United States Patent

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[54] **GARAGE WITH AUXILIARY STORAGE MEANS FOR BOATS AND THE LIKE**
6 Claims, 4 Drawing Figs.

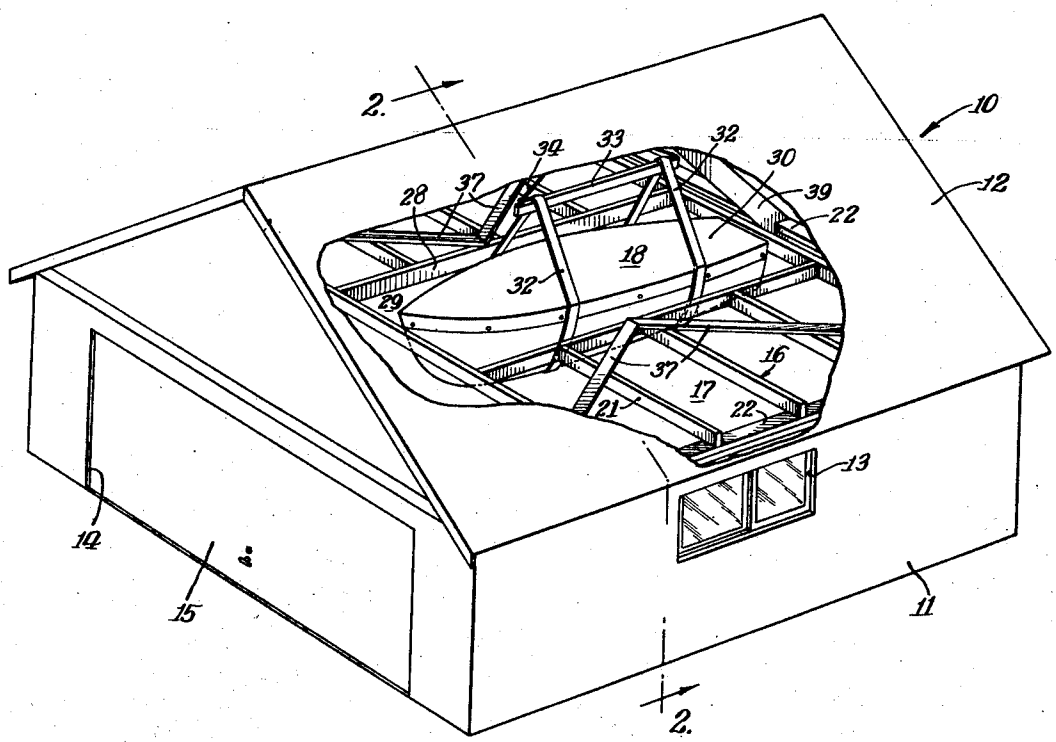
[52] **U.S. Cl.** **214/16,** 52/27; 214/16.1
[51] **Int. Cl.** **E04h 14/00**
[50] **Field of Search** 214/16, 16.4, 16.18C; 52/27, 39, 173

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ABSTRACT: A garage structure defining a lower portion arranged to house an automotive vehicle and an upper loft space. The lower portion is defined by an upper ceiling structure provided with means defining an opening adapted to pass therethrough a structure intended to be stored in the loft space. Means are carried on the roof structure of the garage for selectively raising and lowering the structure intended to be stored in the loft space and means are provided for securing the structure intended to be stored in the storage disposition.



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SHEET 1 OF 4

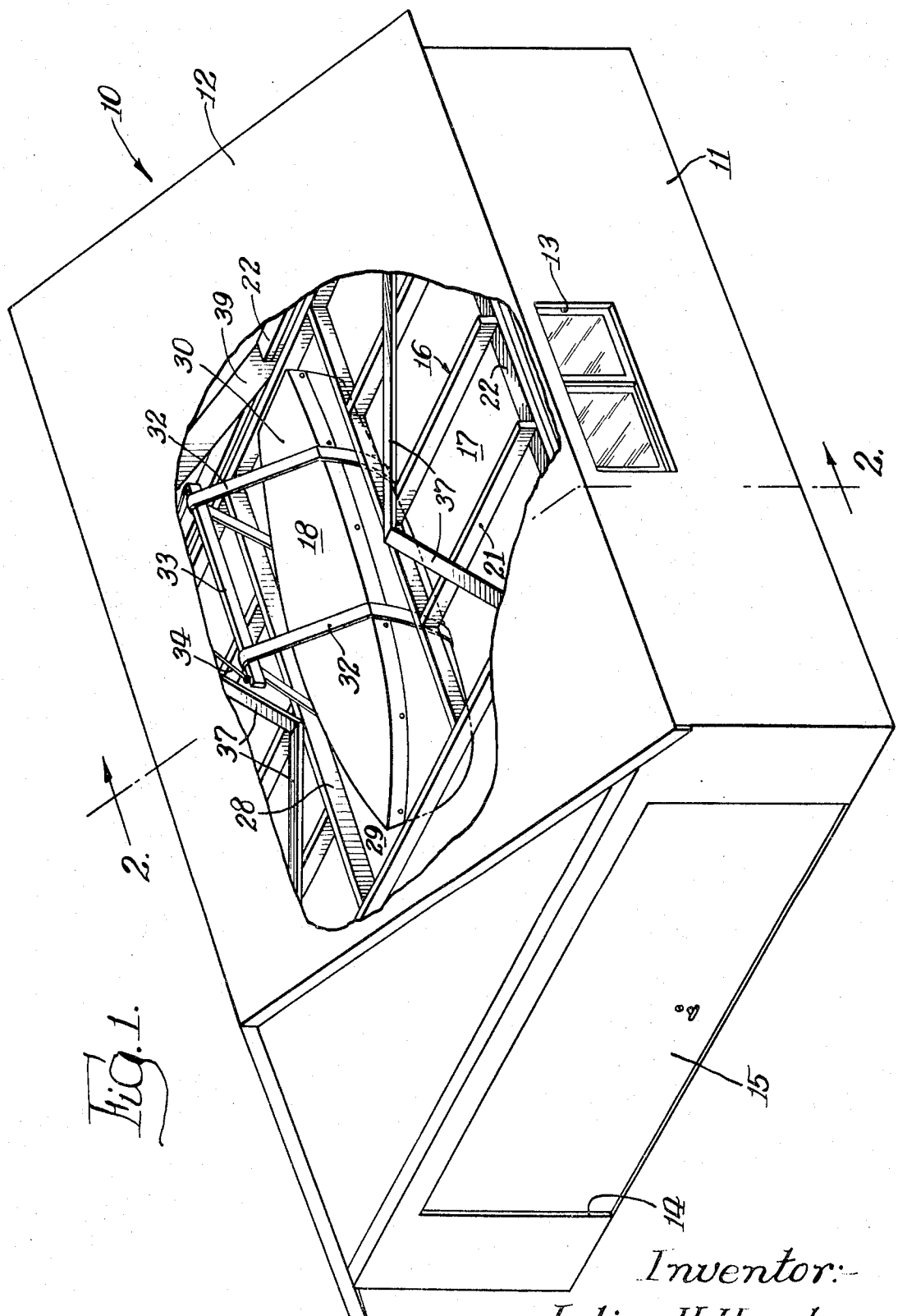


Fig. 1.

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Attys.

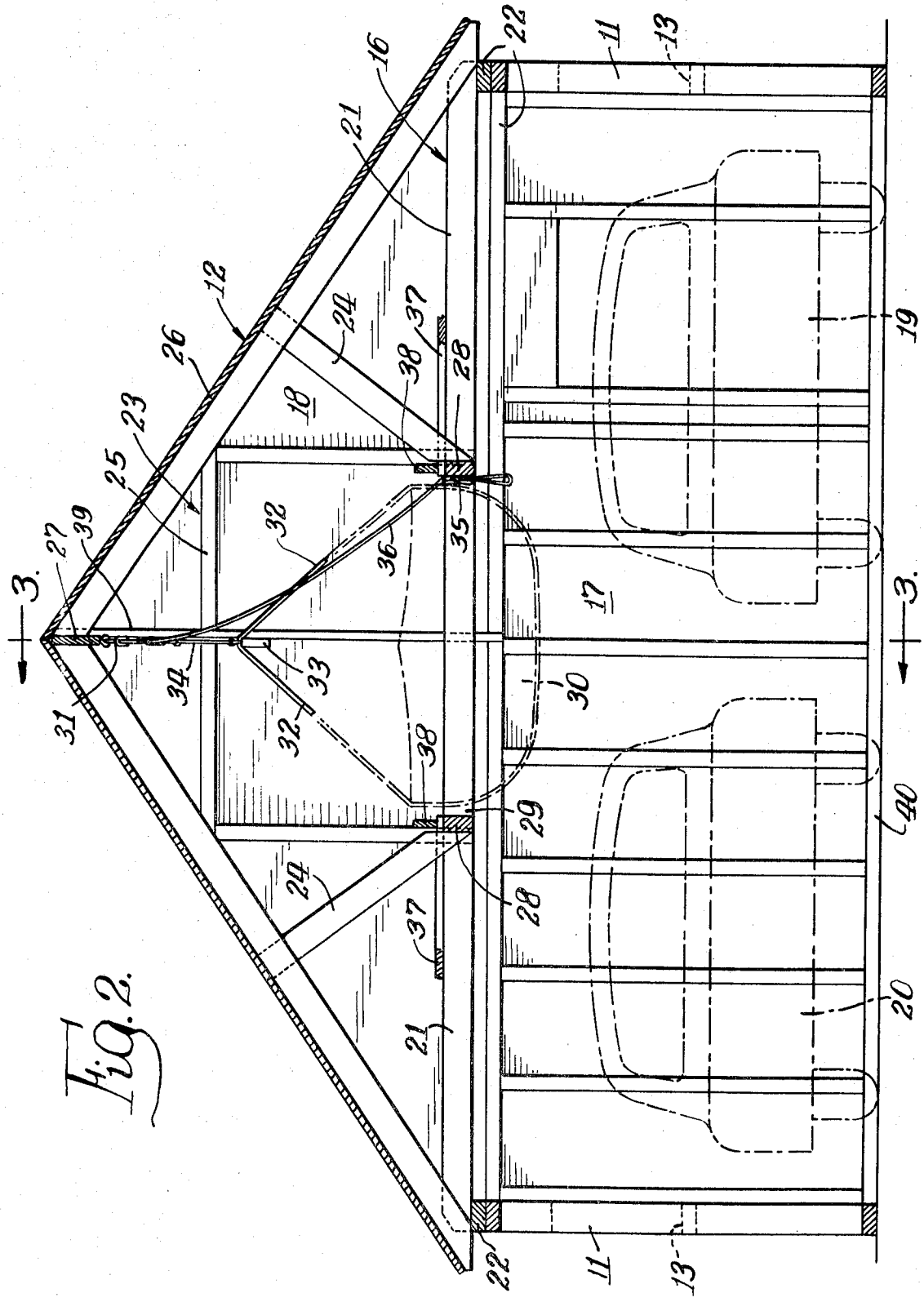

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Fig. 2.

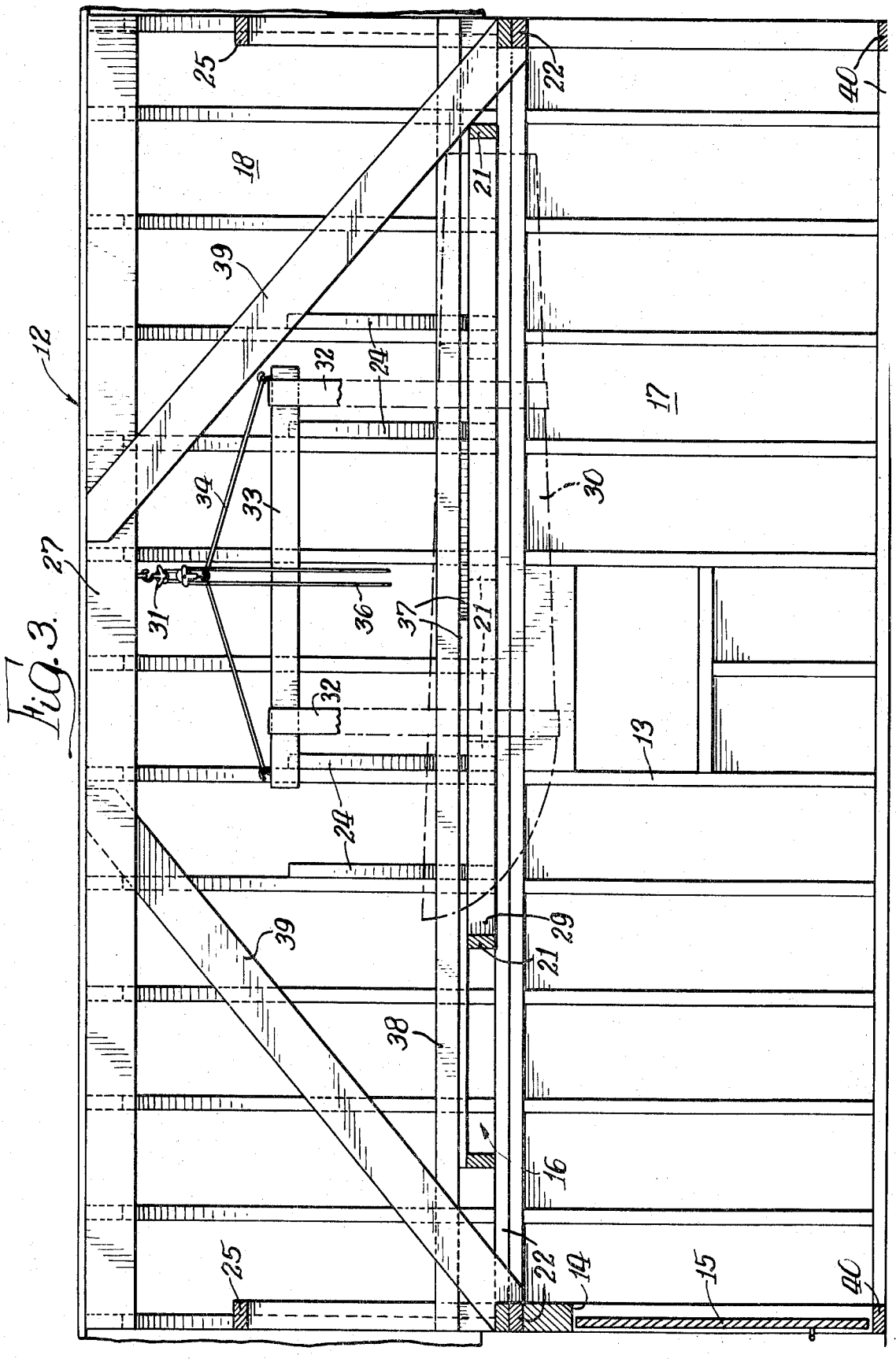


Fig. 3.

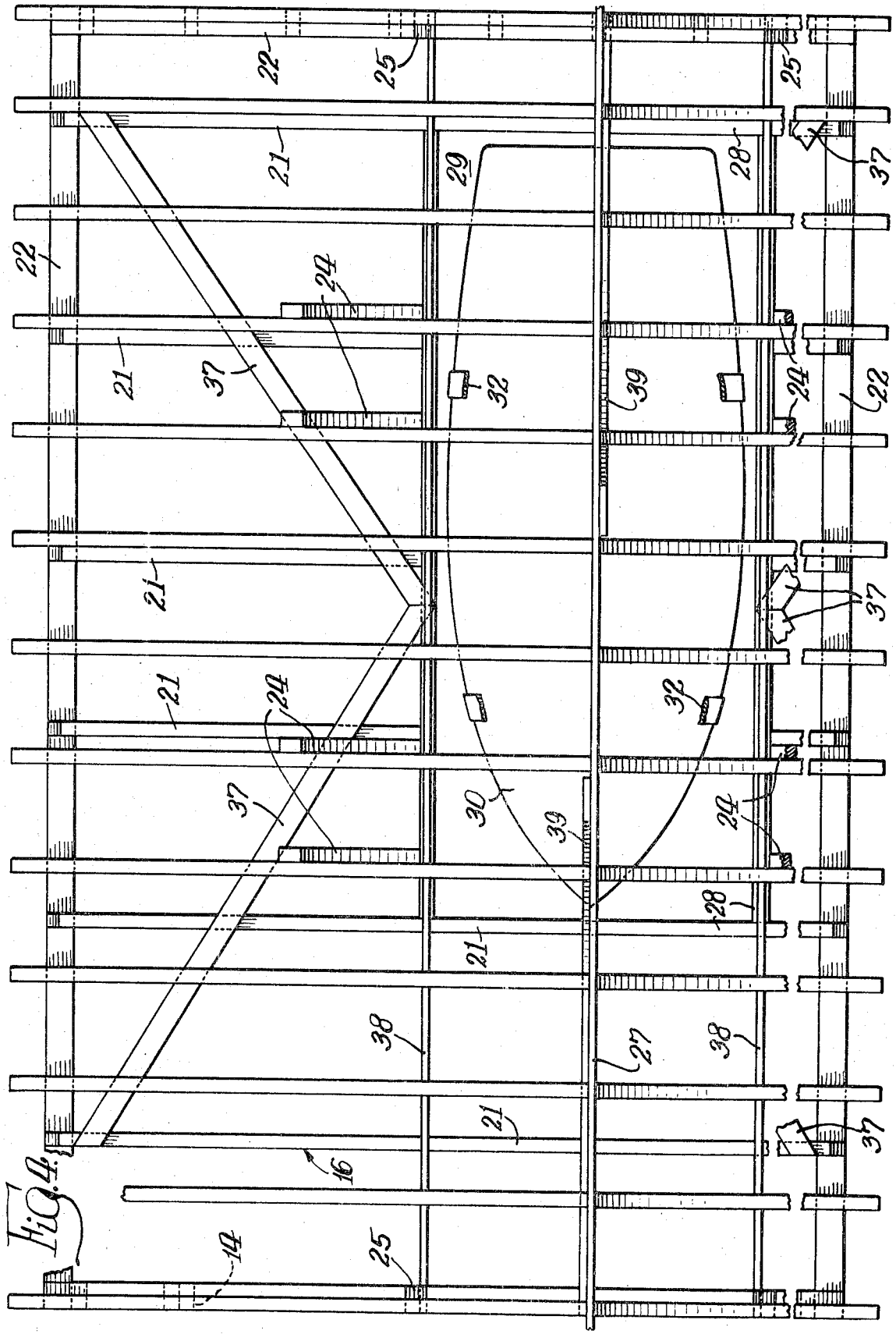


FIG. 4.

GARAGE WITH AUXILIARY STORAGE MEANS FOR BOATS AND THE LIKE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to storage structures and in particular to garage structures and the like for storing relatively large structures such as automobiles.

2. Description of the Prior Art

In the conventional garage structure, the lower portion thereof is arranged to house automotive vehicles and the like. The conventional garage structure is provided with a ceiling portion overlying the lower vehicle storage space and serving to tie together the upright sidewalls of the garage structure. A roof is conventionally provided spaced above the ceiling whereby the roof and ceiling cooperatively define a loft space. Such a loft space is utilized from time to time for storage of objects, materials, and the like, resting on the ceiling joists and in certain instances, the ceiling is provided with an upper floor for more efficient storage.

An increasing number of people who own such automotive vehicles and garages also own other relatively large structures which must be stored from time to time. Illustratively, such additional structures may comprise boats, snowmobiles, riding mowers, small tractors, go-carts, and the like. The storage of such relatively large structures presents a vexatious problem as it is undesirable to utilize the valuable automobile storage space for these additional structures. Thus, often additional sheds are provided or the additional structures are allowed to remain outdoors under tarpaulins and the like during the times of nonuse.

SUMMARY OF THE INVENTION

The present invention comprehends an improved garage structure adapted to accommodate, in addition to the automotive vehicles in the lower portion thereof, the storage of such other relatively large structures in the loft space. The garage structure is arranged to provide for such storage in a facilitated manner permitting the stored structures to be readily made available for use when desired while yet normally providing for storage thereof in such a manner as to provide substantially full normal use of the lower garage space.

Thus, the invention comprehends the provision in the ceiling structure of the garage of means defining an opening adapted to pass the structure intended to be stored upwardly into the loft space for storage therein. Means are provided on the roof structure for selectively raising and lowering the structure intended to be stored and means are provided for releasably securing the structure intended to be stored in a storage disposition in the loft space. Thus, a relatively large structure, such as a boat or tractor, may be readily stored in the loft space by simply raising it form the floor of the garage upwardly through the preformed opening in the ceiling and securing the stored structure in the raised position.

The invention comprehends the provision of reinforcing means in the garage structure for transferring the forces generated by the weight of the stored structure to the sidewalls while effectively precluding outward displacement thereof due to the increased weight acting thereon. The raising and lowering means may comprise a hand operated, or motor operated hoist as desired. The securing means may comprise straps, or the like, for effectively positively securing the stored structure in the loft space. If desired, the stored structure may be positioned so as to permit a portion thereof to extend downwardly into the lower space of the garage below the level of the ceiling. In the illustrated embodiment, the ceiling opening is provided at the center of the garage for utilization of the maximum height of the loft space as in a conventional garage structure herein the ridge beam is disposed at the center of the garage. As will be obvious to those skilled in the art, modifications of the garage structure incorporating the broad concept of the ceiling storage opening and means for retaining the stored structure in the loft space in alignment with the opening may be used within the scope of the invention.

BRIEF DESCRIPTION OF THE DRAWING

Other features and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings wherein:

FIG. 1 is a perspective view of a garage structure having auxiliary storage means embodying the invention, with portions broken away to facilitate illustration of the invention;

FIG. 2 is a vertical section taken substantially along the line 2–2 of FIG. 1;

FIG. 3 is a vertical section taken substantially along the line 3–3 of FIG. 2; and

FIG. 4 is a fragmentary top plan view with the roof removed and with portions broken away to facilitate illustration of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the exemplary embodiment of the invention as disclosed in the drawings, a storage structure **10**, herein comprising a garage, is shown to include a plurality of upright sidewalls **11** and an overlying roof **12**. In illustrating the invention, the roof structure is shown as a gabled roof structure, it being understood that other suitable roof arrangements, such as hip roof structures, may be employed as desired. Illustratively, the sidewalls **11** may include suitable windows **13** and front opening **14** selectively closable as by a conventional overhead door **15**. The garage is further defined by a ceiling structure generally designated **16** which overlies the lower automotive vehicle storage space **17** and which cooperates with the roof **12** to define an upper loft space **18**.

In illustrating the invention, the garage is shown to comprise a two-car garage wherein two automotive vehicles **19** and **20** may be garaged in the normal side-by-side manner in the lower vehicle storage space **17**. As shown in FIG. **2**, the ceiling comprises a plurality of joists **21** carried at their opposite ends on the top plate **22** of the sidewalls **11** whereby the joists tie the sidewalls together against outward displacement by forces acting downwardly on roof **12**. The roof structure may further include bracing **23** including diagonal braces **24** and box braces **25** for stiffening the structure. The roof may be provided with an outer sheath **26** of conventional construction to close the top of the garage structure in the conventional manner. The roof may include a ridge beam **27** extending lengthwise of the garage at the top of the roof in the conventional manner.

As indicated briefly above, the invention comprehends the provision of means defining an opening in the ceiling structure **16** for accommodating the passage of a structure intended to be stored in the loft space **18**. Thus, as best seen in FIGS. **1** and **2**, the ceiling structure is provided with a frame **28** defining an opening **29** in the ceiling structure **16**. In the illustrated embodiment, the opening **29** is intended to receive a relatively large structure, such as a boat, **30**. The boat may be lifted through the opening **29** into the loft space **18** by a suitable pulley **31** carried on the ridge beam **27**. In the illustrated embodiment, the pulley **31** comprises a hand operated hoisting means. As will be obvious to those skilled in the art, if desired, the hoisting means may comprise a motor operated means (not shown) or other suitable lifting devices as desired.

The means for supporting the structure to be stored **30** may further include straps **32** extending under the structure **30** and carried by a support beam **33** to which the pulley **31** is connected by suitable cables **34**. The structure **30** may be secured in the storage position by suitable securing means, such as cleat **35** carried on the frame **28** around which the lower free end **36** of the pulley cable **34** may be wrapped. Other suitable means for securing the structure **30** may be employed, such as additional fixed straps extending under the structure, etc. If desired, the structure **30** may be stored fully above the level of the ceiling structure **16** or, as illustrated in FIG. **2**, the structure **30** may be raised sufficiently to provide desired clearance in the lower vehicle storage space **17** while yet projecting downwardly below the level of ceiling **16**. As shown in FIG. **2**, the opening **29** is disposed along the longitudinal centerline of

the garage defined by the ridge beam **27** thereby providing for the storage of the structure **30** at the highest portion of the roof. As shown in FIG. **4**, the opening **29** may be provided somewhat toward the rear of the garage as desired.

Ceiling opening frame **28** comprises a rectangular box structure which is set into the joists **21** as shown in FIG. **1**. The garage structure is reinforced by a plurality of diagonals **37** laid on the joists for transmitting horizontal forces from the frame **28** to the top plate **22**. The diagonal braces **24** further transfer forces from the framework to the rafters of roof **12**. The end walls may be tied together by stringers **38** extending the length of the garage and tied to the end box braces **25** as best seen in FIG. **2**. The garage structure may be provided with conventional fore-and-aft diagonal bracing **39**, as shown in FIG. **3**. Thus, the forces generated by the weight of the structure being stored are transferred from the ridge beam **27** to the sidewalls **11** of the garage and the ceiling **16** is reinforced by the diagonals and longitudinal stringers to provide a rigid garage structure while yet accommodating the improved storage means. As will be obvious to those skilled in the art, other methods of reinforcing the garage structure to accommodate the opening **29** may be employed as desired.

Thus, in utilizing garage structure **10**, the user need merely bring the structure to be stored in the loft space **18**, such as boat **30**, to a position underlying the opening **29** on the garage floor **40**. Where the structure comprises a boat as shown in the drawings, the user provides suitable strap means **32** and support beam **33** for attachment to the hoist, or pulley, structure **31**, **34**. The boat structure **30** is then raised by suitable manipulation of the pulley to bring the boat structure **30** upwardly through opening **29** into the loft space **18**. When the structure **30** is raised to the desired point, which may be fully within the loft space above the level of ceiling **16**, or partially within the level of the space with the bottom portion thereof extending downwardly into the upper portion of the lower space **17** as shown in FIG. **2**, the user may secure the structure **30** in the storage position as by securing the cable end **36** to the cleat **35** as shown in FIG. **2**.

Structure **30** may be allowed to remain in the storage position as desired, such as over winter. Free access to the automotive vehicle storage space **17** is had at all times as the structure **30** is effectively disposed above the storage area **17**. When, however, it is desired to remove the structure **30** from storage, the user merely releases the cable end **36** from the cleat **35**, lowers the structure **30**, as onto a suitable trailer (not shown), permitting the structure then to be removed from the garage as desired.

By virtue of the improved reinforcement of the garage effected by the reinforcing diagonals and stringers, the garage may be arranged to support and store for protracted periods of time structures of substantial weight without deformation of the garage structure.

The foregoing disclosure of specific embodiments is illustrative of the broad inventive concepts comprehended by the invention.

I claim:

1. In a garage structure defining a lower portion arranged to house an automotive vehicle, said structure including an upper portion defined by a ceiling structure overlying said lower portion, and a roof structure spaced above said ceiling structure and defining therewith a loft space, auxiliary storage means comprising:

means defining an opening in said ceiling structure having a preselected horizontal cross section adapted to pass a structure intended to be stored in said loft space;

means carried by said roof structure for selectively raising and lowering said structure intended to be stored through said opening for selective storage thereof in a storage disposition in said loft space in alignment with said opening; and

means for releasably securing said last structure intended to be stored in said storage disposition.

2. The garage structure means of claim **1** wherein said securing means comprises means for locking said raising and lowering means.

3. The garage structure means of claim **1** wherein said means for raising and lowering said structure means comprises straps secured to said garage structure and extending under said structure to be stored.

4. The garage structure means of claim **1** wherein said securing means is arranged to retain said structure to be stored with a portion thereof disposed below the level of said ceiling structure.

5. The garage structure means of claim **1** wherein said garage roof structure includes a ridge beam and said raising and lowering means is carried by said ridge beam.

6. The garage structure means of claim **1** wherein said structure to be stored comprises a boat.