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E. B. CARNS

PLANKING OR SHEATHING SUBSTITUTE

Filed May 5, 1927

Fig. 1.

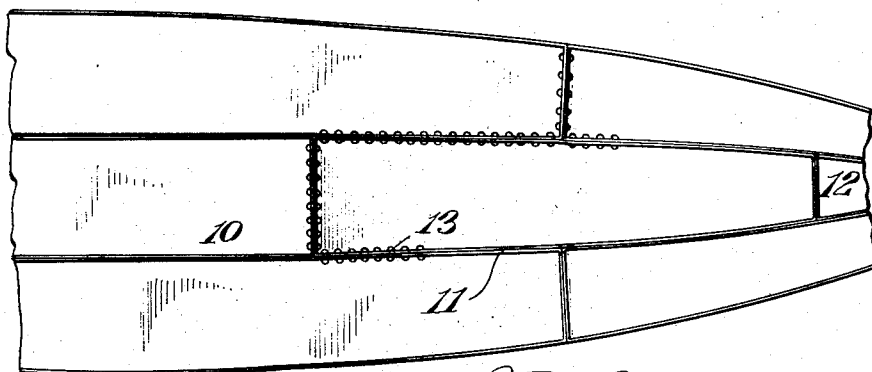


Fig. 2.

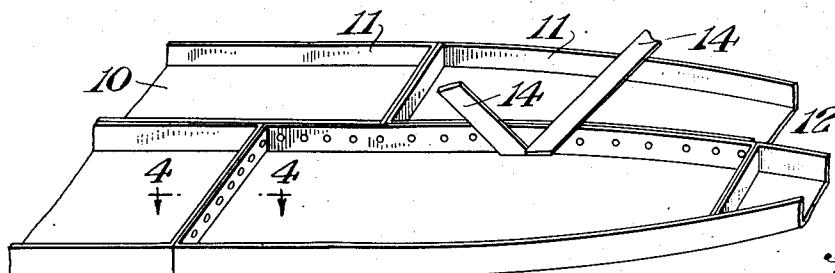


Fig. 3.

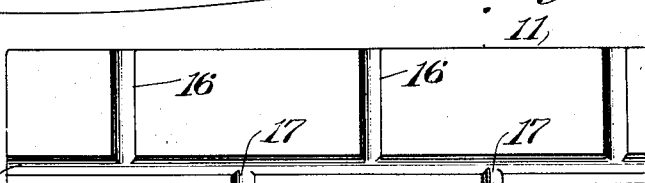


Fig. 4.

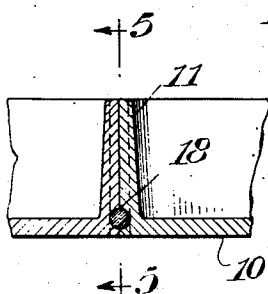
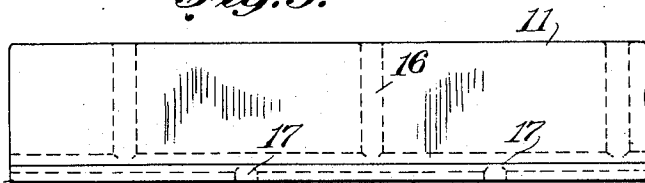


Fig. 5.



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PLANKING OR SHEATHING SUBSTITUTE.

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My invention relates to improvements in a structure which may be satisfactorily and beneficially substituted for ordinary planking or sheathing.

5 My invention also relates to an improved method of caulking a structure like that herein described.

My invention is intended to produce a series of plates which can be conveniently 10 made of metal and may, sometimes, be made of other material, and can be shaped with marginal flanges so that each plate will be particularly stiff by reason of the flanges and, further, to shape these plates so that 15 the flanges will abut, coact, and can be fastened together, thus making the structure, as a whole, tremendously strong, even though the plates be relatively thin.

It will be seen that by this arrangement, 20 plates of the desired shape can be made, and easily assembled and laid so as to break joints, and that when the flanges of these plates are fastened together, the abutting flanges will serve to make the united plates 25 very strong, and they, also, afford a convenient means for connecting with braces or other parts of a structure.

Such an arrangement as I refer to, can be used to especial advantage in the building 30 of boat bottoms or hulls, the walls of tanks and other structures, especially those where a water tight wall and a stiff surface is desirable.

My invention is further intended to construct and shape the plates and flanges so that caulking material can be conveniently run in or placed in channels between adjacent flanges, thus insuring absolutely tight joints.

40 Reference is to be had to the accompanying drawings in which similar reference characters represent the corresponding parts in all views.

Figure 1 is a broken plan view of a boat 45 bottom built of my planking substitutes;

Figure 2 is a broken perspective view of the structure shown in Figure 1;

Figure 3 is a broken side elevation of one of the plates and its flange;

50 Figure 4 is a cross section on the line 4—4 of Figure 2; and

Figure 5 is an elevation on the line 5—5 of Figure 4, looking in the direction of the air holes.

65 For most purposes, my planking substitute can be made effectively from metallic

sheets 10 which are preferably oblong, and, generally, of rectangular shape, each plate having a marginal flange 11 formed thereon, and extending at substantially right angles 60 to the plate body. The plates are not necessarily rectangular, but the flanges of adjacent plates should abut throughout their length so as to coact and form an effective stiffening of the plates as well as a tight 65 joint between them. For example, in Figure 1, I have shown the outline of a boat bottom and, in such a structure, the plates 10 are shown as tapering and curved in places, but where thus shaped, the adjoining plates 70 must be shaped so that the flanges of the adjacent plates will abut throughout their length.

The plates can be conveniently and most effectively laid by breaking joints as shown 75 in Figure 1, and after the manner of laying brick, and where the adjacent flanges 11 of the plates abut, they can be firmly riveted together as shown at 13, or they may be 80 otherwise fastened.

When thus assembled, and with the adjacent and abutting plate flanges rigidly fastened together, it will be seen that the several flanges extend lengthwise and laterally 85 of the structure, and act as ribs to effectually brace it.

Moreover, this arrangement leaves the outer surface of the assembled structure smooth and plain while the connected flanges form a convenient means for attaching the 90 braces or struts 14, or for attaching other parts which it may be desirable to connect with the wall surface formed by the assembled plates.

For many structures, and, especially, 95 where the wall formed by the assembled plates is to be water tight, the plates and flanges can be provided at the meeting parts with channels 15, 16 and 17, extending to the edges and ends of the plates so 100 that when adjacent plates are brought into the right relation, the channels of the two plates and their flanges will be complementary to each other, and form tubes in which caulking material 18 may be placed. 105

It will be seen that the arrangement shown, by which the branch channels 16 and 17 intersect, the channels 15 enables this to be readily done, and the material in the liquid or semi-liquid condition may 110 be run in the ducts formed by the meeting channels, and, for some structures, the as-

sembled plates or a number of them might be submerged in the material which would run in and fill the ducts, then, by cooling, remain in place, for an effective seal. When thus treated, the surplus liquid could be poured from the plates, or material for filling the ducts, can be introduced in any convenient way.

It will be seen that this method of caulking enables a continuous bond to be applied to the meeting parts of the structure described or one analogous to it so that the caulking is absolutely tight, and is economically applied.

It will also be noticed that the structure which I have described is particularly adapted for use in making parts of air craft because the plates with their coacting and abutting flanges can be so readily shaped and because if some of the lighter metals are used they can be conveniently made in light thin castings strongly reinforced by the flanges and with a smooth outer surface which will not offer much air resistance.

From the foregoing description, it will be seen that the several plates may be shaped so as to form a wall or covering of a desired formation, that the plates can be readily stamped, pressed, or otherwise shaped, as described, and that the assembled, structure is cheap, stiff, and easily made.

It will, also, be noticed that where a quantity of structures of similar size and shape are to be produced, the plates for such structures can be made in duplicate, numbered as desired, and readily assembled.

I claim:

1. In an air craft construction, a structure of the kind described comprising a plurality of plates flanged on one side with the outer side smooth, said flanges on adjacent plates abutting, coacting and being rigidly secured together, the plates having channels extending around each plate between the outer plate surface and the edge of the flanges with branches extending inwardly between the flanges to receive caulking material.

2. A planking substitute comprising a plurality of plates having inturned abutting flanges fastened together, channels lying wholly between the plates and flanges whereby the plates and flanges meet snugly except at the channels with branches extending inwardly between the flanges to the channels, and caulking material filling the channels, said caulking material being poured into the channel through the branches.

In testimony whereof, I have signed my name to this specification this 2nd day of May, 1927.

EDMUND B. CARNES.