

(No Model.)

2 Sheets—Sheet 2.

R. KNIGHTS.
FLOOR.

No. 527,430.

Patented Oct. 16, 1894.

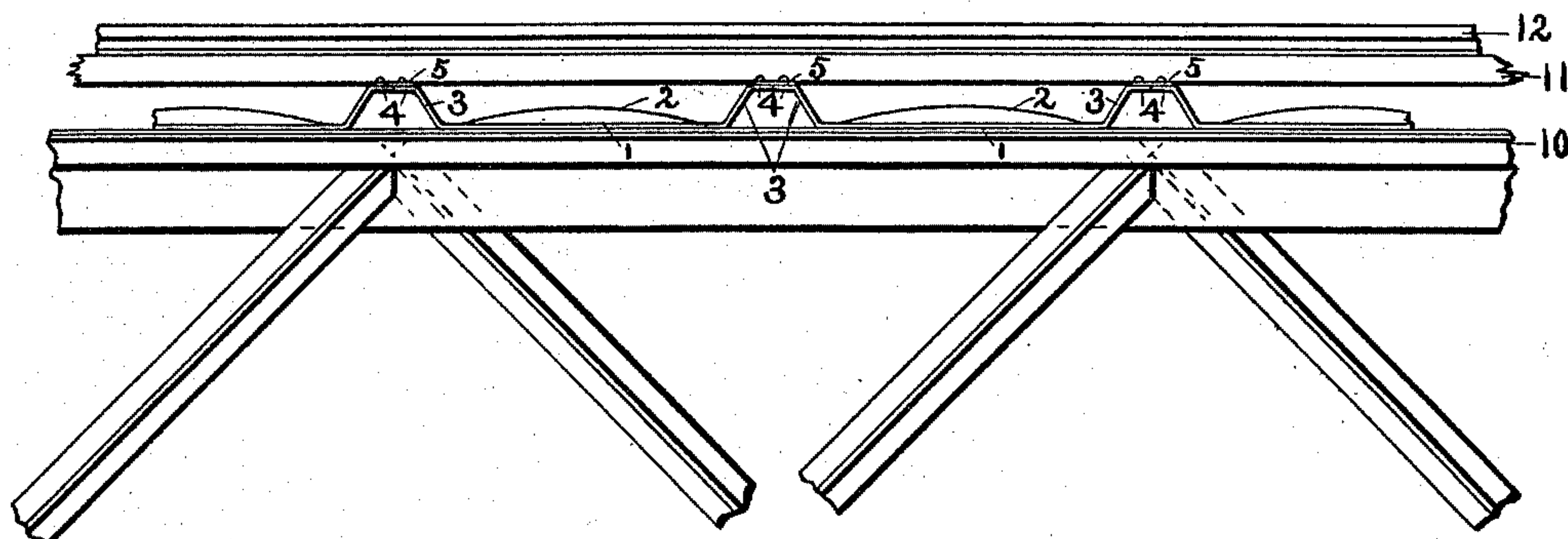


FIG. 10.

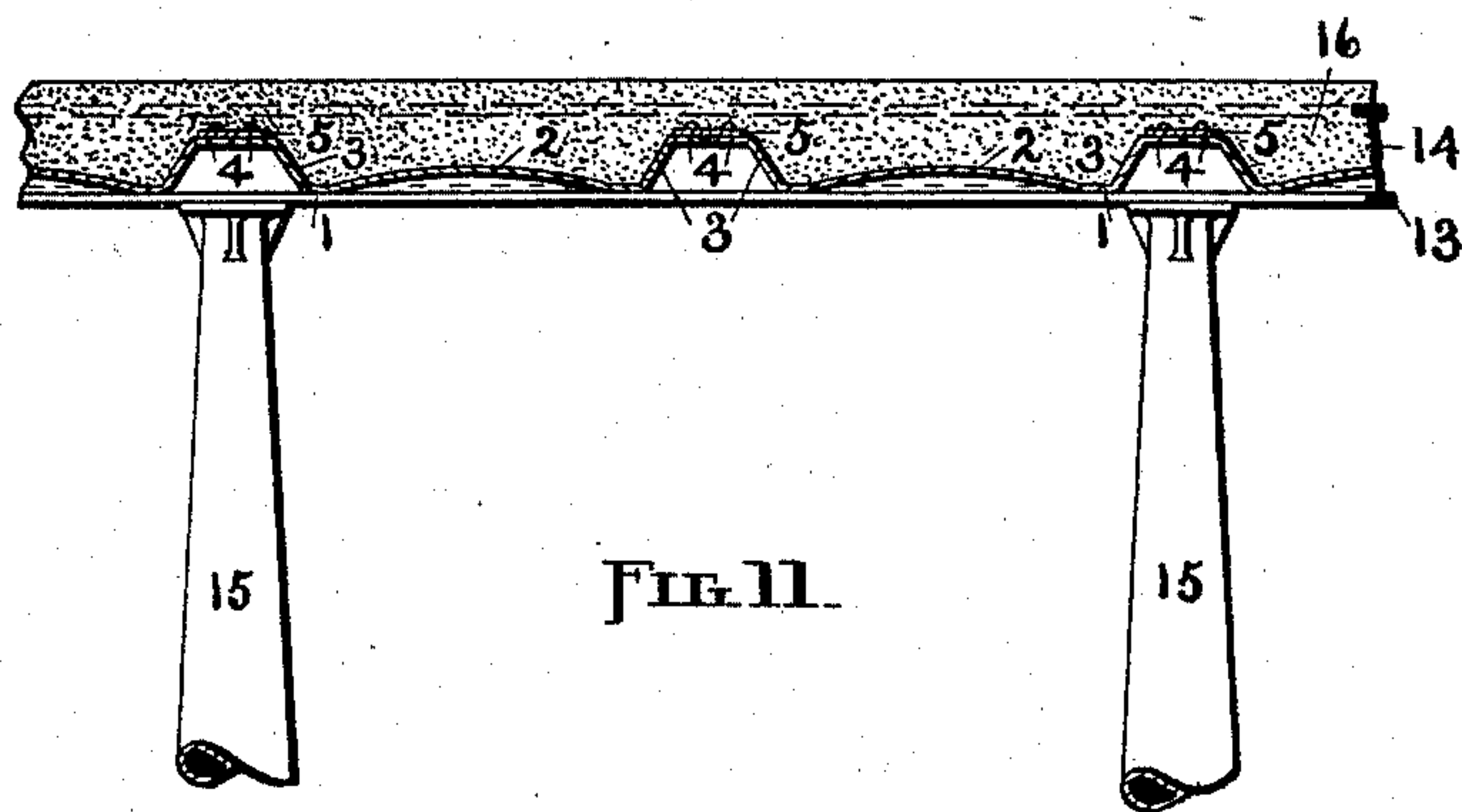


FIG. 11.

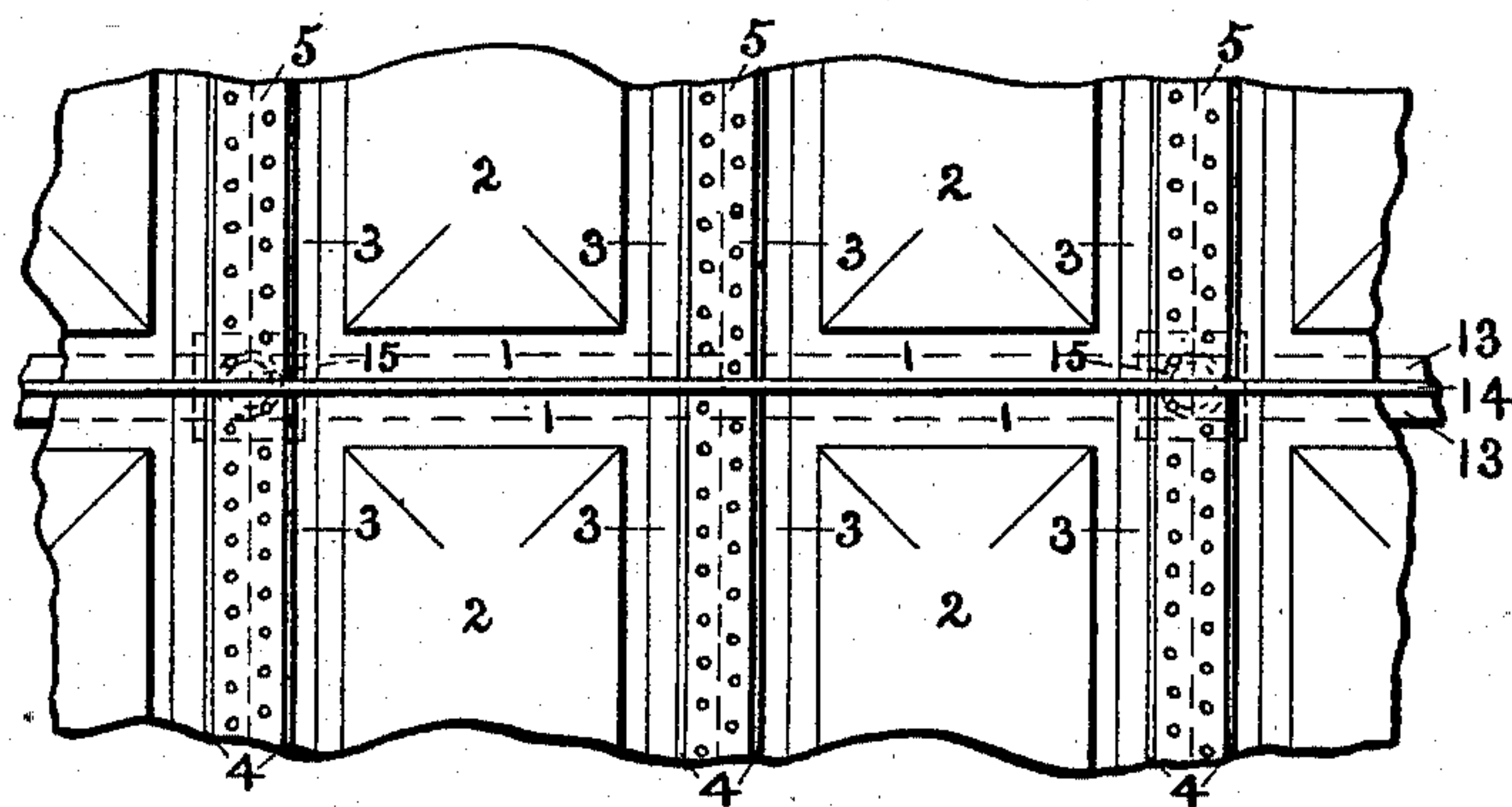


FIG. 12.

WITNESSES:

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UNITED STATES PATENT OFFICE.

RICHARD KNIGHTS, OF SNARES BROOK, ENGLAND.

FLOOR.

SPECIFICATION forming part of Letters Patent No. 527,430, dated October 16, 1894.

Application filed June 23, 1894. Serial No. 515,526. (No model.) Patented in England June 20, 1893, No. 12,154, and in Belgium April 16, 1894, No. 109,181.

To all whom it may concern:

Be it known that I, RICHARD KNIGHTS, a subject of the Queen of Great Britain, residing at Snaresbrook, in the county of Essex, England, have invented certain new and useful Improvements in Floors, (for which I have obtained a patent in Great Britain, No. 12,154, bearing date June 20, 1893, and in Belgium, No. 109,181, bearing date April 16, 1894,) of which the following is a full, clear, and exact description.

My invention relates to improvements in floors, in which convex plates having upwardly extending flanged sides are used and the means employed for fastening said plates together.

The object of my improvement is to provide a light, but exceedingly strong and durable floor for railway and road bridges, warehouses, &c.

That my invention may be seen and fully understood by others, reference will be had to the following specification and annexed drawings, forming a part thereof, in which—

Figure 1 is a plan view of one of the floor plates; Fig. 2, an end view of the same; Fig. 3, a plan view showing a plate in two sections joined by a transverse butt strip; Fig. 4, a transverse sectional view of said plate; Fig. 5, a longitudinal sectional view of the same; Fig. 6, a plan view showing a plate in two sections joined by a longitudinal butt strip; Fig. 7, a transverse sectional view of the same; Fig. 8, a side view of one of said floor plates showing the upper edge cambered; Fig. 9, a perspective view of a section of a bridge illustrating one form of the application of said plates; Fig. 10, a side view of a bridge section illustrating another form of application; Fig. 11, a sectional view of a warehouse floor having a cement filling, and Fig. 12, a plan view of said floor before said filling is applied.

Similar figures of reference designate like parts in the drawings and specification.

The plate 1 has the convexity 2 and the upwardly projecting sides 3, 3 turned outward at the top to form the flanges 4, 4, all formed of one piece of sheet metal. The sides 3, 3 stand at an obtuse angle to the plate 1,

of a varying degree in different plates, and the flanges 4, 4 are parallel to said plate. The convexity 2 gives a far greater amount of strength and a greatly augmented power of resistance to the plate 1 than is possessed by a flat plate of the same size and weight. It will be seen from the above that I am able to produce a flooring material of immense strength without increasing materially the weight of metal of which the plate 1 is constructed. Ordinarily the plates 1 are held in place by means of the strips 5 extending along the top of the flanges 4, 4 and riveted to said flanges, as shown in Figs. 9, 10, 11 and 12, while the ends of said plates are riveted to the structural beams below. The plate 1 may, however, be split either transversely or longitudinally, if desired for greater convenience in laying the same, and the two sections joined together, in the former case by the transverse butt strip 6 riveted to the opposite sections, as shown in Fig. 3, 4 and 5, or in the latter case by the longitudinal butt strip 7 riveted to opposite sections, as shown in Figs. 6 and 7.

A modification of the top of the sides 3, 3 and the flanges 4, 4 is shown at 3^a and 4^a in Fig. 8, in which the same are cambered.

In Fig. 9 a partial view of an iron bridge is shown with its floor constructed of the plates 1. The sides of the plates 1 are parallel with the sides of said bridge and the central contiguous flanges 4 with the strips 5 form supports for car rails. The outside flanges 4 of the outside plates 1 are securely riveted to the angle-irons 8 which are in turn bolted or riveted to the side supports 9.

In Fig. 10 the plates 1 are laid transversely on the bridge beams 10, that is, the ends of said plates are parallel with the sides of the bridge. The sleeper 11 is placed on top of the flange strips 5 and the rail 12 on said sleeper.

In Figs. 11 and 12 the ends of the plates 1 are riveted to the flanges 13 of the girder 14 and the plate flanges 4 are secured as before, by the strips 5. The girder 14 is supported on the posts 15.

In Fig. 11 the cement filling 16 is shown and the same or other suitable filling is used

(No Model.)

C. LESMEISTER.
ROOFING TILE.

No. 527,431.

Patented Oct. 16, 1894.

Fig. 1.

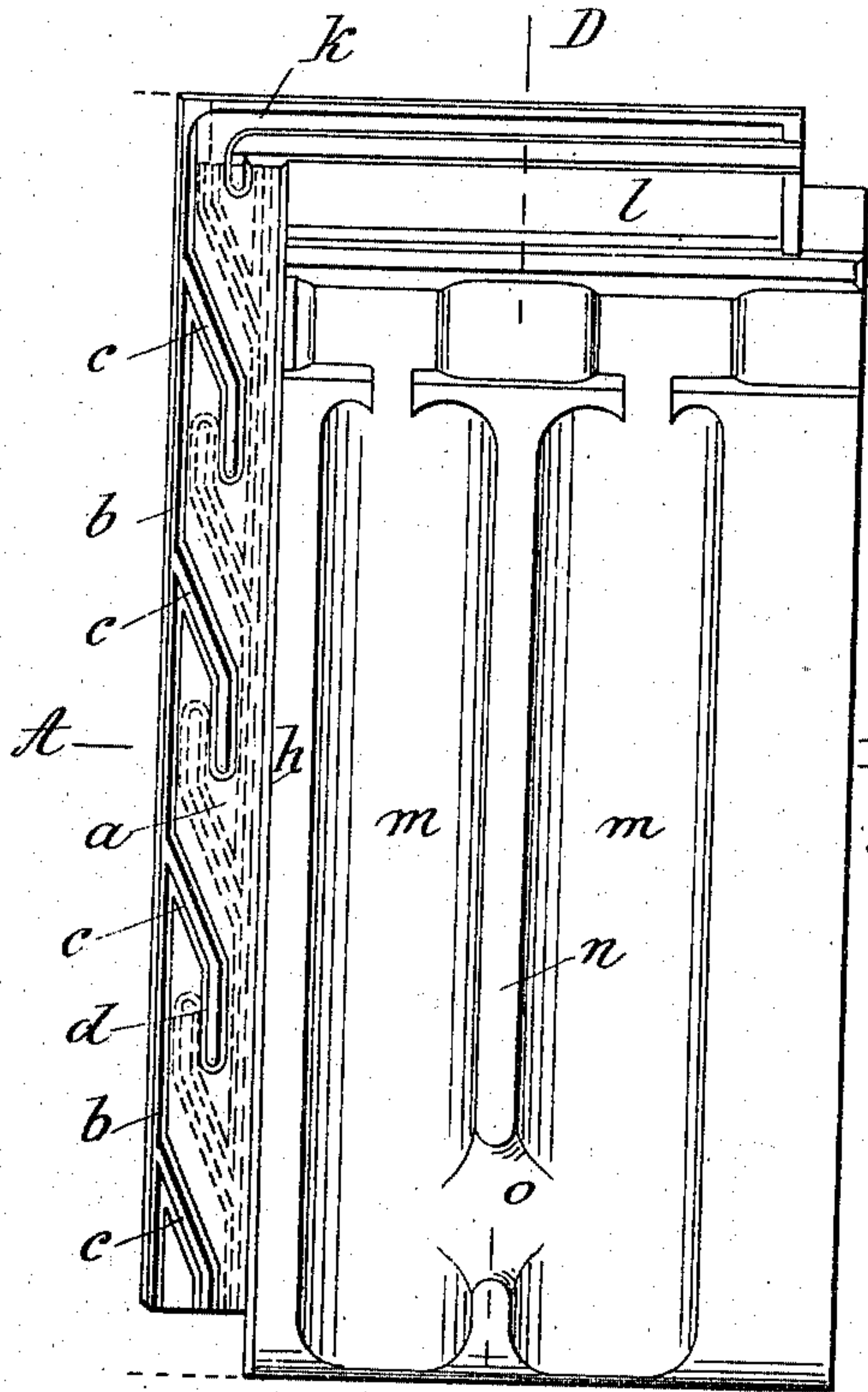
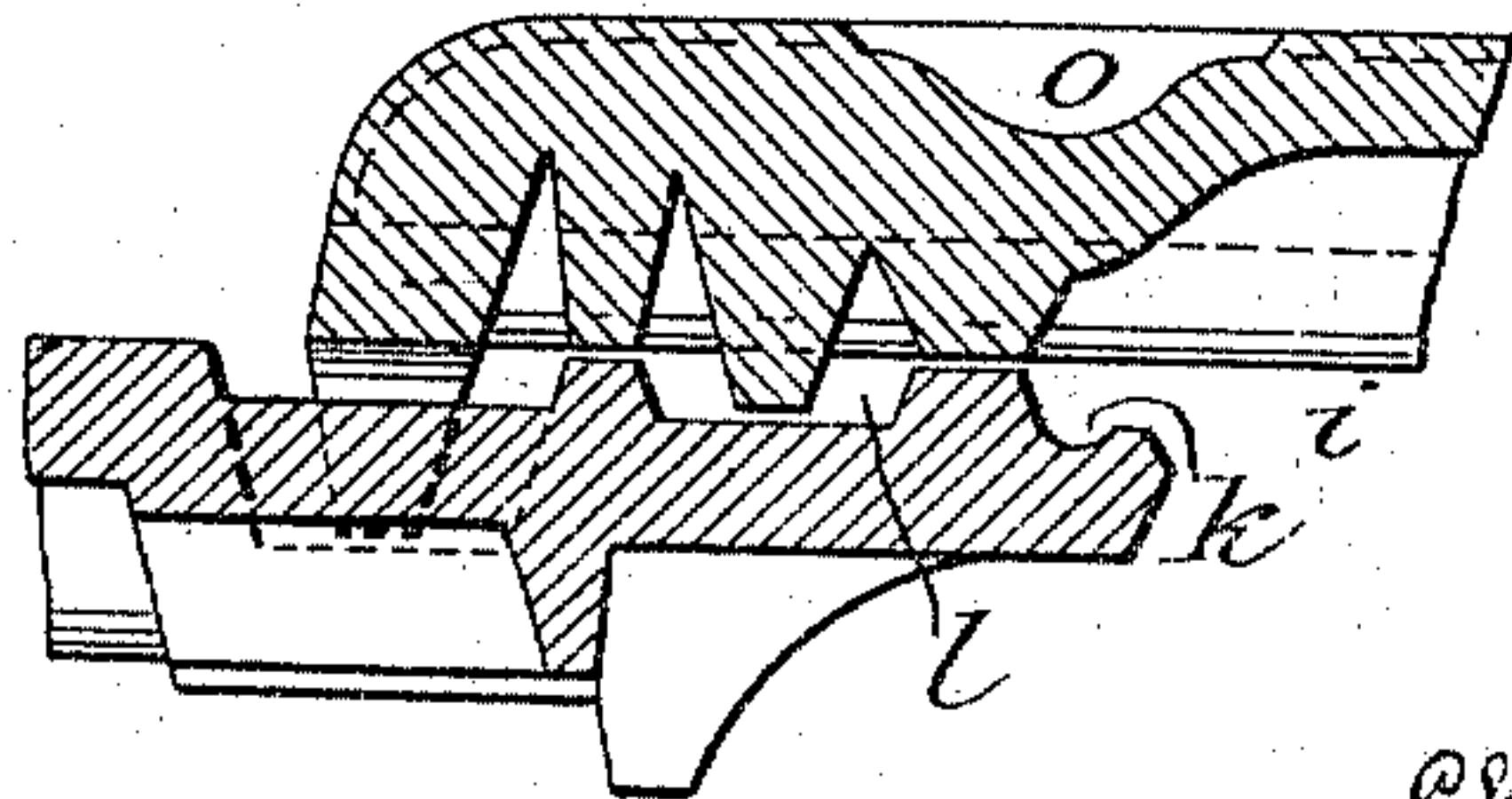
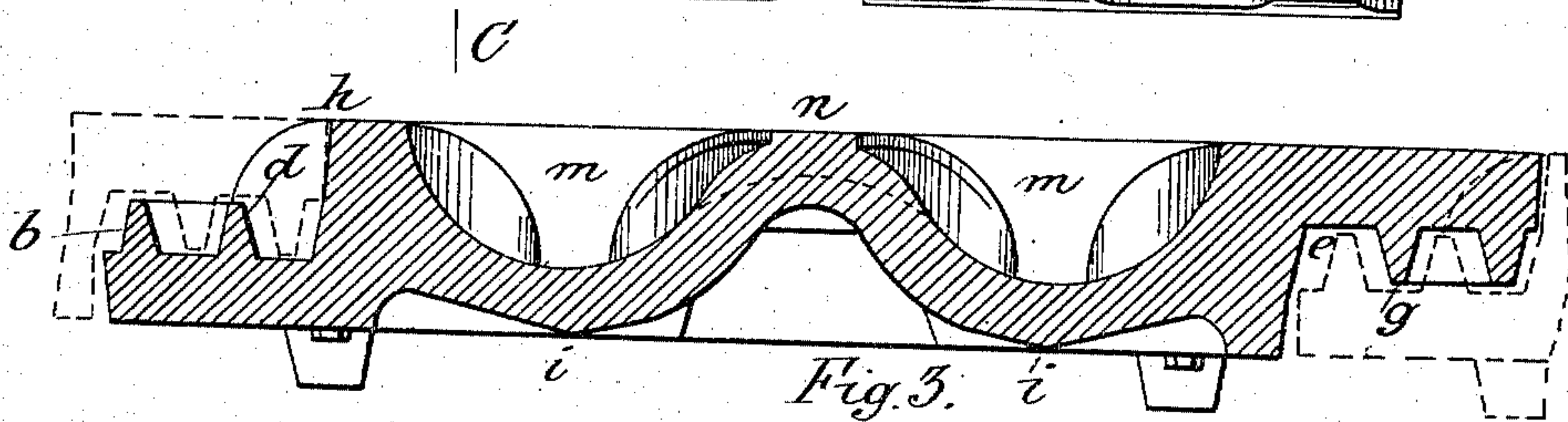
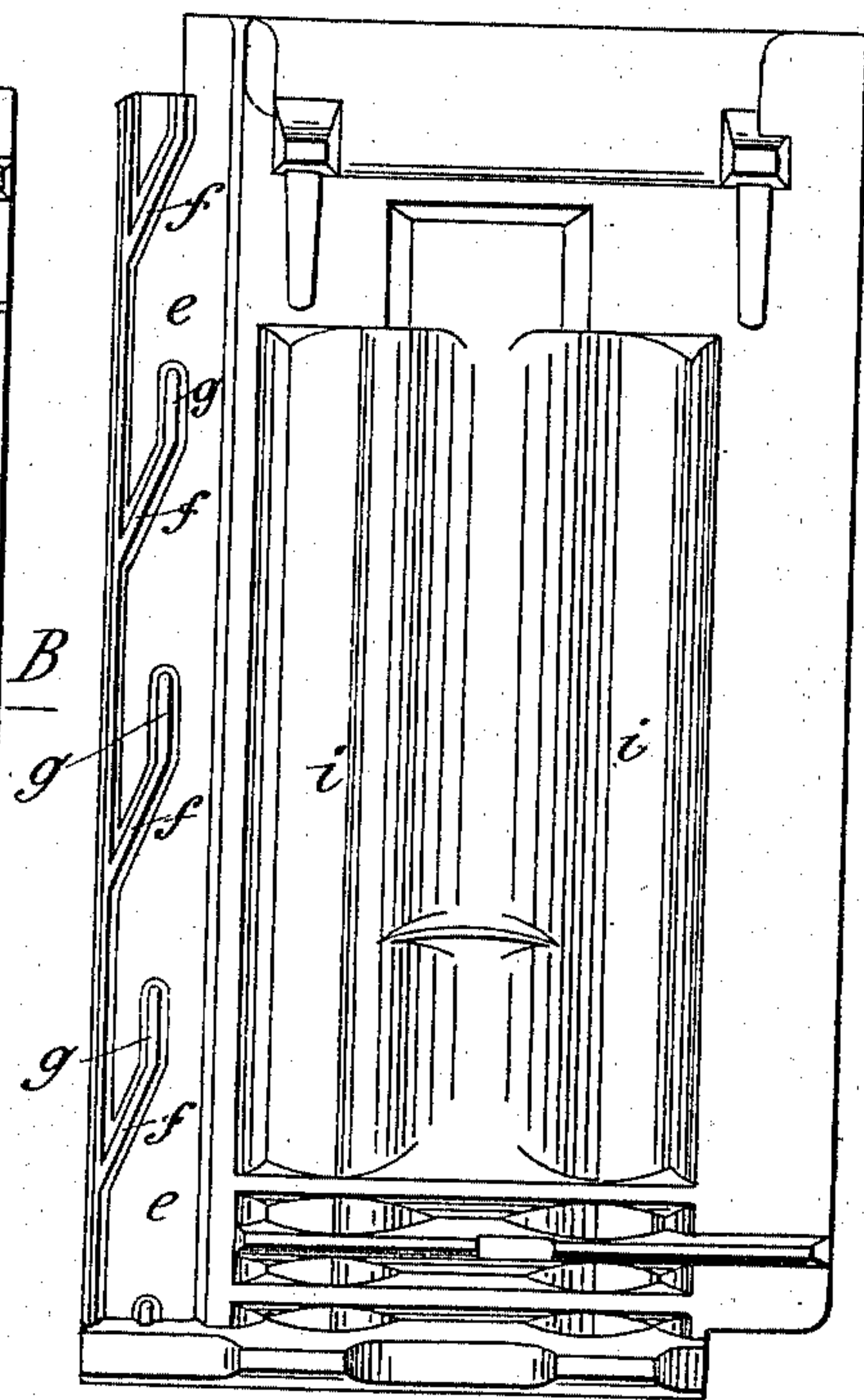


Fig. 2.



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