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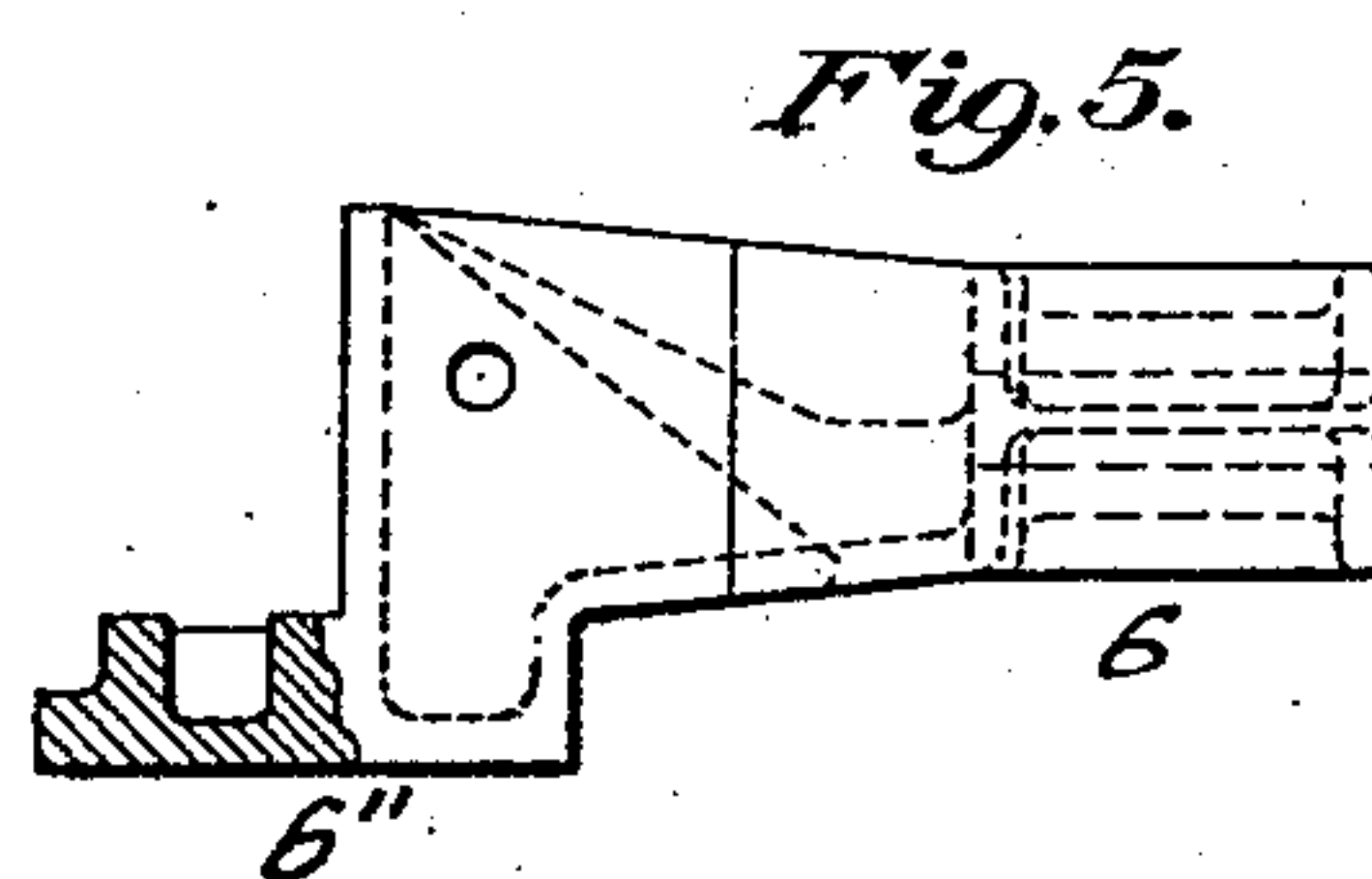
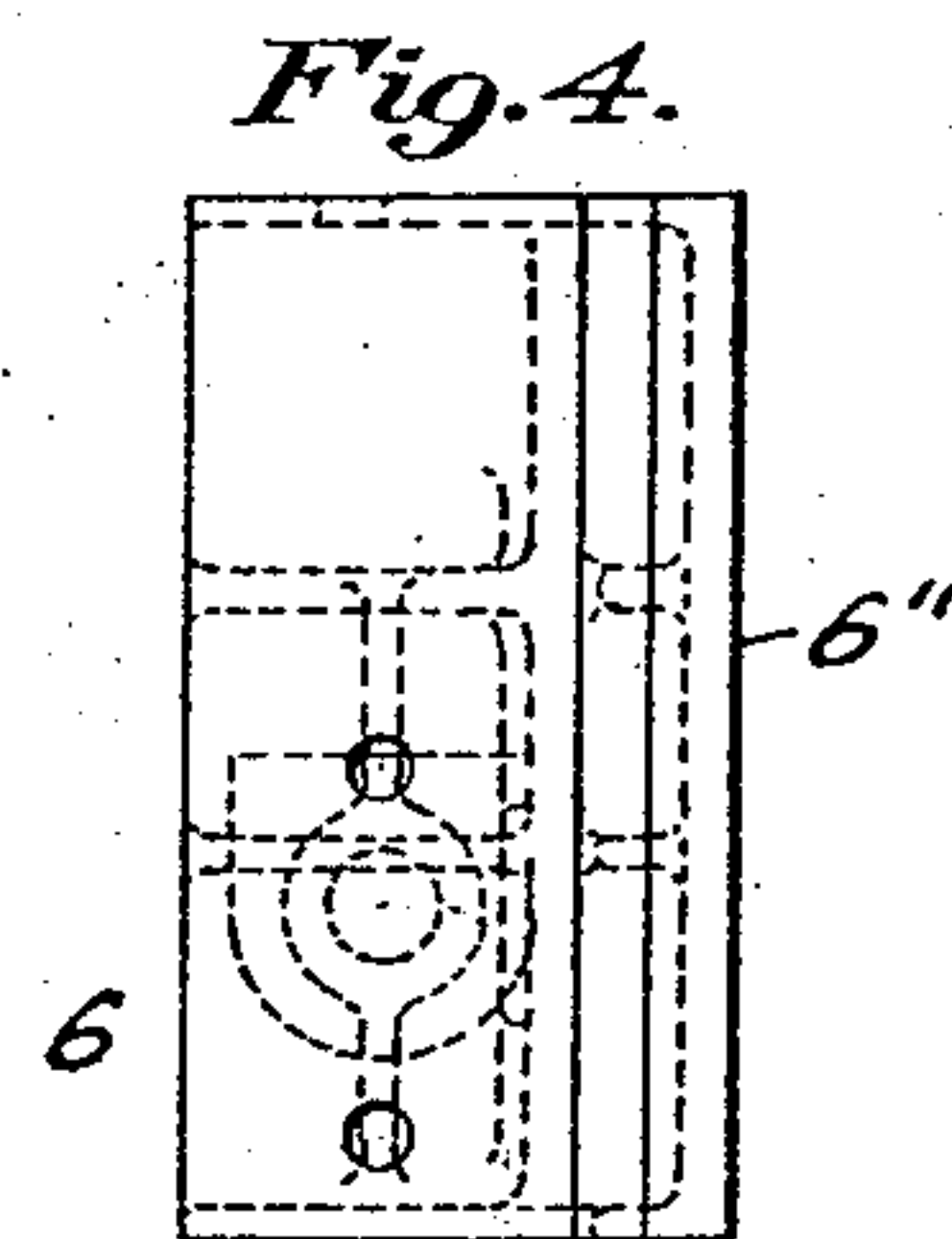
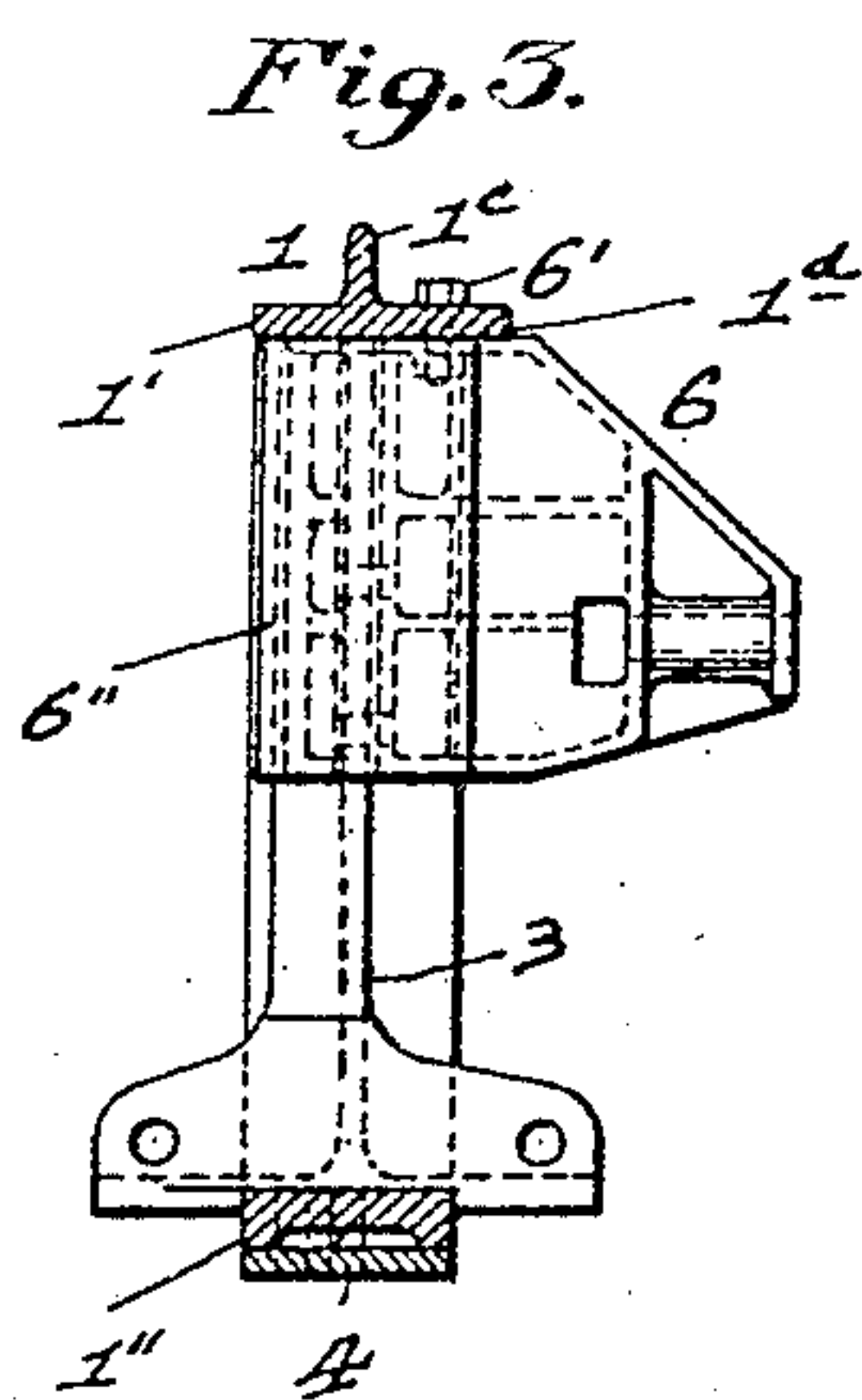
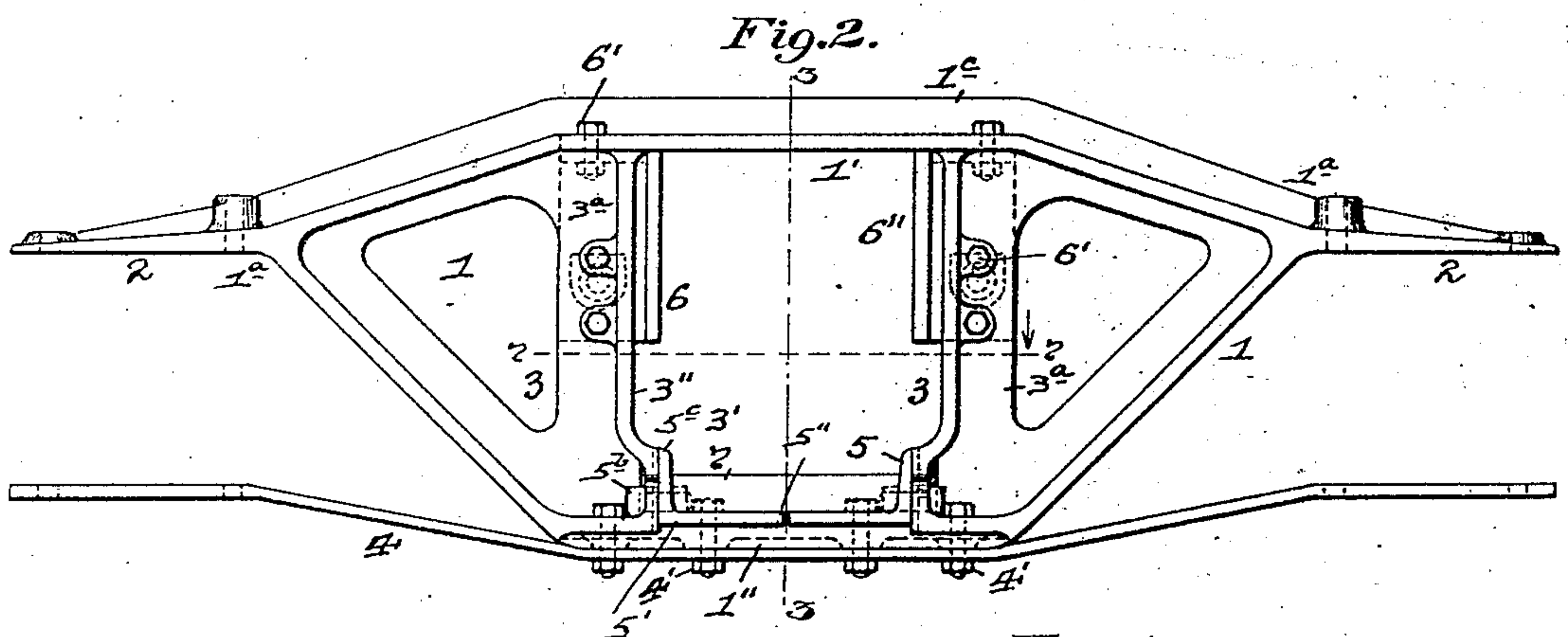
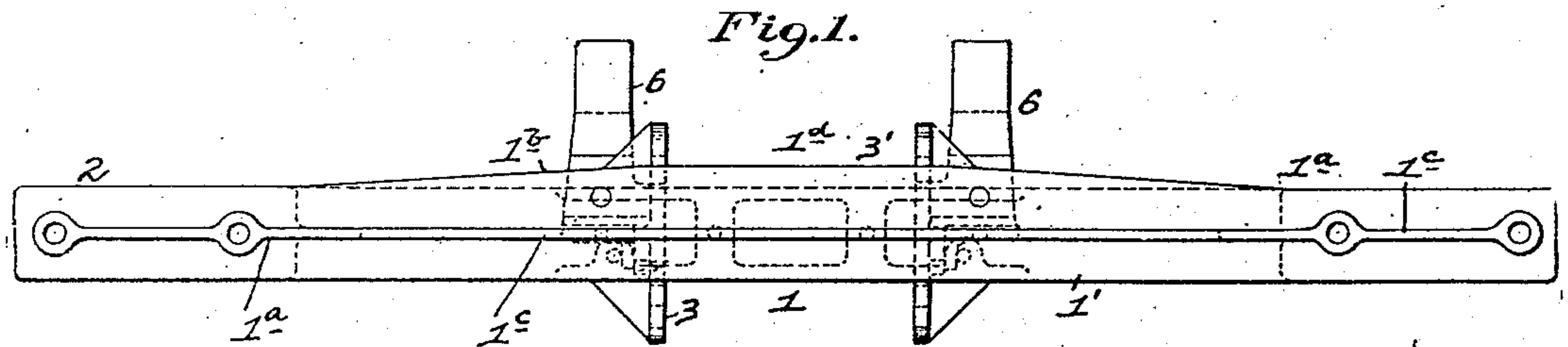
PATENTED APR. 10, 1906.

A. STUCKI.

SIDE FRAME FOR RAILWAY CAR TRUCKS.

APPLICATION FILED JUNE 28, 1905.

2 SHEETS—SHEET 1.



WITNESSES

Walter Samaris
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INVENTOR

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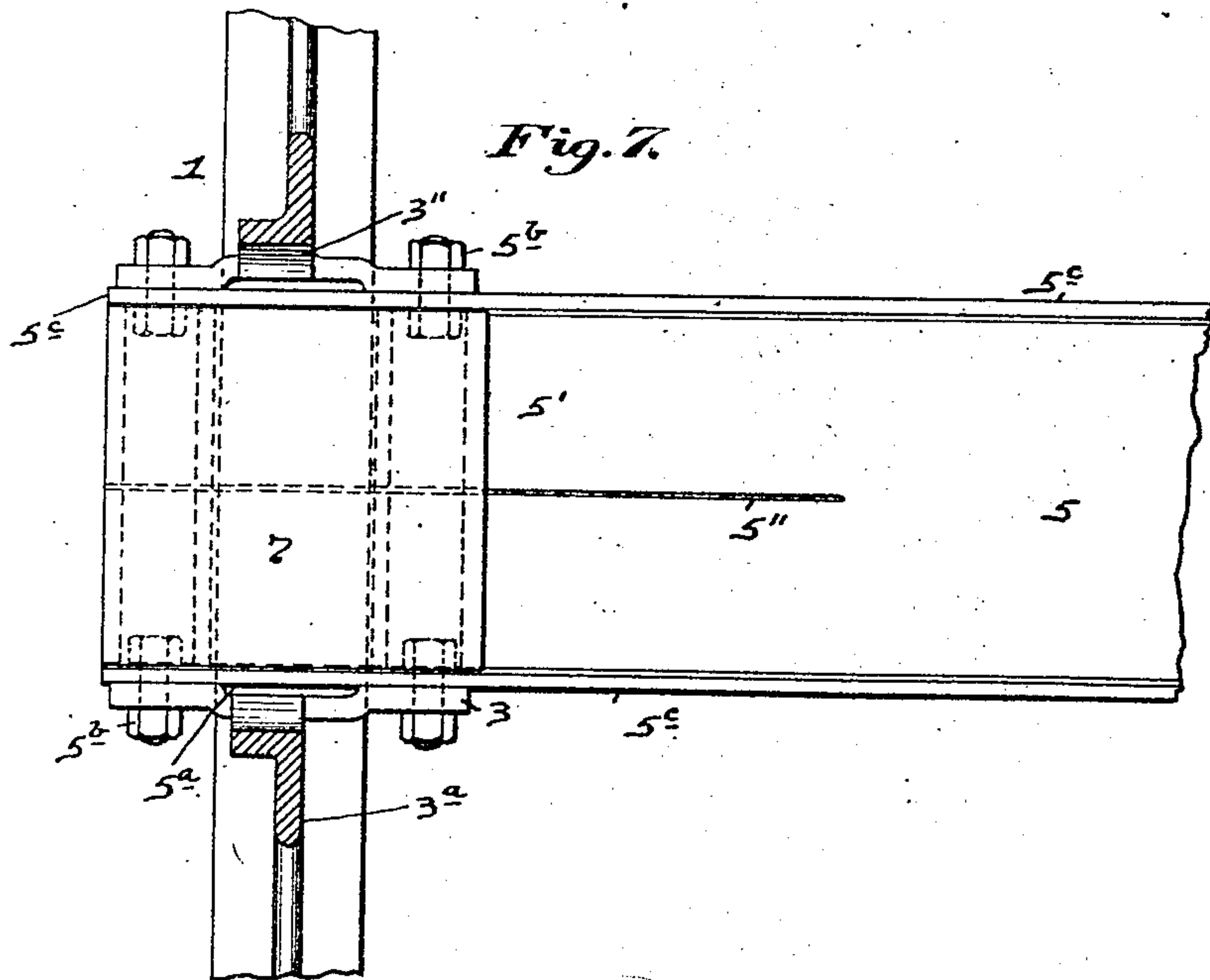
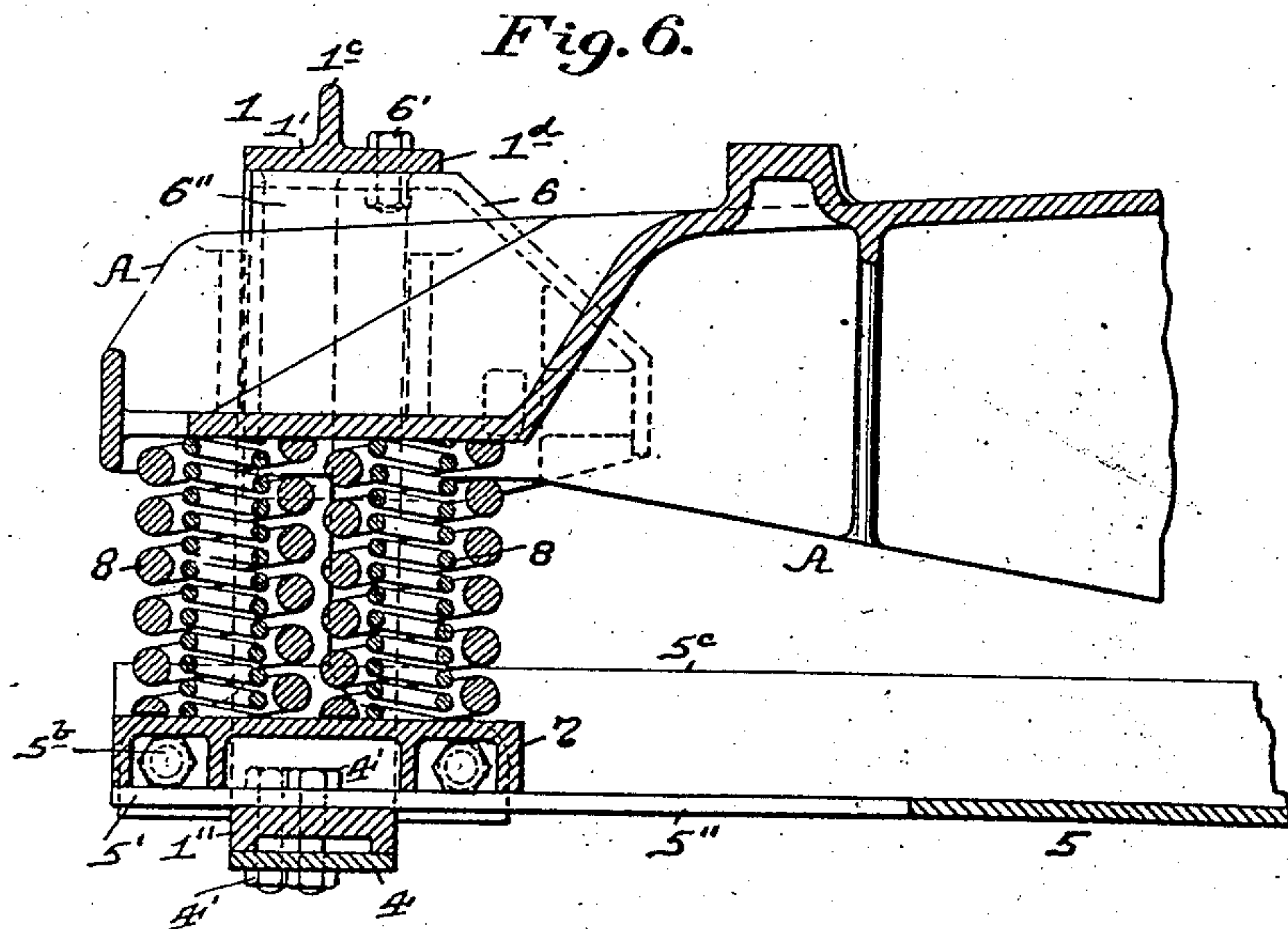
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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

ARNOLD STUCKI, OF ALLEGHENY, PENNSYLVANIA.

SIDE FRAME FOR RAILWAY-CAR TRUCKS.

No. 817,405.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed June 28, 1905. Serial No. 267,385.

To all whom it may concern:

Be it known that I, ARNOLD STUCKI, a resident of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Side Frames for Railway-Car Trucks; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to side frames for railway-car trucks, and has special reference to that class of such frames as are made from one piece of cast metal.

The object of my invention is to provide for the taking care of the strains upon the spring-plank and truck-frame in going around curves, &c., and, further, to improve the construction of these two parts in order to get a rigid, solid, and more superior connection between the same, so that the connecting-bolts can be drawn up tightly.

A further object of the invention is to provide a combined brake-hanger bracket and bolster-stop which is secured to the frame in such a way that all liability of the shearing of the connecting-bolts is obviated and at the same time the connection between these two parts is made stiffer and more rigid than the ordinary connection now in use, as well as allowing a wide bolster-bearing surface to be used which will take up any end shocks thereon.

Referring to the drawings, Figure 1 is a top plan view of my improved side frame for railway-car trucks. Fig. 2 is a side elevation of the same. Fig. 3 is a central vertical section of the frame on the line 3-3, Fig. 2. Fig. 4 is a face view of the brake-hanger support. Fig. 5 is a top view of the same, partly in section. Fig. 6 is a lateral central section of one side of the truck. Fig. 7 is a horizontal section on the line 7-7, Fig. 2.

Like symbols of reference herein indicate like parts in each of the figures of the drawings.

My improved side frame for railway-car trucks comprises the frame 1, formed of cast metal and having the upper and lower parts 1' 1'', which terminate in the horizontal end pieces to form the journal-box portions 2 and are united by the integral column-posts 3 to form vertical bars, braces, or struts between them. A journal-box tie-bar 4 lies below the frame and is secured thereto by bolts 4', passing through the lower part 1'' of

the frame 1 and through the tie-bar, while the inner one of these bolts passes through these parts and through the spring-plank 5, such spring-plank 5 being located in the space 3' between the column-posts 3 and acting as a combined spring-plate support and truck-frame brace. This arrangement of the bolts 4' protects the neck 1^a of the frame from being overstrained by binding. The integral column-posts or struts 3 are widened or recessed, as at 3'', from the top down, so that the bolster A can be slid out of the frame sidewise, and such posts are made strong by the extending flange or web 3^a back of the same.

The brake-hanger bracket 6, as shown in Figs. 1 to 5, inclusive, is secured by bolts 6' to the column-post web 3^a and the flange 1^b on the top part of the frame 1, which hanger serves as a column-post by having formed thereon the wide bearing-surfaces 6'' for the bolster and fitting within the recessed portions 3'', so that the number of pieces is reduced to a minimum in this instance, while at the same time such a fitting against the recessed portion of the frame relieves the bolts from any undue strains, no matter how great the shocks imparted by the bolster may be.

In the frame 1 the metal has been put into the most favorable cross-section; but it has also been placed where it does the most good in speaking of the frame in general. Since the improvements made in casting metals this form of truck-frame is formed so that there are ideal conditions all the way through—as, for instance, the web 1^c on top 1' of the frame 1 has been retained to stiffen the part over the bolster, being in compression and to stiffen the neck 1^a, as hereinbefore mentioned, and this web is tapered down from the neck 1^a and over the journal-box stays at each end of the frame 1 to save material without losing anything in strength. Another advantage is the possibility of widening flange 1^b of the frame 1, as at 1^d, at will near the center of the same, where it is needed to resist the strains due to the lurching of the cars on curves. This flange tapers gradually from the ends 2 to the center, thereby avoiding a waste of material at the boxes and a weak frame at the center as a result and enables the obtaining of a good fastening for the brake-hanger bracket 6, as the overhang of such bracket is very much reduced there-

by. Such an arrangement with top and bottom flanges attached to the brake-hanger bracket likewise strengthens the bracket in itself, as it is practically of a box shape, which tends to stiffen in all directions, and brackets without such flanges would be liable to yield under the heavy strain caused in applying the brakes. Brake-hanger brackets have been cast integral with the frame; but this is not good practice, as many failures occur on account of the hanger wearing out and breaking and the whole casting having to be scrapped. Besides this the loose bracket is quicker to apply than a whole truck side, and thereby time is saved. Therefore the combined brake-hanger 6 and bolster-stop is far preferable over a solid casting, as it embraces all the wearing-surfaces existing on the truck side frame, and in renewing such a hanger occasionally the side frame should last almost indefinitely, while this hanger and stop will facilitate the removal of the truck-bolster without rendering it necessary to drop the same.

The connection between the spring-plank 5 and side frame is very important, as on curves very high strains are produced, which will tend to pull the frame out of square, so in order to resist these strains a very strong joint is necessary between these parts, and as these parts vary in practice it is necessary to make one yielding, which is done by splitting the channel-forming spring-plank 5 near its end, as at 5', in order to form two sections 5' and make a fit between such plank and the solid side frame 1. Furthermore, in order to get a solid bearing at the extreme points and to avoid a rocking motion, which would occur on account of the fins left in the center of the frame-casting, the space for the spring-plank 5 in such frame is cored out to form a receptacle 5^a, so as to get an absolute solid connection and to be able to draw the bolts 5^b, connecting the flanges 5^c of the plank 5 with the column-posts 3 up tightly.

The spring-plank 5 supports a spring-plate 7 at each end and on these plates the truck-springs 8 are supported in conjunction with the bolster A, which extends over the said springs.

It will thus be seen that my improved truck-frame is composed of comparatively few parts which are connected with each other in a more substantial way than those heretofore in use, while at the same time such parts which receive the wear are made renewable. It will also be seen that there are two kinds of strains to be taken care of—i. e., lateral and longitudinal—and as the former strains or shocks are not so great as the latter by reason of their appearing very gradually as the car approaches a curve it will be evident that they will be merely horizontal forces, which will tend to bend the

truck side frame, but with comparatively little tendency to batter the wearing-surfaces against which the bolster bears. As the shocks in the longitudinal direction are more severe and occur every time the car stops or starts, the bolster is thrown against the vertical members of the truck-frame with great force and with a tendency to batter the same. Such a subjection in connection with a constant up-and-down movement of the bolster will soon wear out the bearing-surfaces in taking such longitudinal or end shocks, and for this reason these bearing-surfaces are made wide and renewable, as hereinbefore mentioned.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a truck the combination of a side frame, and a spring-plank formed in two sections at its ends and adapted to be attached to the vertical portions of said frame.

2. In a truck, the combination of a side frame, and a spring-plank formed in two sections by splitting the same at its ends and adapted to be attached to the vertical portions of said frame.

3. In a truck, the combination of a side frame having recesses formed in the vertical portions thereof, and a spring-plank formed in two sections and adapted to be attached to said vertical portions on each side of said recesses.

4. In a truck, the combination of a side frame having recesses formed in the vertical portions thereof, and a spring-plank formed in two sections by splitting the same at its ends, which are adapted to be attached to said vertical portions on each side of said recesses.

5. A cast integral truck side frame consisting of upper and lower portions which are joined by vertical portions and which terminate in end pieces for forming journal-box portions, and said upper portion having its upper flange tapered to a greater width at or near the center thereof than at its end pieces for the purpose specified.

6. A cast integral truck side frame consisting of upper and lower portions which are joined by vertical portions and which terminate in end pieces for forming journal-box portions, and a web on the top face of said upper portion for the purpose specified.

7. In a truck, the combination with a bolster, a cast integral side frame, the same consisting of upper and lower portions which are joined by vertical portions and said vertical portions being provided with an inwardly-extending web, and a brake-hanger bracket secured to said extending web and to the inside flange of the top member and forming a wide wearing-surface for the bolster to abut against.

8. In a truck, the combination with a bol-

ster, of a cast integral truck side frame, the same consisting of upper and lower portions which are joined by vertical portions and which terminate in end pieces for forming
5 journal-box portions and said vertical portions being provided with an inwardly-extending web thereon, and a brake-hanger bracket secured to said web and to the flange

of the said upper portion and forming bearing-surfaces for the bolster to abut against. 10

In testimony whereof I, the said ARNOLD STUCKI, have hereunto set my hand.

ARNOLD STUCKI.

Witnesses:

J. N. COOKE,

R. H. AXTHELM.