

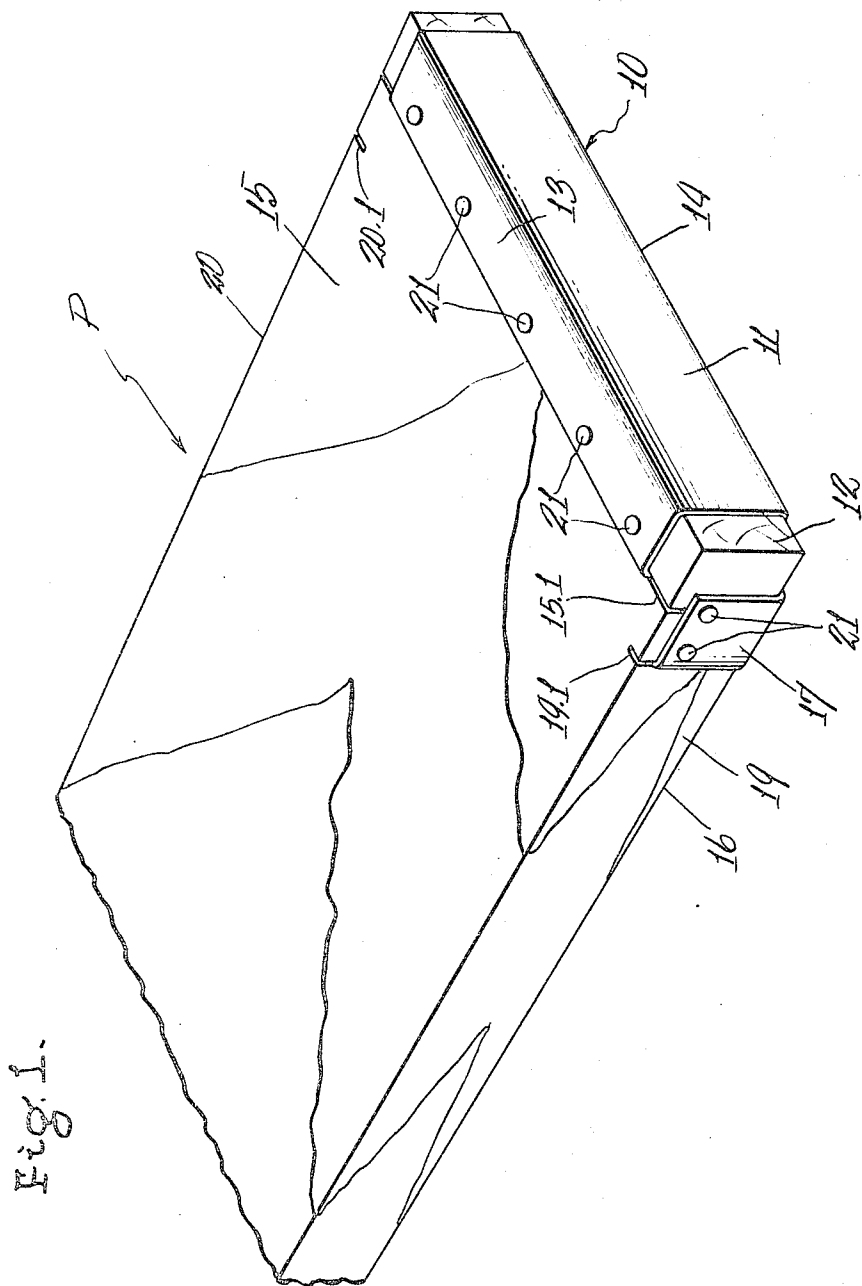
Sept. 19, 1967

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PROTECTIVE DEVICE FOR PLANKS AND THE LIKE
AND METHOD OF ASSEMBLY

3,342,002

Filed April 15, 1965

3 Sheets-Sheet 1



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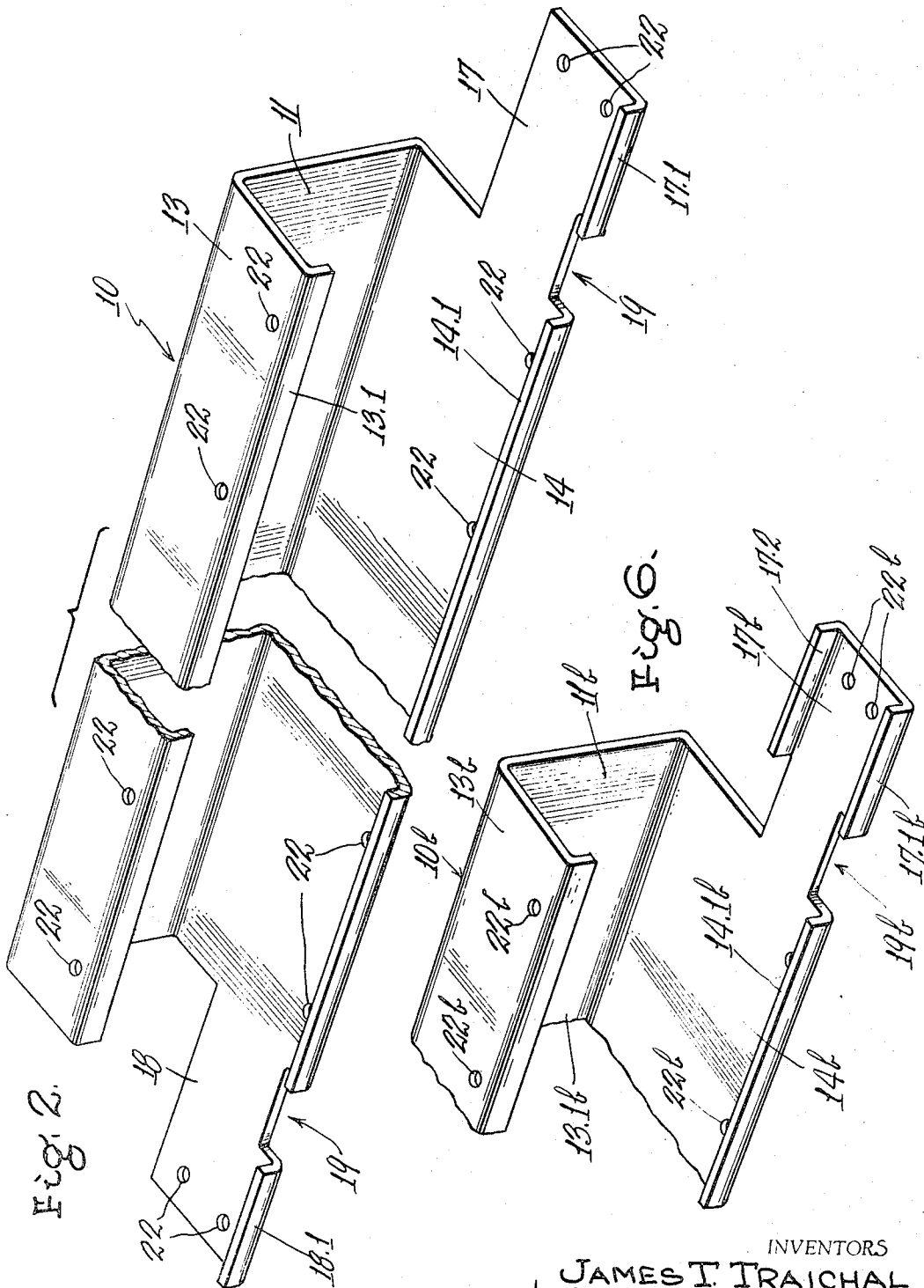
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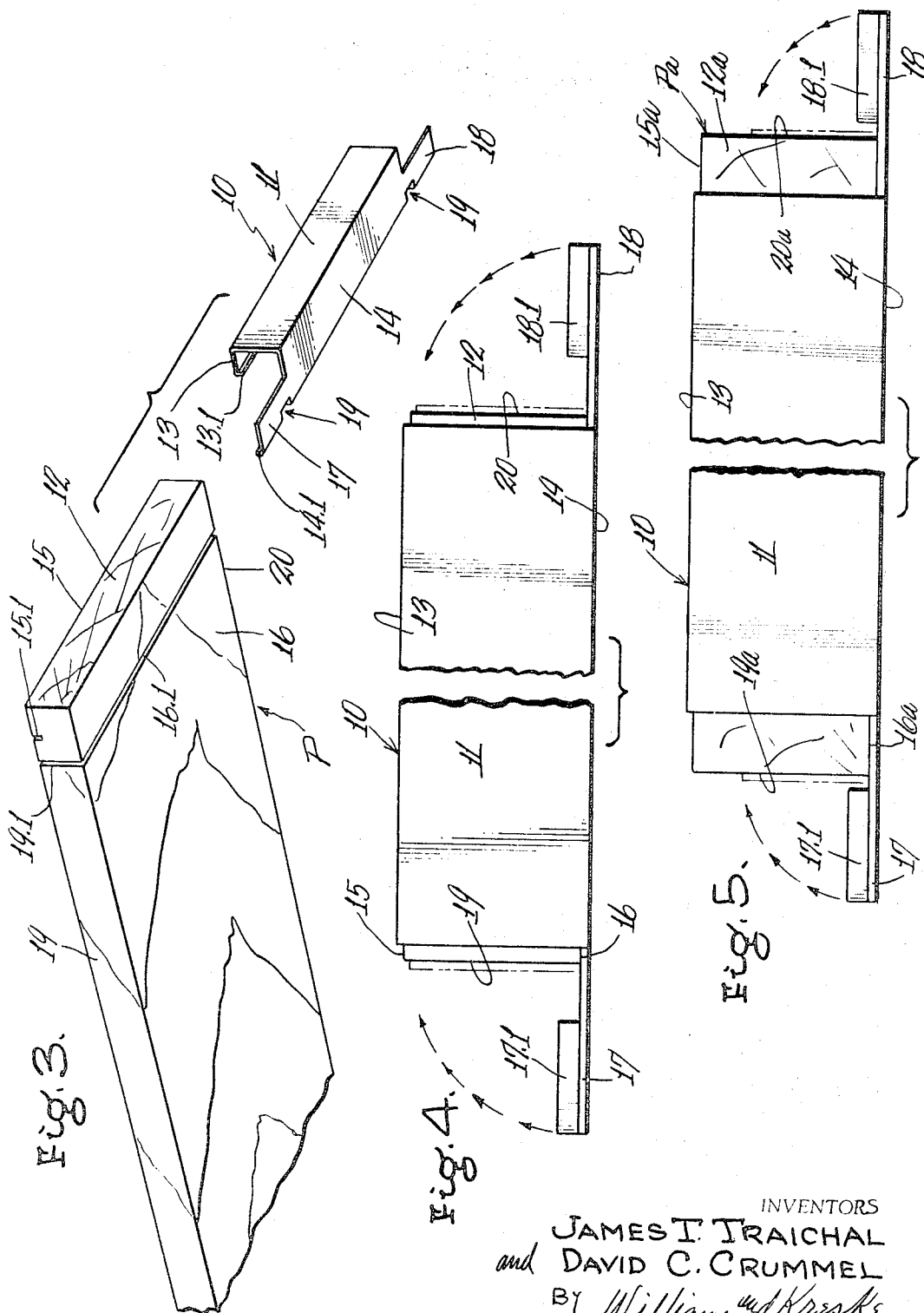
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1

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PROTECTIVE DEVICE FOR PLANKS AND THE
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6 Claims. (Cl. 52—627)

ABSTRACT OF THE DISCLOSURE

A sheet metal cap adapted to be bent over the end of a wooden plank to prevent splitting. The cap has portions which respectively overlie the plank end and the plank sides and edges adjacent the plank end. The cap portions which overlie the plank edges are retained in position by fastening means extending into the plank and such cap portions are solely integral with a cap portion which overlies a plank side to increase the holding power of the fastening means. Those cap portions which overlie the plank sides and edges have inwardly turned margins which fit within recesses formed in the plank adjacent its end.

The present invention relates to plank protectors, more particularly to metal caps for the ends of wooden members, such as planks, and the principal object of the present invention is to provide new and improved articles of such character.

Construction and maintenance work of many kinds, be it residential, commercial or industrial, requires the use of planks for supporting workmen above the ground, a floor surface, or the like. Since a workman's life may depend upon the plank on which he is supported, such planks are necessarily of high quality lumber, free from splits, knots or other structural defects. Such high quality lumber, as might be expected, brings a premium price and since even a small contractor uses large numbers of planks, it is easily possible for such contractor to have several hundred dollars invested in planks.

Despite the use of high quality lumber for planks, the latter have a relatively short life because of being subjected to weather and to frequent and often rough handling in being transferred from place to place. Far and away the most common failing in planks is that they split longitudinally, beginning at a plank end.

The present invention will easily double or even triple the useful life of a plank used in construction or maintenance work, by limiting end splitting, at but a modest price increase over ordinary planks. This and other advantages will readily become apparent from a study of the following description and from the appended drawings.

In the drawings accompanying this specification and forming a part of this application there is shown, for purpose of illustration, embodiments which the invention may assume, and in these drawings:

FIGURE 1 is a fragmentary perspective view of the end of a plank to which is attached a device made in accordance with the present invention,

FIGURE 2 is an enlarged, broken perspective view of a device of the present invention prior to its assembly with a plank end,

FIGURE 3 is a reduced size perspective view of the device seen in FIGURE 2 and the plank at an early state of assembly,

FIGURE 4 is an enlarged, broken, end elevational view of the plank end and the device at a later stage of assembly,

FIGURE 5 is a view similar to FIGURE 4 but showing how the novel device is usable with planks of greater width than that shown in FIGURE 4, and

2

FIGURE 6 is a fragmentary view, similar to FIGURE 4 but of a modified structure.

With reference to FIGURES 1, 2 and 3, the plank to which the device of the present invention is securable is indicated by the reference character P while such device is indicated by the reference character 10. The device 10 is generally channel-shaped in cross-section (FIGURE 2) to provide a web portion 11 for overlying the end 12 of the plank, flange portions 13 and 14 for overlying respective plank sides 15 and 16 adjacent its end 12, and portions 17 and 18 for overlying respective plank edges 19 and 20 adjacent its end 12.

The free flange margins 13.1 and 14.1 of flanges 13 and 14 are turned inwardly of the plank P and fit within respective grooves 15.1 and 16.1 formed in the latter's sides 15 and 16 respectively while margins 17.1 and 18.1 of device portions 17, 18 respectively are turned inwardly of the plank, in the position of parts seen in FIGURE 1, to fit within respective grooves 19.1 and 20.1 formed in respective plank edges 19, 20. In order to longitudinally offset the plank grooves 15.1, 16.1, thus minimizing weakening of the plank, the flange portion 14 is wider than is the flange portion 13; i.e., the turned flange margin 13.1 is closer to the web 11 than is the turned flange margin 14.1.

It is an important feature of the present invention that the portions 17, 18 are integral with the flange 14 and for a purpose to appear, portions 17, 18 are narrower than is the flange 14 of which they are a part. In the position of parts shown in FIGURE 2, the portions 17.1, 18.1 are aligned with or in the same plane as the portion 14.1 of the flange 14; however, portion 14.1 is separated from respective portions 17.1, 18.1 by notched out portions 19 for a purpose to be seen.

Prior to assembly of the cap device 10 with the plank P, the device will be formed up of sheet metal to the configuration seen in FIGURE 2 wherein the portions 17, 18 are co-planar with the flange portion 14. The spacing between the flanges 13, 14 will correspond to the thickness of the plank on which the device is to be installed while the length of the device web 11 will be no greater and preferably slightly less than the width of such plank. Assuming that the grooves 15.1, 16.1, 19.1 and 20.1 have been formed in the plank, assembly will be as follows:

The device 10 will be positioned to one side of the plank, as viewed in FIGURE 3, with the flange margin 13.1 aligned with the plank groove 15.1 and the flange margin 14.1 (together with the margins 17.1 and 18.1) aligned with the plank groove 16.1. The device will then be shifted in a direction edgewise of the plank until it is substantially centered thereon as shown in FIGURE 4. The device portions 17, 18 will then be bent as indicated, to lie along respective plank edges 19, 20, the turned margins 17.1, 18.1 fitting within respective plank grooves 19.1, 20.1. Nails 21 or the like may then be driven through apertures 22 in the device portions 17, 18 and the flanges 13, 14 to complete the assembly.

It is to be noted that since the device 10 not only engages the sides of the plank but also the edges thereof, entire reliance is not placed upon the nails 21 to hold the device in position. Thus, many if not all of the nails could be omitted; however, it is considered best to employ the nails so as to hold flanges 13, 14 and the portions 17, 18 closely against the plank. Moreover, it is to be noted that the turned margins 13.1, 14.1, 17.1 and 18.1 of the device which are seated within respective plank grooves serve to prevent disassembly of the device from the plank in a direction endwise of the latter. The turned margins 13.1, 14.1, 17.1 and 18.1 also serve another useful function in that they present rounded corners which cannot injure a workman handling the planks and which will not interfere with the sliding of one plank upon another.

3

It is a well-known fact that boards and planks from different mills vary in width. Thus, a so-called 10 inch plank may vary from, for example, a width of 8¾ inches to a width of 9¾ inches. The present device is designed to use with planks having normal width variations without any modifications whatsoever:

As viewed in FIGURE 5, there is shown a plank Pa which may be identical to the plank P except that it is of maximum normal width rather than the minimum normal width seen in FIGURE 4. Assembly of the device with plank Pa will be identical with that previously described, it being understood that the bends in device portions 17 and 18, as they are bent to overlie respective plank edges 19a, 20a, will merely occur at a different place and the portions 17, 18 will not extend as close to the plank side 15a as they did to the plank side 15. It is to be noted, however, that since the device portions 17, 18 are formed integrally with the flange 14, the turned margins 17.1 and 18.1 will still align with the respective grooves formed in the plank edges.

Although the device portions 17, 18 are herein shown integral with the flange 14, it will be apparent that they could as well be formed integral with the flange 13. In such case, the turned over margins of the portions 17, 18 would preferably be in the plane of the flange margin 13.1 rather than that of the margin 14.1 as herein disclosed and in such event, the grooves 19.1, 20.1 in the plank edges 19, 20 would be provided in the plane of the plank groove 15.1 rather than that of the plane of the plank groove 16.1 as herein shown.

In the embodiment of the invention seen in FIGURE 6 wherein like parts are identified with the same reference characters as before but with the suffix "b" added, it is to be understood that the structure differs only in that the device portion 17 has a second turned margin 17.2 in opposed relation with the turned margin 17.1b. Margin 17.2 will preferably be in the plane of the flange margin 13.1b and will fit within a groove formed in the adjoining plank edge which is in the plane of the groove in which the flange margin 13.1b is received. Obviously, the opposite device portion 18b (not shown) will have a turned margin corresponding to margin 17.2 for reception in a groove in the adjoining plank edge also in the plane with the groove which receives the flange margin 13.1b. It will be clear that assembly of the device 10b with its plank will be similar to that heretofore described with respect to device 10.

In view of the foregoing it will be apparent to those skilled in the art that we have accomplished at least the principal object of our invention and it will also be apparent to those skilled in the art that the embodiments herein described may be variously changed and modified without departing from the spirit of the invention and that the invention is capable of uses and advantages not herein purposely described; hence, it will be appreciated that the herein disclosed embodiments are illustrative only and that our invention is not limited thereto.

We claim:

1. A protective cap for the end of an elongated wooden plank having an end, opposed sides and opposed edges, comprising a sheet metal member with a channel-like configuration which provides a web portion and opposed flange portions, said member web portion and one of said member flange portions being of a length no greater than the distance between opposed plank edges and said member web portion being adapted to overlie said plank end and said member flange portions being adapted to overlie opposed plank sides adjacent said plank end, the other of said member flange portions being longer than said member web portion to provide ears which are adapted to be bent to overlie respective adjoining plank edges, said member flange portions having respective margins spaced from said member web portion turned toward said plank and fitting within respective transversely extending grooves formed in said plank sides and said mem-

4

ber ears each also having a margin spaced from said member web portion turned toward said plank and fitting within respective transversely extending grooves formed in said plank edges.

2. The combination of an elongated wooden plank having longitudinally extending grain structure and having a tendency to split along its grain at one plank end, and a protective metal cap for said plank one end, said cap being formed as a channel-shaped, sheet metal member having a first portion lying against said plank one end and extending transversely of said plank grain structure, second portions integral with said first portion for overlying opposite sides of said plank adjacent its end aforesaid,

and said sheet metal member also having third portions for overlying opposite edges of said plank adjacent such plank end, and fastening means associated with and extending transversely of said sheet metal member portions and adapted to be embedded in said plank edges to maintain said member third portions assembled with said plank,

the improvement wherein each of said sheet metal member third portions is exclusively integral with one of said sheet metal member second portions whereby when said fastening means are embedded in said plank, any tendency of said plank end to split and thus displace said sheet metal member third portions will be resisted by reaction of said fastening means in a direction transversely of the grain of said plank.

3. The construction of claim 2 wherein said fastening means comprises headed members having shank portions extending through apertures formed in respective sheet metal member third portions.

4. The construction of claim 2 wherein margins of said second and third sheet metal member portions extending transversely of said plank are turned inwardly thereof to fit within respective grooves formed in said plank,

alignment of the turned margins aforesaid of respective sheet metal member third portions with respective grooves formed in said plank being assured, despite variations in plank width, as a result of the integrality aforesaid of said sheet metal member third portions.

5. A protective cap for use with a wood plank having longitudinally extending grain structure, said cap being formed as a channel-shaped, sheet metal member having a first portion for overlying one end of said plank,

second portions integral with said first portion for overlying opposite sides of said plank adjacent its end aforesaid,

and said sheet metal member also having third portions for overlying opposite edges of said plank adjacent such plank end,

margins of said second and third sheet metal member portions extending transversely of said plank being turned inwardly thereof to fit within respective recesses formed in said plank,

the improvement wherein each of said sheet metal member third portions is exclusively integral with one of said sheet metal member second portions to insure registry of the turned margin aforesaid of respective sheet metal member third portions with respective recesses formed in said plank despite variations in plank width.

6. The construction of claim 1 wherein the turned margins aforesaid of said sheet metal member ears are aligned with said turned margin of said other member flange portion prior to bending of said ears to overlie respective plank edges.

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5
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