

Jan. 24, 1967

D. E. BLOK
STRUCTURAL PANEL

3,299,602

Filed June 12, 1963

2 Sheets-Sheet 1

FIG. 1

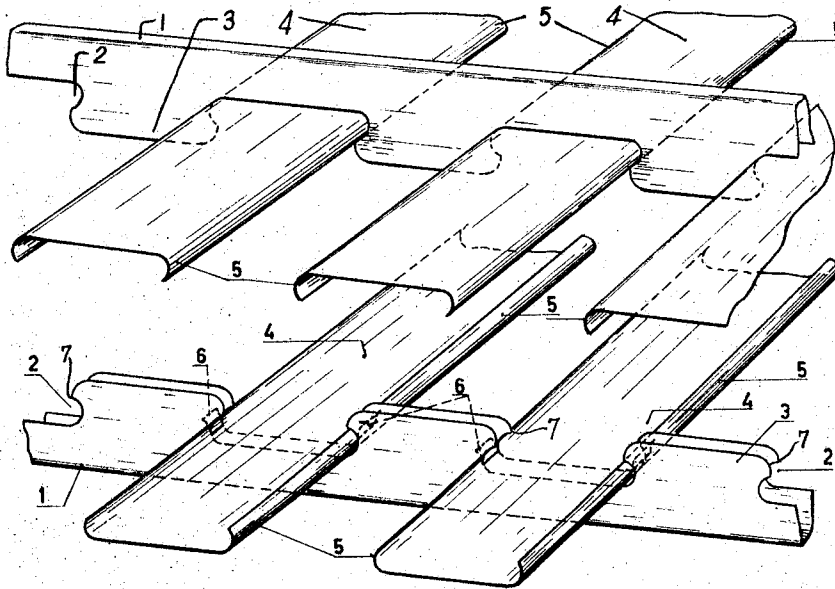


FIG. 2

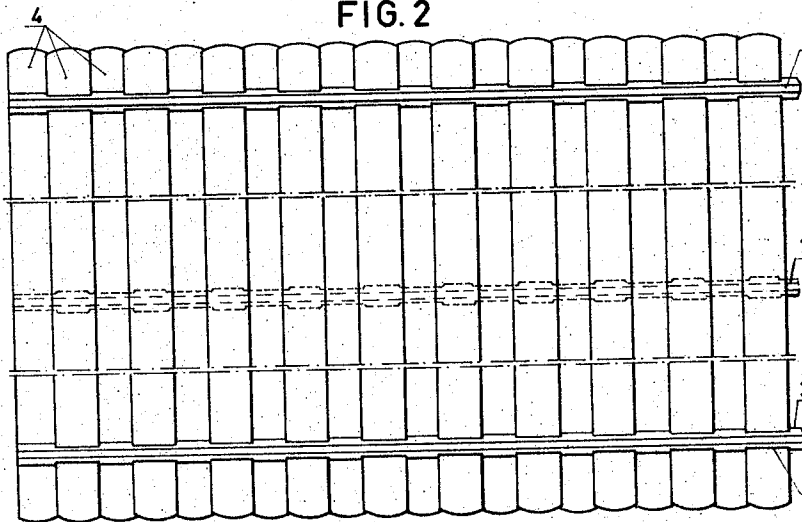
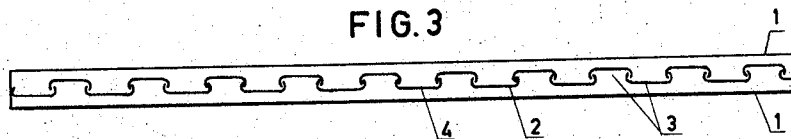


FIG. 3



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FIG. 4

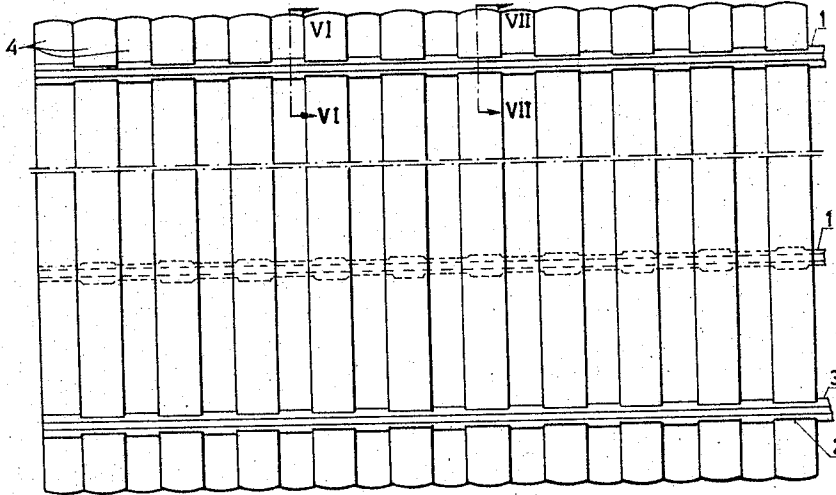


FIG. 5

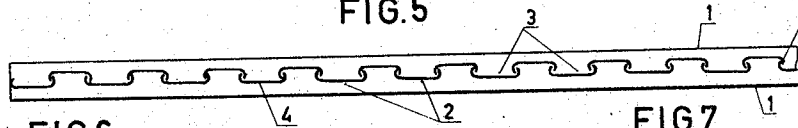


FIG. 6

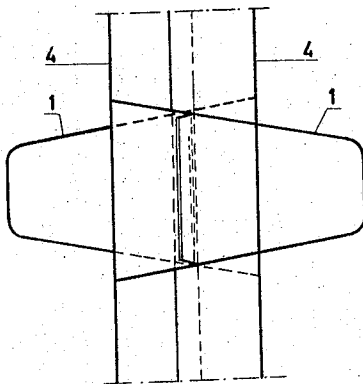


FIG. 7

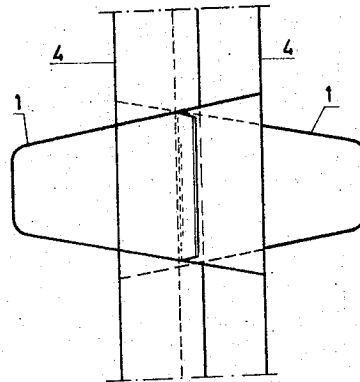
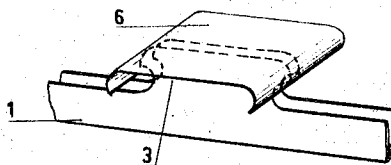


FIG. 8



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3,299,602

STRUCTURAL PANEL

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279,613, 279,618

7 Claims. (Cl. 52—478)

This invention relates to a wall, roof, awning, canopy, terrace partition or such like construction or to a cladding therefor respectively comprising at least two stringers or carrier beams with projections and recesses in which or on which respectively lamellae, strips or similar channel elements with bent rims are arranged, said stringers extending transversely to the lamellae, strips or similar channel elements, and also relates to a method for the manufacture of such a construction or cladding.

The wall, awning, terrace partition or similar channel construction or cladding therefor respectively according to the invention differs from the constructions or claddings of this kind known so far in that the stringers are provided on either side of the lamellae, strips or similar channel elements and the projections and recesses of the stringers or each stringer located at one side of the lamellae, strips or similar channel elements are arranged staggered relative to the projections and recesses of the stringers or each stringer located at the other side of the lamellae, strips or similar channel elements. In this way a sturdy construction is obtained which may be easily and rapidly mounted. The stringers may be provided arranged spaced apart on either side of the lamellae, strips or similar channel elements.

A preferred embodiment of the wall, awning or like construction or cladding is characterized in that every other of the lamellae, strips or similar channel elements are locked against displacement in the longitudinal direction in at least one stringer or carrier beam located on one side of the lamellae, strips or similar channel elements and in at least one stringer or carrier beam located on the other side thereof. This locking against displacement may be accomplished by bending portions of the rims of the lamellae, strips or similar channel elements in such manner that these portions lie against the stringers. These stringers may have a U-shaped or substantially U-shaped cross-section or similar profile. In this case the rim portions located between the legs of the U may be bent. According to the invention a narrow part of lamella on which the lamellae are fixed may be provided on the raised portions of at least one of the stringers or carrier beams. As a consequence thereof the lamellae, strips or similar channel elements may be more easily shifted when being mounted. According to the invention the stringers located on either side of the lamellae, strips or similar channel elements may face each other in twos. The stringers may thereby have, like in the other embodiments, a U- or V-shaped cross-section or some other channel-like cross-section. The two stringers facing each other constitute together a stringer of box-like construction in which the lamellae, strips or similar channel elements are clampingly held. A preferred method according to the invention for the manufacture of a wall, roof, awning or similar channel construction or for a cladding therefor respectively is characterized in that first the recesses of the stringer(s) or carrier beam(s) located on either side of the lamellae, strips or similar channel elements are provided with lamellae, strips or similar channel elements, whereafter the two parts thus obtained are placed upon each other and the lamellae, strips or similar channel elements are pressed onto the raised portions of both stringers or carrier beams.

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Consequently the advantage obtained that when being mounted the bent rims of the lamellae, strips or similar channel elements do not run the risk of being damaged, which certainly is the case if said lamellae, strips or similar channel elements are slid into recesses and onto the raised portions of the stringers.

When the stringers or carrier beams are facing each other in twos the lamellae, strips or similar channel elements may be slid into the recesses and onto the raised portions of the stringers. However, this requires much time. According to a preferred method according to the invention for the manufacture of a wall, roof, awning or similar channel construction, or of a lining therefor, one may proceed in such manner that in the recesses of each of the stringers lamellae, strips or similar channel elements are introduced, said stringers being located at such a point of the lamellae that, when both parts thus obtained are placed one upon the other, said stringers are spaced apart whereupon the lamellae, strips or similar channel elements are pressed into the raised portions and the stringers are displaced until they are facing each other. If narrow lamella parts have been provided on the raised portions of the stringers, said stringers may be easily displaced. It is not necessary to displace all of the stringers, but of each pair of stringers facing each other one stringer may be mounted non-slidably on the lamellae on account of the fact that out of these lamellae lips are bent which co-operate with the corresponding stringers.

The invention will be described below with reference to the accompanying drawings showing by way of example some embodiments of part of a construction according to the invention.

FIG. 1 shows an embodiment with two stringers or beams in which in the recesses of each stringer or beam lamellae have been arranged and the lamellae located in said recesses have not yet been mounted on the raised portions of the stringers.

FIG. 2 shows on a smaller scale diagrammatically an embodiment in which on one side of the construction two stringers and on the other side one stringer is provided.

FIG. 3 is an end view of this construction.

FIG. 4 shows a front view of said wall portion.

FIG. 5 shows diagrammatically a top plan view thereof.

FIG. 6 shows on an enlarged scale a section according to line VI—VI of FIG. 4.

FIG. 7 shows on an enlarged scale a section according to line VII—VII of FIG. 4.

FIG. 8 shows in perspective a part comprising a raised portion on which a narrow piece of lamella has been provided.

As is apparent from FIG. 1, two stringers 1 of U-shaped or substantially U-shaped cross-section are arranged spaced apart with their legs pointing in opposite direction. The legs of the stringers 1 comprise recesses 2 and raised portions 3. The raised portions 3 are provided with flanges 7. In the recesses 2 of each of the stringers lamellae, strips of similar elements 4 with bent rims 5 are clampingly engaged with flanges 7. In order to prevent the elements 4 from shifting in the longitudinal direction there have been bent out of the rims 5 located between the legs of the stringers 1 lips 6 of which the lateral front ends lie against the inner sides of the legs of the stringers 1.

After the recesses 2 of the stringers 1 have been provided with panels, lamellae or similar channel elements 4, said panels, lamellae or similar channel elements 4 are placed upon each other in such manner that one stringer is positioned at the under side and the other stringer at the upper side. Thereupon the free ends of the panels, lamellae or similar channel elements located in the recesses 2 of one stringer are pressed onto the raised portions 3 of the other stringer.

FIGS. 2 and 3 diagrammatically show an embodiment in which on one side of the panels, lamellae or similar elements 4 two stringers 1 and on the other side one stringer 1 are provided.

It is obvious that on either side of the lamellae, strips or similar channel elements also two or more spaced stringers may be provided.

In FIGS. 4-7 there are arranged two stringers 1 of substantially U-shaped cross-section facing each other and pointing in opposite direction. The legs of the stringers 1 are provided, in a manner known per se, with recesses 2 and raised portions 3. In the recesses 2 of each of the stringers 1 there are arranged lamellae, panels or similar striplike elements 4 with curved rims 5, said lamellae, panels or elements 4 being also clampingly arranged on the raised portions 3 of the stringers 1 and in engagement with said recesses 2. In order to prevent the elements 4 from being shifted in the longitudinal direction lips may be bent, in a manner known per se, out of the portions of the lamellae 4 located between the legs of the stringers 1, the front ends of said lips abutting against the inner side of the legs of the stringers.

In order to be able to manufacture such a wall rapidly and easily lamellae, panels or suchlike elements 4 may, according to the invention, first be pressed into the recesses 2 of each of the stringers. Thereupon the two parts thus obtained are placed one upon the other in such manner that the raised portions 3 of the stringers are facing the recesses of the stringers. Care should be taken that the stringers which in the completed wall will be facing each other are arranged at a distance from each other as shown in dotted lines in the lower part of FIG. 4. Therefore only one of the stringers 1 of the two stringers which assume a position facing each other may be placed in its definite position on the lamellae 4 of the channel elements. These lamellae may be non-slidably fixed on this stringer by means of the above-mentioned lips. The stringer 1 shown in dotted lines is thereupon slid over such a distance that it assumes a position facing the stringer located at the other side of the lamellae or strips 4.

In order to facilitate this sliding it is possible, as shown in FIG. 8, to arrange on the raised portions 3 narrow parts of lamella 6 on which the lamellae, panels or strips 4 are clamped. The application of these narrow parts of lamella offers the additional advantage that the lamellae located in the recesses 2 of one stringer may be brought more easily on the raised portions 3 of the other stringer when both stringers are still spaced apart.

It is obvious that the invention is not restricted to the embodiment described above by way of example but that it may be modified in many ways without departing from the scope of the invention. Instead of two sets of stringers or supporting beams facing each other also three or more sets of stringers or supporting beams may be applied. Furthermore, the lamellae or strips may be successively slid into the recesses 2 and onto the raised portions 3. When the lamellae 4 have been put in place the narrow piece of lamella 6 may, if necessary, be removed. Instead of lamellae with circularly bent rims also lamellae with differently shaped bent rims may be applied.

I claim:

1. A structural panel for a wall, roof, awning, wall cladding and the like, comprising substantially U-shaped stringers having alternate flanged projections and recesses for clampingly supporting channel elements having curved rims, said stringers extending transversely to said channel elements and being provided on either side of said channel elements, the channels in the recesses of each stringer opening in one direction and those on the projections opening in the opposite direction, the projections and recesses of each stringer located at one side of the channel elements being arranged staggered relative to the projections and recesses respectively of each

stringer located at the other side of the channel elements.

2. A structural panel according to claim 1, characterized in that every other one of the channel elements is locked against displacement in the longitudinal direction in at least one stringer located on one side of said elements and in at least one stringer located on the other side thereof.

3. A structural panel according to claim 1, characterized in that on the projections of at least one of the stringers there is provided a short piece of channel element on which the striplike elements are arranged.

4. A structural panel for a wall, roof, awning, wall cladding and the like, comprising stringers having alternate flanged projections and recesses for clampingly supporting channel elements having curved rims, said stringers extending transversely to said channel elements and being provided on either side of said elements, the channel of each element in the recesses opening in one direction and those on the projections opening in the opposite direction, the projections and recesses of each stringer located at one side of the channel elements being arranged staggered relative to the projections and recesses respectively of each stringer located at the other side of the channel elements, of each two stringers of said structural panel the stringer located on one side of the channel elements is opposite to the stringer located on the other side of said channel elements.

5. A structural panel for a wall, roof, awning, wall cladding and the like, comprising stringers having alternate flanged projections and recesses for clampingly supporting channel elements having curved rims, said stringers extending transversely to said channel elements and being provided on either side of said elements, the channel elements in said recesses opening in one direction and those on the projections opening in the opposite direction, the projections and recesses of each stringer located at one side of the channel elements being arranged staggered relative to the projections and recesses respectively of each stringer located at the other side of the channel elements, of each two stringers of said structural panel the stringer located on one side of the channel elements being opposite to the stringer located on the other side of said channel elements, the stringers being channel-shaped in cross-section, every other one of said channel elements being locked by means of lips against displacement in their longitudinal direction in at least one stringer located on one side of said elements and in at least one stringer located on the other side thereof, said lips gripping between the legs of the channel-shaped stringers.

6. A method for the manufacture of a structural panel having alternate flanged projections and recesses for supporting channel elements having curved rims, said stringers extending transversely to said channel elements and being provided on either side of said channel elements, said channel elements being first provided into the recesses of the stringers so that two sets of channel elements are obtained, each provided with at least one stringer, whereupon one of said sets is placed upon the other one so that the projections and recesses of the stringers are opposite to one another and are staggered relative to each other and the channel elements in the recesses of one set opening towards the channel elements in the other set, whereafter the channel elements arranged in the recesses of each set are pressed onto the projections of the stringer of each other set.

7. A method for the manufacturer of a structural panel having alternate flanged projections and recesses for supporting channel elements having curved rims, said stringers extending transversely to said channel elements and being provided on either side of said channel elements, said channel elements being first provided into the recesses of the stringers so that two sets of channel elements are obtained, each provided with at least one

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stringer, whereupon one of said sets is placed upon the other one so that the stringers are spaced apart and the projections and recesses of the stringers are opposite to one another and are staggered relative to each other, whereafter the channel elements arranged in the recesses of each set are pressed onto the projections of the stringer of each other set and the stringers on one side of the structural panel are displaced on the channel elements until they are facing one another.

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