

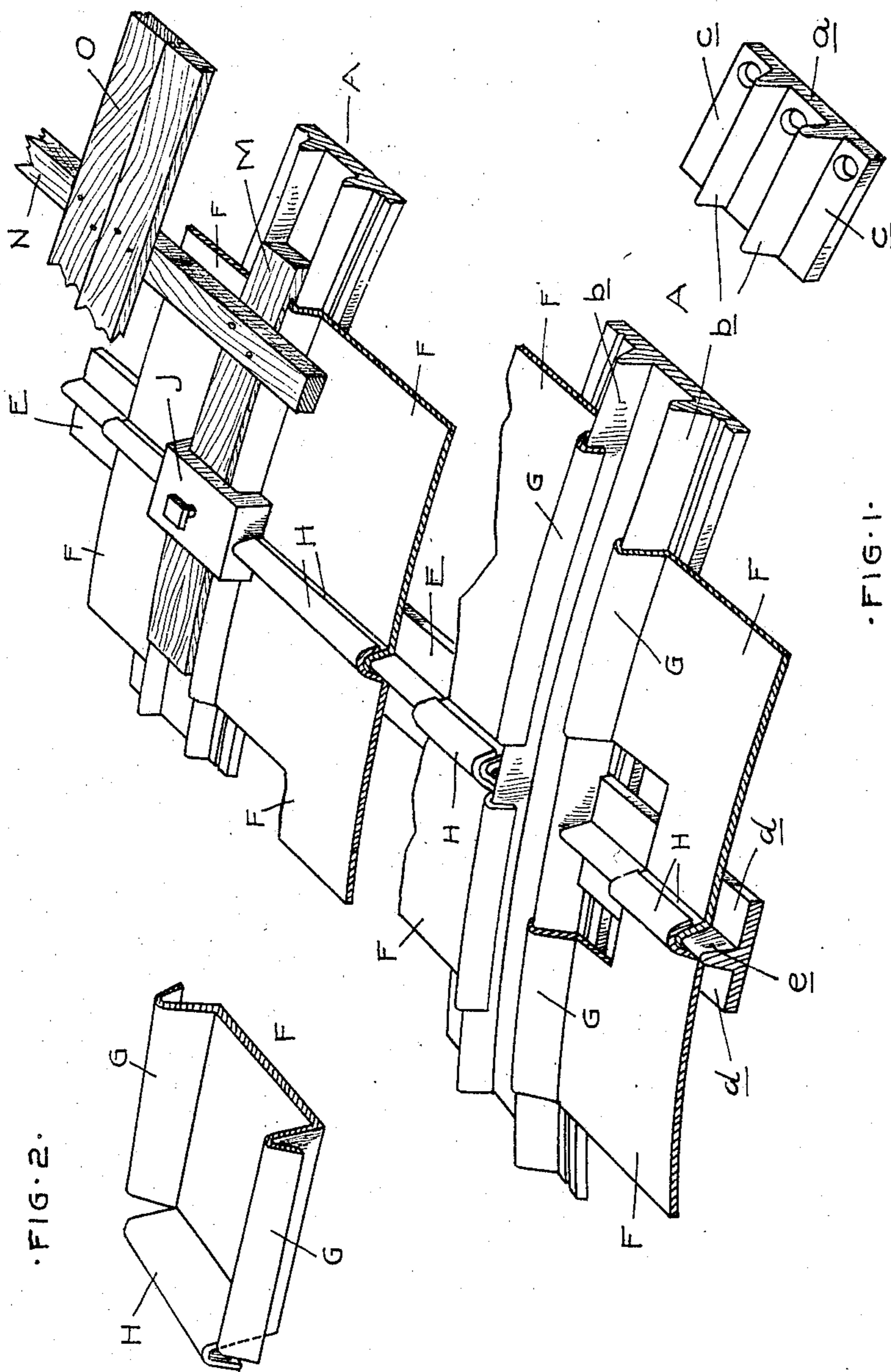
No. 790,054.

PATENTED MAY 16, 1905.

S. HERBERT.
CAR ROOF.

APPLICATION FILED DEC. 7, 1903.

4 SHEETS—SHEET 1.



WITNESSES

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BY

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4 SHEETS—SHEET 2.

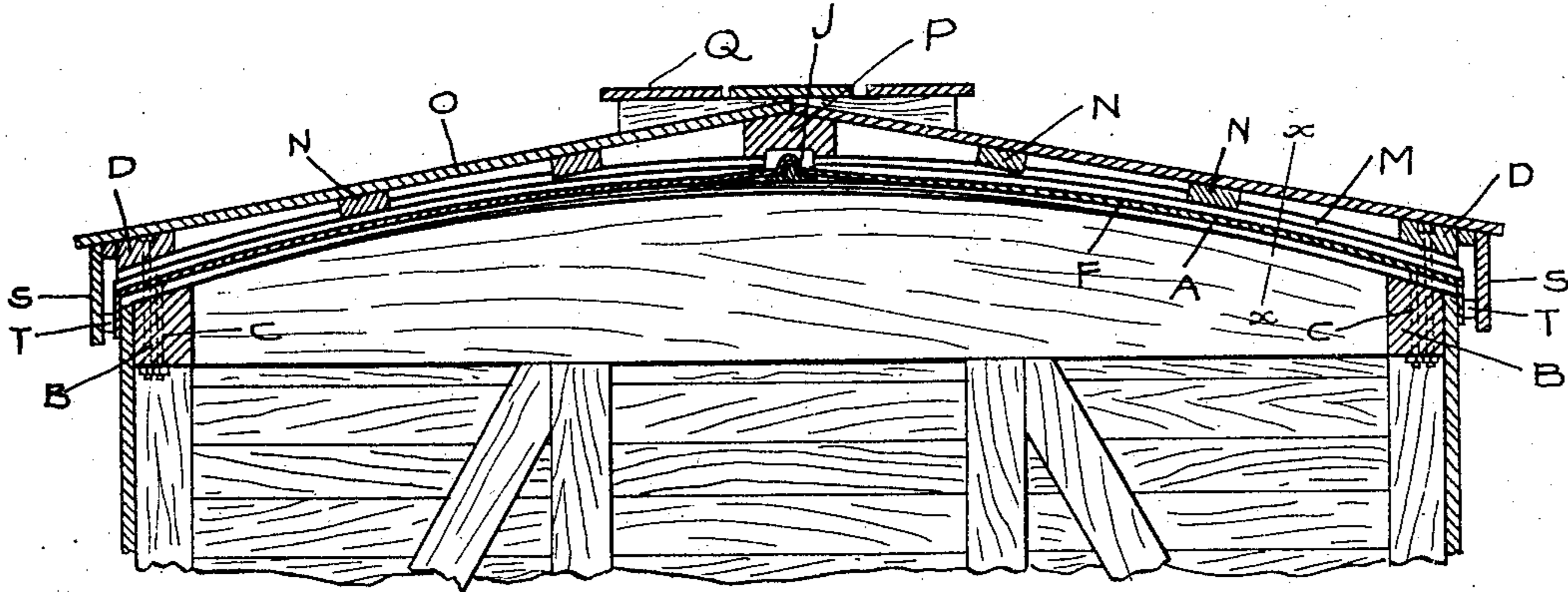


FIG. 3

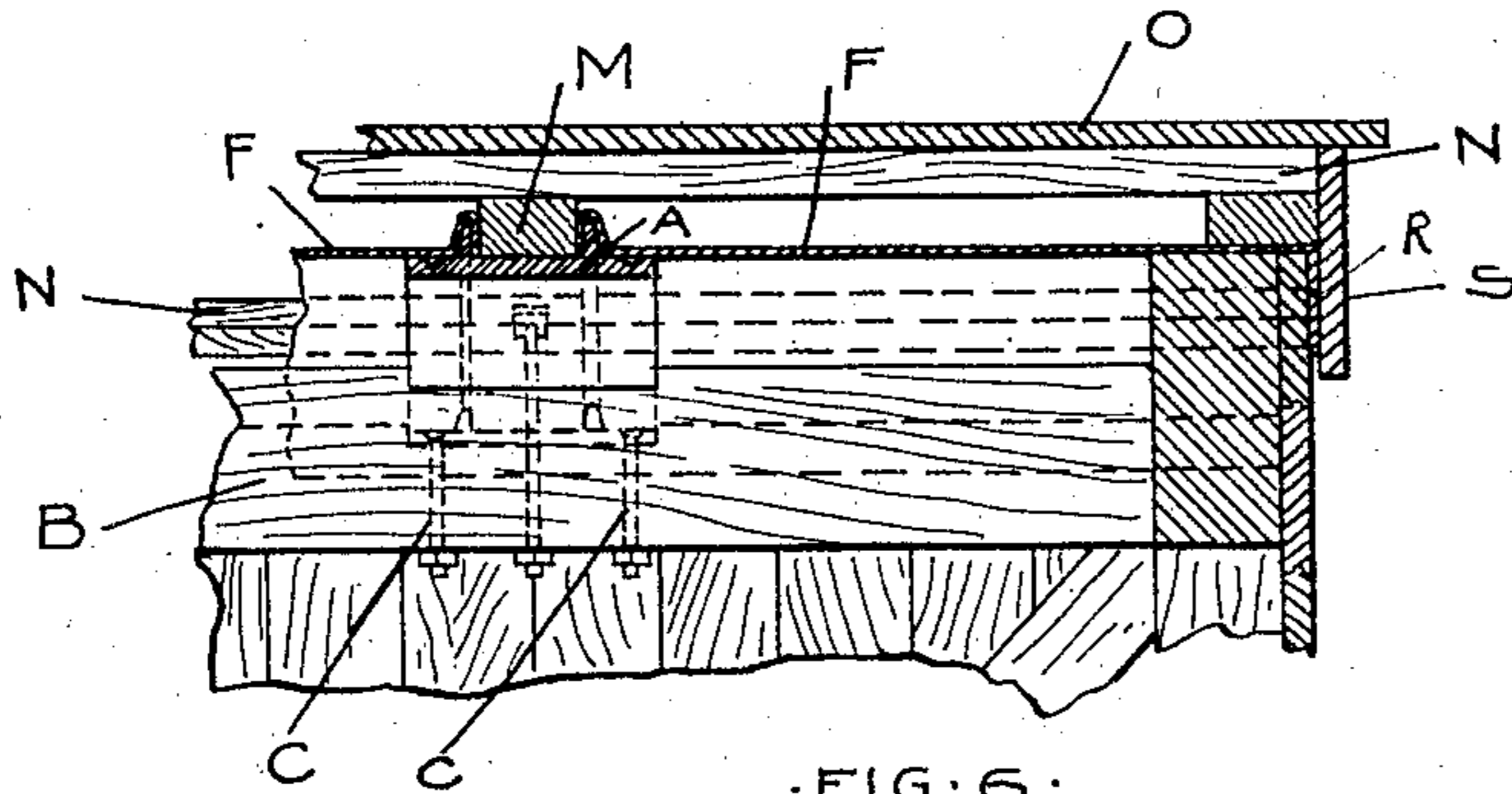


FIG. 6

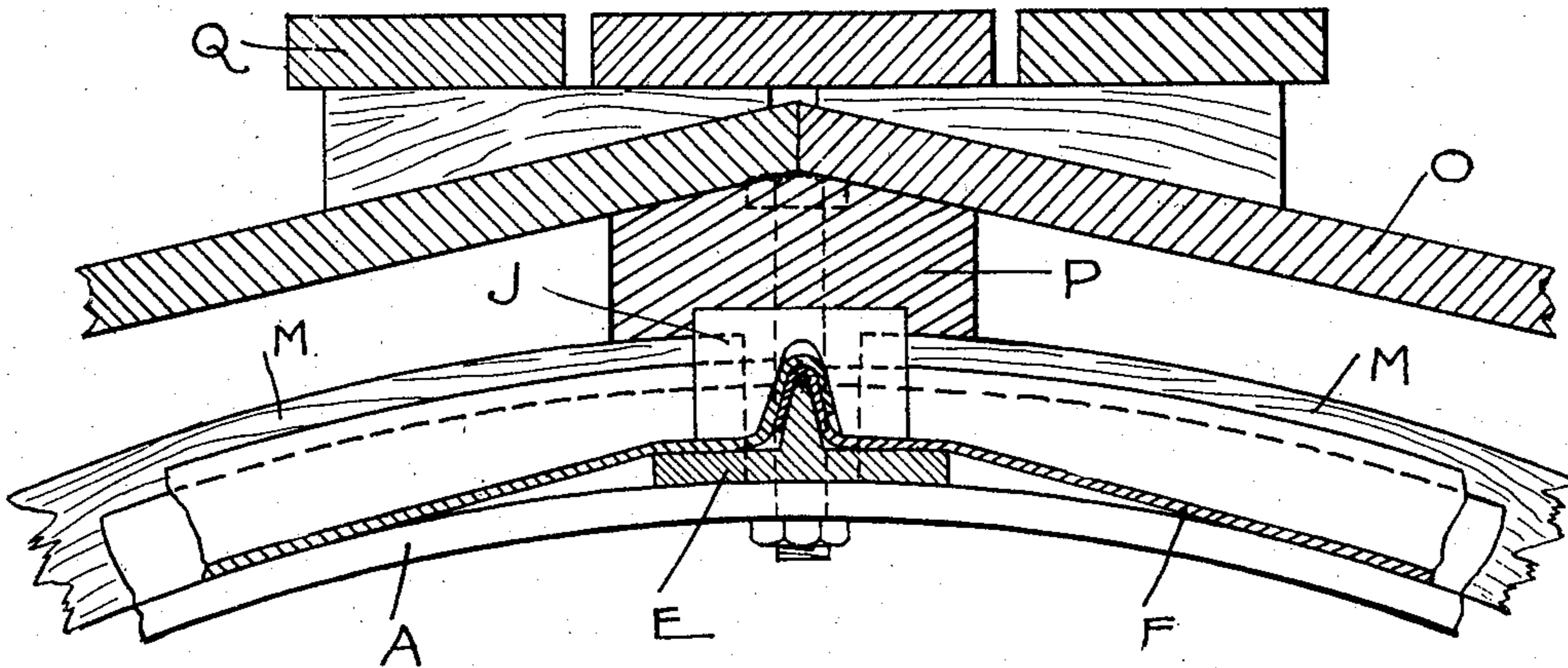


FIG. 7

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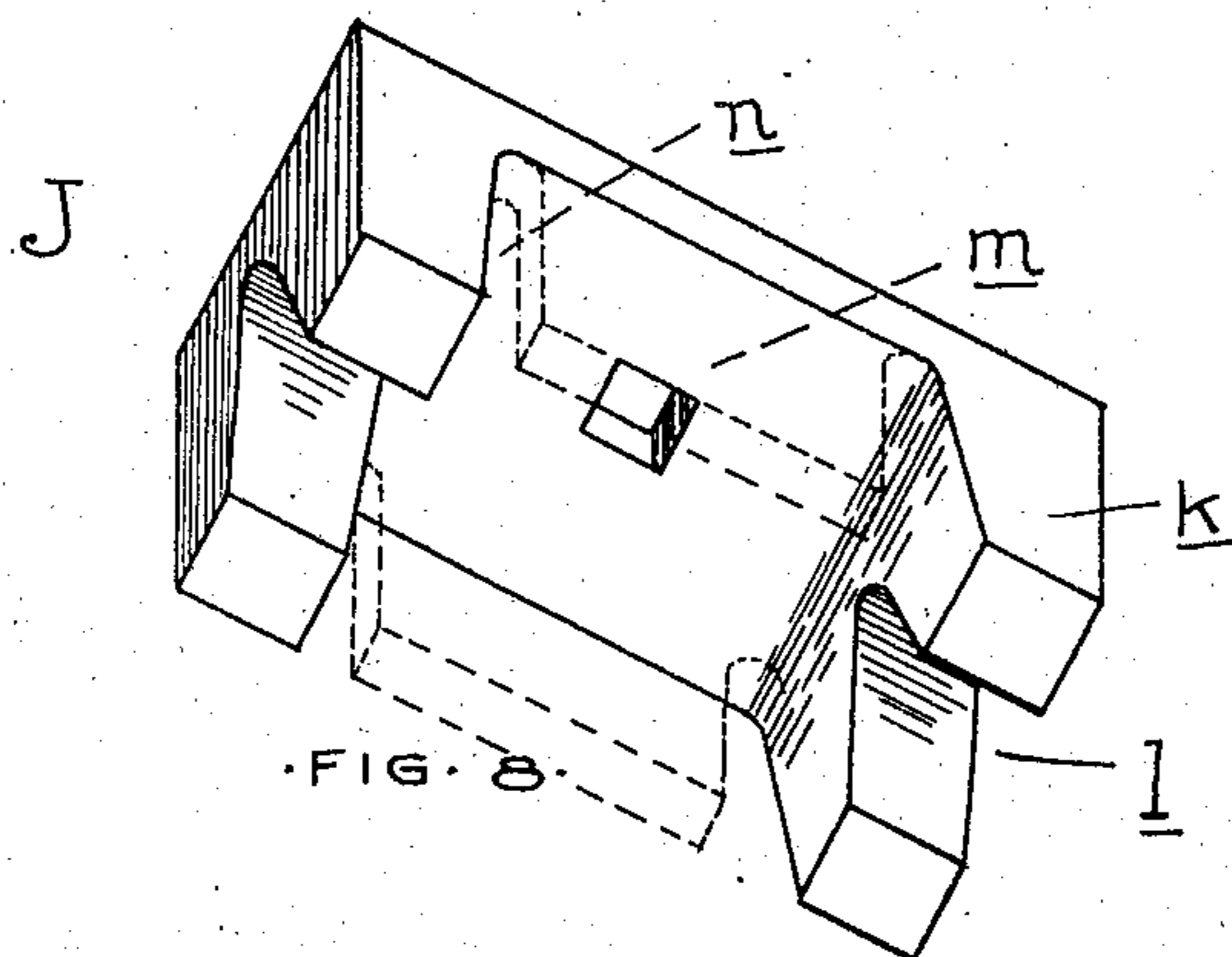
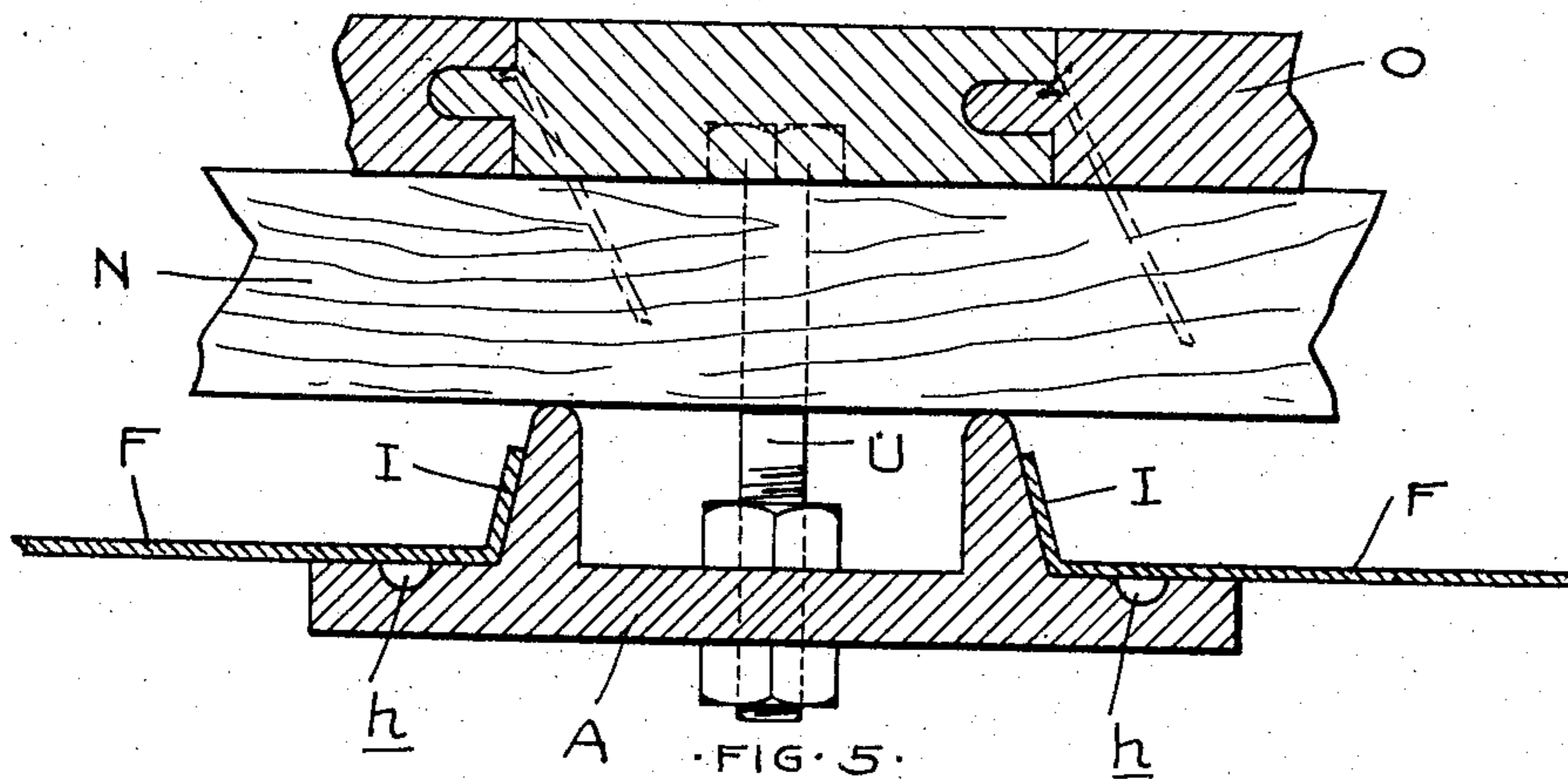
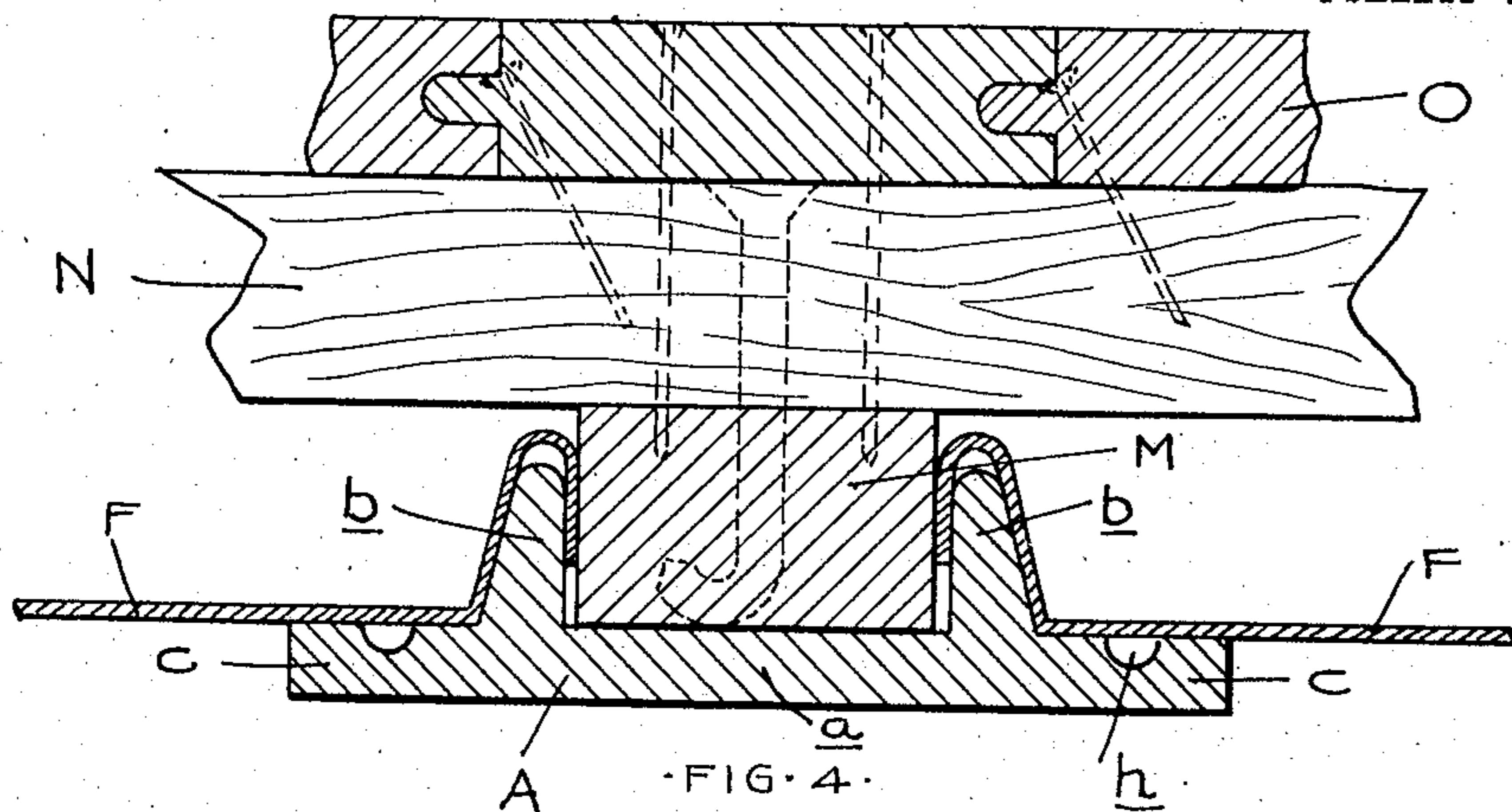
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4 SHEETS—SHEET 3.



WITNESSES

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4 SHEETS—SHEET 4.

FIG. 10.

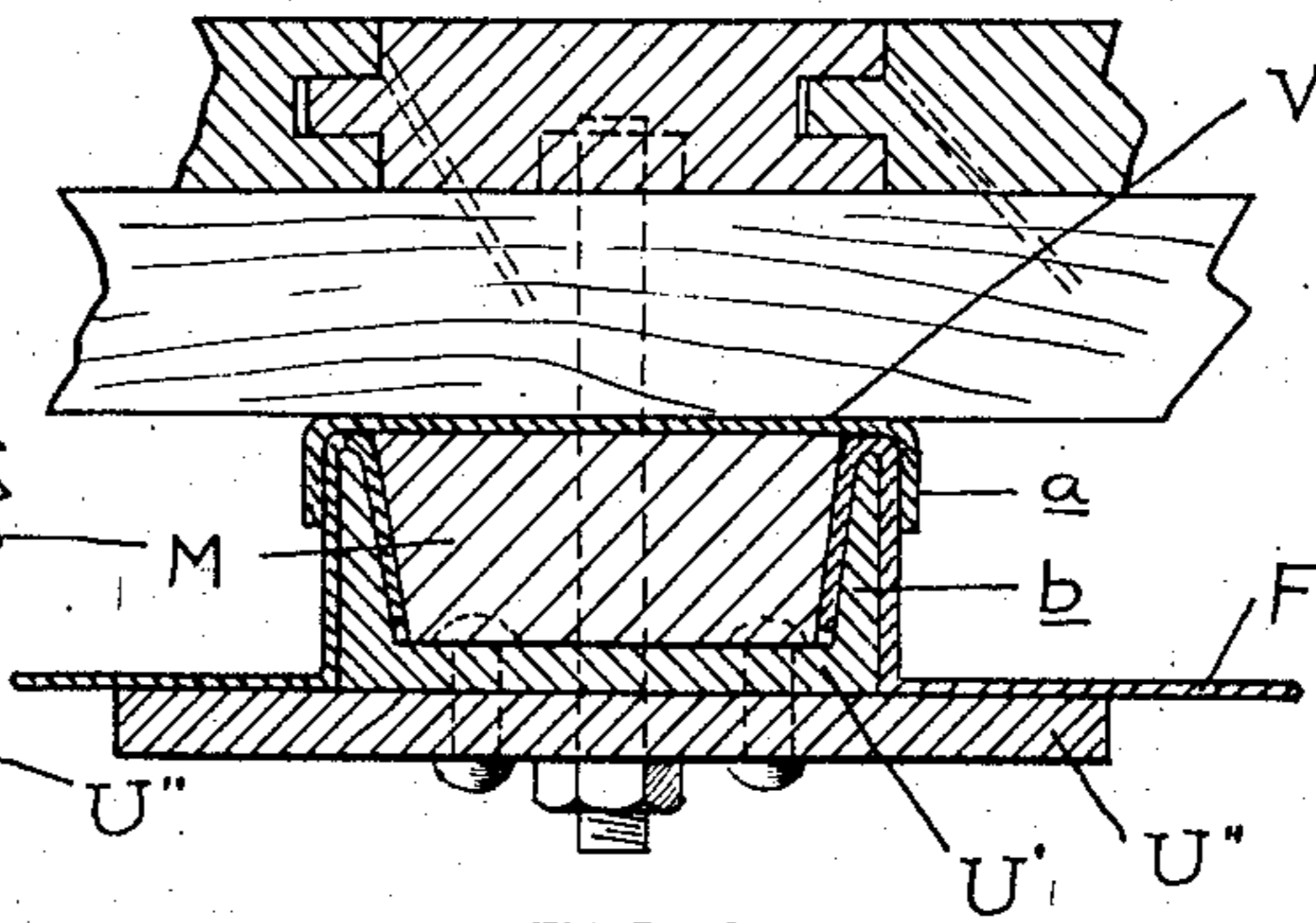
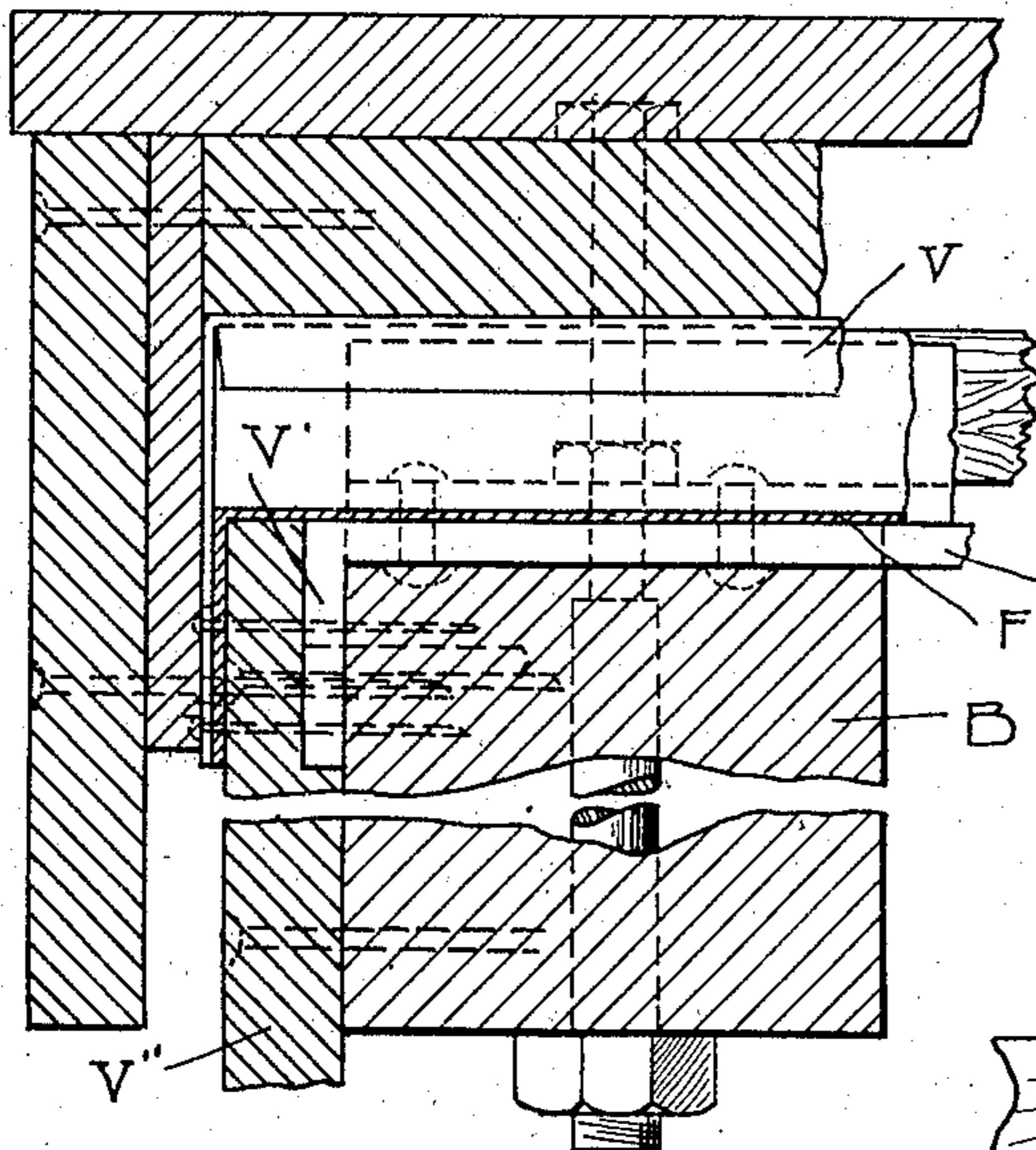


FIG. 9.

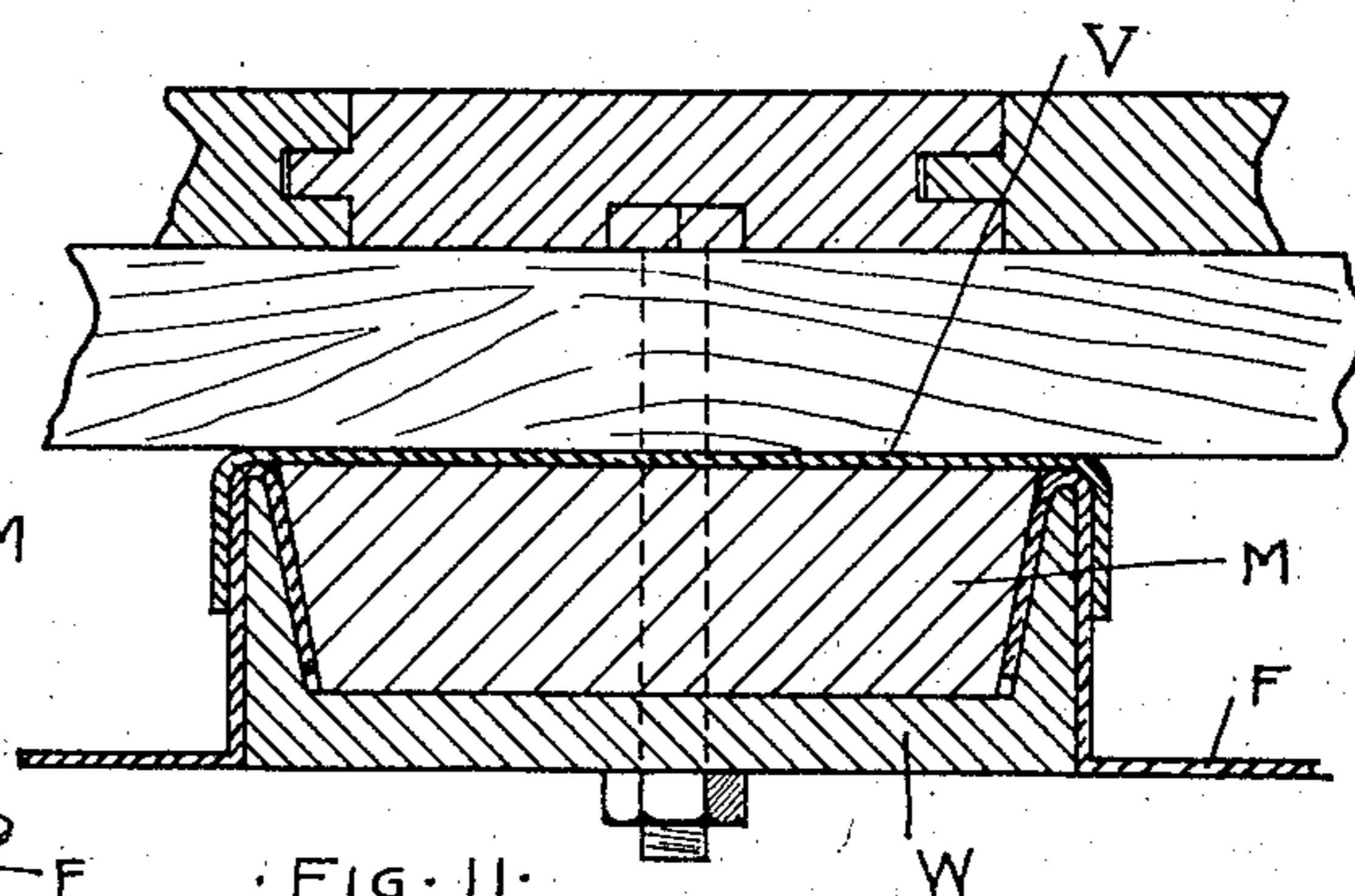


FIG. 11.

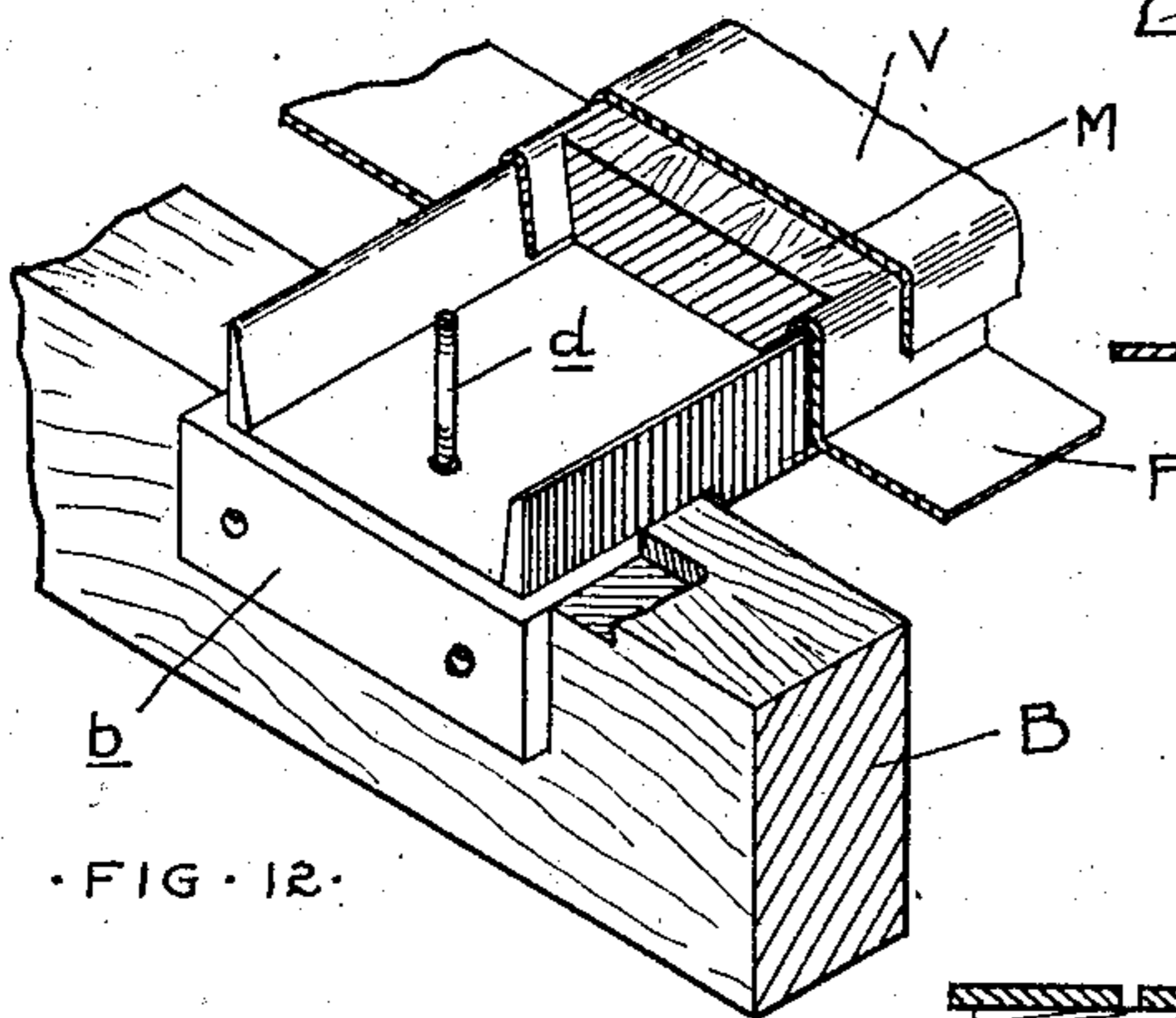


FIG. 12.

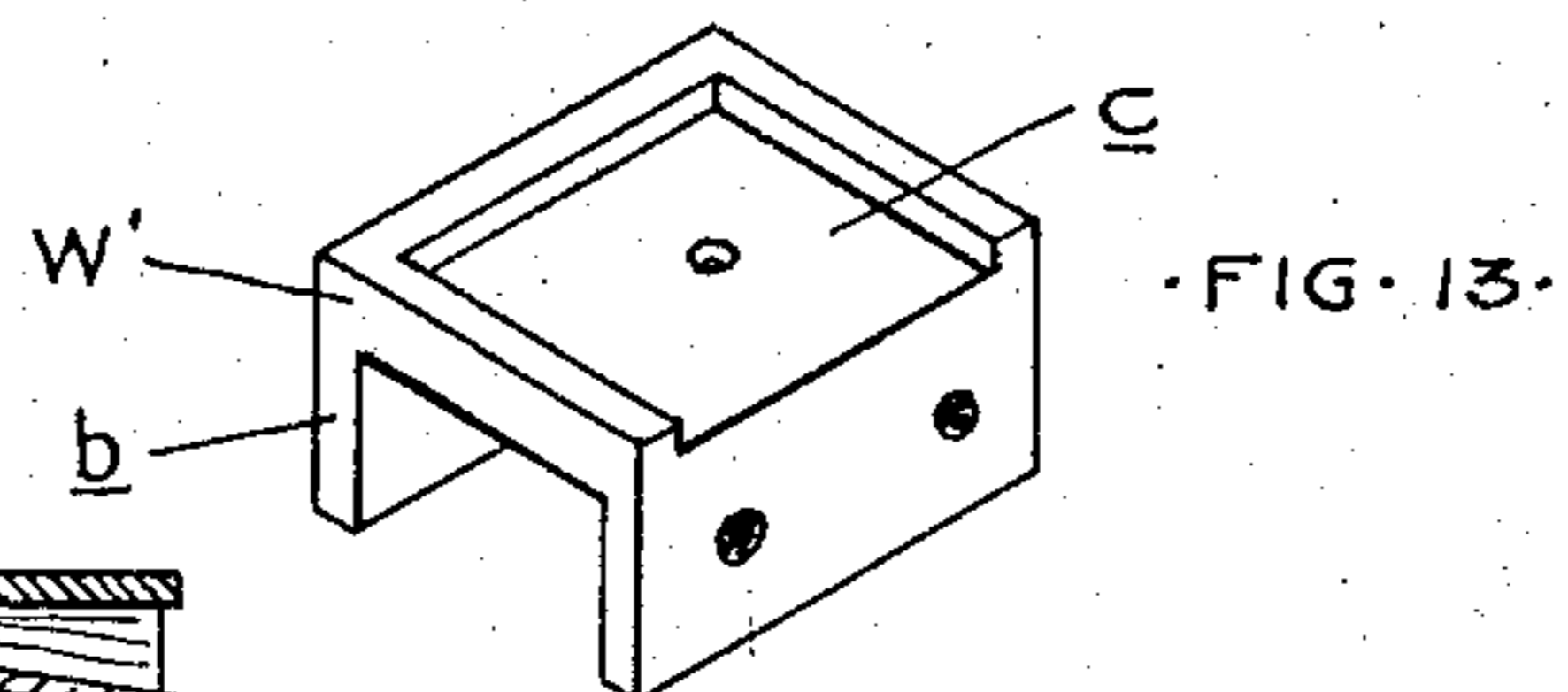


FIG. 13.

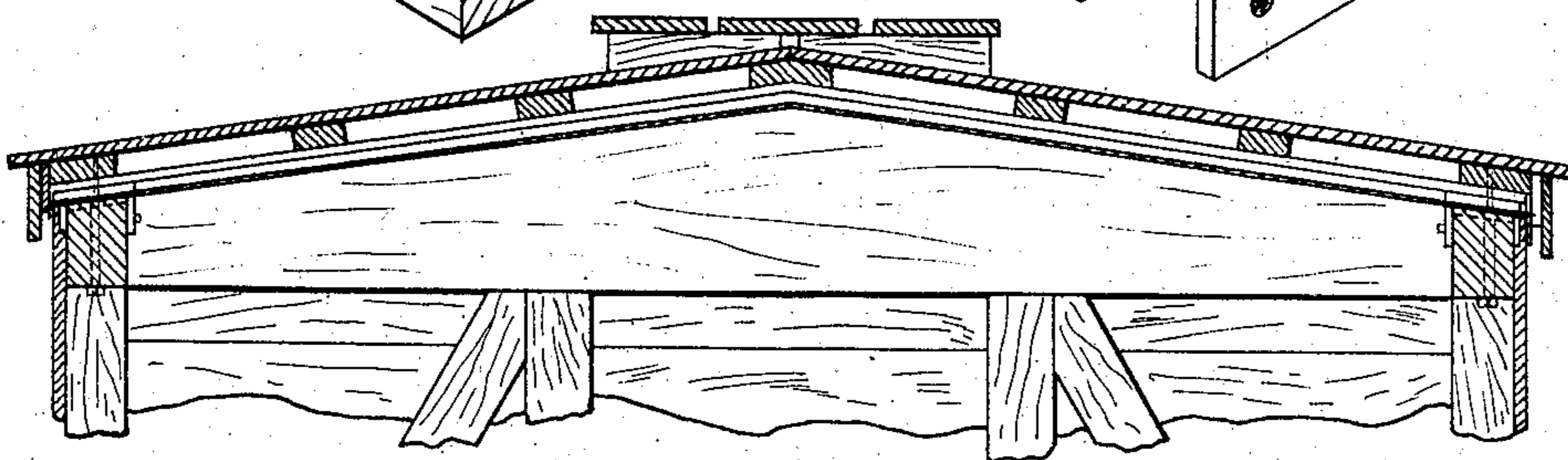


FIG. 14.

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UNITED STATES PATENT OFFICE.

SAMUEL HERBERT, OF DETROIT, MICHIGAN, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO WILLIAM D. THOMPSON, OF DETROIT, MICHIGAN, AND C. B. HUTCHINS & SONS, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

CAR-ROOF.

SPECIFICATION forming part of Letters Patent No. 790,054, dated May 16, 1905.

Application filed December 7, 1903. Serial No. 184,195.

To all whom it may concern:

Be it known that I, SAMUEL HERBERT, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Car-Roofs, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to new and useful improvements in car-roofs, and particularly to the new and improved construction of the carlines, the roof-plates, the ridge-pieces, and caps, and, further, in the construction and arrangement and combination of the various parts, as will be more fully hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of the two carlines arranged in the position they are placed in the roof with the ridge-pieces, roof-plates, and cap, some of the parts being partly broken away and in section to more clearly illustrate the construction. Fig. 2 is a perspective view of one of the roof-plates. Fig. 3 is a vertical section through a car having my roof applied thereto. Fig. 4 is a cross-section on line *xx*, Fig. 3, through one of the carlines. Fig. 5 is a similar section through a slightly-modified form. Fig. 6 is a similar section through the end portion of the car; and Fig. 7 is an enlarged section through one of the ridge-plates, showing the cap for the carlines and roof-plates and the wooden roof in section. Fig. 8 is a perspective view of the under side of one of the ridge-caps, showing in dotted lines a slightly-modified construction. Fig. 9 is a transverse section through a portion of the roof, showing a slightly-modified form of carline and a protecting-plate for the wooden filling in the carline. Fig. 10 is a vertical section through the edge of a car-roof, showing the manner of forming the end construction of this modified form. Fig. 11 is a section similar to Fig. 9, showing another slightly-modified form of carline. Fig. 12 is a per-

spective view showing the preferred manner of connecting this form of carline to the side plates. Fig. 13 is a detached perspective view of the casting used in making this connection; and Fig. 14 is a section through a complete roof, showing a carline illustrated in Figs. 11 and 12.

A represents one of my carlines, which is preferably of the form shown in Fig. 1; but the exact cross-section of it is not material. In this case I show it as consisting of a plate *a*, having the two separate flanges *b* on its upper face, the plate extending laterally outside the flanges to form the lateral portion *c* on each side. This carline I preferably make in a single piece extending over the car and secured to the side plates B of the car by bolts C, extending through suitable apertures in the ends of the carlines, as plainly shown in Fig. 1. These bolts may also and preferably do extend through the purlins D.

At the ridge I preferably place the ridge-pieces E, which may be as shown, consisting of a horizontal plate *d* and a rib or flange *e* centrally thereon. These ridge-pieces are of such length that they extend between the adjacent carlines, their ends resting upon the lateral portion *c* thereof, as plainly shown in Fig. 1.

F represents the roof-plates. These roof-plates are of suitable length, preferably to extend from the ridge to the side of the car and are provided at each side preferably with the hooks G, which are adapted to engage over the adjacent flanges of the adjacent carlines, and at their upper ends are provided with a hook H, adapted to engage over the flange *e* of the ridge-piece. While I preferably employ this hook construction, I may simply upturn the end of the roof-plates to form the flange I, lying against the side of the flanges *b* on the carlines, as shown in Fig. 5; but I prefer the hook construction.

In the lateral portions *c* of the carlines I preferably provide a groove *h*, which in case any water should leak through the roof and

pass the joints of the roof-plates it will enter this groove and run to and be discharged at the side of the car.

When I form the roof-plates with the hooks 5 G, I desire that the bend of the hooks shall be spaced from the flanges *b*, for the reason that the vertical vibration which occurs when the car is in motion has a tendency to wear through the bend portion of the hooks very 10 quickly, and if the edges of the plate are supported on the lateral portions *c* of the carlines and the hooks are made sufficiently high to clear, so that the bend in the hook will not engage with the top of the flange, as shown 15 in Fig. 4, the roof-sheets will be carried on the lateral portions and engage one side of the flanges, and thus wear will not take place. At the intersection of the ridge-pieces and carlines I place the caps J, which are preferably of the construction shown in Fig. 8. 20 In this construction the cap is provided with the lugs *k* separated by the grooves *l*, the legs being sufficiently far apart to span the two flanges of the carline. I may, however, provide these plates with the depending flanges 25 *m*, leaving only grooves or passages *n* for the separate flanges of the carline. The cap being placed in position, as shown in Fig. 7, the plate is passed through the cap and through 30 the carline, suitable apertures being provided therefor in the carline and this clamps the carline, ridge-pieces, and roof-plates all together at each point of intersection.

The wooden roof may be attached in any 35 desired manner; but I prefer to apply the roof-strips M, fitted in between the flanges of the carline, to which the purlins N may be nailed or bolted and upon which the roof-boards O may be nailed. I also preferably 40 place a wooden ridge-pole P along the ridge, as shown in Fig. 3.

Q is the ordinary running-board, which may be of any desired construction.

The end roof-plates I preferably provide 45 with a depending flange R at its edge extending down the side of the car. Along the side of the car may be placed a suitable facing S, which should be spaced from the car by separate blocks T a sufficient distance to allow 50 any water which falls upon the roof-plates to find ready exit.

Instead of putting up the roof-strips I may omit them and bolt the purlins N, as by bolts U, Fig. 5, directly to the carlines.

55 In Fig. 9 I show a slightly-modified form of carline consisting of a channel-bar U', having a plate U'' riveted to the under side. This makes, in effect, the same structure as shown in Fig. 5, except that I may build it up from 60 ordinary merchantable iron instead of having it specially rolled or made, as would be required for the carline shown in Fig. 5. In this construction the lateral flanges upon which the edges of the plates F rest are formed by 65 making the plate U'' wider than the channel-

bar, and thus projecting beyond the edges to form the flanges or extensions U'' for the purpose described. In this construction also I have shown a cap-plate V, preferably of sheet-metal, having depending flanges *a*, which may 70 be placed over the filling-strips M and over the flanges *b* and the hooks at the edges of the plate F, so that in case any water should leak through the wooden roof it will not get into contact with the wooden filling-strips M, these 75 caps extending clear to the lower edge of the roof, as shown in Fig. 10. In this construction I may make the plate U'' longer than the channel-bar and bend it down to form the flange V' across the face of the side plates B, as shown 80 in Fig. 10, and would act as a better tie between the sides of the car through the medium of the carlines. In this construction I may and preferably do notch out the siding V'' to receive this flange V'. 85

In Fig. 11 I show the carline as a plain channel-bar W and show the same cap V in position over the filling-strips M. In this construction I preferably employ a block W', 90 having flanges *b* engaging on opposite sides of the side plates B and having a socket or recess *c* to receive the end of the channel-bar W, to which it may be bolted by a bolt *d*.

In all these constructions I may, if desired, omit the ridge-pieces E and extend the flange- 95 plates F continuously from side to side, as shown in Fig. 14, in which case the purlins and ridge-pole will make the lateral connection between the carlines.

What I claim as my invention is— 100

1. In a car-roof, carlines including spaced upwardly-extended members, a bottom plate having portions extending laterally beyond said members, and roofing-plates resting upon said extended portions. 105

2. In a car-roof, a carline, a flange on the upper face thereof, and lateral portions on the opposite sides of the flange in line with the bottom of the flange, roofing-plates resting on said lateral portions, and having interlocking 110 engagement with the flange on the carline.

3. In a car-roof, a metallic carline, separated flanges on the upper face thereof, lateral portions outside the flanges, roofing-plates resting on such lateral portions, and having 115 hooks engaging the flanges on the carline.

4. In a car-roof, a metallic carline, flanges on the upper face thereof, flat lateral portions outside the flanges having drainage-grooves therein, and coextensive therewith, and the roofing-plates overlapping said lateral portions. 120

5. A car-roof comprising carlines extending across the car, flanges on the upper face thereof, lateral portions beside the flanges, ridge-pieces supported on the carlines at the ridge, having an upstanding flange, and roofing-plates overlapping the lateral portions of the carlines and hooks on their upper edges engaging over the flange of the ridge-pieces. 125 130

6. A car-roof comprising metallic carlines, separated flanges on the upper face thereof and lateral portions outside the flanges, ridge-pieces supported on the lateral portions of adjacent carlines, and roofing-plates supported on the carlines and ridge-pieces.

7. A car-roof comprising metallic carlines extending across the car, separated flanges on the upper face thereof, and lateral portions outside the flanges, ridge-pieces supported on the lateral portions of adjacent carlines, having a vertical flange, roofing-plates supported on the carlines and ridge-pieces, and caps at the intersection of the ridge-pieces and carlines having recesses to receive the upstanding flanges.

8. In a car-roof, carlines having upright flanges on their upper faces, and lateral portions outside the flanges, of roofing-plates resting on said lateral portions, and hooks on said plates engaging over said flanges, but of such height that the bends of the hooks do not rest on the top of the flanges.

9. In a car-roof, a carline, having a flange on the upper face thereof, and a roofing-plate having a hook engaging the flange, the bend of the hook being spaced from the upper surface of the flange.

10. In a car-roof the combination with the carlines having upright flanges thereon and lateral projections on opposite sides thereof, of the metallic roofing-plates resting upon said lateral projections and having corresponding hooks engaging said flanges, a wooden filling-block between the flanges, and a cap V extending over the flanges of the carlines and having downwardly-extending flanges at the edges substantially as and for the purpose described.

11. A car-roof, a carline consisting of a

channel-bar and a plate U" secured to the base thereof, and extending at each side beyond the edges of the channel-bar.

12. A car-roof comprising carlines having a flange on the upper surface thereof, and lateral projections on the opposite sides thereof, a ridge-piece supported on the lateral portions of adjacent carlines, and roofing-plates supported on the carlines and ridge-pieces.

13. A car-roof comprising carlines having a flange on the upper surface thereof, and lateral portions on the opposite sides thereof, a ridge-piece supported on the lateral portions of adjacent carlines, and roofing-plates supported on the carlines, ridge-pieces, and caps at the intersection of the roof-plates and ridge.

14. In a car-roof, a carline, separated flanges on the upper face thereof, a plate on the bottom thereof having portions extending laterally beyond said flanges, and roofing-plates resting upon said lateral extensions.

15. In a car-roof, a carline, separated flanges on the upper face thereof, a plate on the bottom thereof having portions extending laterally beyond said flanges, means for securing said plate to the bottom of said carline, and roofing-plates resting upon said lateral extensions.

16. In a car-roof, the combination of a plate U", of upstanding flanges secured to the upper face thereof away from the edges leaving marginal lateral portions beyond the upstanding flanges, and roofing-plates having their edges resting on such marginal portions.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL HERBERT.

Witnesses:

H. C. SMITH,
JAS. P. BARRY.