

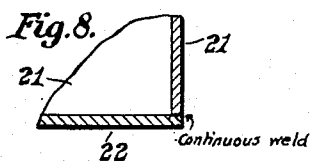
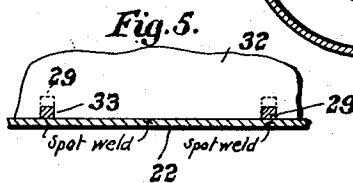
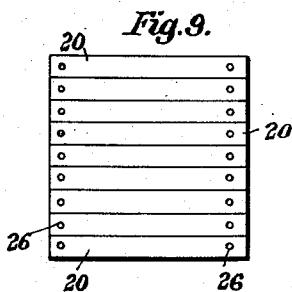
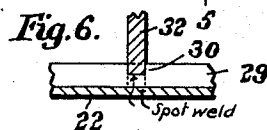
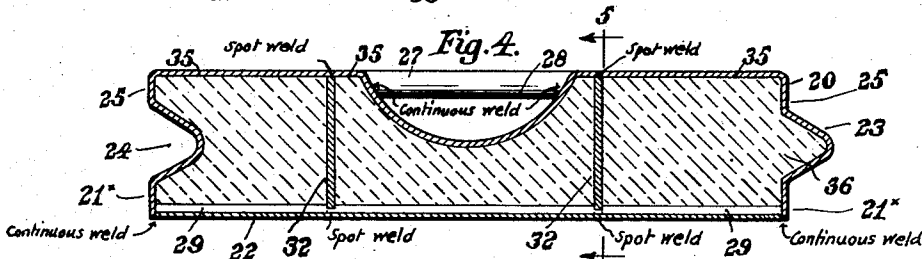
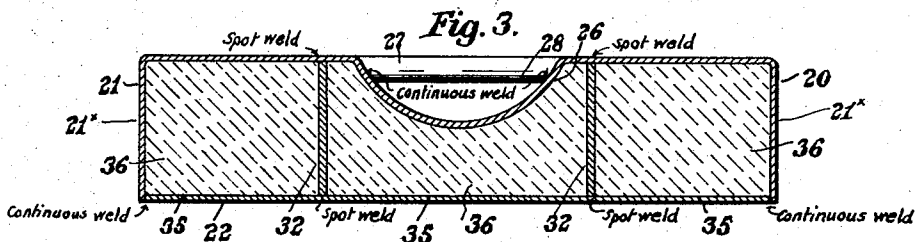
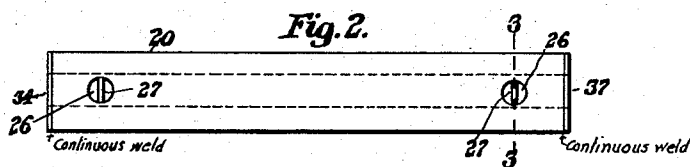
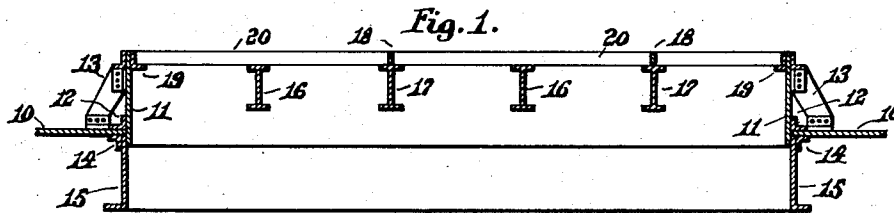
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2,146,180

PLANK FOR COVERING HATCHES AND OTHER OPENINGS

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PLANK FOR COVERING HATCHES AND
OTHER OPENINGS

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6 Claims. (Cl. 114—201)

This invention relates to means for covering the cargo hatches of vessels and closing similar openings and has for its principal object the production of a watertight plank made of thin metal and filled with fire retardant material, a plurality of these planks, laid side by side, being used to effectually close a hatch and prevent the spread of fire.

A further object is to simplify the construction of the plank, thereby reducing to a minimum, the cost of manufacture.

Another object of the invention is in providing each plank with a plurality of partitions extending longitudinally thereof and forming a plurality of compartments in which the fire retardant material is confined.

A further object of the invention is in making these partitions of heavier material than that of the material of the casing and spot welding or otherwise securing the lower ends of the partition to the lower section of the casing.

The present invention is a continuation in part of another application of mine, Serial No. 91,287, filed July 18, 1936, which has matured into Patent No. 2,101,056.

The above and other desired objects are attained by the mechanism illustrated in the accompanying drawing.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawing, 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 drawing—

Figure 1 represents a vertical section of a cargo hatch showing a plurality of metal planks or units covering the same.

Figure 2 represents a plan of one of said planks or units.

Figure 3 represents a transverse section of the same drawn to an enlarged scale, the cutting plane being on line 3, 3 on Fig. 2.

Figure 4 represents a transverse section of a modified form of plank.

Figures 5, 6, 7 and 8, represent sectional details to be hereinafter described, and

Figure 9 represents a diagram showing a plurality of planks or units disposed side by side

in position to cover a cargo hatch or other opening.

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

In the drawing, 10 is a deck of a vessel having secured thereto a hatch frame 11 by means of angle irons 12 and bracing members 13.

Depending from the hatch frame 11 and secured to the deck 10 by angle irons 14 is a supplemental hatch frame 15.

Extending transversely of the hatch frame 11 are a plurality of removable hatch beams or strongbacks 16 and 17, the strongback 17 having flanges 18 extending upwardly above the top of the hatch beams 16, as shown in Fig. 1 of the drawing.

Secured to the inner face of the hatch frame 11 and at the upper end thereof are angle irons 19, the inwardly extending flanges of which are alined with the upper flanges of the hatch beams 16 and 17. The hatch frame forms no part of the present invention and may be made of any well known construction.

On the upper flanges of the hatch beams 16 and 17 and inwardly extending flanges of the angle irons 19 are disposed a plurality of cover units 20.

These cover units 20 may be of any desired length to accommodate them to various conditions, as for instance, as shown in Fig. 1 two long units are shown at the left of said figure and a shorter unit at the right thereof.

When the units 20 have been removed, the hatch beams 16 and 17 may also be removed to give a clear hatch opening.

These units 20 may be made up in different ways either from one sheet of thin steel to form the upper section 21 with a flat steel plate 22 inserted into the lower end of the section 21 as indicated in Figs. 3 and 4, or the flat plate 22 may bear against the under edges of the sides of section 21 as shown in Fig. 8.

As shown in Fig. 3 the plank is made with flat narrow sides 21x while as shown in Fig. 4 one of these flat sides has centrally formed therein a V-shaped projection 23 which is adapted to interlock with a depression 24 in another plank adjacent thereto.

Between the upper and lower ends of the sides of section 21 are flat portions 25 which abut against each other as the planks are positioned to form a cargo hatch cover.

Near either end of each unit 20 is a cup-shaped depression 26 formed in the sheet metal top, said depression having welded to its upper face a

cross handle bar 27 with its under face rounded as indicated at 28 to provide a good grip when positioning the units on the hatch 11 or removing the units therefrom.

- 5 The top of the handle bar 26 is flush with the top surface of the unit 20 so that when the planks are not in use they may be conveniently piled one upon another.

- 10 By making this upper face of the hand grip 26 flush with the upper face of the section 21, there is no raised portion on the hatch cover when the planks 20 are in use as a cover to the cargo hatch.

- 15 The lower flat plate 22 of the plank 20 has preferably welded to the upper face thereof a plurality of transverse bars 29, the upper edges of which are provided with a plurality of spaced notches 30.

- 20 Inserted into these notches 30 are separate metal plates 32 forming spaced partitions extending to the top wall of the section 21 and spot welded thereto.

- 25 The lower edges of these partition plates 32 are notched as indicated at 33 in Fig. 5 of the drawing and when interlocked as shown the partition plates 32 and the bars 29 are spot welded together.

- 30 By this construction the flat plate 22 may have spot welded to its upper face the bars 29 and then the partition plates 32 may be disposed thereon and spot welded thereto after which the plate 22 with the partition plates 32 assembled thereon may be properly disposed relatively to the section 21 and the overlapping edges of the section 21 and the plate 22 may be continuously welded together.

- 35 After the plate 22 with the partitions 32 have been welded to the section 21 one of the end plates 34 may be continuously welded to one end of the plank 20.

- 40 This having been done the compartments 35 within the casing 21 formed by the partition plates 32 may be filled with a fire retardant material 36 after which the other end plate 37 may be continuously welded to the ends of the section 21, plate 22, and partition plates 32.

- 45 In this manner a watertight plank is provided, the casing of which is made up of very thin metal, the whole plank being reinforced by the separate partition plates 32 which are of thicker metal than the metal forming the casing 21, 22.

- 50 Not only are the partition plates 32 spot welded to the bars 33 but their lower edges are also spot welded to the flat plate 22.

- 55 In some cases it may be desired to dispense with the transverse notched bars 29 and spot weld the lower edges of the partition plates 32 directly to the upper face of the flat metal plate 22, as shown in Fig. 3.

- 60 It is obvious, however, that the construction shown in Fig. 4 is preferable as it gives greater strength to the plank when completed.

- 65 It will be noted that the partitions 32 extend the entire length of the plank, are vertical, and are parallel with and equally spaced from the narrower sides 21x of the casing 21.

- 70 By this means three compartments 35 are formed lengthwise of the plank which are filled with some kind of fire retardant insulating material, such as mineral wool or an asbestos mixture.

- 75 This fire retardant material is retained in the various compartments and cannot move about in the interior of the plank and therefore the plank is evenly balanced at all times.

- Moreover, in order to insure this proper bal-

ance of the plank the depression 26 having the grip handle 27 therein is always disposed midway of the width of the plank.

If desired, a plurality of these planks or units 20 may be disposed parallel to each other as shown in Fig. 9 to form a complete covering for a hatch, pit, tank or similar device.

It is obvious that the handle 27 may be grasped by a man's hand or engaged by a cargo hook if so desired.

It is self-evident that any number of planks or units 20 may be used to form a hatch cover and these planks may be of various widths and lengths according to the size of the openings to be covered.

Inasmuch as the casings 21, 22 of the planks or units 20 are made of very thin steel they are comparatively light owing to the thinness of the metal but when the casing 21, 22 is reinforced with the end plates 34, 37 and the longitudinal vertical stiffening or partition plates 32, they are very rigid and much superior to wooden covers now in general use.

These metal planks are so constructed that they can be interchanged with the usual wooden planks without any changes in the hatch combings or strongbacks.

As the planks 20 are made of metal and filled with a fire retardant insulating material they are absolutely fireproof and when in use prevent any fire from spreading, confining the fire to the compartment in which it starts, and reducing conductance of heat to adjacent compartments.

It is well known that when the hatch is closed by planks it is covered with a tarpaulin and the life of these tarpaulins is greatly prolonged by the use of applicant's planks, inasmuch as the closed hatch has no upwardly extending projections which might engage with the tarpaulin and cause injurious wear to same.

In a severe storm these tarpaulins are liable to be blown off the hatch cover and when the hatch cover is made of wooden planks they are liable to float away, while such a result is impossible when metal planks are used similar to those disclosed in the drawing and described in the specification.

In other words, the planks are heavy enough to retain them in place and at the same time are light enough to be handled easily.

A greater degree of safety against fire can be obtained by the use of these metal planks over the wooden planks now generally used.

By making the planks in the manner hereinbefore described the manufacture of the same is greatly simplified, inasmuch as many of the bendings of the metal sheet are dispensed with thus reducing the cost of manufacture.

Moreover, in making the planks in this manner, the various parts of the planks may be more easily assembled, thus saving time and labor.

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

Having thus described my invention, I claim: 65

1. A plank for covering hatches and other openings consisting of a watertight elongated casing formed of two sections of thin metal continuously welded together and closed at both ends, one of said sections being U-shaped with the opposite faces of its side walls parallel throughout their entire depth; a plurality of vertical partitions of different material dividing said casing into longitudinal chambers, said vertical partitions being parallel to the side walls of the U-

shaped section; and weld means uniting the opposite edges of said partitions to the inner faces of both sections.

2. A plank for covering hatches and other openings consisting of an elongated casing formed of two thin metal sheets constituting two sections, one of which is U-shaped in cross section with continuously straight side walls having their lower ends contacting with and continuously welded to the longitudinal side edges of a flat plate constituting the other section; said plank including separate longitudinally disposed vertical reinforcing partitions of rigid material spaced apart parallel with the side walls of the plank and having their opposite longitudinal edges for their entire length secured to the inner faces of the lower and upper sections of said casing; and end plates secured to the opposite ends of both of said sections and to the opposite ends of said partitions thereby forming an enclosed watertight casing with a plurality of closed compartments extending lengthwise thereof.

3. A plank for covering hatches and other openings consisting of an elongated casing formed of two thin metal sheets constituting two sections, one of which is U-shaped in cross section with continuously straight side walls having the inner faces of their lower ends contacting with and welded to the outer longitudinal side edges of a flat plate constituting the other section; said plank including a notched transversely disposed stiffening bar secured to the upper face of the lower section; longitudinally disposed vertical reinforcing partitions of rigid material having their lower end inserted into said notches and spot welded thereto and their upper edges welded to the inner face of the upper section, said partitions being spaced apart and parallel to the side walls of said U-shaped section; and end plates secured by welding to the opposite ends of both of said sections and to the opposite ends of said partitions thereby forming an enclosed watertight casing with a plurality of closed compartments extending lengthwise thereof.

4. A plank as set forth in claim 3, in which the

lower edges of said partitions are provided with a plurality of notches to receive the notched portions of said bar.

5. A plank for covering hatches and other openings consisting of an elongated casing formed of two thin metal sheets constituting two sections, one of which is U-shaped in cross section with continuously straight side walls having the inner faces of their lower ends contacting with and continuously welded to the outer side edges of a flat plate constituting the other section; said plank including a plurality of transversely disposed notched bars secured to the upper face of the lower section; longitudinally disposed vertical reinforcing partitions of rigid material having their lower ends inserted into said notches and spot welded thereto, said partitions being spaced apart and parallel to the side walls of said U-shaped section; and end plates secured to the opposite ends of both said sections and to the opposite ends of said partitions thereby forming an enclosed watertight casing with a plurality of closed compartments extending lengthwise thereof.

6. A plank for covering hatches and other opening consisting of an elongated casing formed of two thin metal sheets constituting two sections, one of which is U-shaped in cross section with continuously straight side walls having the inner faces of their lower ends abutting and continuously welded to the outer side edges of a flat plate constituting the other section; said plank including a transversely disposed bar secured to the inner face of the lower section provided at its upper edge with a plurality of notches; longitudinally disposed vertical reinforcing partitions of rigid material having their lower ends inserted into said notches and secured thereto by weld means, said partitions being spaced apart and parallel to the side walls of said U-shaped section; and end plates welded to the opposite ends of both said sections and to the opposite ends of said partitions thereby forming an enclosed watertight casing.

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