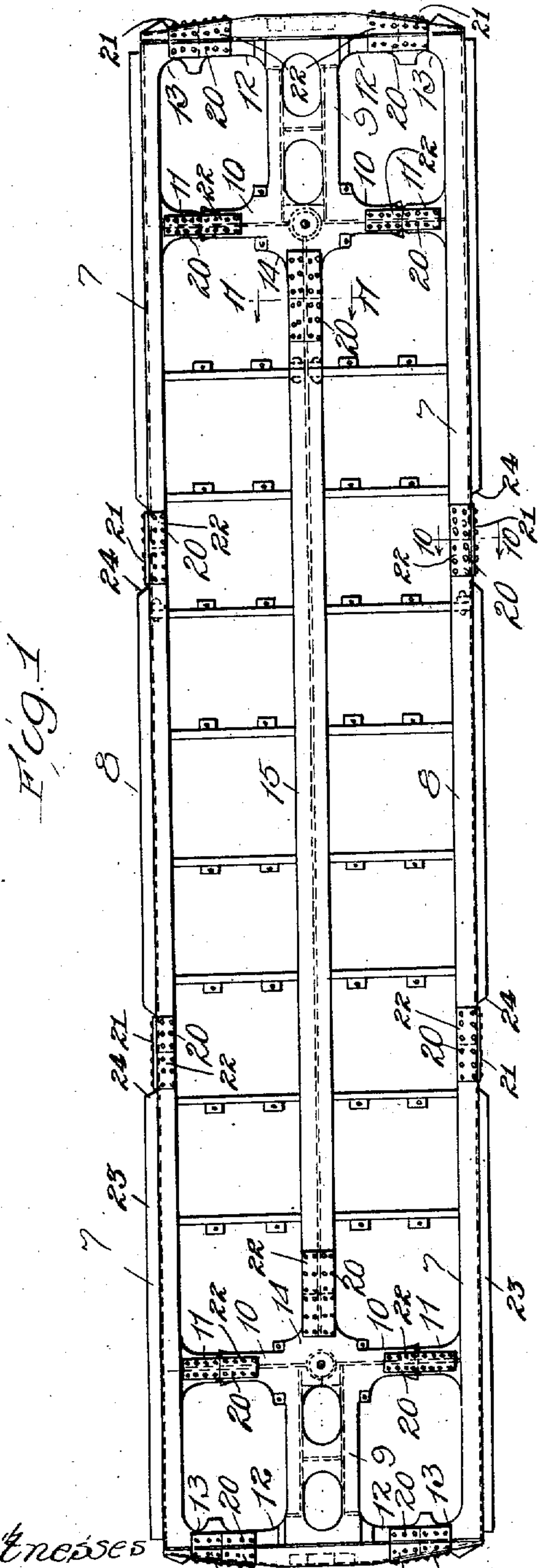


No. 881,281.

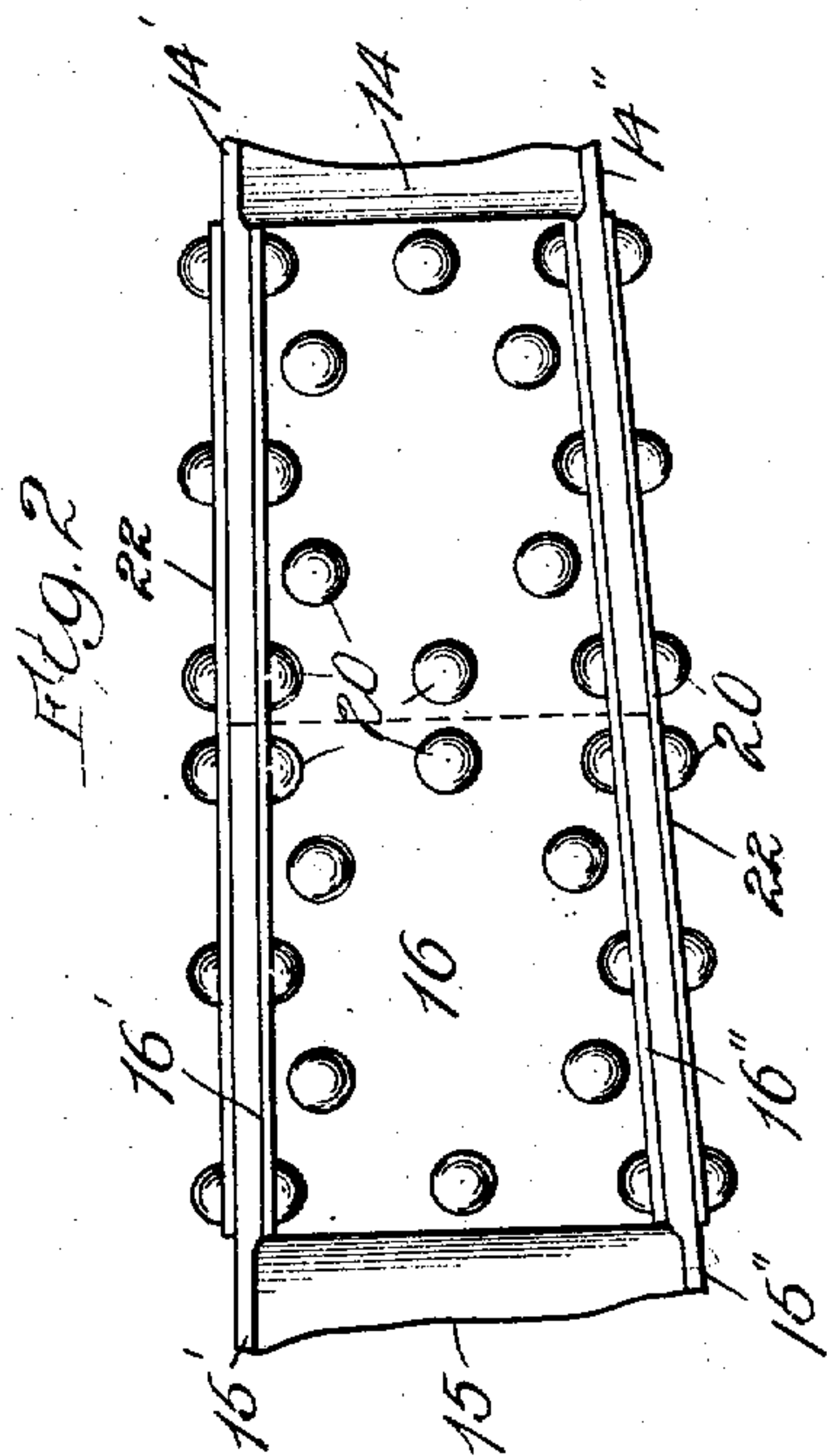
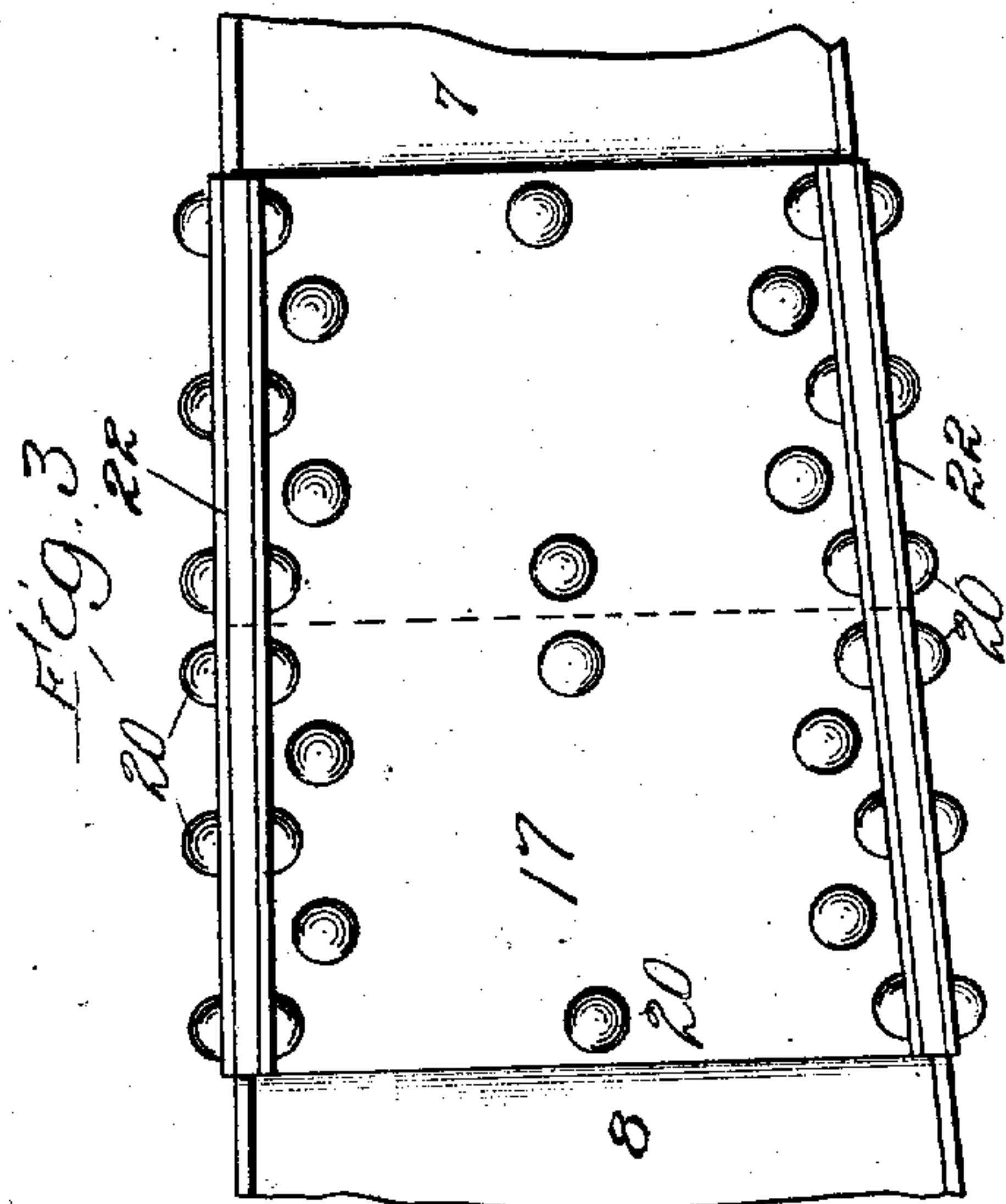
PATENTED MAR. 10, 1908.

J. S. ANDREWS.
UNDERFRAME FOR CARS.
APPLICATION FILED SEPT. 27, 1907.

2 SHEETS—SHEET 1.



Witnesses
Harry R. White
M. A. Kiddie



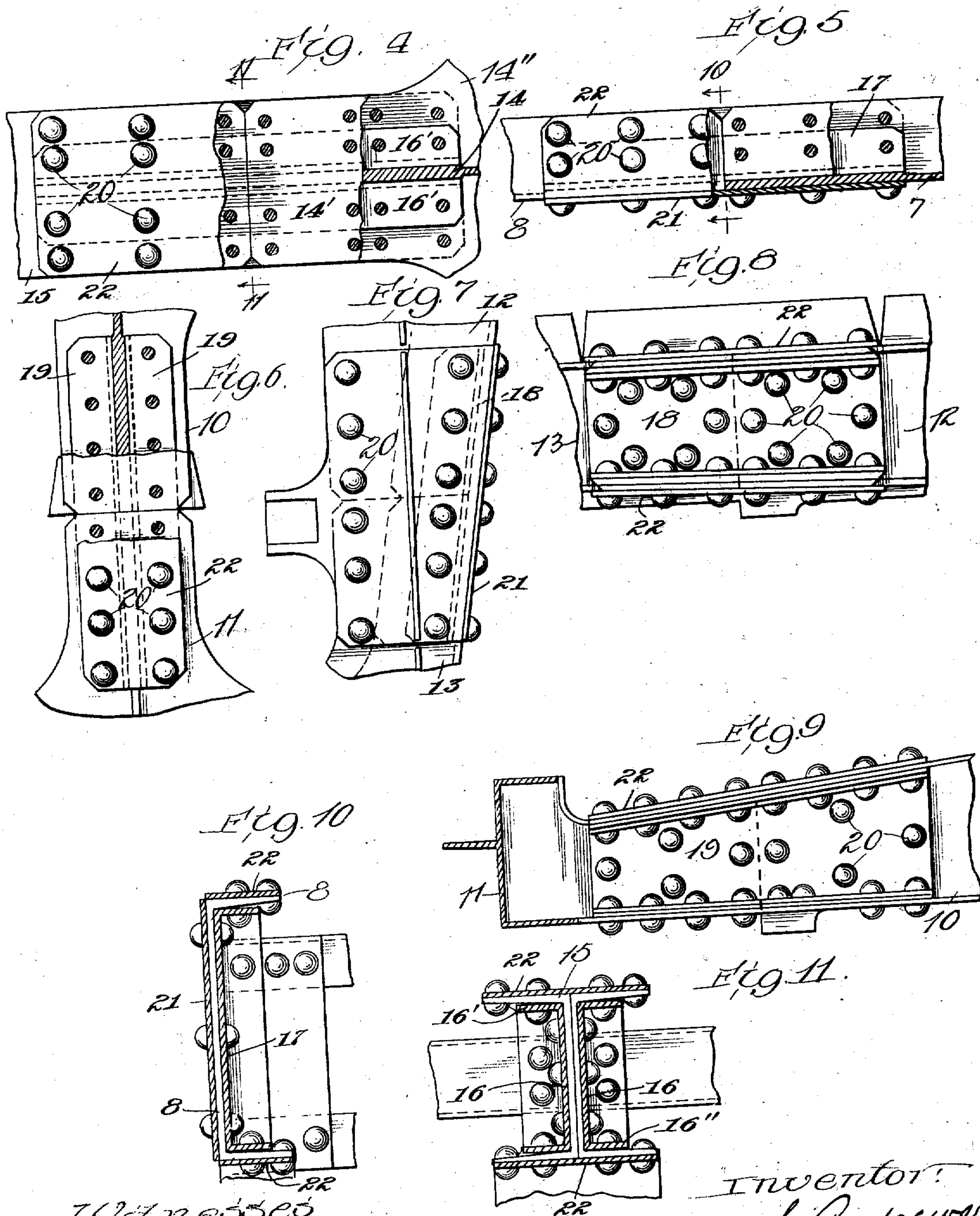
Inventor
James S. Andrews.
By J. M. Bell, Atty.

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Witnessed
Harry R. White
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Inventor:
James S. Andrews
By *Wm. F. Bell* Atty.

UNITED STATES PATENT OFFICE.

JAMES S. ANDREWS, OF NEW YORK, N. Y.

UNDERFRAME FOR CARS.

No. 881,281.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed September 27, 1907. Serial No. 394,790.

To all whom it may concern:

Be it known that I, JAMES S. ANDREWS, a citizen of the United States, residing at New York city in the county of New York and State of New York, have invented new and useful Improvements in Underframes for Cars, of which the following is a specification.

This invention relates to underframes for railway cars, its object being primarily to provide a metal underframe of strong and substantial construction and composed of standard sections consisting of steel castings securely fastened together.

The invention also has for its object specifically to provide improved means of simple construction adapted to be easily applied for securing and holding the sections of the underframe rigidly to each other.

As the invention relates more especially to the manner and means for securing the castings forming the underframe together it will be understood of course that the invention can be embodied in underframes of various constructions and therefore I do not limit myself to the adaptation of the invention with the particular construction of underframe illustrated in the accompanying drawing in which

Figure 1 is a top plan view of an underframe embodying my invention. Fig. 2 is an enlarged detail inside elevation of one of the joints between the center sill and the draw-bar sill. Fig. 3 is an enlarged detail inside elevation of one of the joints in the side sills. Fig. 4 is an enlarged detail plan view, partly broken away and in section, of one of the joints between the center sill and the draw-bar sill as shown in Fig. 2. Fig. 5 is a similar view of one of the joints in the side sills as shown in Fig. 3. Fig. 6 is a top plan view, partly broken away and in section, of the joint between the draw-bar sill and one of the side sills. Fig. 7 is an enlarged top plan view and Fig. 8 is an inside elevation of one of the joints in the end sills. Fig. 9 is an inside elevation of one of the joints in the body bolsters. Fig. 10 is a sectional view on the line 10—10 of Fig. 1 and Fig. 5. Fig. 11 is a sectional view on the line 11—11 of Fig. 1 and Fig. 4.

Referring to the drawings, the side sills consist of two end sections 7 and a central section 8, these sections being all preferably made of cast steel in channel form and rigidly secured together at their adjacent ends as hereinafter described. At each end of the

frame is a draw-bar sill 9 suitably formed to receive the draw-bar and its attachments. The draw-bar sills are each provided with side projections 10 to abut against side projections 11 on the side sills and form the body bolster and also with side projections 12 to abut against side projections 13 on the side sills to form the end sill. The draw-bar sills also have integral projections 14 of greater or less length which abut against the center sill section 15, the latter being made preferably in I-form.

All the sections of the underframe are preferably made of cast steel and they are securely held together by cast steel wedge-shaped tie plates overlapping the joints and fastened to the sections by bolts or other suitable fastening means. The sections are provided, at the joints, with top and bottom flanges which provide a channel on one or both sides of the joint and the channel is made in a proper form at the joint to receive the wedge plate and corresponding substantially to the shape thereof. The channel at the joints and the wedge plates are made substantially in the customary form of a wedge, smaller at one end than at the other, although both sides of the wedge, that is to say the flanges, are not inclined, the top flange being horizontal and the lower flange inclined.

A wedge plate 16 (Fig. 2) overlaps the joint between the center sill section 15 and the draw-bar sill 14 and this wedge plate is made in channel form to fit between the flanges of the sections. The wedge plate 16 has a top flange 16' and a bottom flange 16'' to engage the top flanges 14', 15' and the bottom flanges 14'', 15'' of the sections 14, 15, the top flanges being horizontal and the bottom flanges inclined, as clearly shown in Fig. 2. A wedge plate 17 (Fig. 3) similar in form to the wedge plate 16 but proportioned to fit the parts is arranged in a similar manner at each joint in the side sill. Wedge plates 18, 19 (Figs. 8, 9) are arranged in the joints in the end sills and body bolsters respectively, these wedge plates being properly proportioned and shaped to fit the parts for which they are made.

The wedge plates are all preferably made in channel form and are slipped into place and then driven longitudinally and tightly into locking position overlapping the joint between the sections and between the flanges of said sections. Then the wedge plates are

fastened to the sections by bolts 20. The projections on the draw-bar sill and on the side sills which form the body bolsters, and the center sill projections 14 and section 15, are made in I form and therefore I prefer to provide a wedge plate in the channel on each side of the joints in the body bolsters and the center sill, and the two wedge plates at each joint may be fastened together by transverse bolts passing through the sections, as shown in Fig. 11. As the side and end sills are preferably made in channel form I prefer to provide a flat face plate 21 overlapping each joint on the outer side thereof and also fastened by bolts passing through the sills to the wedge plate on the inside of said joint (Fig. 10). To accommodate the face plates 21 the flange 23 on the side sills, which is provided to support some of the timbers of the car, is cut away at 24 (Fig. 1). Flat face plates 22 are also bolted to the top and bottom of the sections and overlapping the joints.

I prefer to locate the joints in the side sills out of alinement with the joints in the center sill and for this reason I have shown the joints in the center sill close to the body bolsters and at some distance from the joints in the side sills.

As heretofore mentioned the sections of the underframe may be made in any desired form and number so far as my present invention is concerned, and the joints can be located wherever preferred. The invention facilitates the operation of assembling the sections of the underframe and the plates at the joints can be readily removed to permit the removal of any section for repair or replacement without disassembling the entire frame.

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

1. In a sectional underframe for cars, the combination of two sections arranged end to end and provided with a side channel at their abutting ends larger at one end than at the other, and a tie plate larger at one end than at the other secured in said channel and overlapping said ends.

2. In a sectional underframe for cars, the combination of two sections arranged end to end and provided with a side channel at their abutting ends, said channel being

formed by top and bottom flanges on the sections and being wedge shaped longitudinally, and a wedge plate secured in said channel and overlapping said ends.

3. In a sectional underframe for cars, the combination of two sections arranged end to end and provided with a side channel at their abutting ends, said channel being formed by top and bottom flanges on the sections and being wedge shaped longitudinally, and a wedge shaped channel plate secured in said channel and overlapping said ends.

4. In a sectional underframe for cars, the combination of two sections arranged end to end and provided with a side channel at their abutting ends, said channel being wedge shaped longitudinally, a wedge plate secured in said channel and overlapping said ends, a flat face plate overlapping said ends on the outer side thereof, and fastening devices passing through said plates and sections to secure all the parts together.

5. In a sectional underframe for cars, the combination of two sections arranged end to end and provided with a wedge shaped channel on one side thereof at their ends, a wedge plate secured in said channel, a flange on the outer side of said sections, said flange being cut away at the joint, and a face plate secured to the sections over the joint and in the cut-away part of the flange.

6. In an underframe for cars, the combination of a plurality of sections made to fit together and provided with a wedge shaped side channel at each joint, and wedge shaped channel plates secured in said channels and overlapping the joints.

7. A sectional underframe for cars comprising two side sills each consisting of two end sections and a middle section arranged end to end and secured together, two draw-bar sill sections, and a center sill section secured at its ends to the draw-bar sill sections, the joints at the ends of the center sill section being located intermediate of the ends of the end sections of the side sills.

J. S. ANDREWS.

Witnesses:

ROSE FEUERLICHT,
CHAS. S. ANDREWS.