April 28, 1931. A. F. BEMIS 1,803,091

INCLOSURE

Filed Dec. 14, 1929 3 Sheets-Sheet 1

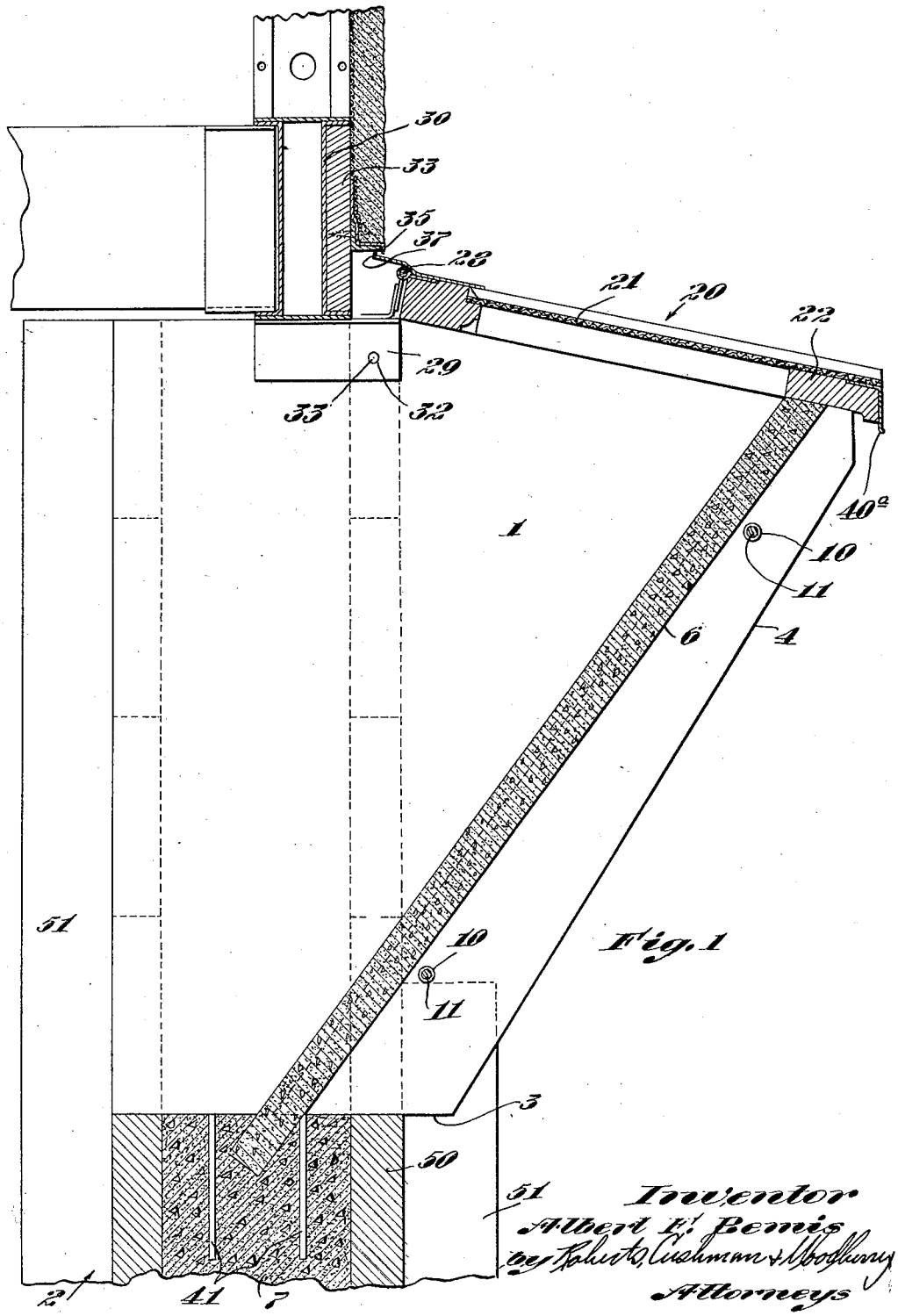


Fig. 1

Inventor
Albert F. Bemis
by Roberts, Cushman & Woodbury
Attorneys

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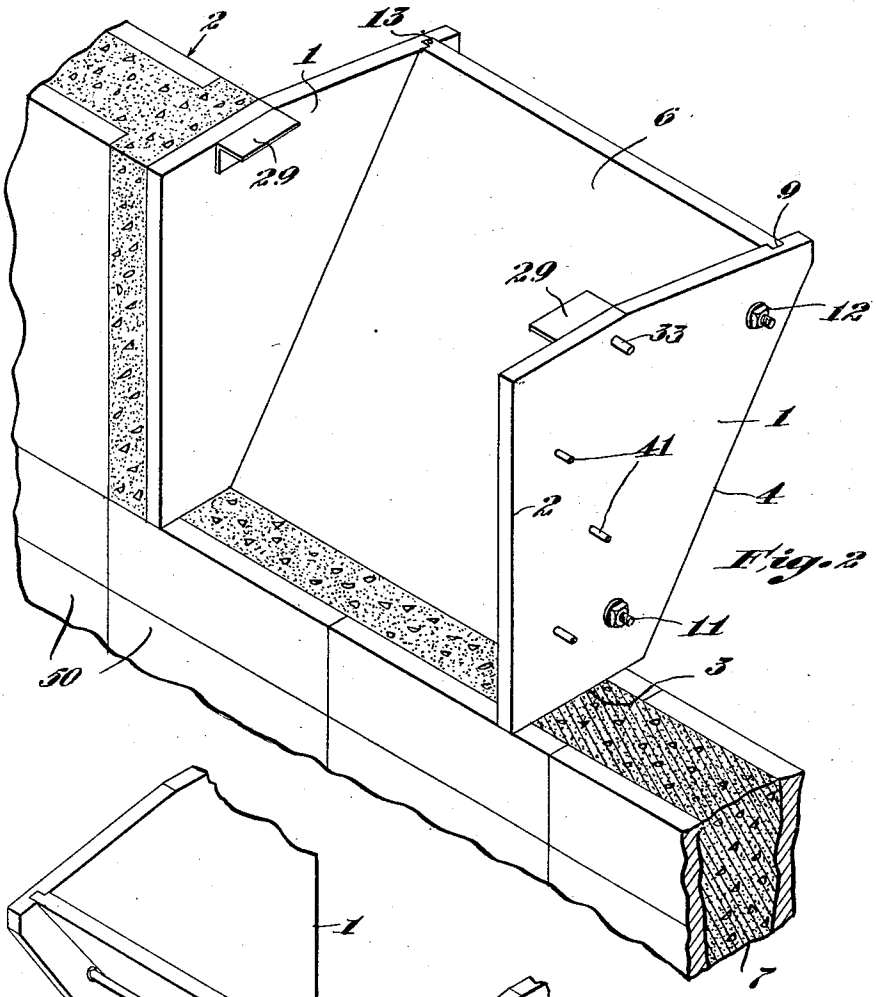


Fig. 2

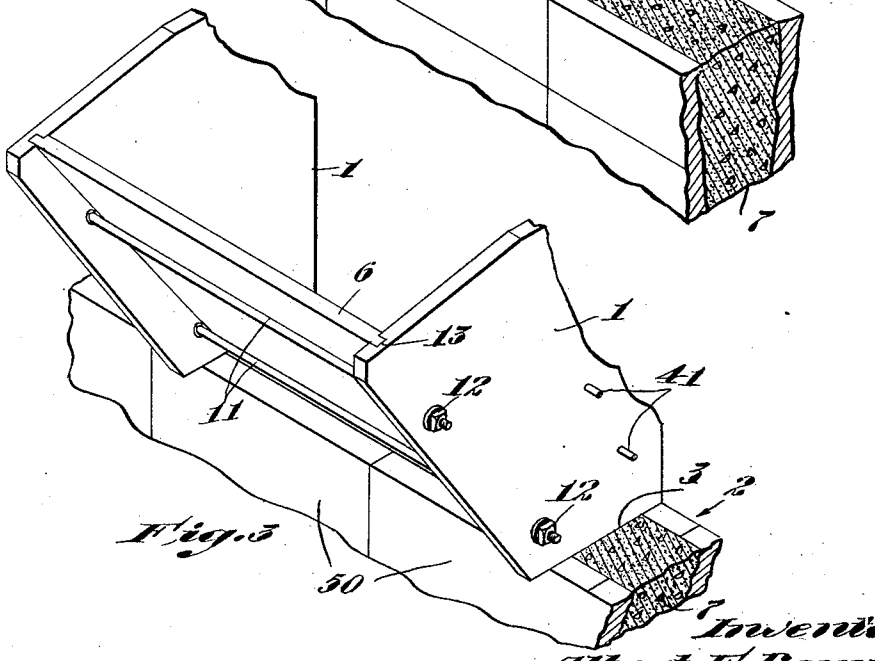


Fig. 3

Inventor
Albert F. Bemis
by Roberts, Cushman & Woodberry
Attorneys

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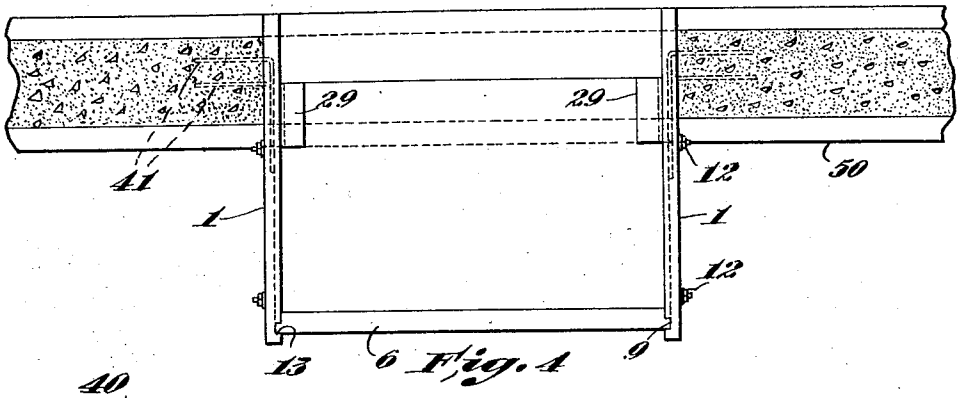


Fig. 4

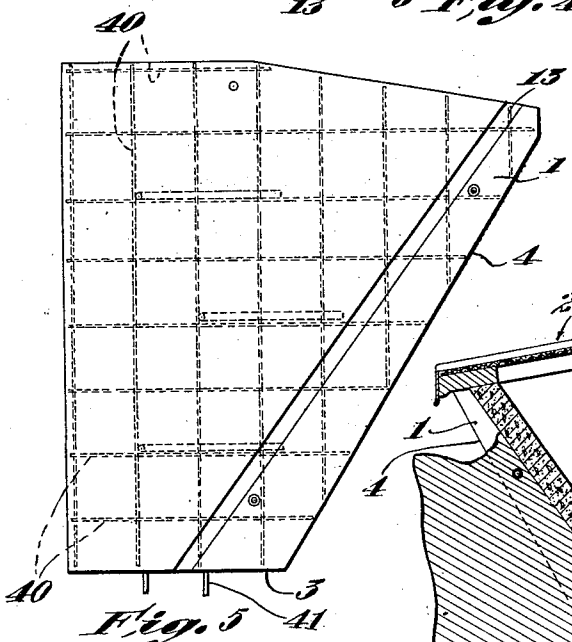


Fig. 5

Fig. 6

Inventor
Albert F. Bemis
by Roberts, Cushman & Woodbury
Attorneys

Patented Apr. 28, 1931 1,803,091

UNITED STATES PATENT OFFICE

ALBERT F. BEMIS, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO BEMIS INDUSTRIES, INCORPORATED, OF BOSTON, MASSACHUSETTS, A CORPORATION OF DELAWARE

INCLOSURE

Application filed December 14, 1929. Serial No. 414,057.

This invention relates to improvements in building construction, and more particularly to the construction and arrangement of the retaining walls and windows or the like for areas adjoining openings in foundation walls.

In many buildings the basement windows have been partially or wholly located below the surface of the adjoining ground and areas have been defined adjoining these windows by brick or cementitious box-like retaining walls, the windows being located substantially in the planes of the foundation walls. This conventional mode of construction has several outstanding disadvantages; for example, the heavy box-like concrete structure normally depends upon the adjacent soil as well as upon the foundation wall for support, and settling of the earth which is disposed beneath the overhanging structure will permit the latter to crack or break away. Furthermore, the concrete area walls have required the provision of pouring forms which were difficult and expensive to build and which impeded the rapid continuation and completion of the construction of the building, and the resulting light-admitting areas were ordinarily quite limited.

The present invention is designed primarily to avoid these deficiencies and objectionable features and to permit the rapid construction of inclosures for cellar areas, which are adapted to remain indefinitely in position and which are not primarily dependent upon the adjacent soil for support and which are so constructed that the settling of the soil does not materially affect the stability of the retaining wall. Furthermore, this arrangement is particularly advantageous in permitting substantially the maximum amount of light to pass into the basement from an area of determined size.

To permit the attainment of these desirable results, I preferably provide preformed members which may be used in conjunction with the form elements provided for the pouring of a cementitious foundation. Preferably the preformed members are provided with means to interlock with the adjoining portions of the foundation to ensure the firm continued retention of the area walls in position; and they may be arranged so that they are supported by the adjoining earth, even if the same settles. To this end the outer wall of my improved area may be inclined in relation to the basement wall. Preferably the window is arranged at a slight angle to the horizontal at the top of the area so that substantially the entire extent of the same may be effective in admitting light to the basement. Thus with areas of a given size a maximum amount of light and ventilation may be provided for the basement.

While my improved inclosure construction is adapted generally to be employed with substantially all types of pouring forms for foundations, it is particularly adapted to be used in conjunction with the form arrangement disclosed and claimed in my copending application Serial No. 342,996, filed February 27, 1929, which involves the employment of precast slabs between which cementitious material is poured in order to provide a foundation wall, suitable temporary uprights being disposed between the ends of the adjoining preformed slabs to hold them in place until the poured concrete has set.

In the accompanying drawings:

Fig. 1 is a vertical section through my improved type of inclosure for cellar areas, including a portion of the adjoining foundation and part of the building frame;

Fig. 2 is a perspective view of a part of the inclosure with a part of the foundation wall removed for clarity of disclosure;

Fig. 3 is a perspective view of the outer side of the inclosure with the foundation wall and parts of the walls of the inclosure broken away;

Fig. 4 is a top view of the inclosure with the window removed;

Fig. 5 is a side elevational view of a portion of the inclosure; and

Fig. 6 is a sectional view of a portion of the inclosure showing the relation of the same to the adjoining earth after the latter has settled.

I preferably employ precast slabs of cementitious material for the construction of my improved inclosure for cellar areas, these slabs being located in place as the foundation wall is being formed. For convenience of description I will first refer to the completed inclosure and then will describe a typical manner in which the same may be assembled with the adjoining building structure.

Referring first to Figs. 2 and 3, my improved area inclosure comprises side slabs 1 which, as shown, may be substantially trapezoidal, having a vertical edge substantially in the plane of the inner face of the basement wall 2, having a lower substantially horizontal edge 3 resting upon a portion of that wall which forms the bottom of an opening and having an inclined outer edge 4. In many installations the edge 3 may project somewhat beyond the outer face of the wall. An intermediate slab 6 is disposed between the side slabs 1, being inclined downwardly and inwardly so that its lower end may be embedded in the poured cementitious material 7 of the foundation 2. Preferably, as shown in Fig. 1, the slab 6 is thus spaced from the inclined edges 4 of the side members 1, preferably being disposed at a greater distance from the same at the bottom of the inclosure than at its top.

Suitable metal sleeves 10, Fig. 1, may be embedded in the slabs 1 and receive tie bolts 11 upon which nuts 12 are threaded to hold the side members 1 in firm engagement with the inclined slabs 6. To permit the more effective attainment of this result suitable grooves 13 are provided in the slabs 1, and the ends of the intermediate member 6 are rabbeted to afford tongue portions 9 to interfit with these grooved portions of the side panels. Thus the fastening elements 11 and 12 may be effective in drawing the parts into their assembled relation and holding them in firm engagement with each other.

Preferably brackets 29 extend outwardly from the first floor sill 30 of the building frame and are provided with openings 32 which receive pins 33 extending through the slabs 1 more firmly to hold the latter in place.

A suitable transparent closure 20 may be disposed at the top of the inclosure assembly, including a suitable window panel 21 which may be formed of glass reinforced with wire or the like and a frame or sash 22 which may rest upon the upper edges of slabs 1 and 6. Preferably the inner edge of this window frame is connected by hinges 28 with brackets 29. A flashing strip 35 may be secured to the sill 30 or to a wooden strip 33ª mounted thereon and may extend over a metal lip 37 carried by the window frame to provide a suitable weather-tight joint at this point. The remaining edges of the window frame may be provided with depending metal flange portions 40ª which prevent the passage of moisture about the upper edges of the slabs.

Preferably slabs 1 and 6 may be precast of cementitious material, such as a suitable Portland cement, which may be reinforced by a coarse reticulated wire or rod members, designated in general by numeral 40, Fig. 5. Outstanding bars 41 may be provided by extensions of portions of this member or by other rods that are embedded in the side panels of the inclosure to extend into the cementitious material 7 of the foundation both at each side of the inclosure and beneath the same.

The horizontal lower edges 3 of the side panels 1 facilitate the employment of this construction with any type of form boards, since these edges may rest upon the boards of the form, but when preformed slabs 50 are employed to define the faces of the foundation, as disclosed in my copending application Serial No. 342,996, the lower edges of these panels may rest upon the slabs, as shown. As disclosed in the copending application referred to, the building frame may be erected upon the footing, the uprights 51 for the foundation form being temporarily connected to portions of this frame and preformed slabs 50 being arranged with their edges in juxtaposition to these uprights to provide a form into which the cementitious material is poured. This mode of construction particularly facilitates the employment of the type of area inclosures disclosed herein, since, as shown in Fig. 1, the lower edges 3 of the side panels 1 may rest upon the edges of the preformed slabs and the brackets 29 after being secured to sills 30 may be connected by pins 33 to the upper portions of the panels, the bolts 11 being arranged to clamp the slab 6 between the outer portions of the panels 1. As shown, the outer uprights 51 adjoining this portion of the wall may terminate below the sill 30 to afford room for the opening in the wall 2 and to afford a clearance for the slabs. Preferably the side panels may be connected to the sills and the intermediate panel which may be in place before the cementitious material is poured adjoining the bottom of the latter. The cement may be poured until its surface will be disposed in substantially the plane of the bottom edges 3 of the side panels 1 and is then allowed to receive an initial set before the cement is poured at each side of the panels 1 to complete the foundation up to the level of sills 30. As described above, panels 1 are provided with rods 41 projecting into the space between the opposite layers of preformed slabs 50 so that when

cementitious material is poured into this space, these rods firmly interlock with the same, while the lower edge of slab 6 is embedded in the poured cementitious material.

Fig. 6 illustrates the manner in which the earth may be packed about an inclosure constructed in accordance with this invention, and particularly the arrangement of the same adjoining the intermediate panel 6. It is evident that although the earth may tend to settle at this point it will merely become more firmly packed adjoining the lower part of the panel 6, thus lending appreciable support to the same; however, even if the earth settles entirely away from the inclosure, the latter is firmly supported by the basement wall and the sill, due to the arrangement of the lower portion of panel 6 in the poured cementitious material 7 and from the interlocking engagement of the rods 41 with the same cement, as well as the connection of the side panels to the sill. It is further evident that the arrangement of the transparent closure 20 in a slightly inclined position permits the admittance of the maximum amount of light to the cellar despite the limited area occupied by the inclosure or the limited horizontal extension of this assembly outwardly of the basement wall.

An inclosure assembly of this character is particularly adapted to be employed in conjunction either with the mode of constructing foundation walls described in my copending application identified above, or in conjunction with the employment of removable form boards, it not being necessary to provide elaborate forms or to delay the construction of the foundation to permit the construction of the cellar area inclosure.

I claim:

1. In a building, a foundation wall having an opening, and a plurality of preformed cementitious slabs secured together to provide an inclosure for the area adjoining the opening and to form a retaining wall for the surrounding earth, a lower portion of each of said slabs being in engagement with the foundation adjoining the bottom of the opening, certain of said slabs having horizontal lower portions resting upon the foundation and extending outwardly from the same.

2. In a building, a foundation wall having an opening, a plurality of preformed cementitious slabs secured together to provide an inclosure for the area adjoining the opening and to form a retaining wall for the surrounding earth, said slabs being held in interfitting relation with each other, and metal elements having portions embedded in certain of the precast slabs and having portions extending into the adjoining foundation.

3. In a building, a basement wall having an opening, a plurality of preformed cementitious slabs secured together to provide an inclosure for the area adjoining the opening and to form a retaining wall for the surrounding earth, said slabs being held in interfitting relation with each other, and means connecting certain of said slabs to the sill for the lower floor of the building.

4. A building construction comprising in combination a foundation wall, an opening in the same and an inclosure and retaining wall for said opening, said inclosure including side walls and an intermediate wall connected to the side walls and inclined downwardly and inwardly to a point of juncture with the foundation wall.

5. A building construction comprising in combination a foundation wall having an opening, an inclosure and retaining arrangement for the same comprising side panels, and an intermediate panel inclined downwardly and inwardly to join the foundation at its lower edge.

6. A building construction comprising in combination a foundation wall having an opening, an inclosure and retaining arrangement for the same comprising side panels formed of precast cementitious material, and the intermediate panel inclined downwardly and inwardly to join the foundation at its lower edge, said intermediate panel being received in grooves in said side panels, and means tying the side panels to each other and holding the intermediate panel in firm engagement therewith.

7. A building construction comprising in combination a foundation wall having an opening, an inclosure and retaining arrangement for the same comprising side panels, an intermediate panel inclined downwardly and inwardly to join the foundation at its lower edge, and a substantially horizontally disposed closure panel arranged over the inclosure.

8. A building construction comprising in combination a foundation wall having an opening, an inclosure and retaining arrangement for the same comprising side panels, an intermediate panel inclined downwardly and inwardly to join the foundation at its lower edge, a substantially horizontally disposed closure panel arranged over the inclosure, and hinges connecting the inner portion of the closure panel to an adjoining part of the building.

9. In a building, a basement wall having an opening, a sill extending along the top of the basement wall, an inclosure for a cellar area projecting outwardly from the foundation wall adjoining the opening, said inclosure having side wall portions, and connections between said portions and the sill, the lower parts of the side wall portions engaging the foundation at the bottom of the opening.

10. In a building, a vertical wall with an opening in which is disposed a window unit,

said window unit comprising a performed inclosure for the area adjoining the opening and a weather-proof cover for said inclosure, said cover being in a plane substantially perpendicular to the plane of said wall and at least a portion of said cover being adapted to permit the passage of light.

11. In a building, a foundation wall having an opening in which is disposed a structure, a portion of which permits the transmission of light, said structure comprising a plurality of preformed cementitious slabs secured together, the lower portion of each of said slabs being in engagement with the foundation adjoining the bottom of the opening, the upper portion supporting a cover to the opening, said cover having a translucent portion and being in a substantially horizontal plane projecting outwardly from said wall.

12. In a building, a vertical wall having an opening in which is disposed a window unit comprising a plurality of preformed cementitious panels secured together to provide an inclosure for the area adjoining the opening, the lower portion of each of said panels being in engagement with the vertical wall adjoining the bottom of the opening, the outer panel projecting upwardly and outwardly at a substantial angle to said vertical wall, the side panels extending from said wall to the outer panel, and a cover for said inclosure, said cover including a translucent sheet and being supported by said panels.

Signed by me at Boston, Massachusetts, this 10th day of December, 1929.

ALBERT F. BEMIS.