Jan. 11, 1966 R. BURSEY ET AL 3,228,405

TENT

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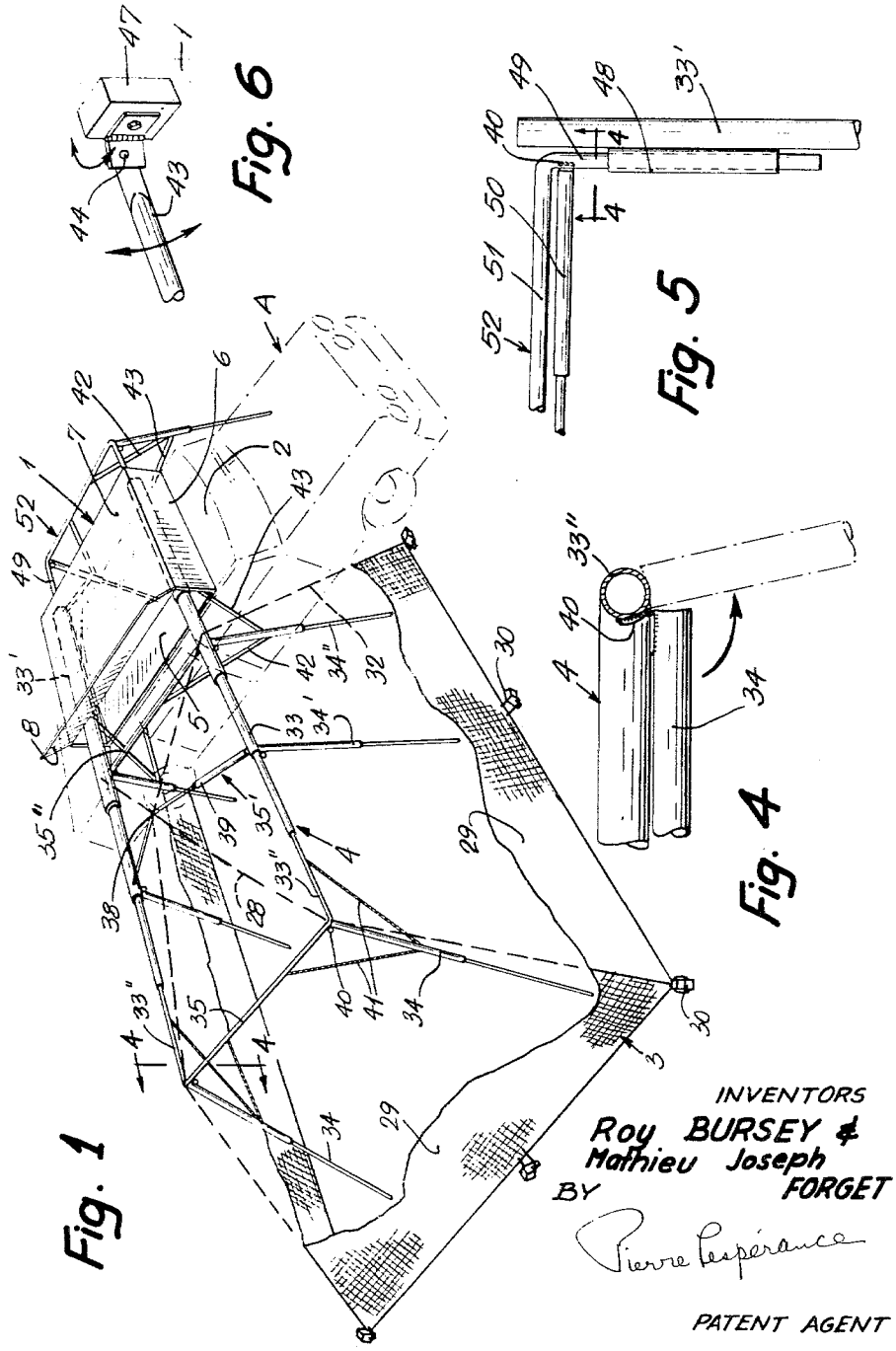


Fig. 1

Fig. 6

Fig. 5

Fig. 4

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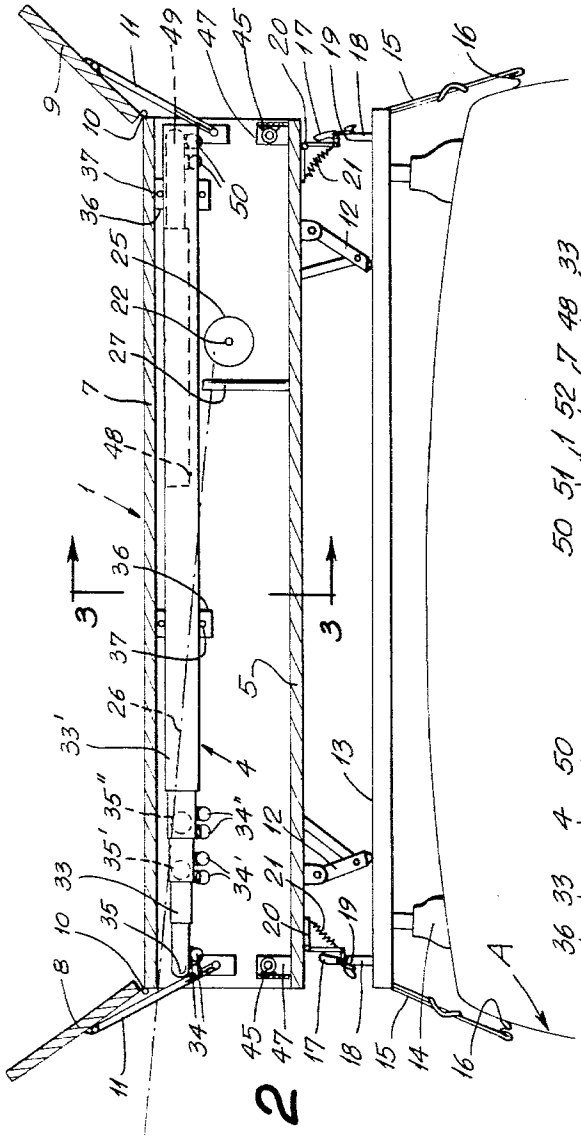


Fig. 2

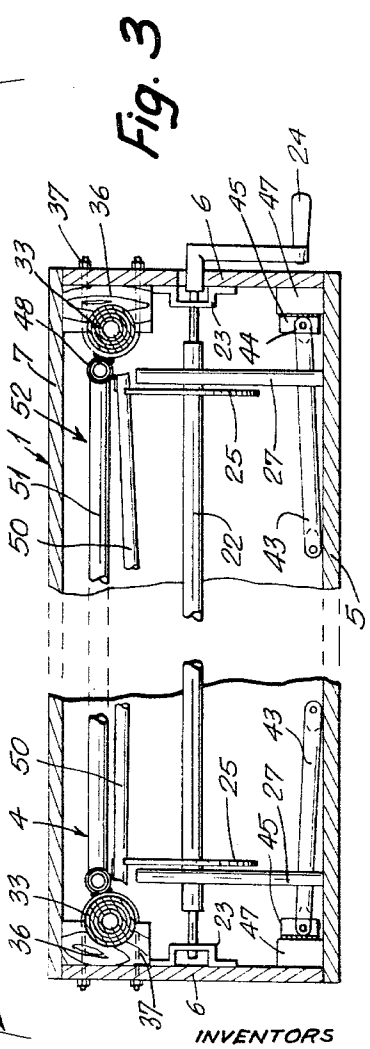


Fig. 3

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TENT

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The present invention relates to tents used for camping.

Camping is becoming more and more popular, especially camping of the type in which one's automobile is driven to the camp site and the tent is erected close to the automobile.

Family size tents, usually of dimensions of 9' x 10' and greater are relatively heavy, take time and considerable physical effort to erect, as the usual metal frame has to be set up and then the canvas shelter draped over the frame. For this, the shelter has to be first laid on the ground and lifted over the frame.

Moreover, it frequently happens that the tent has to be erected in the rain, which results in the equipment and personal belongings becoming wet during transport from the car to the tent.

It is therefore the general object of the present invention to provide a tent which will obviate the above-noted disadvantages.

A more specific object of the present invention resides in the provision of a tent which in collapsed condition is stored in a housing structure mounted on a motor vehicle and which can be erected without lifting any of its constituting elements, the erecting procedure demanding that the tent be pulled in a substantially horizontal plane from its housing structure at substantially the level of the roof of the eventually erected tent, and that the legs constituting part of the supporting frame be simply unfolded and allowed to drop and engage the ground.

Another object of the present invention resides in the provision of a tent of the character described, which is erectable right beside a motor vehicle, whereby the erection procedure can be accomplished while remaining completely under cover and wherein the automobile can be driven away once the tent is erected, the housing structure being used as an extension of the tent proper.

Another object of the present invention resides in the provision of a tent of the character described, which is very easily and very quickly erected and disassembled and which, when in stored condition, is completely protected from the weather.

Another object of the present invention resides in the provision of a tent of the character described, which is of relatively inexpensive construction in view of its size.

The foregoing and other objects of the present invention will become more apparent during the following disclosure and by referring to the drawings, in which:

FIGURE 1 is a perspective view of a first embodiment of the erected tent, the canvas shelter being cut away to show the inner frame;

FIGURE 2 is a cross-section of the housing structure showing the frame in collapsed retracted condition, the canvas shelter not being shown for clarity of the illustration;

FIGURE 3 is a cut-away section on an enlarged scale, taken through line 3—3 of FIGURE 2;

FIGURE 4 is a partial section taken along line 4—4 of FIGURE 1 and on an enlarged scale, said section being also taken along line 4—4 of FIGURE 5;

FIGURE 5 is a partial plan view of the frame; and

FIGURE 6 is a partial perspective view of some elements of the frame.

Referring now more particularly to the drawings in

which like reference characters indicate like elements throughout, a housing **1** in the form of a box is removably mounted on the roof **2** of a motor vehicle, more specifically a passenger car A.

The box **1** is adapted to house both the shelter, generally indicated at **3**, and the supporting frame, generally indicated at **4**, in the collapsed condition of the tent.

Box or housing **1** has a bottom wall **5**, side walls **6**, and a top wall **7**. It is open at both ends, said openings adapted to be closed by closure doors **8** and **9**, hinged to the edges of top wall **7** at **10** and adapted to be maintained in open position, protruding upwardly from top wall **7** by means of collapsible braces **11**.

Foldable legs **12**, mounted on the bottom wall **5**, rest on a platform **13**, which is in turn affixed over the car roof **2** by means of conventional suction cups **14** and straps **15** having a hook engaging the usual rain gutter **16** of the car A. Platform **13** may be replaced by cross bars, if desired.

The housing **1** is firmly anchored to platform **13** by means of luggage type latches **17**, which may consist, for instance, of hooks **18** firmly secured to and upstanding from the sides of platform **13** and lever-operated loops **19**, removably engageable with hooks **18** and mounted on hinges **20** mounted under bottom wall **5** and urged into folded position by springs **21**. Thus, the housing structure **1** is normally firmly anchored on top of the car A, but may be removed therefrom by releasing latches **17**.

Also, it will be noted that the support legs **12** may be collapsed together with the hinges **20** supporting the loops **19** of the latches **17**.

The housing or box **1** is disposed on the car such that its end openings will face the sides of the car A.

A spindle **22** is rotatably mounted within the box **1**, its end being journalled in brackets **23** secured to the inner face of each side wall **6**. One side wall **6** has an opening through which one end of spindle **22** extends, for removable connection to an operating crank handle **24**, which serves to rotate spindle **22** in both directions of rotation.

Crank handle **24** can be removed after use and stored within box **1**.

Spindle **22** is provided with two spaced retaining discs **25** such that the zone between the discs **25** serves to receive the shelter **3** in rolled-up condition on the spindle.

Upstanding posts **27** are secured to bottom wall **5** and are located in front of spindle **22** and just outwardly of discs **25**.

Posts **27** serve to guide the shelter **3** during winding of the same on the spindle **22**.

The shelter **3** or tent proper is made of flexible waterproof material of the type usually found in tents, such as canvas, and has a shape to conform over the frame **4** when the latter is in erected position, as shown in FIGURE 1.

Shelter **3** has a roof portion **28** and dependent side panels **29**, the latter being provided with windows and a door opening, at any suitable location.

The lower edges of side panels **29** are adapted to be anchored in the ground by means of pegs **30**, in conventional manner.

In order to attach the shelter to the spindle **22**, an extension flap is stitched to the edge of roof **28** nearer the car A and extends within box **1** and is secured at its free ends to spindle **22** by means of grommets and hooks, or the like fastening means.

Said roof edge is also provided with zippers for fastening flaps which depend from inner side edges **32** of the side panels **29**, in order to completely close the tent.

The frame 4 comprises two telescopic longitudinal roof members 33, telescopic legs 34, 34', and 34'' and transverse roof members 35, 35', and 35''.

Longitudinal roof members 33 each consists of a plurality of telescopically-engaged tubular members adapted to nest one within the other in the retracted position of said roof members, as shown in FIGURE 2, and of which the innermost telescopic tubular section 33' is rigidly secured inside the box to the side walls 6 thereof and near the top wall 7 by means of blocks 36 and U-shaped clamps 37, as shown in FIGURE 3.

The outermost tubular sections 33'' of roof members 33, which are those farthest away from the car A in the extended position of said roof members 33, are rigidly interconnected by transverse roof member 35.

Similarly, the telescopic sections next to the innermost sections 33' are rigidly connected near their outer ends by rigid transverse roof member 35'. Suitable ones of the intermediate tubular sections of roof members 33 are interconnected by a transverse roof member 35', which consists of two parts pivotally connected at 38 at the middle of the tent structure and one part being telescopic, as shown at 39. Thus, in erected position of transverse roof member 35', the latter has an angled configuration to form an apex in the roof 28 of shelter 3.

By retracting telescopic part 39, said transverse roof member 35' is made to take a straight condition.

Ground-engaging legs 34 are pivotally mounted at the outer corners of the roof portion of the structure by suitable hinge means, as shown at 40 in FIGURE 4. In erected position, legs 34 are stayed by means of thin cable wires 41.

In the erected position, legs 34 are outwardly inclined diagonally of the roof portion of the frame.

Legs 34 are folded inwardly in side-by-side relationship against transverse roof member 35 after they have been initially retracted or telescoped inwardly. They are retained in folded position by suitable strap means surrounding transverse roof member 35.

Similarly, telescopic intermediate legs 34' are pivotally attached by means of hinges 40 to intermediate ones of the tubular sections of longitudinal roof members 33; to fold the same, they are first telescoped inwardly and then pivoted about hinges 40 inwardly to lie side by side and along intermediate transverse roof members 35', and they are attached thereto, the latter having been first telescoped into a straight position.

No staying means are usually necessary for intermediate legs 34'.

Legs 34', nearest car A, are pivoted by means of hinges 40 to the roof members 33, namely to the sections thereof interconnected by transverse roof member 35''. Legs 34'' are stayed by rigid braces 42 and 43.

Braces 42 are pivotally connected to legs 34'' and are detachably connected to transverse roof member 35''.

Braces 43 are detachably connected to legs 34'' and pivotally connected at 44 to a hinge plate of a hinge 45, the other hinge plate of which is secured to a block 47, mounted within box 1 and secured thereto, adjacent side wall 6, near the box opening.

To fold legs 34'', braces 42 are detached from transverse roof member 35'' and braces 43 are detached from legs 34''. The latter are then telescoped inwardly and then folded about their hinges 40 to take a side-by-side position along transverse roof member 35'', to which they are attached by suitable fastening means, not shown, such as a strap.

The braces 43 are pivoted about their pivots 44 and hinges 45 to take a position resting within box 1, as shown in FIGURE 3.

The various telescopic sections of legs 34, 34', 34'', of transverse roof member 35' and of the longitudinal roof members 33, are maintained in extended position by suitable fastening means, such as a pin passing through registering holes of the two telescoped sections. Any other blocking means may be used.

The shelter 3 is attached at its outer end, more specifically at the outer transverse edge of the roof 28, to transverse roof member 35 by means of suitable tapes or hooks (not shown) surrounding said roof member 35 and secured to the shelter, inside thereof.

To collapse and store the tent from its erected position, shown in FIGURE 1, the following operations are effected:

After removal of pegs 30, the side panels 29 of shelter 3 are lifted and folded over the roof 28 thereof.

The crank handle 24 is attached to spindle 22 to rotate the latter to thereby wind the shelter 26 on spindle 22. The winding operation is effected or initiated after the outer legs 34 have been folded and attached to transverse roof member 35.

The winding operation causes the shelter 36 to exert an inward pull on transverse roof member 35, to thereby initiate retraction movement of the roof members 33.

Transverse roof member 35' is telescoped into a straight position and the legs 34' and 34'' are retracted and folded as the winding operation is progressing. If desired, all the legs may be retracted and folded before initiation of the winding of the shelter 3 on spindle 26.

The shelter 3 is guided by posts 27 and discs 25 and forms a neat roll on spindle 22. In the completely retracted position of the frame, the elements of said frame are in the position shown in FIGURE 2, wherein the outermost transverse roof member 35 is inside the box and whereby the door 8 can be closed.

To erect the tent, door 8 is opened and a pulling action is exerted on transverse roof member 35 until full expansion of longitudinal roof members 33. The shelter 3, which is attached to transverse roof member 35, is automatically unwound from spindle 2. The legs are thereafter unfolded and dropped into ground-engaging position. The braces 42, 43 are secured in place; the transverse roof member 35' is caused to take its angled position, and all the telescopic members are then locked into their extended position.

The side panels 29 of shelter 3 are then simply unfolded and allowed to drop over the sides of the frame and then pegs 30 are driven into the ground to secure the tent.

It will be noted that all these operations can be carried out from underneath the roof 28, whereby the operator is completely protected from rain. Only a few minutes are necessary to erect the tent or to collapse the same and store it within housing 1.

The above-described structure is suitable whenever it is not necessary to drive the car away from the tent when the latter is in erected position.

In accordance with the invention, additional means are provided to separate the tent structure completely from the car, so as to release the latter for driving away from the erected tent. The means provided also enable to increase, quite considerably, the useful inside area of the tent.

These means include an additional frame 52 including sleeves 48, shown in FIGURES 2, 3, and 5, which are welded or otherwise rigidly secured to the side of innermost telescopic members 33', which are located within box 1 and rigidly secured thereto.

A U-shaped frame member 49 has its legs slidably engaging the sleeves 48 and ground-supporting telescopic legs 50 are pivoted to U-frame 49 near the corners thereof by means of hinges, such as hinges 40.

Legs 50, when in folded condition, are telescoped inwardly and lie side by side along the transverse portion 51 of U-frame 49, and they can be attached thereto by straps or the like.

In erected position, the legs 50 engage the ground and are stayed by means of braces 42 and 43, identical to the braces associated with legs 34''. In retracted position, this additional tent frame 52 is entirely located within box 1.

To erect this additional frame **52**, closure door **9** is open; U-frame **49** is pulled outwardly; legs **50** are unfolded and extended; and braces **42** and **43** are secured in position.

When at least legs **34**" and legs **50** are in erected position and are fully braced by braces **42** and **43**, the box **1** is detached from car A by releasing latches **17**, whereby hinges **20** pivot upwardly automatically under the box and the short legs **12** are folded inwardly, whereby the box now fully clears the platform **13** and the car can then be driven away from underneath box **1**, platform **13** remaining on the car roof.

Under these conditions, the box structure **1** can be made a part of the roof extension for the shelter and the inside thereof may be used as a storage area accessible from within the tent.

Additional shelter panels may be detachably fastened to the side walls of the box **1** and to the side panels **29** of the shelter **3**, said additional panels being made so as to completely enclose the additional frame **52**. Thus, a bigger tent is obtained.

Whenever it is desired to collapse the increased size tent, the additional side panels are removed; the car is driven underneath box **1**; the short legs **12** are erected, and the latches **17** are operated to secure the box **1** to platform **13**. The additional structure **52** is collapsed and retracted inside the box **1** and then the main frame **4** and shelter **3** are collapsed and folded and stored within box **1** in the manner previously described by operating crank handle **24**.

After removal of the crank handle **24** and closure of doors **8**, **9**, the complete tent assembly is completely stored in water-proof housing **1** and the car can be driven away carrying the complete tent structure.

It is noted that housing **1** can also be used for storing additional equipment and personal belongings apart from the tent.

Housing **1** can be rotated through 180° on platform **13** to extend the tent from any side of car A. For this purpose, foldable legs **12** may be provided with wheels or rollers.

While a preferred embodiment in accordance with the invention has been illustrated and described, it is understood that various modifications may be resorted to without departing from the scope of the appended claims.

What we claim is:

1. A tent comprising, in combination, a box having a side opening, bracket means to removably secure said box on the top of a motor vehicle with said side opening at one side of said motor vehicle, a spindle rotatably mounted within said box, means external to said box removably connected with said spindle to rotate the same, a shelter made of foldable water-proof material having one end attached to said spindle, said shelter windable on and unwindable from said spindle upon rotation of the same and adapted to extend through said side opening, a shelter supporting frame comprising a pair of telescopic longitudinal shelter roof supporting members having one end rigidly secured to said box and disposed within the same, said telescopic roof members in extended position extending through said opening and outside said box in a horizontal plane substantially coincident with said box, transverse rigid roof members interconnecting said longitudinal roof members at separate telescopic sections thereof and including an outermost transverse roof member, said shelter attached to said outermost transverse roof member, and telescopic ground-engaging legs pivotally connected at their upper ends to said roof members and foldable alongside said transverse roof members, said frame together with said shelter being completely enclosed within said housing in the collapsed stored condition of said tent, winding of said spindle means causing simultaneous retraction of said shelter and of said frame into said housing.

2. A tent as claimed in claim **1**, wherein said shelter has side panels depending from the roof portion thereof and adapted to be pegged into the ground at their lower end, said side panels foldable over said roof portion of said shelter for collapsing and storing said shelter and said frame within said housing.

3. A tent as claimed in claim **1**, wherein an intermediate one of said transverse roof members consists of two sections interpivoted at the center of the shelter, one of said sections comprising telescopically-engaged elements whereby said transverse roof members take an angled position protruding upwardly from said longitudinal roof sections to impart a dome shape to said shelter and take a retracted position in which said roof sections are in alignment for retraction and storing within said housing.

4. A tent as claimed in claim **1**, further including bracing means for the telescopic legs nearest said box, said bracing means including braces pivotally attached at one end to said box and removably attached to said legs nearest said box.

5. A tent as claimed in claim **1**, wherein said box has a second side opening opposite said first-named side opening, a supplementary shelter supporting frame mounted within said box and entirely located therein in the retracted position of said supplementary frame and including roof members capable of extension to take an extended position projecting through said second opening and outside of said box on the opposite side of said motor vehicle and ground-engaging telescopic supporting legs pivotally mounted at the outer ends of said roof members and pivoted between a folded position in the plane of said roof members and extended unfolded position engaging the ground, whereby said tent in the erected position of both frames can be detached from said motor vehicle roof and said motor vehicle can be driven away from underneath said box, the latter being entirely supported by the ground-engaging legs of both said frames.

6. A tent as claimed in claim **5**, further including closure doors for each of said side openings of said box, to completely close said box in the retracted position of said shelter and of both said frames within said box.

7. A tent as claimed in claim **1**, wherein said means to support said box on top of a motor vehicle include support members secured to the motor vehicle roof, latching means to removably attach said box to said support members, and foldable legs underneath said box adapted to support said box in spaced position above said support members.

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