June 7, 1949. N. NELSSON 2,472,756

PARTITION STRUCTURE

Filed Nov. 23, 1943 2 Sheets-Sheet 1

Fig. 1

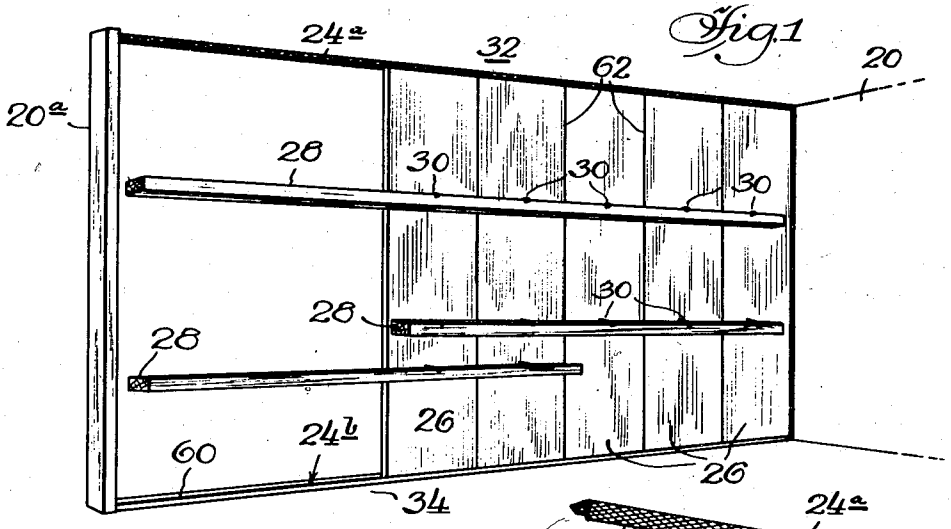


Fig. 5

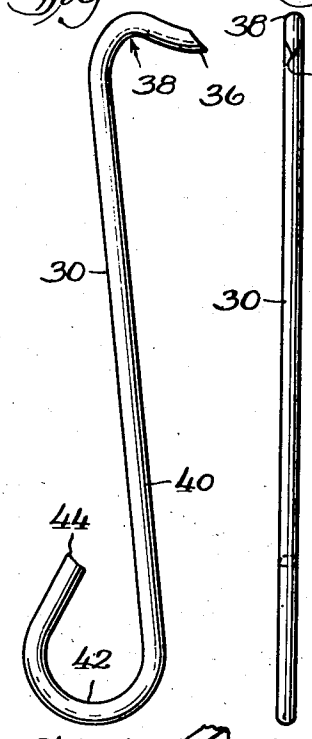


Fig. 6

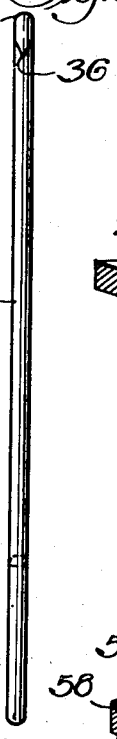


Fig. 4

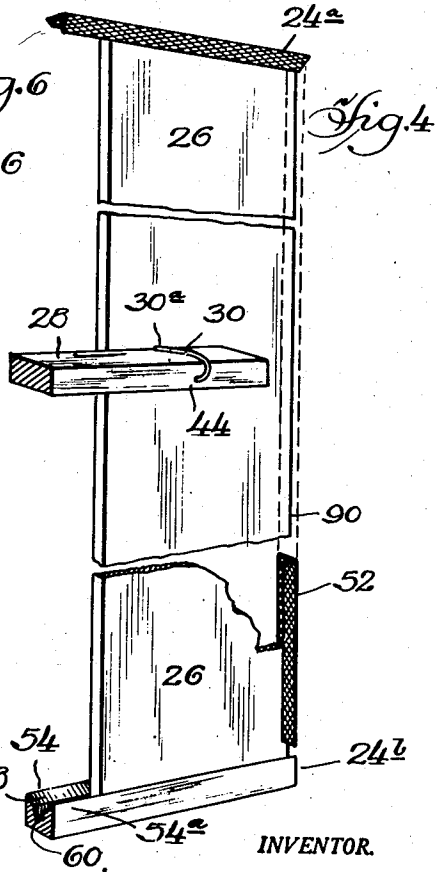


Fig. 2

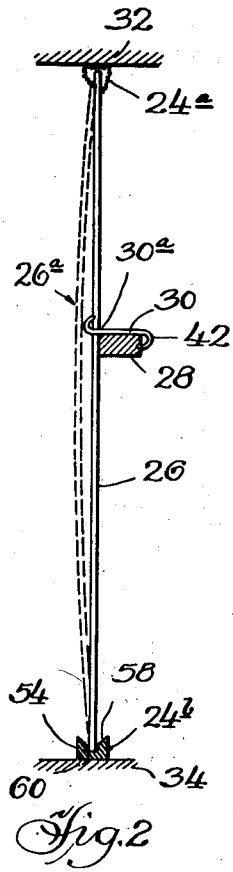
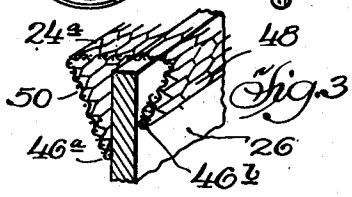


Fig. 3



INVENTOR.

Nels Nelsson,

by T. B. Sliz Atty.

June 7, 1949. N. NELSSON 2,472,756

PARTITION STRUCTURE

Filed Nov. 23, 1943 2 Sheets-Sheet 2

Fig. 7

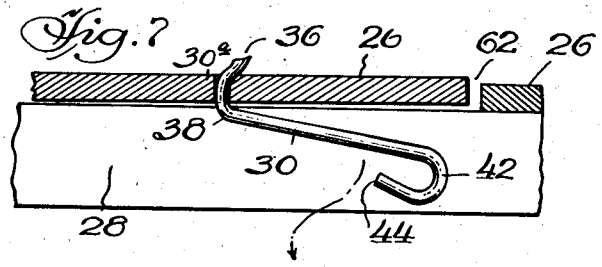


Fig. 8

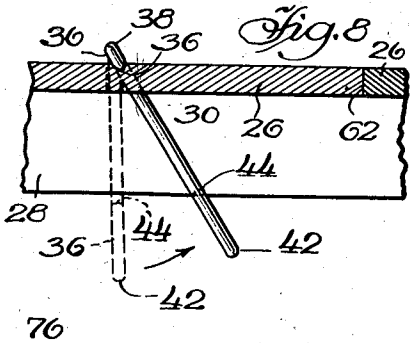


Fig. 9

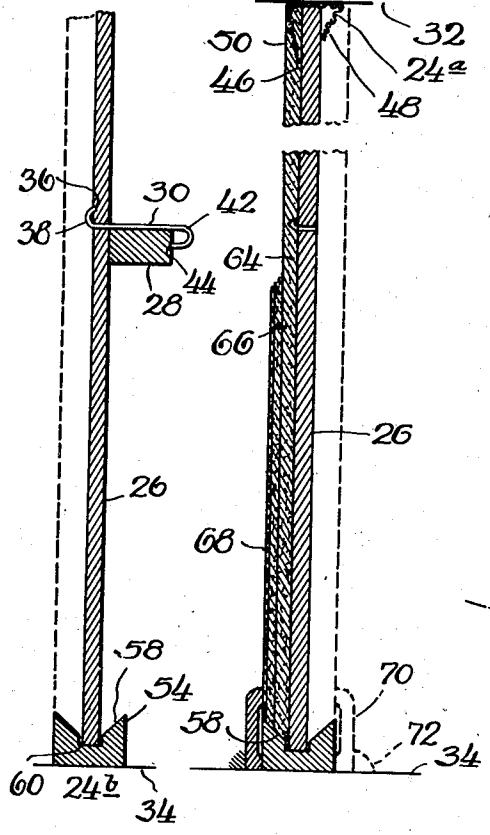


Fig. 10

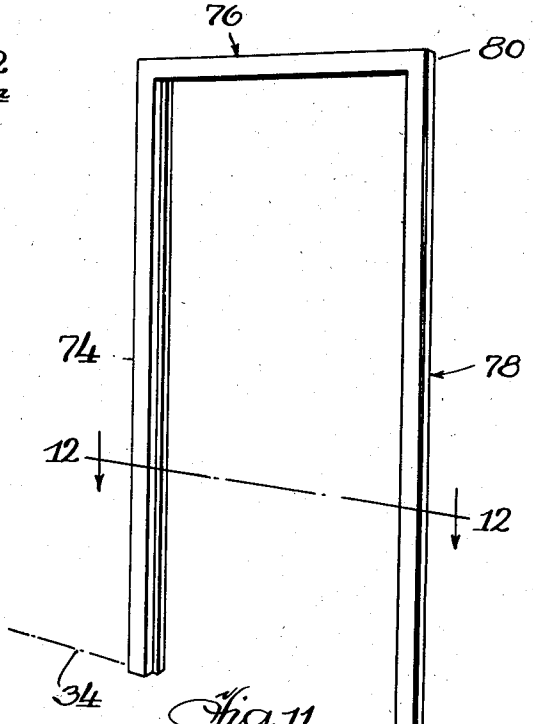


Fig. 11

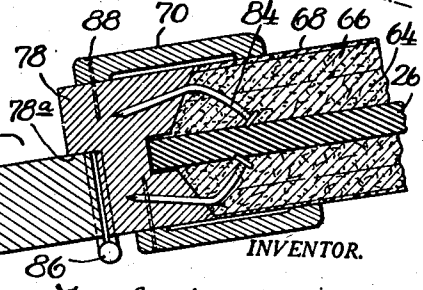
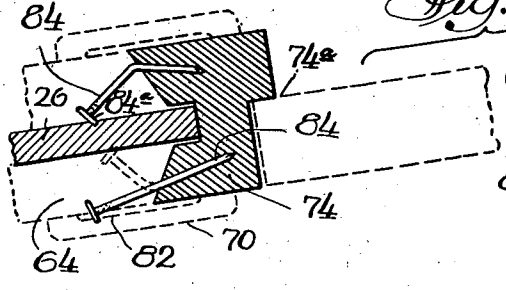


Fig. 12



INVENTOR.

Nels Nelsson,

by T. B. Sloss, Atty

Patented June 7, 1949

2,472,756

UNITED STATES PATENT OFFICE

2,472,756

PARTITION STRUCTURE

Nels Nelsson, Chicago, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

Application November 23, 1943, Serial No. 511,451

3 Claims. (Cl. 72—46)

1

This invention pertains to an improved wall construction of a monolithic type. More specifically it is directed to a non-load type of a partition having substantially a solid plaster body.

Though partitions of the solid plaster type have been known and in use, a number of difficulties in erection and lack of other essential elements such as strength, rigidity, etc., have greatly hampered the commercial recognition of the utility and economies inherent in this type of construction. However, the product of this invention, as it will be subsequently described and shown in the drawings forming a part hereof, not only overcomes all the deficiencies in the finished wall, but also provides a more facile and convenient improved method of erection.

In the drawing,

Figure 1 is a perspective of the partition in one of the initial stages of erection.

Figure 2 is an end view of the partition showing the method of placing the plaster receiving base between the runners.

Figure 3 shows in perspective a section of the ceiling runner and a plaster receiving base engaged by the said runner.

Figure 4 shows in perspective an end and corner section of the partition in its early stages of erection.

Figures 5 and 6 show in detail the construction of the clip forming an essential part of the process of erecting the partition.

Figures 7 and 8 show the clip inserted and wedged into position across the section of a brace of the partition.

Figure 9 shows an end view of the lower part of a braced plaster receiving base inserted into the floor runner, which is slightly enlarged to show detail.

Figure 10 is somewhat similar to Figure 9 and shows in section the plaster applied to one side of the plaster receiving base, and the brace and its supporting clip removed from the other side.

Figure 11 is a perspective of an opening such as a doorway or the like in a partition, utilizing the elements of this invention.

Figure 12 is a plan view partly in section of the opening of Figure 11, taken along line 12—12.

In utilizing the elements underlying the principles of this invention, it will be desirable to define certain terms used herein to provide a more lucid and clearer understanding. The term "walls" as used herein indicates not only ceiling high structures or partitions as customarily

2

known, but also wall-like structures used to divide areas. The term "plaster" means any composition capable of hardening and forming a bond between the receiving base and it. The term "braces" denotes any means temporarily employed to provide a certain degree of stiffness and rigidity to the plaster receiving base to which it is attached by means of clips forming one of the elements of this invention. Though ordinarily the customary wooden 2" x 4"'s or studs are preferred, any other suitable thickness as well as other materials can be employed provided the necessary allowances are made in the size and length of the clips. The term "plaster receiving bases" includes in addition to the conventional and preferred ceiling high gypsum wallboards other similar wallboard-like materials and plaster receiving bases such as insulation board, Beaver board, metal lath, etc. The term "solid" defines the condition wherein the outer coverings of plaster composition are securely bonded to the faces of the plaster receiving bases, such as wallboard, or, as in the case of metal lath, are securely bonded to each other through the open meshes or holes in the metal lath. The term "non-load" defines a condition where no material portion of the weight of the structure or building in which this partition is installed depends for support upon the strength of the partition.

To erect this partition and starting from a wall or upright **20** to some other wall or upright support **20***a*, a pair of runners **24***a* and **24***b*, attached respectively to the ceiling **32** and floor **34** are first placed in a parallel and vertically coplanar position. Though this description is confined to the partition structure whose height is from the floor to the ceiling, nothing should be construed herein as limiting this invention to the preferred embodiment, for obviously, a partition may be of a variable height, and may or may not start at the floor level or end at the ceiling. In case it is desirable to have the partition start or terminate at some other than the preferred and illustrated type, then obvious modifications can be readily made by the artisan erecting the partition. For instance, the floor (or ceiling runners) can be raised (or lowered) to the desired level and firmly attached to the walls **20** and **20***a* and supported, if necessary, at intermediate points.

In order to provide a firm and rigid connection between the walls **20** and **20***a* with the plaster receiving base or wallboard **26**, it is desirable that some means such as the bent nails **84** (as

shown in Figure 12) or a long strip of metal lath 52 suitably bent to provide outstanding flanges to engage snugly and lock the edge 90 of the wallboard 26, be used on each end of the partition.

After the runners 24a and 24b and the edge engaging means 52 are firmly and properly installed, the bottom end of a sheet of wallboard 26 is placed in a groove 60 of the floor runner 24b. The sloping sides 58 of the floor runner 24b not only facilitate the insertion of the end of the wallboard or plaster receiving base 26, but also serve the additional function of acting as a wedge to the plaster composition 64 and thereby locking firmly in place the lower end of the base 26 when the latter is fully plastered from both sides. In addition to the other functions, it serves as an automatic plaster grounds since the artisan must apply the plastic composition 64 with the other coats (66 and 68) to the full thickness of the width of the runners 24b as well as 24a.

When the lower end of the plaster receiving base 26 is inserted into the groove 60, the base is slightly flexed or bent to assume the slightly arched shape as shown in 26a. The upper end of the flexed base 26a is of such height that it just clears the shorter projecting edge 48 of the runner 24a. As the plaster receiving base 26 is being flexed the end is in contact with the shorter edge 48 of the ceiling runner 24a. This end as a part of the chord becomes progressively shorter and shorter with the decrease in the radius of the arc of the flexed base 26a, and will eventually drop off the shorter edge 48 and contact the margin 46a of the longer projecting edge 50. When this occurs the flexed base 26a is permitted to spring back to its original position 26 upon the release of the tension. As it regains its full height the margins 46a and 46b act as guides and automatically center the plaster receiving base within the runner 24a, since both projecting edges 46a and 46b converge to a common point within the plaster receiving base 26. The plastic composition 64 when applied not only penetrates through the openings or meshes of the metal lath to enclose the ends of the plaster receiving base 26, but also bonds thereto to form an anchor with which the base 26 is firmly held in a rigid position.

A series of plaster receiving bases 26 are installed in the same manner until the partition becomes partially erected and ready for the next stage in the process of erection.

Before the plaster receiving base 26 is erected, particularly if it is of the wallboard type, it is desirable that the sharp pointed end 36 of a bracing or wedging clip 30 be driven through the base 26. This point 36 is an integral part of the shank 40, but is bent therefrom at an angle 38. In the preferred embodiment this angle is about 60° from the shank, but it can be varied depending upon the type of material used in the construction of the bases 26. The sharp pointed end 36 is of a length that when driven fully through the base 26, it will protrude slightly through the back side of the base 26 as shown in Figure 7. On the other end of the shank 40, and bent preferably in a reverse direction to that of the pointed end 36, is an open loop 42 ending with a prong 44. The loop 42 is of such a convenient diameter to serve as a pull for a finger inserted therethrough while the prong 44 serves as a barb or wedge to penetrate the surface of the temporary wood bracing 28.

In actual use, the point 36 of the clip 30 is driven through the base 26 at some convenient place. This place, obviously, will vary with the height of the base 26. If the base has a height of about 8 feet, it was found convenient to drive in two clip wedges 30, each driven about a third of the height of the base. When using bases 26, such as wallboard, the sharp point 36 being somewhat longer than the thickness of the wallboard will also penetrate slightly the underlying base layer. This slight penetration is desirable for it simultaneously marks the underlying base to show where the next wedge slip 30 is to be driven in, and thus facilitates further erection.

As mentioned previously, when the series of base members 26 together with the inserted wedge clips 30 are placed between the ceiling 24a and floor 24b runners, the edge 90 of the base 26 at the beginning of the partition is fitted snugly between the retaining means 52. A wood bar 28, preferably having approximate dimensions of 2'' x 4'', is held longitudinally against the face of the base 26 slightly below or above the hole 30a through which is fastened the wedge clip 30. The loop 42 of the wedge clip 30 is grasped and drawn into a position to close the gap 62 (as shown in Figure 7) and bent over the face of the bar 28 as shown by dotted lines in Figure 8. It is then drawn in the desired direction until the barbed point 44 of the spring loop 42 becomes embedded and wedged in the side of the bracing bar 28. The bar 28 is now locked in this position. If necessary, a slight blow of a hammer on the spring loop 42 further secures the wedge 44 in the brace bar 28.

The adjoining base sheet 26 is subjected to the same operation. Eventually the entire series of the bases 26 is locked securely into position, to become a stiff, reinforced and rigid surface suitable for the application of plaster and sufficiently strong to present an unyielding surface to the pressure of a plasterer's trowel.

In preparing this wall it is highly desirable that the joints 62 between the bases 26 be tightly butted together. This is but one of the many essential elements in obtaining a strong and crack free partition structure.

The face of the braced partition is now plastered with a scratch coat (64) of plaster. It is allowed to set, harden, and dry. The wedge clips 30 under tension with the bar 28 are removed from base 26 which has one side coated with plaster. The wooden bracing bar 28 is also removed and reused over and over on other constructions, together with the wedge clips 30 removed from the holes 30a in the plaster receiving bases 26. A scratch coat is also placed on the side from which the bracing bar 28 and clips 30 have been removed and allowed to set and harden in the usual manner. Additional coats 66 and a finish coat 68 are placed in a customary way on both sides of the partition. It is desirable that the overall thickness of the applied plaster coating including the base should be not less than 1½ inches. Generally it is necessary to have at least this thickness to obtain sufficient rigidity and strength in the partition. If desired, conventional trim 70 and quarter round 72 are installed to finish the partition and for decorative effect.

If it is desired to provide an opening such as a door, etc., in the partition, then special shaped runners or door jambs 74, 76 and 78 are provided. These are fitted to the edges of plaster receiving base 26 very much in the same manner as the floor or ceiling runners. To provide additional strength nails 82 and 84 are driven diagonally into the jamb runner 74. They are then bent

as in 84, so that the head 84a of the nail 84 engages and clinches the base 26. The runner 74 has a projecting lip 74a forming preferably an integral part of 74, but other means can be employed to act as a stop for the door 88 which may be hung from hinges 86. Similarly other means for attaching the door buck and jamb 74 to the edges of the plaster receiving base can be used. To finish the opening, framing 70 of the conventional type can be fastened by such means as nails 88 to the door jamb after the plastic composition 68 is applied and set.

It should be noted that as in the case of the floor runners, the door jamb runners 74, 76 and 78 are shaped essentially as the floor runner 24b. The plastic composition enmeshes and embeds the nails, which in turn retain the wedge of plastic coating tightly against the runner.

Though the essential elements underlying this invention have been fully disclosed hereinabove in their preferred form, it is obvious that various extensions, modifications, adaptations and variations can readily be made by a person skilled in the art and still be within the spirit of this invention and the scope of the claims appended herewith.

It is claimed:

1. A partition construction of the non-load bearing type characterized by its relative thinness, rigidity and high resistance to failure by impact, comprising a series of relatively tall, thin and flexible plaster receiving bases, one of the ends of the said bases engaged between the converging projecting edges of a runner attached to a ceiling, one of the said converging projecting edges being longer than the other, the other end of the said bases engaged by a groove in floor runner, the said floor runner being substantially in parallel coplanar relationship with the ceiling runner, a set plastic composition disposed about and upon the surfaces, and including the ends of said bases in a thickness of substantially not less than one and one-half inches to provide a strong rigid substantially monolithic appearing partition wall construction.

2. In the combination of claim 1, wherein the said ceiling runner is formed of metal lath and comprises a base having two outstanding angular, projecting edges, one of the said projecting edges being longer than the other, and the said projecting edges converging toward each other.

3. In the combination of claim 1, wherein the said plaster receiving base is a gypsum wallboard.

NELS NELSSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
555,097	Hurd	Feb. 25, 1896
681,700	Himmelwright	Sept. 3, 1901
681,728	Orr	Sept. 3, 1901
1,562,839	Makowski	Nov. 24, 1925
1,652,701	Collins	Dec. 13, 1927
1,681,311	Techmer	Aug. 21, 928
1,933,476	Flagg	Oct. 11, 1933
1,981,217	Balduf	Nov. 20, 1934
2,012,203	Peterson	Aug. 20, 1935
2,038,115	Keller	Apr. 21, 1936
2,126,309	Cade	Aug. 9, 1938
2,127,837	Wenzel	Aug. 23, 1938

FOREIGN PATENTS

Number	Country	Date
540,302	Great Britain	Oct. 13, 1941

OTHER REFERENCES

Article, "Olsen Clip System Partition," by the Patent & Licensing Corp., 30 Rockefeller Plaza, New York, New York.

Article, "90% With Lumber," by United States Gypsum, 300 W. Adams St., Chicago, Ill. March 1943, from Architectural Record, page 21.