

No. 632,016.

Patented Aug. 29, 1899.

C. M. JENNINGS.

CAR ROOF.

Application filed Sept. 29, 1898.)

(No Model.)

3 Sheets—Sheet 1.

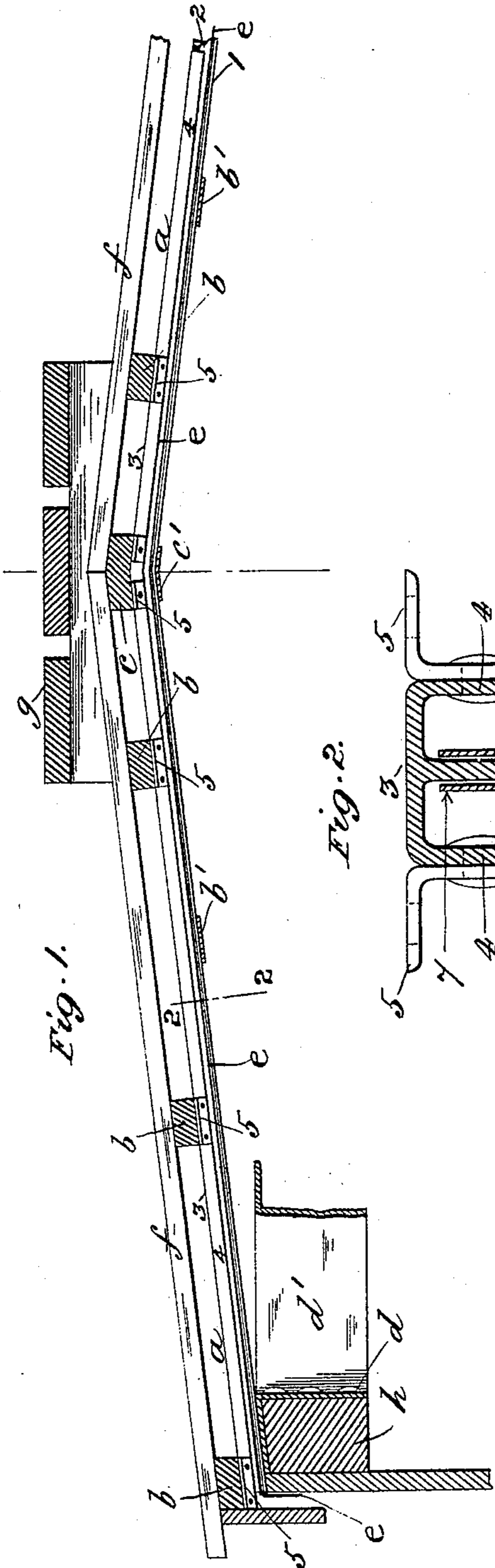


Fig. 1.

Fig. 2.

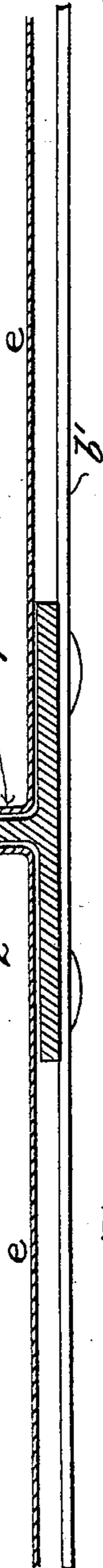


Fig. 3.

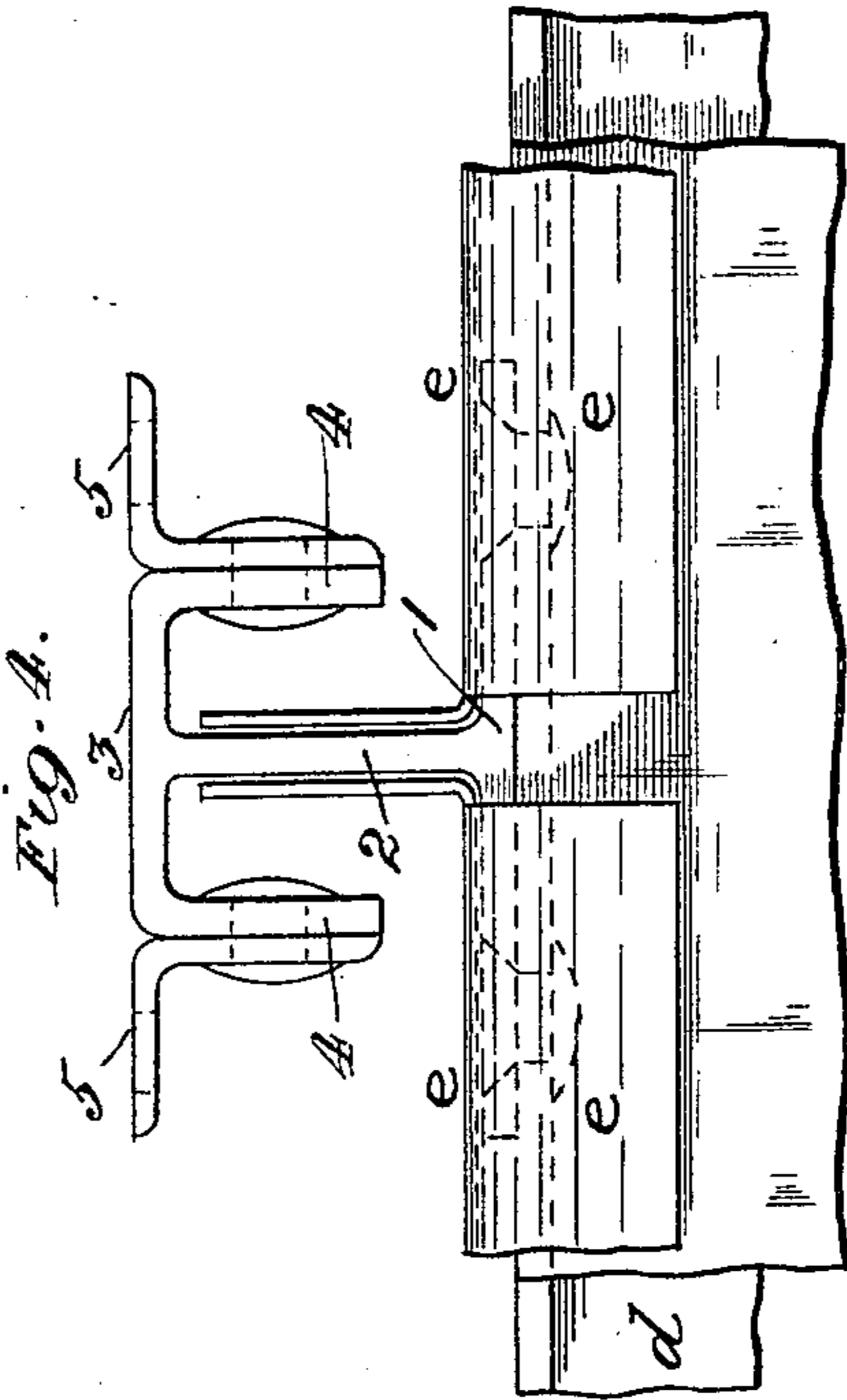
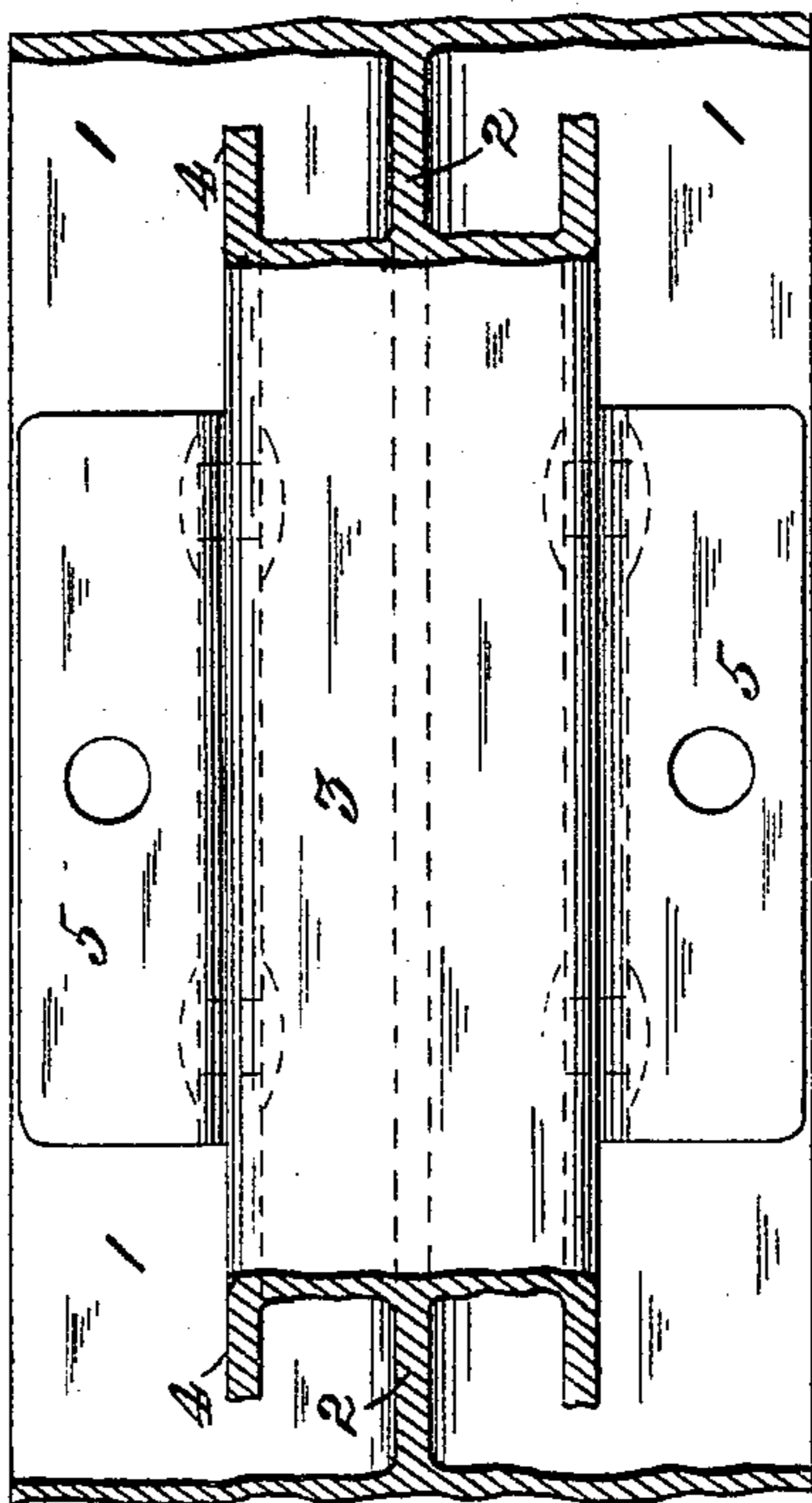


Fig. 4.



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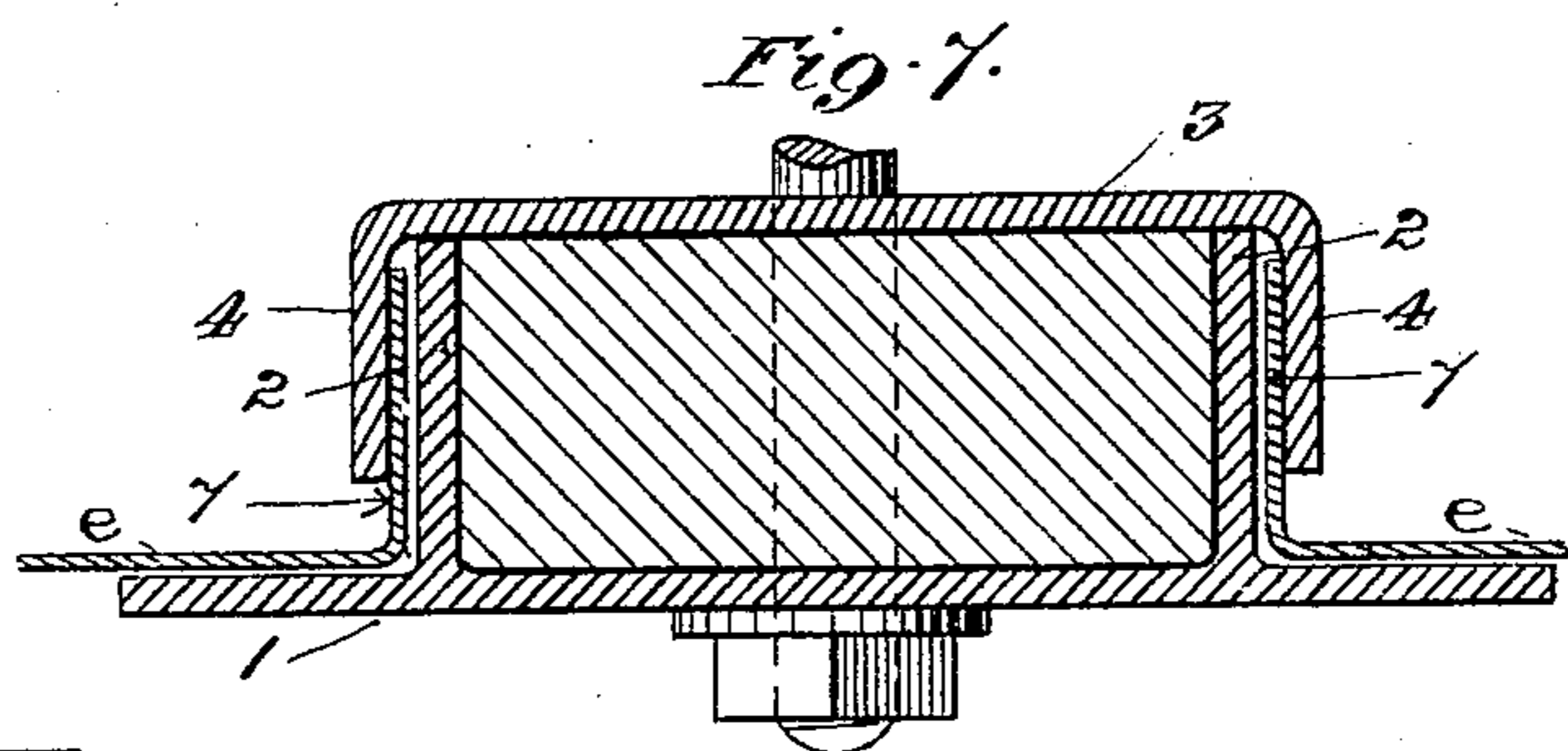
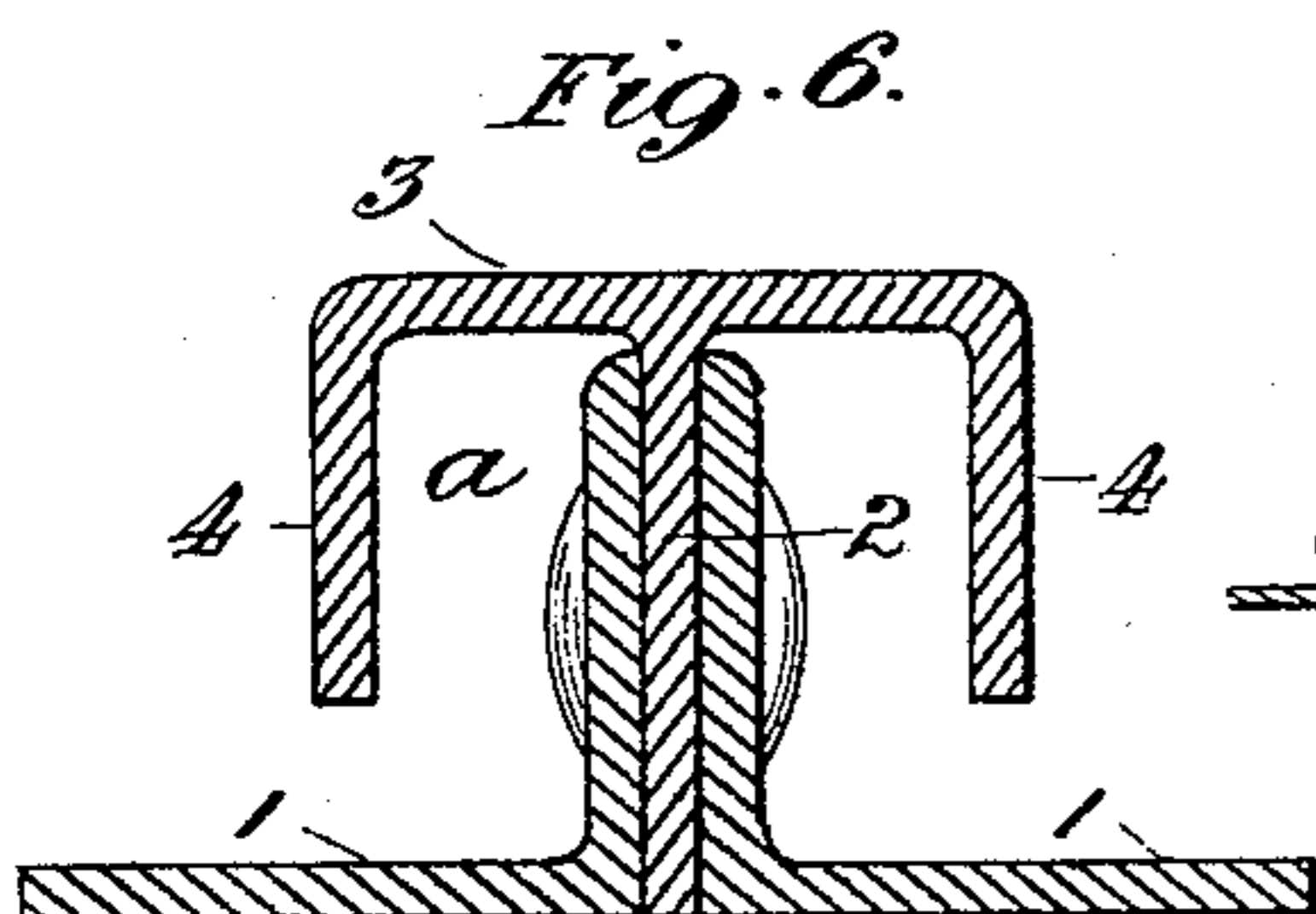
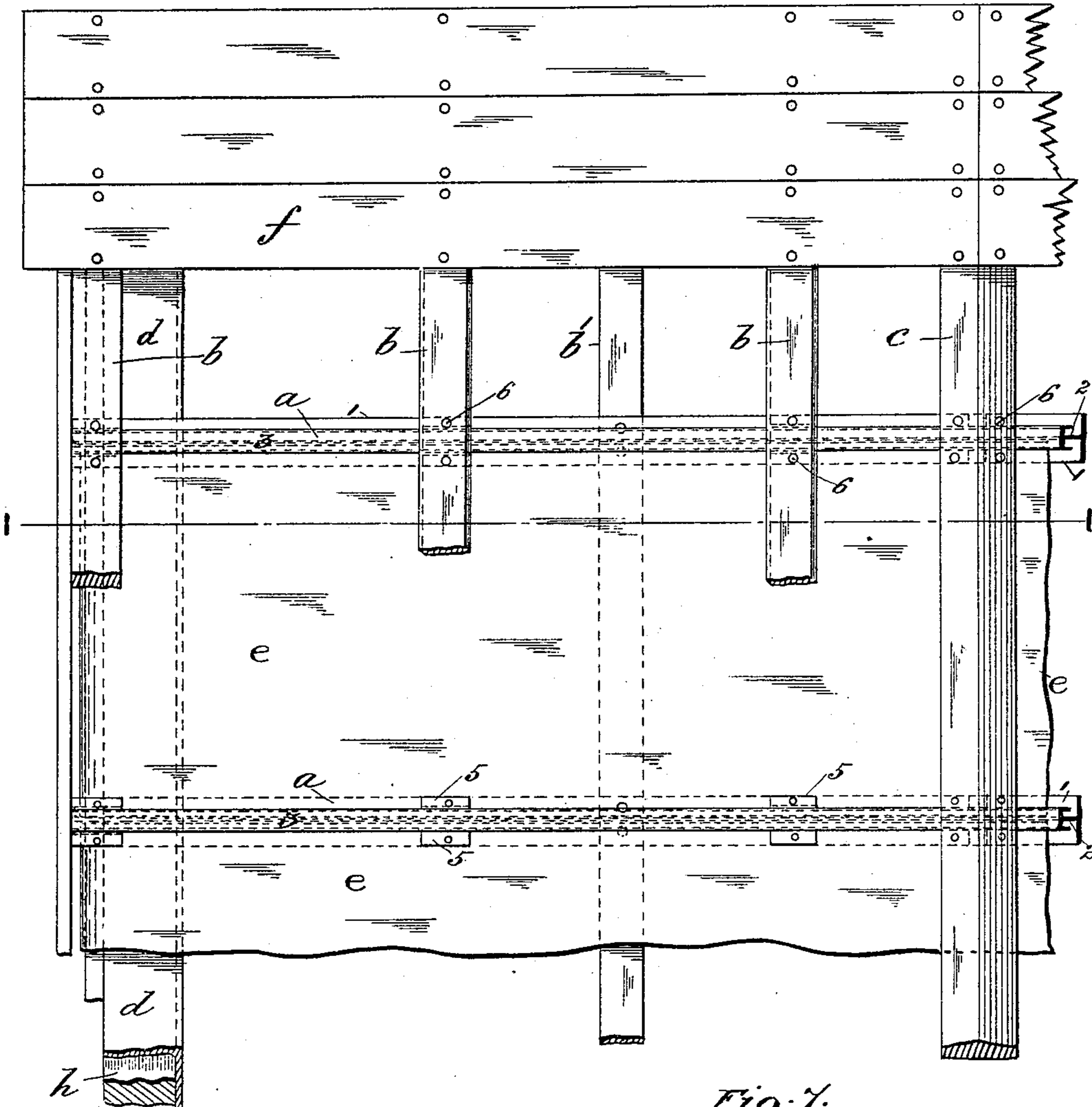
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3 Sheets—Sheet 2.

Fig. 5.



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Fig. 8.

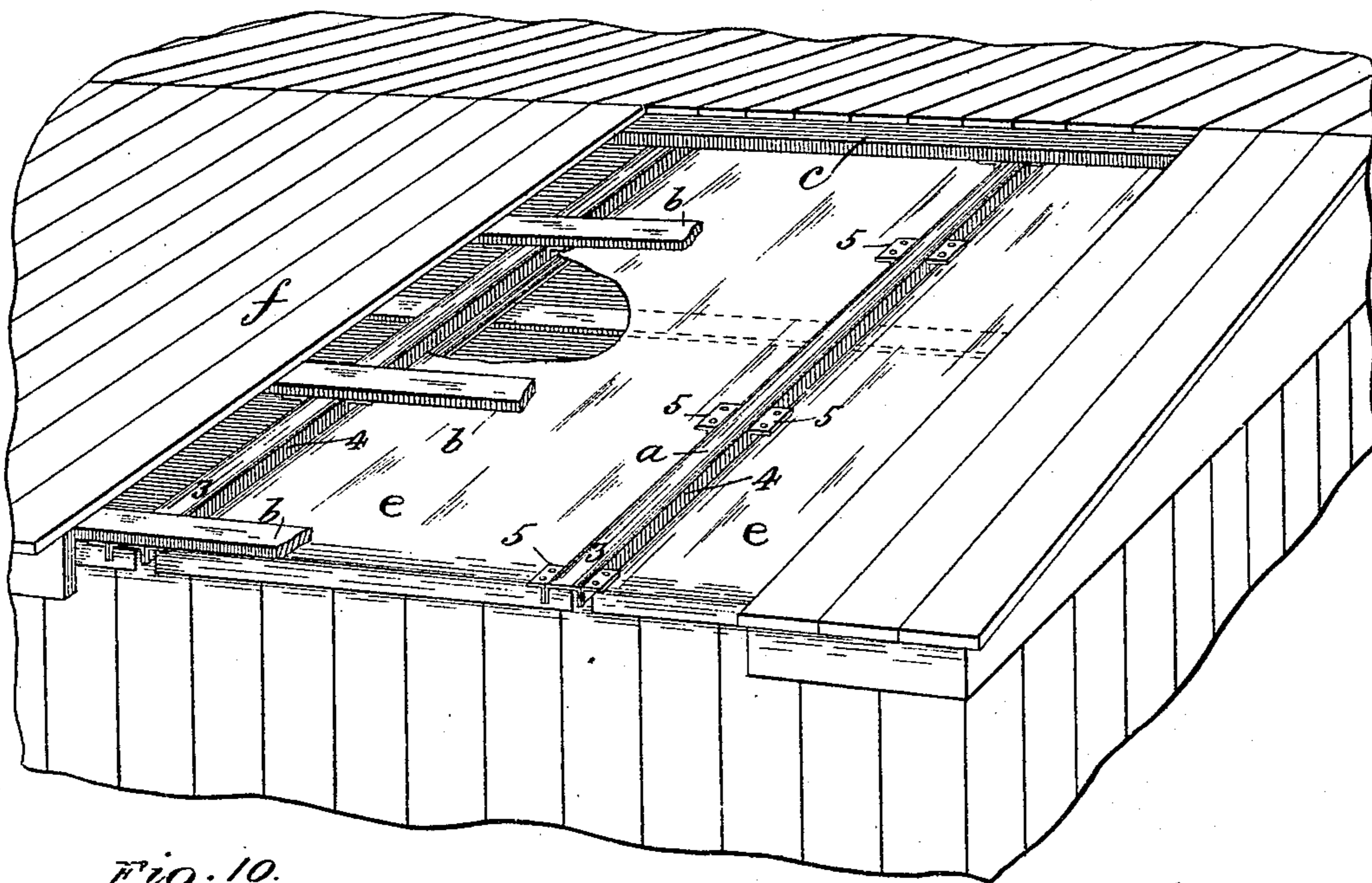


Fig. 10.

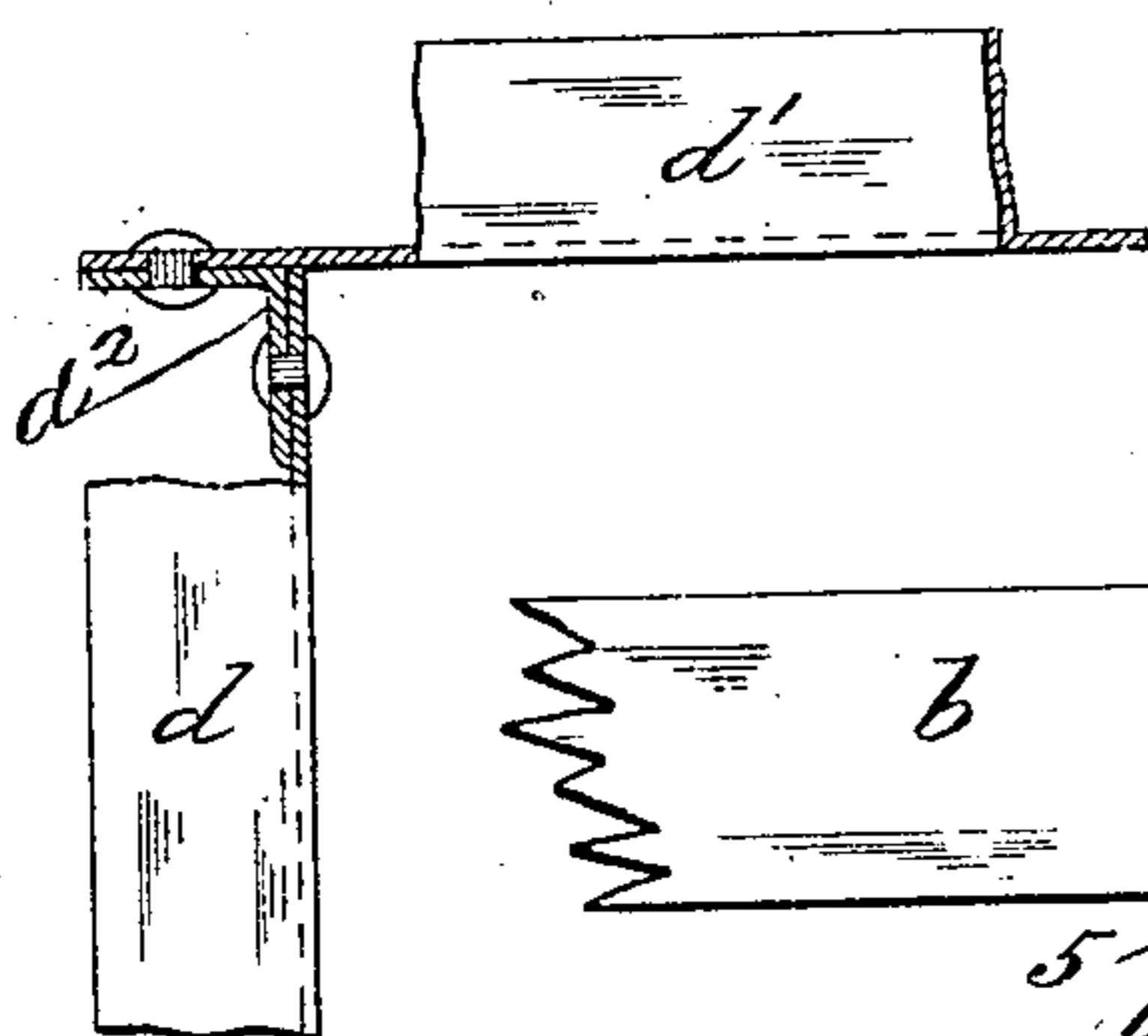


Fig. 11.

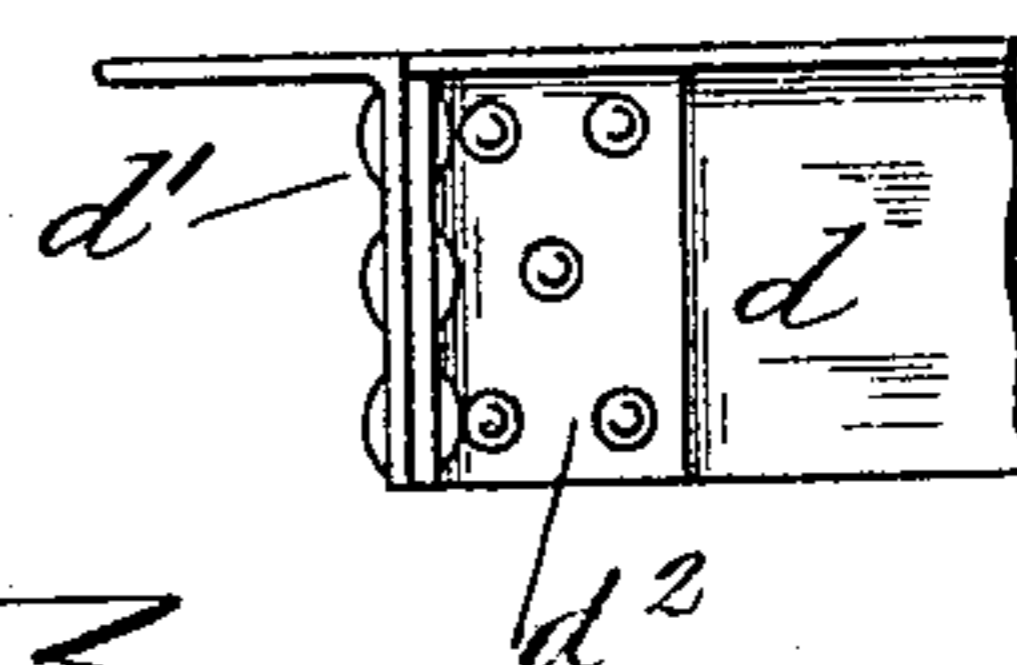
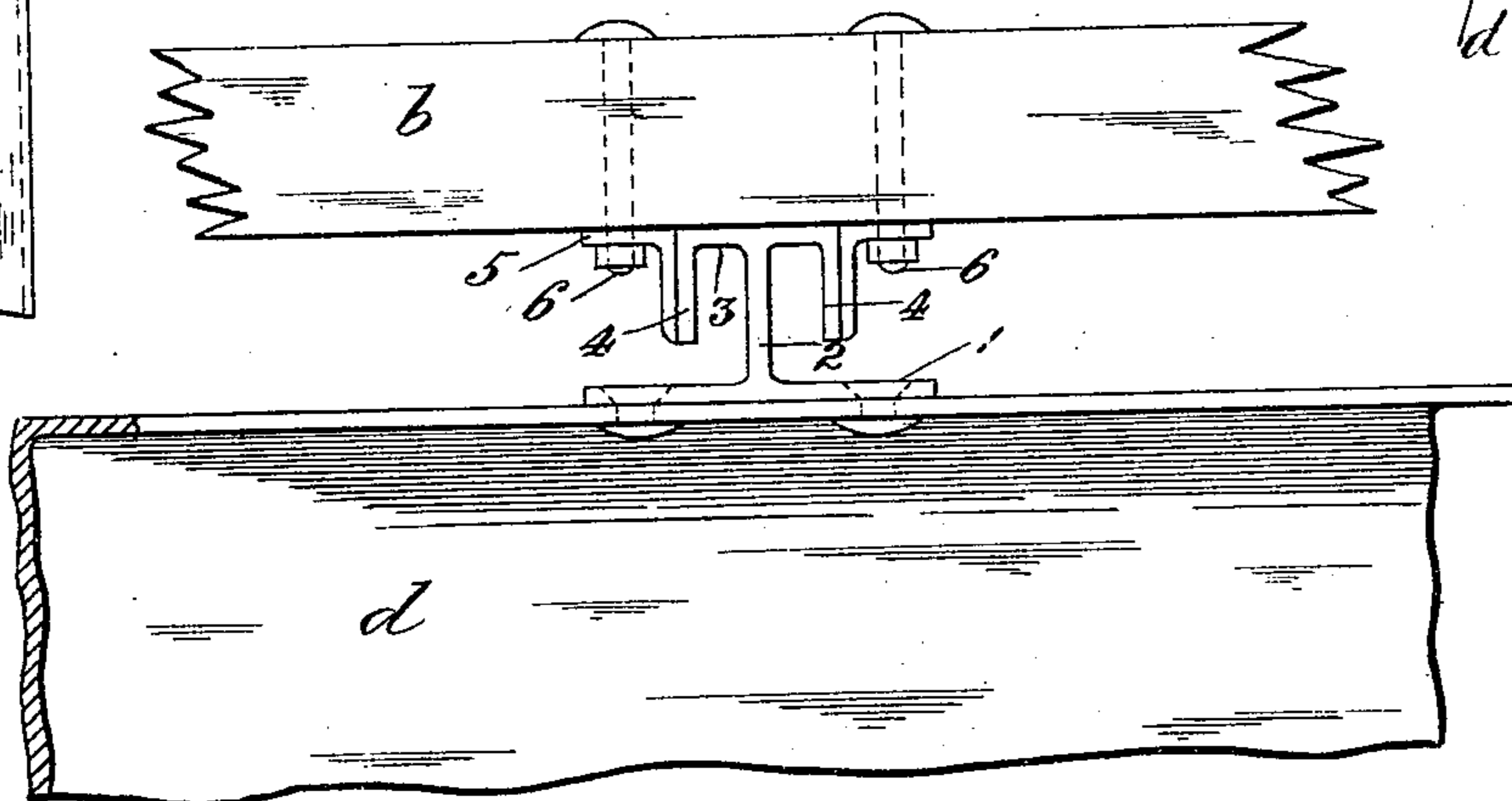


Fig. 9.



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# UNITED STATES PATENT OFFICE.

CURTIS M. JENNINGS, OF ST. LOUIS, MISSOURI.

## CAR-ROOF.

SPECIFICATION forming part of Letters Patent No. 632,016, dated August 29, 1899.

Application filed September 29, 1898. Serial No. 692,189. (No model.)

*To all whom it may concern:*

Be it known that I, CURTIS M. JENNINGS, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Car-Roofs, of which the following is a specification.

My invention relates to that class of roofs known as "inside" car-roofs, (but applicable to other descriptions of roof,) and has for its object to simplify the construction, to obtain greater rigidity and durability of the parts, and to increase the head room or loading capacity of the car.

The invention consists in features of novelty, as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification.

In the drawings, Figure 1 represents a vertical transverse section on line 1 1 in Fig. 5 through my improved inside car-roof broken away; Fig. 2, a cross-section, to enlarged scale, through one of the carlines and combined roof-sheets, broken away, on line 2 2 in Fig. 1; Fig. 3, a top plan, to enlarged scale, of part of the carline and brackets secured thereto for supporting an upper purlin and seen in Fig. 1; Fig. 4, an end view at the roof-eave of a carline and combined roof-sheets broken away; Fig. 5, a top plan of the roof broken away and parts removed; Figs. 6 and 7, views corresponding to Fig. 2, showing modified forms of the carline; Fig. 8, a perspective view of the roof broken away and parts removed; Fig. 9, an end view at the roof-eave, corresponding to Fig. 4 of a carline, showing its attachment to the upper purlin thereat and to the angle-plate or side of the roof-supporting frame forming part of my invention; and Figs. 10 and 11, top sectional plan and elevation, respectively, of a corner of the roof-supporting frame, showing means of securing the side and end angle-plates together.

Like letters and numerals of reference denote like parts in all the figures.

In the improved inside car-roof *a* represents the carlines; *b*, the upper purlins; *b'*, the lower purlins; *c*, the upper ridge-pole; *c'*, the lower ridge-pole; *d d'*, the angle-plates or roof-supporting frame; *e*, the roof-sheets; *f*, the upper covering-boards, and *g* the running-board.

Each carline *a* is composed of iron, steel,

or other suitable material and is preferably T-shaped in cross-section, having the bottom flange or base 1, web 2, projecting vertically upward therefrom, and the top flange 3, which crosses the web 2. The top flange 3 is flat (or may be curved) for a suitable distance on each side of the vertical web 2 and is formed at the termination of its flat portion at each side with a depending flange 4, which extends to within a suitable distance from the base 1, the side edges and adjacent parts of the base 1 extending beyond the flanges 4 for enabling the carline *a* to be secured by rivets or otherwise through the base 1 to the lower ridge-pole *c'*, lower purlin *b'*, and the side angle-plates *d* of the roof-supporting frame *d d'*, as shown, for example, in Fig. 9. The top and bottom flanges 3 1 are preferably integral with the vertical web 2 of the carline *a*, as seen in Fig. 2, but may be separate therefrom and adapted to be secured thereto by rivets or bolts, as seen, respectively, in Figs. 6 and 7.

To the outer faces of the depending flanges 4 of each carline *a* are fixed angle-brackets 5, having their upper projecting surfaces aligned to the top of the carline *a*, and to these brackets 5 are secured the upper purlins *b* and upper ridge-pole *c* by bolts 6, as seen, for example, in Fig. 9, or, if desired, the brackets 5 may be dispensed with and the upper purlins *b* and ridge-pole *c* secured directly to the top member 3 of the carline *a*. Each carline *a* is continuous or in one length from side to side of the car, the lower ends of the carline *a* at the roof-eaves being preferably riveted or otherwise secured through its base 1 to the angle-plates or sides *d* of the roof-supporting frame *d d'*, as seen in Fig. 9, the sides *d* being rigidly connected to the ends *d'* at the corners of the frame by angle-brackets *d''*, as seen in Figs. 10 and 11, thereby imparting increased rigidity to the roof and strength to the car-body.

*e* represents the roof-sheets, which are placed between and supported by the carlines *a*. Each roof-sheet *e* is preferably flat and formed at each side edge with an upwardly-projecting flange 7, which when the roof-sheet *e* is placed in position is in contact with or in proximity to the vertical web 2 of the adjacent carline *a*, the flat under portion of the roof-sheet *e* thereat resting upon the base 1 of the

carline *a* and the corresponding depending flange 4 of the carline *a* overlapping the flange 7 at a suitable distance therefrom, as shown particularly in Figs. 2, 4, and 7, and so on in like manner throughout the entire series of roof-sheets *e* and carlines *a*. The lower ends of the roof-sheets *e* at the eaves are turned downward and overlap the boarding at the sides of the car, as seen in Figs. 1 and 4.

By the use of the improved carline *a* the joint-strips or roof-rafters and the deep wooden carlines or rafters within the car and other members used in the ordinary construction of metal and other roofs are dispensed with, and by making the carlines in one length, respectively, and attaching them at the eaves to the angle-iron frame extending along the sides and ends of the car the roof is rendered stronger and more durable and increased rigidity is imparted to the car thereat.

It is to be noted that the ordinary wood plates *h* are preferably combined with the angle-plates *d d'* or roof-supporting frame, as shown in Figs. 1 and 5, and secured thereto by bolts, screws, or other suitable means, (not shown,) or the wood plates *h* may be dispensed with, if found desirable.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an inside car-roof, a carline having a vertical web; and having a top and bottom flange integral with the web, a roof-sheet having an upwardly-projecting flange at its side edge and resting thereat upon the bottom

flange of the carline, the top flange of the carline having a depending flange overlapping, but out of contact with the said flange of the roof-sheet, for allowing lateral play to the roof-sheet, substantially as described.

2. In an inside car-roof, the combination of a carline of the character described, an angle-iron frame extending along the sides and ends of the car, and adapted to support the opposite ends of the carline, brackets fixed to the side of the carline, upper purlins and an upper ridge-pole supported by the carline and fixed to the said brackets; lower purlins and a lower ridge-pole fixed to the under side of the carline, and a roof-sheet having an upwardly-projecting flange at its side edge and resting thereat upon the base of the carline, the depending flange of the carline overlapping, but out of contact with the said flange of the roof-sheet, substantially as described.

3. In an inside car-roof, the combination of a carline of the character described, an angle-iron frame extending along the sides and ends of the car and adapted to support the opposite ends of the carline, and a roof-sheet having an upwardly-projecting flange at its side edge, and resting thereat upon the base of the carline, the depending flange of the carline overlapping, but out of contact with the said flange of the roof-sheet, substantially as described.

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