Oct. 18, 1949. A. F. POLLMAN 2,485,165

METAL SCAFFOLD PLANK

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Fig. 1

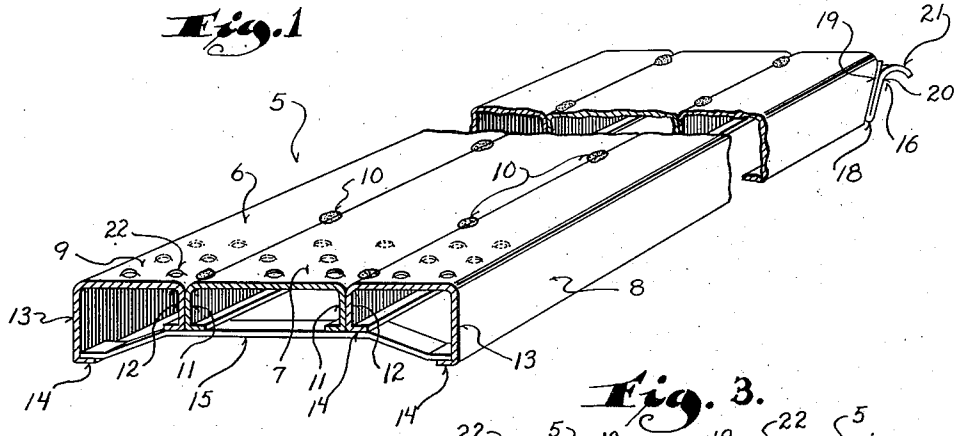


Fig. 3.

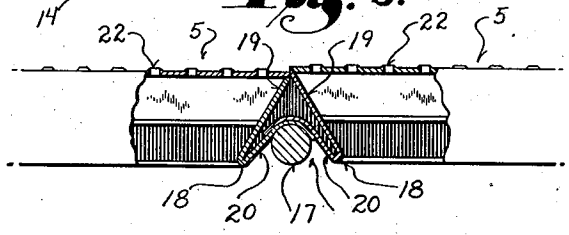


Fig. 2

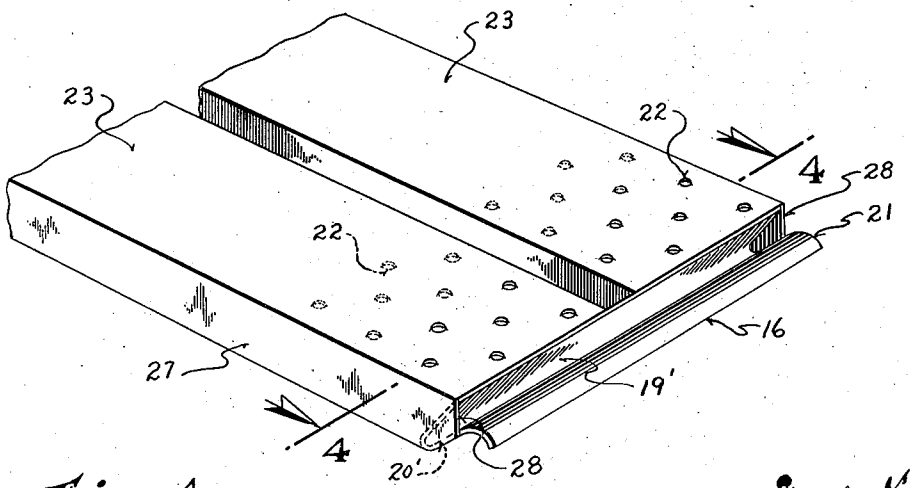
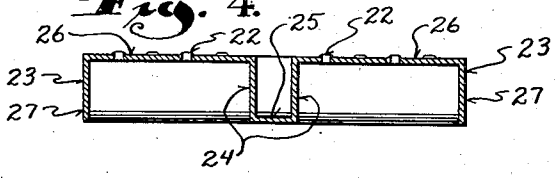


Fig. 4.



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Fig. 5.

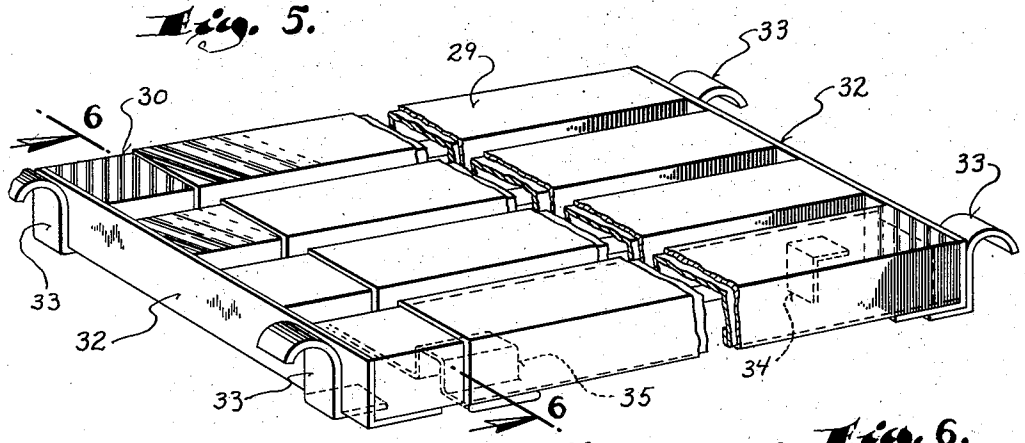


Fig. 6.

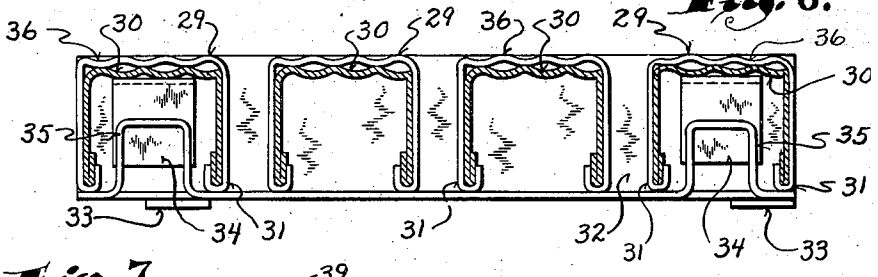
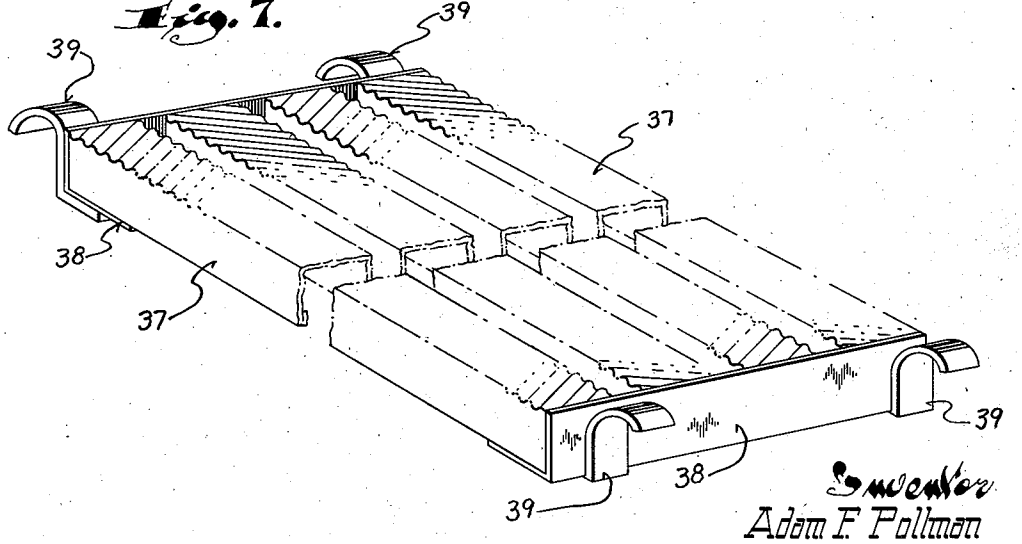


Fig. 7.



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Patented Oct. 18, 1949

2,485,165

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2,485,165

METAL SCAFFOLD PLANK

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Application March 27, 1946, Serial No. 657,525

3 Claims. (Cl. 304—38)

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This invention relates to planking of the type used with scaffolding and has as its general purpose the provision of a light weight metal planking unit to be used in lieu of the wooden planks customarily used in the construction of staging, platforms and runways supported by scaffolding.

While great strides have been made in the development of light weight metal scaffolding, no specific provision was made for constructing the platforms and runways of scaffolding upon which the workmen stand and move about. Instead it has been the practice to use ordinary wooden planks for this purpose. The use of such wooden planks is hardly in keeping with the advance made in scaffolding, but what is more important, it is not as safe as it should be for no suitable means exists for securing wooden planking in position and preventing its shifting to the extent that the workmen might very likely step onto an unsupported end of a plank.

It is, therefore, an object of this invention to not only provide a neater more practical planking unit for use with scaffolding, but also to provide improved means for attaching the same to the supporting members of the scaffording in such a way that the planking units will be held against shifting.

Another object of this invention is to provide metal planking so constructed that units thereof may be arranged substantially continuously end-to-end.

A further object of this invention is to provide a light weight sheet metal planking unit for the purpose set forth which is inexpensive to produce and light enough to be easily handled and carried up the scaffolding.

It is also an object of this invention to provide planking of the character described provided with a non-slip surface.

Still another object of this invention is to provide a light sheet metal planking unit consisting of telescoped sections so as to provide a unit of variable length.

With the above and other objects in view, which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described, and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

The accompanying drawings illustrate several complete examples of the physical embodiment of the invention constructed in accordance with

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the best modes so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a perspective sectional view showing a light weight metal scaffolding unit embodying this invention;

Figure 2 is a view similar to Figure 1 illustrating a slight modification of the structure shown in Figure 1;

Figure 3 is a side view of two planking units arranged end-to-end to illustrate the manner in which adjacent ends of such units are carried on the same supporting member, said view having portions thereof broken away and in section to facilitate illustration of structural details;

Figure 4 is a cross sectional view on the plane of the line 4—4 in Figure 2;

Figure 5 is a perspective of an extensible unit embodying this invention;

Figure 6 is a cross sectional view through Figure 5 taken on the plane of line 6—6; and

Figure 7 is a perspective view of a planking unit of fixed length and somewhat modified construction.

Referring now particularly to the accompanying drawings, the numeral 5 designates a planking unit constructed in accordance with this invention and consisting of three (3) inverted channels 6, 7, and 8. These channels are secured together in side-by-side relation with their web portions 9 substantially coplanar and forming the top surface of the planking unit. Although any suitable means may be employed to secure the channels together, weld spots 10 serve admirably to join their contiguous portions and thus connect the three (3) channels into one unit.

The middle channel 7 has its two flanges 11 of the same height while the side channels 6 and 8 have inner flanges 12 of the same height as the flanges 11 and outer flanges 13 of greater height. These outer flanges form the sides of the planking unit. All of the flanges have inturned marginal edge portions 14 to which a cross member 15 is secured by welding or the like. Although only one such cross member is shown in Figure 1 it should be understood that more may be employed as determined by the length of the planking unit. To avoid projections beyond the bottom edges of the side flanges 13, the ends of the cross member 15 rest on the inner surfaces of the adjacent marginal edge portions 14.

The ends of the planking unit have their under portions cut off on a diagonal so that the top surface of the unit defined by the web portions of the inverted channels overhangs the ends of the

lower edges of the flanges of the channels. This re-entrant formation of the ends of the planking unit enables hooks 16 to be so mounted that the centers of the hooks are substantially in line with the ends of the planking unit as shown in Figure 3. As a result the adjacent ends of two end-to-end planking units may rest on a common supporting member 17 which may be part of the scaffolding (not shown) with which the planking is employed.

Not only does this end formation of the unit permit the adjacent ends of two planking units to be carried by the same support, but also it enables the planking units to have their adjacent ends in abutting relation.

The hooks 16 (alike at both ends of the planking unit) consist of a length of sheet metal folded longitudinally as at 18 and extending across the full width of the planking unit with one flange 19 thereof welded to the ends of the flanges of the inverted channels. The other flange 20 of this cross member has its outer marginal edge portion curved or bent as at 21 to define the hook proper, and as shown in Figure 3, the center of the arc defined by this curved portion is perpendicularly in line with the extreme end of the planking unit. Thus when the hooks of two adjacent end-to-end planking units are engaged in superimposed relation and carried by a common support, as shown in Figure 3, the extreme ends of the planking unit abut each other and are vertically offset only by the thickness of the metal of which the hooks are formed.

The top surface of the planking unit preferably has a non-slip formation provided in any suitable manner but preferably by punching a multiplicity of holes 22 into the webs of the inverted channels. The holes are punched outwardly through the web portions and the flashing formed during the punching operation is left standing around the edges of the holes, thus providing relatively rough edged protrusions on the surface of the unit. While the drawing shows only part of the punched holes it is understood that they cover the entire top.

The construction illustrated in Figure 1 wherein the planking unit consists of three (3) side-by-side inverted channels achieves substantial rigidity even with relatively light gauge sheet metal. If somewhat heavier gauge metal is used, the planking unit can be constructed as shown in Figure 2. In this instance the entire unit is stamped from a single sheet and consists of two connected side-by-side, but spaced inverted channels 23. The inner flanges 24 of these channels are connected at their bottom edges by an integral lower web 25. The main web portions 26 of the two channels are in planar alignment and form the top of the plank.

As in the construction shown in Figure 1, the ends of the planking unit of Figure 2 have hooks 16, and these hooks, like those described, have their flanges 19' welded to the diagonally cut ends of the flanges 24. The outer flanges 27 of the two inverted channels embrace the ends of the hook structure to provide reinforcing plates 28 which are welded to the adjacent end edges of the flanges 19' and 20'.

The extreme ends of the side flanges 27 have their lower portions cut off in line with the bottom of flanges 20' while their upper portions are perpendicular and in line with the ends of the top web portions 26. Consequently the end-to-end disposition of the planking units hereinbefore described can be maintained notwithstanding the provision of the reinforcing plates 28. These reinforcing plates also have the advantage of holding the hook portions of adjacent units against lateral displacement.

If desired, the salient features of the invention may be embodied in an extensible planking unit as shown in Figures 5 and 6. In this instance the planking unit consists of outer and inner sets of inverted sheet metal channels 29 and 30 respectively. The inner inverted channels are slidably received within the outer channels, and to this end the inner channels are just slightly smaller in cross section than the outer channels. In the specific embodiment of this form of the invention, there are four (4) inner and four (4) outer channels, although this number may vary depending upon the contemplated width of the finished planking unit.

The marginal edge portions of the flanges on all of the outer channels are turned in as at 31 over the marginal edges of the flanges on the inner channels which for the sake of reinforcement and to avoid rough edges are folded over.

The outer ends of the two sets of channels have cross pieces 32 secured thereto by welding or the like to thus hold the telescoped channels together in side-by-side spaced relation. Supporting hooks 33 are secured to these cross pieces to provide the means of attaching the planking unit to suitable supports.

The structure is held assembled, that is, against endwise separation of the two sets of channels, by stops 34 welded to the undersides of the inner channels in position to collide with projections 35 formed integrally with a cross member 36 extending across the open ends of the outer channels and secured to the flanges thereof by welding or the like.

Corrugations 36 are formed in the web portions of the channels which serve as the top of the planking to provide a non-slip surface.

Many of the features of the extensible planking unit shown in the Figures 5 and 6 can be conveniently incorporated in a fixed length planking unit as shown in Figure 7. In this instance a plurality of side-by-side separate inverted channels 37 of uniform length are held assembled by angle cross members 38 welded or otherwise secured to the ends thereof. These cross members have hooks 39 fixed thereto as are the hooks 33 in the embodiment shown in Figures 5 and 6.

It should be noted that in both these forms of the invention, the hooks at the opposite ends of the planking unit are offset laterally so that those on adjacent ends of end-to-end units are inter-engageable and positionable in side-by-side relation on the same supporting member thus permitting endwise alignment of the planking units.

As in the embodiment of the structure shown in Figures 5 and 6, the web portions of the channels are corrugated in the construction shown in Figure 7 to provide a non-slip surface.

From the foregoing description taken in connection with the accompanying drawings, it will be readily apparent that this invention provides a simple, highly useful adjunct to present day methods of scaffolding and that it provides a light weight metal planking which has many advantages over the conventional practice of using wooden planks for the platforms, runways or stagings carried on the scaffolding.

What I claim as my invention is:

1. Light weight metal planking of the character described comprising: a plurality of in-

verted sheet metal channels; means for connecting said channels in side-by-side relation with their web portions substantially co-planar, said means including a cross member closing one end of said channels, the other end of said channels being open; a second plurality of inverted sheet metal channels slidably received in the first designated channels and projecting from the open ends thereof; a cross member extending across and closing the exposed end of said second plurality of channels and secured thereto to connect the same; hook means on said cross members; and means for holding said second plurality of channels slidably engaged with the first plurality of channels.

2. Light weight metal planking of the character described comprising: a plurality of inverted sheet metal channels, each having the marginal edge portion of each of its flanges turned inwardly and upwardly to reinforce the channel and to provide a relatively narrow guide rail opening upwardly toward the web of the channel; a second plurality of inverted sheet metal channels, each having the marginal edge portion of each of its flanges bent back upon itself to reinforce the channel and to provide runners adapted to be received within the rails of said first designated channels, said second designated plurality of channels being telescoped within the first set with the runners on the flanges of the second set of channels slidably received in the guide rails on the flanges of the channels of the first set so as to provide a planking unit of variable length; a tie member extending across and secured to the channels of each set to hold the same in side-by-side parallel relationship; and means for limiting endwise separation of said

channels, including a second tie member secured to and extending across the channels of one of said sets.

3. Light weight metal planking of the character described comprising: a plurality of inverted sheet metal channels; means for connecting said channels in side-by-side relation with their web portions substantially co-planar including a transverse member secured across the edges of the flanges of one of said pluralities of channels near one end thereof; a second plurality of inverted sheet metal channels slidably received in the first designated channels; and a stop member secured to at least one of the channels of the other plurality thereof, between the flanges of the channel, in position to collide with a portion of said transverse member to thereby retain said channels against endwise separation.

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