

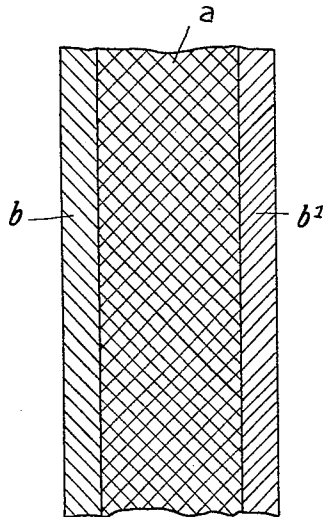
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COMBINATION STRUCTURAL PLATE

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UNITED STATES PATENT OFFICE

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COMBINATION STRUCTURAL PLATE

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My invention relates to improvements in combination structural plates for use as floor plates, wall boards and for other, similar uses, and more particularly in plates comprising
 5 a body of hydraulic cement or concrete and a layer consisting of a mixture of disintegrated wood and other filling matter and a suitable binding medium such as magnesite and magnesium chloride. Combination
 10 plates of this type such as are now in use are objectionable for the reason that the said plates are frequently deformed by reason of the change of the volume of the layer of disintegrated wood and binding medium caused
 15 by the setting of the binding medium, so that cracks are produced in the plate. The object of the improvements is to provide a plate and a process of manufacturing the same which is not deformed when being set, and
 20 which is free of cracks, and with this object in view my invention consists in manufacturing the combination plate from an inner layer of hydraulic cement or concrete coated at both sides with layers of equal thickness
 25 consisting of the said mixture of disintegrated wood, other filling matter, magnesite and magnesium chloride. In the manufacture of the said combination plate the said materials are brought together in a moist
 30 state and pressed together in a hydraulic press, and they are immediately removed from the said press and allowed to set. Therefore it is not necessary to cause the plate to set while under pressure.

35 In order that my invention be more clearly understood a combination plate manufactured by my improved process has been illustrated in the accompanying drawing showing a sectional elevation of a part of the said
 40 plate.

As shown in the said figure, my improved combination plate consists of an inner body or core α made from hydraulic cement, concrete or the like, and outer layers b and b^1
 45 both consisting of a mixture of disintegrated wood, filling matter, and a binding medium. As shown the layers b and b^1 are thin as compared to the body α , and they have equal thickness. Thus the tension produced by the
 50 setting of the outer layers is compensated, so

that the combination plate is not deformed, and no cracks are produced in the plate.

The material from which the layers b and b^1 are made may consist for example of a mixture of 50 parts of filling matter and 50
 55 parts of a binding medium composed of magnesite and magnesium chloride, the filling matter being composed of sawdust, wood-meal, asbestos and talcum.

In the manufacture of the combination
 60 plate a thin layer of the said mixture of disintegrated wood and binding medium is spread into a mould in a slightly moist state, thereafter a thick layer of hydraulic cement or concrete is brought into the mould, and
 65 finally a thin layer of the mixture of disintegrated wood and binding medium is spread on the said layer of concrete, care being taken that the bottom and top layers of wood and binding medium have the same
 70 composition and the same thickness, in order that equal surface tensions are produced by the setting of the plate. The filled mould is placed in a hydraulic press where the matter
 75 is shortly compressed. Finally the mould is removed from the press and the plate is allowed to set.

I claim:

1. A plate comprising a body of concrete and cover layers of disintegrated wood and
 80 a binding medium on opposite sides of said body and coalesced therewith.

2. A plate as claimed in claim 1, in which the cover layers are of equal thickness and each of less thickness than the body.
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In testimony whereof I hereunto affix my signature.

PAUL LANGGUTH.

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