

G. B. ROBBINS & W. E. SHARP.
UNDERFRAME FOR RAILWAY CARS.

APPLICATION FILED JAN. 6, 1908.

Patented Aug. 2, 1910.

4 SHEETS—SHEET 1.

966,054.

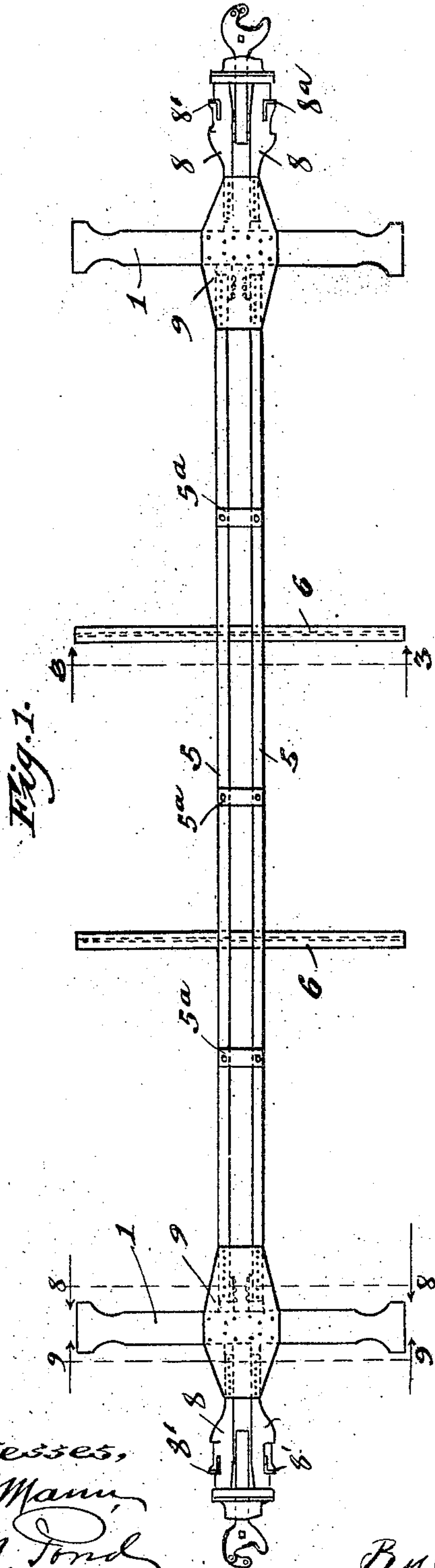
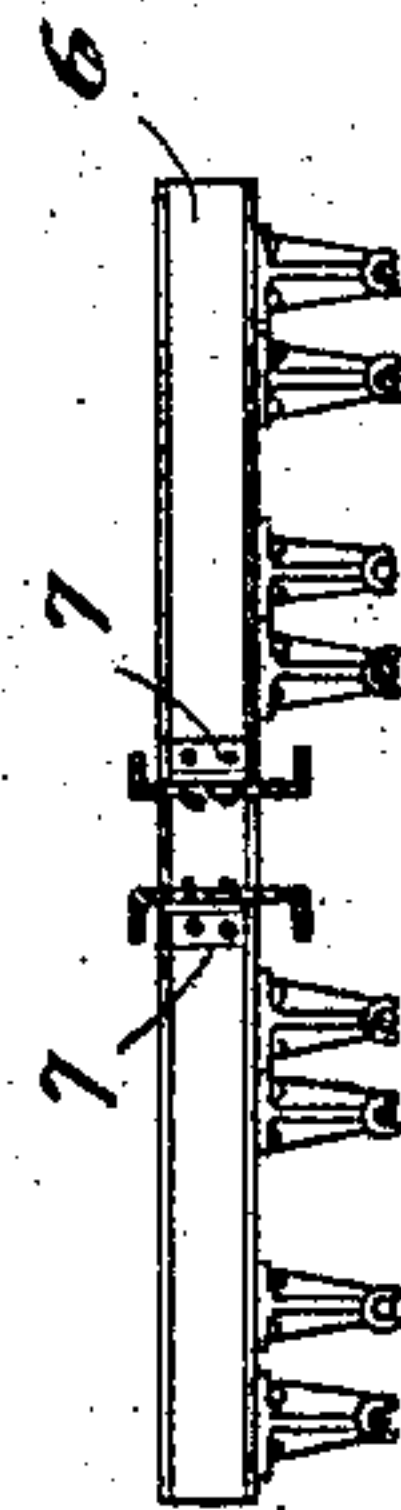
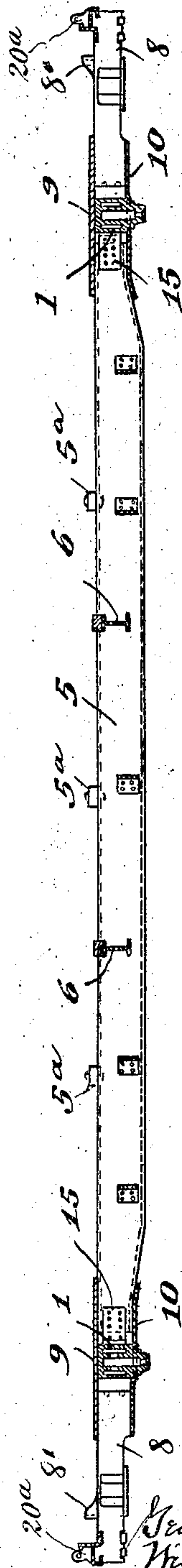


Fig. 2.



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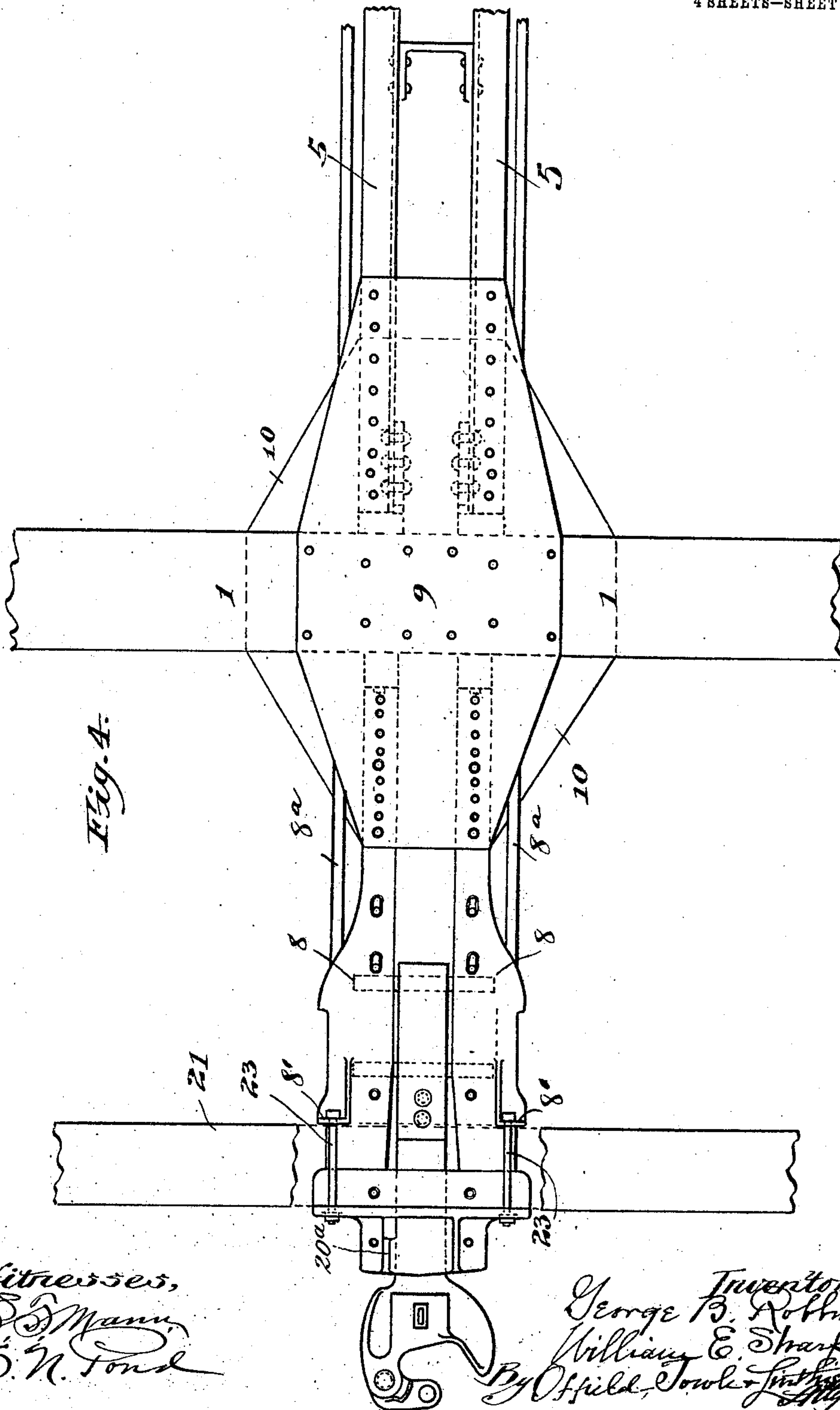
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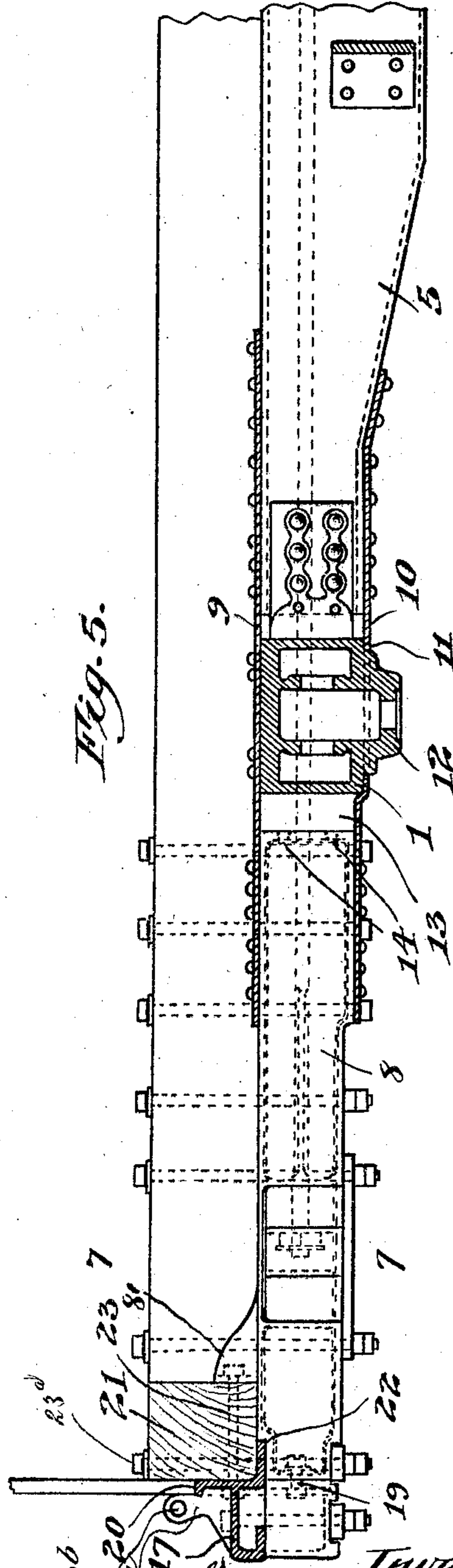
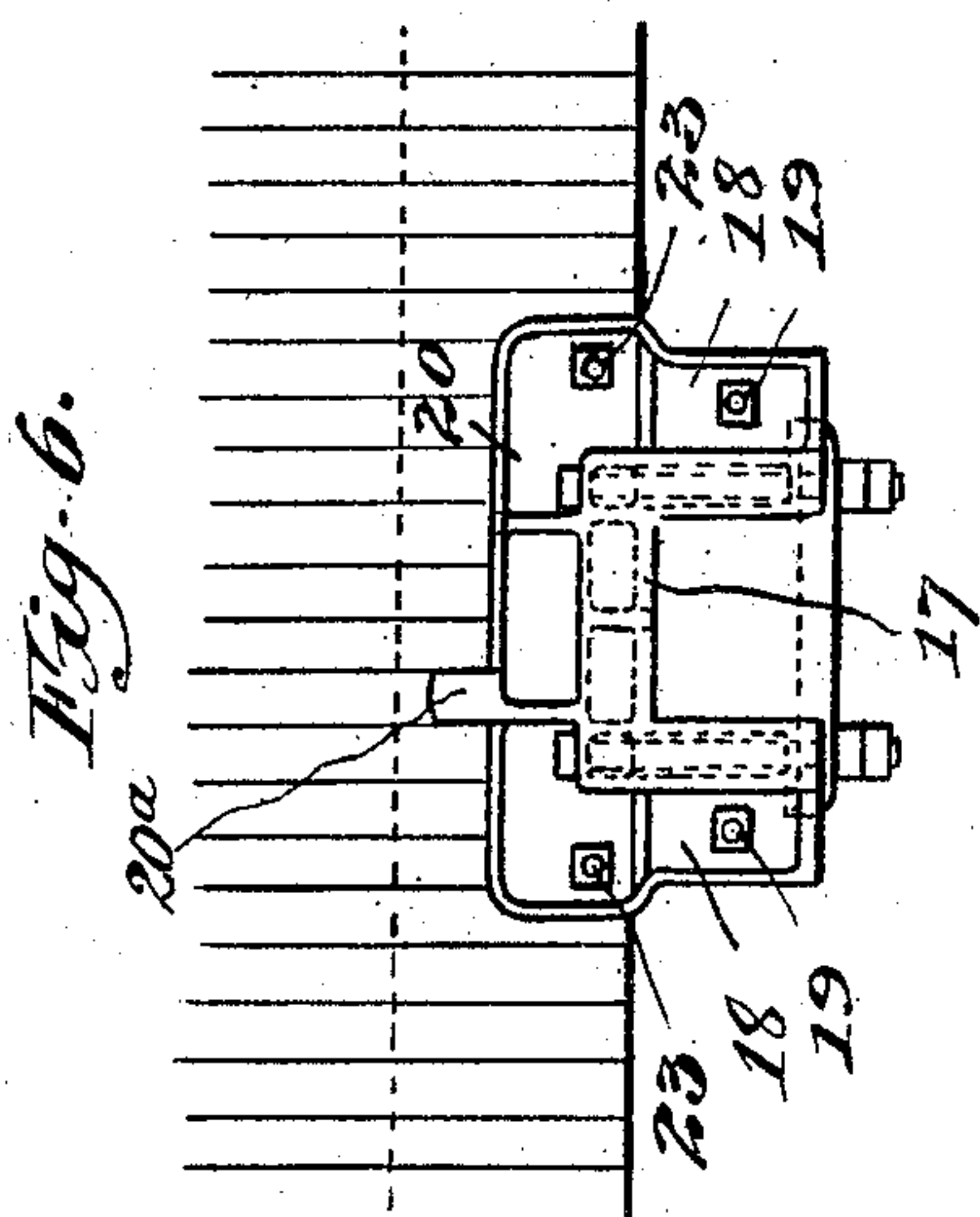
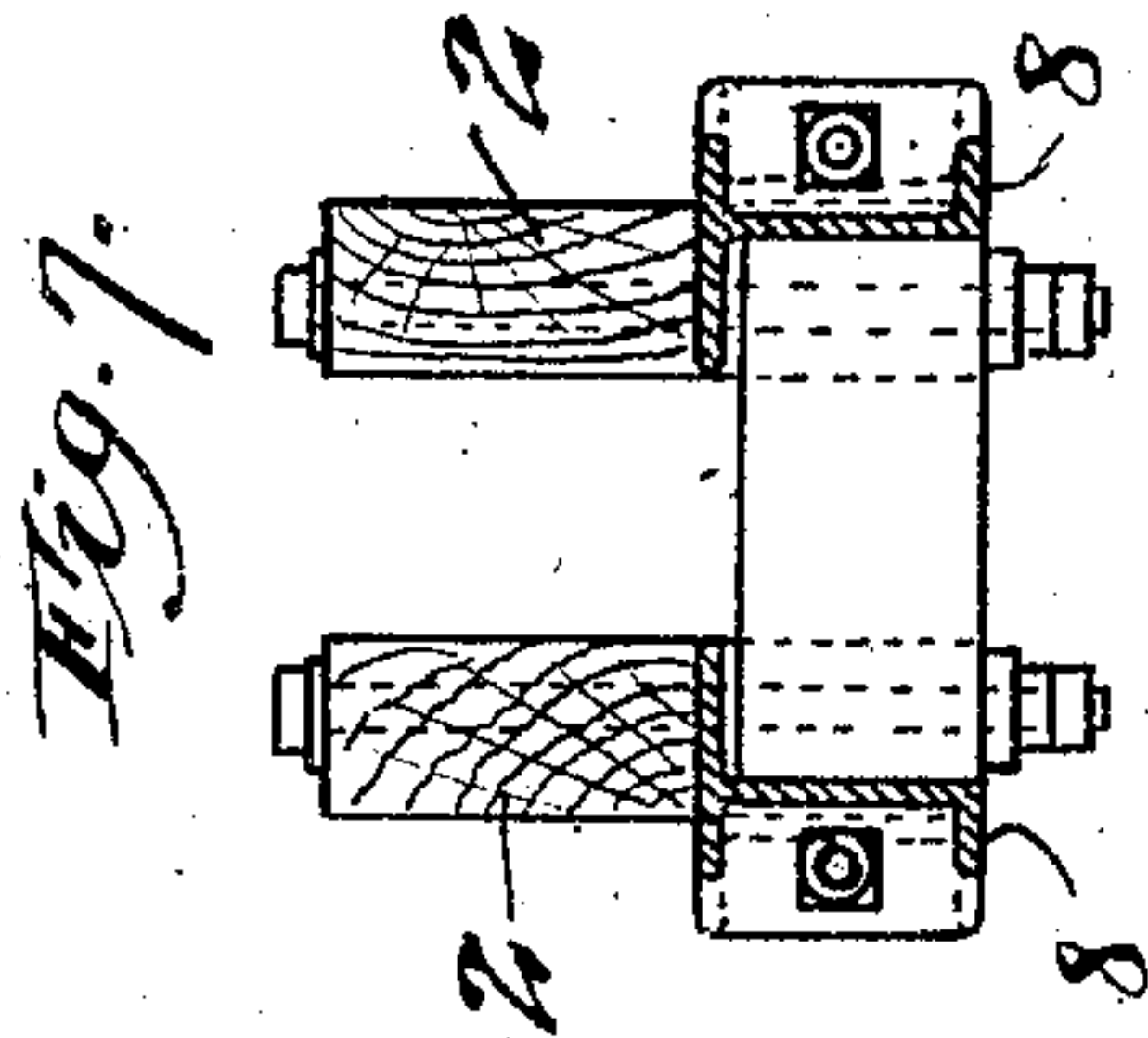
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4 SHEETS—SHEET 4.

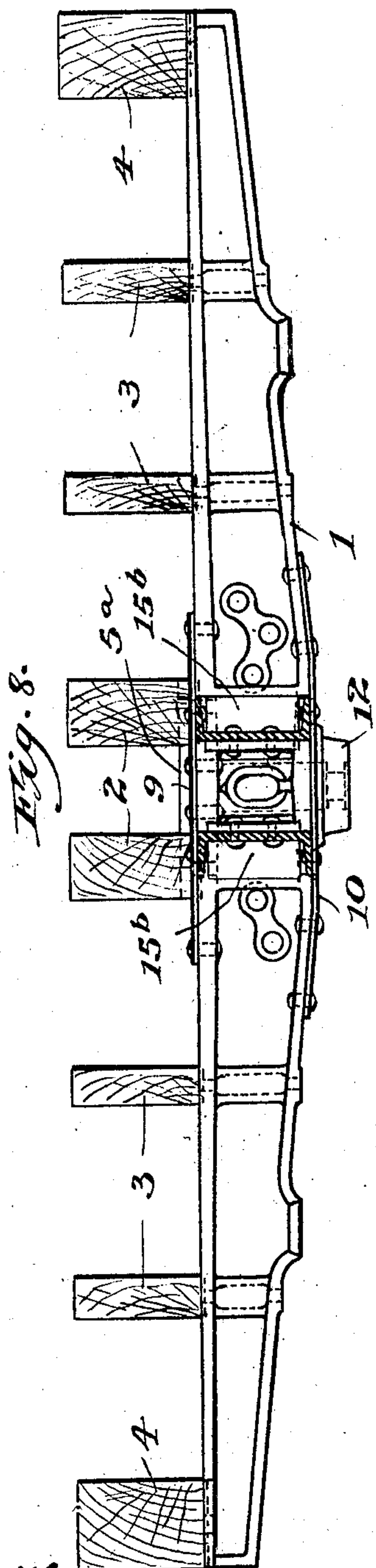


Fig. 8.

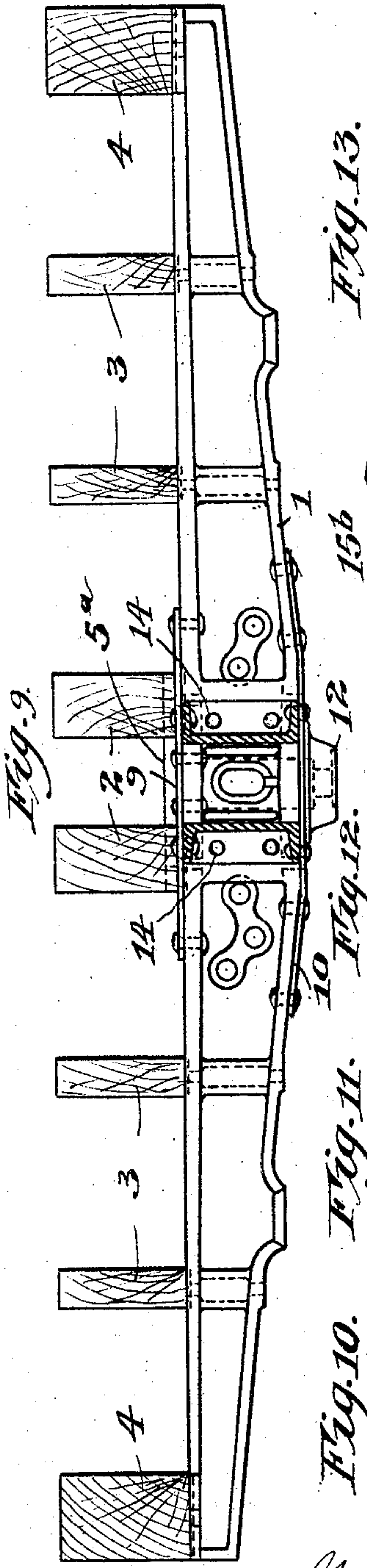


Fig. 9.

Fig. 13.

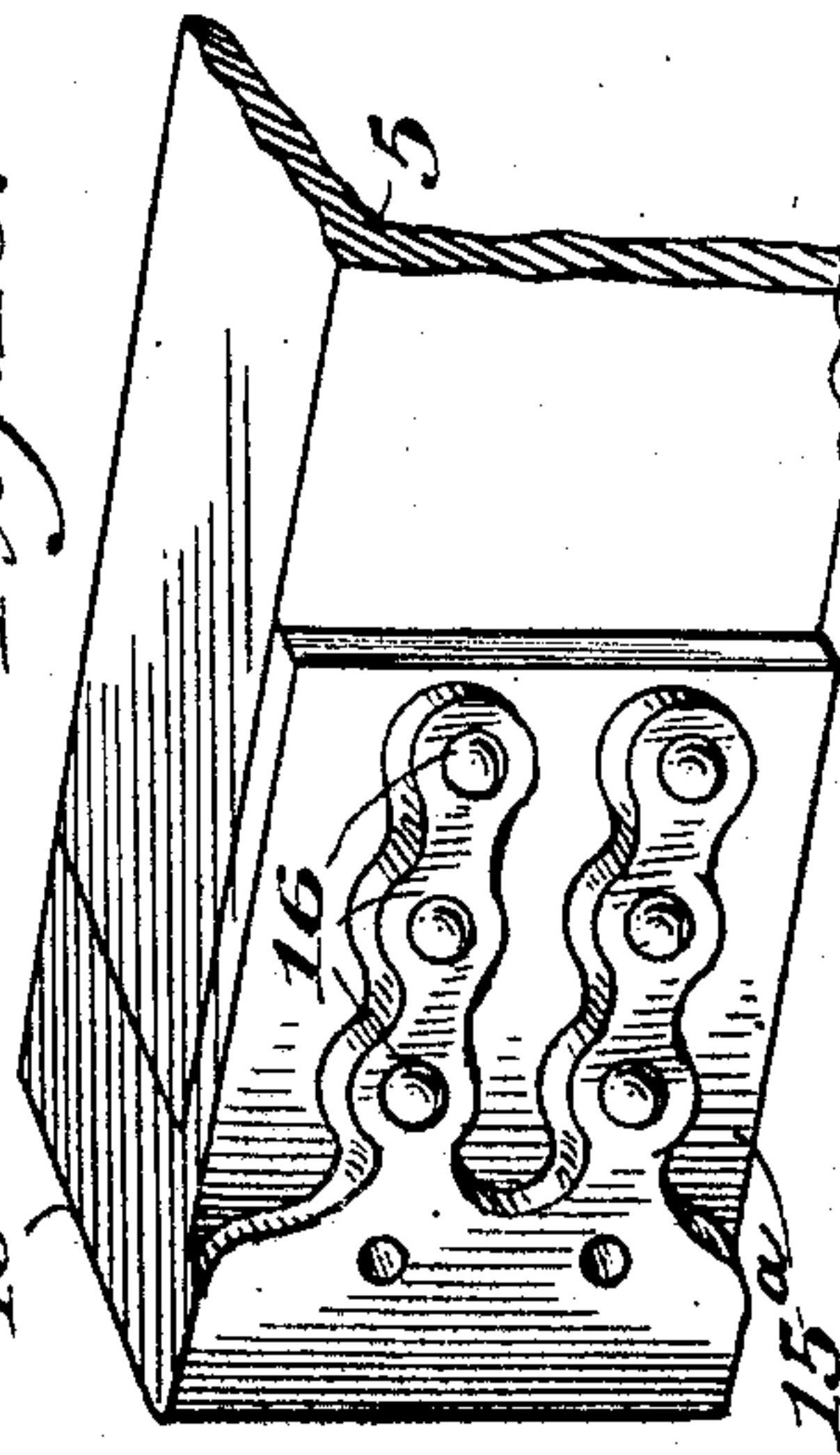


Fig. 12.

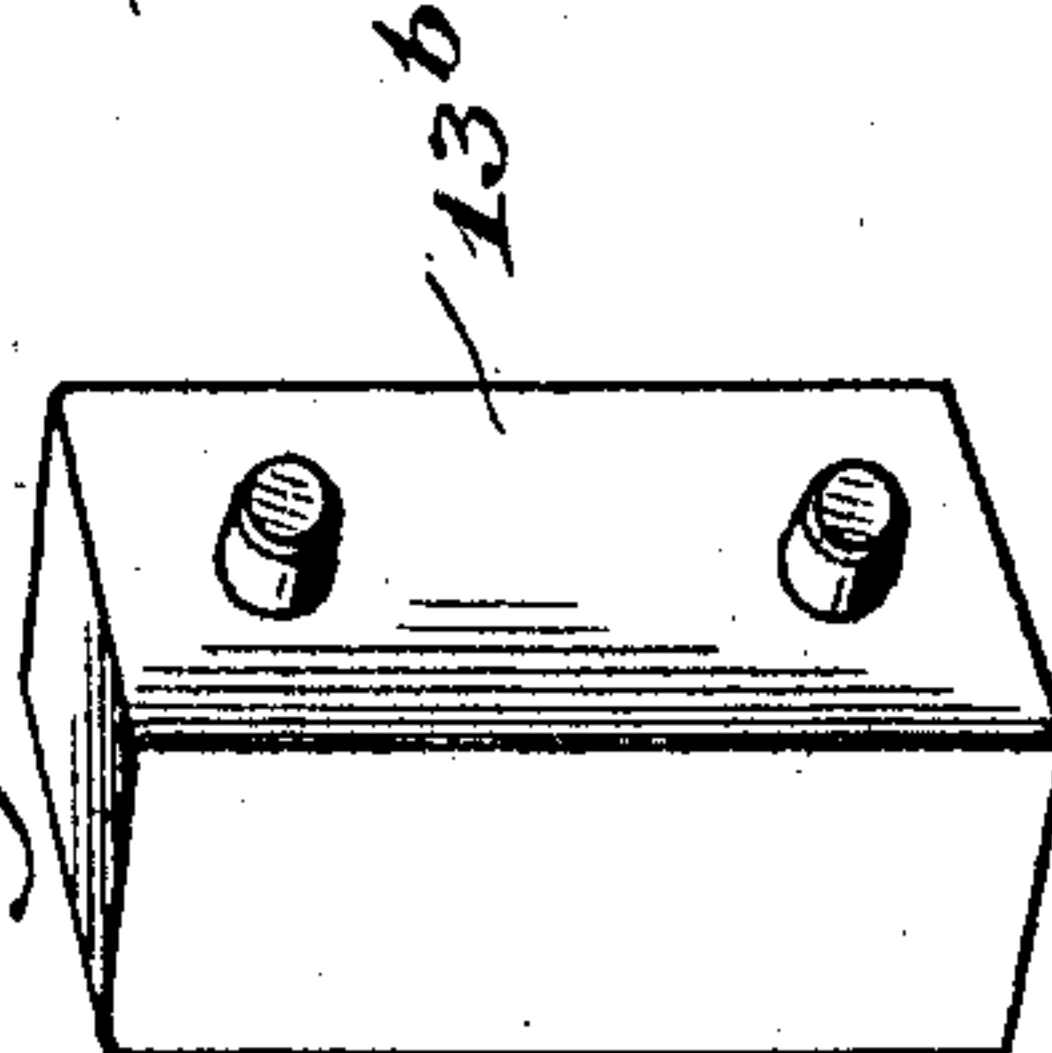


Fig. 11.

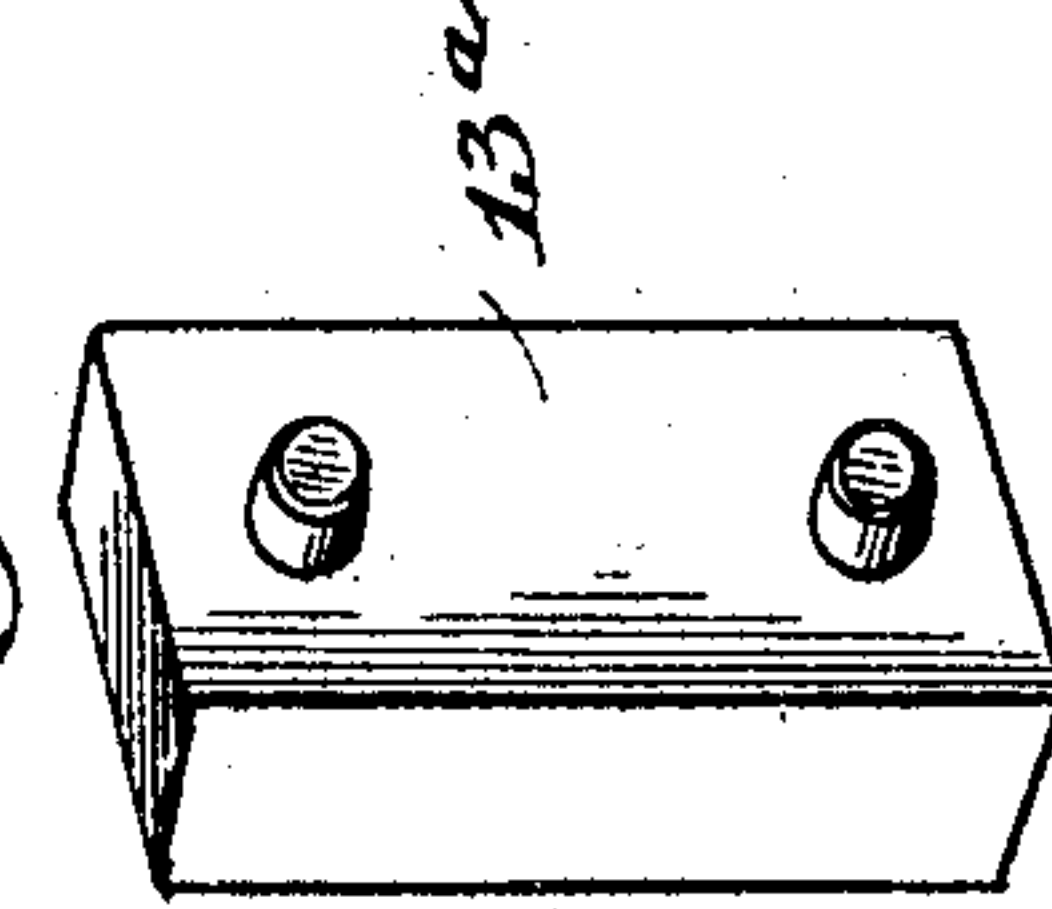
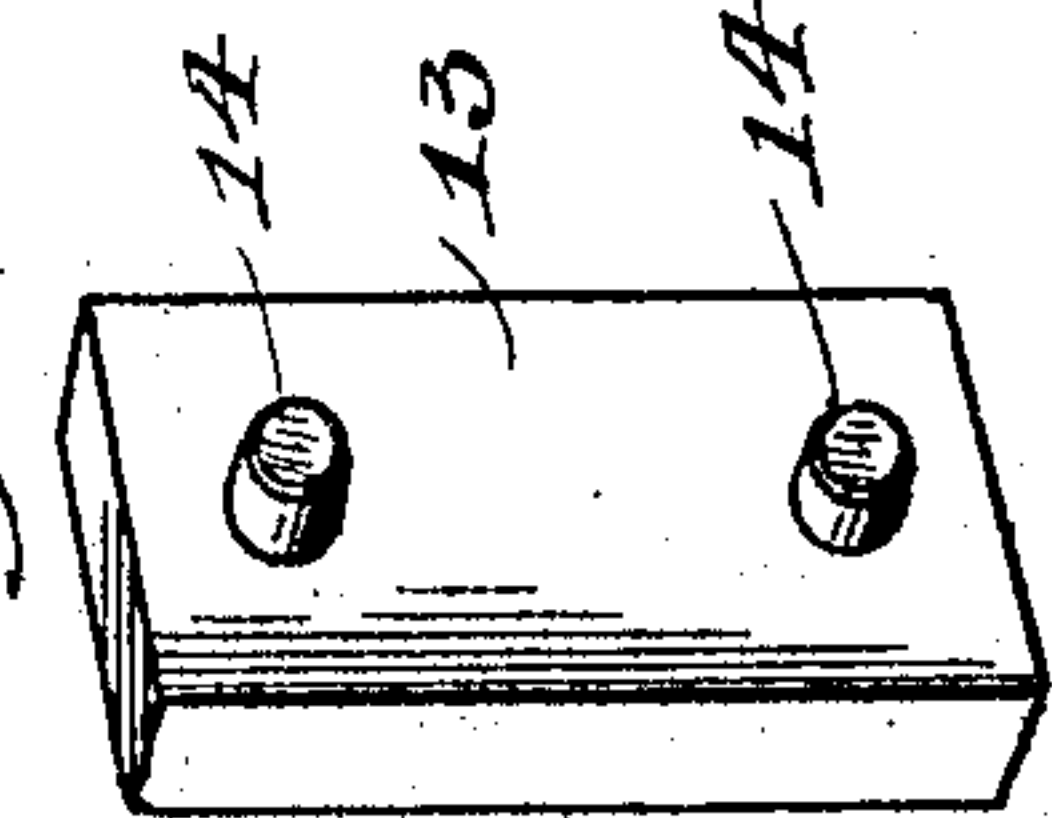


Fig. 10.



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UNITED STATES PATENT OFFICE.

GEORGE B. ROBBINS, OF HINSDALE, AND WILLIAM E. SHARP, OF CHICAGO, ILLINOIS

UNDERFRAME FOR RAILWAY-CARS.

966,054.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed January 6, 1908. Serial No. 409,458.

To all whom it may concern:

Be it known that we, GEORGE B. ROBBINS and WILLIAM E. SHARP, both citizens of the United States, residing, respectively, at Hinsdale and Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Underframes for Railway-Cars, of which the following is a specification.

10 This invention relates to improvements in underframes for railway cars.

The principal object of the invention is to provide an improved steel underframe for wooden cars, a leading feature of the invention residing in the provision of novel means whereby a steel underframe may be readily adjusted and adapted to fit car bodies where-
15 in the distance between the body bolsters and the distance between the end sills of the car and the adjacent body bolsters varies.

Another feature of the invention resides in a construction wherein the continuity of the body bolsters is maintained and the longitudinal draft-sills are interrupted at the
20 points where they are intersected by the body bolsters, with new and improved means of rigidly uniting the body bolsters and draft-sills, consisting of top and bottom gusset-plates securely riveted to both, the
25 bottom gusset plate being apertured to accommodate the center bearing.

A further feature of improvement resides in a novel construction of steel buffer block and draft-arm (representing that portion of the draft-sill lying between the end
30 of the car and the adjacent body bolster) provided with upstanding lugs or flanges embracing the end sill and bolted to the latter.

40 Our invention will be readily understood when considered in connection with the accompanying drawings, in which—

Figure 1 is a top plan view of a steel underframe adapted for use with wooden
45 car bodies having our several improvements incorporated therein. Fig. 2 is a vertical longitudinal median section of Fig. 1. Fig. 3 is a cross-section on the line 3—3 of Fig. 1. Fig. 4 is an enlarged plan view of one
50 end portion of the underframe, also showing the draft-rigging in plan. Fig. 5 is a vertical longitudinal median section of Fig. 4, omitting the draft appliances. Fig. 6 is an end view of the buffer block as applied to one end of the car body. Fig. 7 is a cross-
55 sectional detail on the line 7—7 of Fig. 5.

Figs. 8 and 9 are cross-sectional views, on an enlarged scale, on the lines 8—8 and 9—9 of Fig. 1, looking in the direction indicated by the arrows, showing one of the body
60 bolsters in elevation from opposite sides. Figs. 10, 11 and 12 are perspective details of a filler block, in varying sizes, employed back of the steel draft-arms to lengthen the same and form a continuous connection be-
65 tween the forward end of the car and the front face of the body bolster. Fig. 13 is a perspective detail of another filler block, herein shown as having the form of an angle iron adapted to be securely riveted to
70 the ends of the steel channel under-sills lying between the body bolsters and serving to lengthen the latter to any extent required to accommodate variations in distance be-
75 tween the body bolsters of different cars.

Referring first to the general views, Figs. 1 and 2, 1 designates the body bolsters which, as shown in Fig. 5 and the detail views, Figs. 8 and 9, are hollow members with top,
80 bottom and side walls made continuous from end to end, and are securely bolted to the longitudinal wooden sills of the car bottom shown at 2, 3 and 4. 5 designates the parallel steel center or under-sills, herein shown
85 as of channel form, and which in practice are commonly made in a standard or uniform length and which lie between and connect the body bolsters. 6 designates the
90 usual cross-bearers or needle-beams that intersect the under-sills 5 at intermediate points between the body bolsters, being secured thereto as by angle brackets 7. 8 designates the steel draft-arms that in practice
95 are bolted to the under sides of the wooden center sills 2 of the car body and accommodate between them the coupler and draft-rigging. The draft arms are tied to the body bolster
100 by tie-rods 8^a; and 5^a designates sill-keys riveted across the tops of the center-sills keying the latter to the wooden sills 2.

A strong and rigid connection between the body bolster 1 and the adjacent ends of the under-sills 5 and draft-arms 8 lying on opposite sides of said body bolster is effected
105 by means of upper and lower gusset-plates 9 and 10, respectively. Both of these plates are integral one-piece structures, and are of such dimensions as to directly over- and under-lie the body bolsters and considerably
110 overlap the meeting ends of the under-sills and draft-arms, as clearly shown in Figs. 4 and 5. These gusset-plates are securely

riveted both to the body bolster and to the under sills and draft-arms, as shown, and the lower gusset-plate is provided with a substantially central opening 11, which may conveniently be punched therethrough, to accommodate the upper center bearing 12 (Fig. 5), which is formed directly on the bottom of the body bolster and preferably, and as herein shown, made integral therewith.

The distance between the front face of the body bolster and the end of the car varies within a range of several inches in different cars, especially old wooden cars which from time to time require to be refitted with underframes. The draft-arms 8 are economically manufactured in a standard or uniform length; and in order to render such standard draft-arms capable of use on cars having the varying distances referred to between the front of the car and the forward face of the body bolster, we employ between the inner ends of the draft-arms and the front face of the body bolster filler blocks, which are made in a variety of thicknesses, as illustrated, for example, at 13, 13^a and 13^b in Figs. 10, 11 and 12, respectively. One of these filler blocks is simply interposed between the end of the draft-arm and the front face of the bolster; and in order to insure its retention in operative position without the necessity of special fastenings, we provide on the forward face of the block the dowels 14 that engage correspondingly located holes formed in the inner end of the draft-arm. In this way, and by this means, a standard length of draft-arm may be rendered adaptable to cars wherein the body bolster is set at distances from the end of the car varying within the limits of the filler blocks at hand. These cars likewise vary more or less in the distances between the body bolsters, whereas the under sills 5 are economically and usually cut to standard lengths (26 feet, 2 inches). In order to adapt such standard length of under sills to varying distances between body bolsters, we employ a similar principle as represented by a filler block of somewhat different form from that already described. This filler block 15, which is well shown in the perspective view Fig. 13, is preferably of an angle form, one limb 15^a thereof being provided with a plurality of rivet holes 16, whereby it may be riveted securely to one side (preferably the inner) of the channel under sill 5, and the other limb 15^b, which may vary in thickness as required by the space to be filled, lying across the end of the under sill and abutting against the inner face of the body bolster, as well shown in Fig. 8. A filler block of this form is used at one or both ends of the under sills 5, as may be necessary, and constitutes a simple, efficient, and convenient means for piecing out the length of the under sills to the extent

that may be necessary in each particular case.

One other feature of our present invention resides in an improved steel buffer block for the end of the car. This member is best shown in Figs. 4, 5 and 6, and comprises a metal casting having a rectangular central buffing frame 17 forming a guide and housing for the coupler shank, with side wings 18 adapted to be secured by short bolts 19 to the ends of the draft-arms, and further having, on its upper side, an L-shaped extension, the vertical member 20 of which lies against the front face of the end sill 21 of the car, while its horizontal member 22 underlies said end sill. On the steel buffer-block 17 is cast, between the upper face of the latter and the outer face of the vertical member 20 of the extension, an upstanding rib or bracket 20^a, the upper end of which is apertured, as shown at 20^b, to form a bearing for the rod or shaft of the usual uncoupling lever. On the draft-arms 8 are formed upstanding horns 8' that engage the rear side of the end sill 21, whereby the latter is snugly seated between said horns and the vertical member 20 of the projection of the buffer block. Through-bolts 23 engaging the members 20 and 8^a and passing through the end sill 21 securely unite said parts, thus forming a strong backing and reinforcement for the buffer block and, through the latter and the horns 8', likewise forming a strong abutment for the draft-arms and an increasing strength of the connections between said draft-arms and the superposed center sills of the car to which they are attached. Vertical bolts 23^a unite the end sill to the forward ends of the draft-arms through the horizontal extension 22 of the buffer casting.

From the foregoing it will be apparent that our invention provides a number of useful features in an underframe construction, especially adapting the latter to substitute and repair service in connection with car bodies, whether old or new, varying in respect to the relative locations of the body bolsters.

It is manifest that the exact details of construction herein shown and described may be varied without departing from the spirit of the invention, and that features of the invention may be employed without its adoption as an entirety.

We claim:

1. In an underframe construction for railway cars, the combination with a continuous body bolster having on its lower side a center bearing, of draft-arms on one side of said bolster, center sills on the other side thereof, and top and bottom gusset-plates overlapping and secured to said body bolster and the adjacent end portions of said draft-arms and center sills, said lower gusset-plate

being apertured to accommodate said center bearing.

2. In an underframe construction for railway cars, the combination with a continuous body bolster, and a draft-arm, of a filler block interposed between the inner end of said draft-arm and the bolster.

3. In an underframe construction for railway cars, the combination with a continuous body bolster and a draft-arm having holes in its inner end, of a filler block interposed between the inner end of said draft-arm and the bolster and having dowel-pins adapted to enter said holes of the draft-arm.

4. In an underframe construction for railway cars, the combination with a continuous body bolster, and a center sill, of a filler block interposed between said bolster and the adjacent end of said center sill.

5. In an underframe construction for railway cars, the combination with a continuous body bolster, and a center sill, of an L-shaped block having one arm thereof riveted to said center sill and the other arm extending across the end of said center sill and abutting against the side of said body bolster.

6. In an underframe construction for railway cars, the combination with an end sill and a draft-arm having an integral longitudinal upstanding projection with a transverse portion lying against the rear face of

said end sill, of a buffer-block casting having an integral buffing frame forming a guide and housing for the coupler shank and having an upstanding projection therefrom engaging the front face of the end sill, and bolts tying together said projections through said end sill.

7. In an underframe construction for railway cars, the combination with an end sill and draft-arms having integral upstanding longitudinal projections with transverse portions lying against the rear face of said end sill, of a buffer-block casting having an integral buffing frame forming a guide and housing for the coupler shank and an L-shaped extension on its upper side, the vertical member of said extension lying against the front face of the end sill, and the horizontal member thereof lying against the under side of the end sill, bolts tying together said upstanding projections through said end sill, and bolts connecting the end sill and draft-arms through the horizontal member of said buffer projection, substantially as described.

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