

April 16, 1963

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3,085,489

WINDOW WELL SHIELD

Filed March 9, 1959

3 Sheets-Sheet 1

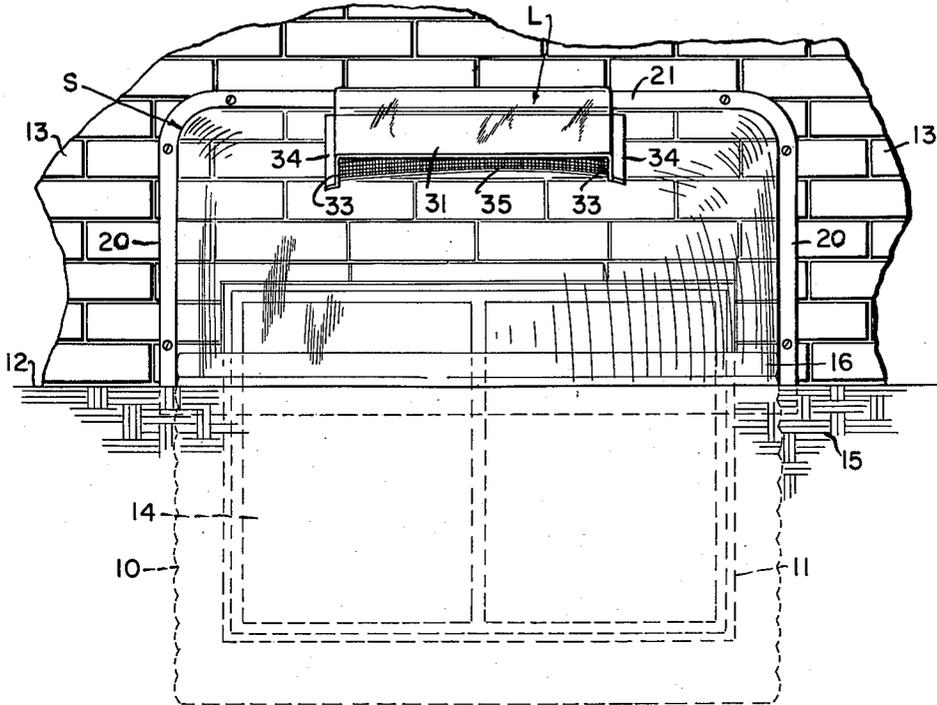


FIG. 1.

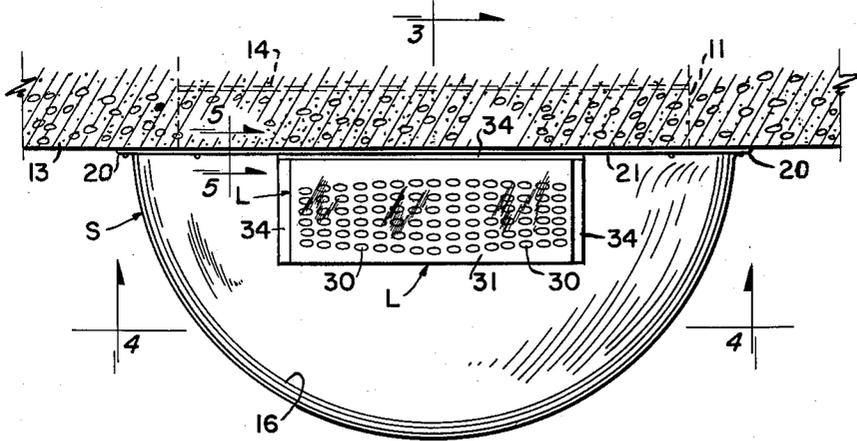


FIG. 2.

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3 Sheets-Sheet 2

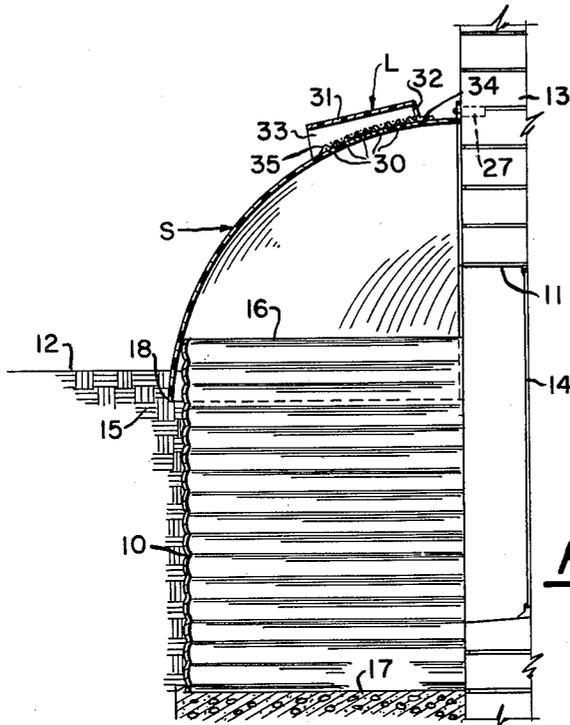


FIG. 3.

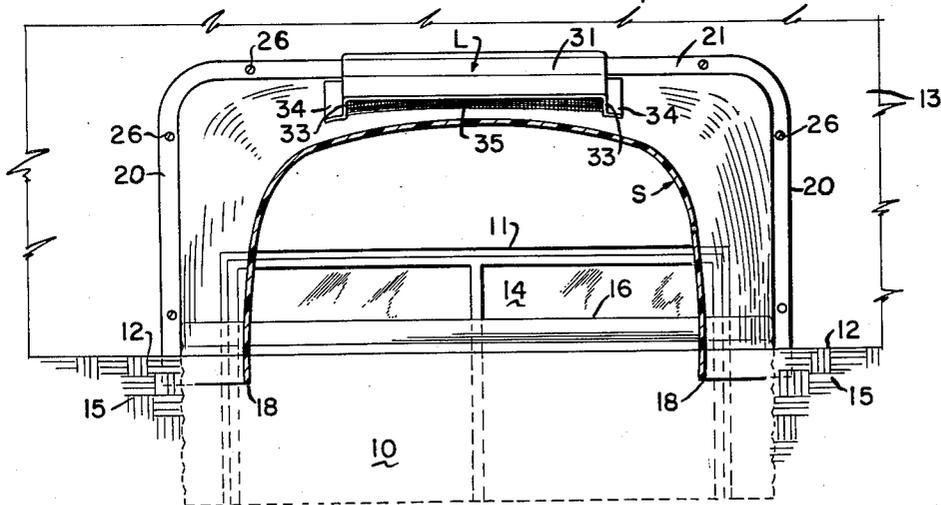


FIG. 4.

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3 Sheets-Sheet 3

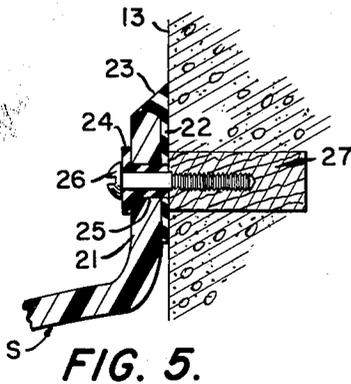


FIG. 5.

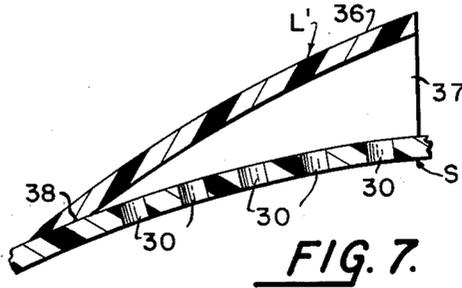


FIG. 7.

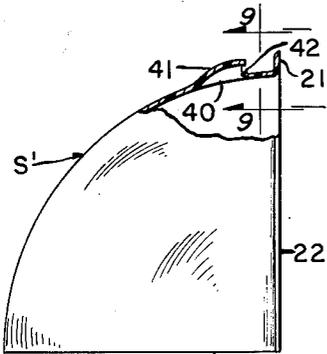


FIG. 8.

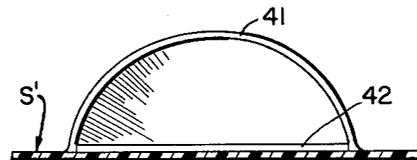


FIG. 9.

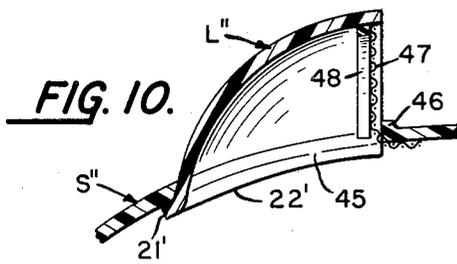


FIG. 10.

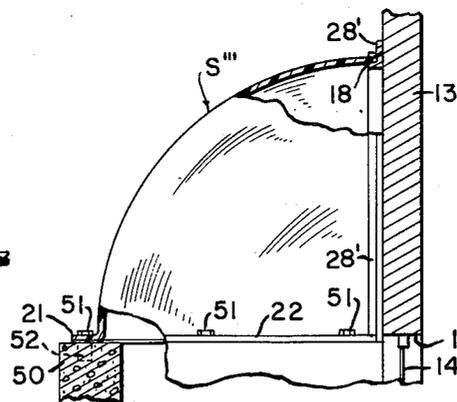


FIG. 11.

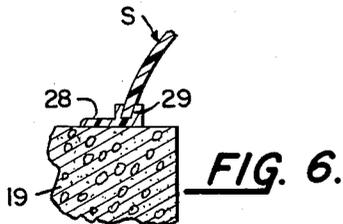


FIG. 6.

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3,085,489

WINDOW WELL SHIELD

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3 Claims. (Cl. 98-37)

The present invention relates to shields or covers for windows, especially subgrade windows, as at a window well.

It is customary to provide areaways, such as window wells, to permit the entrance of light and air into a subgrade opening of a basement in a building structure. The window well generally forms an opening large enough to admit a sufficient amount of light and air into the subgrade window opening, so as to permit the basement to be ventilated and receive outside light. The well usually extends between the sides of the window opening in semicircular fashion and includes an outer casing defining the outer periphery of the well, which casing preferably extends a slight distance above ground level to prevent dirt and debris from rolling into the well. However, a heavy rain or flash flood will cause a considerable amount of water to collect in or even fill the well, with the possibility of flooding the basement and consequent property damage and possible loss of life. Also, it is difficult if not impossible by such a casing alone to prevent foreign matter, such as leaves and debris, along with water, from collecting in the well, thus giving the well an undesirable appearance.

Among the objects of the present invention are to provide a novel shield to cover the opening formed by a window well surrounding a subgrade window opening in a building structure; to provide such a shield which will effectively prevent the entrance of water and debris into the well, but at the same time admit the necessary amount of light and air to or through the window opening; to provide such a shield or cover which will readily fit over the top of the well; to provide such a shield which is of sturdy construction so as to prevent accidental breakage and is conformable for attachment over the window well and opening regardless of the size of the window opening or the height of the window opening relative to the grade level; to provide such a shield which will effectively limit the amount of water entering the well, especially during periods of heavy rain or flooding and will also assist rapid drainage of water away from the well area; to provide such a shield which may be simply and readily constructed as a one-piece unit and which may be securely and permanently attached in a desired position with respect to the window well; to provide such a shield which may be simply yet securely mounted in water-tight relation around the well of a basement window or the like; and to provide such a shield which embodies therein a novel ventilating arrangement for the more effective admission of air therethrough while restricting the entrance of water, debris, and other foreign matter.

Additional objects of the present invention and the advantages thereof will become apparent from the following description, taken in connection with the accompanying drawings, in which:

FIG. 1 is a front elevation of a shield constructed in accordance with the present invention and shown in mounted position on a window well;

FIG. 2 is a top plan view of the shield as shown in FIG. 1;

FIG. 3 is a vertical section taken along line 3-3 of FIG. 2;

FIG. 4 is a vertical section taken along line 4-4 of FIG. 2;

FIG. 5 is an enlarged cross-section taken along line 5-5 of FIG. 2, illustrating a preferred manner of attachment of the shield to the building;

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FIG. 6 is a fragmentary vertical section of the lower end of a shell which may be utilized when the window well is surrounded by a concrete apron;

FIG. 7 is an enlarged fragmentary vertical section, illustrating a modified form of ventilating means or louvre;

FIG. 8 is a side elevation of an alternate form of shield of this invention, partially broken away to show the construction more clearly;

FIG. 9 is an enlarged, fragmentary vertical section taken along line 9-9 of FIG. 8;

FIG. 10 is a vertical section, similar to FIG. 7, but illustrating another form of ventilating means constructed in accordance with the present invention; and

FIG. 11 is a side elevation of still another form of shield constructed in accordance with the present invention, partially broken away to show the installation more clearly.

With more particular reference to FIGS. 1 to 5, inclusive, a preferred embodiment of a window well shield or covering S is disposed over a window well provided by a casing 10 adjacent a window opening 11, which is disposed at least partially below ground level 12 in a wall 13 of a building, which may be brick, as in FIG. 1, or concrete as in FIG. 2, or other construction. The casing 10 is generally dimensioned so as to extend outwardly and around the window opening 11 a sufficient distance to form a well which will admit the desired amount of light and air into the basement area through a window 14 which is disposed within the opening 11. As will be evident, casing 10 prevents the earth 15 from caving in or falling into the window opening. In accordance with conventional practice, casing 10 may be of concrete or brick masonry construction, but, as shown, is usually formed of a generally semicircular section of corrugated, galvanized iron or steel or the like, and has a top edge 16 projecting slightly above the ground level. The bottom 17 of the well may be earth, or may be a layer of concrete, as in FIG. 3, or masonry, or the like which preferably extends outwardly beneath the lower edge of casing 10. Thus, when the casing 10 is of masonry or concrete construction, the bottom of the well may be integral therewith, while if the casing 10 is of metal and the bottom of the well is other than earth, the lower edge of casing 10 may be set in concrete, masonry, or the like. Or, the well may be formed of concrete or masonry which is integral with a concrete apron, such as apron 19 of FIG. 6.

The shield S of the present invention is formed preferably of a sturdy, transparent material as a hollow shell which will fit over the window well so as to prevent foreign material from entering the well while at the same time admitting light and air therethrough. Thus, the lower edge 18 of the shield conveniently conforms generally to the shape of the casing 10 but is slightly larger than the outer dimension of the casing 10, so that the lower edge 18 may be buried in the earth a short distance outside the casing, as in FIG. 3. In addition, the shield S is so constructed and arranged as to be attachable in water-tight relation to the building wall at each side of and above the window well, notwithstanding variations in the relative height of the window opening with respect to the top of the window well. Accordingly, the shield S is formed of a transparent material having the necessary mechanical strength to prevent accidental breakage, for example, a plastic material such as polyethylene or the acrylic plastic sold as "Plexiglas," which will retain its transparent qualities under extremes of weather conditions and will undergo very little expansion and contraction over a broad temperature range. As illustrated, the shield S may have the general form of a quadrisphere with its lower, forward edge 18 of semicircular form, or of any form or configuration, so as to correspond to the shape of the

casing 10. The shield S curves upwardly and rearwardly from its lower edge 18 to its rear edge, which is planar so as to fit against the building wall 13 and is generally rectangular, but open at the bottom. The rear edge of the shield S is also provided with laterally outwardly extending flanges 20 at the sides and a similar flange 21 at the top. As will be evident, since the height of the shield is generally equivalent to its greatest depth, from front to back, the top flange 21 is normally at a sufficient elevation that considerable variation in the elevation of the top of the window opening, relative to ground level, will be accommodated. Thus, due to the arcuate configuration of the shield as distinguished from the presently known flat coverings, the shield is of such a height as to fit well above the top of the window opening, notwithstanding the height of the window opening with respect to the top of the window well. In addition, it is not necessary to secure the lower edge 18 of the shield to the window well casing, although caulking or similar sealing means, not shown, may be employed if such should be desirable or become necessary. Thus, due to the extension of the shield over the casing 10 and the convenient burial of the lower edge 18 of the shield in the earth outside the casing, the shield will prevent flow of water or entrance of debris or the like into the well. Moreover, it will be seen that for a conventional window well whose top is at right angles to the building wall, the lower edge 18 is correspondingly disposed at right angles to the rear edge of the shield. Obviously, the angle between the lower and rear edges of the shield may be increased or decreased to correspond with the relative angle between the window well and the building wall, so that the flanges 20 and 21 will fit flush against the wall of the building.

Each of flanges 20 and 21 may be connected in watertight relation to wall 13 in any suitable manner, such as shown in FIG. 5, in which a plastic sealing strip 22, such as vinyl and having a lip 23 along one edge, is interposed between each flange and the building wall, sealing strip 22 conveniently being continuous and extending around all of the flanges. Also, a grommet 24 of rubber or the like may be provided for each of a series of openings 25, shown in FIG. 5 and provided along the flanges 20 and 21, to seal attaching elements, such as bolts or screws 26, shown in FIGS. 1, 4 and 5. If desired, plugs 27, as of wood, may be set into the wall 13 so as to receive and be expanded by wood screws 26 extending through each of the openings 25. It will be noted that the holes 25 may be used to locate the positions of the wall holes for the plugs 27. Also, any other suitable manner of attachment may be utilized. When the well is surrounded by a concrete apron or the like, such as apron 19 of FIG. 6, the lower edge of the shell may fit generally down against the apron and may be sealed thereto, as by caulking, or in any other suitable manner, such as the sealing strip 28 having a groove 29 therein to receive the edge of the shell. Sealing strip 28 may be formed of any suitable material, such as plastic.

An additional feature of the present invention is the manner in which ventilating means is provided. As illustrated in FIGS. 1 to 4, the shield may be provided with a series of apertures 30 disposed in spaced rows adjacent the upper edge of the shield, there being a sufficient number of apertures to provide the desired entrance of air to the basement area. Top 31 of a louvre L, which provides a cover for the openings 30, may be spaced from the surface of the shield and inclined downwardly and outwardly to prevent water from entering apertures 30. Louvre L may be open at the front and include a rear wall 32 and side walls 33, provided with flanges 34 which may conform in contour to the surface of the shell and are attached thereto, as by a water impervious adhesive. Holes 30 may also be covered by a screen 35, conveniently of plastic and secured around its edges by a water impervious adhesive, the screen 35 being omitted in FIG. 2 and holes 30 being omitted in FIG. 1 for clarity of illustration. The side and rear edges of screen 35, if desired,

may extend beneath flanges 34 of louvre L, so as to be secured to the surface of the shell by the same adhesive. Louvre L is conveniently formed of the same material as shield S, or a similar material.

The alternative louvre L' of FIG. 7 may, as before, provide a cover for the holes 30 and it may be formed of the same or a similar material as shell S. Louvre L' is provided with a top 36 which is inclined upwardly from the surface of the shield toward the building wall, in spaced relation to apertures 30, so as to prevent the direct descent of water through apertures 30. The louvre L' also includes sides 37, the lower edges of which may be contoured to fit the upper surface of the shield, while the rear edge of top 36 may be beveled on the underside, as at 38, to conform to the contour of the shield. Louvre L' may be attached to shield S by a suitable water proof adhesive, along the surface 38 and the lower edges of louvre sides 37. The inner edge of louvre L' should be located sufficiently close to the wall that water dripping from the eaves, for instance, will fall onto the top of louvre L' or outwardly from the louvre, rather than between the louvre and the wall, so that such water will not tend to flow into the louvre and through the holes 30.

In the modified form shown in FIGS. 8 and 9, the shield S' may be similar in construction and installed in a manner similar to the shield S, as described previously, except that one or more openings 40 are provided adjacent the upper end of shield S, with a generally quadrispherical cover or dome 41 associated with each opening 40 and having an open end facing toward the wall. Opening 40 and dome 41 may conveniently be formed by slitting or otherwise parting the plastic material on a line parallel with the upper edge of the shield and extending across the same for a limited distance. The surface of the shield forward of the parting line may then be forced upwardly by the application of heat and pressure in a well known manner so as to form dome 41. An upstanding, upwardly curved lip or ledge 42 may also be provided, as by forcing the rear edge of opening 40 upwardly by heat and pressure, to prevent inflow of water into opening 40. As will be evident, air for ventilation purposes will flow into the open end of dome 41 and through opening 40. This modified form has the advantage of integral construction, while at the same time providing the desired ventilation, particularly when a plurality of openings 40 and domes 41 associated therewith are provided.

If desired, a shield similar to shield S' may be formed in essentially the same way as in FIGS. 8 and 9, with the exception that the parting line is spaced a greater distance away from flange 21 of the shield and the surface rearwardly of the parting line is forced outwardly by the application of heat and pressure to provide an opening 40 and a dome 41 whose open end faces outwardly and away from the side of the building. In this way, drainage of water from the side of the building and the rear edge of the shield through opening 40 will be avoided, since any water entering through the ventilating means will be restricted to that which falls directly through the open end of dome 41 and into opening 40. Again, at the parting line, an upwardly curved lip or ledge 42 may be formed so as to restrict accidental drainage of water through the opening 40.

The alternative louvre L'' of FIG. 10 may be similar in shape to the shield, i.e., generally quadrispherical in shape and provided with flanges 21' and 22', so as to be insertable from beneath into a rectangular opening 45 formed in the shield S'' adjacent the inner edge thereof, shield S'' being similar to shield S, except for the opening 45. The flanges 21' and 22' may be slightly arcuate or bowed to conform to the contour of the shield, while the louvre L'' may be secured in position by a water proof adhesive applied to the upper surface of flanges 21' and 22'. As will be evident, the louvre L'', instead of being inserted through hole 45, may be at-

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tached to the upper surface of the shield, around hole 45. An upwardly curved ledge or lip 46 is also preferably provided at the rear edge of opening 45, while a screen 47, as of plastic, may be secured in the opening of louvre L', as by being secured by a water proof adhesive to the edge and underside of lip 46 and to the inside of louvre L' by a strip 48, conveniently also of plastic, with the edge of screen 47 between strip 48 and the inside of louvre L' and the water proof adhesive which secures the screen to the inside of the louvre, also attaching strip 48 thereto. For better ventilation, two or more openings 45 may be provided in the shield, such as two or three, with a louvre L' attached to the shield at each opening. As will be evident, the open end of dome 36 of FIG. 7 or dome 41 of FIG. 9 may similarly be provided with a screen, while a screen may also be mounted at the open end of or inside louvre L of FIGS. 1-4 or merely over holes 30.

The shield S''' of FIG. 11 is conveniently utilized when the window well is rectangular in shape, rather than semi-circular, as by being surrounded by a wall 50 of concrete, masonry or the like. Also, a concrete apron may extend outwardly from the well. Due to the rectangular contour of flanges 21 and 22, these flanges are placed against the top of wall 50, or the corresponding portion of a concrete apron surrounding the well, and attached to the wall, as by lag bolts 51, grouted in position or turned into plugs 52 of wood, soft metal or the like, inserted in holes therefor in the wall or apron. A suitable caulking compound may be interposed between the flanges 21 and 22 and the top of the wall or apron, for sealing purposes. Since the edge 18 of the shield will then abut against the building wall 13, edge 18 may be sealed thereto by a strip 28', similar to strip 28 of FIG. 6 and provided with a groove to receive the edge 18. It is normally not necessary to bolt or otherwise physically attach the edge 18 to the building wall 13, since the attachment of flanges 21 and 22 to the well wall 50 or apron, will hold edge 18 securely in position. As shown, shield S''' is not provided with ventilating means, but it will be understood that it may be provided with ventilating means adjacent edge 18 and similar to the louvre L of shield S, or any of the alternative ventilating means.

The plastic shield S, S', S'' or S''' of the present invention may be formed in any suitable manner, as by molding initially to form. Molding a flat sheet of plastic to shape, as by heating and placing in a die, tends to render the shield opaque, so that a clear shield for better light transmission and vision therethrough is preferably produced. Thus, a desirable mode of forming the shield may be accomplished by clamping the edges of a flat sheet of heated plastic material on a table having a hole or holes therein. Such a sheet should be sufficiently large to produce two shields, with the clamps on two opposite sides corresponding to flanges 21 and the clamps on the other two opposite sides each corresponding to two flanges 22 in endwise relation. Air under pressure is then introduced through the hole or holes in the table so as to force the center of the sheet upwardly until it takes the general form of a bubble having a central cross section corresponding to the contour of the lower edge 18 of the shield. The bubble shape so formed may then be allowed to cool and, upon removal from the table, may be bisected by a sawing operation. The bisected edges of the bubble shape form the lower edges 18 of the two shields, with the adjacent previously clamped edges forming the flanges 22 thereof. In order to form the ventilator arrangement shown in FIG. 8 and FIG. 9, the same may be suitably accomplished either during or after the forming operation for the shield itself. For the preferred form of ventilating means shown in FIGS. 1-4, the apertures 30 may be drilled after the material has cooled, followed by attachment of the louvre L to the surface of the shield. The

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louvre L may be formed by heating a flat sheet of plastic, clamping around the side and rear edges of the top 31, then bending the extending portions to form the rear wall 32 and side walls 33, with additional heat being supplied, if necessary, at the corners between the rear wall and side walls. The flanges 34 may be formed simultaneously or at a different time than the rear and side walls. Or, a notch may be cut at the position of the corners and the rear wall, side walls and flanges bent to shape, then the rear wall joined to the sidewalls, at the corners, by a water proof adhesive. The louvre L' may be formed by heating a flat sheet of plastic, then bending at the corners between top 36 and sides 37, while the beveled under edge 38 may be formed in any suitable manner, as by routing. Two of the louvres L' of FIG. 10 may be formed simultaneously from a flat sheet in a manner similar to the formation of two shields simultaneously, as described above, with the upper surface of the table convex to correspond to the desired contour of the flanges 21' and 22' and the clamps having a similar curvature or of resilient material so as to conform to the contour of the table.

The construction of the shield of the present invention herein disclosed provides a window well cover of unitary, sturdy construction which accomplishes in a unique way the selective admission of light and air into the window well, while preventing the entrance of foreign material and particularly restricting the amount of water that may enter the well. As will be evident, various modifications in the construction may be made and other embodiments may exist, without departing from the spirit and scope of this invention.

What is claimed is:

1. A shield construction for a window well at an opening at least partially below ground level of a building wall, comprising a generally semi-circular casing extending around said opening with the top of said casing above ground level; a shell formed of transparent plastic material and open at the rear and at the bottom, said shell having a generally horizontal top edge at the rear and side edges at the rear disposed generally at right angles to said top edges, said rear edge at each side being a laterally and outwardly extending upright flange and said top rear edge being an upwardly extending top flange, said shell extending outwardly and downwardly from said flanges generally in the form of a quadrisphere with the lower edge of said shield being generally semicircular with a radius greater than the radius of said casing and the lower edge of said shield being embedded in the ground outwardly from said casing, said side and top flanges being provided with holes for the insertion therein of means for attaching said flanges to the building wall around said opening, said shell having air passage means adjacent said upper rear flange including at least one aperture in said shell; a sealing strip between said flanges and the building wall; means extending through said holes for attaching said flanges to the building wall; and a transparent cover for said air passage means attached to said shell around three sides of said air passage means and extending over said air passage means in spaced relation thereto, said cover having an open end on the fourth side of said air passage means.

2. A shield construction for a window well at an opening at least partially below ground level of a building wall, comprising a generally rectangular wall extending around said well opening with the top of said well wall at or above ground level; a shell formed of transparent plastic material and open at the rear and at the bottom, said shell having a generally horizontal front edge and side edges disposed generally at right angles to said front edge, said front edge and each side edge having a laterally and outwardly extending horizontal flange, said shell extending inwardly and upwardly from said flanges generally in the form of a quadrisphere with the rear edge of said shield being generally semicircular,

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said side and front flanges being provided with holes for the insertion therein of means for attaching said flanges to said well wall; a sealing strip between said rear edge and the building wall; and means extending through said holes for attaching said flanges to the well wall.

3. A reversible shield for use with both rectangular and semicircular window wells at an opening at least partially below ground level in a building wall, comprising a unitary, generally quadrispherical, transparent shell having a laterally extending flange of generally rectangular shape around a first edge for connection in watertight relation to said building wall and alternatively to the top of a rectangular window well, and a generally semicircular second edge, at right angles to said first edge, and proportioned to abut said wall and alternatively to

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extend outwardly beyond and below the upper edge of a semicircular window well.

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