

J. B. STRAUSS.

CONCRETE CAR.

APPLICATION FILED NOV. 1, 1907.

925,964.

Patented June 22, 1909.

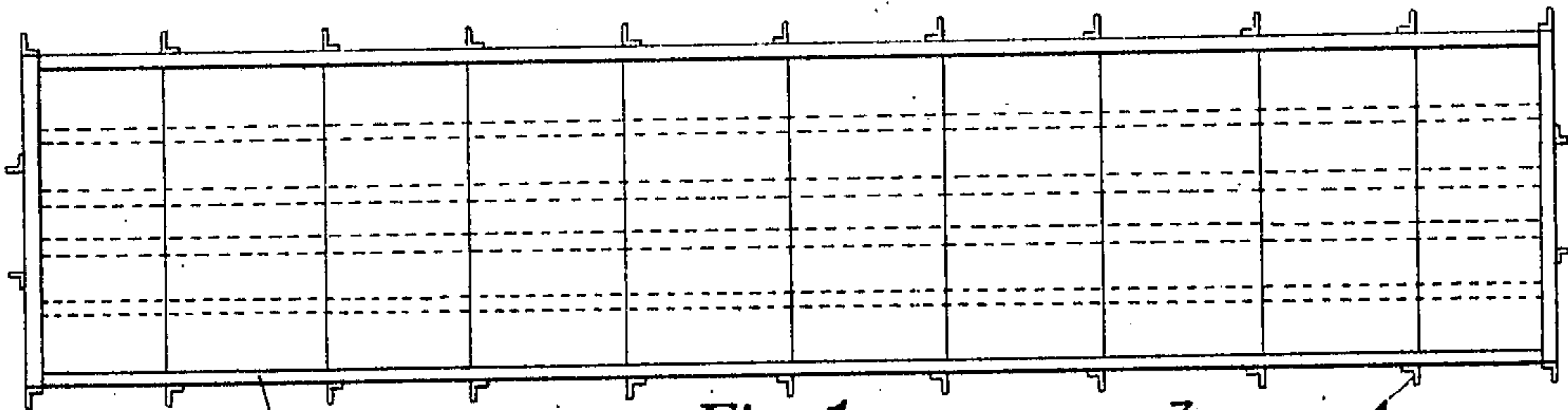


Fig. 1

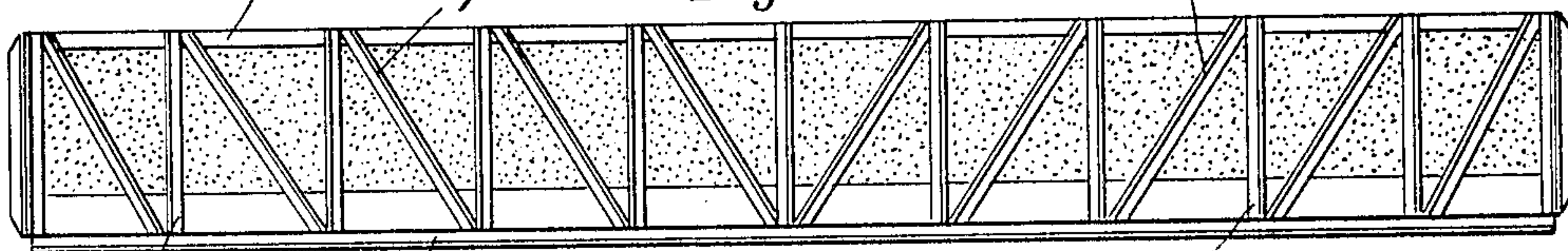


Fig. 2

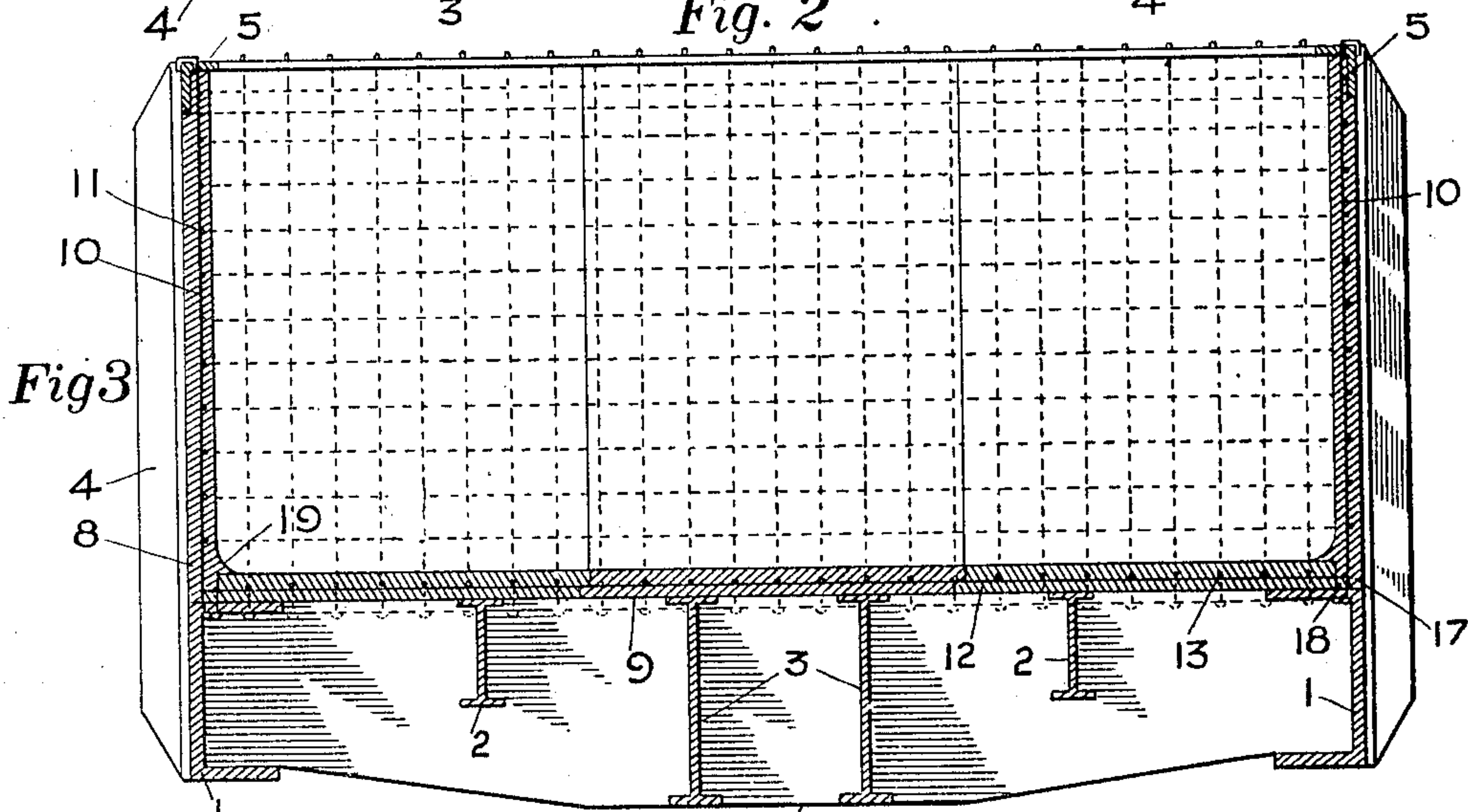


Fig. 3

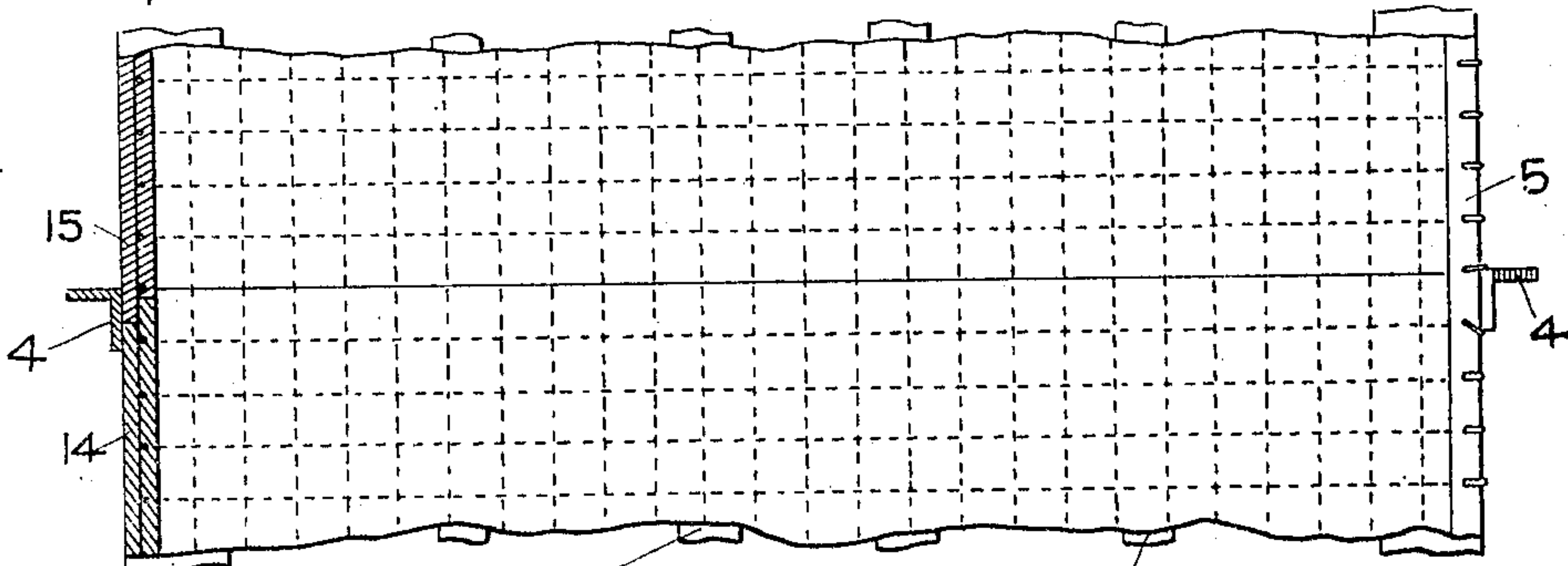


Fig. 4

WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOSEPH B. STRAUSS, OF CHICAGO, ILLINOIS.

## CONCRETE CAR.

No. 925,964.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed November 1, 1907. Serial No. 400,281.

*To all whom it may concern:*

Be it known that I, JOSEPH B. STRAUSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Concrete Cars, of which the following is a specification.

This invention relates to improvements in concrete cars, and has for its object to provide a new and improved car of this description.

Referring to the accompanying drawings, Figure 1 is a plan view of a car embodying the invention; Fig. 2 is a side elevation; Fig. 3 is an enlarged cross sectional view; Fig. 4 is an enlarged plan view in part section, and with parts omitted.

Like numerals refer to like parts throughout the several figures.

This invention is applicable to various kinds and classes of vehicles, and I have shown it illustrated in connection with a railway car. As herein shown the car may be said to be made up of two parts, a steel skeleton frame, and a concrete filling supported thereon. The steel frame may be formed in any desired manner. In the drawing I have illustrated one form consisting of the side beams 1 which are shown as channels, and the intermediate beams 2, 3; connected with the side beams 1 are the metallic strips or uprights 4 which are fastened at the top to the longitudinal piece 5. Diagonal braces 7 may be placed between the uprights 4. The parts are fastened together so as to form a metallic frame for the car. The walls of the car are made up of concrete sections 8, and the floors of concrete sections 9. These concrete sections are preferably of concrete steel, that is, sections having steel embedded therein. As herein shown the steel consists of reinforcing wires or rods 10, 11 in the wall sections, and 12, 13 in the floor sections. The wall and floor sections instead of having straight edges which abut are preferably provided with overlapping edges 14 and 15 (Fig. 4). In the wall sections the joint between the sections is arranged so as to come opposite the uprights 4. The wall sections and floor sections preferably have an overlapping engagement so they may move with relation to each other to accommodate themselves to the conditions of use, and to adapt the concrete filling to the twists and distortions of the car frame without injuring the concrete. Any suit-

able arrangement may be used for this purpose. As herein shown the ends of the floor and wall sections are grooved so as to provide the overlapping parts 17 and 18. The wires or rods 10 in the wall sections are preferably connected with the metallic frame of the car. This may be done in any desired manner. As herein shown the upper ends of these wires or rods pass through holes in the longitudinal pieces 5 and are bent so as to be held in place while the lower ends pass through openings in the side beams 1, and are bent or riveted in place. The wires 12 in the floor sections pass through holes in the side beams, and are bent or riveted in place. The corner at the joint between the wall and floor sections may be filled in as shown at 19. It will be noted that by means of this construction the steel frame of the car is completely protected by the concrete sections so that the material in the car cannot come into contact with the steel frame to corrode it, and that there is secured the strength of the steel car, the car at the same time being non-corrosive. This construction provides a car of very great resistance and endurance, and one that can be easily and quickly repaired in case of accident, for the concrete sections can be removed if injured, and easily and quickly replaced.

This construction in addition to being cheap to construct can also be maintained at small cost, and is clean and sanitary as well as water-proof and air-tight. For these reasons it is particularly adapted for refrigerator cars, fruit cars, stock cars, and the like. In electrically equipped cars there is little danger of short circuits. With this construction the cars are not affected by variations in temperature or moisture.

By means of this invention I provide what may be called a composite car.

I claim:

1. A car comprising a skeleton metallic frame and a self-sustaining concrete body.
2. A car comprising a skeleton metallic frame with self-sustaining concrete wall sections and concrete floor sections mounted upon said frame.
3. A car comprising a skeleton metallic frame, self-sustaining concrete wall sections and concrete floor sections supported thereon, and means for uniting the skeleton frame and sections to form a composite car.
4. A car comprising a skeleton metallic



frame, a series of concrete wall sections and concrete floor sections, each section removably connected with the frame so that it may be easily and quickly removed and replaced.

5 5. A car comprising a skeleton metallic frame and reinforced self-sustaining concrete body located on the inside of the frame so as to protect it from the material in the car.

10 6. A car comprising a supporting frame, a series of self-sustaining concrete wall sections and concrete floor sections assembled to form the body portion of the car, said concrete sections all upon one side of the supporting frame.

15 7. A car comprising a supporting frame and a concrete body made up of a series of separable self-sustaining concrete sections.

20 8. A car comprising a supporting frame, a series of self-sustaining concrete wall sections and concrete floor sections mounted upon said frame, said sections provided with overlapping edges.

25 9. A car comprising a supporting frame, a series of concrete wall sections and con-

crete floor sections mounted upon said frame, said sections provided with overlapping edges, and means for independently and removably fastening each section to the frame.

30 10. A car comprising a supporting frame, a series of concrete wall sections and floor sections mounted upon said frame, said sections provided with reinforcing wires, the reinforcing wires fastened to said frame so as to hold the sections in place.

35 11. A car comprising a supporting frame, a concrete filling for said frame forming the body of the car, and means for permitting the concrete filling to adjust itself to distortions of the car frame without injuring the concrete.

40 12. A car comprising a skeleton frame made up of pieces separated by spaces, and a self-sustaining concrete body closing the spaces of the frame.

JOSEPH B. STRAUSS.

Witnesses:

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