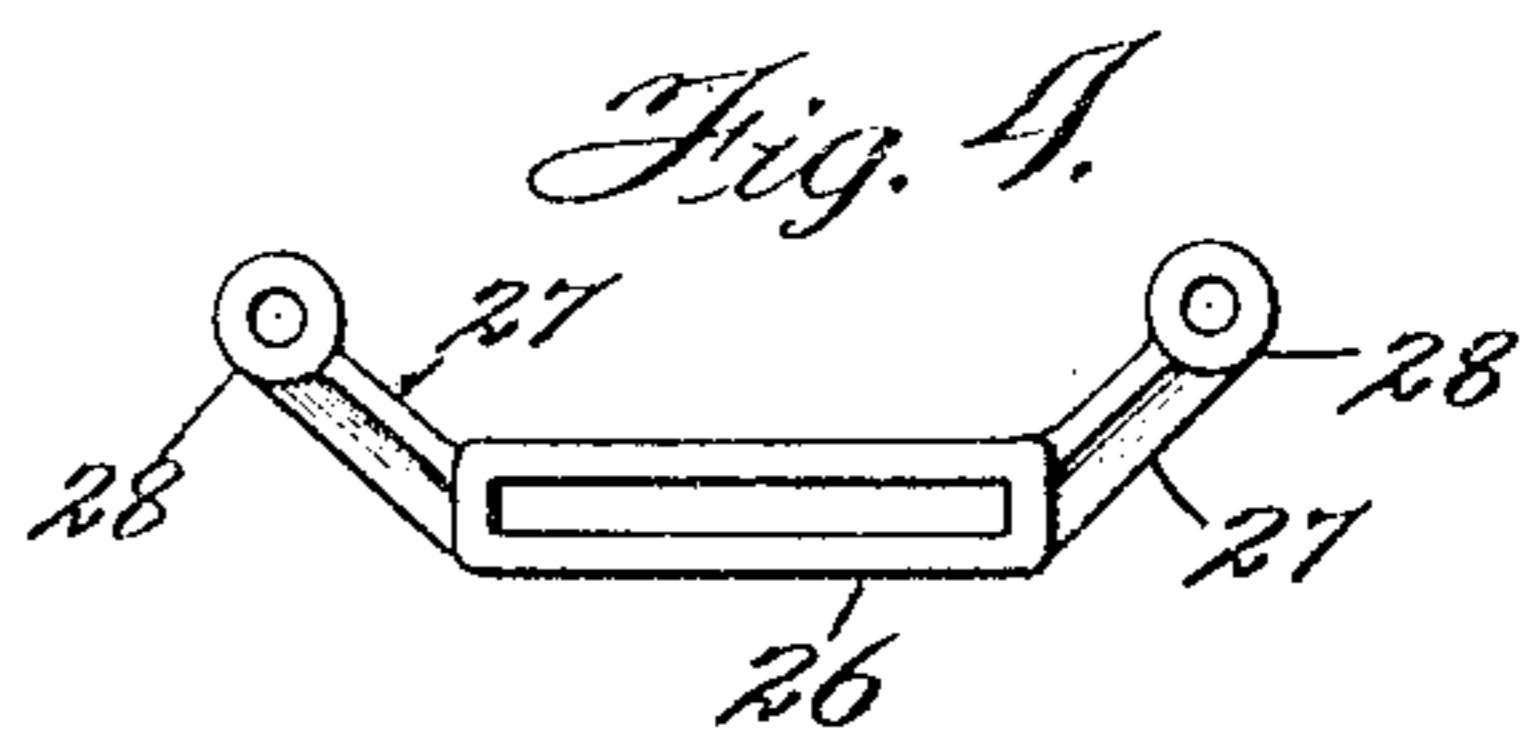
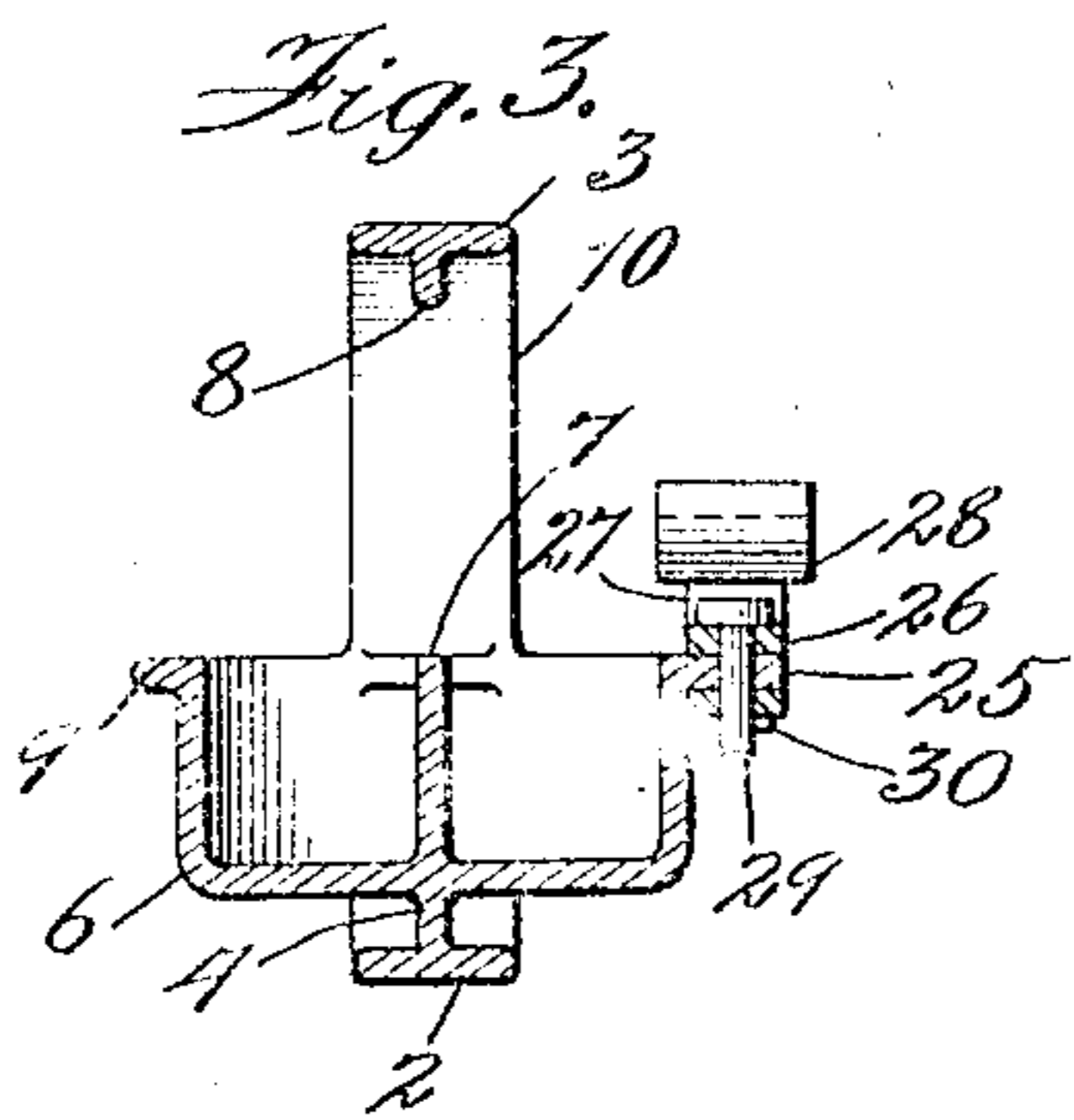
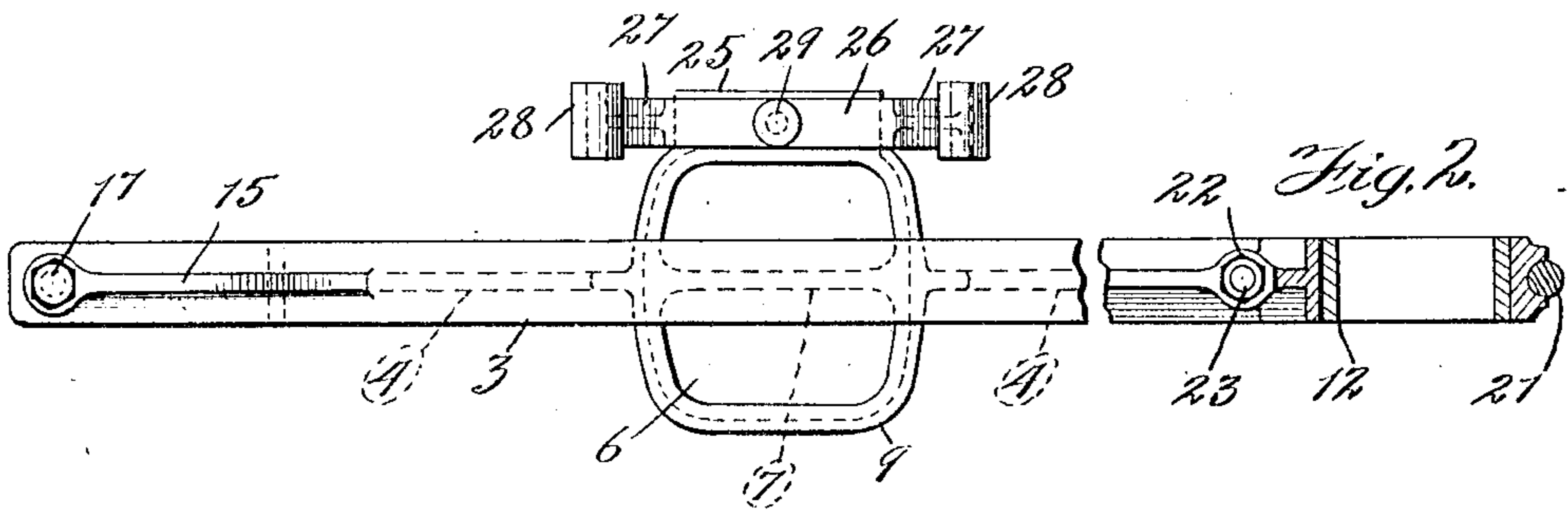
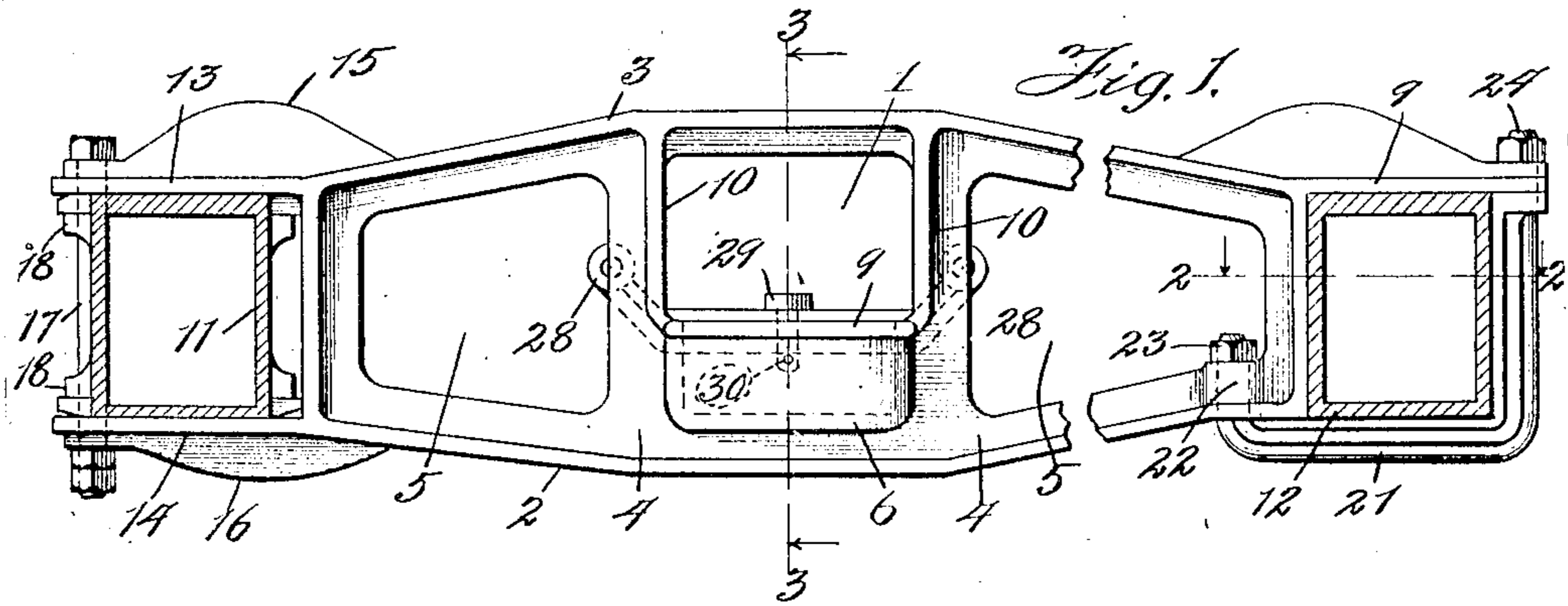


No. 869,416.

PATENTED OCT. 29, 1907.

H. C. BUHOUP.
SIDE FRAME FOR CAR TRUCKS.
APPLICATION FILED JUNE 14, 1907.



Witnesses:

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UNITED STATES PATENT OFFICE.

HARRY C. BUHOUP, OF CHICAGO, ILLINOIS.

SIDE FRAME FOR CAR-TRUCKS.

No. 869,416.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed June 14, 1907. Serial No. 378,948.

To all whom it may concern:

Be it known that I, HARRY C. BUHOUP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Side Frames for Car-Trucks, of which the following is a full, clear, and exact specification.

This invention relates more particularly to that class of side frames for car trucks in which the bolster springs are situated at about the mid-length thereof in a seat or recess between the upper and lower edges of the frame, and of this class it has especial reference to cast frames as contradistinguished from pressed or composite frames. In this form and class of side frames the presence of the spring recess thus disposed renders the structure weak and without adequate stiffness and rigidity against vertical stress at the very point where the greatest strength is required.

One of the objects of the invention, therefore, is to overcome this objection and provide an improved and durable form of cast side frame which will possess the necessary strength to resist the usual stress at the bolster spring seat without increasing the usual depth or vertical dimensions at such point, a further object being at the same time and by the same means to make appropriate retaining provisions for the ends of the bolster springs whereby they will remain properly positioned without special agencies.

Another object of the invention is to provide improved, simple and durable means for holding the journal boxes at the ends of the side frames.

A still further object of the invention is to provide an improved brake beam hanger whereby the brake beam may be readily released and removed if desired.

With these ends in view the invention consists in certain features of novelty in the construction, combination and arrangement of parts whereby the said objects and certain other objects, which will hereinafter appear, are obtained, all as fully described with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings--Figure 1 is a side elevation of a car truck side frame embodying this invention; Fig. 2 is a plan view thereof with one end in horizontal section on the line 2--2, Fig. 1; Fig. 3 is a vertical cross-section on the line 3--3 of Fig. 1; and Fig. 4 is a detail side elevation of the brake beam hanger detached.

It is customary in the construction of side frames for car trucks, of this character, to locate the springs for the bolster at about the mid-length of the frame and in such position and relation to the frame that the upper ends of the springs will be below the upper edge of the frame. To do this it is necessary to form at that point a recess which is indicated at 1, and this of course greatly weakens the frame at the very point where the

greatest strength against vertical stress is required. In this exemplification of the invention, the frame in side elevation has the general form of a truss, or approximately diamond shaped, and its lower edge is cast with an integral longitudinal rib 2, while its upper edge is formed with a similar rib 3, both of these having their greatest diameters or width arranged horizontally, and they are connected together by a vertical web 4 in which apertures 5 may be formed at both sides of the spring recess 1 for the sake of economizing the material. Between these apertures 5 and below the recess 1 is cast integrally with the web 4 a spring seat or box 6 which projects equal distances from the sides of the web 4, as better shown in Fig. 2, so that the main body of the side frame will be central with respect to the spring box and will divide the box into two seats or compartments of equal dimensions. The combined height of the springs and the bolster, all of which should be contained between the upper and lower ribs 2--3 of the side frame, is such as to make it necessary to locate the bottom of the box 6 very close to the bottom rib 2, and as a consequence the main web 4 of the frame upon which greatest reliance is placed for resisting vertical stress is almost wholly destroyed or removed at this point. In order to compensate for this and to at the same time afford simple and efficient means for holding the springs accurately in place in box, four springs being usually employed, the device is cast integrally with a central partition web 7, which, as better shown in Fig. 3, rises as a continuation of the web 4 and the bottom of the spring box to substantially the level of the upper edges of the box, thus amply reinforcing and stiffening the side frame at the mid-length where the recess 1 is formed and at the same time leaving ample room above for the introduction of the end of the bolster. Immediately above the reinforcing web 7 the top rib 3 may be formed with a depending flange 8 in the same plane as the web 7, which adds considerable strength to the casting at this point without materially increasing the weight or interfering with the movement of the bolster.

Neither the bolster nor the springs have been shown in connection with the side frame, but as their construction and position are well understood in this art, it is not necessary to illustrate and describe them in detail; suffice it to say that the springs are ordinary vertical coil springs, four in number, arranged two on each side of the partition web 7 and resting upon the bottom of the box 6, while the bolster projects through the recess 1 and has suitable support upon their upper ends.

The structure at its mid-length is further strengthened and reinforced to compensate for the loss of strength incidental to the presence of the recess 1, by providing the upper edges of the box 6 with a surrounding lateral flange or web 9, and this is carried into and cast integrally with vertical flanges or webs 10 at the

vertical edges of the recess 1 on both sides of the web 4, thus forming with that portion of the top rib 3 immediately above the recess 1, and the partition web 7, a rectangular integral structure of great strength and rigidity incorporated with the spring box in a side frame as a single casting.

At the ends of the side frame are situated the usual journal boxes 11—12, which need not be different from the form heretofore employed. To accommodate these, the ends of the side frame are formed with jaws of appropriate form to receive them, and clamps to hold them in place. Fig. 1 has been utilized for illustrating jaws and clamps for this purpose of two different forms, both of which, if desired, may be employed on the same side frame, or the frame may be provided at both ends with either form. Referring to the form shown on the left in Fig. 1, it will be seen that it consists of two integral jaws 13—14, which project horizontally, so that the journal box 11 may be inserted from the left hand side between them. The upper jaw is stiffened at the proper point by means of a vertical rib 15, and the lower jaw with a similar rib 16. Between the extremities of these jaws passes a vertical bolt 17 which fits in suitable seats or retainers 18 on the outer side of the box 11. The opposite end of the side frame may, of course, be provided, if desired, with a similar means for holding the box 12, or it may be provided with the form of means shown in Fig. 1, and which it will be seen consists of an upper jaw 19 under which is situated the box 12, and by which the side frame is supported upon the box, and below the box and against the outer side thereof is arranged an L shaped casting 20, which fits against the under side of the rib 2 and also against the under side of the jaw 19. This L shaped casting 20 is held in place by an L shaped bolt 21 which passes through the overhanging extremity of the jaw 19 and also through the boss 22 cast integrally with the web 4 and rib 2. The upwardly extending extremities of this bolt 21 are provided with nuts 23—24 or other suitable means for placing it under strain in an upward direction and thereby clamping the casting 20 and box 12 in place.

On one side of the spring box 6 is formed a lip or laterally projecting flange 25, and over this is fitted body 26 of the brake beam hanger which is also formed with two arms 27 carrying perforated lugs 28 for the attachment of the brake beam. This hanger is removable from the lip of flange 25 in a lateral direction, but when in use is held in place by a pin 29 passing downwardly through the body 26 and the lip 25 and held against upward displacement by a cotter 30, so that when desired the hanger may be released from below and the brake beam readily dropped down and removed if desired.

In order that the invention might be understood by those skilled in the art, the details of an exemplification thereof have been thus specifically described, but

What I claim as new and desire to secure by Letters Patent is:

1. In a cast side frame for car trucks embodying means at its ends for receiving and holding the journal boxes, a bolster spring box situated between said means, and projecting laterally from both sides of the side frame for receiving a plurality of bolster springs, the side frame having a recess above said box for the introduction of the bolster, a central web rising perpendicularly from the bottom of said box in said recess and extending longitudinally of the side frame, said web being cast integral with the

side frame and spring box and dividing the bottom of the box into two compartments or spring seats.

2. In a cast side frame for car trucks embodying means at its ends for receiving and holding the journal boxes, a bolster spring box situated between said means at the lower edge of the side frame and having a bottom and upright continuous walls cast integral with the side frame and extending laterally from both sides thereof, the side frame having a recess above said box for the introduction of the end of the bolster and the edges of said recess being formed with laterally projecting ribs at the top and the sides cast integral with the spring box and forming therewith a rectangular structure, the bottom of the spring box being provided with a rising web connecting the sides of said rectangular structure together and extending longitudinally of the side frame for dividing the spring box into two compartments, each for receiving a plurality of springs, said web, spring box and rectangular structure being cast integral with the side frame.

3. In a cast side frame for car trucks embodying means at its ends for receiving and holding the journal boxes, a bolster spring box situated at the lower side of the frame between said means and consisting of a bottom portion extending laterally from the side frame in both directions and a surrounding upwardly extending wall, the side frame above said box having an aperture for the introduction of the end of the bolster and the bottom of the spring box below said aperture being provided with an upwardly extending web connecting the sides of the spring box together and dividing the spring box into two elongated compartments extending longitudinally of the side frame for the reception of a plurality of bolster springs, respectively, said web and spring box being cast integral with the side frame.

4. In a cast side frame for car trucks embodying means at its ends for receiving and holding the journal boxes, a bolster spring box situated between said means at the lower edge of the said frame and consisting of a bottom extending laterally from the side frame in both directions and a continuous surrounding wall cast integral with the bottom and with the side frame, the side frame above said box having a recess for the reception of the end of the bolster and provided above and at the sides of said recess with laterally extending reinforcing ribs cast integral with the walls of the spring box, a reinforcing partition rib rising perpendicularly from the bottom of the spring box and connecting the walls thereof together and being cast integral with the said ribs at the sides of said recess whereby the side frame is reinforced against vertical stress and the spring box is divided into two compartments for the reception of the bolster springs.

5. In a cast side frame for car trucks, a spring box situated near the lower edge thereof, the side frame having a recess above said spring box for the reception of the end of the bolster, upper and lower jaws situated at the ends of the side frame and cast integrally therewith for receiving the journal boxes, said jaws being arranged horizontally whereby the journal boxes may be introduced between them and the bolt connecting the extremities of the jaws together outside the journal boxes.

6. In a cast side frame for car trucks, a bolster spring box situated at the lower side thereof and cast integrally therewith, the bottom of the box having a rising web dividing the box into a plurality of seats or compartments for the bolster springs and said web being cast integral with the box and side frame, upper jaws at the extremities of the side frame cast integrally therewith for supporting the side frame upon the journal boxes, an L shaped member adapted to fit the side and bottom of the journal box at each end of the frame and an L shaped bolt embracing said L shaped member and having its extremities separated by the body of the side frame and said jaw respectively.

7. In a side frame for car trucks the combination of the frame proper embodying a bolster spring box extending laterally therefrom, a separate brake beam hanger and means whereby said brake beam hanger is detachably supported by the side of the spring box.

8. In a side frame for car trucks the combination of the frame proper having a bolster spring box extending

laterally therefrom, a lip on flange extending from said box, a slotted brake beam hanger fitted over said flange and a means for holding the said hanger from lateral displacement.

- 5 9. In a side frame for car trucks the combination of the frame proper having a bolster spring box, a lip or flange extending from the side of the box, a brake beam hanger comprising a slotted body fitted over said lip and two supporting lugs extending from the ends of said body,

and a pin for holding the latter against lateral displacement on the flange. 10

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 11th day of June, A. D. 1907.

HARRY C. BUHOUP.

Witnesses:

C. H. SEEM,

FRANCIS A. HOPKINS.