

(No Model.)

G. B. FRANCIS & E. P. DAWLEY.
METALLIC FLOOR CONSTRUCTION.

No. 523,143.

Patented July 17, 1894.

Fig. 1.

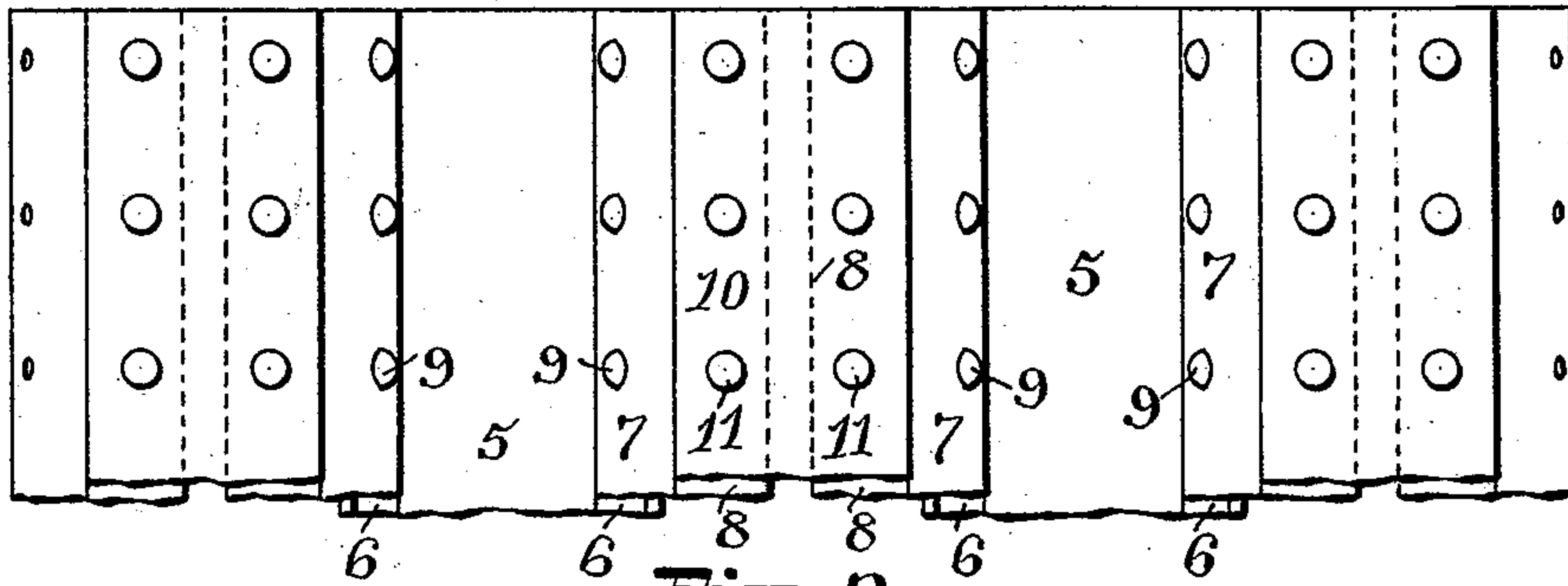


Fig. 2.

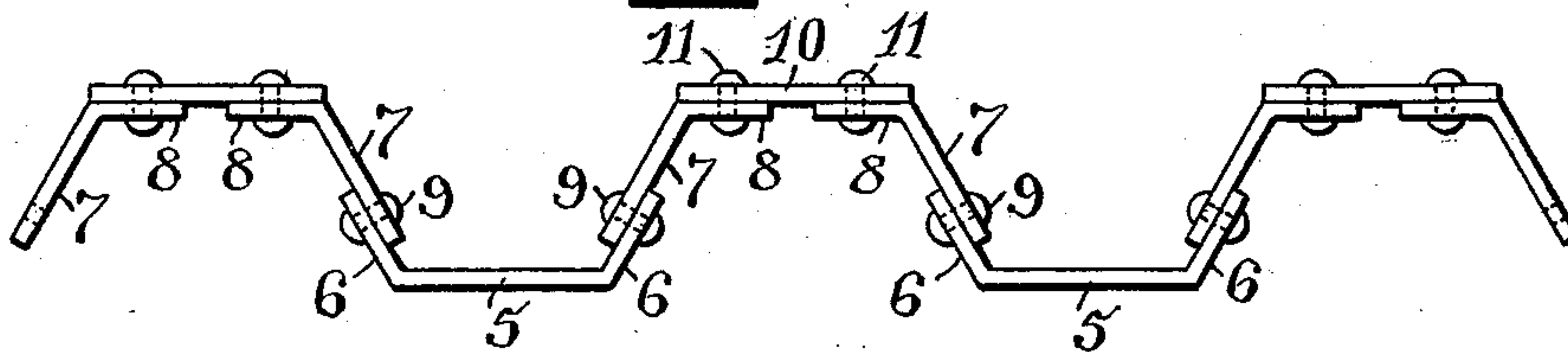


Fig. 3.

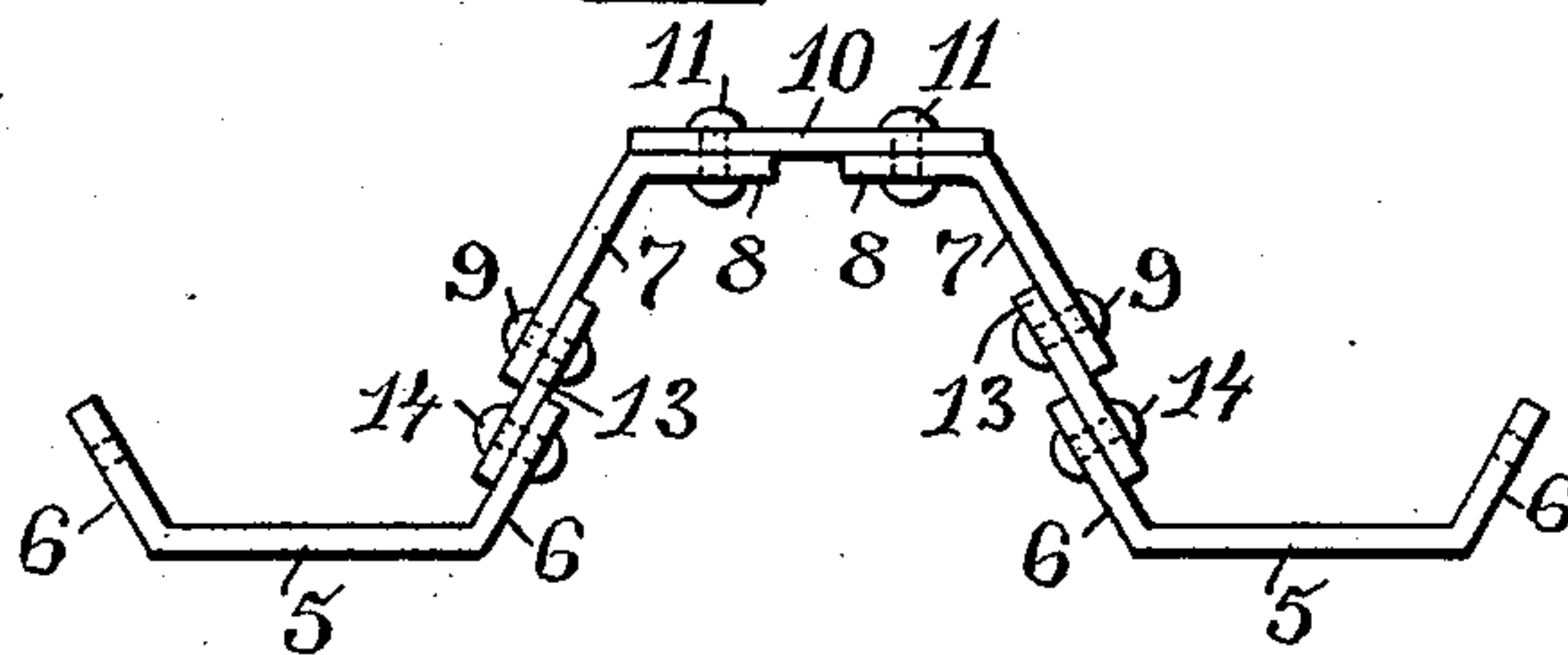
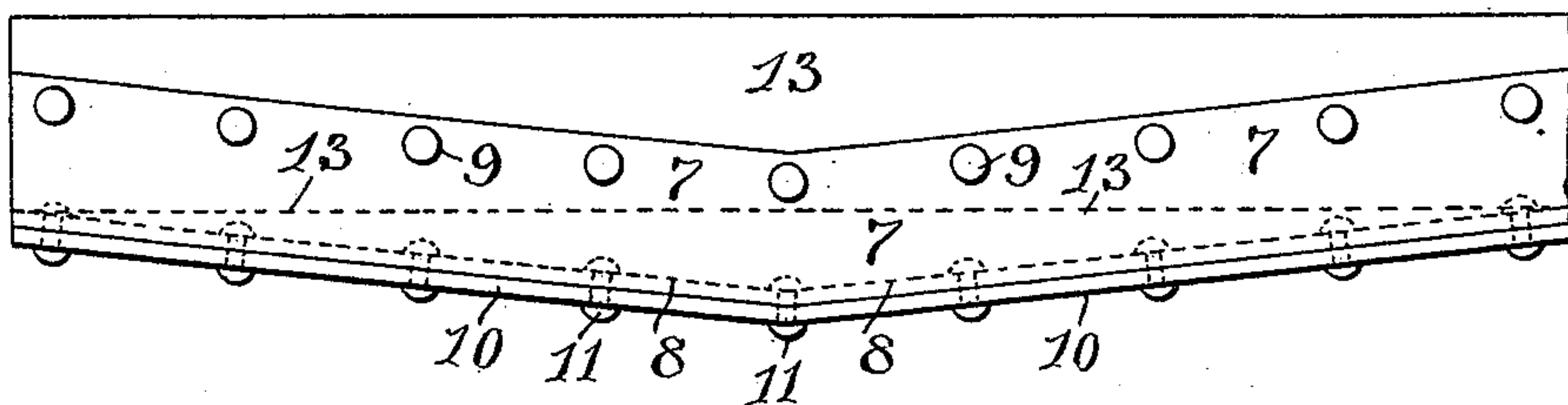


Fig. 4.



WITNESSES:

Henry J. Miller
Chas. H. Luther Jr.

INVENTORS:

George B. Francis and
Edwin P. Dawley
By Joseph A. Miller & Co. Attys

UNITED STATES PATENT OFFICE.

GEORGE B. FRANCIS AND EDWIN P. DAWLEY, OF PROVIDENCE, RHODE ISLAND.

METALLIC-FLOOR CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 523,143, dated July 17, 1894.

Application filed February 28, 1894. Serial No. 501,797. (No model.)

To all whom it may concern:

Be it known that we, GEORGE B. FRANCIS and EDWIN P. DAWLEY, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Metallic-Floor Construction; and we hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in metallic floor construction and particularly in floors for buildings and bridges.

One object of the invention is to so construct a metallic floor formed of a succession of troughs that simple water-tight bottoms may be provided for the troughs.

Another object of the invention is to so construct the metallic portions, of which the floor is formed, that the cost of manufacture will be reduced.

Still another object is to so construct the lower sections of a flooring, of the nature herein described, that the same may be secured to the upper sections or side plates without the necessity of making rivet holes in the bottom plates of these sections.

Still further the object of the invention is to so construct the sections of which a floor of this nature is composed that enlarged smooth bearing surfaces will be provided to bear on the supporting structure and to afford a support for the superstructure.

Another object of the invention is to provide members from which trough-shaped floor sections may be constructed having a greater depth at their longitudinal centers than at the ends.

The invention consists in the combination with two angle plates each having a narrow member and a wider member bent at an angle from the narrow member, a flat plate riveted to the narrow members, of flat side plates having parallel side edges riveted to the wider members, these side plates being of a width exceeding the width of the wider members so that the angle plates may be bent at an angle at the longitudinal center to an extent from a straight line nearly equal to the width of the wider member.

The invention also consists in the combination of a U-shaped member, straight, flat side plates riveted to the sides of the U-shaped member, angle plates riveted to the side plates and to a top plate.

Figure 1 represents a plan view of portions of a flooring showing the improved construction. Fig. 2 represents an end view of the same. Fig. 3 represents an end view showing a modification thereof. Fig. 4 represents a side view of a modified form of one of the inverted trough sections showing the adaptability of this construction to floors formed of trough-shaped sections and having a greater depth at the longitudinal or span center than at the ends.

Similar numbers of reference designate corresponding parts throughout.

In ordinary flooring where it is not necessary to produce a flooring having troughs with water-tight bottoms, but where it is desirable to secure a greater depth of trough at the span center than at the ends we construct the trough of upper and lower sections each section being composed of plates having long members 7 and short members 8 bent at an angle from the long members and secured together in pairs by cap-plates 10 and bolts 11—11, the edges of the cap-plates extending to or slightly beyond the bends between the members 7 and 8. Secured to the members 7 of the alternate upper and lower sections thus composed, the lower sections being inverted to form the bottoms of the troughs, are the side-plates 13 which are wider than the members 7 and are adjusted in relation thereto so that any bend in the length of these members not exceeding the width of the same will be closed by the side plates, where it becomes necessary to increase the depth of the troughs additional side plates may be secured between the oppositely-extending members 7, the upper edges of these plates being secured to the outer surface of the members 7 or of the side-plates 13 extending therefrom, while the lower edges of the side plates are secured to the inner surfaces of the side plates next below or of the members 7 thus producing a shingle effect.

When it becomes desirable to form troughs having water-tight bottoms we construct the

inverted sections of single pieces having bottom-plates 5 and inclined sides 6—6. These side-plates 6—6 are secured to the lower edges of the side-plates 13 by the bolts 14 in a deep trough while the upper edges of the side plates 13 are secured to the members 7 by the bolts 9, thus producing a trough with a water-tight bottom without the undue extension of the side-plates 6—6 which are difficult and expensive to form when combined with the bottom-plate 5 beyond six inches in width, the side-plates 13 serving to extend the same to a practical degree for this purpose. By the use of these lower sections we provide a smooth, flat bearing surface which is adapted to rest firmly on a supporting structure and the bolt-holes being made in the upper portions of the side-plates 6—6 are above the normal water level in the bottom section.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a metallic trough-shaped floor construction, the combination with upper sections consisting of cap-plates, bent plates having short members secured to the cap-plates, and depending outwardly-inclined longer members, of inverted sections forming the

bottoms of the trough having inclined sides which are secured to the depending members of the bent plates.

2. In metallic trough-shaped floor construction, the combination with upper sections formed of bent plates having the members 7 and 8, and the cap-plates 10 to which the members 8 are secured, of lower sections formed of bottom plates and inclined sides secured to the bottom plates and to the members 7 of the upper sections.

3. In a metallic trough-shaped floor construction, the combination with upper sections formed of bent plates having the members 7 and 8, and the cap-plates 10 to which the members 8 are secured, of a lower section formed with a bottom-plate 5 having integral inclined sides 6—6, and the side-plates 13 secured to the sides 6—6 and to the members 7—7 of the upper sections adapted to extend the depth of the troughs, as described.

In witness whereof we have hereunto set our hands.

GEORGE B. FRANCIS.
EDWIN P. DAWLEY.

Witnesses:

HENRY J. MILLER,
JOSEPH A. MILLER, Jr.