May 5, 1964 W. E. SHIMON 3,131,704

SHELTERS

Filed Sept. 18, 1961 2 Sheets-Sheet 1

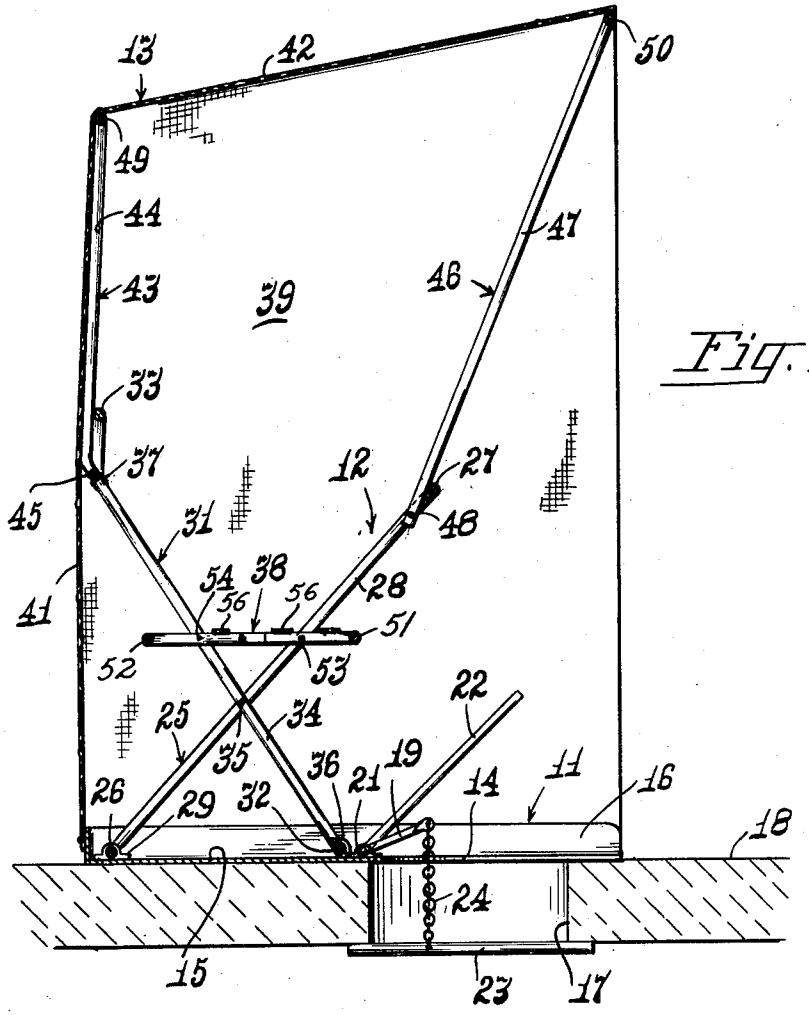


Fig. 1.

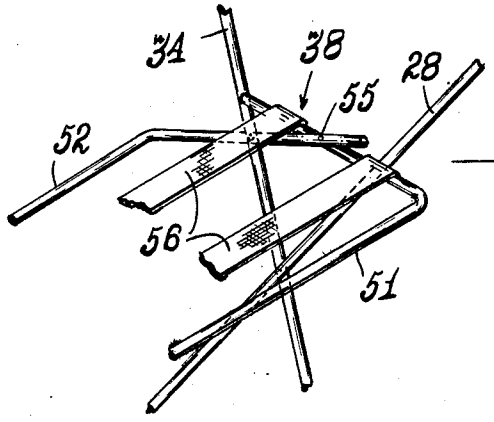


Fig. 5.

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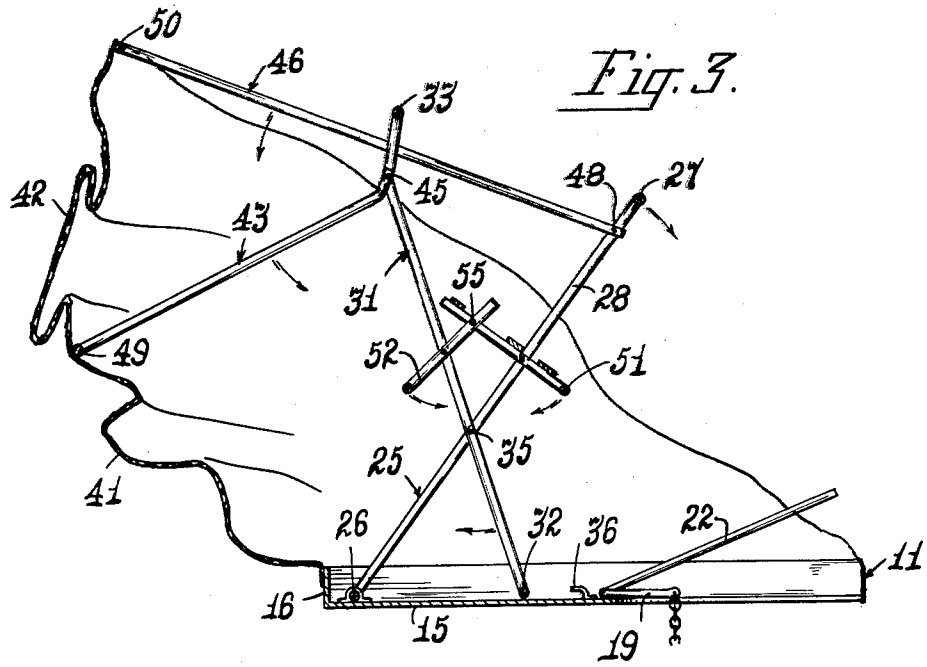


Fig. 3.

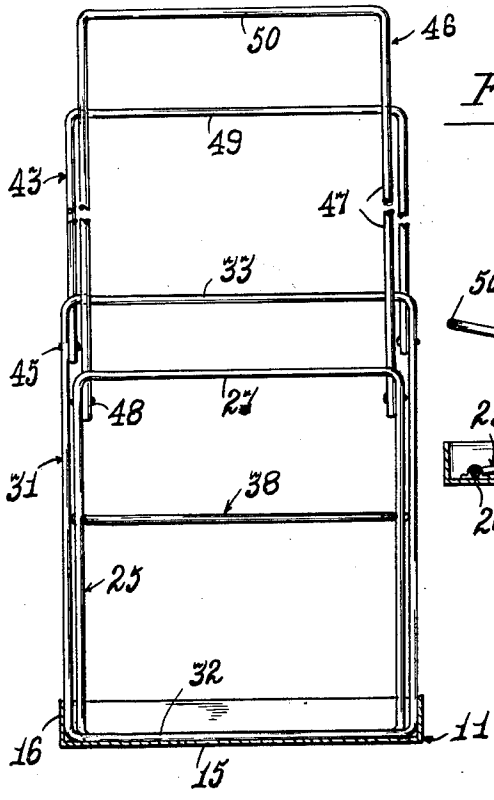


Fig. 2.

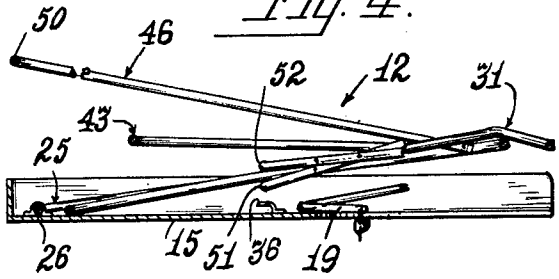


Fig. 4.

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SHELTERS

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6 Claims. (Cl. 135—5)

The invention relates to improvements in shelters and is particularly concerned with the novel construction and assembly of a frame structure that may be moved from a first or collapsed position for storage into a second or open position for providing a rigid upstanding frame for supporting a flexible covering in a tent-like manner to afford a wind break for a chair assembly forming a part of the frame structure.

More specifically, the present invention is concerned with the provision of a base structure upon which a novel assembly of a plurality of relatively movable interconnected frames are mounted, and which is such as to cooperate with said frames to provide a sturdy supporting structure for a flexible covering. The base structure includes means for securely anchoring the assembly over a hole cut in the frozen surface of a body of water when the assembly is being used as an ice fishing shelter.

The structure also includes a novel, readily collapsible seat assembly hingedly connected to the frame components and adapted to fold easily and quickly into collapsed position when the frame assembly is folded and to open into a position of use when the frame assembly is set up in shelter providing position.

It is therefore an object of the invention to provide a novel shelter.

Another object is to provide a novel frame structure for a collapsible shelter.

Another object is to provide a novel collapsible frame assembly and novel means for retaining said assembly in a set up condition without the aid of accessory parts.

Another object is to provide a collapsible shelter of the character referred to which is not expensive to construct, is easy to assemble and which involves a collapsible frame assembly that is readily moved from a first or collapsed position for storage, into a second or extended position of use, and is retained in its extended position without the use of screws, bolts or any fastening devices whatsoever and consequently, may be set up or collapsed with minimum expended labor and quickly.

Another object is to provide novel means to anchor the shelter over an opening in a support surface.

With the foregoing and such other objects in view, which will appear as the description proceeds, the invention consists of certain novel features of construction, arrangement and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in form, proportion, size and minor details of the structure may be made without departing from the spirit and scope of the invention.

Referring to the drawings in which the same characters of reference are employed to identify corresponding parts:

FIG. 1 is a vertical longitudinal sectional view of the shelter, showing it set up for use.

FIG. 2 is a front elevational view of the shelter, as viewed in FIG. 1, but omitting the covering.

FIG. 3 is a view similar to FIG. 1, but showing the shelter partially collapsed.

FIG. 4 is a view similar to FIG. 1, but showing the shelter in a substantially fully collapsed condition and omitting the covering for purposes of clarity.

FIG. 5 is a detail fragmentary perspective view of the seat structure.

Referring particularly to the exemplary embodiment of the shelter of the present invention shown in the accompanying drawings, the shelter comprises a base 11, a collapsible frame assembly, generally indicated at 12, and a covering 13.

The base 11 preferably comprises a substantially rectangular sheet of stiff material, such as sheet metal, having a substantially central cut-out 14 in its bottom 15 that opens onto the front edge thereof and which has upstanding side edge and back end edge flanges 16. The cut out area of said base is provided primarily for alignment with a hole 17 that may be cut in the frozen surface 18 of a body of water for purposes of ice fishing.

The base 11 may have mounted thereon an arm 19 journalled on its bottom 15, as by clamps 21, and which includes a lever 22 that is manually engageable and operable to raise and lower arm 19 for the purpose of pulling a clamp bar 23 (FIG. 1) connected thereto by chain 24, into tight engagement with the under side of surface 18 so as to lock the base in position.

The base affords mounting means for the pre-assembled easily collapsed frame assembly 12, which includes a substantially rectangular closed loop frame 25 comprised of a bottom bar 26, a top bar 27 and a pair of connecting side bars 28. The bar 26 is hingedly secured firmly, as by clamps 29, to base 11 and it is adapted to be moved from the collapsed or first position substantially as shown in FIG. 4, through a position shown in FIG. 3 and into the set up or second position shown in FIG. 1.

Pivotally mounted substantially midway between its ends and between the ends of loop frame 25, is a second closed loop frame 31. As illustrated, this loop frame 31 comprises a bottom bar 32, a top bar 33 and a pair of connecting side bars 34. The two frames 25 and 31 are pivotally connected, as at 35, and the bottom bar 32 of frame 31 is engaged in clips 36 carried by base 11, when the frame assembly is set up as shown in FIG. 1. The connecting side bars 34 of said frame 31 are offset upwardly as viewed in FIG. 1, as at 37, so as to locate its top bar 33 inwardly of what might be considered its normal plane were the bends 37 not present. The mounting of frame 31 is such that it may be swung about its pivots 35 through the intermediate position shown in FIG. 3 and into the collapsed position shown in FIG. 4, such movement occurring when the bottom bar 32 is disengaged from clips 36 and the companion loop frame 25 is correspondingly moved.

The frame assemblies 25—31 cooperate with each other and with means to be described presently, to provide support means for a collapsible seat, generally indicated at 38, and to afford novel means for mounting a shelter over said seat. The shelter comprises a three sided covered fabric member including side walls 39, a connecting back wall 41 and a top 42. The side walls 39 and back wall 41 are each connected at its lower margin to the respective upstanding base flanges 16 by any suitable fastening means. The closed loop frame 31 also mounts a substantially U-shaped inverted frame 43 having the terminal ends of its side bars 44 pivotally connected, as at 45, to side bars 34 of frame 31. When in the extended position shown in FIG. 1, the side bars 44 of frame 43 bear against the top bar 33 of frame 31, thus limiting swinging movement of said frame 43 beyond the substantially vertical position illustrated.

A similar inverted U-shaped frame 46 has the terminal ends of its side bars 47 pivotally connected, as at 48, to side bars 28 of frame 25. When in the extended position shown in FIG. 1, the frame 46 is limited in its movement in a forward direction by bearing against top bar 27 of said frame 25.

Both U-shaped frames 43—46 have their respective intermediate bars 49—50 connected to the fabric forming the shelter so as to be movable therewith from the extended or set up position of FIG. 1, into the fully col-

lapsed position shown in FIG. 4. In so doing, the frames 43—46 move substantially through the representative intermediate position shown in FIG. 3, in the general direction of the arrows illustrated.

When the frame assembly is fully extended as shown in FIG. 1, the seat structure 38 functions also as toggle means for locking the loop frames 25—31 against unintentional collapse. Referring particularly to FIGS. 1 and 5, the seat comprises a pair of U-shaped frames 51—52, each connected pivotally as at 53—54 respectively, to the side bars of one of frames 25—31 upwardly of their pivot 35. The seat frames are pivotally connected, as at 55, one to the other, and the frame 51 has transverse webbing 56 affording a seat surface. When the seat is in its position of use, one web of the webbing overlies the side bars of frame 52 to prevent collapse. When the assembly is collapsed, the seat frames 51—52 fold relative to each other and each lies substantially in the plane of its mounting frame 25 or 31.

It should be quite apparent that applicant has provided a structure that can be easily and quickly set up and which may be securely anchored in place and, when set up, will afford a seat structure that has the added function of locking the assembly against collapse.

As many possible embodiments may be made in the invention, and as many changes might be made in the embodiment above set forth, it is to be understood that all matters hereinbefore set forth or shown in the accompanying drawings are to be interpreted as illustrative and not in a limiting sense.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A portable shelter of the character that may be moved from a collapsed position into an extended position of use, said shelter including a base, a support frame pivotally connected at one end to said base, a second support frame pivotally connected to said first named support frame intermediate the ends of said frames and engageable with the base to retain both support frames in an extended position, a foldable seat structure pivotally connected to both support frames and adapted to afford rigidity to the support frames when said frames are in said extended position, a pair of auxiliary frames one connected pivotally to each support frame and movable from a collapsed position into an extended position, and a flexible covering overlying said auxiliary frames and connected at its lower end to said base said auxiliary frames operating to maintain the covering in a position of use.

2. The shelter recited in claim 1, in which means is provided to engage in and secure the assembly in place over an opening in a support surface.

3. A portable shelter frame structure including a base and being adapted to be moved from a collapsed position into an extended position, said frame structure comprising a support frame pivotally connected at one end to said base, a second support frame pivotally connected midway between its ends to the medial portion of said first named support frame, means on the base engageable with said second support frame to retain both support frames in extended position, a foldable seat structure pivotally connected with both of said support frames to impart rigidly to the support frames when the frames are in extended position, a pair of inverted U-shaped frames pivotally connected one inwardly of the upper end of each support frame and movable from a collapsed position into an extended position, said U-shaped frames having their bight portions abutting the respective support frames when in extended position so as to retain them

in such positions, and a flexible covering overlying all of said frames and connected at its lower end to said base, said U-shaped frames operating to maintain the flexible covering in a position of use.

4. A portable shelter of the character that may be moved from a collapsed position into an extended position of use, said shelter including a base, a supporting frame pivotally connected at one end to said base, a second support frame pivotally connected to said first named support frame and engageable with the base to retain both support frames in an upstanding position of use, each of said frames including spaced side bars and top and bottom bars connecting said side bars, a foldable seat structure connecting the related side bars of said support frames and adapted to afford rigidity to the support frames when said frames are in said extended position, a pair of auxiliary frames one connected to each support frame and movable from a collapsed position into an extended position, said auxiliary frames being movable into abutment with the top bars of the respective support frames when in extended position so as to retain them in such position, and a flexible covering overlying said auxiliary and supporting frames.

5. A collapsible frame structure for a portable shelter, said structure comprising a base, a first support frame pivotally connected at one end to said base, a second support frame pivotally connected to said first support frame midway between their ends, each of said support frames including side bars and connecting top and bottom bars, means on the base engageable by the bottom bar of said second frame to retain both support frames in an upstanding position of use, a foldable seat structure pivotally connected to the side bars of both of said support frames and adapted to impart rigidity to said frames when they are in upstanding position, a pair of inverted U-shaped auxiliary frames one pivotally connected to each support frame and movable from a collapsed position into a position extending beyond the upper ends of the upstanding support frames, and a flexible covering overlying all of said frames and connected at its lower end to said base.

6. A collapsible shelter comprising, in combination, a base, a first loop type support frame having parallel side bars and connecting top and bottom bars, means pivotally connecting the bottom bar of said frame to the base, a second loop type support frame having parallel side bars and connecting top and bottom bars, means pivotally connecting the side bars of one frame to the side bars of the other frame midway between their ends, means on the base engageable by the bottom bar of the second frame for retaining the frames in an extended position, a foldable seat structure pivotally connected to both frames and adapted to impart rigidity to the frames when they are in extended position, a pair of U-shaped auxiliary frame members each including side bars and a connecting cross bar, said auxiliary frames having their side bars pivotally connected one to the side bars of each of the support frames below the top bars thereof and being movable into extended position with the side bars of the auxiliary frames abutting the top bar of the respective support frame, and a flexible covering overlying all of said frames and connected to the base.

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