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C. E. CARLO

3,090,430

METALLIC DUAL THICKNESS PARTITION

Filed May 8, 1962

2 Sheets-Sheet 1

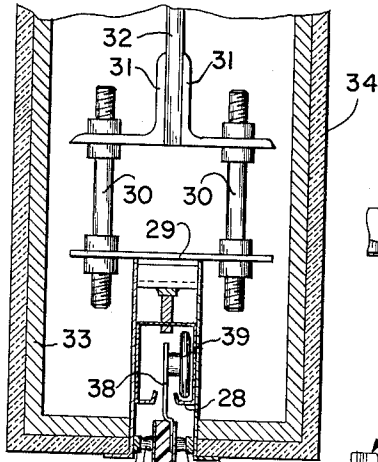


FIG. 2

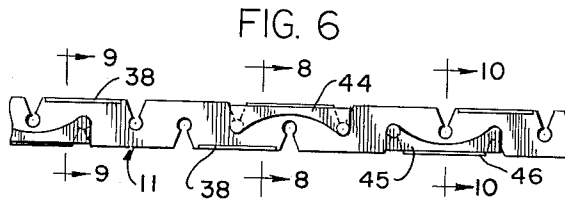


FIG. 6

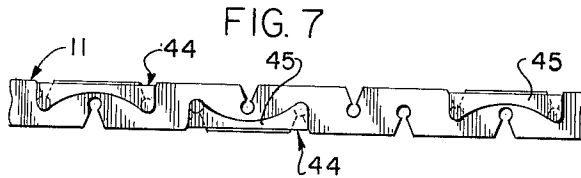


FIG. 7

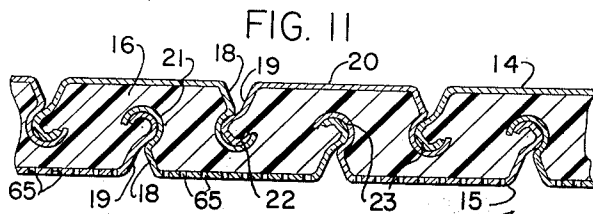


FIG. 11

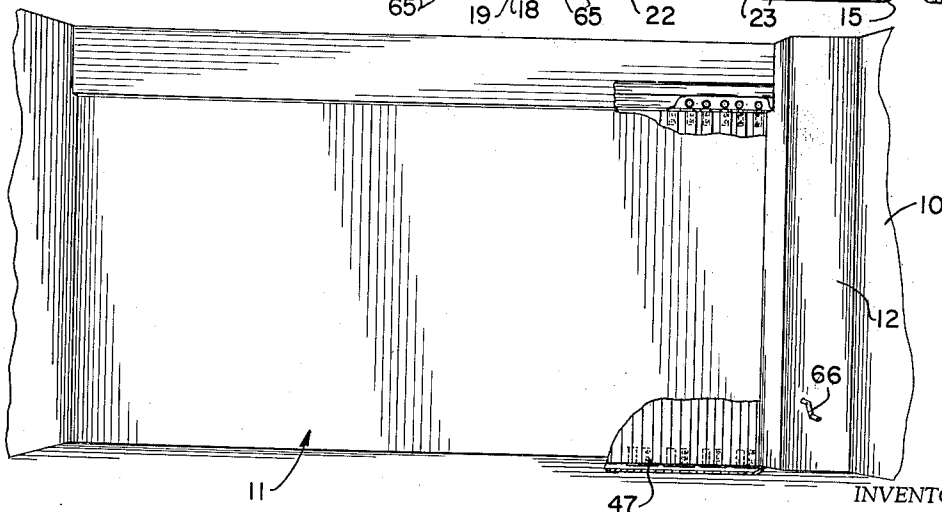


FIG. 1

CLARENCE E. CARLO

BY

Byata Dovee
ATTORNEY

May 21, 1963

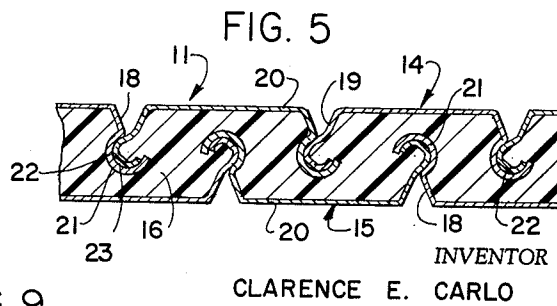
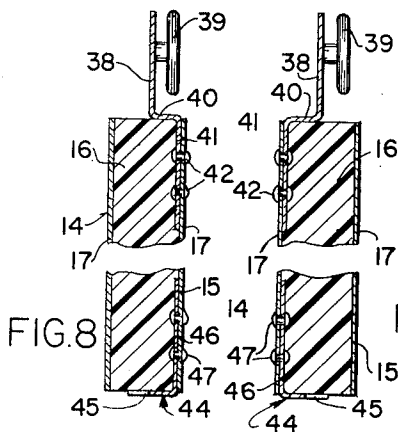
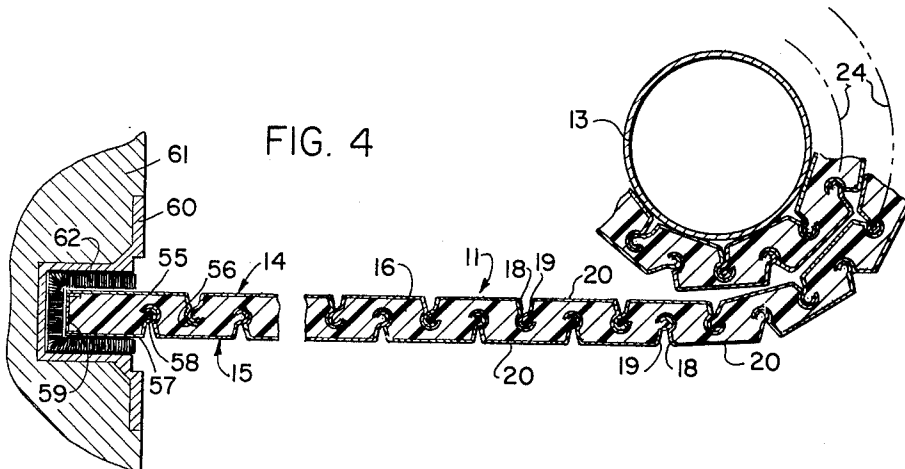
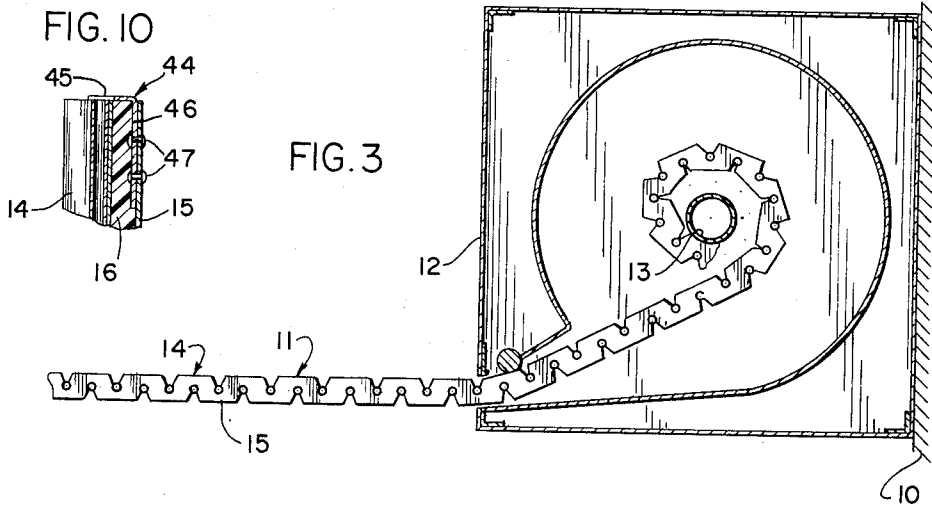
C. E. CARLO

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METALLIC DUAL THICKNESS PARTITION

Filed May 8, 1962

2 Sheets-Sheet 2



INVENTOR
CLARENCE E. CARLO

BY *James D. ...*
ATTORNEY

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3,090,430

METALLIC DUAL THICKNESS PARTITION

Clarence E. Carlo, Dubuque, Iowa, assignor to Dubuque Products, Inc., Dyersville, Iowa, a corporation of Iowa
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6 Claims. (Cl. 160—196)

This invention relates to the subdivision of areas of structures of various kinds into smaller segments for use by smaller groups, and to types of constructions employed in order to provide for such subdivisions.

The invention relates particularly to dual thickness partitions having a continuous light sound and heat barriers between spaced wall structures, and with such wall structures coailable, composed of independent pivotally connected and suspended slat segments, and the axis of rotation of one wall being substantially along the same center line as the axis of rotation of the other wall.

This invention is an improvement over that shown in my copending application on "Multiple Wall Sight and Sound Insulating Partition," 95,951, filed March 15, 1961.

Heretofore partitions of various kinds have been provided, some of which could be coiled, with more or less poor light sound and heat insulating qualities, and although sometimes composed of independent units these units have been connected at the same general locations resulting in a break in the barrier whereby such prior art devices have been inadequate and failed to fulfill the purposes desired as well as being subject to other criticisms.

It is an object of the invention to overcome the inadequacies of prior devices and to provide a multiple wall partition of individual components capable of being interchangeably pivotally interconnected to provide a partition with spaced generally parallel wall portions, providing insulation or a barrier against light sound and heat passage as well as a partition of the character indicated which can be suspended, and mounted upon a single axis about which it can be coiled and housed within a single container or a sufficient portion withdrawn from the container to provide the desired partition.

Another object of the invention is to provide a multiple wall partition, each wall of which is of individual elements connected to provide a continuous wall, and offering resistance to the flow of light sound and heat and with the space between the multiple walls providing an additional barrier for the passage of such sound and heat.

A further object of the invention is to provide a flexible multiple wall partition, of sheet material or relatively movable interchangeable slats, interlockingly connected and which can be unrolled to form a partition and rerolled when the partition is no longer needed thus forming a barrier against the passage of heat light and sound, and with relatively simple means by which the partition is mounted and in which it can be housed during the time it is not in use.

Other objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawings wherein:

FIG. 1 is a perspective illustrating one application of the invention;

FIG. 2, an enlarged section on the line 2—2 of FIG. 1;

FIG. 3, a top plan view of the partition and coil box;

FIG. 4, an enlarged section on the line 4—4 of FIG. 2;

FIG. 5, an enlarged fragmentary section through the partition illustrating the connecting means and insulating barrier;

FIG. 6, a top plan view of the partition illustrating the arrangement of the hangers and brackets;

FIG. 7, a bottom plan view illustrating the arrangement of the lower clips;

FIG. 8, an enlarged detail section on the line 8—8 of FIG. 6;

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FIG. 9, an enlarged detail section on the line 9—9 of FIG. 6;

FIG. 10, an enlarged fragmentary section on the line 10—10 of FIG. 6; and

FIG. 11, an enlarged fragmentary section of a modified form of the invention.

Briefly stated, the present invention comprises an articulated partition constructed of interfitting, interchangeable sheet metal slats arranged to form a double wall partition with a light, sound and heat insulating barrier disposed between such walls. The partition is suspended from an overhead track and may be housed within a coil box having a rotatable post or may be extended to divide a large area into multiple smaller areas. The interlocking slats are adapted to be loosely connected in a coiled position to permit a slight variation in coiling diameters as the two sides coil but to be tightly connected to prevent air and sound passage when the partition is extended.

With continued reference to the drawings, a building 10 is provided having a relatively large open area which it is desirable to divide into multiple smaller areas at times and to remain open at other times. In order to divide the area into smaller areas, a partition 11 is provided which may be retracted into a coil box 12 having a central rotatable post 13 to which the partition is attached in any conventional manner.

The partition comprises a pair of walls 14 and 15 of high density material separated by a high volume, low density material which provides a barrier 16 against the passage of light, air, sound or heat. Each of the walls 14 and 15 is constructed of a plurality of interlocking articulated strips or slats 17 of generally U-shaped configuration having legs 18 and 19 connected by a substantially flat portion 20.

As best illustrated in FIG. 5, the free end of the leg 18 is formed into a semi-circular hook 21 of a predetermined size and the free end of the leg 19 is formed into a hook 22 having a flattened portion 23. The hook 22 is of a size to be received within the hook 21 and to provide a pivotal bearing surface to permit the slats to rotate relative to each other. In order to permit the walls 14 and 15 to be coiled about the post 13, the hooks 21 and 22 of the wall 14 are interspersed between the hooks 21 and 22 of the wall 15 with the axis of rotation of each pair of hooks being located substantially on a common centerline 24. The low density material of the barrier 16 will compress sufficiently to permit the walls 14 and 15 to be coiled about the post 13.

In order to support the partition, an overhead track 28 is provided suspended from a plate 29 which in turn is adjustably connected by bolts 30 to angle members 31 welded or otherwise attached to a structural member 32 of the building. The track 28 is confined within a housing 33 which may be covered by an acoustic insulating material 34 if desired. The housing 33 is adapted to contain a pair of sweep strips 35 having a strip of sound insulating pile material 36 engaging the upper portion of the partition when the partition is extended.

The partition is supported on the track 28 by providing approximately every fourth slat 17 with a hanger bracket 38 and on the upper extremity of each bracket is mounted a roller 39 preferably of nylon or the like to reduce sound when the partition is being moved. The hangers 38 of the wall 14 are staggered relative to the hangers of the wall 15 and the rollers 39 of each of the hangers extend to the same side of the track 28. The hangers 38 each have an offset portion 40 and a downwardly extending tongue 41 connected by rivets 42 or other fasteners to the slats 17.

As illustrated in FIGS. 6 and 7, slats which are not supported by the hangers 38 are supported by brackets

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44 having a flanged portion 45 extending across the width of the partition and a tongue 46 extending along the inside of the associated slat and attached thereto by rivets or other fasteners 47. The flanged portion 45 is of a length to extend the full width of the slat and to support the hinged joint of both of the adjacent slats. The slat that is supported by the hanger also has a bracket 44 on the lower end which supports the two adjacent slats, and the intermediate slat, which is located between the slats supported by the bracket, is provided with a bracket 44 on its upper end overlying the pivotal connection between the supported slats to support such intermediate slat.

The bottom portion of the partition is slidably received within a groove formed by an inverted U-shaped member 50 having a pair of continuous sweep strips 51 with a pile lining 52 adapted to bear against the partition to prevent passage of light, sound or heat.

The free end of the wall 14 terminates in an elongated slat 55 having a hook 56 for complementary engagement with the hook 22 of the slat 17 and the free end of the wall 15 is provided with an end member 57 having a hook 58 for complementary engagement with the hook 21 of the contiguous slat 17. The ends of the members 55 and 57 are substantially parallel and are connected by a U-shaped end member 59. In order to prevent the passage of light, sound and heat around the end of the partition, such free end is received within a U-shaped channel 60 recessed within a wall 61 and having a pile lining 62 which engages the end of the partition.

As illustrated in FIG. 11 the high density material of one of the walls may be pierced by a plurality of openings 65 to permit sound to pass through such wall and be absorbed by the low density material of the barrier 16.

In the operation of the device, the partition may be coiled within the coil box 12 and may be extended from the coil box and supported on the track 28. The partition may be removed from the box by merely pulling the same and may be returned therewithin by an operating crank 66 or an electric motor and gear means may be provided for automatically extending and retracting the partition.

Although the partition has been illustrated and described as being vertically disposed and suspended from an overhead track, it will be apparent that the coil box could be located overhead and substantially horizontal. By providing vertical tracks and rollers on each end of the partition which engage such track, a vertically closing partition can be formed which will act as a barrier against the passage of light, sound and heat.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is illustrated in the drawings and described in the specification, but only as indicated in the accompanying claims.

What is claimed is:

1. A coilable partition including a pair of spaced walls, each wall comprising a series of interchangeable members having interlocking hinge forming side terminal portions pivotally engaging the hinge forming portions of adjacent members of the same wall, the hinge forming portions of each wall being offset toward the opposite wall and longitudinally spaced from the hinge forming portions thereof, and the axis of rotation of said hinge portions located along a common center line whereby each of said spaced walls and the air space therebetween provide a barrier to the passage of light, sight and sound.

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2. A multiple thickness coilable partition of spaced generally parallel walls, each wall comprising members having hinge forming connections interlocking with hinge forming connections of the adjacent members of the same wall and disposed along a longitudinal center line, the connections of each wall extending toward the opposite wall, and said hinge forming connections of one wall being located in spaced relation to the hinge forming connections of the other wall and disposed along the same longitudinal center line.

3. The structure of claim 2 and continuous yieldable insulation member between said spaced walls.

4. A coilable partition for use in a building having a ceiling and a floor and comprising a pair of spaced generally parallel walls, each wall comprising a series of independent generally U-shaped members with a hinge forming hook portion on the free end of each leg of said members, each of said hook portions providing an interfitting hinge engaging the hook portion of the contiguous U-shaped members of the same wall, the hook portions of each of said walls being disposed toward the opposite wall, the axis of rotation of the hinge portions of one wall being located substantially along a longitudinal center line, the axis of rotation of the hinge portions of the other wall being located substantially along the same center line in spaced relation to the hinged portions of said one wall, and a continuous flexible insulating membrane disposed between said spaced walls whereby a multiple wall partition is formed providing a barrier against the passage of light, sound and heat.

5. The structure of claim 4 including track means mounted in the ceiling of the building, hanger bracket means on the upper extremity of certain of said slat like members, roller means on each of the hanger bracket means and engageable with said track means for supporting said partition, a support bracket carried by each of the unsupported slat-like members for supporting the members which are not directly supported by the track.

6. A coilable partition comprising a pair of spaced generally parallel walls, each wall including a plurality of slat-like generally U-shaped members with a hinge-forming hook portion on the free end of each leg of said members, each of said hook portions rotatably engaging the hook portions of continuous U-shaped members of the same wall, the hook portions of each wall projecting inwardly toward the opposite wall with the hook portions of one wall being longitudinally spaced from the hook portions of the other wall, the axis of rotation of the hook portions of said walls being disposed substantially along a common longitudinal center line, an end member connecting the free ends of said walls, means for supporting certain of said U-shaped members from an overhead track, and bracket means for supporting the members intermediate said certain U-shaped members whereby a multi-wall partition is formed providing a barrier against the passage of light, sound and heat.

References Cited in the file of this patent

UNITED STATES PATENTS

1,352,656	Cahill	Sept. 14, 1920
2,739,677	Greulich	Mar. 27, 1956
2,804,136	Ternes et al.	Aug. 27, 1957
2,907,383	Kloote et al.	Oct. 6, 1959
2,934,139	Wardlaw	Apr. 26, 1960

FOREIGN PATENTS

70	846,036	France	May 17, 1939
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