Dec. 3, 1963 L. D. McDOUGAL 3,112,501

LOAD-CARRYING APPARATUS FOR AN AUTOMOBILE TOP

Filed Oct. 2, 1961 2 Sheets-Sheet 1

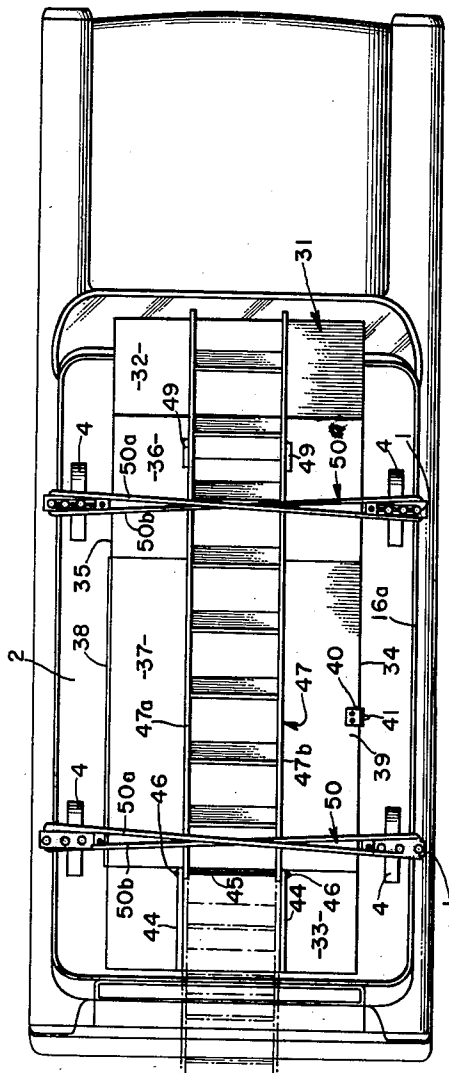


FIG. 2.

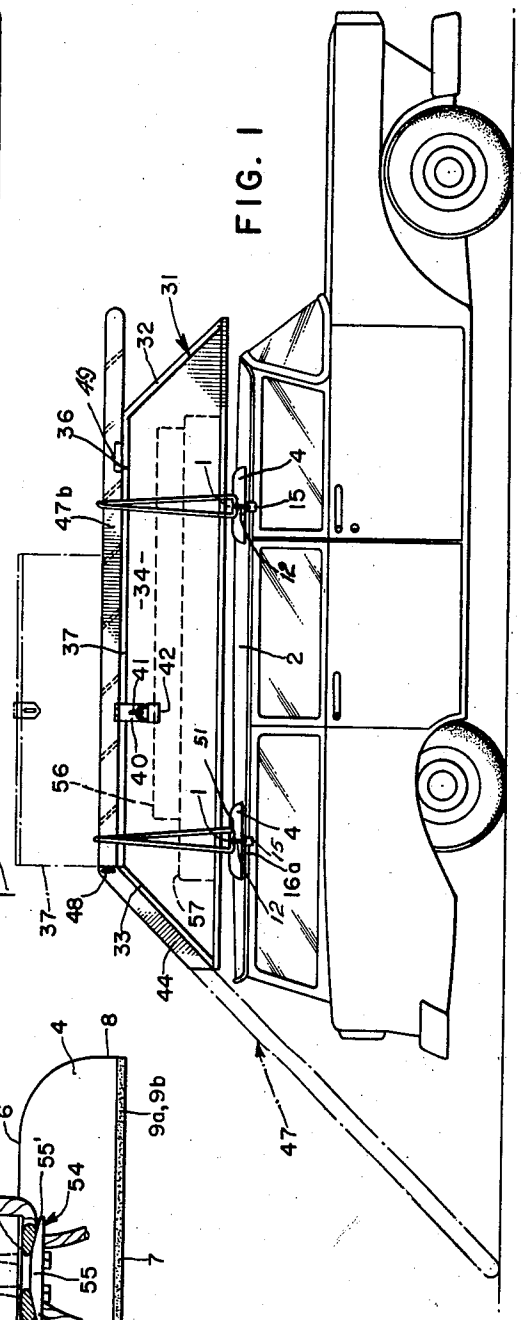


FIG. 1

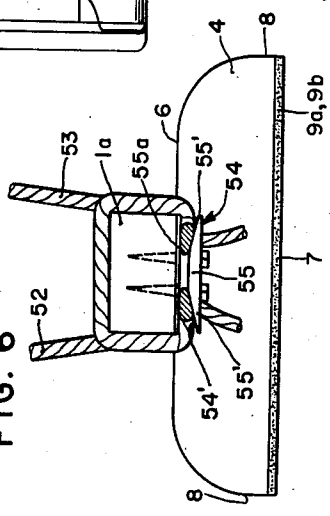


FIG. 6

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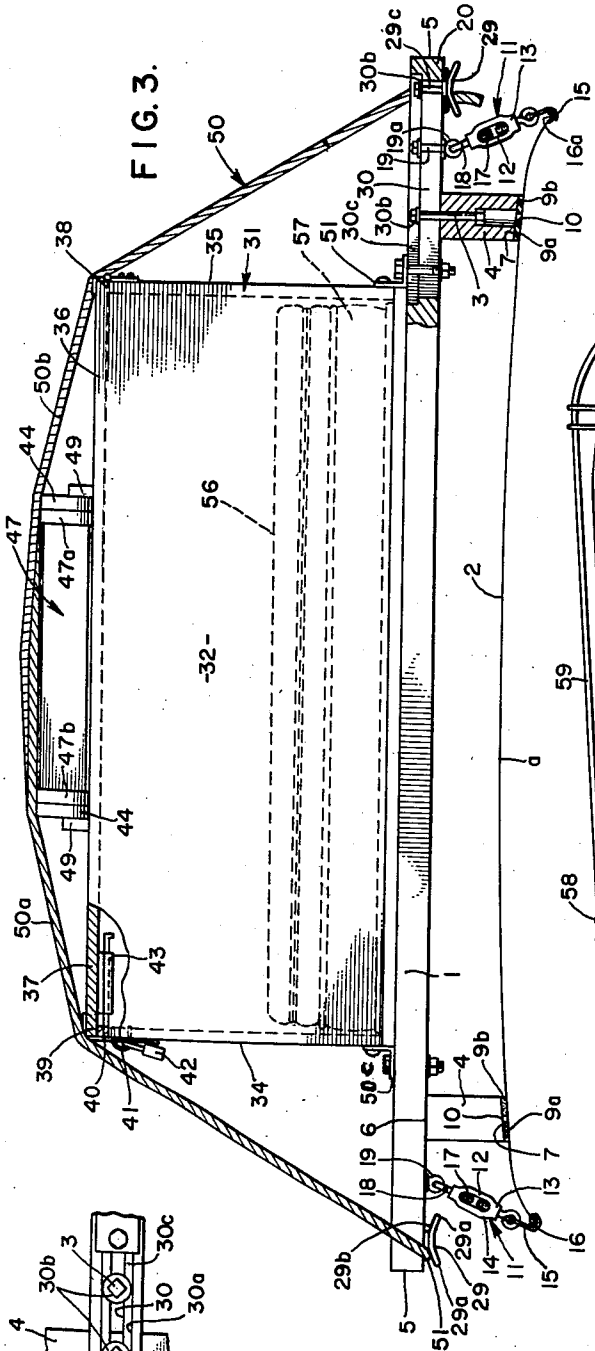


FIG. 3.

FIG. 4.

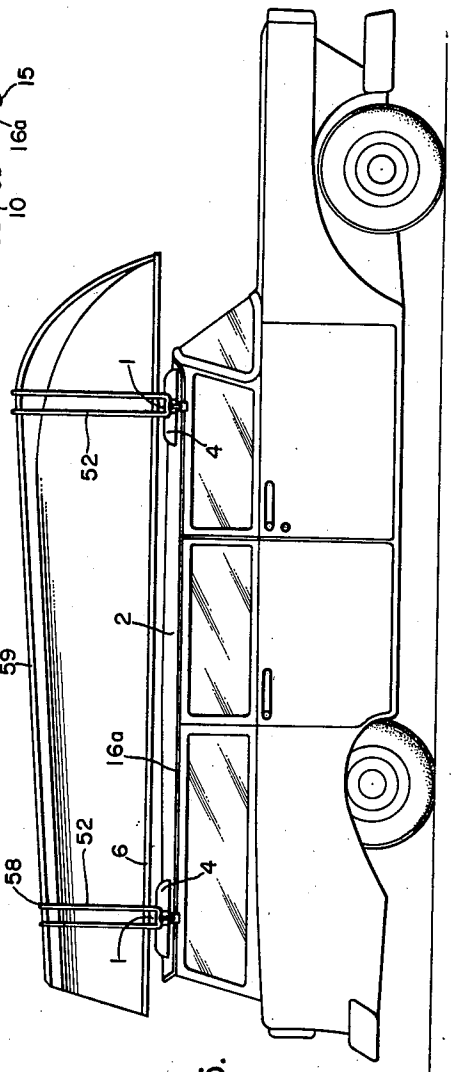


FIG. 5.

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LOAD-CARRYING APPARATUS FOR AN AUTOMOBILE TOP

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8 Claims. (Cl. 5—119)

In localities where game birds are plentiful, and lakes and streams are teeming with game fish, residents of cities not too distant appreciate an opportunity to take an outing over a week end to try their luck with their rod and reel, or the quail in the fields near their hunting lodge. And it is advantageous if they can arrive at the field or stream at an early hour in the day.

One of the objects of this invention is to provide apparatus which can be readily rigged up on the top of an automobile, that need have no special anchorage apparatus permanently attached on the car, for enabling accessible sleeping quarters to be mounted on its roof.

Another object of the invention is to construct such an apparatus so that it can be rigged up on car tops of various widths and braced safely to the rain gutter that is present high up on the side walls of the car; and incidentally, to provide features in the apparatus that cannot mar the paint or finish of the car roof, at the points on which the apparatus rests.

Another object is to provide sleeping quarters for temporary mounting on the car top, with means carried by the car for making them accessible to the occupants of the car.

Another object of the invention is to provide a construction for the apparatus that will facilitate the use of tying cables or ropes for securing the sleeping quarters on the roof of the car, and to place at the proper points, anchoring bitts fashioned so as to present a wrist or neck around which the ends of tightened tying ropes or flexible cable of hemp or other vegetable material can be coiled in a loop or bight; and in which the bitt presents a taper-socket into which the loop or bight is to be pulled tight, thereby making it unnecessary to make any knots in the rope in order to be certain that the ties will hold, and maintain the tension that has been set in the runs of the rope; the specific object being to avoid the necessity, and time lost, in untying any knots that are sometimes used by riggers in making articles fast that are not carried in containers.

Another feature of the apparatus is the providing of thick and stout blocks preferably of wood, that support above them, two bolsters that extend transversely of the car top on which the padded lower faces of the blocks rest. The specific object of the invention here is to provide an effective compressible pad area that will practically conform to flat or the slight convexity of the upper face of the top plate, to assure that the downward pressure developed by the tight ties will prevent any possible shifting of the bottom faces of the pads with respect to the enameled surface on which the pads rest. That protects the car's top surface from rubbing and injury.

Another object of the invention is to avoid as far as possible, the use of metal parts excepting the bolts and tackle necessary to connect up the working parts. This favors economy in the cost of constructing the apparatus.

Other objects of the invention may become evident from a careful reading of the specification of the apparatus and study of the drawing.

The invention consists of the novel parts and combinations of the same now to be described, all of which contribute to attain the objects of the invention; the

title of which is Load-Carrying Apparatus for an Automobile Top.

In the drawing:

FIGURE 1 is a side elevation of an automobile having the general type or design of a station wagon, and illustrating the apparatus of the invention atop the roof of the car; and showing an access ladder in dotted lines put in place for giving access to the sleeping quarters, from the ground.

FIGURE 2 is a plan of the car and the apparatus shown in FIGURE 1, which view shows the lid of the sleeping quarters in dotted lines in a raised position.

FIGURE 3 is a front elevation of the apparatus, and showing in dotted outlines a mattress and a double sleeping bag.

FIGURE 4 is a detail plan of the end of one of the bolsters broken away, and also showing a portion of the block that rests on the car top and supports the bolster. The shouldered slot is also shown with the three bolts carried in the slot that are shiftable in the slot for adapting the apparatus to car tops of different widths.

FIGURE 5 is another side elevation on a smaller scale and illustrating the apparatus being rigged to carry a small boat.

FIGURE 6 is an end elevation of a bolster illustrating another type of bitt attachable to the under side of the bolster and having a body portion constructed to carry means for fastening it to the underside of the bolster; and having two tapered spurs, or horns, that cooperate with a base plate to present two tapering sockets which can receive the ends of the ties and secured as illustrated and as described herein.

Referring to FIGURES 1 and 2, **1**, **1** indicate two transverse bolsters preferably made of 2 x 4 wood scantling. In practice these two bolsters are parallel and spaced apart from each other. They extend transversely to the longitudinal axis of the car-roof—or top **2**. As shown in FIGURES 3 and 4 each of these bolsters at its end portions is attached by a long bolt **3** to a block **4** preferably of wood; and these bolts are located in proximity to the end face **5** of the bolster to which they are attached, but preferably not at the extreme tips of the bolsters.

As indicated in FIGURES 2 and 3, these blocks are mounted in a vertical plane, and in their side elevation they are preferably shaped approximately as indicated in FIGURE 3. That is to say, the upper face **6** of each block is in a horizontal plane, and the bottom faces or seat faces of each block extend in a general fore-and-aft direction. That is to say, they are about parallel with each other, and as the blocks are relatively thick they afford a satisfactory area of supporting contact with the roof, and this area would depend somewhat upon the weight of the load to be supported.

Each end face **8** of each block may be struck on a radius, as shown, or they may be cut on any angle with a straight incline connecting the ends of the upper face **6** and the contact face **7**.

As indicated in FIGURE 3, a cushion type pad **9** is provided which is preferably of foam rubber or an equivalent material, and the foam rubber is preferably cut into two strips **9***a* and **9***b* extending longitudinally on the bottom face **7** of each block.

The strips **9***a* and **9***b* are disposed slightly apart on their inner edges but their outer edges should be substantially flush with the side faces of the blocks. It is preferable to leave a small gap **10** between the adjacent edges of the strips. For the most common use the strips should be about five eights of an inch thick in which case they would be compressed by the load, down to a thickness of three eighths of an inch.

Any thickness may be selected for the cushion strips

depending on their expected load, and they should be secured in position with some waterproof adhesive such as rubber cement, or the like.

In order to secure the apparatus described, against shifting laterally, it is preferable to employ a tension mechanism 11 such as illustrated in FIGURE 3 at the sides of the car.

This tension mechanism 11 preferably includes a turnbuckle 12, the lower end 13 which is tapped with screw thread to carry a long bolt 14. The lower end of this bolt is formed into an eye carrying a hook 15, to be applied under the lower face or edge 16 of the adjacent rain gutter 16*a*, that is present on all cars.

The upper end of the four turnbuckles may carry a shorter screw 17 that terminates in an eye 18, applied to an eye 19*a* carried by the lower end of a long bolt 19 worked into the upper side of the adjacent bolster 1. On the end portion of the overhanging end 20 of the bolster, a metal fitting 29 is secured. This is a jamb cleat or bitt, and it includes a pair of downwardly bent tongues 29*a*. Between their upper faces and the lower face of the bolster 1 a tapering recess 29*b* is formed. It has an integral bolt 29*c*.

When the turnbuckles at the ends of one of the bolsters are tightened up, the cushions 9*a* and 9*b* will be compressed to a less thickness and will hold the load against lateral shifting.

In order to adopt the apparatus for being used with cars of different widths all three of the bolts 3, 19, and 29*c*, are mounted in the same long slot 30 that extends out to the tip of the bolster 1.

This slot 30 is just wide enough to fit the diameters of the bolts which all have the same diameter.

This slot is "countersunk" by a wider slot 30*a* that is just wide enough to enable the washers 30*b* to fit into them and lie on the countersunk shoulder 30*c* (see FIGURE 4). This slot may be made as long as necessary to accommodate the range of car widths, that seems to be confined to about 14 inches, for each slot.

As indicated in FIGURES 1 and 2 the sleeping quarters comprise a box-form casing 31 preferably composed of plywood that is about one half inch in gage. The front and rear walls 32 and 33 of the casing 31 are rectangular, as shown in FIGURE 3, but the front and rear edges of the side walls 34 and 35 converge in an upward direction where they meet the inclined front and rear walls, as shown in FIGURE 1.

Toward the forward end the casing has a fixed roof section 36; and a lid 37 is attached by a piano hinge 38 at its left edge so as to cover the remainder of the casing. The free edge portion 39 of the lid has a hasp 40 to fit over a staple 41 that can carry a lock 42 that may be used when the casing is being used to carry a load of any kind.

When the casing is being used for sleeping quarters the lock 42 is not used but a draw-bolt type of lock 43 is employed, that is attached on the inner side of the lid near the lock. (See FIGURE 3.)

However, for the occupants' protection a type of staple must be employed that can be disconnected and pushed out free from the inside.

On the upper side of the inclined rear wall 33, two fixed parallel side bars 44 are carried, and between their upper ends a hinge-bar 45 is secured in the side bars. The end portions 46 of the hinge-bar function as pivots for the rear end of a ladder 47 that lies on the top of the casing.

Slots 48 cut in the ladder stringers 47*a* and 47*b* enable the ladder to be swung up and out at the rear into an inclined position in which it is shown in FIGURE 1.

Chocks 49 secured to the upper side of the lid 37, at the sides of ladder 47 may be used to absorb inertia in the forward portion of the ladder on sharp turns of the car to right or left.

In addition to this, two ropes or cables 50 are used

that function as ties to hold the ladder pressed firmly down on the case, and hold the sleeping quarters and the ladder firmly pressed down and secured to the bolsters 1.

In practicing the invention only two lengths of rope 50 are required. Each length of rope is used with a loop 51 at its middle applied under one of the tips of one of the bolsters, and the two runs 50*a* and 50*b* of the rope are passed over and crossed over the ladder, as shown in FIGURE 2, and then passed down to the other end of the bolster where the two ends are pulled inwardly into the tapered sockets between a downwardly bent tongue 29*a* on each side of the bolt 29*c*.

In FIGURE 6 an anchorage for two tie ends 52 and 53 is illustrated that involves the use of a bitt or jam cleat 54. In this anchorage the cleat is a small metal fitting with a plate like body 55 with two sockets for two lag screws with square bolt heads to enable them to be screwed up tight with a wrench.

The ties 52 and 53 are passed around the end of the bolster 1*a* and the tips of the two ties may be jambed into tapered sockets 54 between two tapering tongues 55 and the baseplate 56 of the fitting.

In this case, as in the anchorage shown in FIGURE 3, the necessity for tying knots in the ends of the ropes is avoided.

As shown in FIGURE 3, the casing 31 is secured to the upper sides of the bolsters by angle clips, the flanges of which are bolted to the two connected parts.

When the lid 37 is in its raised position, and the ladder 47 swung down with its foot on the ground, two or three sportsmen can ascend the ladder and step down into the interior of the casing with their guns and fishing tackle, and then pass the lower part of their bodies, feet first, into the double-type sleeping bag illustrated at 56.

It should lie on a mattress 57 indicated in dotted lines in FIGURE 1.

In practice of course, the casing would be provided with small windows (not illustrated) on all four sides, and in very cold weather an electric heater may be carried in on both ends of the casing.

FIGURE 5 illustrates how a small boat can be carried in an inverted position made fast by the same kind of ropes and ties on one side of the boat, as illustrated at the right in FIGURE 3.

In this instance however, it is preferable to keep the two ropes 50 free of each other, and to provide four notches in the boat's keel 59 that will assist in keeping it fixedly anchored.

At this time it is highly probable that a length of 14 inches for the slots 30 will enable the apparatus to be rigged up in the manner indicated on any cars on which it is desired to use it.

It is obvious also that when the casing 31 or the small boat is not in place on the car roof, the cables or ropes which should be compressible, can be rigged over any articles stowed between the bolsters 1, 1.

As in some cases the bottom faces of the blocks 4 may have to rest on slightly convex surfaces, a complete apparatus should include two blocks or more, with concave faces that would be accepted to conform to the top of any car that would be available for use with the apparatus.

Many other embodiments of this invention may be resorted to without departing from the spirit of the invention.

I claim as my invention and desire to secure by Letters Patent:

1. In load-carrying apparatus for an automobile top, a combination of a pair of transversely disposed spaced-apart bolsters extending across the car top, a supporting block under each end portion of the bolsters extending in a general fore-and-aft direction along the top, means for attaching the bolsters to the blocks, said blocks having seating faces at their lower ends conforming to the physical character of the surface of the top, upon which they rest, compressible pads of foam rubber carried by the

under faces of the blocks and resting upon the car top, tension means under tension connecting the end portions of said bolsters to the rain gutters of the automobile, flexible cables of laterally compressible material extending across the car top for holding down articles carried on the top, and means at the ends of the bolsters presenting tapered sockets into which the ends of said cables may be forcibly pushed to avoid the necessity of tying the same.

2. A load-carrying apparatus for an automobile top according to claim 1, in which the means at the ends of the bolsters for presenting tapered sockets include fittings attached to the bolster and carrying projecting tongues with means cooperating with the same to form tapered sockets for receiving the cable ends and compressing the same when pushed into the sockets.

3. A load-carrying apparatus for an automobile according to claim 1, in which the said pads are composed of separate strips with a space between the same to permit for expansion of the strips under pressure, and in which the means for presenting tapered sockets are located on the bolsters in a location that is outboard with respect to the location of the said tension means.

4. A load-carrying apparatus for the top of a car according to claim 1, in which the said tension means includes turnbuckles with their upper ends attached to the said bolsters and their lower ends attached to the rain gutters on the sides of the car.

5. In load-carrying apparatus for an automobile top, a combination of a pair of transversely disposed spaced-apart bolsters extending across the car top, a supporting block under each end portion of the bolsters extending in a general fore-and-aft direction along the top, means for attaching the bolsters to the blocks, said blocks having seating faces at their lower ends conforming to the physical character of the surface of the top, upon which they rest, compressible pads of foam rubber carried by the under faces of the blocks and resting upon the car top, tension means under tension connecting the end portions of said bolsters to the rain gutters of the automobile, flexible cables of compressible material with means for connecting their ends to the ends of the bolsters, sleeping quarters including a casing with means for removably holding the same on the bolsters beneath the said cables.

6. In load-carrying apparatus for an automobile top according to claim 5, in which the casing is provided with an upper opening, means carried by the automobile for rendering the interior of the casing accessible to the driver of the car, and a sleeping bag disposed on the floor of the casing, and means for locking the lid in the closed position.

7. In load-carrying apparatus for an automobile top according to claim 6, in which the means for rendering the interior of the casing accessible includes a ladder supported on the upper side of the casing normally in a horizontal position, and means for shifting the ladder into an inclined position with the foot of the ladder disposed toward the ground to enable the driver to ascend the same.

8. In load-carrying apparatus for an automobile top, the combination of a pair of transversely disposed spaced-apart bolsters extending across the car top, a supporting block under each end portion of the bolster resting on the car top and extending in a general fore-and-aft direction along the top, means for attaching the bolsters to the blocks, said blocks having seating faces at their lower ends conforming to the physical character of the surface of the car top upon which they rest, compressible pads carried by the under faces of the blocks and resting directly upon the car top, tension means under tension connecting the end portions of said bolsters to the rain gutters of the automobile, flexible cables of extensible material extending across the car top for holding down articles carried on the top, and means at the ends of the bolsters presenting tapered sockets into which the ends of said cables may be forcibly pushed to avoid the necessity of tying the same.

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