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P. S. ECKLAND
LAMINATED CONSTRUCTION

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Fig. 1.

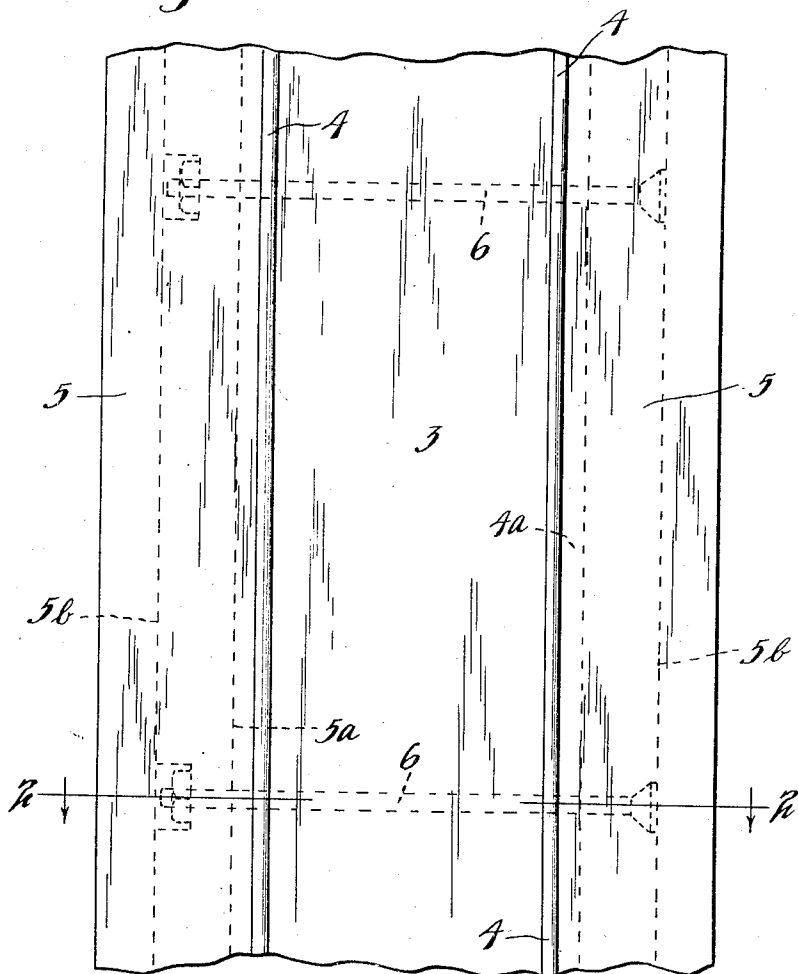
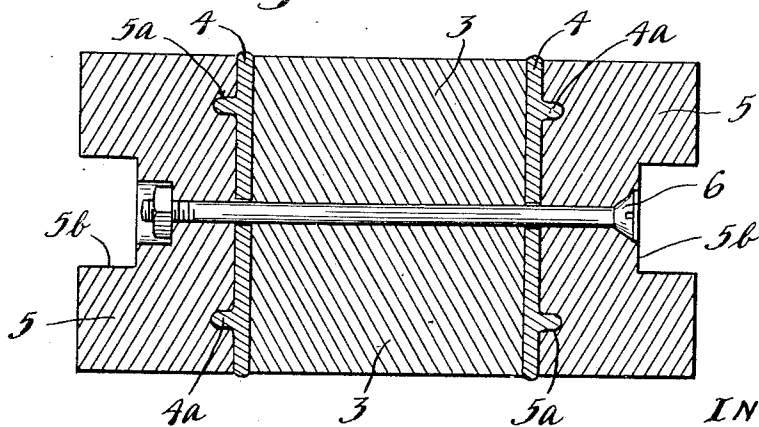


Fig. 2.



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LAMINATED CONSTRUCTION

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This invention relates to laminated constructions for posts, beams, etc., particularly adapted for use in the building of bus bodies, automobile bodies and similar constructions subjectable when in use to jolts, strains and vibrations.

In bus bodies posts are used between the windows of the bus and at the ends thereof. These posts must be strong, light and durable. Iron posts or other posts constructed from heavy metal cannot be used on account of their weight. Wooden posts, although sufficiently light, will crack and break after they have been used for a comparatively short length of time, the cracking and breaking being largely due to the jolting of the bus body during use, and vibration thereof. Solid wooden posts are, therefore, impracticable. Aluminum posts or posts constructed from aluminium alloys are light and strong, but it has been found that these posts will crystallize from the vibrations thereof occasioned from jolts and other strains when the bus body is in use, whereupon after the posts have been crystallized the posts will soon break.

It is the object of the present invention to provide a light, strong and durable post, beam or similar construction which will not crystallize, break or otherwise be injured from jolts, strains or vibrations.

To this end, the invention consists in the novel parts and novel combinations of parts hereinafter defined in the claims, and described in the following specification, made in connection with the accompanying drawings, wherein like reference characters refer to the same or similar parts throughout the two views, and, in which,

Fig. 1 is a view in front elevation of a portion of a post constructed in accordance with the present invention; and

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1, as is indicated by the arrows.

Referring to the drawings, a long scantling preferably rectangular in cross section is designated by the numeral 3. The scantling 3 is preferably constructed from wood. Abutting two opposite sides of the scantling

3 are long, thin, light weight metal plates 4 and these plates are preferably constructed from light weight aluminium alloy, although they may be constructed from other light weight metals. The plates 4 preferably run parallel with the two sides of the scantling 3 and they are smooth faced at their inner sides. Projecting outwardly from the outer sides of the plates 4 are the longitudinal flanges 4a which are spaced inwardly a short distance from the two edges of the plates. The flanges 4a are preferably rounded at their outer edges. Abutting the outer sides of the plates 4 are long bars 5 preferably constructed from wood. These bars 5 extend generally parallel with the scantling 3 and the plates 4 and they are provided on their inner sides with longitudinal grooves 5a within which the flanges 4a of plates 4 snugly fit. The construction illustrated is adapted for use as a bus post and, accordingly, large grooves 5b are formed on the outer side surfaces of the bars 5 and the grooves 5b are adapted to be used as window grooves for receiving bus windows. It will be understood that all parts of the bars 5, with the exception of the inner surfaces thereof, may be variously constructed to suit the particular requirements for which the laminated construction is used. The scantling 3, plates 4 and bars 5 are all secured together to form a rigid structure by suitable means as by the longitudinally spaced nutted bolts 6, the heads and nutted ends of which are countersunk in the outer sides of the bars 5.

By use of the present invention, a light, exceedingly strong and durable construction is provided, no part of which will be subject to crystallization, although the construction is subjected to severe jolts, strains and vibrations. The scantling 3 and the bars 5 being constructed from wood will have a certain natural free vibration period. The plates 4 being constructed chiefly from aluminium, or similar light metal, will also have a certain natural free vibration period, but this vibration period will be different than the vibration period of the wooden scantling 3 and bars 5. Accordingly, inasmuch as the wooden scantling 3 and the bars 5 abut op-

posite sides of the plates 4, the vibrations of the scantling 3 and the bars 5 will intercept and break down the vibrations of the plates 4 when the construction is subjected to severe jolts, strains and vibrations, and the plates 4 will similarly act to intercept and break down the vibrations in the scantling 3 and bars 5. The wooden parts and the metal parts will thus mutually act to prevent free natural vibration in each other. The metal parts, accordingly, will not crystallize and break and the wooden parts will not crack or break. The flanges 4a on the metal plates 4 fitting snugly within the grooves 5a in the bars 5, not only act to tie the various parts together to thoroughly prevent the natural vibrations of the parts and to prevent side-ward movement of the plates and bars relative to each other, but also the flanges 4a act to give great strength and rigidity to the structure. As the plates 4 are chiefly constructed from aluminium, or similar light metal, and as the scantling 3 and bars 5 are preferably constructed from wood, the construction will be very light.

If desired, the scantling 3 and bars 5 may be made from light material other than wood, it being only necessary that the material used have a different natural free vibration period than the material used in constructing the plates 4. The inventor also contemplates the use of merely a single plate 4 with wooden members abutting the two opposite sides thereof, and bolts 6 or similar means holding the parts together. Although the present device was constructed particularly for use in connection with bus body constructions it will be understood that it may be used where desired in other constructions subjectable to severe jolts, strains and vibrations where a light strong construction is desired.

The present construction is now being extensively used in bus bodies in interstate and intrastate commerce, and the construction has proved itself to be very successful and efficient. The construction is simple and cheap and the parts may be quickly and easily assembled.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of the present invention.

What is claimed is:

1. A laminated construction for use in vehicles and the like subjectable to severe vibrations and jolts, comprising a central wooden scantling, a pair of long, thin, metal plates having spaced longitudinal flanges on the outer sides thereof, a pair of wooden bars having sides abutting the outer sides of said plates and having spaced longitudinal grooves cut therein within which said flanges snugly fit and means for securing said scant-

ling, plates and bars tightly together in assembled relation.

2. In the construction defined in claim 1, said plate flanges being spaced from each other and from the edges of said plates substantially in parallelism, and said securing means comprising bolts or the like passing through the wooden members and through said metal plates.

In testimony whereof I affix my signature.
PETER S. ECKLAND.

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