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SKYLIGHT CONSTRUCTION

Filed Jan. 21, 1953

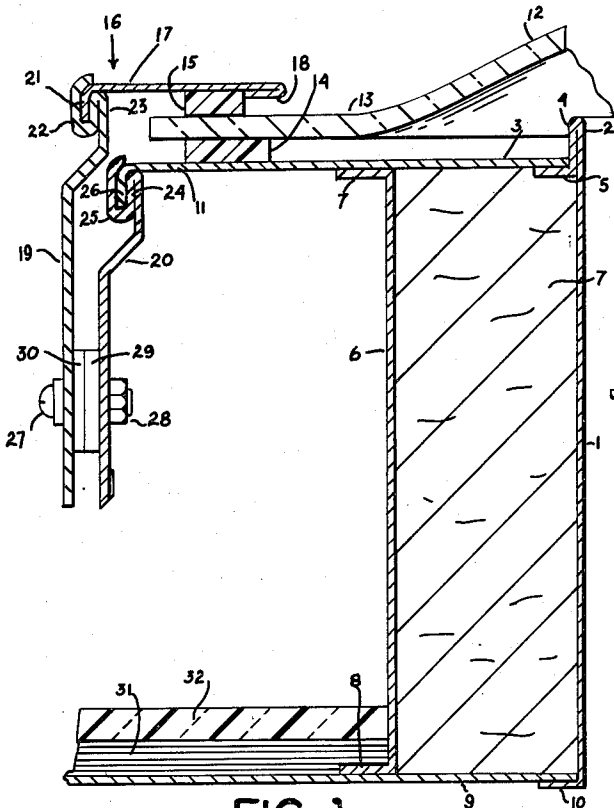


FIG. 1

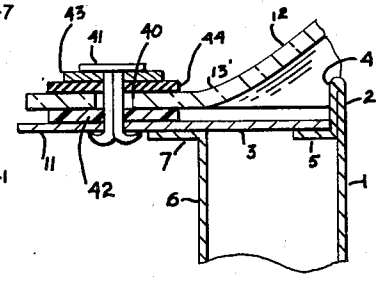


FIG. 2

FIG. 4

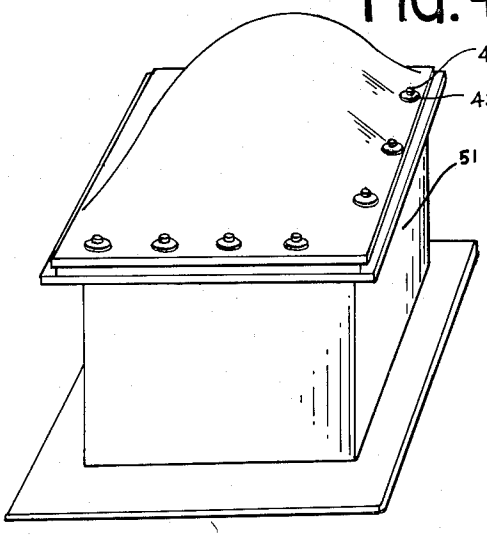
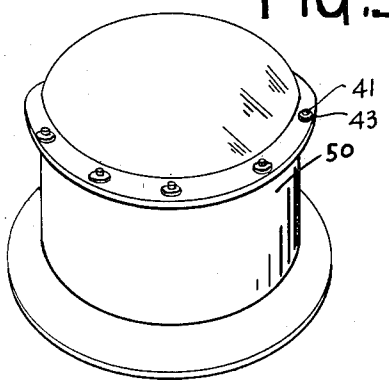


FIG. 3



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SKYLIGHT CONSTRUCTION

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The present invention relates to sky-light construction and more particularly to a well type of construction surrounding a sky-light opening. In this type of construction a well may be built into or up from the roof of the sky-light and a plastic sky-light dome may be used to cover the top of the well. This application is a continuation-in-part of my earlier co-pending application, Serial No. 275,896, filed March 11, 1952, and now abandoned.

It has been customary to build such sky-light constructions for the particular sky-light opening and corresponding to its particular shape and size.

The present invention relates to a pre-fabricated structure in which the complete well with the curbing and sky-light dome is formed as a unitary structure which may be installed over the sky-light opening with a very minimum of preparation. Because of this, not only is very little sheet metal work required but the structure formed is finished in every way and the installation is readily water-proofed and firmly secured in place.

One of the objects of the present invention is to provide a pre-fabricated well structure for a sky-light construction in which the well is formed with an inner and outer wall preferably of metal with heat insulation between the walls and with a transparent or transluscent plastic dome secured over the top of the well.

Another object of the present invention is to provide a durable and strong structure which will not only withstand rugged weather conditions but also extreme changes in temperature encountered at different times of the year.

A further object of the present invention is to provide a rugged type of construction in which there is efficient drainage for snow and rain from the outer side of the dome structure and also drainage for moisture which may gather on the inside of the plastic dome.

Other and further advantages of the present invention will be more readily seen from the specification set forth below when taken in connection with the drawings showing an embodiment of the invention, in which:

FIGURE 1 shows a partial section through the well structure and plastic dome installed on a building.

FIGURE 2 shows a modification of the dome structure shown in FIGURE 1.

FIGURE 3 shows a perspective view of the invention as applied to a circular dome, and

FIGURE 4 shows a perspective view of the structure as applied to a rectangular dome.

Referring more particularly to FIGURE 1, the well is formed with an inner wall 1 which is preferably of metal sheeting or may be of metal plate, or in the case of a cylinder, the wall 1 may be drawn or formed in a tube. In a case of a rectangular structure, the wall 1 may be made up of four wall elements welded, rivetted or soldered along the corners to form a complete rectangular well. The wall 1 indicates only one wall of a rectangular structure or a circular wall if a tube is used. The wall 1 may be provided with a flange 2 extending upward beyond a top curbing cover 3 forming an inner gutter so that the moisture may be drawn outward of the well. The flange 2 is preferably provided with a reverse bend 4 adjacent to the flange 2 and an inwardly turned horizontal flange 5 lying underneath the outwardly extending curb cover 3. The curb cover 3 may be welded or soldered to the outwardly extending turned flange 5,

rivetted or secured in any suitable manner. The curbing 3 extends outward beyond the outer curbing wall 6 which is parallel to the wall 6. The outer curb wall 1 may be provided with an outwardly extending flange 7 on its upper end as well as an outwardly extending flange 8 on its lower end. This outer wall 6 may be formed as a part of a rectangular outer wall or as a cylindrical outer wall in the same manner as the wall 1.

The outer wall 6, if the structure is rectangular, may be joined at the corners in the same manner as has been described in connection with the element 1. Between the walls 6 and the wall 1, the inner part of the curbing is filled with some heat insulating material, such as rock wool, glass fiber, or some insulating cellular or other material which may be standard construction.

The flange 7 may be secured to the covering plate or sheet 3 in any suitable fashion, and the flange 8 may similarly be secured to a bottom covering plate 9 for the bottom of the well. The lower end of the wall 1 may also be provided with an outwardly extending flange element 10, which is soldered, welded or rivetted to the plate 9. The covering plates 3 and 9 may extend all the way around the curbing and they may be overlapped along angular joints or they may be butted or mitered at 45° angles with each other so that continuous outwardly extending covering elements may be at the top and the bottom of the curbings.

The top covering curbing elements 3 should preferably slope downwardly on the outside to provide proper drainage, these top covering elements corresponding to the usual curbing frames in sky-light constructions where a wooden curbing is provided. The curbing plates 3 preferably extend outward of the well walls as indicated at 11 all the way around the structure, and a plastic dome 12 is provided with a flange 13 which lies over the curbing plate 3. This flange may only extend over the curbing plate proper or it may extend over the extension of the curbing plate in the section 11.

Under the flange 13 of the plastic dome, there is provided a strip gasket 14, and over the flange 13 a second gasket 15 or clamping strip may be used.

In the structure shown in FIGURE 1, the flange 13 of the dome is held down by the angle clamping member 16 which is provided with a horizontal angle piece 17 having an in-turned end 18 which may extend back to the gasket 15. The member 16 also has a downwardly extending portion 19 which is secured to the downwardly extending apron 20 firmly held at the end of the extension 11 of the curbing 3.

The portions 17 and 19 of the angle piece 16 may be formed of two metal plates or strips interlocked together as indicated in FIGURE 1. In this case the horizontal plate 17 has a downwardly extending flange 21 which is held between two reversely bent sections 22 and 23 extending from the top end of the section 19. In effect the downwardly extending flange 21 is therefore clamped between the reversely bent ends of the section 19 and firmly held in place by them.

The same type of construction is applied to the downwardly extending flange or apron 20. It is provided with two reversely bent sections 24 and 25 at its upper end, which squeeze a downwardly turned flange or end 26 of the extension 11 of the top covering plate 3.

The plates or elements 19 and 20 are secured together by means of a nut 27 and a bolt 28 spaced by means of spacing washers 29 and 30, thereby permitting drainage of any moisture which may gather outside of the gaskets 14 and 15 to pass downward between the plates 19 and 20.

It will be noted in the construction in FIGURE 1 that the plastic dome is actually in what may be called a float position inasmuch as it may expand endwise and it is

clamped flexibly by the upper and lower clamping gaskets 14 and 15.

The whole installation as has been previously stated is pre-fabricated and will be installed on the roof by having the lower curbing plate 9 border the edge of the roof opening. The plate 9 is secured by nails or other suitable means to the roof and over this may be laid the usual tar paper or water-proofing materials 31 and roof tars 32 or whatever other materials are used in the finishing of the roof.

In the structure shown in FIGURE 2, the inner wall 1 and the outer wall 6 together with the other structural elements noted in FIGURE 1 as 2, 3, 4 and 5, may be of the same construction as in FIGURE 1. The difference between the structure in FIGURE 1 and FIGURE 2 is that the flange 13 of the plastic dome 12 is provided with spaced holes 40 through which rivets 41 pass to hold the dome firmly to the curb covering 3 either in the curb cover proper or in its extension 11 beyond the curbing proper.

A strip gasket 42 may be used beneath the plastic dome flange and a metal washer 43 above it beneath which is a stud washer 44 or an insulating and water-proof fabric element whichever is preferable.

The hole 40 may be large enough to allow the shank of the rivet 41 sufficient freedom so that the plastic dome will effectively float and not be rigidly fixed to the roof, but at the same time the structure must be such as to be water-tight.

FIGURE 3 shows a cylindrical construction in which the well wall 50 is cylindrical as previously described, and FIGURE 4 shows a structure in which the well wall 51 may be rectangular.

It will be obvious that any other type form may be used, but that the circular and rectangular forms are the most simple and most inexpensive in the usual construction.

Having now described my invention I claim:

1. A skylight or the like for covering a building opening surrounded by inner and outer curb walls, comprising a covering plate shaped to cover the curbing walls and having a downwardly extending outer apron and an inwardly extending top cover having an upwardly flared inner flange, a plastic skylight dome having an outwardly extending flange supported by said plate, means spacing the flange of the dome from the top cover defining a drainage passage between the dome and plate, and an outwardly extending clamping member cooperating with said plate to secure the flange of said dome, and terminating at its outer side in a downwardly extending portion spaced outwardly from said outer apron, thereby defining a drainage passage between said apron and downwardly extending portion.

2. A skylight unit for a building formed as a unitary prefabricated structure comprising,

an upstanding well adapted to enclose a skylight opening and having inner and outer enclosing walls,

said outer enclosing wall adapted to fit within a skylight opening,

a flange extending outwardly from the base of said outer enclosing wall for securing said well within a skylight opening of a building,

a covering member for the top of said well walls and having an outwardly extending flange terminating in a downwardly extending lip forming an apron about said outer enclosing wall,

said outwardly extending flange sloping downwardly toward said lip and forming a drain,

a flange extending upwardly at the inner edge of said outwardly extending flange forming a gutter for the drain,

a plastic dome having a flange lying over said covering member,

spacing means supporting said flange of the dome above said covering member and preventing the flange from interrupting the drain formed by said outwardly extending flange,

means having one leg lying over said flange of said dome and a second leg secured to said downwardly extending lip clamping said dome to said covering member,

said second leg extending downwardly and spaced from said lip and defining therewith a drainage passage as a continuation of said drain.

3. A skylight formed as a unitary structure and mounted over a skylight opening in a building comprising,

an upstanding well formed by inner and outer enclosing walls with the lower portion of said outer wall adapted to be disposed within a skylight opening,

a flange extending outwardly from the base of the outer wall for securing said well to a building,

a covering member secured to the top of said well walls and having a flange extending outwardly and beyond said outer wall,

a downwardly extending flange interlocked with said outer edge of said outwardly extending flange and forming an apron about said outer enclosing wall,

said outwardly extending flange sloping downwardly toward said apron and forming a drain,

a flange extending upwardly at the inner edge of said outwardly extending flange forming a gutter for said drain,

a plastic dome having a flange supported on said outwardly extending flange of said covering member,

means disposed between said flange of said dome and said outwardly extending flange preventing the flange of the dome from interrupting said drain,

means forming an angle element having one portion lying over said flange of said plastic dome and a second portion secured to said downwardly extending flange forming said apron for clamping said dome to said covering member,

and a plurality of spacer means between the said other portion of said angle member and said downwardly extending flange forming said apron providing a drainage passage between them as a continuation of said drain.

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