

May 24, 1938.

G. SLAYTER ET AL

2,118,237

PARTITION

Filed Sept. 18, 1936

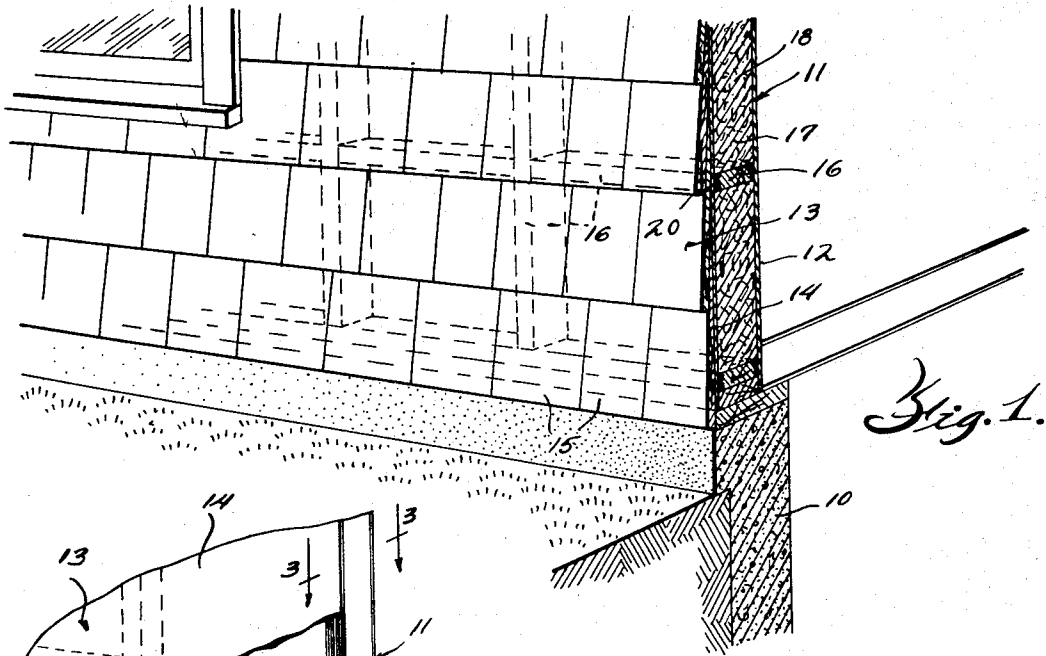


Fig. 1.

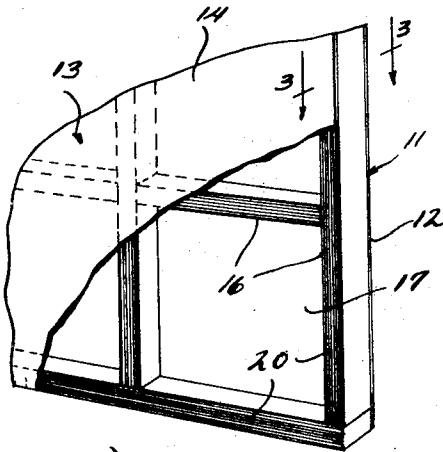


Fig. 2.

Fig. 3.

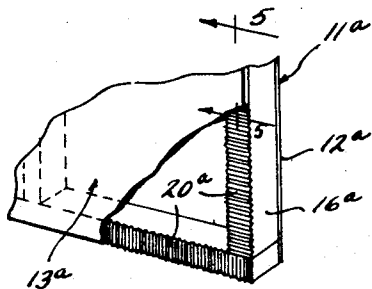
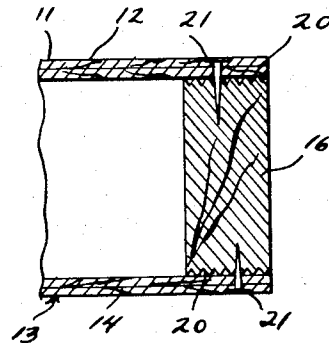


Fig. 4.

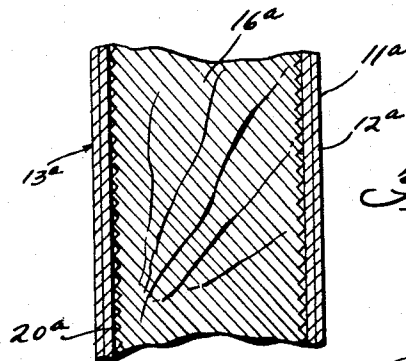


Fig. 5.

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2,118,237

PARTITION

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Application September 18, 1936, Serial No. 101,514

6 Claims. (Cl. 20-4)

This invention relates to partitions or walls and has particular reference to partitions or walls adapted to be located where opposite sides thereof are subjected to a temperature differential.

One of the primary objects of this invention is to render more uniform the heat transmitted through the partition so that, for example, the warmer side thereof will not have areas which are relatively warm and other areas which are relatively cold.

Numerous other objects and advantages of this invention will become more apparent as the following description proceeds particularly when reference is had to the accompanying drawing wherein

Fig. 1 is a perspective view with parts broken away of an outside wall constructed in accordance with the teachings of this invention;

Fig. 2 is a fragmentary perspective view with parts broken away of the structure shown in Fig. 1;

Fig. 3 is a sectional view taken substantially on the line 3-3 of Fig. 2;

Fig. 4 is a view similar to Fig. 2 showing a slightly modified form of construction; and

Fig. 5 is a sectional view taken substantially on the line 5-5 of Fig. 4.

While the invention is not necessarily so limited, it will find particular utility in insulated walls, that is, walls where a suitable insulating material is placed in the space between the inner and outer surfaces thereof. It is a common experience to note in the ceilings of rooms, particularly second floor rooms, dark streaks which appear to be the laths forming the plaster base for the ceiling. Actually, these dark streaks or stripes represent relatively cool areas since dust deposits more readily on cool surfaces than on warm surfaces.

These cool areas in ceilings and the like of rooms are caused by the fact that heat is transmitted more rapidly through some parts of the ceiling than through other parts thereof and the present invention therefore contemplates the provision of means for making more uniform the conduction of heat through a wall or partition so that neither side of the wall or partition will be formed of relatively cool and relatively warm areas.

Referring now more particularly to the drawing wherein like reference characters designate corresponding parts throughout all views, there is shown in Fig. 1 a foundation wall 10 and an outside wall structure designated generally by the reference character 11. The outside wall struc-

ture comprises an inner surface or side 12 and an outer surface or side 13, the former being formed of any suitable material such, for example, as plywood, and the latter being formed of sheathing 14 and shingles 15.

The inner and outer sides are spaced apart by studs 16 to provide a chamber 17, in which there is preferably located insulation 18. The insulation may be of any desired character, that which is generally used being fibrous glass wool or rock wool.

In a properly insulated outer wall structure such as that above described, it will be found that the heat conductivity through the insulated portions of the wall will be approximately .08%, while the heat conductivity through the studs, if the latter be of the character generally used, will be approximately 2%. This results from the fact that the wood studs have a relatively high co-efficient of thermal conductivity and obviously therefore in such a construction the inner side 12 of the wall has relatively cool areas corresponding to the edges of the studs.

To eliminate the relatively cool areas caused by the studs of usual construction, the present invention contemplates the provision of means for decreasing to a minimum the surface contact between the edges of the studs and the inner and outer sides of the wall structure. This is effected, as illustrated in Figs. 2 and 3 of the drawing, by providing longitudinally extending grooves 20 in the stud edges, with the result that the joists have a minimum amount of contact with the inner and outer sides of the wall structure. It has been found that by so grooving the studs, the heat transmitted through the same may be reduced a substantial amount and thus more closely approximate that transmitted through the intermediate portions of the wall structure which are filled with insulating material.

It will be apparent that the inner and outer sides of the wall structure may be secured to the studs in any desired manner, there being illustrated in Fig. 3 of the drawing nails 21 for this purpose. Obviously these nails may be so located as to pass through the bases of the grooves 20 but this is not essential, since even should the nails strike the peaks of the ridges between the grooves, the sides of the wall structure will be securely fastened to the studs.

In Figs. 4 and 5 of the drawing a slightly modified form of construction is illustrated in which the wall structure 11' is illustrated as having an inner side 12' and an outer side 13'. In this embodiment of the invention, the studs 55

16^a are provided with transversely extending grooves 20^a, it being obvious that these grooves would likewise decrease the surface contact between the studs and the inner and outer sides of the wall structure. As in the previously described form of construction therefore, the heat transmitted through the studs will be decreased a substantial amount so that the heat transmission through the studs will more closely approximate the heat transmission through the insulated spaces between the studs.

While the invention has been described in connection with an outer wall structure in which of course, the outside is subjected to the relatively cold atmospheric air, while the inside is subjected to the warm air within the house, it will be apparent that the invention may be embodied in any wall structure or partition where there is a heat differential between opposite sides thereof.

Thus the invention might be incorporated in walls between different rooms in houses, in attic floors, or in refrigerator or like walls. Thus the words "wall" or "partition" should be utilized synonymously since it is not necessary that the invention be incorporated in a wall within the usual meaning attributed to that term.

Additionally, it will be clearly apparent that the inner and outer sides of the wall or partition may be formed in the manner described, or in any desired manner and of many types of material, since in each instance with the partition formed in the manner disclosed, transmission of heat through the studs will be decreased to a minimum. It should further be understood that the invention is not limited to a wall or partition in which the spaces between the studs are filled with an insulating material, since it will be clearly apparent that even if the walls be uninsulated, it will be desirable to decrease to a minimum the amount of heat conducted through the walls by way of the studs.

While the invention has been described with some detail, it is to be understood that the description is for the purposes of illustration only and is not definitive of the limits of the inventive idea. The right is reserved to make such changes in the details of construction and arrangement of parts as will fall within the purview of the attached claims.

What we claim as our invention is:

1. A partition adapted to be located between areas differing in temperature, said partition comprising spaced apart sides, and wood mem-

bers between said sides for maintaining the same in spaced relation to each other, said members having a plurality of fine grooves in close proximity to each other to reduce the surface contact between said members and the sides.

2. A partition comprising spaced sides one of which is exposed to a higher temperature than the other, and wood studs between said sides for maintaining the same in spaced relation to each other, said studs being finely grooved to reduce the surface contact between the studs and the sides.

3. A wall structure comprising spaced sides one of which is exposed to a higher temperature than the other, wood studs between said sides for maintaining the same in spaced relation to each other, and insulation located between the sides and in the space between the studs, said studs having a plurality of fine grooves their edges to reduce the surface contact between the studs and the sides.

4. An outer wall structure comprising inner and outer sides spaced apart, wood studs disposed between said sides for maintaining the same in spaced relation to each other, and insulation disposed between the sides and in the space between the studs, said studs having their longitudinal edges engaging the said sides and having in their longitudinal edges a plurality of fine grooves to reduce the surface contact between the studs and the sides.

5. A wall structure comprising spaced sides one of which is exposed to a higher temperature than the other, and wood studs between the sides and engaging the same for maintaining the sides in spaced relation, said studs having portions thereof which engage the sides provided with a plurality of longitudinally extending grooves in close proximity to each other, said grooves cooperating to reduce the contact of the studs with the sides.

6. A partition comprising spaced sides one of which is exposed to a higher temperature than the other, and wood studs between the sides for maintaining the same in spaced relation to each other, said studs being so arranged that their longitudinal edges engage the sides and the said longitudinal edges of the studs having a plurality of transversely extending grooves to reduce the surface contact between the sides and the studs.

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