March 3, 1970 L. H. THOMAS 3,497,998

COMBINATION DOOR AND CANOPY

Filed July 31, 1968 2 Sheets-Sheet 1

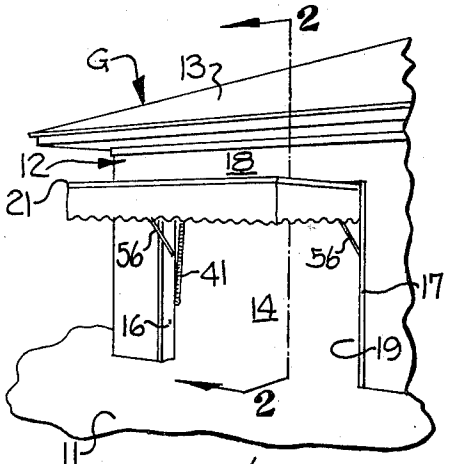


Fig-1

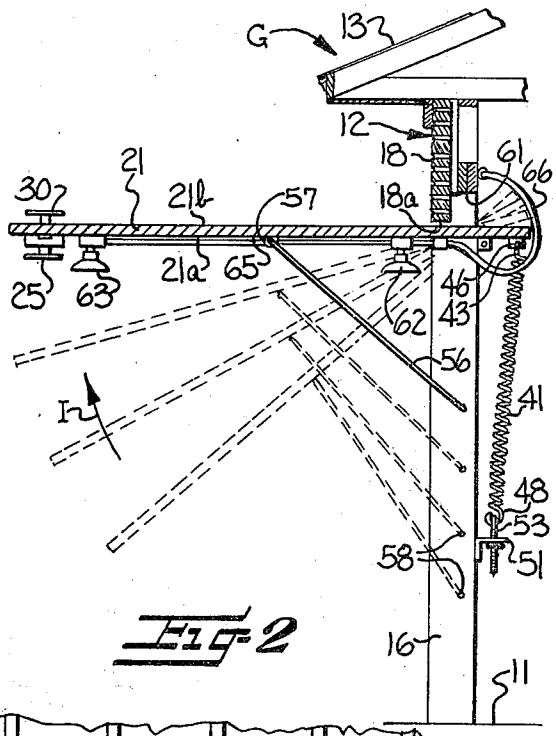


Fig-2

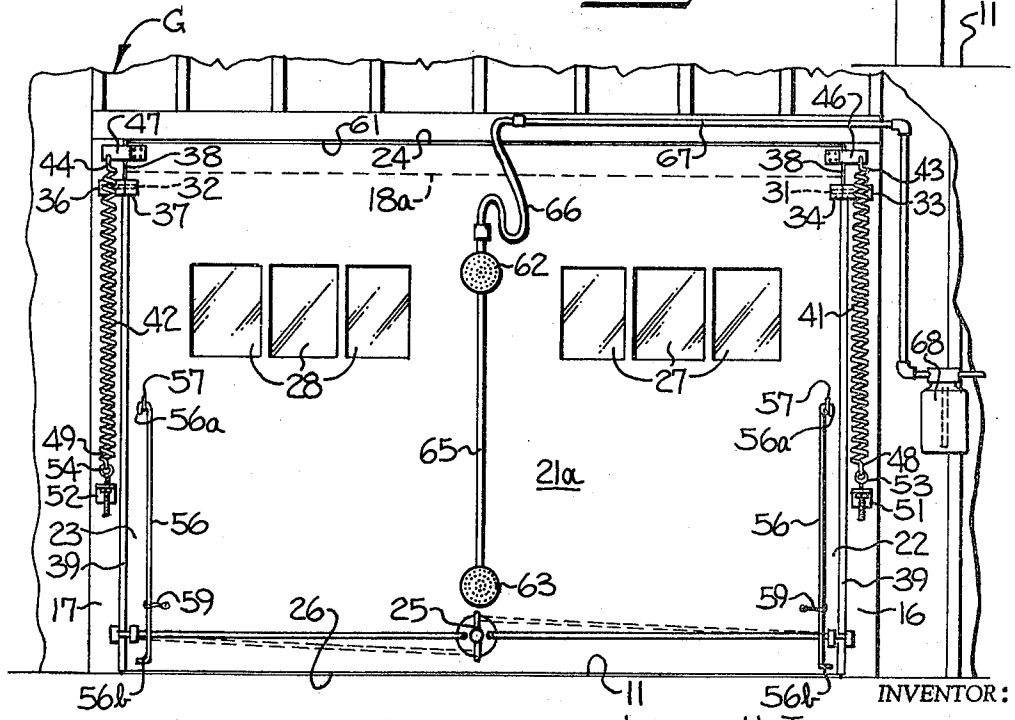


Fig-3

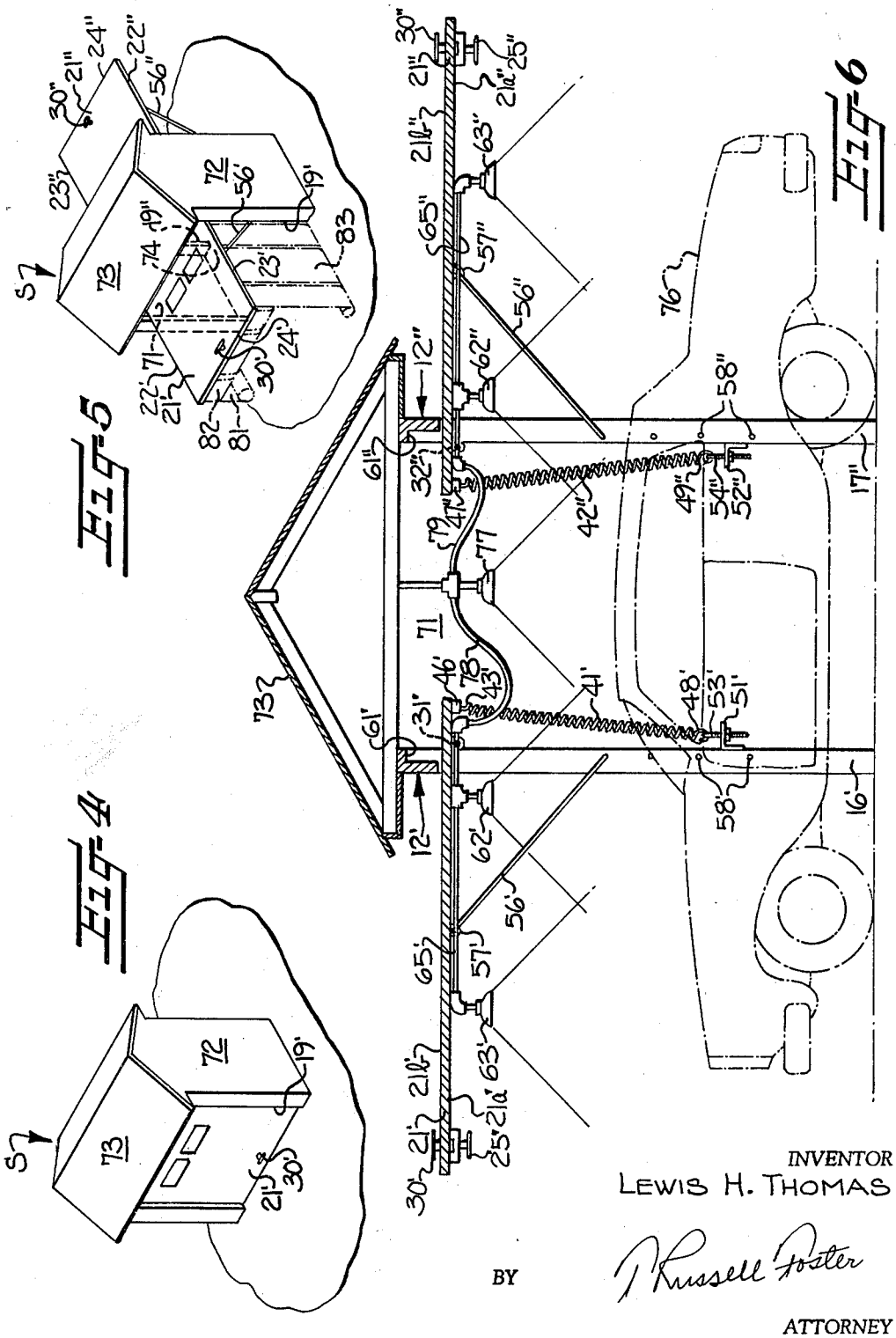
INVENTOR:
LEWIS H. THOMAS

BY J. Russell Foster
ATTORNEY

March 3, 1970 L. H. THOMAS 3,497,998

COMBINATION DOOR AND CANOPY

Filed July 31, 1968 2 Sheets-Sheet 2



United States Patent Office 3,497,998
Patented Mar. 3, 1970

3,497,998

COMBINATION DOOR AND CANOPY

Lewis H. Thomas, 804 Sloop St.,
Charleston, S.C. 29406

Filed July 31, 1968, Ser. No. 757,179
Int. Cl. E05d 15/00
U.S. Cl. 49—70 2 Claims

ABSTRACT OF THE DISCLOSURE

A frame structure such as the wall of a garage or the like having an opening in which is mounted a door for pivotal movement between a closed position and a substantially horizontally extending canopy position forwardly of the frame structure with spring means attached to the door and frame structure for yieldingly urging the door into the canopy position.

This invention relates to a building structure and more particularly to a combination door and patio roof for such a structure.

Many structures in use today and in particular residences are provided with storage facilities such as garages having a suitable opening to the exterior of the structure for egress and ingress. Such openings are generally provided with doors which when closed not only protect the property stored within the interior of the storage facility but permit the facility to be comfortably occupied regardless of external weather conditions or the like. Doors utilized to close garages in which vehicles are stored are commonly arranged for pivotal or slidable movement so that they may be readily opened and closed with relatively little physical exertion to allow for repeated movement of a vehicle such as an automobile into and out of such garages. While present day pivotally mounted garage doors generally functions satisfactorily. The mechanism which permits pivotal or sliding movement of the door between the open and closed position is somewhat complicated and expensive in construction as well as imposing somewhat of a physical strain on the operator during manipulation.

Garages, whether attached to or detached from residences, are generally well constructed and costly so that their interiors are generally of a minimum area in accordance with the number of vehicles arranged to be accommodate. Therefore, a considerable investment is generally involved in such garage constructions imposing a limitation on the supplemental uses to which such garage floor areas might be put by the homeowner. For instance, in periods of good weather it is frequency not necessary to store motor vehicles within such garages so that the garage interiors are available for activities such as home workshop projects, patio living and the like all of which activities are restricted somewhat by the available space. While it has been proposed to utilize such garage doors interchangeably as an outwardly extending canopy or roof, such proposed constructions generally involve either an entirely different construction for supporting the door from that used in conventional garage doors or otherwise substantial and expensive modifications must be made to existing doors before such present day door constructions may be so utilized.

Accordingly, a primary object of this invention is to provide a new and novel combination door and canopy.

Another object of this invention is to provide a new and novel door construction for a garage or the like which serves also as a canopy so as to extend the garage interior area for patio type living activity.

A further object of this invention is to provide a new and novel combination garage door and patio roof which

is movable automatically from a closed position outwardly from the garage into a canopy position and suitably maintained therein without risk of damage from wind and similar adverse conditions.

Still another object of this invention is to provide a new and novel combination door unit having an operating mechanism which is extremely simple and inexpensive in construction, requires only a minimum of space and which permits the door unit to be adapted to a wide variety of storage activities.

This invention further provides a new and novel combination door and canopy which permits most of the component parts of one type of widely used garage door to be utilized with a minimum of modification and which may be used either singly or in pairs to provide fluid dispensing facilities such as a shower for summertime use, for washing motor vehicles in combination with soap or wax dispensing if desired and which permits small detached structures to be used convertibly as either storage facilities or as a shelter such as a carport.

Other objects and advantages of the invention will become apparent from the following description taken in connection with the accompany drawings.

The objects stated above and other related objects are accomplished by providing an upstanding frame structure for association with a supporting surface with the frame structure having vertically extending side edge portions and a horizontally extending upper edge portion defining a door opening. A door is pivotally mounted on the side edge portions of the frame structure by pivot means connected to opposite sides of the door for pivotal movement of the door between a vertically disposed closed position in the opening and a substantially horizontally disposed canopy position with the major portion of the door extending outwardly from the frame structure. Spring means associated with each of the pivot means are provided which are connected at one end to the door between the pivot means and the door upper edge and at the other end to the frame structure below the pivot means for yieldingly urging the door into the canopy position.

The novel features which are believed to be characteristic of the invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and operation may be best understood by reference to the following description taken in conjunction with the accompanying drawings in which:

FIGURE 1 is a perspective view of the door of the invention in a canopy position;

FIGURE 2 is an enlarged sectional view of a portion of FIGURE 1 taken substantially along line 2—2 of FIGURE 1 in the direction of the arrows;

FIGURE 3 is an enlarged rear elevation view of the door of FIGURE 1 in the closed position;

FIGURE 4 is a perspective view of a modification of the invention showing the doors in the closed position;

FIGURE 5 is a view similar to FIGURE 4 showing the doors in the canopy position; and

FIGURE 6 is an enlarged longitudinal sectional view of the modification of FIGURE 5 illustrating the use of the invention for washing automobiles.

Referring now to the drawings and to FIGURES 1–3 in particular, the invention is shown incorporated with a garage G of conventional construction to form a combination garage door and patio roof or canopy. The garage G may be of any well-known construction either attached to or forming a part of a residence or the like, the ground on which the garage G is constructed forming a supporting surface 11.

As specifically illustrative of the invention, an upstanding frame structure is provided which in the illustrated embodiment comprises a forward wall, designated gen-

erally by the numeral **12**, and forming a portion of the garage G. As is well known, the frame structure or wall **12** defines with the other walls and the roof **13** of the garage G, an interior **14** for accommodating therein an automobile or the like, egress and ingress being permitted by the supporting surface **11**. Although the garage interior **14** is primarily for the temporary storage of an automobile, a common practice among homeowners is to utilize at least a portion of the garage interior **14** as a storage facility for lawn tools and the like and even as an area for workshop or play activities when the use of the garage for automobile storage is not required such as during the summertime when pleasant weather conditions exist.

The wall or frame structure **12** includes vertically extending side edge portions or jambs **16, 17** and a horizontally extending upper edge portion or head **18** which defines with the supporting surface **11**, a door opening **19**.

A substantially planar door **21** having an inner surface **21***a* and an outer surface **21***b* is provided which may be of any conventional construction formed from sheet metal, reinforced plastic, wood or the like for closing the door opening **19**. As shown best in FIGURE 3, the door **21** includes side edges **22, 23**, a top edge **24**, and a bottom edge **26**, and may be provided with windows **27, 28** of glass or the like suitably formed within the body of the door **21** for visibility, illumination and the like.

In FIGURE 3, the door **21** is shown in a vertically disposed closed position within the door opening **19** with the door side edges **22, 23** in close fitting relationship with the jambs **16, 17** respectively, the door upper edge **24** in closely spaced relationship with the head **18** and the door bottom edge **26** in closely spaced relationship with the supporting surface **11** so that the door **21** nests in closing relationship with the opening **19** in the vertically extended position of FIGURE 3.

Preferably handles **25, 30** are provided on the door inner and outer surfaces **21***a*, **21***b* respectively which are operatively connected in the well known manner to locking devices of conventional construction (not shown) for releasably locking the door **21** in the closed position.

Pivot means are provided for the door **21** which are mounted on opposite sides of the door adjacent each side edge **22, 23** and the upper edge **24** as well as on the associated side edge portions **16, 17** respectively of the frame structure **12** for pivotal movement of the door **21** between the vertically disposed closed position of FIGURE 3 and a substantially horizontally disposed canopy position with the major portion of the door **21** extending outwardly from the frame structure **12** as shown in FIGURES 1, 2. More specifically, pivot pins **31, 32** are provided on each side of the door **21** and the ends of the pins are supported in bearing members such as brackets or the like **33, 34** and **36, 37** suitably secured to the door adjacent each side edge **22, 23** and associated side edge portions **16, 17** of the frame structure **12** respectively adjacent the door upper edge **24** as shown.

The door **21** is thus supported for pivotal movement from the closed position of FIGURE 3 outwardly of the frame structure **12** into the canopy position as shown best in FIGURE 2 with a major portion of the door **21** extending outwardly from the frame structure **12** to form a canopy or roof over the supporting surface **11** in front of the garage G. In the preferred embodiment, weather stripping **38, 39** are provided on each of the side edge portions or jambs **16, 17** of the frame structure **12**. The stripping **38** extends from the pivot pins **31, 32** upwardly to the upper edge **24** of the door **21** and is preferably of the rubber gasket type which yieldingly engages the door edge so as not to restrict the inward movement of the door as it moves from the closed position to the canopy position. Stripping **39** extends downwardly from the pivot pins **31, 32** to the door bottom edge **26** and is preferably of the flexible metal type which slightly overlaps the door edge portions **22, 23** as the door moves into the closed position of FIGURE 3.

Spring means are associated with each of the pivot means for yieldingly urging the door **21** into the canopy position of FIGURE 2. More specifically, coil springs **41, 42** are provided on each side of the door **21**. The springs upper ends **43, 44** are attached to the door **21** by suitable means such as brackets **46, 47** above the pivot pins **31, 32** adjacent the door upper edge **24**. The lower ends **48, 49** of the springs **41, 42** respectively are secured to brackets **51, 52** suitably secured to the side edge portions **16, 17** respectively of the frame structure **12**. Preferably, the lower ends **48, 49** of the springs **41, 42** respectively are connected to the brackets **51, 52** by adjustable means such as externally threaded couplings **53, 54** so that the tension in the springs **41, 42** respectively may be adjusted in accordance with the weight of the door **21**.

The springs **41, 42** normally maintain the door **21** in the canopy position of FIGURES 1, 2 but in order to securely retain the door **21** in the canopy position or in a selected angular position between the closed position of FIGURES 3 and the canopy position, at least one bracing member is provided on at least one side of the door **21** for releasably interconnecting the door **21** with the frame structure **12**. More specifically, a bracing member or rod **56** is pivotally mounted at one end **56***a* by means such as a pivot **57** to each side of the door adjacent the door side edges **22, 23**. Suitable means such as a plurality of vertically spaced retaining apertures **58** are provided in the side edge portions **16, 17** of the frame structure **12** which selectively receive the lower end **56***b* of the rod **56** as as to securely retain the door **21** in the canopy position or in the selected angular position as shown in the solid line and dotted line positions of FIGURE 2. When not in use, the rod **56** may be pivoted against the inner surface **21***a* of the door **21** into a stored position and retained therein by means of a hook **59** or the like.

In the preferred embodiment, the horizontally extending portion or head **18** of the frame structure **12** has a lower edge **18***a* which is preferably positioned in closely spaced relationship with the outer surface **21***b* of the door **21** as shown in FIGURE 2 thereby reducing or eliminating substantially any gap between these surfaces. This relationship is obtained by the provision of a horizontally extending recess **61** in the inner surface of the head **18** as shown in FIGURE 2 which accommodates the upper edge portion **24** of the door **21** in the closed position of FIGURE 3. However, it should be understood that if desired this recess may be eliminated and the door top edge accommodated below the bottom edge of head **18** in the closed position of the door.

The door **21** is also preferably provided with at least one fluid dispensing device which is mounted on the inner surface **21***a* of the door **21**. This fluid dispensing device may be of any conventional form such as a shower head and two of such shower heads **62, 63** are preferably provided. In the illustrated embodiment, the dispensing devices **62, 63** are mounted in a row extending in substantially parallel relationship with the door side edges **22, 23** as shown best in FIGURE 3 but if desired the dispensing devices may be arranged in a staggered relationship. As shown in FIGURE 2, the shower heads **62, 63** which are preferably of the type which provide for angular adjustment of the spray and may be used in the canopy position for such purposes as car or boat washing, showering, etc.

The spray devices **62, 63** are connected to fluid conduit means which include a pipe **65**, a flexible conduit **66**, and a pipe **67** positioned on the inner wall of the frame structure **12** for supplying fluid such as water to the spray devices from a suitable source of fluid (not shown). Additionally, a dispenser **68** for cleansing fluid such as liquid soap, wax, or the like may be also provided in the pipe **67** so as to introduce the cleansing fluid or wax to the water flowing within the conduits **65–67** when the spray devices **62, 63** are to be used for cleansing or waxing purposes.

It will be noted that the flexible conduit **66** maintains fluid communication between the pipes **65, 67** in any position of the door **21**.

Referring now to FIGURES 4–6, there is shown a modification of the invention wherein like numerals are used to identify like parts. In the embodiment of FIGURES 4–6, a pair of frame structures **12', 12''** are provided which are arranged in aligned, spaced parallel relationship on an associated supporting surface **11'**. Preferably, the frame structures **12', 12''** are incorporated within a building or shed S provided with side walls **71, 72** and a roof **73** supported on the frame structures in overlying relationship therewith to define an interior **74**. The building S is preferably a detached structure in contrast with the garage G of the embodiment of FIGURES 1–3 and may be of the type commonly used in association with residential structures to provide storage facilities or the like.

Each of the frame structures or walls **12', 12''** is provided with a door opening **19', 19''** in aligned relationship in which are positioned doors **21', 21''** together with the associated parts identical to that of the embodiment of FIGURES 1–3 for pivotal movement of the doors between a closed position as shown in FIGURE 4 and a canopy position as shown in FIGURES 5, 6. However, the doors **21** are arranged to pivot outwardly in opposite directions and into substantially horizontal alignment in the canopy position to form with the roof **73** a continuous canopy for accommodating a vehicle **76** or the like. Thus, the building S may be used as a storage facility, access to the interior **74** being permitted by either of the doors **21', 21''**.

In the canopy position of FIGURES 5, 6, the doors **21', 21''** together with the roof **73** form what is generally referred to as a "carport" for protecting the vehicle **76** against inclement weather as well as providing washing or waxing facilities for the vehicle as shown best in FIGURE 6. Preferably, an additional fluid dispensing device **77** is suitably suspended from the roof **73** being connected by suitable conduit means (not shown) to an associated fluid source which is also connected by flexible conduits **78, 79** to the spray devices or shower heads **62', 63'** and **62'', 63''** of each of the doors **21', 21''**.

In either the embodiment of FIGURES 1–3 or the embodiment of FIGURES 4–6, suitable curtains or the like may be provided in association with the doors to enclose the area under the doors in the canopy position. Such an arrangement is shown in phantom in FIGURE 5 wherein roll-type curtains **81–83** are detachably mounted on the edge portions **21', 26'** and **23'** of door **21'**, curtain **83** being shown in the draped position. It should be understood that similar curtains may be provided on the other door **21''** to provide a totally enclosed area.

In the operation of the invention, the door may be pivoted to the closed position of FIGURE 3 either by simply pushing on the door or by using either handle **30** on the door outer surface **21*b*** or handle **25** on the inner surface **21*a*** of the door **21** against the urging action of the springs **41, 42** whereby the door is positioned in a substantially vertical closing position in the opening **19** and locked therein with the top edge portion **24** of the door nesting within the notch **61** in the head **18** of the frame structure **12**.

When the door **21** is to be moved to the open or canopy position, the locking devices (not shown) are released by manipulation of one of the handles **25, 30** and the door pivots upwardly in the direction of the arrow I in FIGURE 2 under the urging action of the springs **41, 42** so that the door is moved into the canopy position of FIGURES 1, 2 and maintained therein by the springs. Since, in the canopy position of FIGURE 2, the major portion of the door **21** extends outwardly from the frame structure **12**, a canopy or roof is provided over the supporting surface **11** adjacent the garage G thereby extending the sheltered area of the garage interior **14** for patio type activities or the like.

The bracing members **56** may now be used if desired in the event of high winds or the like where a more sturdy support of the door **21** is obtained by disengaging the bracing members **56** from the retaining hooks **59** and engaging the bracing members or rods lower ends **56*b*** in one of the apertures **58**. It will be noted that the upper aperture **58** is for bracing the door in the canopy position with the door being supported in an intermediate angular position by selective engagement with the additionally provided apertures **58** in the frame structure **12**.

With the door **21** in the canopy position of FIGURE 2, the spray devices **62, 63** may be actuated by suitable valve (not shown) to spray water alone or in combination with cleansing material, wax, etc., introduced into the conduits **65–67** from the receptacle **68** thereby providing a boat or car washing or waxing facility, shower facilities for beach and hot weather use or the like.

It can be seen that there has been provided with the novel arrangement of this invention an extremely simple arrangement by means of which a pivotally mounted door may be pivoted from a closing position to a canopy position and back again, the pivotal movement into the canopy position automatically obtainable by the action of springs connected to the doors. In the canopy position, the major portion of the door is extended outwardly from the supporting structure so that considerable covered area may be provided adjoining the area behind the door opening making the invention ideally suitable for a combination garage and patio facility. An outstanding feature of the invention is the easy adaptation of a conventional type of pivotally mounted doors presently installed on residential garages and the like with the addition of only a few inexpensive component parts thereby greatly extending the value and usefulness of such present installations. It will be noted that the invention requires very little space behind the door opening thereby permitting the door to be readily adapted to any type of storage facilities such as trucks, warehouses, relatively shallow enclosures in combination with residences, etc. Furthermore, the fluid dispensing arrangement employed in combination with the door construction further extends the usefulness of the invention since it may also be used for a multitude of operations such as boat or car washing and waxing, showering and the like.

While there has been provided what at present is considered to be the preferred embodiment of the invention, it will be understood by those skilled in the art that various changes and modifications may be made therein without departing from the invention and, therefore, it is the aim of the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

Having thus described the invention, what is claimed is:

1. A combination door and canopy comprising, in combination, at least one upstanding frame structure for association with the supporting surface, said frame structure having vertically extending side edge portions and a horizontal extending upper edge portion defining with said supporting surface at least one substantially planar door having side edges and top and bottom edges for closing said door opening, pivot means mounted on opposite sides of said door adjacent each side edge and upper edge of said door and on the associated side edge portion of said frame structure for pivotal movement of said door between a vertically disposed closed position in said door opening and a substantially horizontally disposed canopy position with the major portion of said door extending outwardly from said frame structure, spring means associated with each of said pivot means inwardly of said frame structure for yieldingly

urging said door into said canopy position, said spring means having an upper end connected to said door above said pivot means and adjacent said door upper edge and a lower end connected to the associated frame structure side edge portion below said pivot means and at least one fluid dispensing device mounted on the inner surface of said door and fluid conduit means connected to said dispensing device for conducting fluid to said dispensing device from an associated fluid source.

2. A combination garage door and patio roof in accordance with claim 1 wherein a pair of said upstanding frame structures are provided which are arranged in aligned spaced parallel relationship on said associated supporting surface, a roof supported on said frame structure in overlying relationship therewith, each of said frame structures having vertically extending side edge portions and a horizontally extending upper edge portion defining with said supporting surface a door opening, a substantially planar door having side edges and top and bottom edges for closing each of said door openings, pivot means mounted on opposite sides of each of said doors adjacent each side edge and upper edge of said doors and on the associated side edge portions of said frame structures for pivotal movement of said doors between a vertically disposed closed position in said door openings and a substantially horizontally disposed canopy position with a major portion of said doors extending outwardly from said frame structure in opposite directions and in substantially horizontal alignment to form with said roof a continuous canopy for accommodating a vehicle, boat or the like and spring means associated with each of said pivot means inwardly of each of said frame structures for yieldingly urging said doors into said canopy position, said spring means having an upper end connected to each of said doors between pivot means and each of said door upper edge and a lower end connected to the associated frame structure side edge portions below said pivot means and wherein at least one fluid dispensing device is mounted on the inner surface of each of said doors, and fluid conduit means connected to said dispensing devices for conducting fluid from an associated fluid source to said dispensing devices.

References Cited

UNITED STATES PATENTS

1,307,726	6/1919	Cropper	160—77
2,973,561	3/1961	Jackson	49—149 X
3,038,481	6/1962	Brechtel	134—123 X
3,044,540	7/1962	Hammersley	160—40 X
3,265,087	8/1966	Livingston	239—209 X
3,368,571	2/1968	Honorof	134—123 X

FOREIGN PATENTS

228,126	5/1960	Australia.

DENNIS L. TAYLOR, Primary Examiner

U.S. Cl X.R.

49—197