

J. O. NEIKIRK.

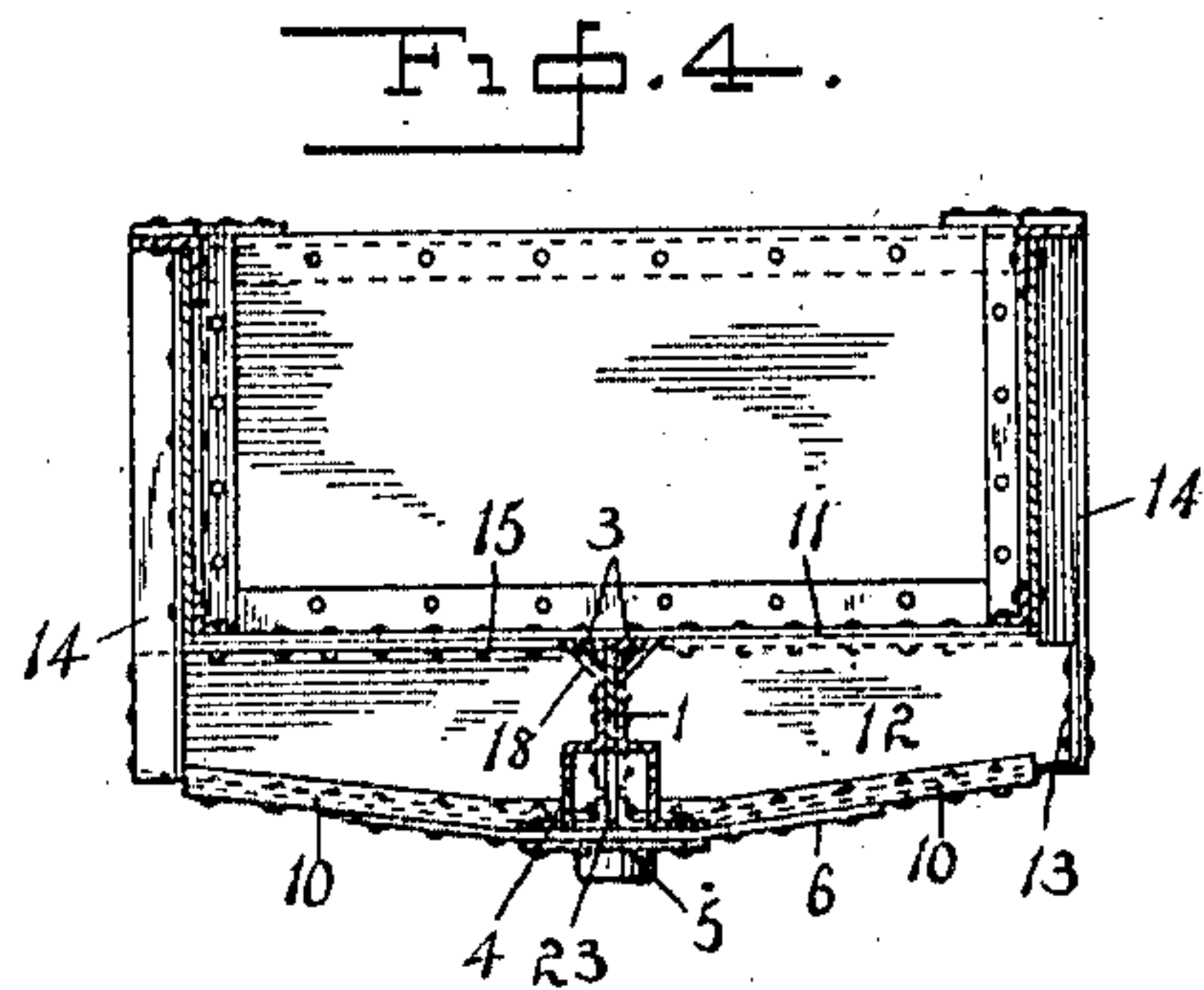
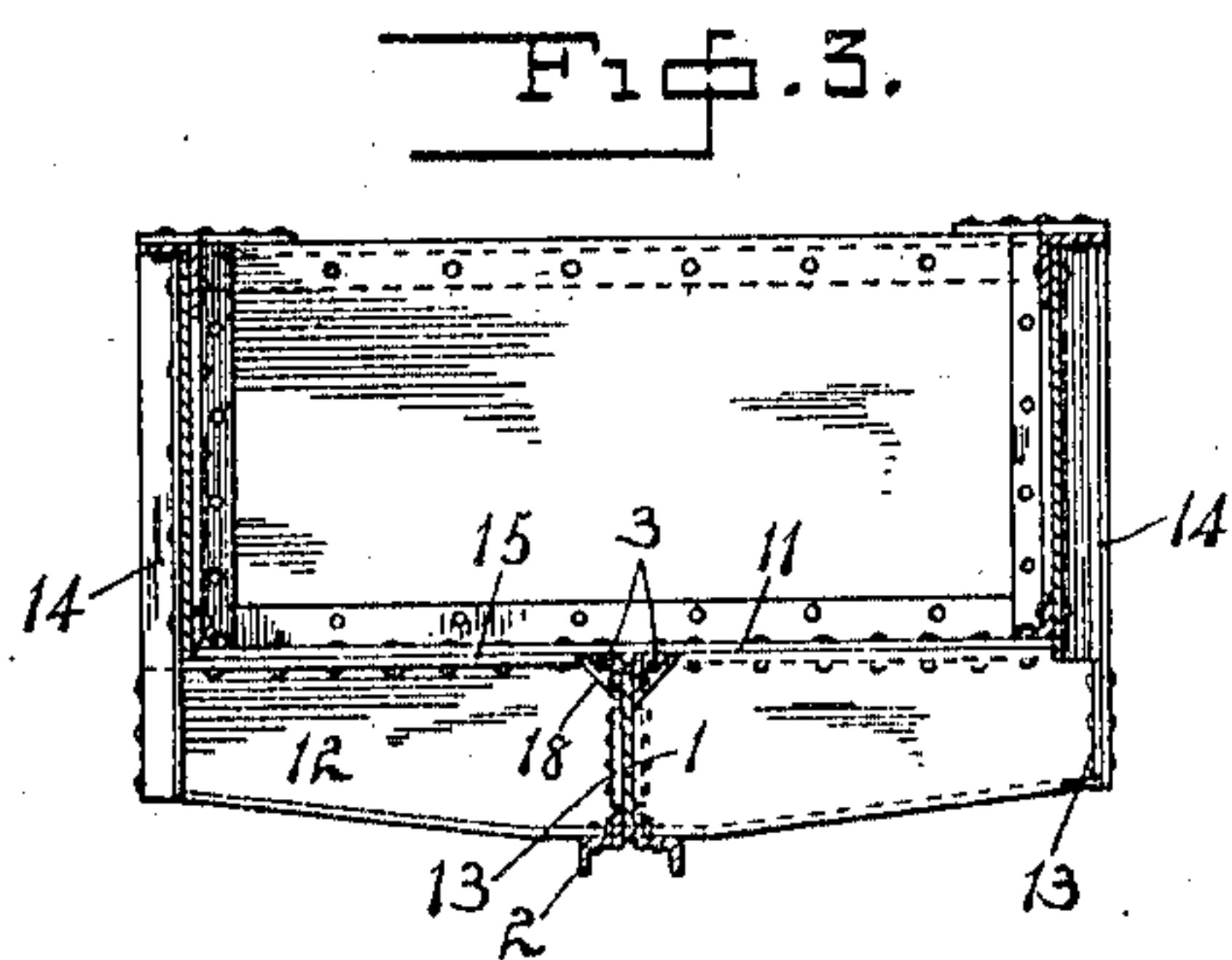
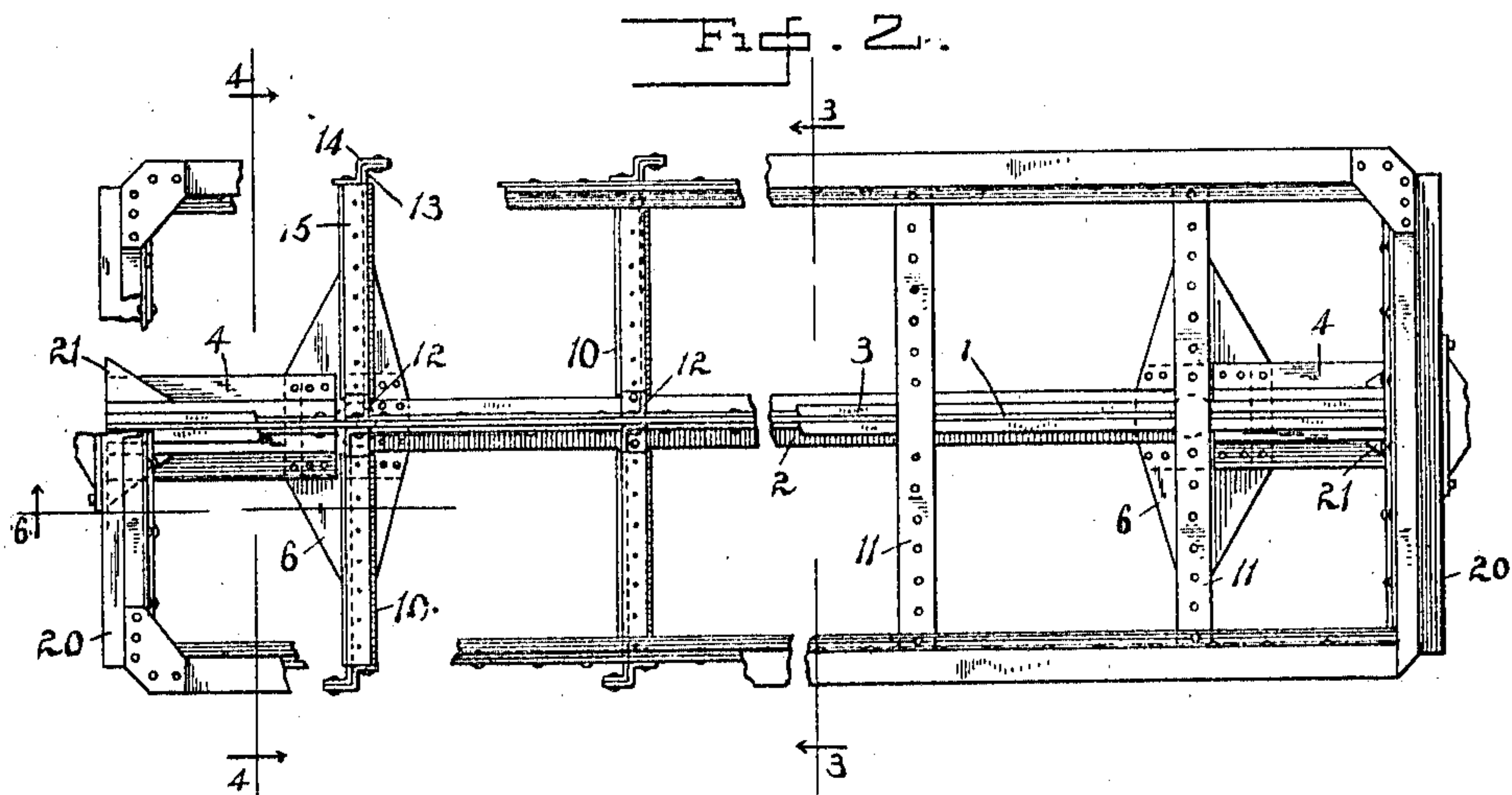
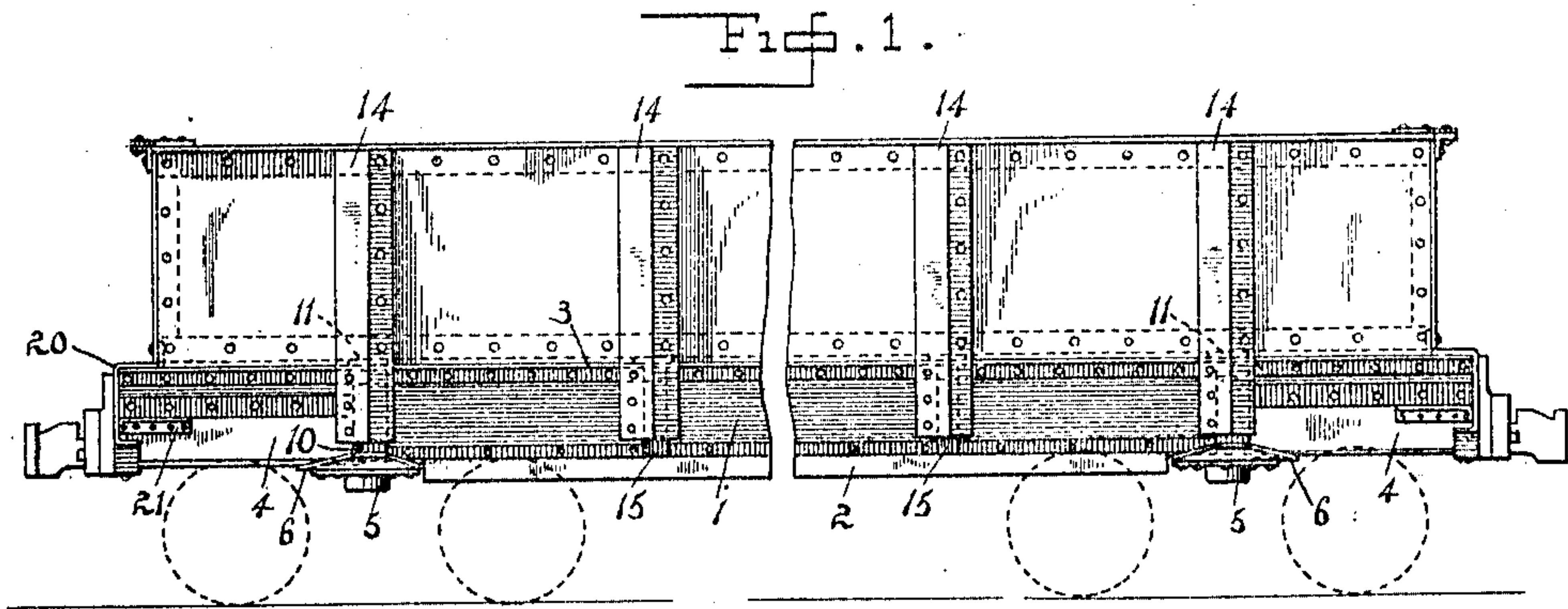
RAILWAY CAR.

APPLICATION FILED OCT. 7, 1909.

953,176.

Patented Mar. 29, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

Charles J. Hart

Henry A. Parks

INVENTOR

John O. Neikirk

BY

Frederic W. Wilkinson & Co.

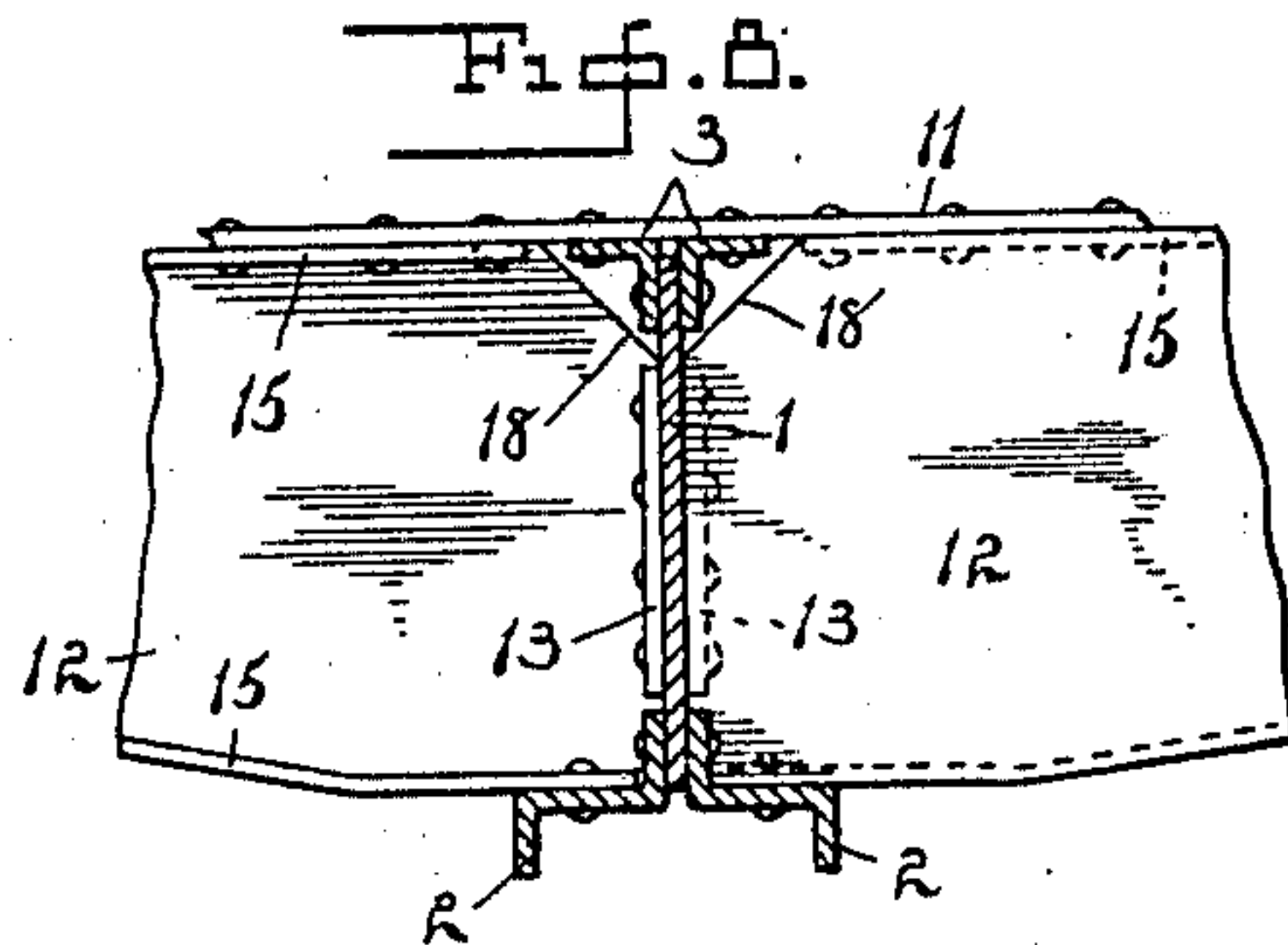
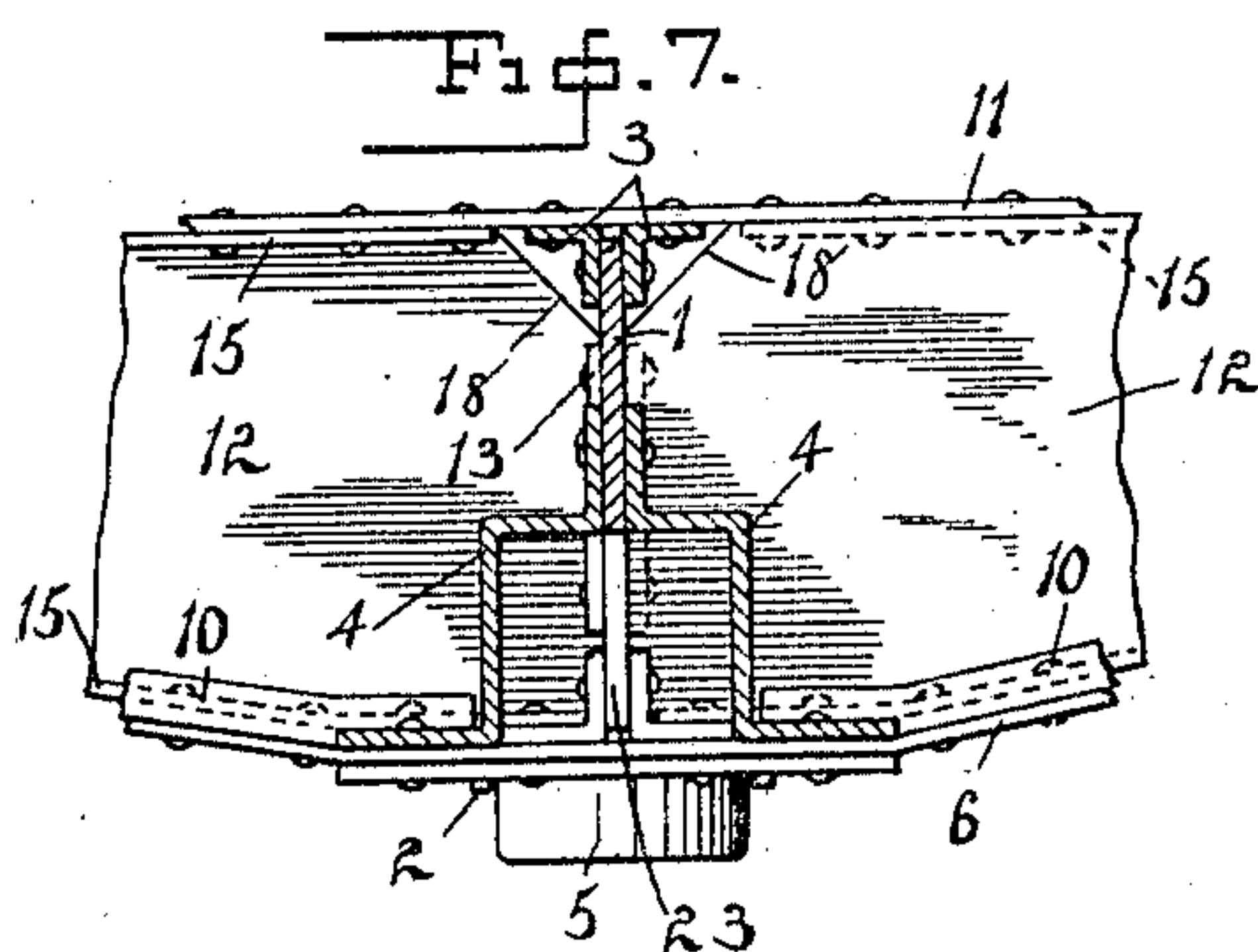
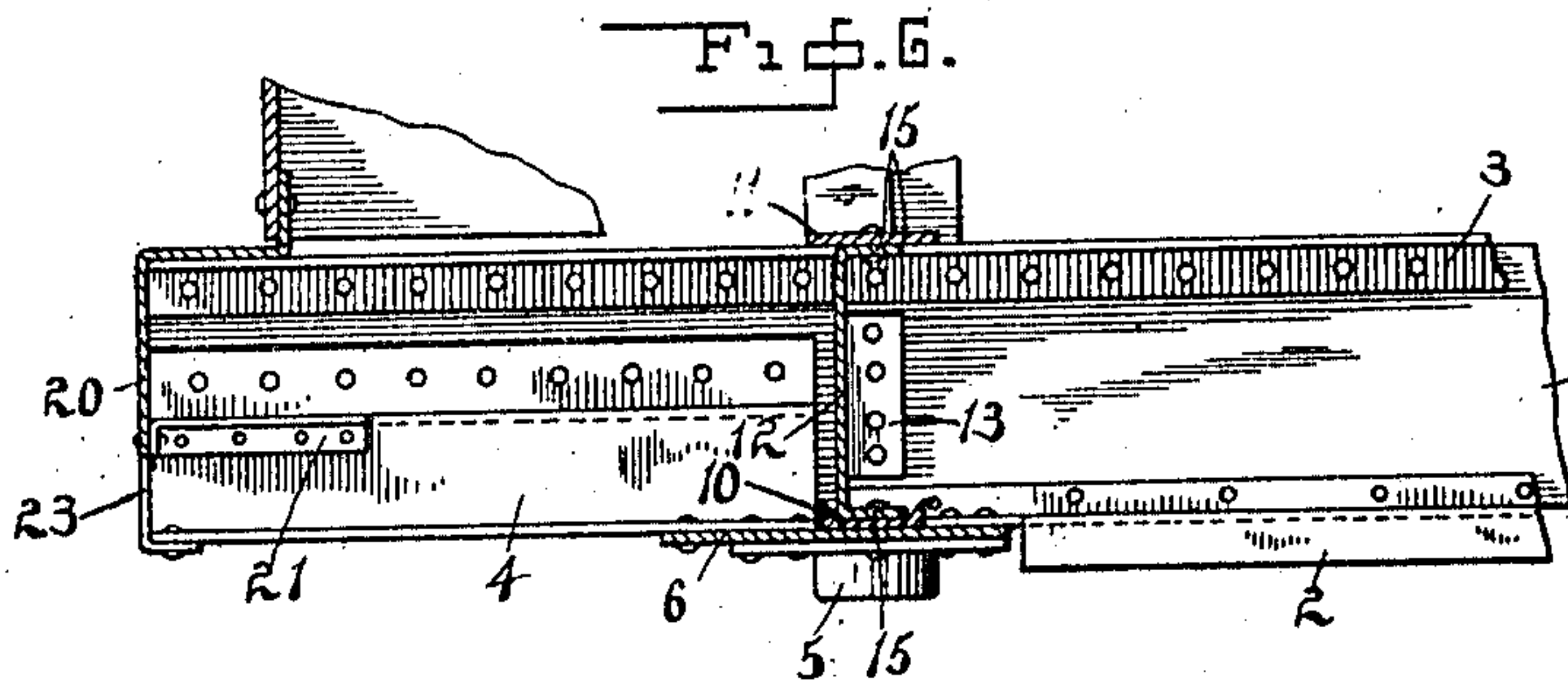
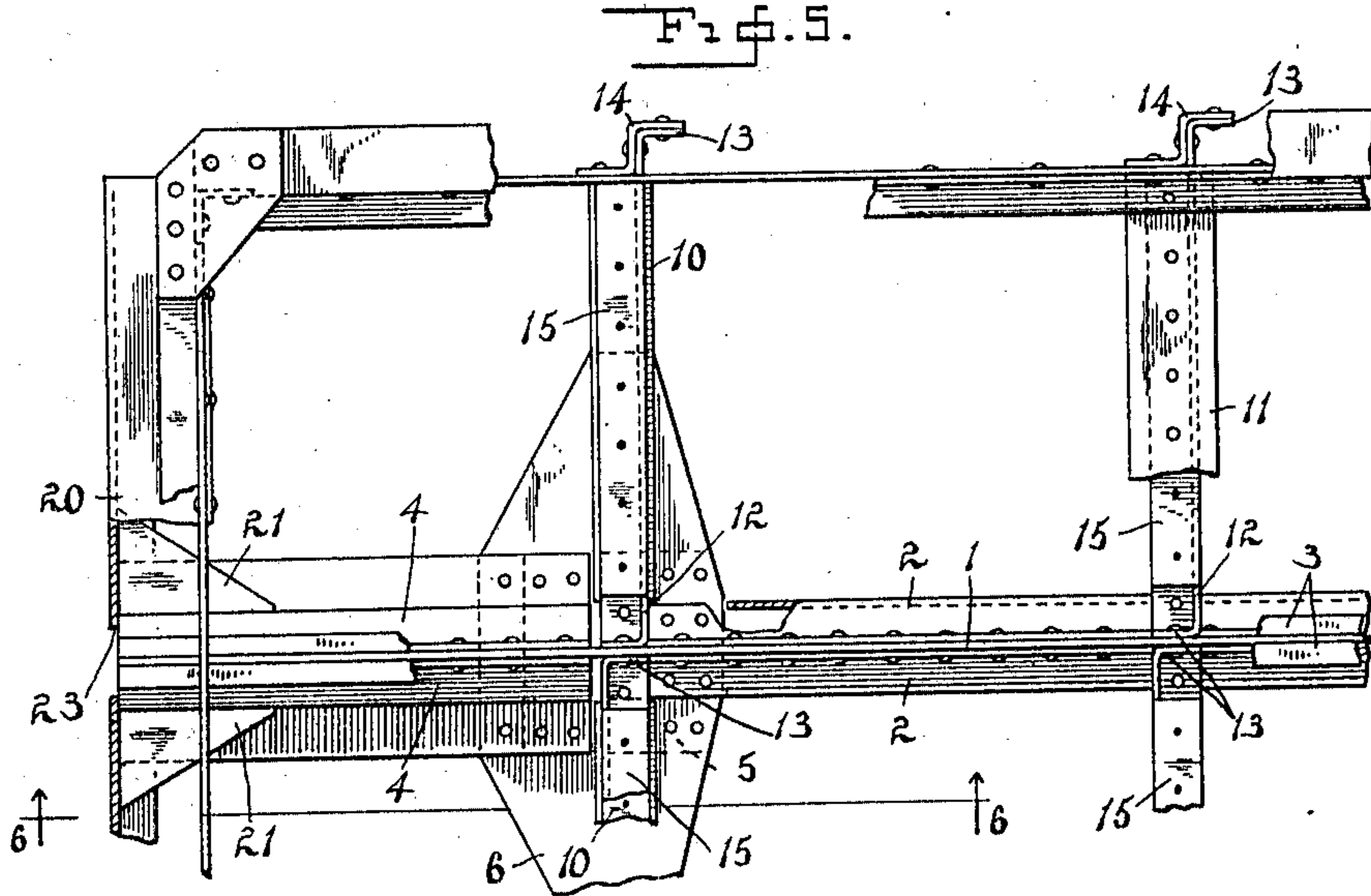
ATTY

J. O. NEIKIRK.
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APPLICATION FILED OCT. 7, 1909.

953,176.

Patented Mar. 29, 1910.

2 SHEETS—SHEET 2.



WITNESSES:

Matthew J. Hart
Henry A. Parks

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UNITED STATES PATENT OFFICE.

JOHN O. NEIKIRK, OF MORGAN PARK, ILLINOIS.

RAILWAY-CAR.

953,176.

Specification of Letters Patent.

Patented Mar. 29, 1910.

Application filed October 7, 1909. Serial No. 521,599.

To all whom it may concern:

Be it known that I, JOHN O. NEIKIRK, a citizen of the United States, residing at Morgan Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Cars, of which the following is a specification.

The object of my invention is to improve the structure of steel cars, the invention relating more particularly to the underframe and side stakes and the relation thereof to other parts of the car.

The particular objects and nature of the invention will clearly appear from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side view of a car embodying my invention, the central part of the car being broken away to make the view more compact. Fig. 2 is a plan view corresponding to Fig. 1, certain parts being broken away at different points to show the structure more clearly. Fig. 3 is a cross section on the line 3—3 of Fig. 2. Fig. 4 is a cross section on the line 4—4, of Fig. 2. Fig. 5 is an enlarged plan view of part of the car adjacent one end, certain parts of the structure being broken away. Fig. 6 is a section on the line 6—6 of Fig. 5, looking in the direction of the arrow. Fig. 7 is an enlarged view corresponding to Fig. 4 and showing part of the underframe. Fig. 8 is an enlarged view corresponding to Fig. 3, and also showing part of the underframe.

My improved car comprises an underframe having a center sill extending continuously from one end sill to the other, together with diaphragm cross members and side stakes of a form described below.

The center sill comprises a vertical web 1 which extends continuously from one end sill to the other. Between the bolsters the central web 1 is of full depth but just beyond each bolster the lower part of the central web is cut away, primarily for the purpose of making room for the draft rigging. The depth of the central web between the bolsters and beyond the bolsters is clearly shown in Figs. 8 and 7 respectively, as well as in Figs. 3 and 4. Between the bolsters the center sill, taken as an entirety, comprises a central web having at the upper edge outwardly extending flanges and at the lower edge flanges which extend outwardly horizontally on each side, the edges of said lat-

eral flanges being turned down vertically at their outer extremities.

The upper flanges consist of angle irons 3, these angle irons being secured to the central web 1 and to each other by a single set of rivets, each rivet passing through both of the angle irons and the central web. The angle irons 3, like the central web 1, extend continuously from one end sill to the other. The lower flanges between the bolsters consist of Z-bars 2 having their flanges disposed in vertical planes and their webs directed outward horizontally from the central plate 1. The Z-bars 2, like the channel irons 3, are secured to each other and to the central web 1 by a single set of rivets passing through all three of the members referred to.

Between the bolsters and end sills, the lower flanges of the center sill consist of W-bars 4, the upper flanges of which lie against the sides of the central web 1 and are secured thereto and to each other by a single set of rivets, as in the case of the other flanges referred to above. As above stated, the depth of the center sill is reduced at this point by cutting away its lower part. The W-bars are preferably of right angular section and their upper webs extend horizontally outward from the lower edge of the central web 1 of the center sill; the lower webs extend downwardly vertically, and the lower flanges extend outward vertically. By means of this arrangement, a rectangular housing is formed for the draft gearing. The cross members of the car are formed of diaphragms 12 preferably made of pressed steel. Each diaphragm 12 is flanged at its inner edge and secured to the web 1 of the center sill by means of rivets, the same rivets passing through the flanges of opposite diaphragms and through the central web 1 of the center sill. I have shown the flanges of the cross members 12 oppositely directed for the purpose of avoiding the necessity of constructing right and left diaphragm cross members. The web of each diaphragm extends outwardly beyond the car side and the projecting end is provided with a flange 13 lying parallel to the side of the car. The side stakes consist of Z-bars 14 having their flanges lying parallel to the side of the car. The web and outer flange of each side stake conform to the projecting end of the adjacent cross member and are riveted respectively to the web and flange thereof, and the

inner flange of each Z-bar side stake is riveted to the side plate of the car. By this means a simple and secure connection is formed between the cross members, side stakes and car sides. The cross members 12 are also provided with upper and lower horizontal flanges 15, and cover plates 11 lie upon and are secured to the upper flanges. The webs of the cross members 12 are preferably cut away at their inner corners as indicated at 18 to afford clearance for the angles 3. As will be apparent from the foregoing, the general form of each half of one of the cross members is that of a central web having top, bottom and inner flanges bent in one direction and an outer end flange bent in the opposite direction.

The cross members may be provided at the top with cover plates 11 extending across the car, and I have shown the bolster as provided with an under cover plate 10 consisting of a channel with upwardly directed flanges. A gusset plate 6 reinforces the junction of the center sill and bolster and is secured to the web of the Z-bar 2, the lower flange of the Z-bar being cut away at the point of junction with the bolster, to the lower flange of the W-bar 4 and to the lower flanges of the cross members 12 of the bolster. The center plate 5 is secured by rivets beneath the gusset 6. The junction of the W-bars 4 with the end sill 20 is reinforced by flanged gusset plates 21 riveted to the said parts. The end sill 20 is provided with an aperture at 23 for the draw-bar.

I claim:

1. In a car, a center sill comprising a central vertical web, flanges at the upper and at the lower edges of said web, said lower flanges comprising Z-bars secured to said web.

2. In a car, a center sill comprising a central web, upper flanges formed of angles riveted to said central web, and lower flanges formed of Z-bars having one flange of each Z-bar riveted to said central web.

3. In a car, a center sill comprising a central web, oppositely disposed angle bars extending along the upper part of said web and secured thereto and to each other by a single set of rivets, and Z-bars extending along the lower part of said central web and also secured to each other and to said central web by a single set of rivets.

4. An underframe for railway cars comprising end sills, and a center sill extending continuously from end sill to end sill, said center sill comprising a vertical web with upper and lower flanges, said lower flanges comprising Z-bars secured to said central web.

5. An underframe for cars comprising end sills, bolsters, and a center sill extending continuously from end sill to end sill, the part of said center sill between said bolsters

comprising a vertical web with upper and lower flanges, said lower flanges consisting of Z-bars secured to said web.

6. An underframe for railway cars comprising end sills, bolsters and a center sill, said center sill comprising a central vertical web extending from end sill to end sill, and upper and lower flanges, the lower part of said central web beyond the bolsters being cut away, said lower flanges between the bolsters consisting of Z-bars secured to each other and to said central web by a single set of rivets.

7. An underframe for railway cars comprising end sills, bolsters and a center sill, said center sill comprising a central vertical web extending from end sill to end sill, and upper and lower flanges, the lower part of said central web beyond the bolster being cut away, said lower flanges beyond the bolsters consisting of W-bars secured to said central web and to each other by a single set of rivets.

8. An underframe for railway cars comprising end sills, bolsters and a center sill, said center sill comprising a central vertical web extending from end sill to end sill, and upper and lower flanges, the lower part of said central web beyond the bolsters being cut away, said lower flanges between the bolsters consisting of Z-bars secured to each other and to said central web by a single set of rivets, and said lower flanges beyond the bolsters consisting of W-bars secured to said central web and to each other by a single set of rivets.

9. An underframe for railway cars comprising end sills, bolsters and a center sill, said center sill comprising a central vertical web extending from end sill to end sill, and upper and lower flanges, the lower part of said central web beyond the bolsters being cut away, said lower flanges between the bolsters consisting of Z-bars secured to said central web.

10. An underframe for railway cars comprising end sills, bolsters and a center sill, said center sill comprising a central vertical web extending from end sill to end sill and upper and lower flanges, the lower part of said central web beyond the bolsters being cut away, said lower flanges beyond the bolsters consisting of W-bars secured to said central web.

11. An underframe for railway cars comprising end sills, bolsters and a center sill, said center sill comprising a central vertical web extending from end sill to end sill, and upper and lower flanges, the lower part of said central web beyond the bolsters being cut away, said lower flanges between the bolsters consisting of Z-bars secured to said central web, said lower flanges beyond the bolsters consisting of W-bars secured to said central web.

12. A railway car comprising sides, an underframe having a center sill and diaphragm cross beams, a flange at the inner end of each cross beam secured to the center sill, the webs of said cross beams projecting beyond the car sides, and Z-bar side stakes, each side stake having one flange secured to the car side and the other flange secured to the projecting end of one of said cross beams.

13. A railway car comprising a center sill, cross beams, sides and side stakes, each cross beam comprising a web attached at its inner end to the center sill and at its outer end projecting beyond the car side and having an end flange parallel to the car side, Z-bar side stakes, each having one flange secured to the car side and the other

secured to said end flange of one of the cross beams.

14. In a car, an underframe, sides and side stakes, each side stake comprising a Z-bar having its flanges arranged parallel to the car side and directly connected to the car side and underframe respectively.

15. In a car, an underframe, sides and side stakes, each stake comprising a Z-bar having one flange secured to the car side and the other flange and web secured to the underframe.

In testimony whereof, I have subscribed my name.

JOHN O. NEIKIRK.

Witnesses:

G. F. McHUGH,
W. J. RYAN.