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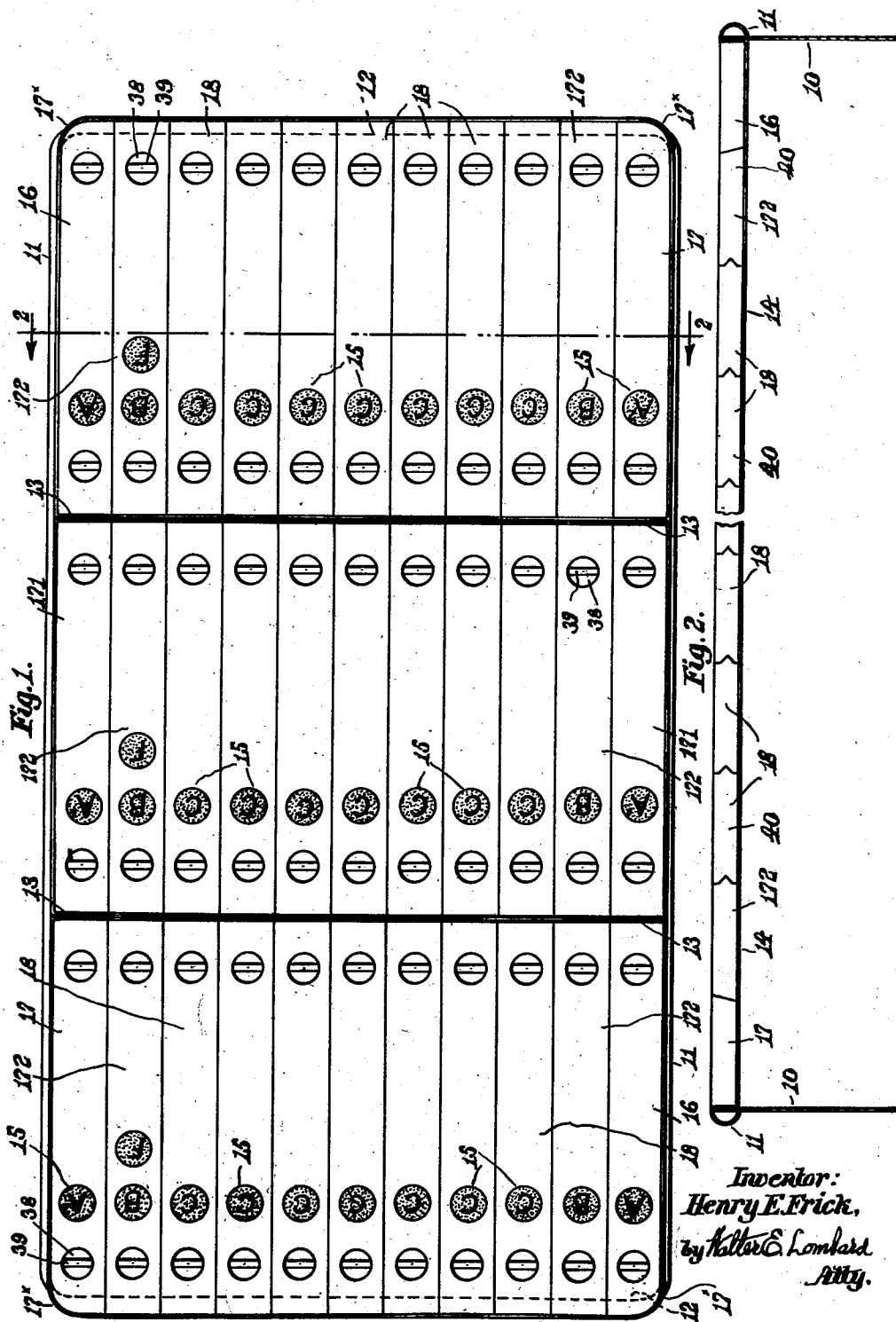
H. E. FRICK

2,376,245

MEANS FOR COVERING CARGO HATCHES AND THE LIKE

Filed Nov. 15, 1941

2 Sheets-Sheet 1



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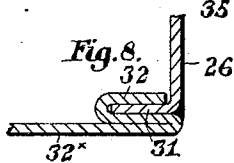
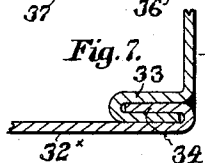
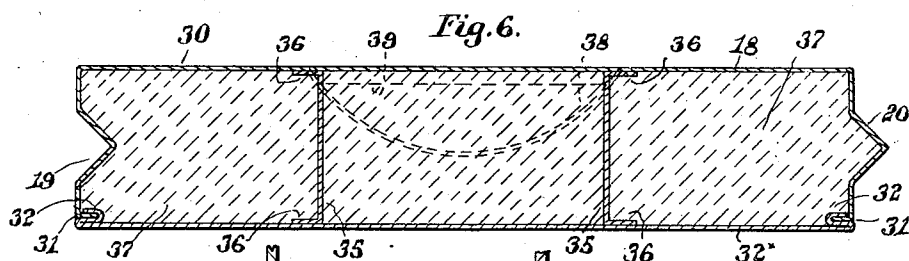
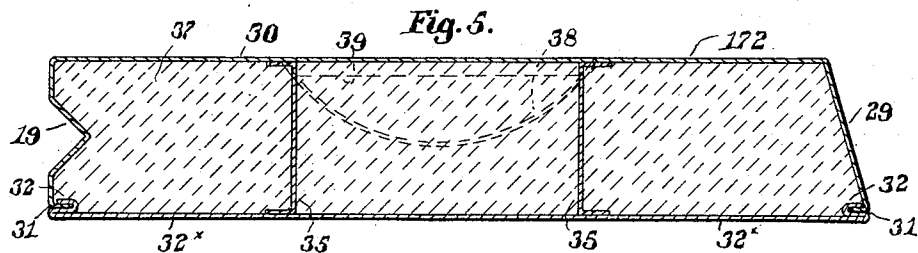
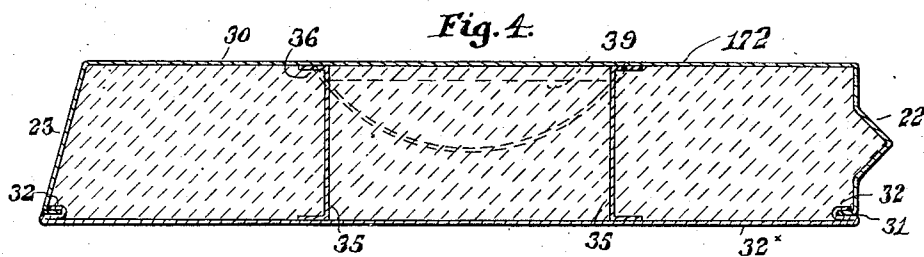
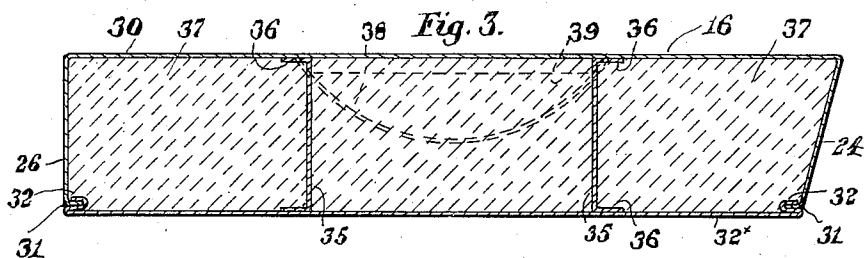
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MEANS FOR COVERING CARGO HATCHES AND THE LIKE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,376,245

MEANS FOR COVERING CARGO HATCHES
AND THE LIKEHenry E. Frick, Upper Montclair, N. J., assignor to
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Application November 15, 1941, Serial No. 419,276

7 Claims. (Cl. 114—201)

This invention relates to cargo hatches for vessels and has for its principal object the provision of means for covering said hatches or similar openings, said means comprising a cover formed by the assemblage of a plurality of planks made of thin sheet metal of which the inner planks are adapted to be interlocked while the outer planks are so constructed as to permit of their ready removal prior to separating the inner planks.

A further object is the production of a plank made in two sections of thin metal, the upper section having flanges in the lower end of its side walls adapted to interlock with flanges on a bottom wall and to be tack-welded thereto.

Another object of the invention is the marking of each individual plank unit with a distinctive character designating the correct place it should be disposed in the assembled cover.

The above and other desired objects are attained by the mechanism 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 cargo hatch having superimposed thereon a cover therefor.

Figure 2 represents a transverse section of the same on line 2, 2 on Fig. 1, the ends of the cover planks being in elevation.

Figure 3 represents a transverse section of one of the outer planks forming said cover.

Figure 4 represents a transverse section of another plank to be used in said cover, said plank being adapted to be disposed with its left hand side wall against the right hand side wall of the plank shown in Fig. 3.

Figure 5 represents a transverse section of another plank adapted to be disposed in the assemblage of the cover with its left hand side wall interlocking the right hand side wall of the plank shown in Fig. 6.

Figure 6 represents a transverse section of one of the inner planks the side walls of which are adapted to be interlocked with each other, said plank being shown filled with slag wool.

Figure 7 represents a section of a detail showing the interlocking of a side wall of a plank with a lower wall having a flange extending inwardly into a U-shaped flange on said side wall.

Figure 8 represents a similar detail showing a modification in which the side wall of the plank is provided with an inwardly extending flange disposed in a U-shaped flange formed integral with the lower wall of said plank.

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

In the drawings, 10, 10 are side walls of a cargo hatch having at their upper ends outwardly extending buffer members 11.

Between the ends 12 of the hatch opening are removable inverted T-shaped partitions 13 supported at their opposite ends on the side walls 10 of the hatch in any well known manner.

On the flanges 14 of the partitions 13 rest the inner ends of a plurality of hollow planks made up of very thin sheet metal and having different contours of side walls.

The outer ends of some of these planks rest on the end walls 10 of the hatch as shown in Fig. 1 of the drawings.

All of the planks forming the assembled cover are disposed within the coaming formed by the side walls 10.

On the upper faces of the various planks are designating characters 15 of a color distinctively contrasting from the color on the faces of the planks.

These designating characters 15 give the necessary information as to where each plank unit is to be disposed in the assemblage of all of the plank units to form the cover for the hatch.

For instance, there are two plank units 16 marked "A" which may be used in the position shown in Fig. 1 of the drawings at the lower left hand corner and upper right hand corner.

Similarly the plank units 17 marked "A2" may be used in the upper left hand corner and the lower right hand corner, as shown in Fig. 1.

Preferably the units "A" and "A2" are curved at their corners as indicated at 17x.

The plank units 171 marked A1 are disposed between the T-shaped partitions 13 and at the outer ends thereof (as indicated in said Fig. 1) and the opposite ends of these units 171 rest on the flanges 14 of the partitions 13.

Next to the inner sides of the plank units 16 and 17 marked "A," "A1" and "A2" are the plank units 172 marked "B" and "B1," all of

the plank units "B" being in alinement and all of the plank units 172 marked "BF" also being in alinement on the opposite side of the cover when assembled.

Between the plank units 172 marked "B" and "BF" are a plurality of plank units 18 marked "C," these plank units 18 being shown in cross section in Fig. 6 of the drawings.

Each of these units 18 has a V-shaped depression 19 extending lengthwise of one side wall thereof while the opposite side wall has a V-shaped projection 20 adapted for insertion into a V-shaped depression 19 in an adjacent plank unit 18.

The plank units 172 marked "B" are shown in section in Fig. 4 of the drawings, and these plank units 172 have on their inner side walls V-shaped projections 22 adapted for insertion into the V-shaped depressions 19 in a side wall of the outer plank unit 18.

These plank units 172 have an inclined side wall 23 opposite to the V-shaped projection 22, the inclination of said wall 23 being upwardly and inwardly toward the center of the assembled cover.

Adapted to contact with the side wall 23 is an inclined side wall 24 formed on the outer plank unit 16, 17 or 171 marked either "A," "A2" or "A1."

The outer side walls 26 of the plank units 16, 17 and 171 are vertical and parallel with the longitudinal side walls 10 of the hatch.

The plank units 16, 17 and 171 at the upper end of Fig. 1 are similar to the units 16, 17 and 171 at the bottom of said Fig. 1, while the plank units 172 are as shown in Fig. 5 of the drawings, each unit 172 having an inclined side wall 29 extending lengthwise thereof adapted to contact with the inclined side wall 24 of a unit 16, 17 or 171.

Regardless of the contour in cross section of the various plank units each plank unit is made up of an upper section 30 having downwardly extending side walls either inclined as shown in 23, 24 and 29, or provided with V-shaped depressions 19 or projections 20, 22.

The lower ends of the side walls of the various plank units have inwardly extending flanges 31 disposed in inwardly turned U-shaped flanges 32 formed upon the opposite edges of a bottom wall 32x of each plank unit.

The projecting flange 31 and the U-shaped flange 32 are tack-welded together.

This construction is clearly shown in Figs. 3, 4, 5, 6 and 8 of the drawings.

In Fig. 7 a modified form of interlocking connection is shown in which the lower end of the side wall 26 is provided with an inwardly turned U-shaped flange 33 in which an inwardly turned flange 34 on the bottom wall 32x is disposed, these two flanges being tack-welded together.

Within each plank unit and extending the length thereof are two channel irons 35 spaced apart and forming longitudinal chambers in each unit, the flanges 36 of these channel irons being spot-welded to the upper and lower walls of the plank unit to give great rigidity thereto.

The compartments in each unit are packed with $4\frac{1}{4}$ # density slag wool 37, making the units when assembled into an insulated cover perfectly fire-proof.

At the end of each plank unit is a cup-shaped handle depression 38 having diametrically disposed therein a half oval mild steel handle 39 welded thereto, all as shown in Fig. 7 of Letters

Patent No. 2,101,056, issued to applicant Dec. 7, 1937.

The opposite ends of all of the plank units have welded thereto closing plates 40 similar to those shown in Fig. 2 of said Letters Patent No. 2,101,056.

When the various plank units are assembled in the position indicated in Fig. 1 and covering the cargo hatch, the whole cover is very strong and capable of supporting great weight.

At the same time the cover being made up of a plurality of plank units, these plank units can be readily removed by lifting the outer units "A," "A1," "A2" out of position and then disengaging the units "B" and "BF" from the inner units "C," after which all of the inner units "C" may be separated and removed from the hatch opening.

In practice it is designed to have the upper face of each plank unit 12 inches in width.

When the plank units have all been removed from the hatch coaming, the partitions 13 are removed leaving a clear hatch opening of any desired length and width.

The handles 39 may be grasped by a man's hand or a hand cargo hook may be engaged therewith to remove each plank.

While the plank units are made of steel they are comparatively light owing to the thinness of the steel, but when reinforced by the end plates 40 and the channel irons 13, these planks are very rigid and combining as they do light weight and strength, they are very superior to the wooden covers which have in the past been in general use.

When metal plates such as shown and described in the present application are used to form a cover for a cargo hatch, protection is provided against the spread of fire.

Moreover, the danger of the planks being washed away in a heavy sea is obviated as such metal planks will not float.

Cover planks made of wood often are washed overboard but this objection is overcome by the use of metal planks.

Moreover, it is obvious that with a smooth surface of the hatch covers when the various planks are assembled the life of the canvas tarpaulins or other hatch coverings is greatly prolonged.

In many cases these metal planks may be substituted for wooden hatch planks without making any changes in the hatch coamings which are installed on the vessel.

Consequently, these metal planks may be installed on vessels already in service or they may be made in such a manner as to adapt them for any new construction of vessel.

Owing to the planks being filled with fire retardant material they serve as fire stops and prevent the spread of fire to other compartments of vessels.

It will be understood that the various joint shoulders of the metal planks may be either spot-welded or continuously welded as the particular case may require.

Owing to the light weight of the planks they are easy to handle and may be manufactured with comparatively little expense.

It is believed the many advantages of the invention will be understood without further description.

Having described my invention, I claim:

1. A hatch cover built up of a plurality of hollow planks of thin sheet metal all of which have vertical closures at their opposite ends, the inner planks being provided with interlocking means and the two outer planks at one side of said cover having adjacent sides inclined from top to bottom

and contacting with each other, the outermost of said two outer planks having an edge face disposed at right angles to the horizontal plane of said plank.

2. A hatch cover built up of a plurality of hollow planks of thin sheet metal all of which have vertical closures at their opposite ends, the inner planks being provided with interlocking means and the two outer planks at both sides of said cover having adjacent sides inclined from top to bottom and contacting with each other, the outermost of said two outer planks having an edge face disposed at right angles to the horizontal plane of said plank.

3. A hatch cover as set forth in claim 1 in which said contacting inclined sides of the two outer planks extend upwardly and toward the center of the assembled cover.

4. A hatch cover as set forth in claim 1 in which the inner planks have in the side walls thereof means for interlocking two adjacent planks and the plank next to the outer plank having in one longitudinal side a depression to receive a projection on an adjacent inner plank and provided on its opposite side with a flat wall inclined from top to bottom towards the center of the hatch and contacting with a complementary inclined wall of the adjacent outer plank.

5. A hatch cover as set forth in claim 1 in which each of the inner planks has a V-shaped extension in one side wall thereof extending into a V-shaped depression in the side wall of an adjacent plank and the plank next to the outer plank having in one longitudinal side a depression to receive a projection on an adjacent inner plank and provided on its opposite side with a flat wall inclined from bottom to top towards the center of the hatch and contacting with a complementary inclined wall of the adjacent outer plank.

6. A hatch cover as set forth in claim 1 in which each outer plank has a vertical side wall and an opposite side wall inclined from bottom to top upwardly and towards the center of the cover in contact with a complementary inclined wall of an adjacent inner plank.

7. A hatch cover as set forth in claim 1 in which the plank adjacent the outer plank has a V-shaped extension in one wall and its opposite wall is inclined upwardly from bottom to top and toward the center of the cover said inclined wall contacting with a complementary inclined wall of an outer plank.

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