May 27, 1958 A. STERKIN 2,835,931

FOLDABLE SHELTER

Filed July 6, 1954

Fig. 1.

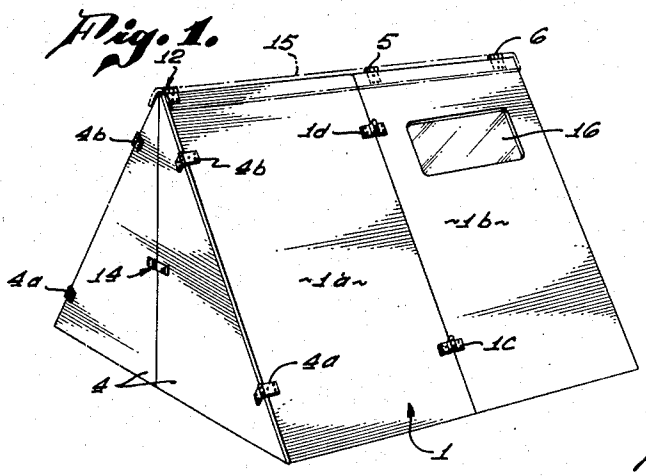


Fig. 4.

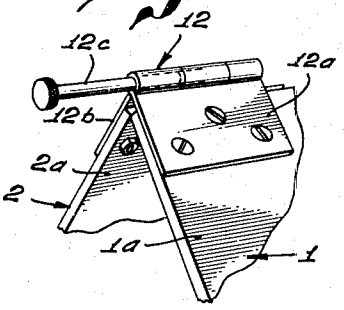


Fig. 2.

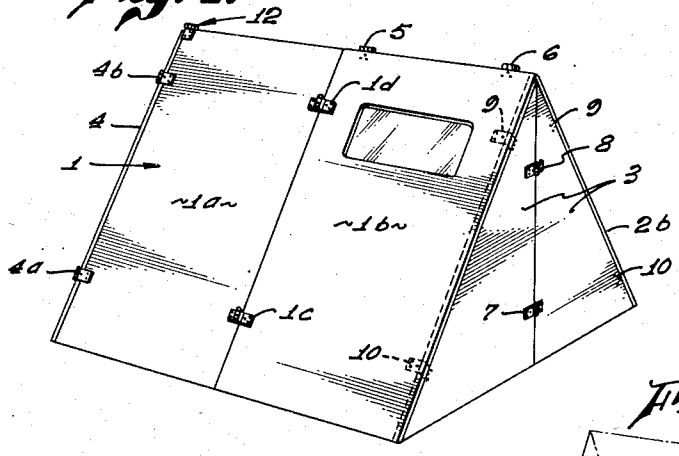


Fig. 5.

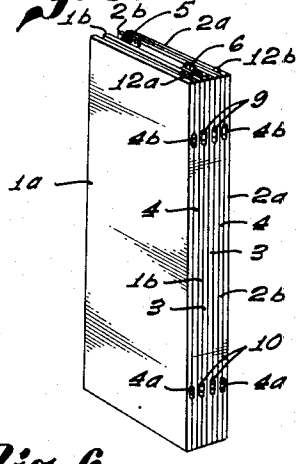


Fig. 6.

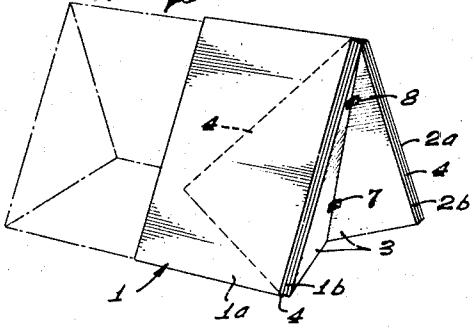
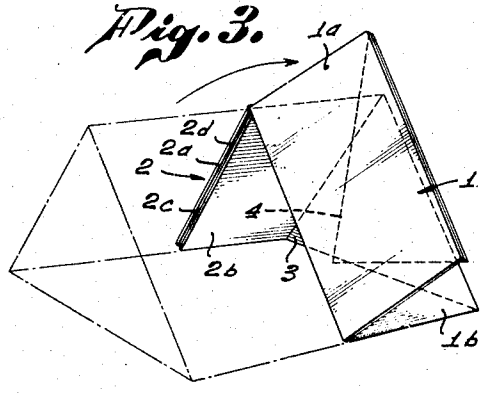


Fig. 3.



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FOLDABLE SHELTER

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10 Claims. (Cl. 20—2)

This invention relates to tent-like shelters for use by campers, hikers and others following out-of-doors pursuits.

It is an object of this invention to provide a simply constructed and light-weight structure of the character described which may be quickly and easily folded into small compass for storage or shipment, or for transportation on the top of or within a motor vehicle, and as quickly and easily erected from such folded position to provide a substantial tent-like shelter.

It is another object of this invention to provide a foldable shelter such as described which embodies a plurality of wall sections hingedly connected so as to be self-supporting when unfolded and positioned to form the shelter.

It is a further object to provide a shelter such as described in which the wall sections are foldable into a compact flat package of substantially uniform rectilinear dimensions whereby the package may be easily stored, shipped or transported.

A further object is the provision of a foldable shelter such as described wherein a single fastening means is operable to releasably hold the shelter in erected tent-like form and when released, for example, as by withdrawing a pin, provides for the folding of the shelter into small compass.

An additional object is to provide a shelter such as described which readily lends itself to the use of self-sustaining wall sections made of plywood and similar form-retaining sheets or made of flexible sheeting mounted on rigid frames.

A further object of this invention is the provision of a shelter such as described wherein a novel arrangement of front and rear panels or walls for closing the front and rear of the shelter, permits of the folding of these panels between the side walls of the shelter so as to form a compact and uniform package.

This invention possesses many other advantages, and has other objects which may be made more easily apparent from a consideration of one embodiment of the invention. For this purpose there is shown one form in the drawings accompanying and forming part of the present specification. This form, which illustrates the general principles of the invention, will now be described in detail; but it is to be understood that this detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

Fig. 1 is a perspective view of a shelter embodying the present invention looking toward the front thereof;

Fig. 2 is a perspective view similar to Fig. 1, looking toward the rear of the shelter;

Fig. 3 is a schematic perspective showing the manner of folding the side wall sections and the front panels of the shelter;

Fig. 4 is an enlarged fragmentary perspective of the upper part of the front end of the shelter, showing the

means for releasably holding the shelter in erected position;

Fig. 5 is a perspective view of the shelter as folded for the storage, shipment or transportation thereof; and

Fig. 6 is a schematic perspective view similar to Fig. 3, showing how the rear panels are folded inwardly when a pair of the side wall sections and the front panels are folded onto the other pair of side sections of the shelter.

One embodiment of this invention as shown in the accompanying drawings, includes a tent-like structure made up of like sectional side walls **1** and **2**, rear panels **3** and front panels **4**.

The side wall **1**, as here shown, is made of two rectangular panels **1***a* and **1***b*, whereas the side wall **2** comprises like rectangular panels **2***a* and **2***b*. The panels of both walls are of sufficient rigidity to be self-sustaining and form-retaining, being made of plywood, corrugated aluminum or similar sheet or board-like material, or made of rigid framing covered with flexible material such as canvas. As here shown, the side wall panels are made of any suitable sheet material having sufficient rigidity to be self-sustaining and form-retaining when stood on edge.

The rear panels **3** and the front panels **4** are in pairs of triangular form. They may be made as flexible panels, but are here shown as made of sheet or board-like material such as plywood or the like.

The two panels **1***a* and **1***b* forming the side wall **1** are hingedly connected one to the other as at **1***c* and **1***d* so that they may be folded one upon the other. The two panels **2***a* and **2***b* forming the side wall **2** are hingedly connected to one another as at **2***c* and **2***d* in the same manner as the panels of the side wall **1**. The panels **1***b* and **2***b* form the rear half of the shelter and are hinged to one another at the upper abutting transverse edges thereof as at **5** and **6** whereby these panels may be folded together to lie substantially parallel one over the other.

The rear panels **3** for closing the rear of the shelter are hinged as at **7** and **8** to one another and as at **9** and **10** to the rear edges of the side panels **1***b* and **2***b*, so that they may be folded inwardly between panels **1***b* and **2***b* as indicated in Fig. 6.

The panels **1***a* and **2***a* of the walls **1** and **2** form the front half of the shelter and are free from connection with one another except at the front portions of the meeting upper edges thereof, where fastening means **12** is mounted for releasably connecting the panels to one another to hold the structure erected as a tent. As here shown, the means **12** may be in the form of a hinge in which the hinge leaves **12***a* and **12***b* are fastened to the corners of the panels **1***a* and **2***b*, respectively, and held together by a withdrawable hinge pin **12***c*.

With this arrangement, the releasable fastening means **12** holds the structure in assembled position as a shelter, and it is only necessary to remove the hinge pin **12***c* as indicated in Fig. 4, to render the structure subject to being collapsed and folded.

In having the upper transverse edges of the side wall panels **1***a* and **2***a* unconnected except at the front by the loose pin hinge means **12**, these panels, when the hinge means is dismantled by pulling the pin **12***c*, may be folded back onto the side wall panels **1***b* and **2***b* as shown in Figs. 5 and 6.

The front panels **4**, for closing the front of the shelter, are independently hinged as at **4***a* and **4***b* to the side wall panels **1***a* and **2***a* so as to be swung back onto the outer sides of the side walls panels **1***a* and **2***a*. These front panels may be individually moved into and out of position partly closing the front end of the shelter. Latch means **14** may be provided, as shown in Fig. 1, to releasably hold

the front panels in position to close the front end of the shelter.

Although the joints of the panels forming the side walls and the joints at the ridge of the shelter may be close and fairly tight, it may be necessary to provide sealing strips for such joints to render them waterproof, as for example the adhesive waterproof strip of tape **15** shown covering the ridge of the shelter in Fig. 1 to seal the ridge joint.

As shown in Fig. 1, the construction of the panels makes it possible to provide windows therein, such for example, as the window **16** in the panel *1b* of the side wall **1**.

Assuming the shelter structure, folded as shown in Fig. 5, is placed on end on the ground or other supporting surface, the hingedly connected side wall panels *1b* and *2b* may be spread apart to an inverted V-formation, as indicated for example in Figs. 3 and 6, the hinged rear panels **3** swinging outwardly as shown in Fig. 6 during this spreading of the panels *1b* and *2b*. The rear panels **3** and the side panels *1b* and *2b* of the side walls **1** and **2**, in being form-retaining and self-sustaining, will support the shelter somewhat as shown in Fig. 6, and the rear panels **3** may be pushed all the way out to stand at right angles to the panels *1b* and *2b*.

The side wall panels *1a* and *2a* which now lie folded with the front panels **4** upon the outer sides of panels *1b* and *2b*, may be swung forwardly on the hinges *1c*, *1d*, *2c* and *2d* to occupy the position shown in Figs. 1 and 2, with the upper transverse edges thereof in abutting relation. This disposes the hinge leaves *12a* and *12b* in position such that the hinge pin *12c* may be inserted therein to releasably hold the structure assembled as shown in Figs. 1 and 2. The front panels **4** may be left in folded-back position on the outer sides of the side panels *1a* and *2a* or one or both of the panels **4** may be swung into position to partially or fully close the front end of the shelter.

The shelter is collapsed by removing the hinge pin *12c* and folding the front panels **4** back over the outer sides of panels *1a* and *2a*. Next, the panel *1a* and *2a*, with the front panels **4** thereon, are folded back to lie upon the outer sides of the side wall panels *1b* and *2b*, this being permitted as the top edges of the panels *1a* and *2a* are not connected to one another.

The structure now appears, for example, as shown in full lines in Fig. 3, and provides a stable rear portion of the shelter wherein the side wall panels *1b* and *2b*, also the rear panels **3**, aided by the side wall panels *1a* and *2a*, support the shelter structure in partially folded upright position.

To complete the folding of the shelter the operator may stand behind the rear panels **3** and push them inwardly on the hinges **8** and **9** while swinging the side panels *1a*, *2a* and *1b* and *2b* together so that all the side wall panels and the front and rear panels are folded in substantially parallel relation, as shown in Fig. 5.

It will now be apparent that one person may erect and collapse the shelter in a particularly easy manner due to the stability of the parts of the structure while being erected as well as while being collapsed.

While the shelter is here shown as including the rear panels **3** and the front panels **4** it is to be understood that the side walls **1** and **2** will provide a useful shelter without the front panels or without the front and rear panels.

I claim:

1. A foldable tent-like shelter including: opposed side walls; each of said walls including form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which the panels lie over one another in substantially parallel relation; hinge means connecting edges of said walls for movement between an erected on-edge position in which the walls converge from the lower edges thereof toward the upper edges thereof and a collapsed position in which said walls lie one over the other; one pair of opposed panels of said walls being free from connection with one another and hinged to other panels of said walls so as to be foldable back upon the outer sides of other panels of said walls while said other panels are in said erected position; and means releasably holding said one pair of panels against being folded back upon said other panels.

2. A foldable tent-like shelter including: opposed side walls; each of said walls including a pair of form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which one panel lies over and in substantially parallel relation to the other panel; hinge means connecting edges of said walls for movement between an erected on-edge position in which the walls converge from the lower edges thereof toward said hinge means and a collapsed position in which said walls lie one over the other; the hinge means connecting said walls being free from connection with one pair of opposed panels of said walls whereby said one pair may be folded back upon the outer sides of the other pair of panels of said walls while said other panels are in said erected position; and means releasably connecting the upper edges of the panels of said one pair to hold said one pair against being folded back upon the other pair of panels of said walls.

3. A foldable tent-like shelter including: opposed side walls; each of said walls including form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position lying over one another in substantially parallel relation; hinge means connecting edges of said walls for movement between an erected on-edge position in which the walls converge from the lower edges thereof toward the upper edges thereof and a collapsed position in which said walls lie one over the other; the hinge means connecting said walls being free from connection with one pair of opposed panels of said walls whereby said one pair may be folded back upon the outer sides of the other panels of said walls while said other panels are in said erected position; means releasably holding said one pair of panels against being folded back upon said other panels; and a pair of rear panels for closing the rear end of the shelter hingedly connected with one another and with said other pair of panels of said walls, to fold inwardly between the latter.

4. A foldable tent-like shelter including: opposed side walls; each of said walls including form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which the panels lie over one another in substantially parallel relation; hinge means connecting edges of said walls for movement between an erected on-edge position in which the walls converge from the lower edges thereof toward the upper edges thereof and a collapsed position in which said walls lie one over the other; the hinge means connecting said walls being free from connection with one pair of opposed panels of said walls whereby said one pair may be folded back upon the outer sides of the other panels of said walls while said other panels are in said erected position; means releasably holding said one pair of panels against being folded back upon said other panels; and a pair of front panels for closing the front of the shelter, each front panel being hinged to a panel of said one pair for movement between a closing position and a folded back position.

5. A foldable tent-like shelter including: opposed side walls; each of said walls including a pair of form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which one panel lies over and in substantially parallel relation to the other panel; means hingedly connecting edges of said walls for movement between an erected on-edge position in which the walls converge from the lower edges thereof toward said hinge means and a collapsed position in which said walls lie one over the other; the hinge means connecting said walls being free from connection

with one pair of opposed panels of said walls whereby said one pair may be folded back upon the outer sides of the other pair of panels of said walls while said other panels are in said erected position; means releasably holding said one pair of panels against being folded back upon said other pair of panels; a pair of rear panels for closing the rear end of the shelter hingedly connected with one another and with said other pair of panels of said walls, to fold inwardly between the latter; and a pair of front panels for closing the front of the shelter, each front panel being hinged to a panel of said one pair for movement between a closing position and a folded back position.

6. A foldable tent-like shelter including: opposed side walls; each of said walls including a pair of form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which one panel overlies the other panel; hinge means connecting corresponding edges of one pair of opposed panels of said side walls whereby said side walls are movable between an erected position in which they converge upwardly to form a tent-like structure, and a collapsed position in which said walls lie over one another; and means for releasably connecting corresponding edges of the other pair of side wall panels to hold the side walls assembled in a tent-like formation; release of said last named means permitting said other pair of panels to be folded back upon the outer sides of said one pair of panels while the latter are in said erected position.

7. A foldable tent-like shelter including: opposed side walls; each of said walls including a pair of form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which one panel overlies the other panel; hinge means connecting corresponding edges of one pair of opposed panels of said side walls whereby said side walls are movable between an erected position in which they converge upwardly to form a tent-like structure, and a collapsed position in which said walls lie one upon the other; means for releasably connecting corresponding edges of the other pair of side wall panels to hold the side walls assembled in tent-like formation; release of said last named means permitting said other pair of panels to be folded back upon the outer sides of said one pair of panels while the latter are in said erected position; and a pair of rear panels for closing the rear of the shelter hinged to one another and said one pair of side wall panels so as to be foldable inwardly between said one pair of side wall panels.

8. A foldable tent-like shelter including: opposed side walls; each of said walls including a pair of form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which one panel overlies the other panel; hinge means connecting corresponding edges of one pair of opposed panels of said side walls whereby said side walls are movable between an erected position in which they converge upwardly to form a tent-like structure, and a collapsed position in which said walls lie upon one another; and means for releasably connecting corresponding edges of the other pair of side wall panels to hold the side walls assembled in tent-like formation; release of said last named means permitting said other pair of panels to be folded back upon the outer sides of said one pair of panels while the latter are in said erected position; and front panels for closing the front of the shelf, hinged to said other pair of side wall panels to fold back thereon.

9. A foldable tent-like shelter including: opposed side walls; each of said walls including a pair of form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which one panel overlies the other panel; hinge means connecting corresponding edges of one pair of opposed panels of said side walls whereby said side walls are movable between an erected position in which they converge upwardly to form a tent-like structure, and a collapsed position in which said walls lie upon one another; and means for releasably connecting corresponding edges of the other pair of side wall panels to hold the side walls assembled in tent-like formation; release of said last named means permitting said other pair of panels to be folded back upon the outer sides of said one pair of panels while the latter are in said erected position; rear panels for closing the rear of the shelter hinged to one another and said one pair of side wall panels to fold together between the latter, and front panels for closing in front of the shelter hinged to said other side wall panels to fold back thereon so as to be between said pairs of side wall panels when the latter are folded upon one another.

10. A foldable tent-like shelter including: opposed side walls; each of said walls including a pair of form-retaining panels hingedly connected for movement between a side-by-side on-edge position and a folded position in which one panel overlies the other panel; hinge means connecting corresponding edges of one pair of opposed panels of said side walls whereby said side walls are movable between an erected position in which they converge upwardly to form a tent-like structure, and a collapsed position in which said walls lie upon one another; a pair of hinge leaf members fixed to corresponding edges of the other pair of side wall panels, and a hinge pin withdrawably mounted in said leaf members to releasably hold said side walls in erected position; withdrawal of said pin permitting said other pair of side wall panels to be folded back upon the outer sides of said one pair of side wall panels while the latter are in erected position.

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