

Oct. 7, 1930.

E. H. EWERTZ ET AL

1,777,880

MEANS FOR COVERING CARGO HATCHES

Filed Nov. 20, 1928

2 Sheets-Sheet 1

Fig. 1.

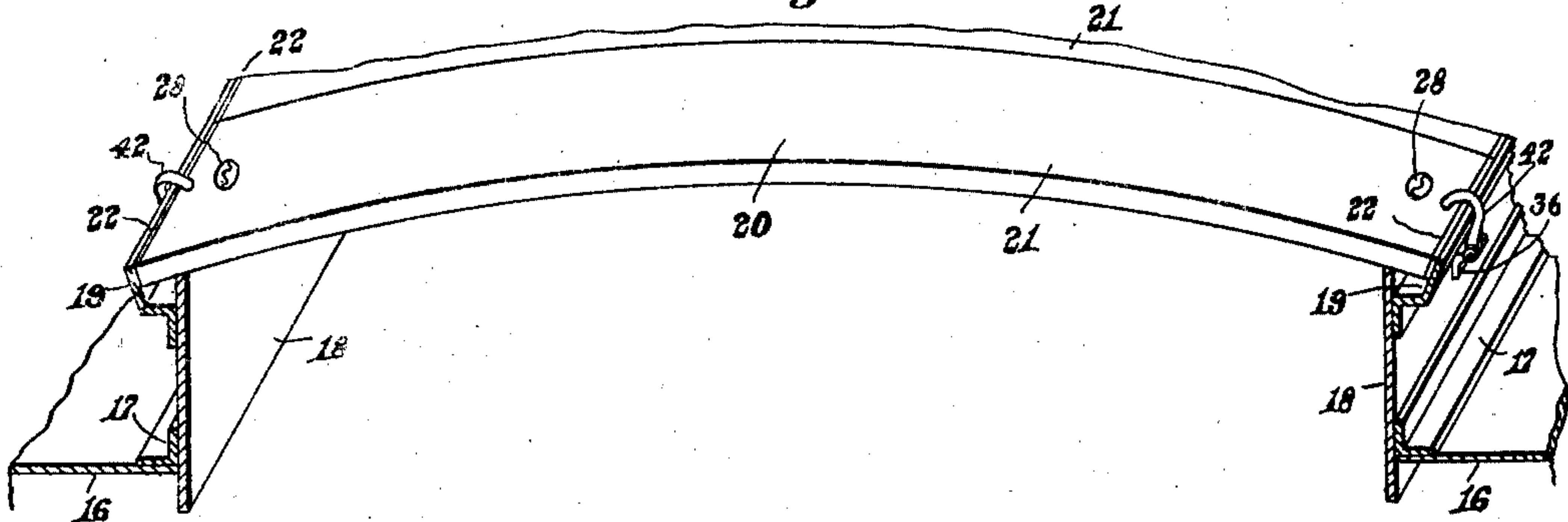


Fig. 2.

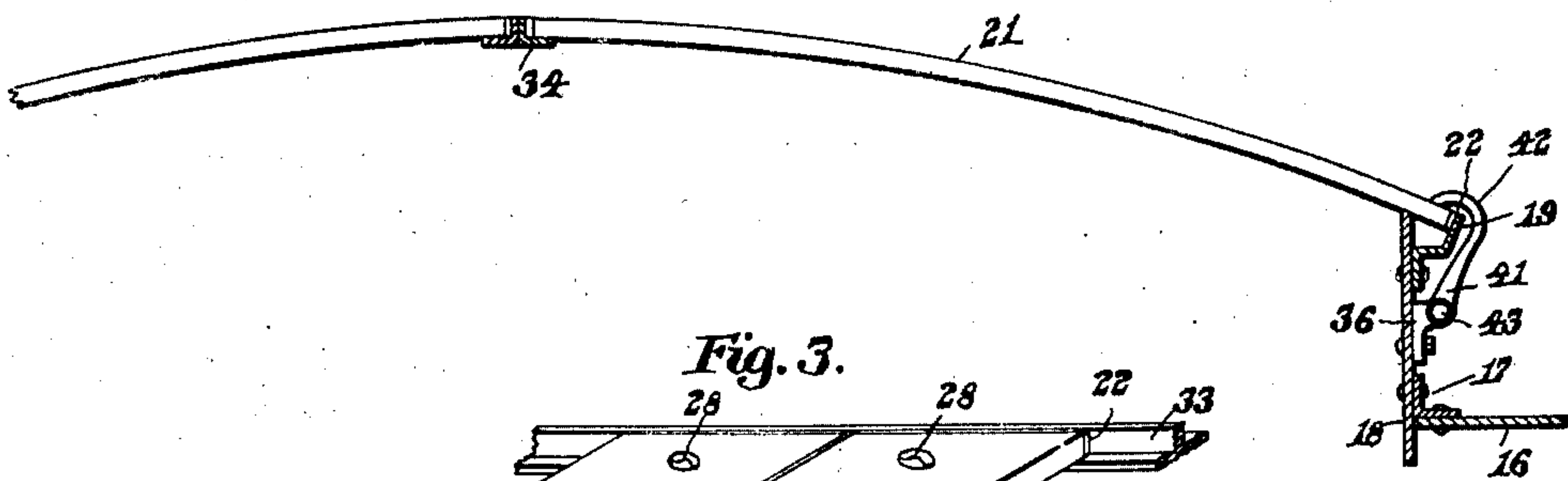


Fig. 3.

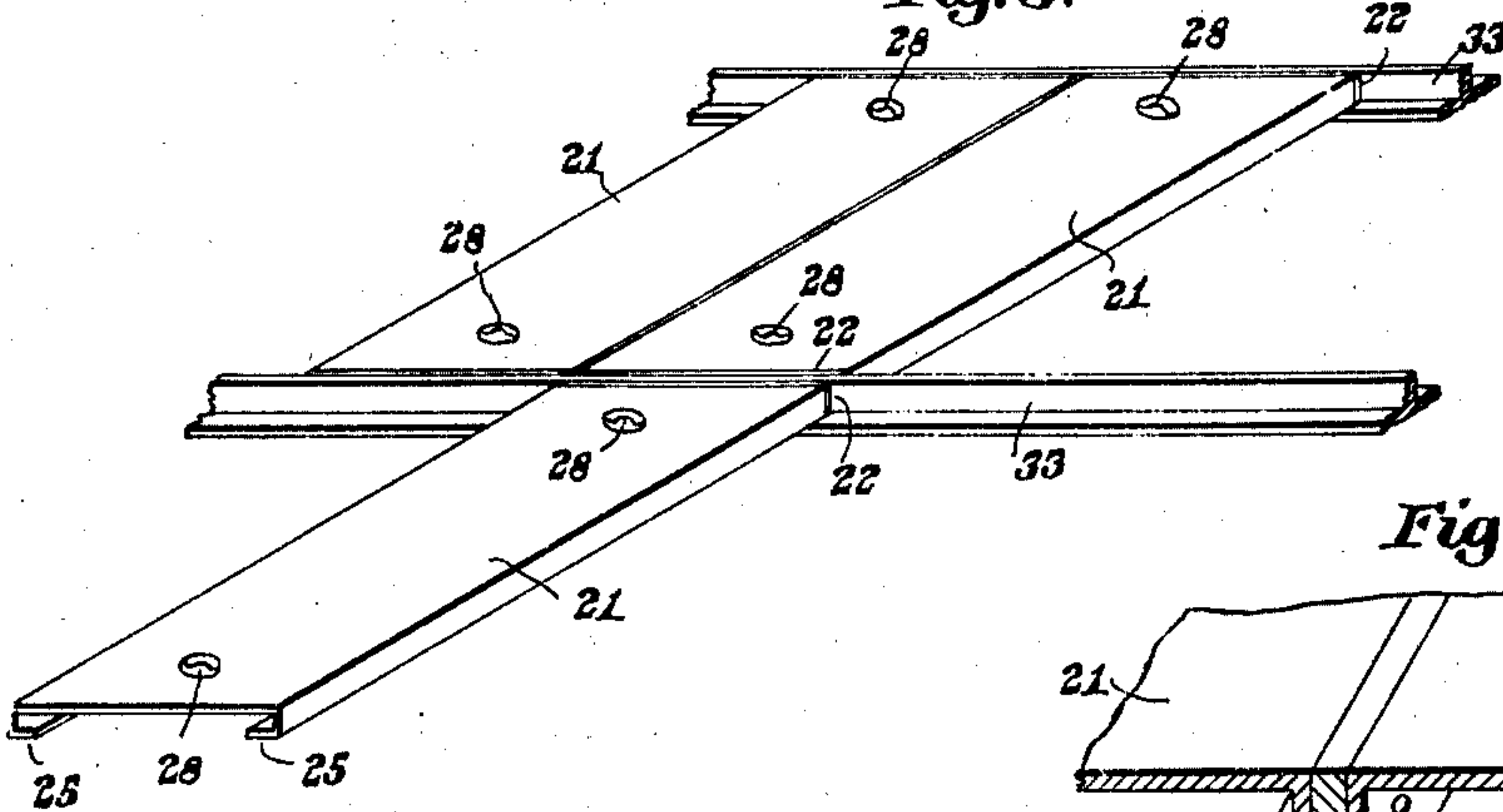
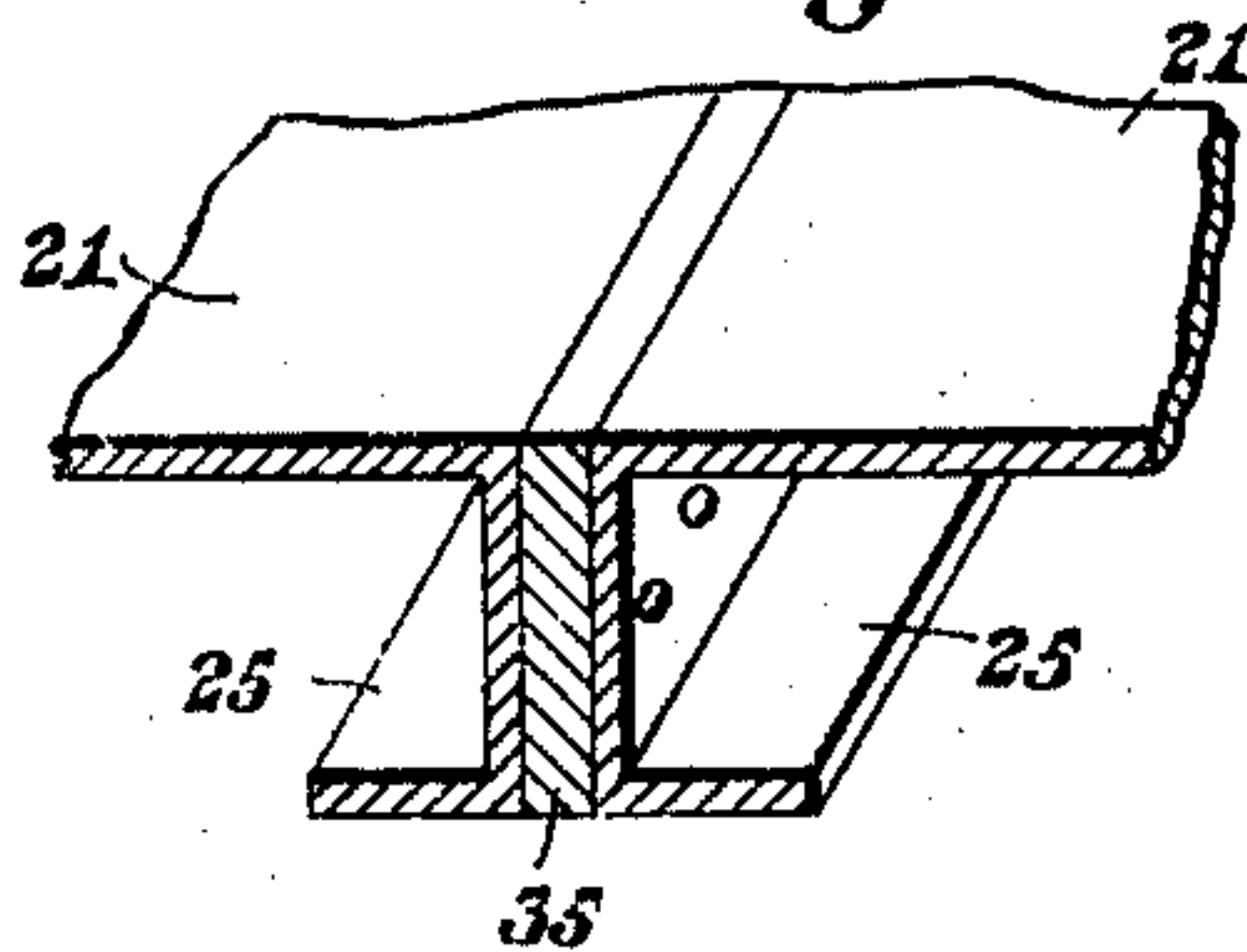


Fig. 4.



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2 Sheets-Sheet 2

Fig. 5.

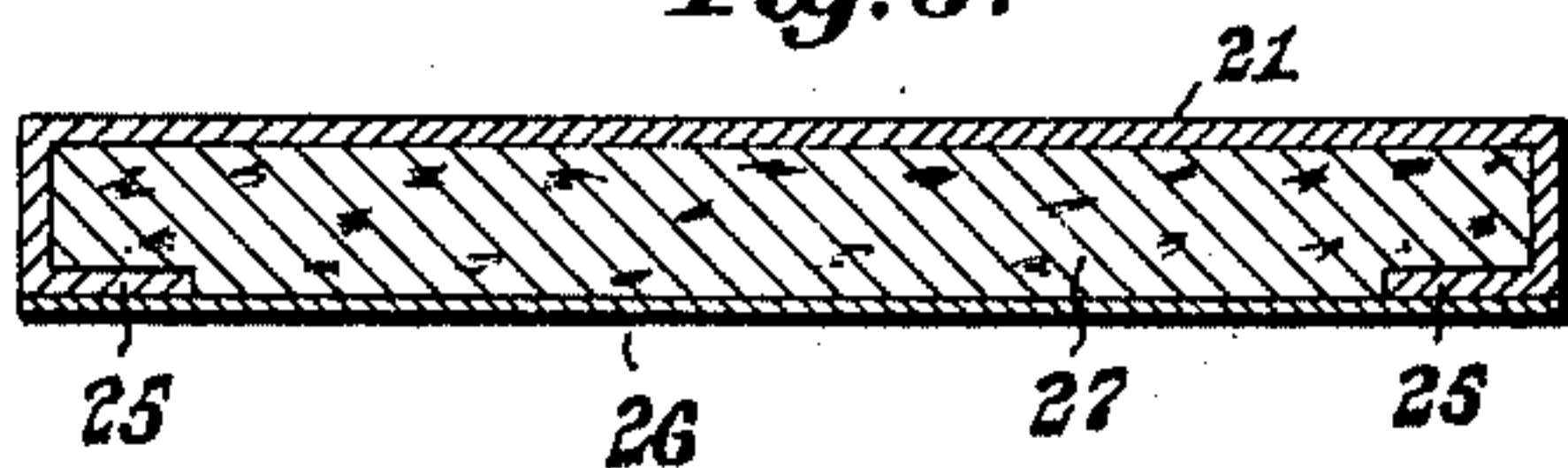


Fig. 6.

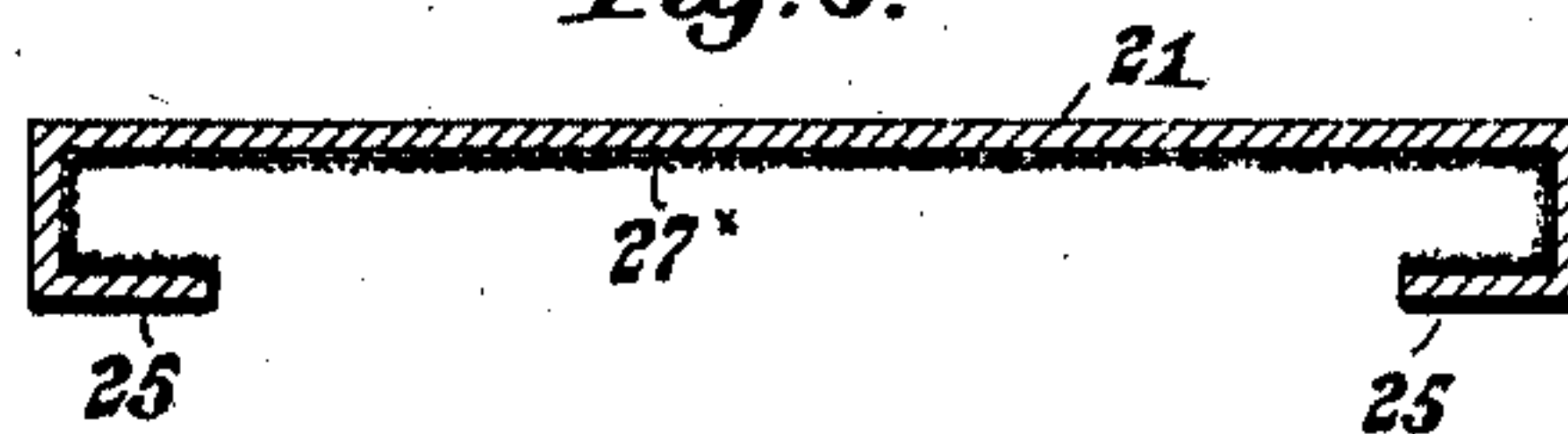


Fig. 7.

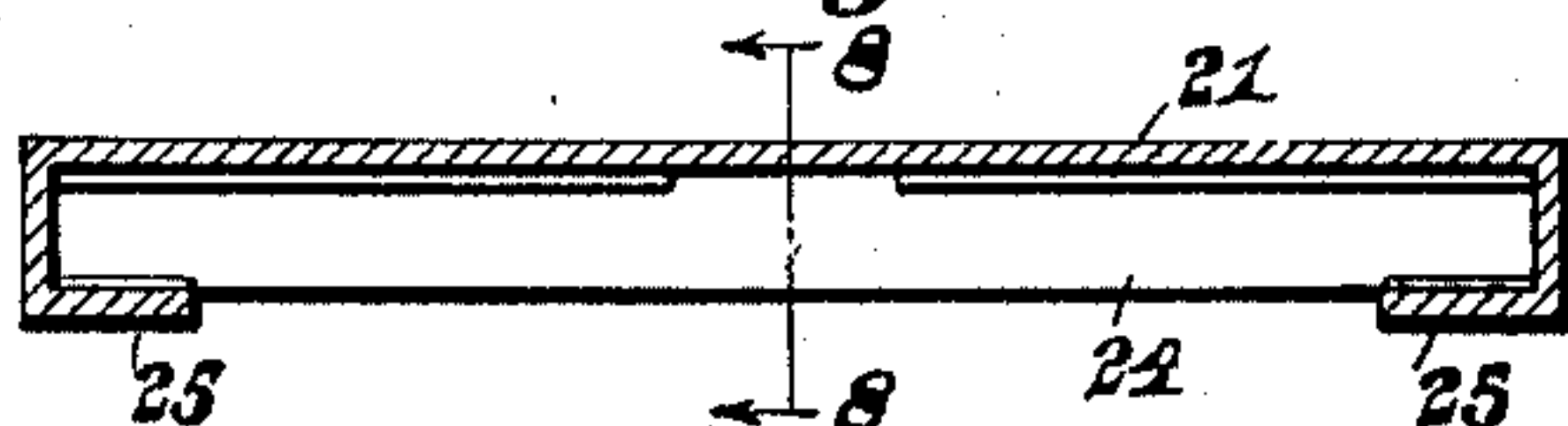


Fig. 8.

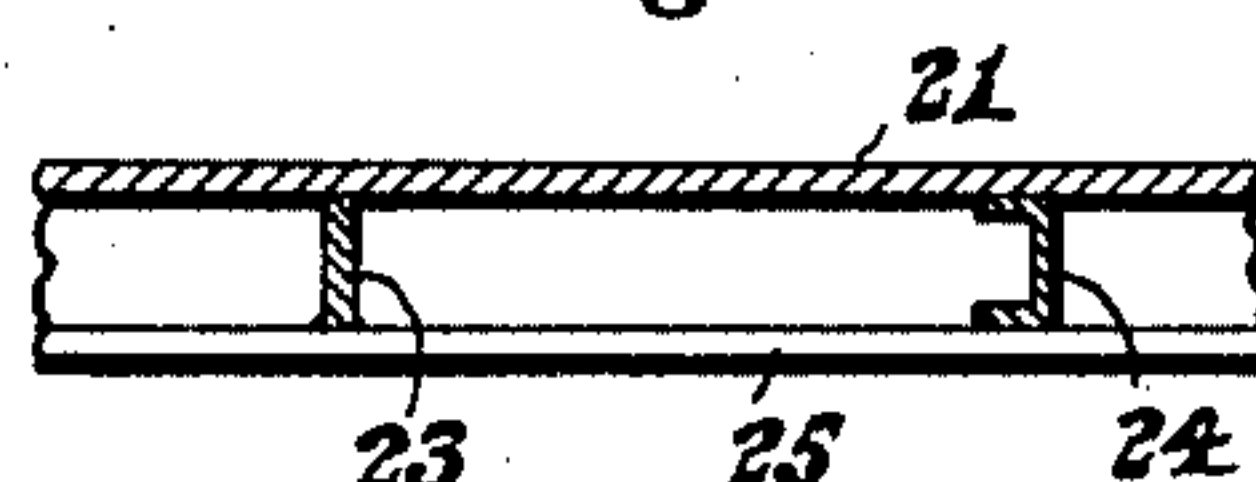


Fig. 9.

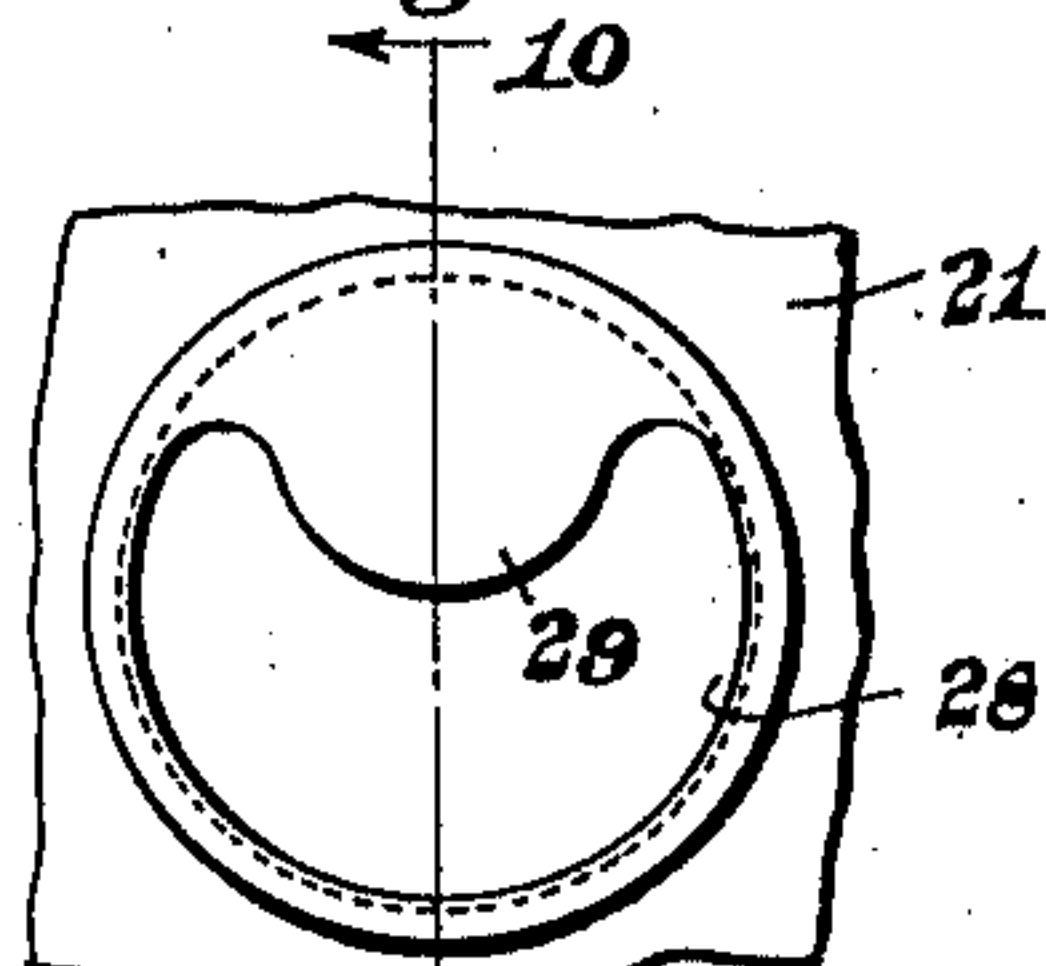


Fig. 10.

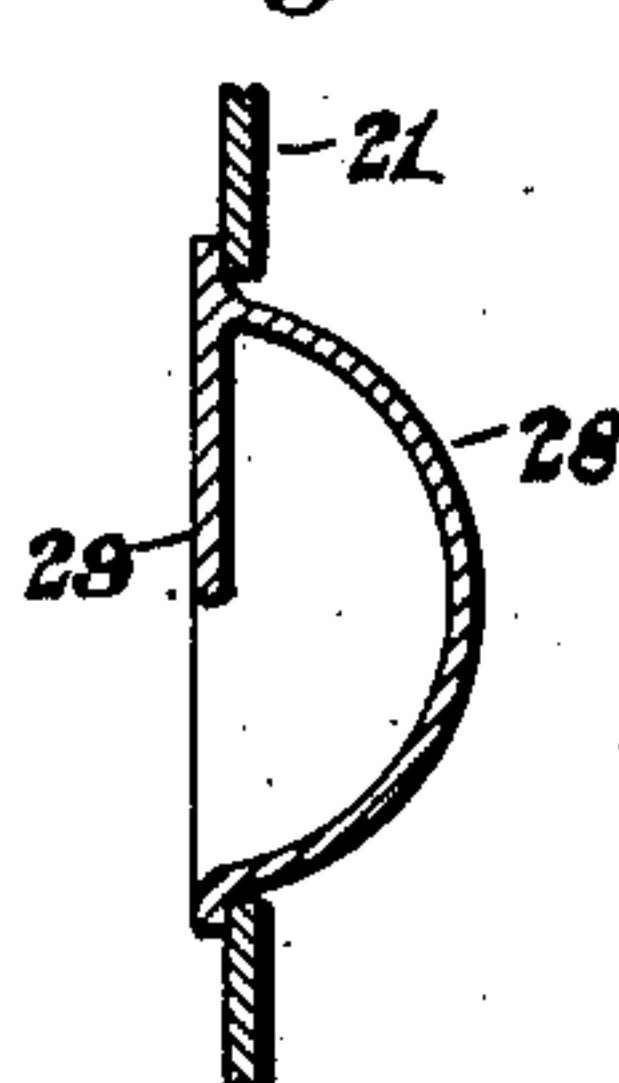


Fig. 13.

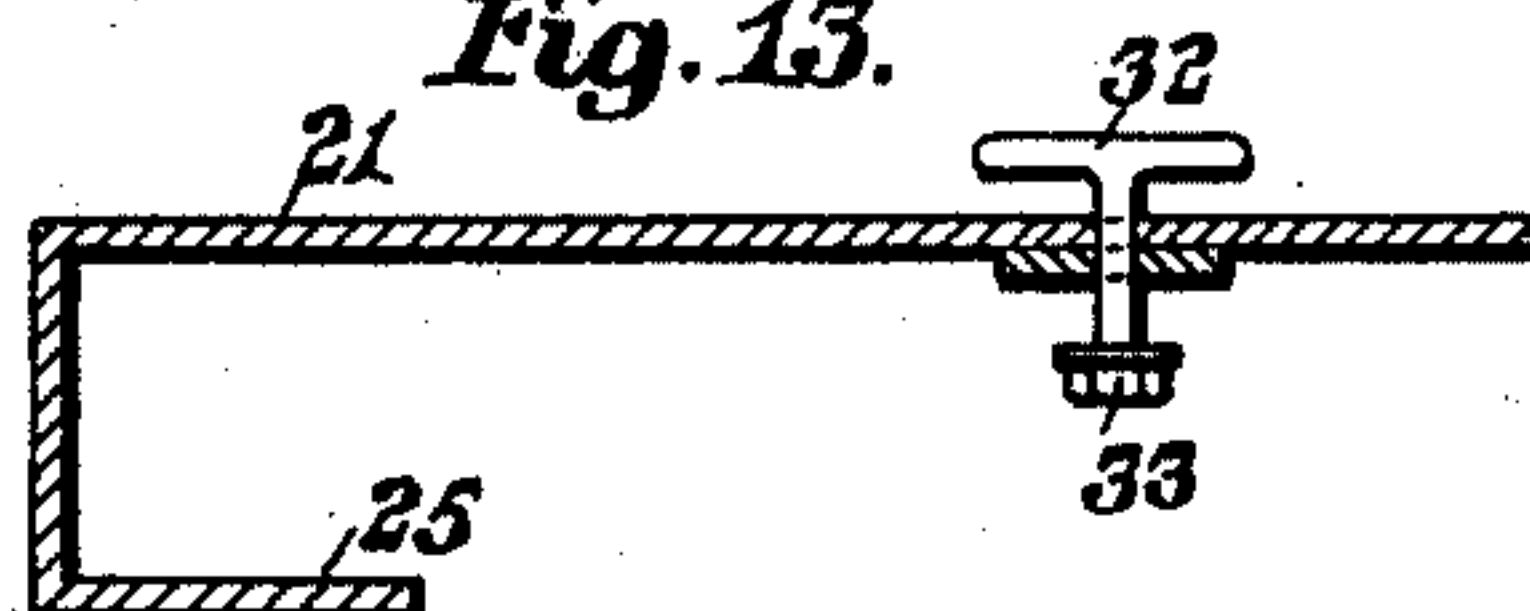


Fig. 11.

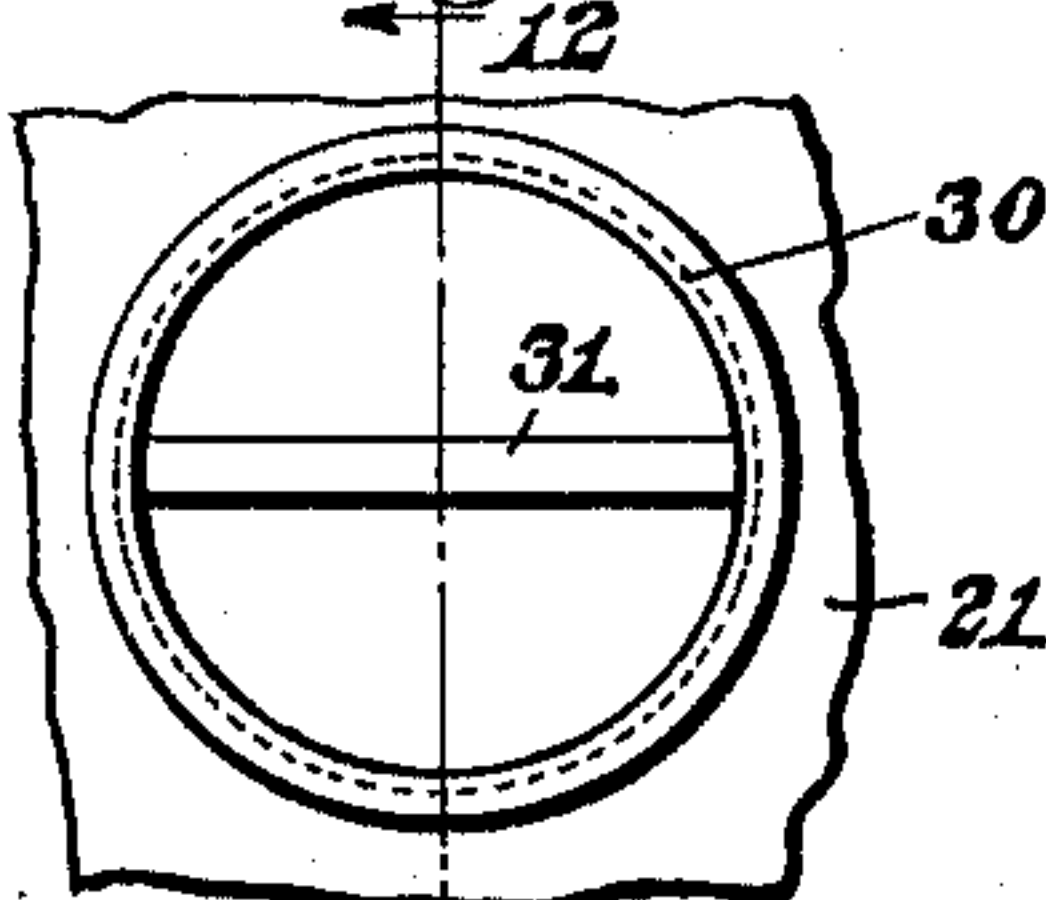


Fig. 12.

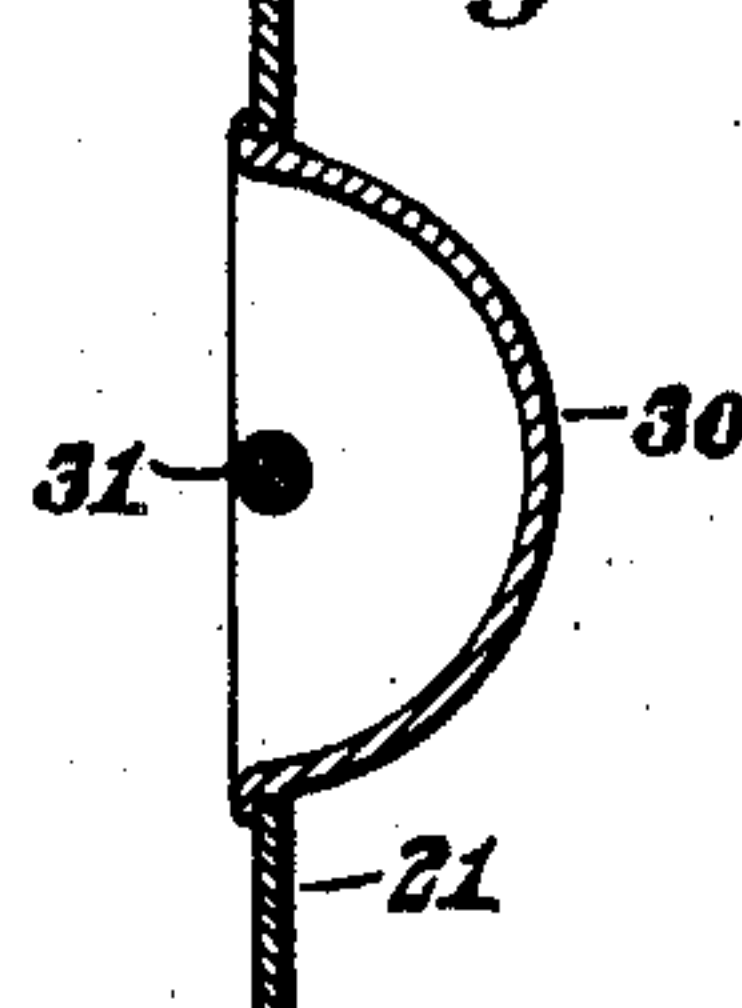


Fig. 14.

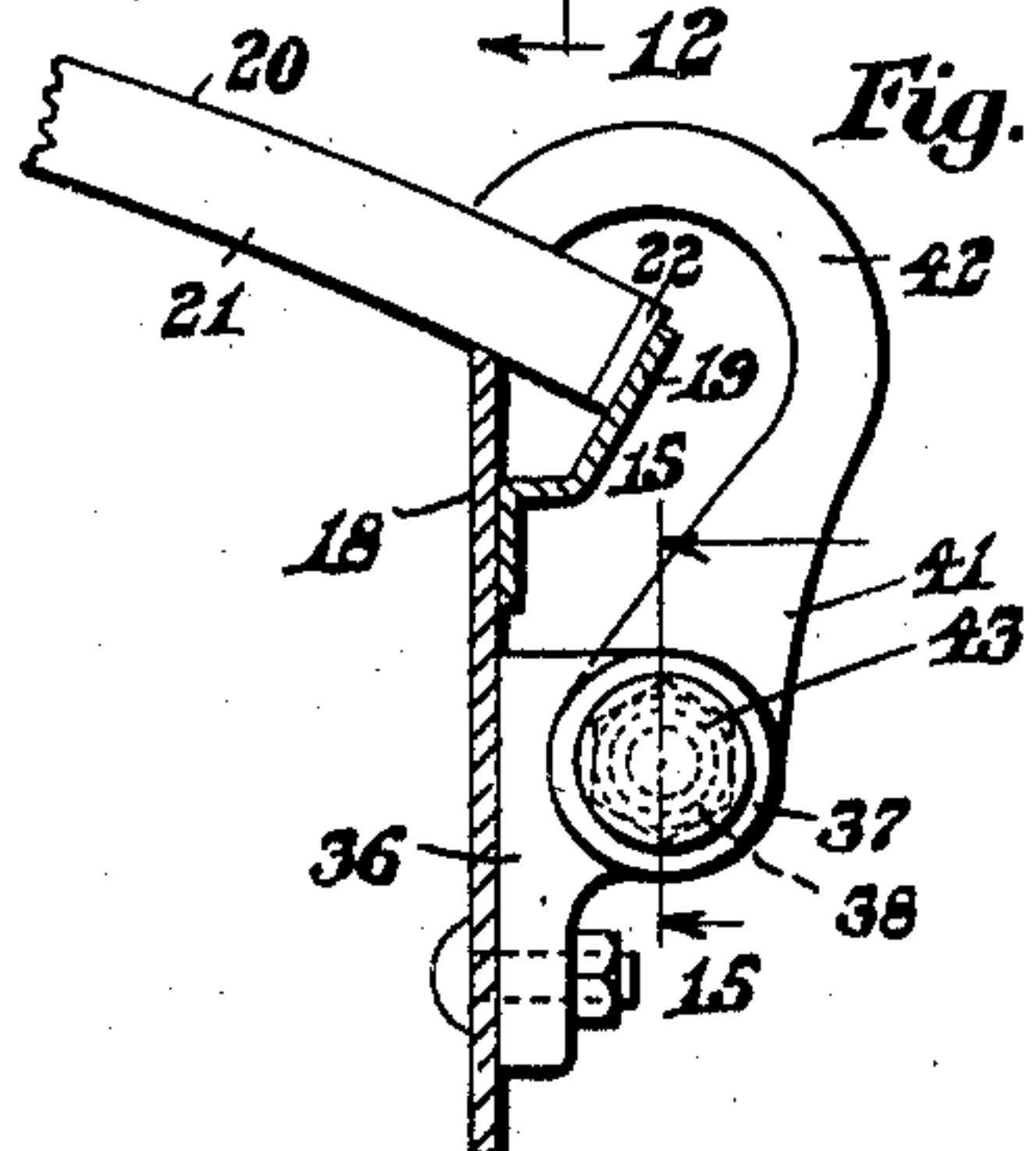
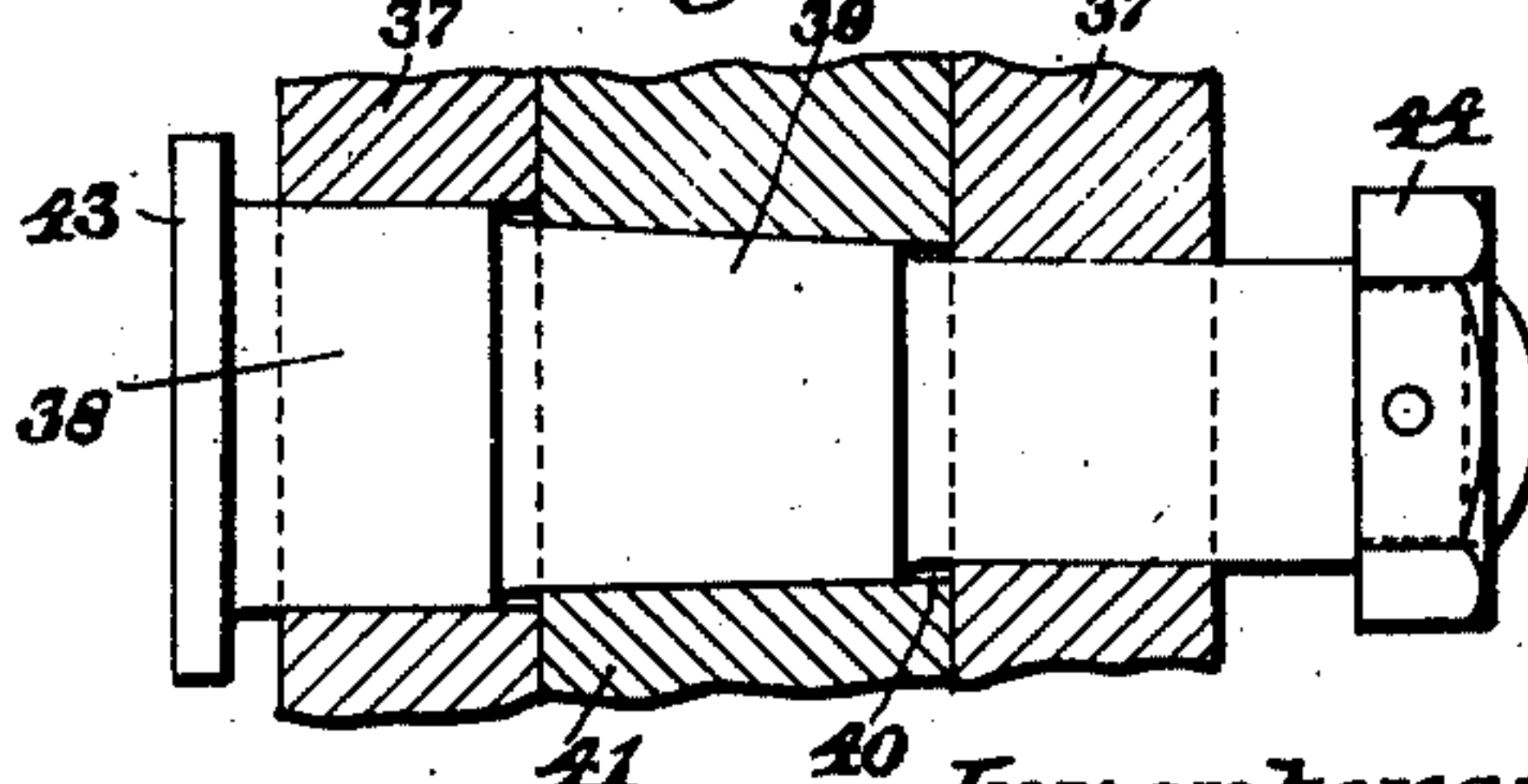


Fig. 15.



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UNITED STATES PATENT OFFICE

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MEANS FOR COVERING CARGO HATCHES

Application filed November 20, 1928. Serial No. 320,688.

This invention relates to cargo hatches for vessels of all types and has for its object the provision of means for constructing the covers of said hatches from a plurality of units, each unit having as its base a light channel section of steel known as "metal lumber."

Another object of the invention is the provision of means of locking the cover to the frame of the hatch.

These objects are attained by the mechanisms illustrated in the accompanying drawings.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized, and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described except as required by the scope of the appended claims.

Of the drawings

Figure 1 represents a perspective partially in section of a portion of a cargo hatch and its cover and embodying the principles of the present invention.

Figure 2 represents a section of a cargo hatch having a central support for the cover.

Figure 3 represents a perspective of a portion of a large cargo hatch with a central support and with flat covers therefor.

Figure 4 represents a section showing a stiffening plate interposed between two cover units and welded thereto.

Figure 5 represents a section of one of the cover units filled with cork or similar material.

Figure 6 represents a section of a cover unit the interior face of which is provided with a coating of ground cork.

Figure 7 represents a section of a cover unit

with stiffening plates extending transversely thereof.

Figure 8 represents a section of a portion of same on line 8, 8, on Fig. 7.

Figure 9 represents a plan of one form of handle adapted to be welded to one end of a cover unit.

Figure 10 represents a section of same on line 10, 10, on Fig. 9.

Figure 11 represents a plan of another form of handle adapted to be welded to the ends of the cover units.

Figure 12 represents a section of same on line 12, 12, on Fig. 11.

Figure 13 represents a section of a portion of a cover unit with a movable T-handle mounted therein.

Figure 14 represents a section showing in elevation a clamp member for retaining the cover on the top of the hatch frame, and

Figure 15 represents an enlarged section on line 15, 15, on Fig. 14.

Similar characters indicate like parts throughout the several figures of the drawings.

In the drawings, 16 is the deck of a vessel having secured thereto by angle irons 17 the hatch frame 18.

To the outer face of this frame 18 near the top thereof is secured an inclined flanged member 19 against the inner face of which the ends of the cover sections 20 are adapted to bear.

The covers are made of a plurality of units, each unit consisting of a thin metal channel section 21 known in the trade as "metal lumber".

A cross section of these channel sections is shown in Figs 5, 6 and 7, of the drawings.

The ends of each channel section 21 are closed by metal plates 22 as shown in Figs. 1, 2 and 3, which may be welded or otherwise united to the channel section.

Intermediate the end plates 22 each channel section 21 may have disposed therein stiffen-

ing plates 23 or 24, (see Figs. 7 and 8) which may be welded, riveted or otherwise secured to the channel sections 21.

To the inner flanges 25 of each channel section 21 may be welded or otherwise secured a steel plate 26 which gives additional rigidity to the channel section.

The interior of each channel section may be filled with cork 27 which will prevent the sections from sweating due to temperature changes, this cork filling being shown in Fig. 5 of the drawings.

If undesirable to fill the entire interior of the channel section with cork, the inner faces of these channel sections may be painted and ground cork 27* applied to the faces before the paint dries.

This coating of ground cork will produce substantially the same result as if the entire interior of the channel sections were filled with cork.

A handle is provided for each channel section near each end thereof, these handles being provided to lift the cover sections from the hatch when it is desired to load or unload the cargo.

The preferred form of handle is that shown in Figs. 9 and 10, this form consisting of a cup-shaped member 28 which is inserted through a hole in the channel section 21 and is welded or otherwise secured thereto.

This cup-shaped member has a gripping portion 29 and when this cup-shaped member is secured to the channel section the outer face projects slightly beyond the upper face of the channel section.

Due to this construction the various channel sections 21 may be readily removed from the hatch frame 18 and stacked.

Other forms of handles may be used, as for instance, the cup-shaped member 30 having a gripping rod 31 extending across the outer end thereof, this form being shown in Figs. 11 and 12 of the drawings.

Still a different form may be used if desired, this form being shown in Fig. 13 of the drawings.

It consists of a T-shaped member 32 which is movable endwise in an opening in the channel section 21 and has a head 33 on its inner end to limit the outward movement thereof.

Ordinarily the T end of this handle would rest upon the outer face of the channel section 21 but may be lifted until the head 33 contacts with the inner face of the channel section, at which time the T portion 32 may be readily gripped by the hand of the operator.

The channel sections may be of any desired length or width to suit different conditions and may have a curvature as indicated in Fig. 1, or be perfectly flat as indicated in Fig. 3 of the drawings.

Usually the flat channel sections shown in

Fig. 3 are used in large hatches and rest upon the flanges of strongbacks 33 extending from the opposite walls of the hatch.

Even when the curved channel sections are used as indicated in Fig. 2, it is sometimes desirable to have the inner ends of the sections rest upon angle bars 34 as shown in said figure.

The channel sections 21 may be used independently of each other or may have their adjacent side faces welded or otherwise secured to each other.

Where it is desired to have considerable additional rigidity to the hatch cover, a steel plate 35 may be interposed between two adjacent sections and welded or otherwise secured to both sections as indicated in Fig. 4 of the drawings.

To the outer face of the hatch frame 18 are secured a plurality of bifurcated brackets 36 having ears 37 through which extends a pivot bolt 38, as indicated in Fig. 15.

This pivot bolt has a tapered section 39 which is seated in a tapered opening 40 formed in a clamp member 41.

This clamp member 41 has a curved portion 42 which is adapted to be moved over the top of the cover sections 21 and force the cover section downwardly against the upper edge of the hatch frame 18 and also against the inclined flange 19.

When in this position it is desirable to lock the clamping member to prevent its movement about the pivot 38.

This is accomplished by providing limited movement of the pivot member 38 within the ears 57.

The pivot bolt 38 is provided with an enlarged head 43 which may be hit by any suitable tool to force the tapered portion 39 into the tapered opening 40 of the clamping member and when thus forced in the clamping member is locked from rotation about the axis of the bolt 38.

The opposite end of the bolt 38 is provided with a collar 44 which prevents the accidental removal of the bolt when said bolt is moved in the opposite direction.

It is self-evident that the covers 20 may be made up of any number of sections 21 which may be of various widths and lengths to accommodate them to various sizes of openings to be covered.

These channel sections while made of steel are comparatively light but when reenforced with the end plates 22 and the intermediate stiffening plates 23 or 24 are very rigid and combining as they do light weight and strength they are far superior to the wooden covers now in general use.

One great advantage of covers thus constructed is that they are absolutely fireproof.

The invention is not limited to the various forms of covers shown in the drawings as it is perfectly obvious that a great variety of

similar designs may be produced by means of these "metal lumber" sections.

It is believed that the invention will be understood from the foregoing without further description.

Having thus described our invention, we claim

1. A hatch cover built up of a plurality of metal channel sections having at their open sides flanges extending toward each other with a steel plate welded to said flanges each section having a filling of cork retained therein by said plate.

2. A hatch cover built up of a plurality of channel sections formed of thin metal and each section provided at its opposite ends with cup-shaped members welded thereto and extending into the interior of said sections, each member having at its outer end a hand-gripping portion extending transversely thereof.

3. A hatch frame; a cover therefor built up of a plurality of parallel and abutting metal channel sections; and an inclined flange secured to the outer face of the hatch frame and extending to the top of said frame, said flange forming an abutment against which the ends of said sections are adapted to bear.

4. A hatch frame; a cover therefor built up of a plurality of parallel and abutting metal channel sections; an inclined flange secured to the outer face of the hatch frame and extending to the top of said frame, said flange forming an abutment against which the ends of said sections are adapted to bear; and means on said hatch frame and movable into engagement with the upper faces of said cover sections to lock them in position.

5. A hatch frame; a cover therefor built up of a plurality of parallel and abutting metal channel sections; an inclined flange secured to the outer face of the hatch frame and extending to the top of said frame, said flange forming an abutment against which the ends of said sections are adapted to bear; brackets on opposite sides of said hatch frame; and clamping members pivoted to said brackets and adapted to be forced over the upper faces of said cover sections.

6. A hatch frame; a cover therefor built up of a plurality of parallel metal channel sections; an inclined flange secured to the outer face of the hatch frame and extending to the top of said frame, said flange forming an abutment against which the ends of said sections are adapted to bear; brackets on opposite sides of said hatch frame; clamping members pivoted to said brackets and adapted to be forced over the upper faces of said cover sections; and means for locking said clamping members in adjusted position.

7. A hatch frame; a cover therefor built up of a plurality of parallel metal channel sections; an inclined flange secured to the outer face of the hatch frame and extending

to the top of said frame, said flange forming an abutment against which the ends of said sections are adapted to bear; bifurcated brackets on opposite sides of said hatch frame; clamping members interposed between the ears of said brackets; and tapered pivot pins extending through said ears and clamping members.

8. A hatch frame; a cover therefor built up of a plurality of parallel metal channel sections; an inclined flange secured to the hatch frame against which the ends of said sections are adapted to bear; bifurcated brackets on opposite sides of said hatch frame; clamping members interposed between the ears of said brackets; and pivot pins extending through said ears and clamping members, each pin being provided with a tapered portion seated in an opening in its clamping member and having limited movement endwise in said ears.

9. A hatch frame; a cover therefor built up of a plurality of parallel metal channel sections; brackets on opposite sides of said hatch frame; clamping members pivoted to said brackets and adapted to be forced over the upper faces of said cover sections; and means for locking said clamping members in adjusted position.

10. A hatch cover built up of a plurality of abutting metal channel sections welded together and having at their open sides flanges extending toward each other.

11. A hatch cover built up of a plurality of abutting metal channel sections welded together and having at their open sides flanges extending toward each other and provided with closing plates welded to said flanges.

12. A hatch cover built up of a plurality of abutting metal channel sections welded together with closing plates at the ends thereof, and intermediate stiffening plates welded to the inner faces of said sections and extending transversely thereof.

13. A hatch cover built up of a plurality of metal channel sections with their abutting sides welded together and provided with closing plates welded to the ends thereof, and intermediate stiffening plates extending transversely of each section with their edges welded to the inner faces of said section.

14. A hatch cover built up of a plurality of parallel metal channel sections with their abutting sides welded together and each section having a reinforcing steel plate interposed between and welded to the side flanges thereof.

15. A hatch cover built up of a plurality of parallel channel sections of thin metal welded together and having relatively thick reinforcing steel plates between said units and welded thereto.

16. A hatch cover built up of a plurality of metal channel sections welded together

and having at their open sides flanges extending toward each other and provided with a closing plate welded to the outer faces of said flanges.

- 5 17. A hatch cover built up of a plurality of metal channel sections welded together and having at their open sides flanges extending toward each other and provided with a closing plate welded to the outer faces of said
10 flanges and transverse reinforcing plates within each section and welded thereto.

Signed by us at New York city, N. Y., this 10th day of November, 1928.

ERIC H. EWERTZ.
JOHN T. DALCHER.

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