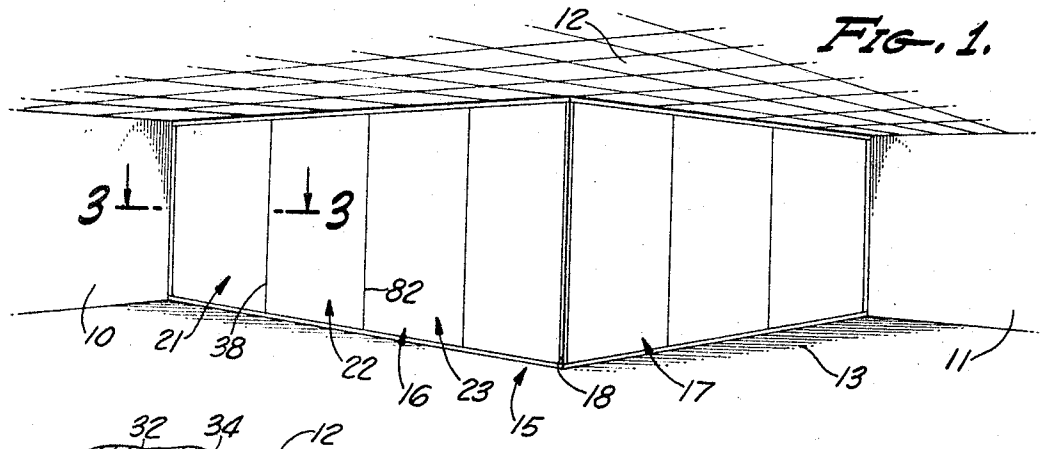
May 23, 1967 G. J. BYSSING 3,320,710

PARTITION WITH SUPPORTING SHAFT SECTION IN RABBET OF FACER PANELS

Filed Nov. 15, 1963

FIG. 1.



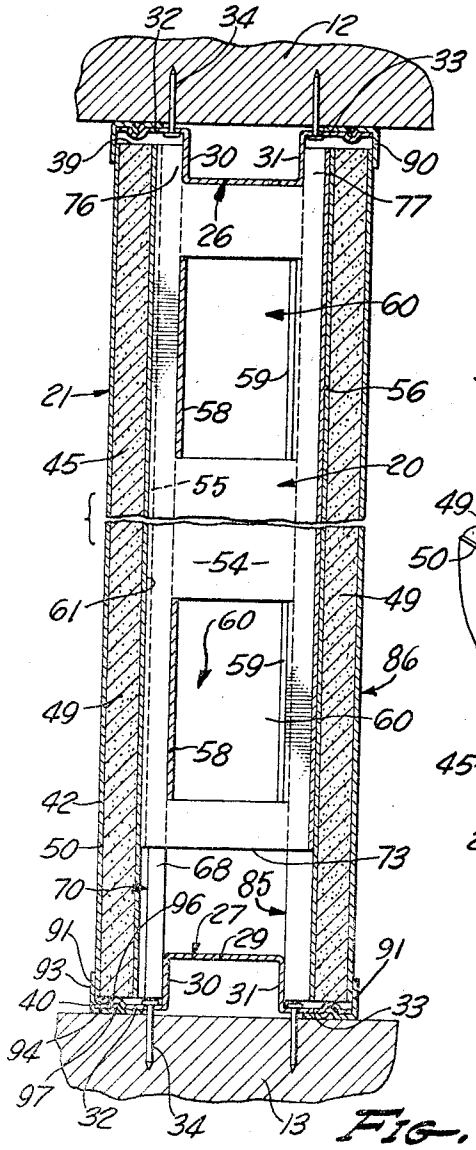


FIG. 2.

FIG. 3.

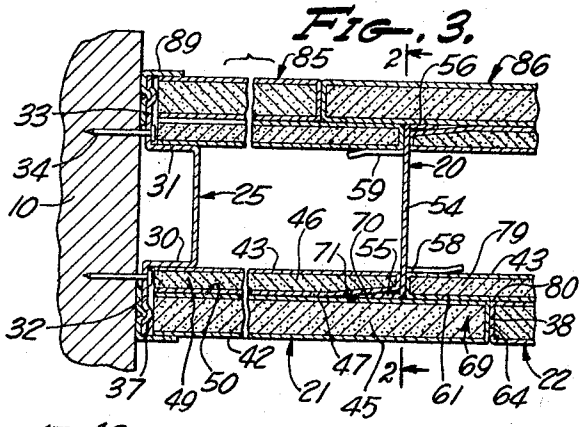
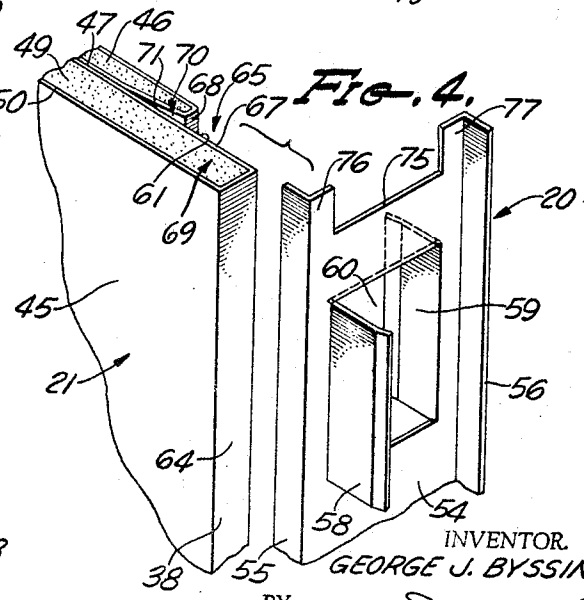


FIG. 4.



INVENTOR.
GEORGE J. BYSSING
BY J. M. Dubiel
ATTORNEY

United States Patent Office 3,320,710
Patented May 23, 1967

3,320,710

PARTITION WITH SUPPORTING SHAFT SECTION IN RABBET OF FACER PANELS

George J. Byssing, Los Angeles, Calif., assignor to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington

Filed Nov. 15, 1963, Ser. No. 324,105
2 Claims. (Cl. 52—481)

This invention relates generally to wall construction including floor-to-ceiling partitions and cornice partitions, and it relates more particularly to the details of construction of studs and wallboards for forming a partition.

A partition of the general type to which this invention relates comprises studs and wallboards which are so constructed that they may be readily and easily interconnected. The vertical edges of the wallboards have slots for engagement with flanges on the studs. It is an object of this invention to provide a partition of that general type and in which the wallboards are interengaged at the stud connections in a lap joint arrangement, whereby the partition will meet building code requirements with respect to preventing passage of fire or flames into the partition at the joints.

The wall construction of this invention is especially advantageous when embodied in a hollow partition. For such embodiment, the wallboards for a full side of the partition may be installed and then those for the other side may be installed. Thus, after one side of the partition is completed, electrical conduits, heating ducts and the like may be arranged in the wall whereupon the partition may be closed and completed with installation of the wallboards for the other side.

Further objects and advantages of the invention will appear in the course of the following part of this specification wherein the details of construction and mode of installation of a partition embodying this invention are described with reference to the accompanying drawing, in which:

FIG. 1 is a perspective view of a floor-to-ceiling hollow partition of this invention;

FIG. 2 is a sectional view taken along line 2—2 of FIG. 3 with portions added and other portions removed and illustrates further details of the invention;

FIG. 3 is an enlarged section through the partition taken along a horizontal plane indicated by line 3—3 in FIG. 1; and

FIG. 4 is an exploded detail section illustrating the manner in which a stud is connected to a wallboard according to this invention.

In FIG. 1, the hollow partition of this invention is shown as installed in a corner of a room which is defined in part by room walls **10** and **11**, ceiling **12** and floor **13**. The partition, designated generally by reference numeral **15**, is formed of two wall sections **16** and **17** disposed at an angle with each other and interconnected along a vertical corner edge **18** of conventional construction. The partition comprises a series of spaced vertical studs **20** and a plurality of wallboards, three of which in FIG. 1 are designated by reference numerals **21**, **22** and **23**, respectively. For convenience of reference herein, those wallboards, including wallboard units **21**, **22** and **23**, which appear in FIG. 1, are referred to as being for the outside of the partition **15**, and those wallboard units which are hidden in FIG. 1, but are represented in FIGS. 2 and 3, are hereinafter referred to as being for the inside of the partition **15**.

The details of construction of the illustrated partition are described hereinafter in the order in which the component parts of the partition are adapted to be assembled.

For the partition section **16**, a wall runner **25**, an upper or ceiling runner **26** and a lower or floor runner **27** are

secured to the room wall **10**, to the ceiling **12** and to the floor **13**, respectively, to provide a framework by which the partition section is mounted in the room. In the illustrated embodiment such wall, ceiling and floor runners are identical in cross-sectional configuration. Referring to the floor runner **27**, for example, it extends throughout the length of the partition section **16** and is shaped to provide a medial portion **29** integrally formed with opposed leg portions **30** and **31**, the leg portions having terminated portions **32** and **33** which extend laterally outward from the lower edges of their respective leg portions. The runner **27** is fastened to the floor as with nails **34** driven through the terminal portions of the runner. For the illustrated embodiment, the runners **25**, **26** and **27** have a common dimension between the outside surfaces of their opposed leg portions **30** and **31** which is equal to the dimension between the inside faces of the opposed wallboards for the sides of the hollow partition.

When the runner framework is secured in the room, the wallboards and studs may then be fitted into place. As a beginning, an outside wallboard unit **21** of rectangular outline and defined by side edges **37** and **38**, top edge **39** and bottom edge **40**, is placed against the outside leg portions **30** of the wall, ceiling and floor runners. For the wallboard **21**, its side edge **37**, which abuts against terminal portion **32** of the wall runner **25**, may be straight across between exposed or outer face **42** and hidden or interior face **43** of the wallboard. For simplicity in forming the wallboard units so that they will interengage with their next adjacent wallboard units in a lap-joint relationship, each wallboard or wallboard unit, e.g., wallboard **21**, is formed of an outside panel **45** and an inside panel **46** which are secured together as with an interposed layer of adhesive **47**. The panels, two of which form a wallboard of the illustrated embodiment, are of conventional construction having a plaster core **49** and a paper sheathing **50**. A description of the details of configuration of that side edge of the wallboard **21** which is designated generally in FIG. 1 by reference numeral **38** will appear after the details of configuration of the studs **20** are described.

With the wallboard **21** fitted in place, installation of a stud **20** and the next wallboard unit **22** may be done. Each of the studs **20** of aluminum, for example, is initially of generally right-angle Z-configuration in cross-section having a flat web **54** and two parallel oppositely directed flanges **55** and **56** integral with and extending along and throughout opposite side edges, respectively, of the web. Web **54** has a plurality of vertically spaced sets of projections **58** and **59** which, in the illustrated embodiment, are struck out from the web to leave an opening **60** in the web and are bent to extend at right angles to the web. In the case of the outside of the partition **15**, projection **58** extends at right angles from one side of the web **54** in the direction of the plane of the next-in-line wallboard **22** while its near flange **55** extends from the other side of the web **54** in the plane of wallboard **21**. The plane of the projection **58** is spaced from the plane of the flange **55** by a dimension about equal to the thickness of an inside panel **46** so that when the wallboards **21** and **22** are interconnected in a lap joint arrangement with a stud **20**, the projection **58** will lie flush against the interior face **43** of the wallboard unit **22** and the flange **55** will lie flush against the inside face **61** of the outside panel **45** of wallboard **21**. For an understanding of this invention, it is of no consequence that in the illustrated embodiment the outside panels **45** of the wallboards are thicker than the inside panels **46**.

For the wallboard-stud connection which appears in FIG. 3 and includes wall boards **21** and **22** for the exposed or outside of the partition section **16**, the vertical side edge **38** of the wallboard **21** is defined by a land edge **64** (side

edge of outside panel 45) extending substantially perpendicularly from outside or exposed face 42 of wallboard 21, and a vertically extending rabbet 65 of substantially right-angled cross-section open to the interior face 43 of the wallboard 21, the rabbet being defined by an inner lap-joint side surface 67 (continuation of inside face 61 of the outside panel 45) extending substantially perpendicularly from the land edge 64, while the other side of the rabbet is defined by a recessed edge surface 68 (the same as a side edge of the inside panel 46), such recessed edge surface extending substantially perpendicularly from the interior face 43 of the wallboard 21. That portion of the outside panel 45 which extends beyond the recessed edge surface 68 (side edge of inside panel 46) is designated by numeral 69 and is referred to herein as being a lap portion.

The wallboard 21 has a vertically extending slot 70 at the vertex of the rabbet and open to the recessed edge surface 68. For the illustrated embodiment, the slot 70 is conveniently provided by making a bevel 71 on the inside surface of the inside panel 46 at its side edge 68. The flange 55 of a stud 20 fits frictionally tight into the slot 70 with the web 54 of the stud being seated flush against the recessed edge surface 68 of the wallboard 21.

The studs 20 are so formed that they will hold up the wallboards 21, 22 and 23 for one side of the hollow partition even before the wallboards for the other or hidden side of the partition have been installed. It is not necessary that the studs 20 be of a length to extend fully between the floor and ceiling runners, and for the illustrated embodiment the stud 20 in FIG. 2 has its lower edge 73 spaced above the floor runner 27, i.e., the stud is shorter in length than the height of the partition. At their upper ends, the studs 20 have a rectangular cut-out 75 for spanning the medial portion of the ceiling runner whereby the stud has end portions 76 and 77 which extend beyond the bottom of the cut-out 75 for engagement against the outside surfaces of the leg portions 30 and 31, respectively, of the ceiling runner 26. Thus, the stud and wallboard 21 are prevented from falling from the runner framework.

After placement of the wallboard 21 and a stud 20 into the partition framework, the next wallboard 22 is set into its place for continuing with installation of the partition by seating the wallboard 22 against the ceiling and floor runners and sliding it sideways for engagement with the wallboard 21 and the stud 20. The wallboard 22 has a lap portion 79 and a rabbet 80 complementary to the rabbet 65 and the lap portion 69 respectively of the wallboard unit 21 such that the wallboards 21 and 22 become interengaged in a lap-joint relationship. In the sideways movement of the wallboard 22 toward the stud 20 and wallboard 21, the lap portion 79 of the wallboard 22 becomes positioned between the lap portion 69 of the wallboard 21 and the projections 58 of the stud 20 thus to hold the wallboard 22 in coplanar edge-to-edge abutment with respect to the wallboard 21, and the wallboard 22 is held by the stud against falling from the partition framework.

The side edge 82 of the wallboard 22 disposed in adjoining relation to the next-in-line wallboard 23 as indicated in FIG. 1 has a lap portion, rabbet and slot corresponding in size and shape to the lap portion 69, rabbet 65 and slot 70 of the wallboard 21 for forming a wallboard-stud connection with the next wallboard in line, i.e., wallboard 23. Inasmuch as lap portions at opposite side edges of each wallboard are of the same dimension, taken in the plane of the wallboard, it is apparent that for forming a wallboard unit, e.g., wallboard 22, of a standard width, the outside panel 45 and the inside panel 46 thereof are of the same width.

Upon completion of installation of the wallboards 21, 22, 23, etc., for that side of the partition which is exposed in FIG. 1, the partition is still open at its hidden side for installation of such electric conduits, pipes, or heating ducts, etc., as are desired. It is then but a simple matter to complete the hollow partition by placement of wallboard units 85, 86, etc. (FIG. 3) for what has herein been referred to as the hidden side of the partition, such wallboards being interconnected in edge-to-edge lap-joint abutment and interlocked with the flanges 56 and projections 59 of the positioned studs.

In view of the foregoing, it will be apparent that the component parts of the partition of this invention are so constructed that installation thereof is a simple and easy operation. It is important to note further that the lap-joint relationship of adjacent wallboard units provides an arrangement in which there is no straight crack between the outer and inner faces of the wallboards for one side of the partition. Thus, when a flame from a torch, for fire resistance testing purposes, is directed toward the crack 38, for example, the flame will not pass to the stud, and the partition will be found to meet the rigid requirements of sustaining resistance against flames, as is required by building codes.

After the wallboards have been set in place, the partition may be trimmed along the wall, ceiling and floor of the room as with snap-in strips 89, 90 and 91, each of which, in the illustrated embodiment and referring in particular, for example, to trim strip 91 which serves as a base board, is an angle strip of two legs 93 and 94. The leg 94 is designed to fit under the terminal portion 32 of the floor runner 27, and it has a longitudinally extending bead or ridge 96 for mating with a complementary groove 97 formed in the terminal portion 32.

While the instant invention has been shown and described herein, in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is therefore not to be limited to the details disclosed herein, but is to be accorded the full scope of the claims.

I claim:

1. In a hollow wall structure the combination of a first series of wallboard units and a second series of wallboard units spaced from said first series of wallboard units, the wallboard units of each of said series including side edges having recessed edge portions whereby the side edges of adjoining pairs of wallboard units in each of said first and second series are disposed in side edge to side edge abutment and overlapped relationship, one wallboard unit of each pair of adjoining wallboard units in said first and second series of units having a rabbet groove extending inwardly between the side edge of the one wallboard unit and its recessed edge portion, a stud element anchored to opposite pairs of adjoining wallboard units in said first and second series, said stud element comprising an elongated generally Z-shaped member provided with a pair of parallel side flanges extending in diametrically opposite directions, said stud element being further provided with a web portion and at least one pair of spaced flange elements of smaller length than said web portion, each flange element of said pair of spaced flange elements being disposed adjacent to one of the side flanges of said pair of side flanges while projecting in a direction from said web portion which is diametrically opposite to that of the side flange with which it is associated, each flange element lying flush against the inside surface of one of the wallboard units in one of the pairs of adjoining units in said first and second series of units, while the side flange associated with such flange element is inserted in the rabbet groove in the other one of said wallboard units in said one of the pairs of adjoining units of said first and second series of units, when the joinable edge of the one wallboard unit and the recessed edge portion of the other wallboard unit in each pair of units of said first and second series of units are brought into abutting contact with the opposite sides of the web portion of said stud element and when the recessed edge portion of the wallboard unit from which the inwardly extending rabbet groove is absent is brought into abutting contact with

the joinable edge of the other wallboard unit in each pair of units in said first and second series of units such that the overlapped and abutting edges of adjoining pairs of units in said first and second series of units lie on opposite sides of the web portion of said stud element.

2. A hollow wall structure as set forth in claim 1 wherein said flange elements on the stud element are provided with inwardly bent converging fingers.

References Cited by the Examiner

UNITED STATES PATENTS

2,958,403	11/1960	Robertson	52—241
2,958,982	11/1960	Baker	52—354
3,125,193	3/1964	Brown et al.	52—481

FRANK L. ABBOTT, *Primary Examiner.*

J. L. RIDGILL, *Assistant Examiner.*