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J. K. COLLINGS

2,457,129

HATCH COVER

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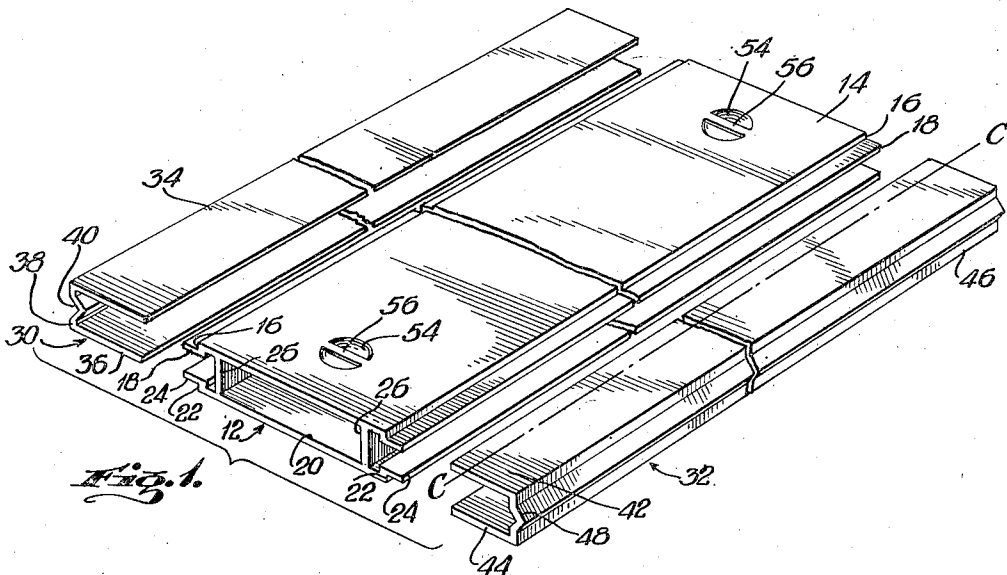


Fig. 1.

Fig. 2.

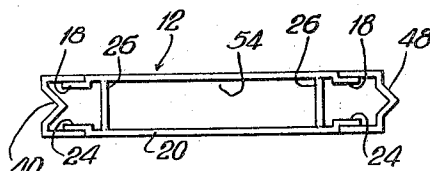
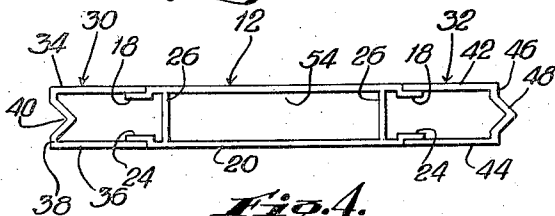


Fig. 3.

Fig. 4.

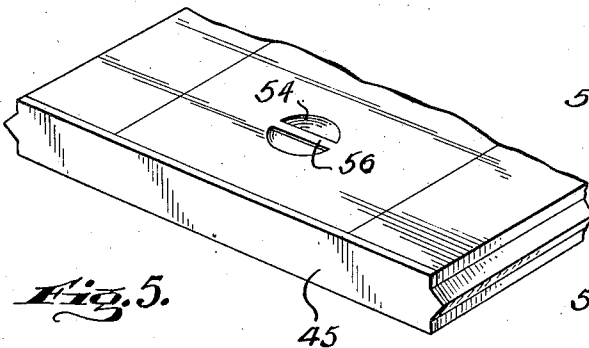
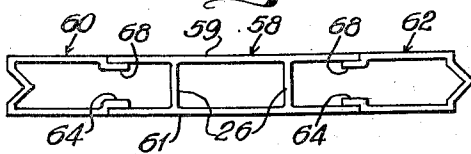


Fig. 5.

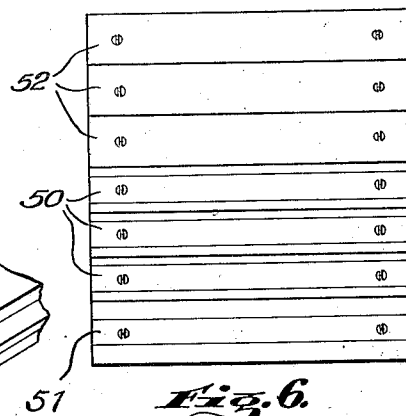


Fig. 6.

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HATCH COVER

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This invention relates to improvements in hatch covers and the method of making the same, and is particularly directed to sectional covers for openings of cargo hatches of vessels.

Cargo hatches are closed or covered by means of a plurality of planks of either metal or wood, which are laid side by side on the coaming and then strapped or fastened in place. Wooden hatch cover planks have been replaced in recent years by metal planks or sections. Generally the planks, whether wood or metal are approximately twelve inches in width, and where the length of the coaming or hatch opening is a multiple of twelve inches the required number of twelve inch planks or sections comprise the completed cover. However, in cases where the length of the coaming is not an even multiple of twelve inches, for example where the coaming or opening is twelve feet nine inches, it is necessary to reduce the width of one of the planks or sections to provide the proper covering. In the case of wooden planks it is a simple operation to saw off the excess width of one plank (three inches in the example given), whereby to provide the odd width plank to complete the cover. In sheet metal planks or sections it has likewise been a simple operation to make an odd width plank by cutting off and bending the sheet metal of the section or plank to the desired width.

However, a different problem is presented with extruded or drawn metal hatch cover sections or planks of the character disclosed in my copending application Serial No. 606,964, inasmuch as it would require different dies for each odd width section or plank, which is prohibitive because of the fact that a special set of dies would be required for practically every width to fraction of every inch less than twelve inches.

The present invention has for one of its objects the provision of a hatch cover section or plank which can be extruded or drawn by means of one set of dies and which can be accommodated to any odd width opening left in a hatch cover after the standard width planks or sections have been laid in place.

Another object of the present invention resides in the provision of a hatch cover or section of the character indicated by the extruding or drawing process, and which will be of the desired strength and ruggedness to withstand any rough usage to which it may be subjected in service.

Further objects of the present invention will be manifest from the following description and the accompanying drawing, in which drawing:

Fig. 1 is an exploded, fragmentary view in per-

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spective of a hatch cover section made in accordance with the present invention;

Fig. 2 is an end view of the completed hatch cover section of the present invention;

Fig. 3 is a view similar to Fig. 2 but showing a section of lesser width;

Fig. 4 is an end view of a modified form of hatch cover section made in accordance with the present invention;

Fig. 5 is a fragmentary view in perspective of the completed section with the end plate in place; and

Fig. 6 is a plan view of a completed cover comprising a plurality of standard sections or planks and sections or planks of the present invention.

Referring to the drawing in detail a central body portion 12 is produced by a drawing or extrusion process, which process may be performed by any conventional drawing or extrusion device, which device forms no part of the present invention and accordingly is not illustrated.

The body portion 12 comprises a top wall 14 having a depending web 16 at each of its sides from each of which webs a lateral or side flange 18 extends. The body 12 also includes a bottom wall 20 having an inwardly extending web 22 at each of its sides from each of which a lateral or side flange 24 extends. The top and bottom walls are connected to each other by partitions or reinforcing members 26, which preferably are extruded or drawn during the extrusion or drawing of the body 12.

Side portions 30 and 32 are also drawn or extruded in the same manner as the body 12, but of course by means of different dies.

The side portion 30 comprises top and bottom wall extensions 34 and 36, respectively, and a connecting wall 38 which eventually is to form a side wall of a complete section. The wall 38 is provided with a longitudinal groove 40. The side portion 32 also comprises top and bottom wall extensions 42 and 44, respectively, and a connecting wall 46 which eventually is to form the other side wall of the complete section. The wall 46 is provided with a longitudinal tongue 48. The tongue and groove arrangement is provided whereby the section, when placed in position on the coaming of a hatch opening, will be interlocked with complementary tongues and groove on adjacent sections in the conventional manner.

The central body portion 12 is provided with hand holes or depressions 54 in its top wall and each depression is provided with a handle 56, whereby to facilitate handling of the section.

The webs 16 and 22 are equal in depth to the wall thickness of the section and the wall thickness of the wall extensions or flanges of the side portions 30 and 32, so that the flanges 18 and 24 are in different planes relative to their respective walls, whereby when the parts are assembled, as shown in Figs. 2 and 3, the surfaces of the top and bottom walls of the complete section is uniform throughout.

When it is desired to form or fabricate a hatch cover section or plank from the parts illustrated in Fig. 1, the top and bottom wall extensions of the portions 30 and 32 are fitted over the laterally extending flanges of the opposite sides of the body portion 12, with the edges of the wall extensions engaging the webs of the central section, as illustrated in Fig. 2. The overlapping wall extensions or flanges are then secured to the flanges of the body portion by welding or by any other suitable method whereby a rigid section having conventional tongue and groove side walls, is provided.

When the section is assembled in the manner described it is filled with slag wool or similar material and end walls 45 are then welded or otherwise secured to each end thereof whereby to hermetically seal the same and render the section waterproof.

The central body section 12 may be any desired width, for example about four inches, and the side portions 30 and 32 likewise may be any desired width, for example about two and one half inches each, which when assembled in the manner described provides a section nine inches wide.

Should it be desired to provide a section of lesser width, say seven inches, one inch may be cut off each of the wall extensions of the side portions, as indicated by the dot and dash line C-C in Fig. 1. After the wall extensions are cut as just described they are applied to the body portion 12 in the same manner as hereinbefore described, whereby to provide a narrower section as illustrated in Fig. 3.

The sections or planks of the present invention are preferably made from light metals or alloys, such as aluminum, but may be made of synthetics, plastics or other non-corrosive materials capable of being extruded or drawn.

The modified form of hatch cover section shown in Fig. 4 is similar to that of Figs. 1, 2 and 3 except that the depending webs and lateral flanges are provided on the side flanges instead of the central portion. Central portion 53 comprises top and bottom walls 59 and 61, respectively, providing side flanges in the same plane as the walls. Side portions 60 and 62 have depending webs and integral lateral flanges 64 and 68, so that when the portions are assembled, whereby to be welded or otherwise secured to each other in the manner hereinbefore described, the flanges 64 and 68 of the side portions will fit on the inside of the flanges on the central body portion. In this form of the invention, should it be desired to reduce the width of the section, a longitudinal strip is cut off each of the flanges of the central body portion, the reinforcing partitions 26 being sufficiently spaced from the sides to permit the removal of such strips and still permit the insertion of the flanges of the side portions.

While I have mentioned that the sections or planks of the present invention are preferably less than twelve inches in width, it is to be understood that I do not wish to be limited to a section or plank of a lesser width than the standard

twelve inch plank, as obviously sections or planks greater than twelve inches in width can readily be produced by the herein disclosed method. As a matter of fact it might be desirable in some installations to make a section, say fourteen inches in width, to fill in a space of that width left in the hatch opening, instead of employing two sections or planks seven inches wide.

It is therefore to be understood that the dimensions herein given are for convenience of description only and are not employed in any limiting sense, as the central body portion and the side portions may be of any desired widths.

It is to be understood that the odd width sections of the present invention may be placed at any position in the group of sections making up the complete cover, but preferably are placed intermediate the end sections.

It is also to be understood, that while but one of the sections or planks of the present invention, when fabricated in the manner described to properly fit in the space left in the hatch cover, will suffice to complete the cover, any number of these sections may be employed if desired in making up the complete cover. In fact, sections made in accordance with the present invention may if desired be employed to make up the entire complete cover, or sections or various widths, made in accordance with the present invention, may be combined with each other or with standard sections to make up the complete cover.

The completed hatch cover shown in Fig. 6 for purposes of illustration and description, is made up of several standard width sections 52, several sections 50 made in accordance with the present invention of a lesser width than the standard sections 52, and one section 51 made in accordance with the present invention but of a greater width than the standard sections.

It will be seen from the foregoing that I have provided a novel hatch cover section of drawn or extruded material which is capable of being made into various widths and a novel method of making the same.

It will be understood that, while I have illustrated and described two embodiments of my invention, I do not wish to be limited to the precise structures of those embodiments nor to the sequence of the steps of the disclosed method as obviously various changes and modifications may be made therein without departing from the spirit and scope of my invention.

What I claim is:

1. A hatch cover section comprising a substantially rectangular tubular metallic body member having top and bottom walls and side walls connecting said top and bottom walls and a laterally extending flange at each side of said top and bottom walls, and a channel-shaped member at each side of said body member each having top and bottom flanges and a connecting web, said flanges of said body member and of said side members being formed with complementary joint portions for positioning said flanges of said side members in overlapping relation with said flanges of said body member, said side members being integrally secured to said body members.

2. A hatch cover section as set forth in claim 1 in which an end wall member is secured to said body member and said side members at each end thereof.

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