Nov. 3, 1936. A. H. TASHJIAN 2,059,664

FIREPROOF METAL-CLAD INSULATING PLANK

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Fig. 1.

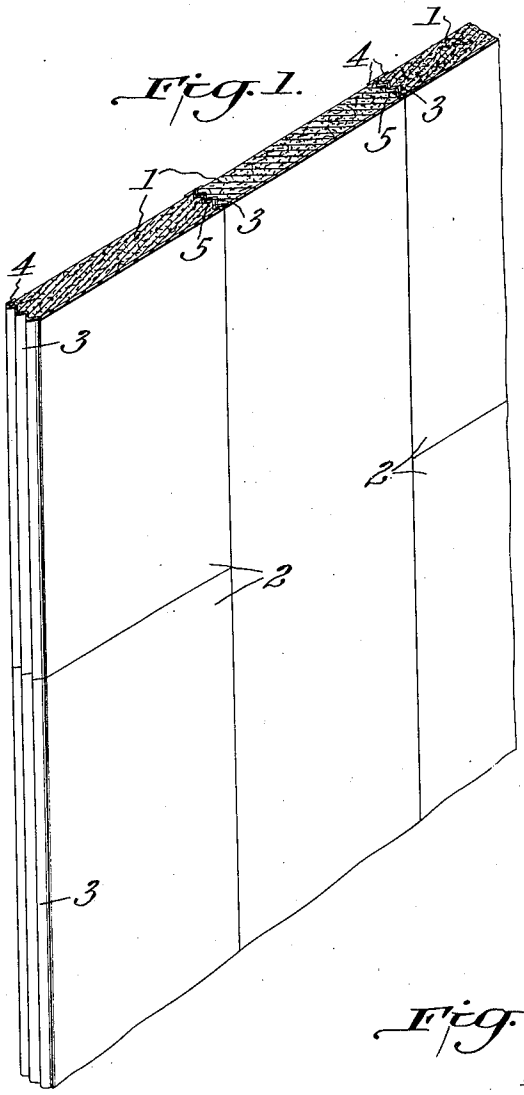

Fig. 2.

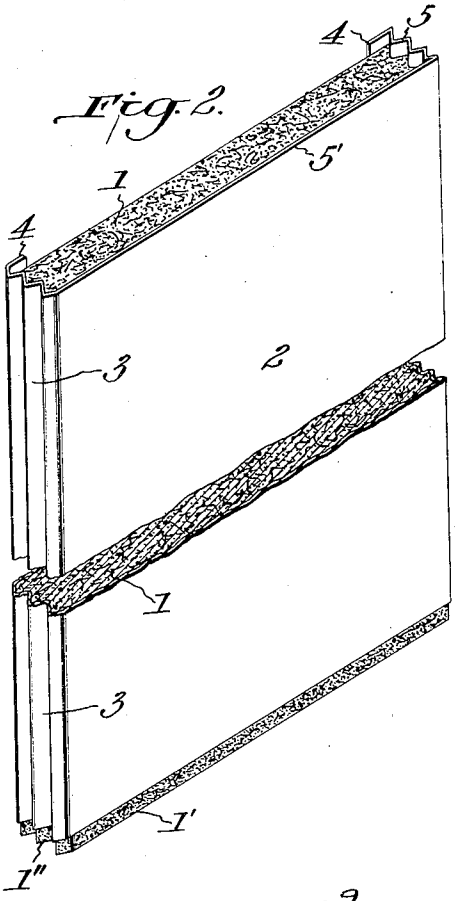

Fig. 3.

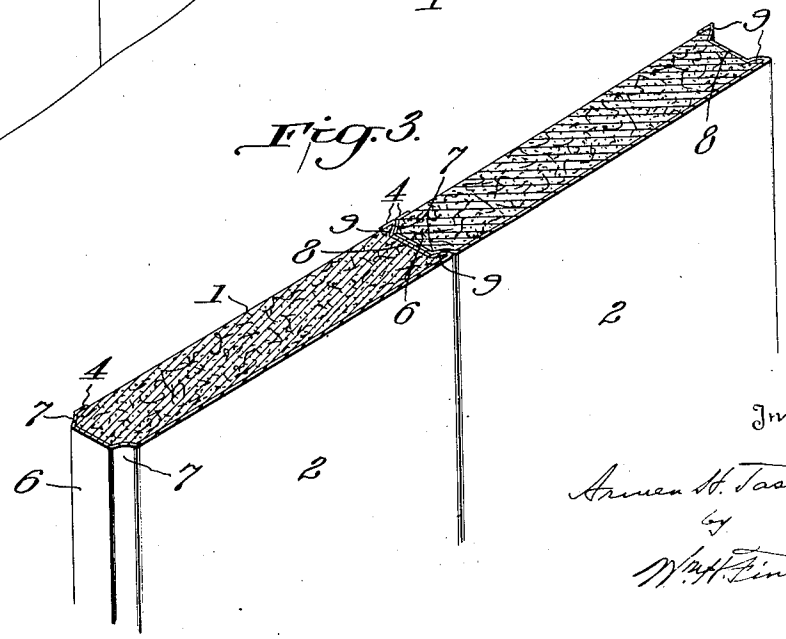

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Fig. 4.

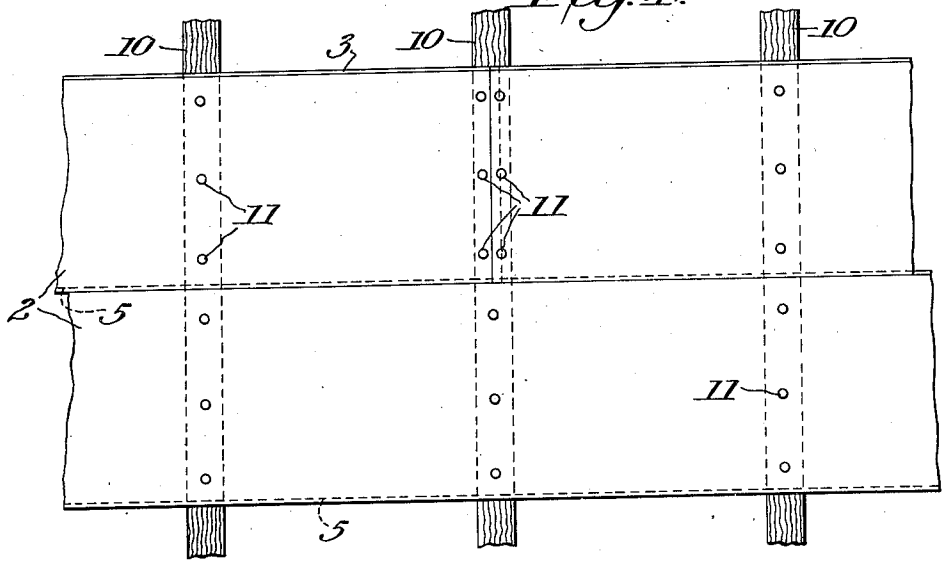


Fig. 5.

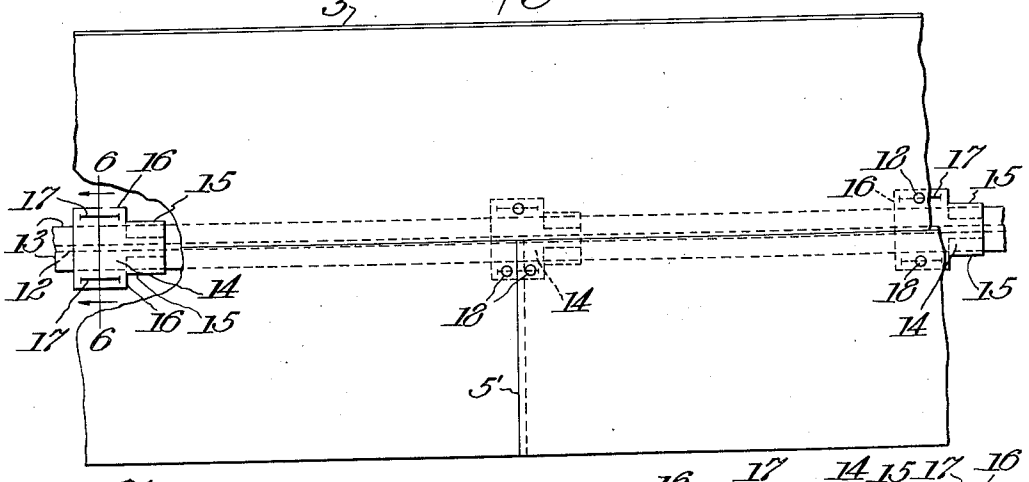


Fig. 8.

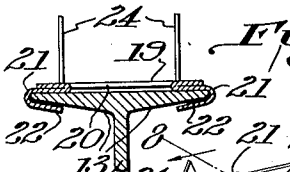


Fig. 7.

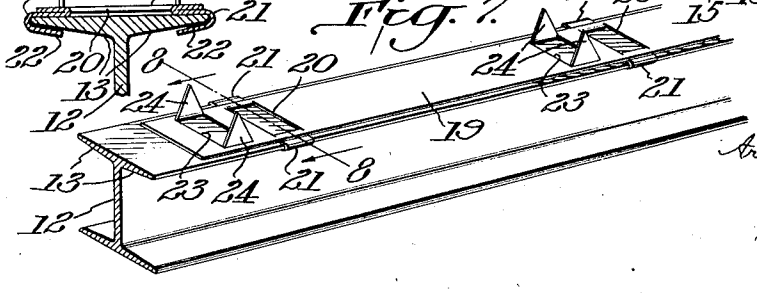
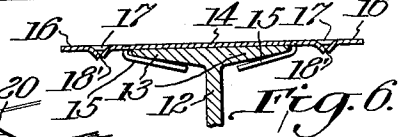


Fig. 6.



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UNITED STATES PATENT OFFICE

2,059,664

FIREPROOF METAL-CLAD INSULATING PLANK

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Application June 13, 1934, Serial No. 730,481

3 Claims. (Cl. 72—68)

The object of this invention is to supply a fireproof metal clad insulating plank for roofs, floors, sidings and other structural parts where required or desirable, in the form of units ready to apply.

The invention consists of a fabricated building plank or structure embodying an inner body member clad on one side and opposite edges with unperforated or solid metal, the edges being formed with matching surfaces and the abutting ends supplied with interlocking means, so that superposed features may be nailed or clipped on and also the parts may be nailed or clipped to adjacent supports, as I will proceed now more particularly to set forth and finally claim.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view in cross section of several pieces of the plank in assembled position. Fig. 2 is a perspective view in cross section on a larger scale, of a plank broken out longitudinally and illustrating, more particularly, the matching edges and the interlocking ends. Fig. 3 is a perspective view in cross section illustrating a modified form of matching and interlocking means. Fig. 4 is a plan view of a portion of a roofing structure embodying wooden purlins or rafters and my planks nailed on. Fig. 5 illustrates in plan view part of a structure using I beam supports to which the planks are clipped, and Fig. 6 is a cross section on line 6—6 of Fig. 5. Fig. 7 is a perspective view illustrating another form of clip, and Fig. 8 is a cross section on line 8—8, of Fig. 7.

Referring to Figs. 1 through 3, the plank comprises any suitable foundation member 1, covered or clad with metal 2 overlying the whole of one side and the opposite edges, as at 3, and underlying as at 4 portions of the other side adjacent to the edges and projecting slightly beyond the member 1 as at 5 and 5'. The edge portions 3 are so formed, as by crimping or corrugating, to form in effect tongue and groove interlocks when a number of planks are assembled in a structure.

I have shown two types of interlock, one of which is in the form of a series or plurality of longitudinal crimps or corrugations, as in Figs. 1 and 2, and the other is a modified tongue and groove construction, as shown in Fig. 3, in which the tongue 6 has opposite incurved edges 7 and the groove 8 has complementally curved sides 9.

The foundation member may be of wood, or a composition or aggregate or other nail-penetrable substance or material which is of itself or by treatment made to be slow burning or fireproof or fire resistant.

The metallic casing 2 is solid as distinguished from reticulated, meshed, perforated or expanded, and both the casing and the inner member 1 are stiff or rigid enough to constitute a plank which is self-sustaining and easy to handle in transportation and in the erection of a structure, such as the roof, walls, sidings, partitions and other parts of a building, and, further, these planks may be penetrated by driven nails or other fastenings used to attach other parts to them.

The crimps or corrugations preferably are made in interfitting male and female parts, as, for example V formation, and they are arranged in opposite sense on opposite edges of the planks so as to interlock adjacent planks; and these interfitting parts on adjacent edges not only provide for interengagement of the planks and alignment of their exposed surfaces, but form substantial I beams and thereby give structural strength to the planks to span supporting members. Furthermore the non-punctured metallic surface is important in that it permits nailing of shingles, siding and other parts to the metal at any desired place.

It is also to be observed that the plank consists of an insulating, fire-safe surface 1 exposed on one side and a solid, non-perforated metal surface 2 on the other side. The part 1 receives the points of the nails or other fasteners, and also affords an ideal bond for plastering. The metal covering 2 affords protection from rain or snow for the inner part 1 during installation.

As shown in the lower part of Fig. 2 the metal 2 at one edge of the part 1 stops short of the part 1, so that when the planks are laid the projecting parts 5 and 5' will overlie the exposed parts 1' and 1'' and thus level surfaces at the lap joints are secured.

The structure thus described may be laid on wooden purlins 10 or other supports, and secured thereto by nails 11, as shown in Fig. 4. In case the purlins or other supports are of metal, such as I beams 12, it may be advisable to apply metal clips at intervals or continuously for cooperating with the planks and the supports, to secure the planks to such supports. As shown in Figs. 5 and 6, the metal beams 12 have attached to their upper flanges 13 metal clips 14 which are slit partway across, and the parts 15 provided by such slitting are bent down over the edges of the

flanges 13 so as to engage the beam, and the full width parts 16 are provided with longitudinal slots 17 for the passage of nails 18 through the planks and with their points thereafter clenched. As seen in Fig. 6, the slots 17 have their edges 18' retained and these edges 18' provide lips to grip the nails passed through the slots and thereby aid in holding the nails securely. These clips are applied at suitable intervals to attach the planks to the support.

Another form of clip is shown in Figs. 7 and 8. It consists of a continuous base 19 of any desired length, to be laid upon the flange of the beam and provided with cuts 20, the metal so cut being bent beneath the base 19 at 21 and then beneath the flange of the beam as at 22 to secure the clip to the beam. Near the cuts 20 the base is provided with other cuts 23 having its cut metal shaped to form the plank-penetrating prongs 24 into which planks the prongs are driven and their points clenched above or upon the metal casing 2.

Standard planks may be made to any required dimensions; they are light in weight; structurally strong, can be sawed with ease and handled and nailed like wood; can be used for flat or sloping roofs, and make a superior base for any kind of roofing, and are well adapted for wood or slate shingles or siding which may be nailed to the metal surface at any place. The planks may be laid like standard tongue and groove planking, metal side out, with staggered joints and nailed or clipped to supporting members.

The planks will not burn; they have high insulating value; will prevent condensation on ceilings or walls; have excellent sound-absorption properties, and will not disintegrate, deteriorate or support vermin, and are odorless.

The planks are particularly adapted for residences, schools, hospitals, theaters, garages, service stations, industrial buildings and low cost housing. They have load carrying ability without losing any insulating value. The metal casing or covering forms integral structural small beams at abutting edges to give the plank structural strength, and still leave the under side of the insulation uncovered.

Variations other than those mentioned, are considered as within the principle of the invention and the scope of the claims following.

What I claim is:—

1. A fabricated plank, having an inner foundation member of penetrable material and an outer member of solid metal likewise penetrable, the inner member having portions of the sides and edges of one of its ends left bare and the outer member extended at the opposite end sufficiently to overlap the bare portions of an adjacent plank and form a closed joint.

2. A fabricated plank, having an inner foundation member of penetrable material and an outer member of solid metal likewise penetrable, said outer member extending solidly over one side of the foundation member and over both of its longitudinal edges, the two longitudinal edges of the plank each being provided with a plurality of longitudinally extending corrugations arranged in opposite sense on the two edges to provide for interengagement of juxtaposed edges of adjacent planks in an assembly of same.

3. A fabricated plank, having an inner foundation member of penetrable material and an outer member of solid metal likewise penetrable, said outer member extending solidly over one side of the foundation member and over both of its longitudinal edges, the two longitudinal edges of the plank each being provided with a plurality of longitudinally extending similar V-shaped corrugations arranged in opposite sense on the two edges to provide for interengagement of juxtaposed edges and alignment of the surfaces of adjacent planks in an assembly of same and to afford structural strength for the planks to span supporting members.

ARMEN H. TASHJIAN.