

Sept. 15, 1964

C. ARNOPOLE
TENT CONSTRUCTION

3,148,688

Filed Aug. 29, 1963

2 Sheets-Sheet 1

FIG. 1

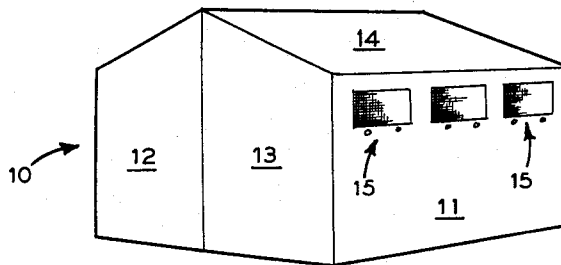


FIG. 2

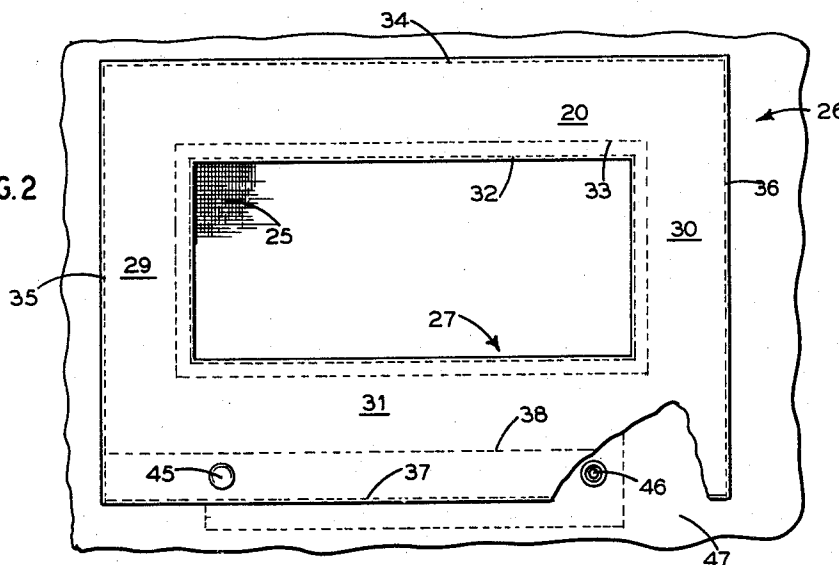
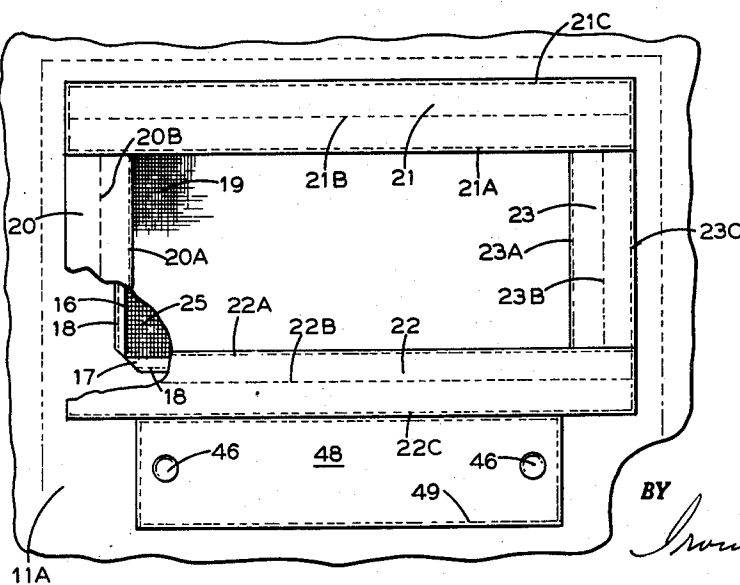


FIG. 3



INVENTOR.
Charles Arnopole
BY *Irving Seidman*
ATTORNEY

Sept. 15, 1964

C. ARNOPOLE
TENT CONSTRUCTION

3,148,688

Filed Aug. 29, 1963

2 Sheets-Sheet 2

FIG. 4

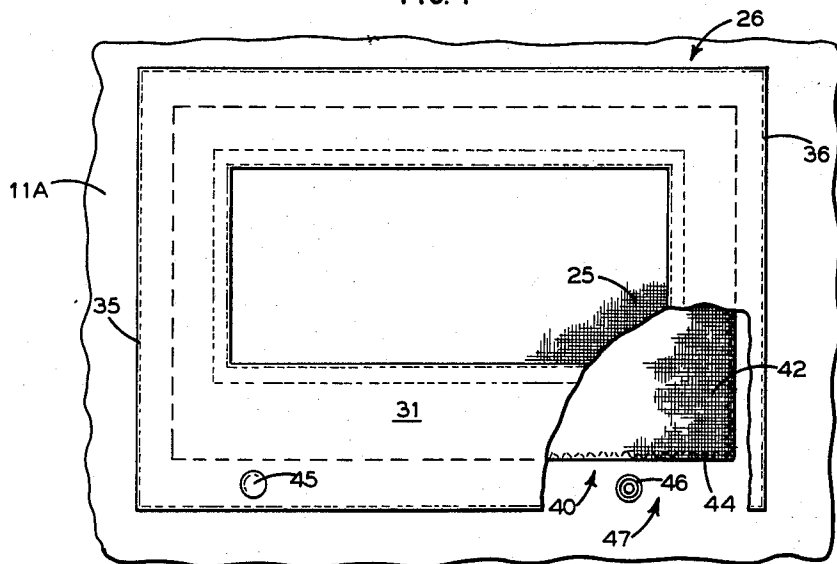


FIG. 6

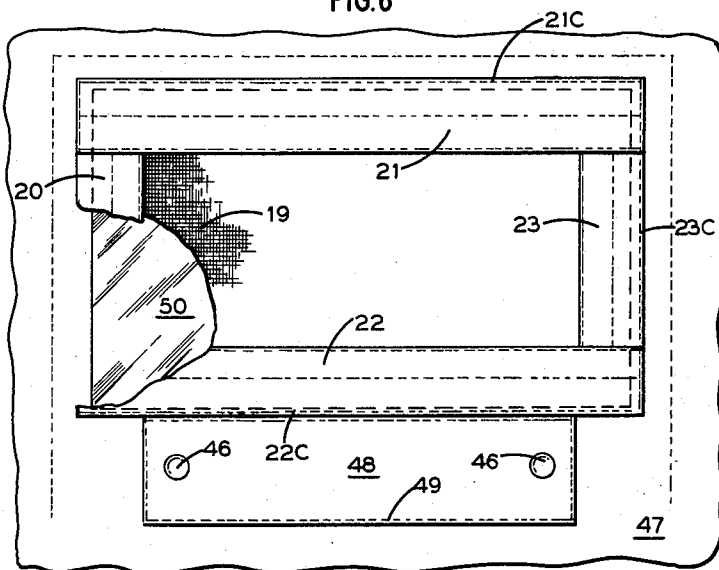
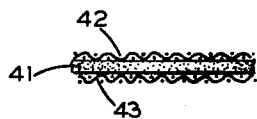


FIG. 5

INVENTOR.

Charles Arnopole

BY

Irving Seidman

ATTORNEY

1

3,148,688

TENT CONSTRUCTION

Charles Arnopole, 1302 Avenue K, Brooklyn, N.Y.

Filed Aug. 29, 1963, Ser. No. 305,282

6 Claims. (Cl. 135-14)

This invention relates to a tent construction, and more particularly concerns a ventilating panel for a tent.

Conventional tent constructions provide ventilation by means of one or more screened openings in the side walls thereof. Provision is made against incoming rain by a flap over the screened opening, which flap is raised or rolled up when not in use. The flap may be either on the inside or outside of the tent.

It has been found that with conventional closure flaps for ventilating openings on a tent, the same are subject to leakage; are difficult to manipulate and give rise to excessive manufacturing costs for the tent as a whole.

Accordingly, an object of this invention is to provide a tent construction including improved ventilating means which combines screening, filters and window elements in various combinations to suit a given set of environmental conditions.

Another object of this invention is to provide in a tent of the character described, improved means for covering an opening in the tent wall with screening to assure adequate ventilation; together with means for removably associating with the screen means selectively, a filter element which will keep out very small insects, dust and other deleterious matter in finely divided or particle form; or a transparent sheet window element which is effective to keep out the rain without leakage, or to prevent the ingress of cold air currents into the interior of the tent.

A further object of this invention is to provide an improved tent panel section which is provided with screen, filter and window elements, for incorporation in a wall panel of a tent.

Still a further object of this invention is to provide a combination ventilating, filter and window panel section for tents which is easily and economically manufactured; readily incorporated into tent wall panels and which is readily manipulated to selectively use the filter or window elements.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

In the drawings, FIG. 1 is a perspective view of a tent embodying the invention;

FIG. 2 is a front elevational view of a panel portion showing the ventilating elements embodied in the invention;

FIG. 3 is a rear elevational view thereof;

FIG. 4 is a view similar to that of FIG. 1, with parts cut away, and showing the filter element in place;

FIG. 5 is a transverse sectional view of the filter element; and

FIG. 6 is a view similar to that of FIG. 1, with parts broken away and showing the window element in place.

Essentially, the tent of the instant invention includes a wall section formed with a ventilating opening which is enclosed by a pair of opposed screen members which provide a pocket which may be left unfilled, if desired, or alternatively such pocket may be filled with either a filter element or an impervious window element. Provision is suitably made for quickly and easily inserting either of the desired elements into the screen pocket.

Thus as shown in FIG. 1, 10 designates a tent con-

2

struction made up of the usual canvas panels. For the purpose of illustration only, such tent 10 is shown as a rectangular, ridge and roof type including similar side wall panels 11, front wall panels 12, 13 which provide the usual door flaps, the peaked roof wall panels 14 and a back panel, not shown.

Tent 10 is provided with ventilating means in the form of several similar spaced openings in the side wall panels 11, generally indicated at 15. Such openings 15, of rectangular shape, are suitably spaced and located immediately below the top edge of said side wall panels.

Each of the openings 15 in side wall panels 11 is defined by turned back marginal fabric portions 16 on the back side thereof and at the opposite end edges thereof and turned back marginal fabric portions 17 at the top and bottom edges thereof, with stitching 18 to secure the turned back portions in place.

A rectangular screen element 19 of interwoven plastic or metal wire is fixedly mounted in opposed relation to opening 15 and on the back side of panel 11, indicated at 11A. Screen element 19, which is of dimensions longer and wider than that of opening 15, is stitched by double rows of stitching to webbing strips 20, 21, 22 and 23 at the marginal edges thereof, as at 20A, 20B; 21A, 21B; 22A, 22B and 23A, 23B. The webbing strips 21-23 are in turn stitched at their outer edges to fabric panel portion 11A in spaced relation to the corresponding edges of opening 15 as at 21C, 22C, 23C. Webbing strip 20 is left in unattached relation to panel portion 11A. Thus a pocket open at one end is formed between screen element 19 and the opposed marginal portions of panel portion 11A about opening 15 thereon.

A second screen element 25 is disposed in opposed relation to screen element 19. Screen element 25, similar to element 19, is located on a rectangular frame 26 of tent canvas which has a rectangular opening 27 defined by a top frame portion 28, end frame portions 29, 30 and a bottom frame portion 31 of a width somewhat greater than that of frame portions 28-30. The screen element 25 covers opening 27 on the inner side of frame 26 and is stitched to marginal portions of said frame 26 by a double row of peripheral stitch lines 32, 33. The frame 26 is stitched to the outer surface of panel portion 11A along the top edge as at 34 and along the end edges as at 35, 36, leaving the bottom frame portion 31 in unsecured relation to the front panel 11. The bottom edge of frame portion 31 is doubled back on itself inwardly thereof and secured in place by stitch lines 37, 38.

The screen elements 19, 25 are substantially coextensive as to area and are in substantially registered relation; being displaceably related to each other to further define a pocket therebetween. With the screen elements 19, 25 in face to face relation, the tent 10 is provided with ventilating means which prevents the entry of insects and the like into tent 10.

However, a filter element generally indicated at 40 may be removably inserted into the pocket between screen elements 19, 25, which pocket is open at the bottom as defined by the unsecured, bottom frame portion 31. The filter element 40, as shown in FIG. 5, comprises a flexible sheet 41 of porous polyurethane foam having intercommunicating cells and open cells at the surface thereof. Sheet 41 is enclosed between flexible sheets of screening 42, 43 of similar surface area, the combined screen elements 42, 43 and interposed filter sheet 41 being se-

cured together by hemming the peripheral edges as at 44.

As shown in FIG. 4, the pocket 40 between screen elements 19, 25 is closed by a pair of snap fasteners 45 disposed in spaced relation along the lower marginal portions of frame position 31, which fasteners engage complementary fastener elements 46 fixed to a front panel portion 47 of panel 11 and a canvas reinforcing strip 48; the strip 48 being secured to the inner surface portion 11A of panel 11 by peripheral stitching 49.

As the complementary fastener elements 45, 46 are located on intermediate portions of frame portion 31, and panel portion 47, the bottom edge of filter element 40 rests on said interengaged fastener elements 45, 46 to effectively hold the filter element in place between screen elements 19, 25. It will be apparent that filter element 40 may be readily inserted into or removed from its operative position by manipulation of the fastener elements 45, 46 and simple movement of the filter element 40 relative to the pocket between screen elements 19, 25.

In the event of rain, ingress of the same by way of screen elements 19, 25 is readily averted by the use of an impervious window element 50 of transparent sheet plastic of suitable gauge to give the same stiffness. The window element 50 which may be of cellulose acetate, vinyl copolymer or the like, is of a size somewhat greater than the opening 15 and is readily slid into a pocket between screen elements 19, 25, from the interior of tent 10.

Thus, the window element 50 is inserted into the pocket outlined by webbing strips 20, 21, 22 and 23, see FIG. 6; the end opening to said pocket being defined by the strip 20 which is unattached to panel portion 11A. The window element 50 has its bottom, top and end marginal portions received between the webbing strips 20-24 and the opposed inner marginal portions of panel portion 11A which define opening 15 therein.

The filter element 40 has its marginal edge portions received between frame portions 28-30 and the opposed outer marginal portions of panel portion 47 at opening 15 therein.

As window panel 50 fits snugly in its pocket, any leakage into the interior of the tent 10 is substantially eliminated. Any water passing through the exteriorly disposed screen element 25 will be deflected downwardly by said window panel 50 and will pass outwardly of the bottom openings between panel portion 47 and bottom frame portion 31 which are unsecured except at limited points corresponding to interengaged fasteners 45, 46. Hence the window assembly is self draining with all water passing downwardly on the exterior surfaces of tent panel 11.

It is understood that a section of tent canvas together with its screen elements 19, 25 and pocket forming frame 26 and pocket forming webbing strips 20-23 may be formed as a unitary panel portion to be incorporated in tent wall panels 11 by forming appropriate openings on said panels 11 to accommodate the panel portion assembly therein, and suitably stitching the peripheral margins of said panel portion to panel 11 at the opening therein.

As various changes might be made in the embodiments of the invention herein disclosed without departing from the spirit thereof, it is understood that all matter shown or described herein shall be deemed illustrative and made by way of limitation except as set forth in the appended claims.

What is claimed is:

1. A tent comprising a fabric panel having an opening therein, first fabric frame means on the outer side of said panel about said opening, said frame means, and opposed marginal portions of said panel at the opening therein defining a first pocket, second fabric frame means on the inner side of said panel at said opening therein, said second fabric frame means and opposed marginal portions of said panel at the opening therein defining a second pocket, said first pocket being open along one edge thereof to slidably receive therein a sheet filter element, means for retaining the filter element in said first pocket, said second pocket being open along one edge thereof to slid-

ably receive therein a water impervious transparent window element, the open edge of said first fabric means being along the bottom edge thereof to provide rain drainage means and the open edge of said second fabric means being along one end edge thereof, and a pair of opposed screen elements respectively secured to said frame means and marginal edge portions of said panel at the opening therein, said pair of screen elements respectively forming portions of said first and second pockets.

2. A tent wall section comprising a fabric panel formed with an opening, a first rectangular fabric frame over said opening on one side of said panel, said frame being secured along the outer edge portions of the top, and opposite end portions thereof, the bottom edge portion thereof being in unsecured relation to said panel, a screen element secured over said frame opening and overlying the opening in said panel, a second rectangular fabric frame over the opening in said panel on the other side thereof, said second fabric frame being secured along the outer edge portions of the top, bottom and one end portion thereof to said panel the other end portion thereof, being in unsecured relation to said panel, a second screen element secured over the frame opening of said second frame and in opposed relation to said first screen element, said frames and marginal portions of said panel at the opening therein defining first and second pockets for respectively receiving therein a sheet filter element and a sheet window element, respectively insertable into said pockets by way of the unsecured edges of said frames.

3. A tent wall comprising a fabric panel formed with a ventilating opening therein, rectangular pocket forming means on each side of said panel about the opening therein, each pocket forming means comprising frame means having a screen element fixed in the opening thereof, said screen elements being in opposed relation to each other and overlying the opening in said panel, each pocket forming means including an open edge portion for removably inserting a sheet element therein to dispose said sheet element between said screen elements and in overlying relation to the opening in said panel, the open edge of the pocket forming means on the outer surface of said panel opening downwardly, and the open edge of the pocket forming means on the inner surface of said panel opening along one end thereof.

4. In combination with a tent comprising a wall having a ventilating opening therein, first and second rectangular fabric frame means on the respective outer and inner surfaces of said wall about the opening therein, means for securing outer edge portions of said frame means to said wall to provide first and second pocket means between the first and second frame means respectively and the marginal surface portions of said wall about the opening therein opposed thereto, screen means secured to inner edge portions of each of said frame means, said screen means overlying the opening in said wall, said first fabric frame means having the bottom edge thereof in unsecured relation to the opposed marginal surface of said wall to provide an opening for said first pocket means, a rectangular filter element receivable in said first pocket forming means and between said screen means, said filter element being insertable into said first pocket means through the bottom opening therein, and means for detachably interconnecting the bottom edge of said first frame means to the opposed marginal portion of said wall, said interconnecting means supporting the bottom edge of said filter element.

5. The combination as in claim 4, wherein said second fabric frame means comprises one end portion thereof in unsecured relation to the opposed marginal surface of said wall to provide a laterally disposed opening for said second pocket means, and a rectangular window element receivable in said second pocket forming means and between said screen means, said window element being insertable into said second pocket means through the end opening therein.

5

6. A tent wall as in claim 4 wherein said interconnecting means comprises means for securing spaced restricted portions of the bottom portion of said frame member to opposed portions of said panel beneath the opening therein, while leaving the portions of the bottom portion of said one frame member intermediate said fastener means in unsecured relation to the opposed portions of said panel.

5

6

References Cited in the file of this patent

UNITED STATES PATENTS

922,067	Walsh	May 18, 1909
922,069	Walsh	May 18, 1909
1,546,613	Beman	July 21, 1925
2,666,441	Powers	Jan. 19, 1954
3,093,098	Rosenfeld	June 11, 1963