaft-hangers and consists of a novel form of shaft-hanger formed of structural metal, whereby great strength and rigidity are attained; the object of my invention being to provide a structural shaft-hanger of relatively few parts, which parts may be readily assembled in a cheap and effective manner, and provided with reinforcing members at the points of greatest strain; means being further provided for supporting the adjusting devices for the shaft journal-boxes in a manner that will greatly facilitate their use.

My invention is fully shown in the accompanying drawings, in which:—

Figure 1, is a side elevation of one form of the improved structural shaft-hanger forming the subject of my invention; Fig. 2, is a perspective view of one of the joints of the same; Figs. 3, 4 and 5 are sectional views taken on the lines *a—*a**, *b—*b** and *c—*c** respectively, Fig. 1; Figs. 6, 7, and 8 are views of modified forms of structural shaft hangers of the same general form as that shown in Fig. 1; and Figs. 9 and 10 are views of details of my invention.

The structural shaft-hanger forming the subject of my invention is one in which the immediate support for the journal box is of J-shape, the portion to which this part is attached having legs of the usual flaring shape of an ordinary shaft-hanger, and being provided with the usual feet for the reception of securing means.

In Fig. 1, of the accompanying drawings, the upper portion of the hanger is substantially U-shaped, having the flaring legs 1 and 2, and a connecting piece 3 integral with the leg 2. Each of said legs extends upwardly and terminates in a foot 4, on the same plane, whereby the hanger may be properly secured in position, for instance to the beam 5. These parts are duplex, as clearly indicated in the sectional views Figs. 3, 4 and 5, and they are secured together by means of rivets indicated at 6.

The immediate support for the journal-box

indicated at 7 in Fig. 1, has the shape of the letter J, and in this particular instance it is formed integral with the leg member 1. The connection or cross piece 3, formed integral with the leg 2 is secured to the leg 1 in a novel manner, clearly illustrated in Figs. 1 and 2. The duplex portions of the cross piece 3 are cut at the ends and have portions of the flange bent up, as clearly indicated at 8, in Figs. 1 and 2, and these pieces are riveted to the leg 1, as shown. A brace 9 is also interposed between these bent up portions of the cross piece 3, and this brace is also riveted to the leg 1; one rivet being passed through the several plies of the three different parts, while the other rivet passes through the leg and lower extension of the brace 9. A further stiffening of the hanger is provided by the cross brace 10 engaging the cross piece 3. This hanger is provided with several adjusting screws, indicated at 11, to position the journal-box in proper place, and these screws are preferably placed between the plies of flanged sections which form the structure in the manner, for instance, shown in Fig. 9. It will be understood, however, that I may interpose jam nuts between the journal-box and the flanged members forming the hanger without departing from my invention. The position of the shaft is indicated at 12 by dotted lines.

In Fig. 6, I have shown a form of shaft hanger similar in most respects to that shown in Fig. 1, but one in which the cross piece 3 is provided with a depending extension 3<sup>a</sup>, which is riveted to the leg 1, and a flanged brace 9<sup>a</sup> is provided which passes between the sections forming the leg 1 and the sections forming the cross piece 3. This form of hanger will also be provided with the usual adjusting screws for the journal box.

In Fig. 7, I have shown another form of hanger, in which the portion to receive the journal-box is formed integral with the leg 1, as in the forms illustrated in Figs. 1 & 6, but one in which the cross piece 3 has an upwardly projecting portion 3<sup>b</sup>, whose flanges pass between the members forming the leg 1, and are riveted thereto.

In Fig. 8, I have shown another form of shaft-hanger of this general shape, in which the leg 2 has the journal supporting portion 7<sup>a</sup> formed integral therewith, and the leg 1 is bent to join the cross piece 3, which is also integral with the leg 2. These several parts



are riveted together as shown, and in addition as a further strengthening means, a plate 9<sup>b</sup> is interposed between the several parts and riveted thereto.

5 I have shown in the several forms, by means of dotted lines, the position the shaft will occupy in respect to the hanger, but have not thought it desirable or necessary to show the journal-box in place. It will also  
10 be understood that each of the hangers will be provided with adjusting screws of the same character as those illustrated in Figs. 1 and 7.

The different forms of structural shaft-  
15 hangers shown in the accompanying drawing are preferably provided with tie-plates 15, which connect the feet 4 of the same, as indicated in several of the figures, and these tie-plates are preferably corrugated by forming the rib 16 in the same, as shown in Fig.  
20 10. The shaft-hanger structures may be further strengthened by providing bracing pieces at the several angles of the same, in addition to those already indicated in the  
25 several views, and these angle pieces may be secured to the main body of the structure by means of rivets or bolts.

By having the support for the journal-box of J-shape, it becomes a simple and easy mat-  
30 ter to mount the shaft in place after the hanger has been fitted up. This construction, however, is possibly not as stiff as one in which the support for the journal-box is connected at both sides to the upper portion  
35 of the hanger and in order to gain this advantage of strength, but at the same time not to complicate the matter or prevent the ready mounting and disengagement of the shaft, I provide the connecting link 17, which  
40 may be attached to the end 18 of the journal support 7 and extends to a point 19 adjacent to the connection of the leg 2 and connecting portion 3.

I propose to make these shaft-hangers of  
45 commercial angle iron, such as bars of T, I and U-shape, which can be found upon the market at all times, in varying weights and sizes and the hanger may be made up in its entirety of such angle bars. The portions of  
50 the hanger formed from such bars are secured together by means of rivets and bolts and adjusting bolts or screws are provided to position the journal-boxes.

I claim:

55 1. A shaft-hanger made of structural metal, comprising a supporting portion having flaring legs formed of duplex sections of metal of similar shape, a depending portion of J-shape to receive the journal-box, also of  
60 duplex sections of structural metal, said depending portion being formed continuous with one of said legs and bent to form the journal-box support, flanged braces for the members of said hanger, portions of said  
65 braces lying between the parts comprising

the hanger while the other portions of said braces abut the same, and means for securing said parts together.

2. A shaft-hanger made of structural metal, having a main supporting portion 70 formed of duplex sections of metal of similar shape, said portion being attachable to a wall or other solid support, a journal supporting portion of J-shape also of duplex sections of metal secured to said main portion, said jour- 75 nal supporting portion being continuous with part of the main supporting portion and having its end bent to form the journal-box support, a tie brace for the main support disposed between its duplex portions, reinforcing 80 braces for the connection with the main support and the journal support, and means for securing said parts together.

3. A shaft hanger made of structural metal, comprising a main supporting portion 85 having flaring legs and formed of duplex flanged sections of similar shape suitably secured together, bent portions forming feet carried by the sections of said main supporting portion, a journal supporting portion of 90 J-shape also formed of duplex sections of metal secured to said main portion, said journal supporting portion being continuous with part of the main supporting portion and having its free end bent to form said journal-box 95 support, and an independent tie or brace for the main support having its ends disposed between and secured to the duplex sections forming the legs of the same.

4. A shaft-hanger made of structural 100 metal having a main supporting portion formed of duplex parts of the same shape and having flaring legs, a J-shaped journal support also formed of duplex sections of the same shape, said journal support being con- 105 tinuous with part of the main supporting portion and having its end bent to form the journal-box support, the two parts being suitably secured together, braces for the angles of the structure, and a connecting brace 110 for the ends of the flaring legs of the main supporting portion of the hanger.

5. A structural shaft-hanger comprising a plurality of angularly-shaped converging legs formed of duplex sections of metal of the 115 same shape, said legs being united at their intermediate portions to form a brace and so shaped that said brace and one of said legs form an integral piece while the other leg is continuous and has its portion extending 120 from said brace junction bent at right angles to form an open cradle of J-shape to receive a journal-box.

6. A structural shaft-hanger comprising a plurality of angularly-shaped converging legs 125 formed of duplex sections of metal of the same shape, said legs being united at their intermediate portions to form a brace and so shaped that said brace and one of said legs comprise an integral piece while the other leg 130



is continuous and has its portion extending from said brace junction bent at right angles to form an open cradle of J-shape to receive a journal-box, in combination with adjusting screws for the journal-box mounted in proper position with respect to the hanger and disposed between the walls of the duplex sections of metal forming the same.

7. A structural shaft-hanger comprising a plurality of angularly shaped converging legs, said legs being united at their intermediate portions to form a brace and so shaped that said brace and one of said legs form an integral piece while the other leg is continued from said brace junction and is bent at right angles at its end to form an open cradle of J-shape to receive the journal-box, and a link connecting the free end of the cradle with the portion of the hanger above the same.

8. A structural shaft-hanger of J-shape comprising a plurality of angularly-shaped converging legs having feet and formed of duplex sections of metal of similar shape, said legs being united at their intermediate portions to form a brace and so shaped that said brace and one of said legs form an integral piece while the other leg is continuous and has its portion extending from the brace junction bent at right angles to form an open cradle to receive a journal box, the feet of the leg members of said hanger being connected together by a cross-brace or spacing piece.

9. A structural shaft-hanger of J-shape, comprising a plurality of angularly shaped converging legs having feet, said legs being united at their intermediate portions to form a brace and so shaped that said brace and one of said legs form an integral piece while the other leg is continued from said brace junction and is bent at right angles at its end to form an open cradle to receive the journal-box, and a link connecting the free end of the cradle to the leg portion of the hanger above said cradle.

10. A shaft-hanger made of structural metal, comprising a J-shaped section with a foot at the upper end and a return bend at the lower end to receive the journal-box, a second J-shaped section having a foot at the upper end and a bent portion at the lower end, said bent portion being secured to the first named section at a point substantially intermediate its ends, and a connecting bar for spacing and securing the feet in proper position with relation to the structure, said second section also providing a cross brace.

11. A shaft-hanger made of structural metal, comprising a J-shaped section with a foot at the upper end and a return bend at the lower end to receive the journal-box, a second J-shaped section of less length than the first named having a foot at the upper

end and a laterally bent portion at the lower end, said bent portion being secured to the other section at a point substantially intermediate its ends, and a connecting bar for spacing and securing the feet in proper position with relation to the structure, said second section also providing a cross brace.

12. A shaft-hanger made of structural metal, comprising a J-shaped section with an outwardly bent foot at the upper end and a return bend at the lower end to receive the journal-box, a second J-shaped section having an outwardly bent foot at the upper end and a bent portion at the lower end, said bent portion being secured to the first named section substantially intermediate its ends, and a corrugated connecting bar for spacing and securing the feet in proper position with relation to the structure, the second section also providing a cross brace.

13. A shaft-hanger made of structural metal, comprising one member made of duplex J-shaped sections secured together by rivets or other suitable fastening means and having a foot at the upper end and a return bend at the lower end to receive the journal-box, a second member made of duplex J-shaped sections suitably secured together and having a foot at the upper end and a bent portion at the lower end, said bent portion having its flanges disposed between and secured to the other section substantially intermediate its ends, and a connecting bar for spacing and securing the feet in proper position with relation to the structure, the bent portions of said second sections also providing cross braces.

14. A shaft-hanger made of structural metal, comprising one member made of duplex J-shaped sections of angle iron secured together by rivets or other suitable fastening means and having a foot at the upper end and a return bend at the lower end to receive the journal-box, a second member made of duplex J-shaped sections of angle iron suitably secured together and having a foot at the upper end and a bent portion at the lower end, said bent portion having its flanges secured to the flanges of the other section substantially intermediate its ends, and a connecting bar for spacing and securing the feet in proper position with relation to the structure, the second section also providing a cross brace.

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

HARALD F. GADE.

Witnesses:

MURRAY C. BOYER,  
JOS. H. KLEIN.