July 31, 1956 T. E. SHELTON 2,756,584

SCHOOL BUILDING

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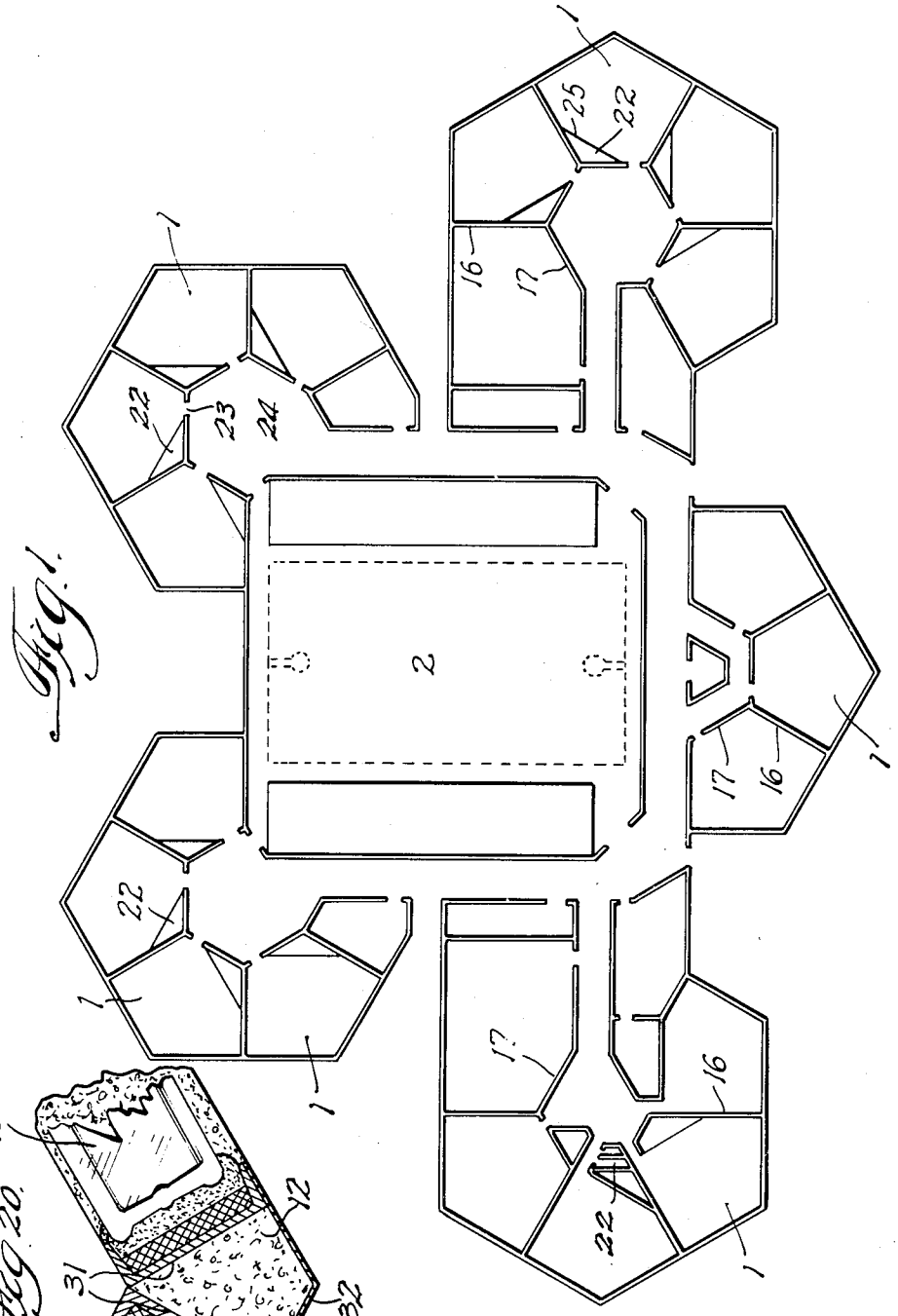


Fig. 1.

Fig. 20.

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July 31, 1956 T. E. SHELTON 2,756,584

SCHOOL BUILDING

Filed Aug. 2, 1952 10 Sheets-Sheet 2

Fig. 2.

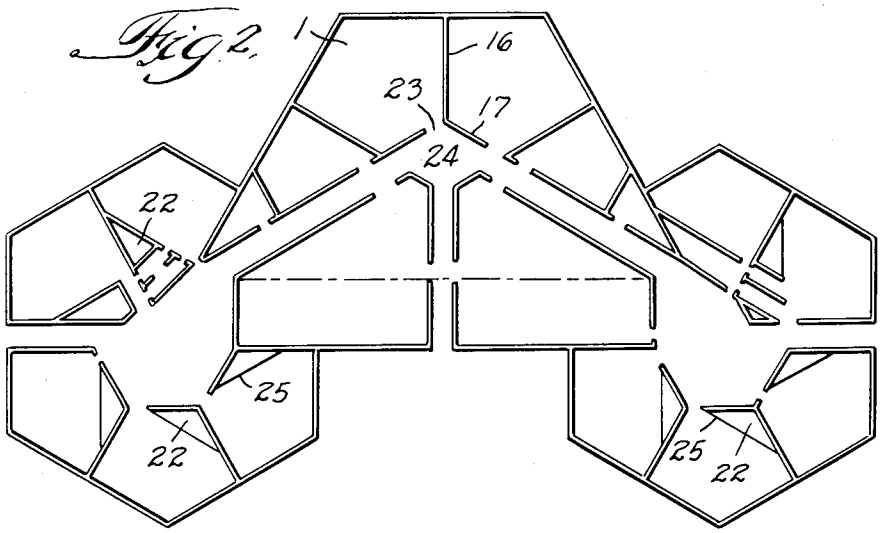
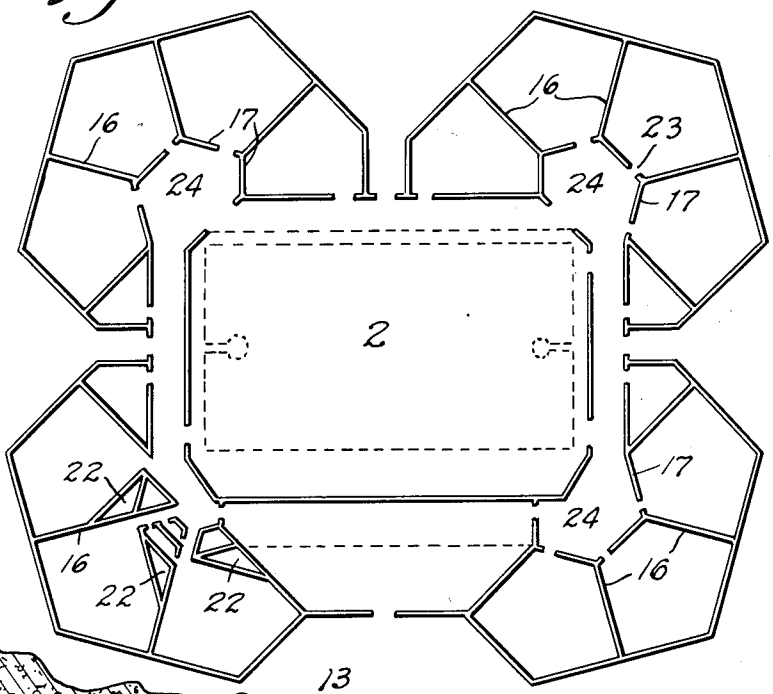


Fig. 3.



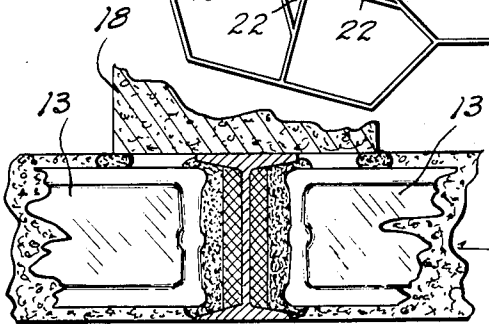


Fig. 19.

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July 31, 1956 T. E. SHELTON 2,756,584

SCHOOL BUILDING

Filed Aug. 2, 1952 10 Sheets-Sheet 3

Fig. 4.

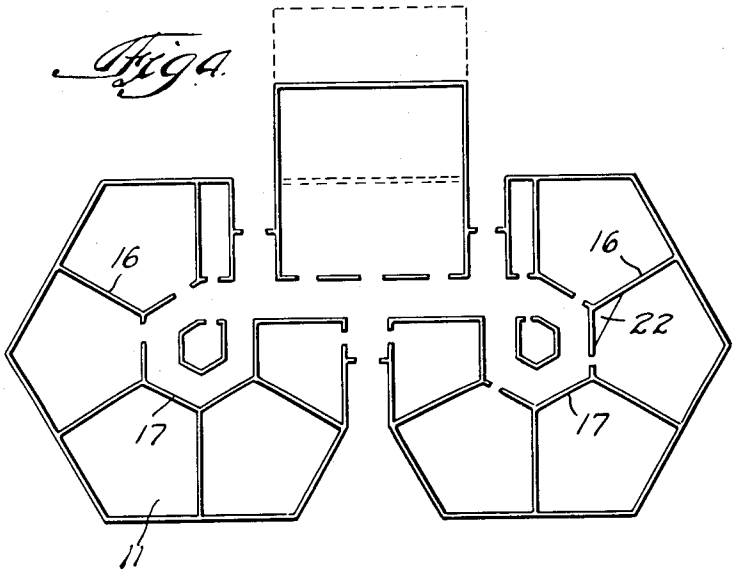


Fig. 22.

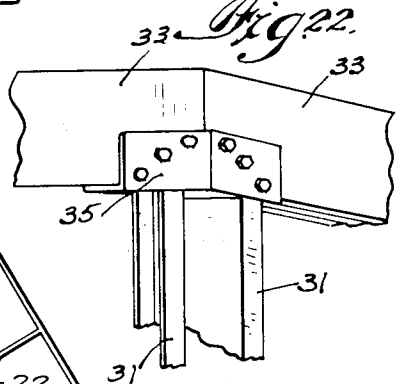


Fig. 5.

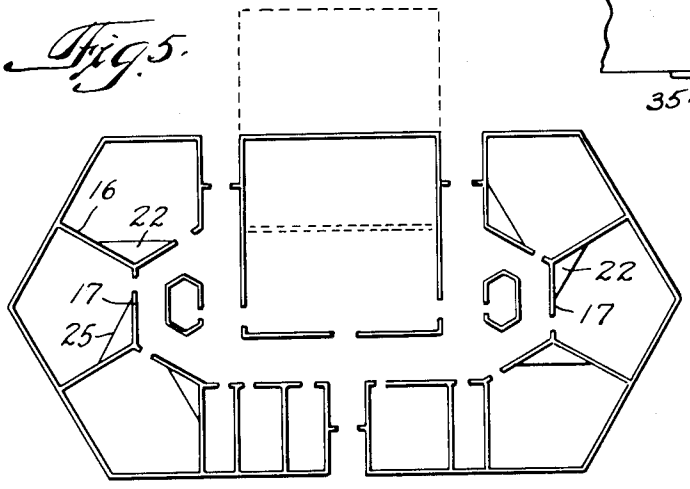
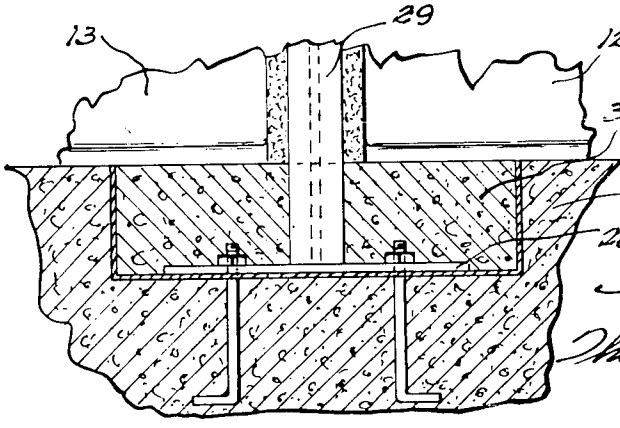


Fig. 18.



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July 31, 1956 T. E. SHELTON 2,756,584

SCHOOL BUILDING

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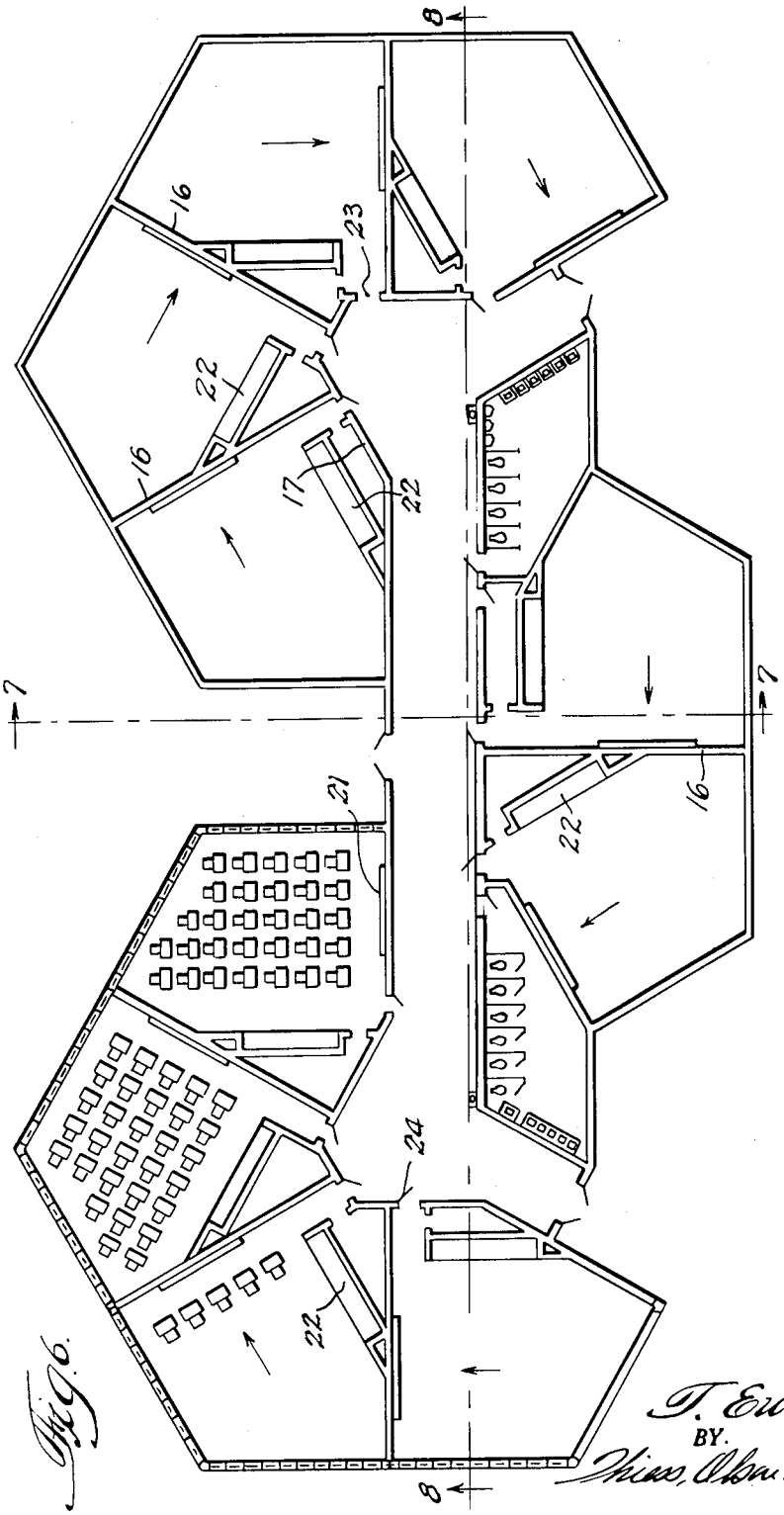


Fig. 6.

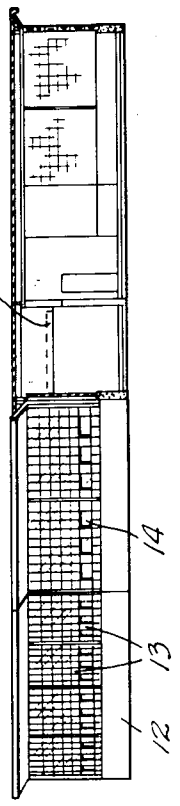


Fig. 7.

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July 31, 1956 T. E. SHELTON 2,756,584

SCHOOL BUILDING

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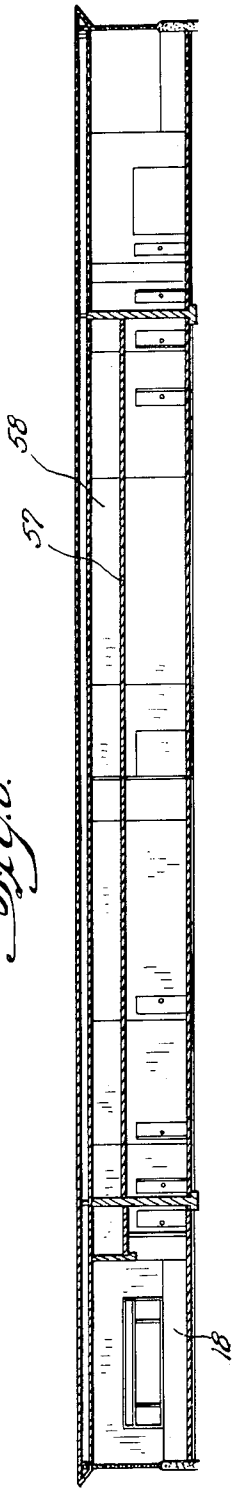


Fig. 8.

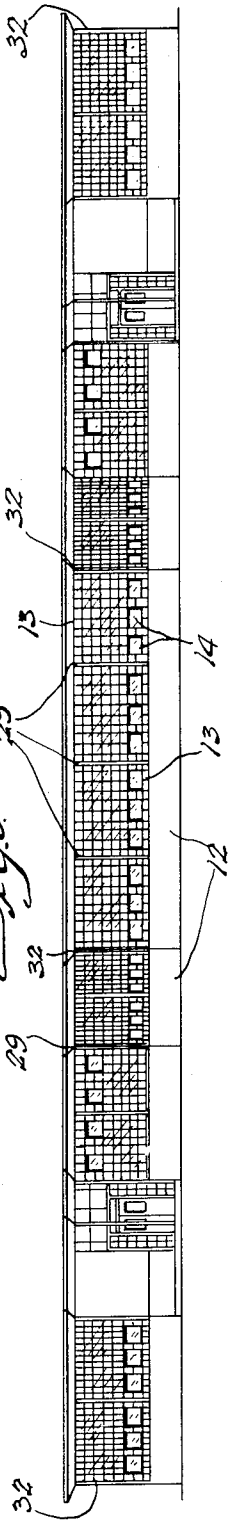


Fig. 9.

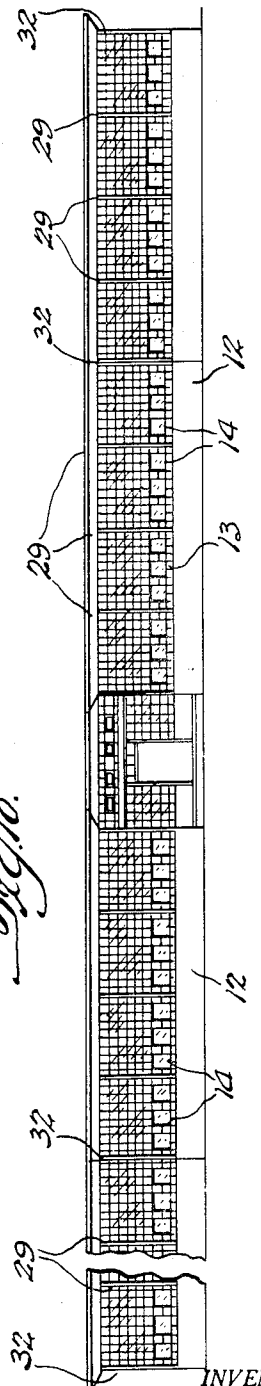


Fig. 10.

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SCHOOL BUILDING

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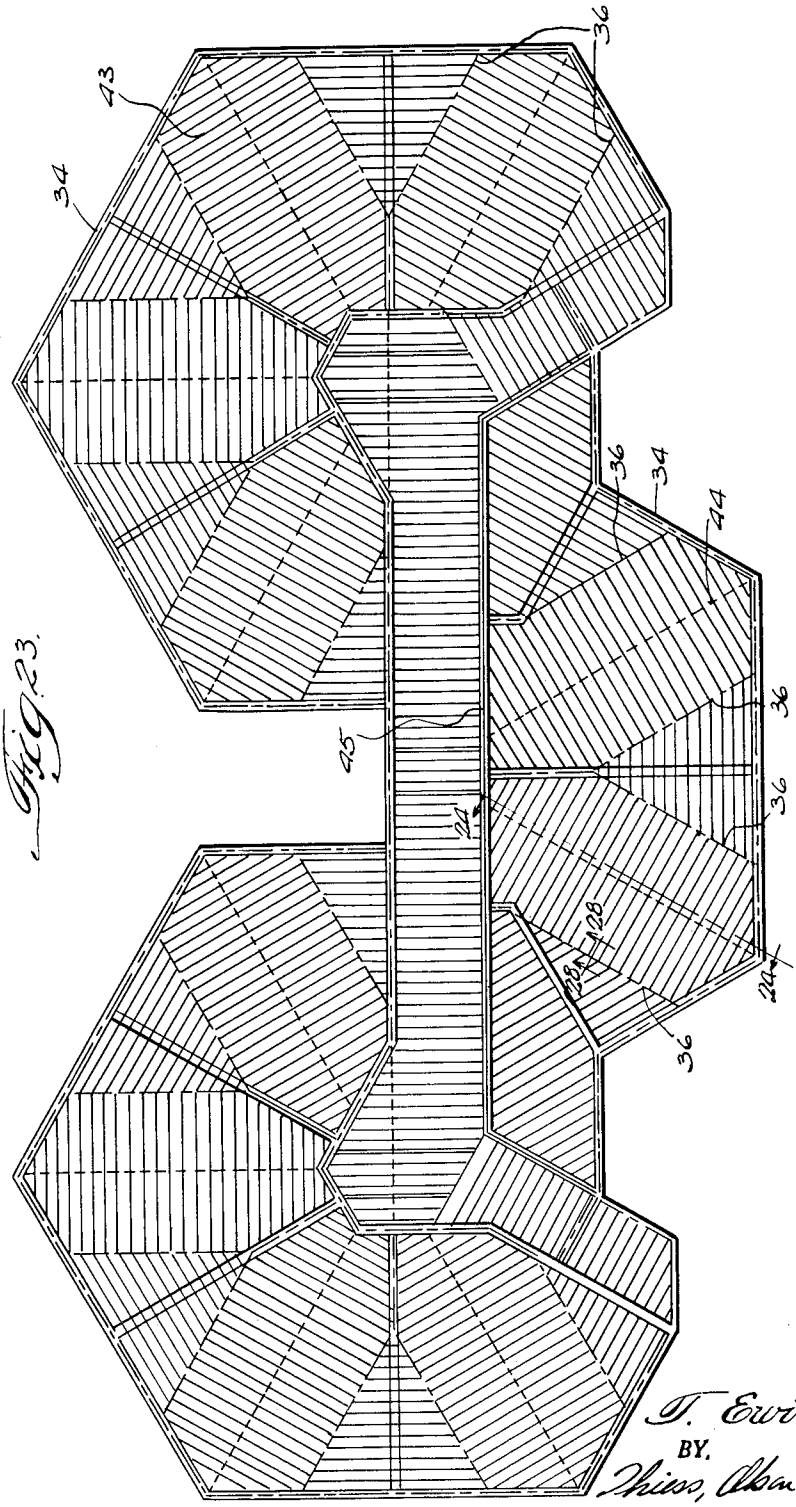


Fig. 23.

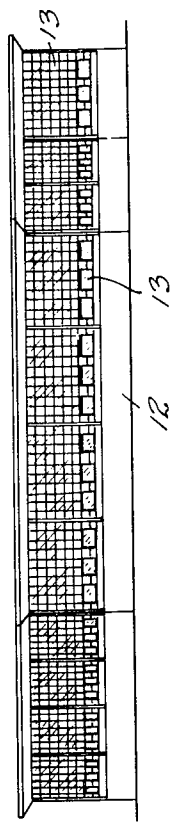


Fig. 11.

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July 31, 1956 T. E. SHELTON 2,756,584

SCHOOL BUILDING

Filed Aug. 2, 1952 10 Sheets-Sheet 7

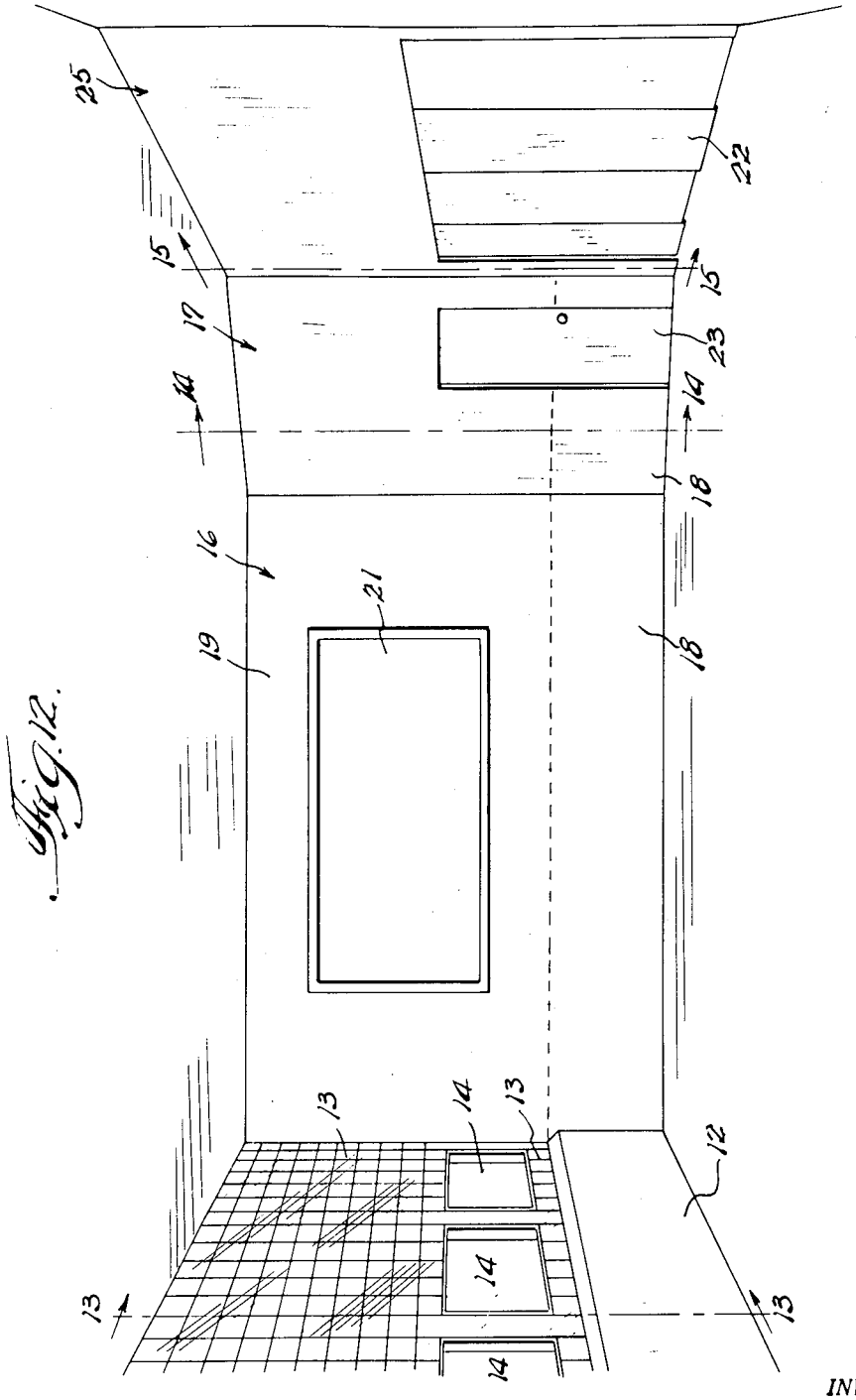


Fig. 12.

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July 31, 1956 T. E. SHELTON 2,756,584

SCHOOL BUILDING

Filed Aug. 2, 1952 10 Sheets-Sheet 8

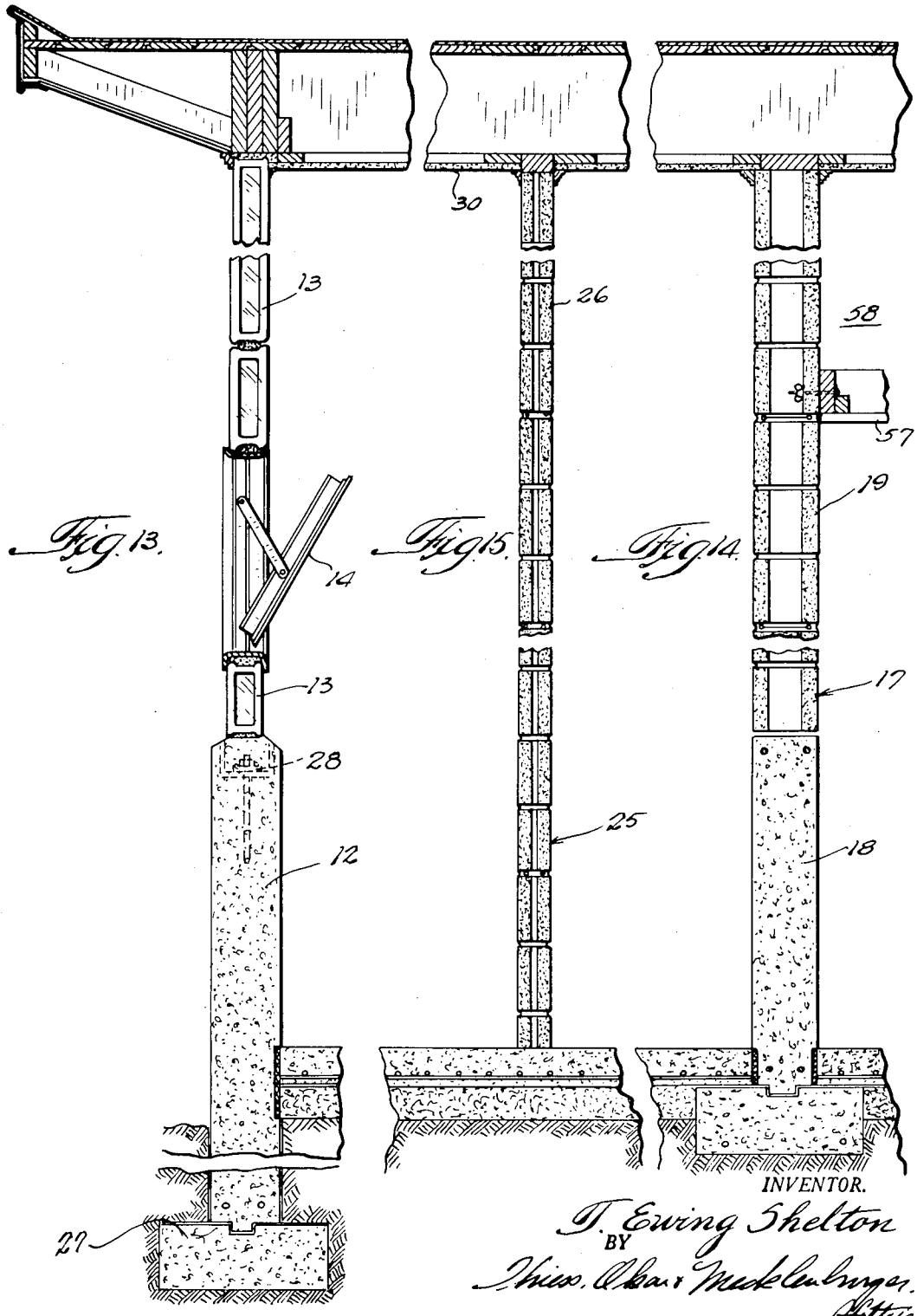


Fig. 13. Fig. 15. Fig. 14.

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July 31, 1956 T. E. SHELTON 2,756,584

SCHOOL BUILDING

Filed Aug. 2, 1952 10 Sheets-Sheet 9

Fig. 16.

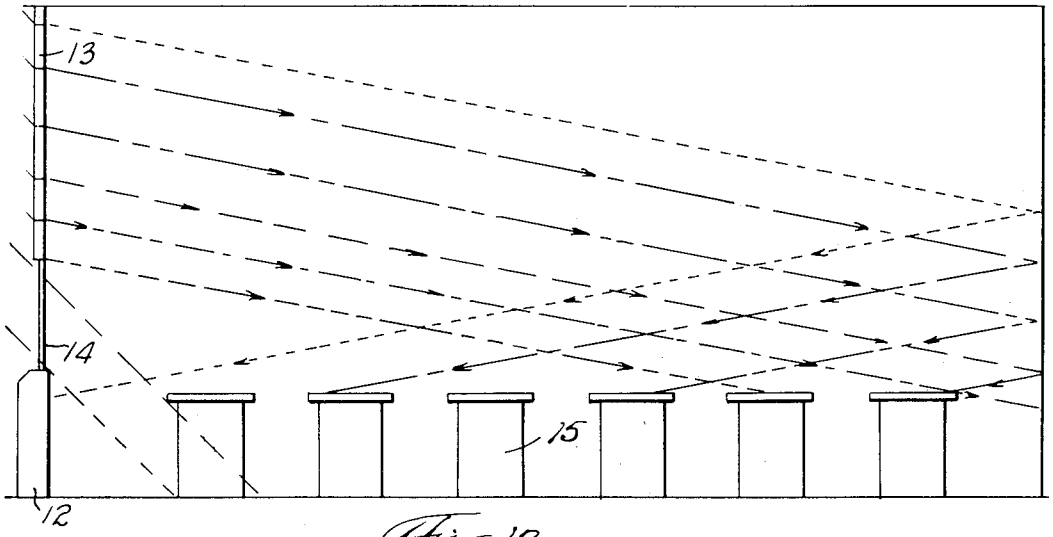
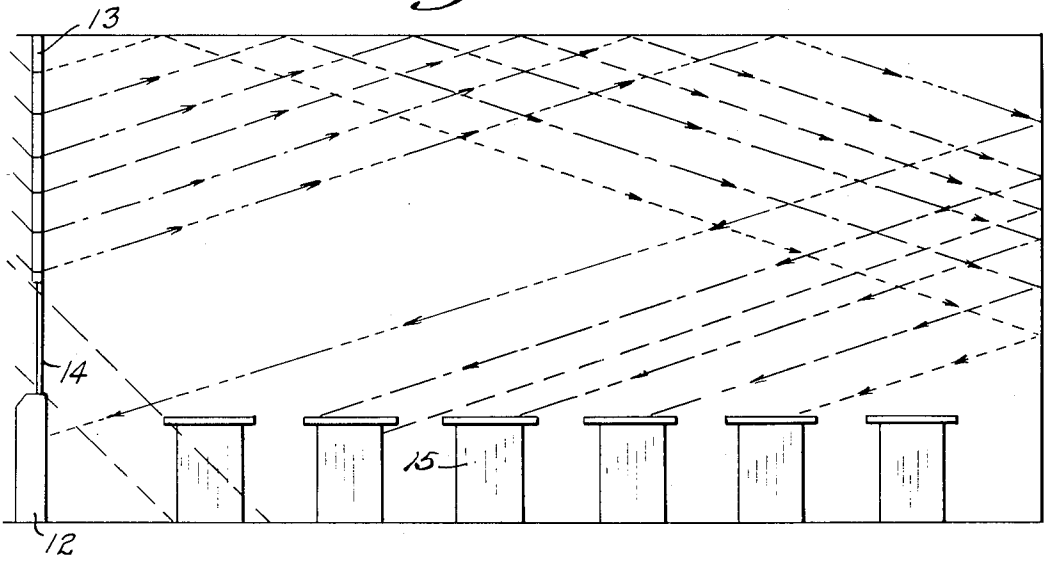


Fig. 17.



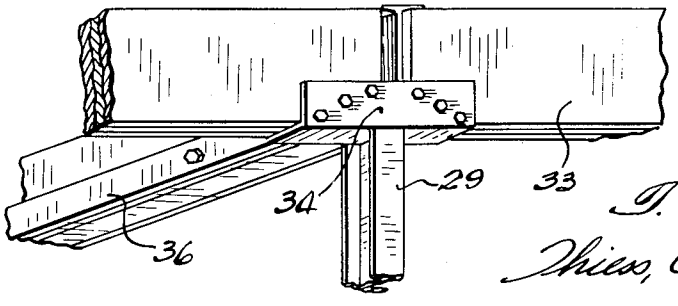


Fig. 21.

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SCHOOL BUILDING

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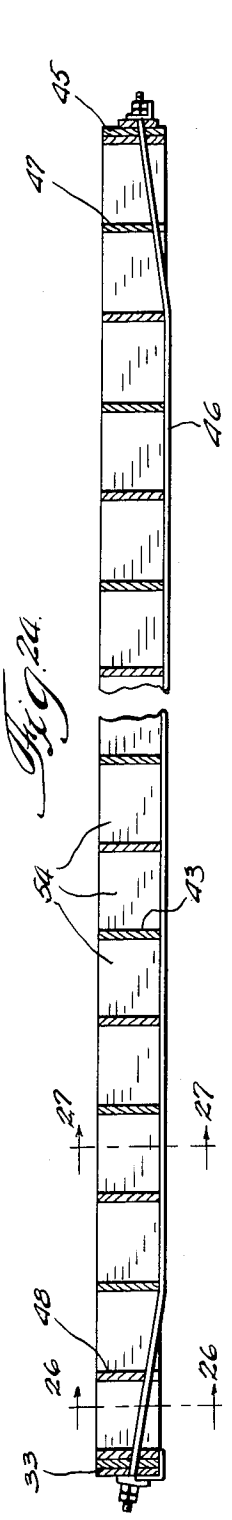


Fig. 24.

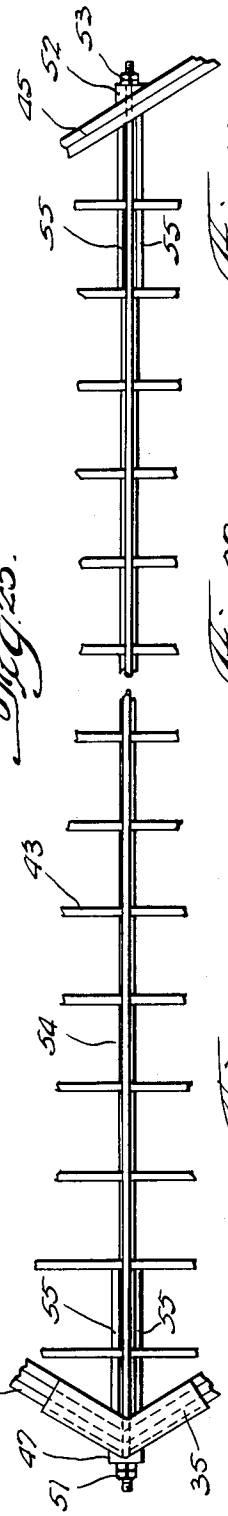


Fig. 25.

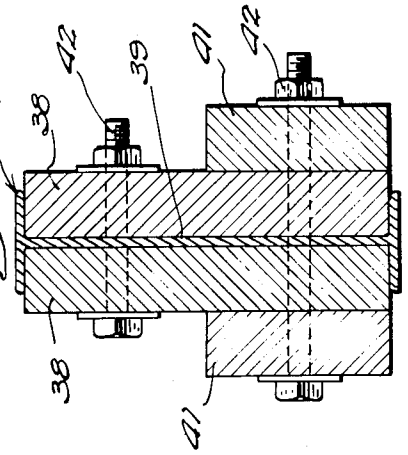


Fig. 28.

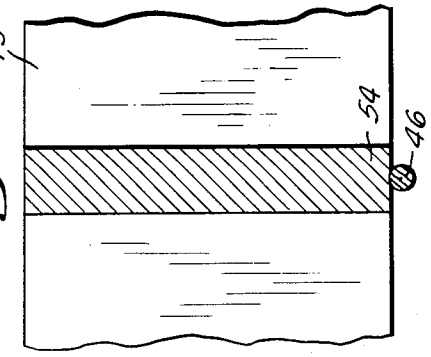


Fig. 27.

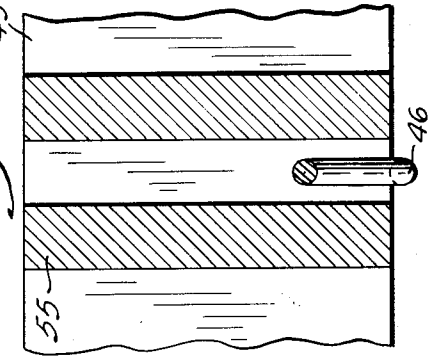


Fig. 26.

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United States Patent Office

2,756,584

Patented July 31, 1956

2,756,584

SCHOOL BUILDING

Thayer Ewing Shelton, Fayetteville, Ark.

Application August 2, 1952, Serial No. 302,317

6 Claims. (Cl. 72—1)

The present invention relates to schoolrooms or units and to school buildings which include one or more such rooms as a part thereof.

In constructing schoolrooms the most important object is to provide good natural lighting throughout the room, but this has heretofore been most difficult to accomplish. In the common rectangular schoolrooms having windows in one or two outside walls, light adjacent the windows is often too bright and glary, while the light in the portions of the room furthest from the windows is inadequate for good vision. Blinds, shades etc., may be employed to cut out the glare, but they further reduce the light in the darker areas, so are unsatisfactory. However, in schoolrooms embodying the present invention, good quality light is distributed throughout the rooms with relative uniformity. Moreover, the principal source of natural light is always over the left shoulder of the pupils, which is ideal.

The improvement in the quality and distribution of light in the schoolrooms results primarily from the novel shape of the present schoolroom and the fenestration employed therein.

Schoolrooms embodying the present invention have the shape of substantially one-sixth of a regular hexagon with the partition walls of each room radiating from a common center and being generally at right angles to and substantially bisecting the straight sides of the outer walls. The outer walls of each room are therefore of substantially equal length and at an angle of substantially 120° to each other. The partition walls may be terminated adjacent their inner ends and an additional wall or walls employed connecting the inner ends of said partition walls. The short inner wall, if used, may be provided with a door for communicating with a central hall or corridor.

As students are preponderantly right-handed, the seats are preferably arranged in rows facing directly toward a partition wall with the outer wall adjoining said partition wall parallel to said rows of seats and to the left thereof. The light is therefore over the left shoulders of the pupils occupying the seats. A closet, wardrobe, washroom or the like may be placed at the inner side of the room with the exposed wall thereof substantially parallel to the fore-and-aft alignment of the seats. The resulting room thus appears more or less as a conventional rectangular room.

Cooperating with the shape of the room to produce the maximum results desired, is a particular type of fenestration. The two outer walls of each of the rooms, for approximately the upper three-quarters thereof, are light admitting. For this purpose light-directing glass blocks and clear glass windows are employed. The outside walls are opaque and preferably load supporting for about one-quarter of their height. Over this wall portion there may be a row of light-directing glass blocks, above which is a vision panel consisting of a horizontal row of windows which may be of approximately one-sixth the height of the room. From the top of the windows to adjacent the ceiling of the room, light-directing blocks are employed.

The light-directing blocks are preferably of such type that the light striking the outside thereof passes generally transversely therethrough and approximately 60% is then directed inwardly and upwardly at a slight angle in vertical planes. The remaining approximately 40% of the light, after passing through the blocks, is diffused horizontally in all directions. Thus, while the diffused light is brightest adjacent the windows, the major portion of the light deflected upwardly is directed inwardly to the normally darker inner portions of the room. The result is that the light in the schoolroom is free of glare and excessive brightness, and is also relatively uniformly distributed throughout the room providing ample natural light of good quality even in the portions furthest from the windows.

Rooms embodying the present invention with the generally non-parallel walls are also superior acoustically. Echoing and reverberations are substantially eliminated, and with a sound absorbing ceiling a conversational tone of voice can be clearly heard in all parts of the room. Due to their shape, the rooms also readily lend themselves to effective heating, cooling and ventilation.

Not only are the individual schoolrooms greatly superior to conventional schoolrooms, but their use in school buildings results in many additional advantages. Since the building may be constructed so that a group of similar rooms is arranged generally about a common center, and the seating arrangement is the same in all the rooms of the group, the orientation of the building is of little moment, and the building may be placed in any desired position on a given site.

Through the use of the present rooms a great variety in building arrangement to provide for any size or capacity of building is possible. The rooms may be grouped about an auditorium or gymnasium or they may be isolated. All blank walls on the exterior of the building may be eliminated, leaving the entire exterior as a light source. It is also possible to design the building to accommodate it to building lots of various sizes and shapes. Another advantage of a building including the novel rooms of the present invention is that it may be made quite compact, requiring relatively short, and economically arranged corridors, thereby resulting in more efficient supervision and administration of the classes in the rooms.

Although the individual classrooms and the buildings having such rooms as a part thereof are greatly superior to conventional classrooms and school buildings, the school buildings of the present invention are relatively inexpensive. In many cases the cost is less than one-half that of a conventional school building of the same capacity.

The high efficiency and relatively low cost of these school buildings is of inestimable value in improving the educational standards throughout the country. While equally valuable in urban or rural communities, these school buildings have particular significance in smaller communities and rural areas where the funds available for educational purposes are usually more limited. Such areas and communities which of necessity frequently have had to continue with crowded, inadequate and inefficient school buildings because they were unable to afford a modern conventional building, can now in many instances construct a modern school building far superior to the conventional type.

An object of the present invention is to provide a schoolroom having natural, glare-free light of good quality relatively uniformly distributed throughout the room.

Another object is to provide a schoolroom having superior acoustical properties.

A further object of this invention is to provide a schoolroom which may be efficiently heated, cooled and ventilated.

Still another object is to provide a school building having rooms of the above type.

A still further object is to provide such school buildings which may be made up of a plurality of rooms of the above type, alone or with conventional rooms to provide a school building of desired shape.

Still another object is to provide such a school building having the above advantages which may be constructed at a greatly reduced cost over that of conventional schools of equal capacity.

Further objects and advantages will be apparent from the following description and claims when considered with the accompanying drawings, in which:

Fig. 1 is a diagrammatic floor plan of a school building embodying the present invention;

Figs. 2, 3, 4 and 5 are views similar to Fig. 1 of differently arranged school buildings embodying the present invention;

Fig. 6 is a horizontal, cross-sectional view of a school building embodying the present invention showing the seating arrangement employed in the rooms;

Fig. 7 is a cross-sectional view taken on the line 7—7 of Fig. 6;

Fig. 8 is a cross-sectional view taken on the line 8—8 of Fig. 6;

Fig. 9 is a rear elevational view of the building shown in Fig. 6;

Fig. 10 is a front elevational view of the building shown in Fig. 6;

Fig. 11 is a side elevation of the building shown in Fig. 6;

Fig. 12 is a partial perspective view of a schoolroom embodying the present invention;

Fig. 13 is a cross-sectional view taken on the line 13—13 of Fig. 12;

Fig. 14 is a cross-sectional view taken on the line 14—14 of Fig. 12;

Fig. 15 is a cross-sectional view taken on the line 15—15 of Fig. 12;

Fig. 16 is a diagrammatic view showing the path of the diffused light passing through the glass blocks in the outside wall shown in Fig. 12;

Fig. 17 is a diagrammatic view showing the path of the directed light passing through the glass blocks in the outside wall shown in Fig. 12;

Fig. 18 is an elevational view partially in section of a portion of an outer load bearing wall with an upright I-beam mounted thereon;

Fig. 19 is a partial cross-sectional view of a portion of an outer wall and an intersecting partition wall;

Fig. 20 is a partial cross-sectional view of the portion of the outer wall forming the angle of the room;

Fig. 21 is a perspective view of the upper end of an I-beam showing its connection with the roof stringers and girders;

Fig. 22 is a perspective view similar to Fig. 21 showing the upper end of a channel member support positioned at the outer wall angle;

Fig. 23 is a top plan view of the building showing the framing and joist arrangement.

Fig. 24 is a cross-sectional view taken on the line 24—24 of Fig. 23 showing a tension rod passing beneath the roof joists;

Fig. 25 is a bottom plan view of the construction shown in Fig. 24;

Fig. 26 is a cross-sectional view taken on the line 26—26 of Fig. 24;

Fig. 27 is a cross-sectional view taken on the line 27—27 of Fig. 24; and

Fig. 28 is a cross-sectional view of a roof girder taken on the line 28—28 of Fig. 23.

Referring to the drawings and more particularly to Figs. 1–6, there are shown floor plans of a number of school buildings in which school rooms **11** embodying the present invention are employed. They are merely examples of the numerous arrangements of school buildings possible with the present novel rooms. These similar rooms may be arranged about a generally common center in groups of two or more and in combination with conventional rooms such as halls, gymnasiums, auditoriums **2** etc.

In Fig. 1 the novel rooms are arranged in groups of three and four. Fig. 2 shows the rooms arranged in groups of two and five. In Figs. 3 and 4 the rooms are arranged in groups of four. In Fig. 5 they are arranged in groups of three and in Fig. 6 the rooms are arranged in groups of two and four.

The individual rooms **1** embodying the present invention have the shape of substantially one-sixth of a regular hexagon with the partition walls of each group of rooms radiating approximately from a common center, being generally normal to and substantially bisecting the straight sides of the outer walls. Therefore, the outer walls of each room are of substantially the same length and arranged at an angle of approximately 120° to each other. As shown in the drawings, the inner ends of the partition walls adjacent the common center may be terminated at inner walls of the rooms which define hallways, corridors etc. Rooms of this shape are referred to herein as having the shape of substantially one-sixth of a regular hexagon.

The outer walls of each room are preferably similarly constructed as shown particularly in Figs. 9, 10, 11, 12 and 13. Each wall preferably consists of a lower, solid, load bearing portion **12** constructed of concrete or other suitable strong material with a vision panel and glass blocks thereabove. While the proportions and sizes may vary, it has been found suitable when the height of the room is about 12 feet to have the load bearing wall portion **12** extend upwardly from the floor a distance of approximately 3 feet. A row of glass blocks **13** may be positioned on the wall portion **12** and a vision panel comprising a series of rectangular windows **14** placed on the bottom row of glass blocks.

The windows are preferably of a type that may be opened to permit the circulation of fresh air and also to provide for the escape of the children in case of fire or other emergency. The height of the windows may suitably be about 2 feet and in an ordinary sized room having two outer wall portions of approximately 22 and ½ feet in length, three such windows may be employed in each portion. Additional glass blocks **13** complete the outer wall from the top of the vision panel to the ceiling. Such an outer wall will have slightly more than one-half thereof formed of glass blocks.

The glass blocks are of a light-directing type formed of clear, colorless glass with a hollow, partially evacuated center. The inner and outer faces of the glass blocks are provided with prisms which direct all the light striking the outer faces thereof through the blocks substantially normal to the outer face thereof. The interior prisms then diffuse a portion of the light passing through the blocks in all directions in a generally vertical direction, such as illustrated in Fig. 16. However, approximately one-half or more of the light passing through the glass blocks is directed upwardly in substantially vertical planes at a slight angle, such as on the order of 17° as illustrated in Fig. 17. Light-directing glass blocks of the general type hereinabove referred to are shown in the patents to Rolph No. 2,179,863 and to Rapp No. 2,322,591. The directed light is reflected by the ceiling to the inner walls of the room and from there onto the desks **15** diagrammatically illustrated in Figs. 16 and 17. Thus, the light striking the outside of the glass blocks is directed largely inwardly in planes at right angles to the outer wall, to the innermost portions of the room furthest from the outer walls which normally would have relatively little light. The effect of this fenestration is to distribute good quality glare-free light relatively uniformly throughout the room.

The partition walls **16** and the inner corridor walls **17** are of similar construction, such as that shown in Fig. 14. They consist of a strong bottom load bearing portion **18** formed of concrete or similar material. From the top of the load bearing portion **18** to the ceiling, the partition walls are preferably formed of hollow load bearing concrete masonry wall units **19** made from Portland cement and suitable aggregates such as haydite, perlite, pumice etc. The walls **16** are preferably provided with a blackboard or the like **21**.

The inner portion of each of the rooms is preferably provided with a closet, wardrobe, lavatory etc. **22**, as shown in Figs. 1 to 6. A door **23** communicating with corridor **24** may be at the inner end of the room. The exposed wall **25** of the closet, wardrobe etc. **22** (Fig. 6), cuts off one corner of the room and is preferably parallel to the opposite outer wall. With this arrangement the room appears to be substantially of conventional shape. The inner wall **25** of the wardrobe, closet etc., may also be formed of relatively narrow Portland cement wall blocks or units **26** extending from the floor to the ceiling, as illustrated in Fig. 15.

The desks are preferably arranged in longitudinal rows facing a partition wall **16** having the blackboard **21** thereon (Fig. 6). These rows are parallel to the inner closet or wardrobe wall on the right side and to the outer wall on the left side. The other outer wall is toward the rear of the seats. The light source is therefore over the left shoulders of the pupils sitting at the desks, which is the ideal arrangement for good vision.

With the two angular outer wall portions of each room substantially 22 and ½ feet long, the room will easily accommodate thirty desks as shown in Fig. 6 without crowding and with good natural light provided at each desk in the room. The amount of light measured by the candle power at each desk top in schoolrooms embodying the present invention is far greater at the inner parts of the room than in conventional rectangular rooms and is of far superior quality. Due to the shape of the room and the fenestration, much more of the light is directed inwardly so that the amount of light is relatively uniform throughout the room as compared with conventional type of rooms. It is also substantially free of the usual glare.

Largely because of the novel shape of the room, the acoustics are greatly improved, particularly where sound absorbing materials are employed in the ceiling **30**, as is preferably the case in schoolrooms of the present invention. Echoing and reverberation are substantially eliminated and the ordinary speaking voice of the teacher at one side of the room can be easily heard in all parts of the room.

The load bearing portions **12** of the outer walls and the lower load bearing portions **18** of the partition and corridor walls are first formed of concrete or other suitable material. As each of the outer walls and partition walls of the various rooms is practically the same for rooms of the same size, a great saving in cost may be made in the foundations. The outer walls are provided with the usual footings **27**, some distance below the ground level. During the formation of the outer walls **12** supporting plates **28** for the upright I-beam supports **29** are formed therein, as shown in Fig. 18. After the I-beams **29** are positioned on and suitably secured to the plates **28**, additional concrete is poured about the portion of the I-beam extending below the top of the cement wall portion **12**. With each outer wall section 22 and ½ feet long, which may be considered standard size, I-beams are positioned on the outer wall portion **12** at the intersection of the outer walls with the partition walls **16** and midway between these I-beams and the angle formed by the two outer wall portions.

A slightly different construction, shown in Fig. 20, is employed at the intersection or apex of the two outer wall portions. This preferably consists of a pair of upright channel irons **31** arranged with their webs at an angle of substantially 60° and their opposed flanges extending therefrom in the direction of the adjacent outer walls. An angle member **32** which may be formed of aluminum or other metal, with the wings thereof forming an angle of approximately 120°, is positioned over the outer sides of the channel irons **31** and forms the outer corner of the room.

After the load supporting I-beams **29** and channel irons **31** have been secured in upright position on the outer load bearing wall portion **12**, stringers or girders **33** are secured on the upper ends thereof. These stringers, which may consist of three 2 x 12's arranged side by side, are preferably of a length to extend between adjacent I-beams **29** and between the I-beams and the adjacent corner channel iron supporting members **31**. The ends of the stringers **33** are properly positioned over the supporting I-beams **29** and channel irons **31** by suitable plates which are angle-shaped in cross section. The plates **34** (Fig. 21) mounted on the I-beams **29** are straight channel members and are provided with openings for receiving lag bolts or other securing means therein. The plates **35** mounted on the top of the channels **31** at the angular corners of the outer wall, while being angle-shaped in cross section, are formed with the two ends at an angle of substantially 120° to each other so as to abut the outer surfaces of stringers as shown in Fig. 22.

Girders **36** (Figs. 21 and 23) extend from the plates **34** on the supporting angle irons **29** to an adjacent partition wall, those above each room being substantially parallel. The girders, shown in detail in Figs. 21 and 28, may consist of an I-beam **37** with two planks **38** of substantially the same width adjacent each side of the web I-beam **39** and two additional planks **41**, preferably of one-half the width of the planks **38**, positioned on each side of the planks **38** adjacent their lower portions. The I-beam and the planks **38** and **39** may be secured together by any suitable securing means such as the nuts and bolts **42**.

The outer ends of the girders **36** are preferably supported on the plates **34** and their inner ends rest upon the top of the partition walls **16**. The roof joists **43** are secured between the girders **36** and the stringers **33**, and are arranged substantially normal to lines extending radially outwardly from the common centers of a group of similar schoolrooms, as shown in Fig. 23.

In order to provide additional support for the joists tie rods **44** are employed between the intersecting angular corners of the outer stringers **34** and the inner stringers **45** positioned on the corridor walls **17**. As shown in Figs. 24 and 25, the tie rod **46** may pass under all of the joists **43** between these two points except the inner and outer ones **47** and **48** which may be slotted to permit the rod to extend upwardly therein. A washer **49** is positioned on the outer end of the rod which is threaded to receive nuts **51** thereon. A shaped washer or block **52** is provided at the inner end of the stringer **45** and nuts **53** are secured on the end of the rod **46**. Sufficient tension is preferably provided by tightening the nuts **51** or **53** to give a slight upward camber to the roof construction between the inner and outer stringers **33** and **45** respectively. Thus, no sagging of the beams could take place without breaking the tie rods in a downward direction which is practically impossible. Bridging blocks **54** are provided between the joists **47** directly in line with the portions of the joists engaged by the tie rod **46**. Adjacent the inner and outer joists **47** and **48**, pairs of spaced bridging blocks **55** are positioned as shown in Fig. 25, on each side of the tie rod. Any lateral movement of the tie rod is thus prevented and a strong rigid structure is provided.

The ceilings **57** of the corridors shown in Figs. 7, 8 and 14 are substantially lower than the ceilings of the various classrooms, so as to form an opening or passage-

way 58 thereover throughout substantially the entire corridor area. The heating units, conduits for hot and cold air blowers, electrical wiring, plumbing etc., may all be positioned in the space 58 above the corridor ceilings 57, where they are concealed from view and may be readily accessible through trap doors or access panels in the ceiling. As the corridors are substantially shorter than the corridors in the conventional school buildings, the cost of the heating, plumbing and wiring materials for the building is substantially reduced and such materials may be more easily installed. Referring to Fig. 6, the various conduits, pipes and wiring for a group of four rooms on the right thereof, may run into these rooms from a central location in the end of the corridor. This is true of any other group of rooms embodying the present invention.

Due to the numerous variations in the design and arrangement of the school buildings, they may be readily constructed to fit the shape and size of the plot of ground on which the building is to be placed. The duplication of the various parts in the building makes it feasible to form them by mass production methods, thus greatly reducing the cost thereof. The same cement forms may be used repeatedly in the same building or in different buildings having schoolrooms of the same size. Another advantage leading to economy is that the glass blocks may be very readily and accurately laid as they may be kept plumb and in line with the supporting uprights 29 and 31 at all times.

The individual rooms have excellent quality light throughout, even in the portions of the room furthest from the outer walls. Moreover, the light comes over the left shoulders of the pupils sitting in each of the rooms.

While particular embodiments of this invention have been illustrated and described, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is contemplated therefore by the appended claims to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. In a school building, a plurality of similar adjoining rooms, each of said rooms having two abutting outer wall portions of substantially the same length at an angle of substantially 120° to each other, the adjacent outer wall portions of adjoining rooms being aligned and of substantially the same length and together forming one outside wall of said buildings, a partition wall extending inwardly from substantially the midpoint of each of said outside walls and substantially normal thereto, and side walls extending inwardly substantially normal to the end outer wall portions from the end extremities thereof, said partition and side walls converging from their outer ends inwardly and each of said outer wall portions having at least substantially the upper half thereof former of natural-light transmitting members.

2. In a school building, a plurality of similar adjoining rooms, each of said rooms having two abutting outer wall portions of substantially the same length at an angle of substantially 120° to each other, the adjacent outer wall portions of adjoining rooms being aligned and of substantially the same length and together forming one outside wall of said building, a partition wall extending inwardly from substantially the midpoint of each of said outside walls and substantially normal thereto, and side walls extending inwardly substantially normal to the end outer wall portions from the end extremities thereof, said partition and side walls converging from their outer ends inwardly and each of said outer wall portions having at least substantially the upper half thereof formed on natural-light transmitting members, at least the major area of which comprises light-directing glass blocks.

3. In a school building, a plurality of similar adjoining rooms, each of said rooms having two abutting outer wall portions of substantially the same length at an angle of substantially 120° to each other, the adjacent outer wall portions of adjoining rooms being aligned and of substantially the same length and together forming one outside wall of said building, a partition wall extending inwardly from substantially the midpoint of each of said outside walls and substantially normal thereto, and side walls extending inwardly substantially normal to the end outer wall portions from the end extremities thereof, said partition and side walls converging from their outer ends inwardly and each of said outer wall portions having at least substantially the upper half thereof formed of natural-light transmitting members, at least the major area of which comprises light-directing glass blocks arranged to direct a substantial portion of the light passing therethrough upwardly at a slight angle in substantially vertical planes and to diffuse substantially all of the rest of the light passing therethrough.

4. In a school building, a plurality of similar adjoining rooms, each of said rooms having two abutting outer wall portions of substantially the same length at an angle of substantially 120° to each other, the adjacent outer wall portions of adjoining rooms being aligned and of substantially the same length and together forming one outside wall of said building, a partition wall extending inwardly from substantially the midpoint of each of said outside walls and substantially normal thereto, and side walls extending inwardly substantially normal to the end outer wall portions from the end extremities thereof, said partition and side walls converging from their outer ends inwardly and each of said outer wall portions having at least substantially the upper half thereof formed of natural-light transmitting members comprising vision panels and light-directing glass blocks.

5. In a school building, a plurality of similar adjoining rooms, each of said rooms having two abutting outer wall portions of substantially the same length at an angle of substantially 120° to each other, the adjacent outer wall portions of adjoining rooms being aligned and of substantially the same length and together forming one outside wall of said building, a partition wall extending inwardly from substantially the midpoint of each of said outside walls and substantially normal thereto, and side walls extending inwardly substantially normal to the end outer wall portions from the end extremities thereof, said partition and side walls converging from their outer ends inwardly and each of said outer wall portions having at least substantially the upper half thereof formed of natural-light transmitting members comprising vision panels and light-directing glass blocks, said glass blocks comprising the major area of said light transmitting members.

6. In a school building, a plurality of similar adjoining rooms, each of said rooms having two abutting outer wall portions of substantially the same length at an angle of substantially 120° to each other, the adjacent outer wall portions of adjoining rooms being aligned and of substantially the same length and together forming one outside wall of said building, a partition wall extending inwardly from substantially the midpoint of each of said outside walls and substantially normal thereto, and side walls extending inwardly substantially normal to the end outer wall portions from the end extremities thereof, said partition and side walls converging from their outer ends inwardly and each of said outer wall portions having at least substantially the upper half thereof formed of natural-light transmitting members comprising vision panels and light-directing glass blocks and having opaque portions therebelow.

References Cited in the file of this patent

UNITED STATES PATENTS

94,116 Irwin ---------- Aug. 24, 1869

(Other references on following page)

9			10		
267,159	Darling	Nov. 7, 1882	2,566,099	Van Hulst	Aug. 28, 1951
358,083	Stewart	Feb. 22, 1887		FOREIGN PATENTS	
700,794	Martin-Cooke	May 27, 1902			
1,048,938	Broughton	Dec. 31, 1912	496,592	Great Britain	of 1938
1,425,114	Luard	Aug. 8, 1922		OTHER REFERENCES	
2,101,538	Faber	Dec. 7, 1937			
2,322,591	Rapp	June 22, 1943	Architectural Forum, volume 91, No. 4, pages 126, 127, 132 and 133, October 1949.		
2,510,958	Coff	June 13, 1950			