Oct. 12, 1965 T. V. PETTY 3,210,783

WATER VEHICLE

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FIG. 5

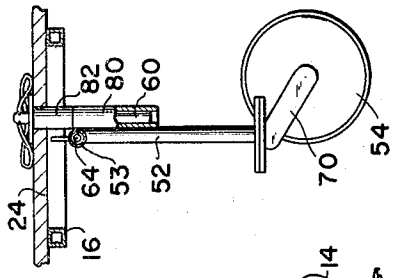


FIG. 1

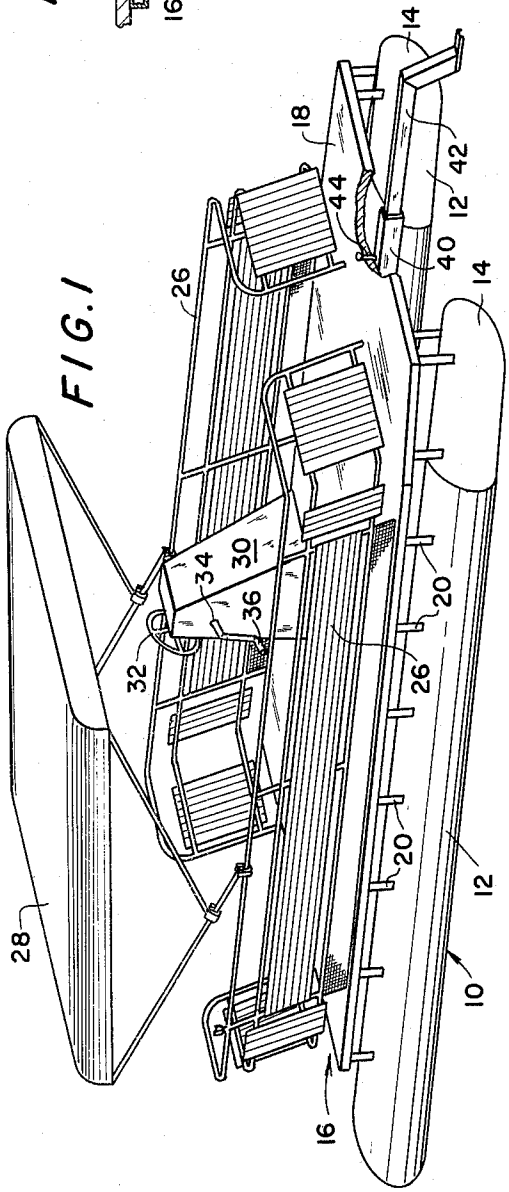
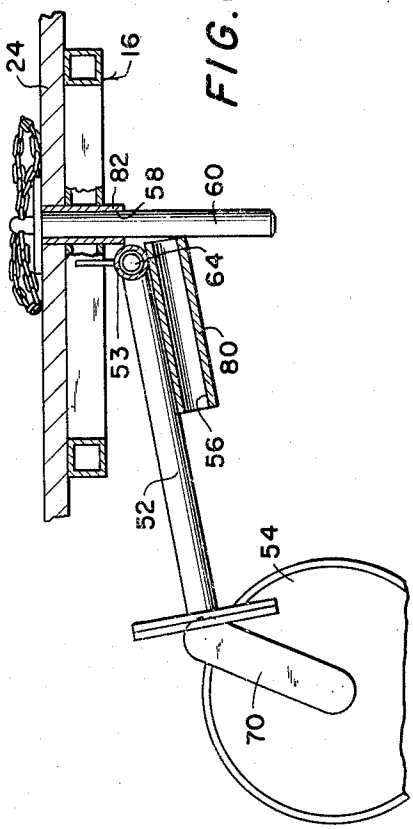


FIG. 6



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WATER VEHICLE

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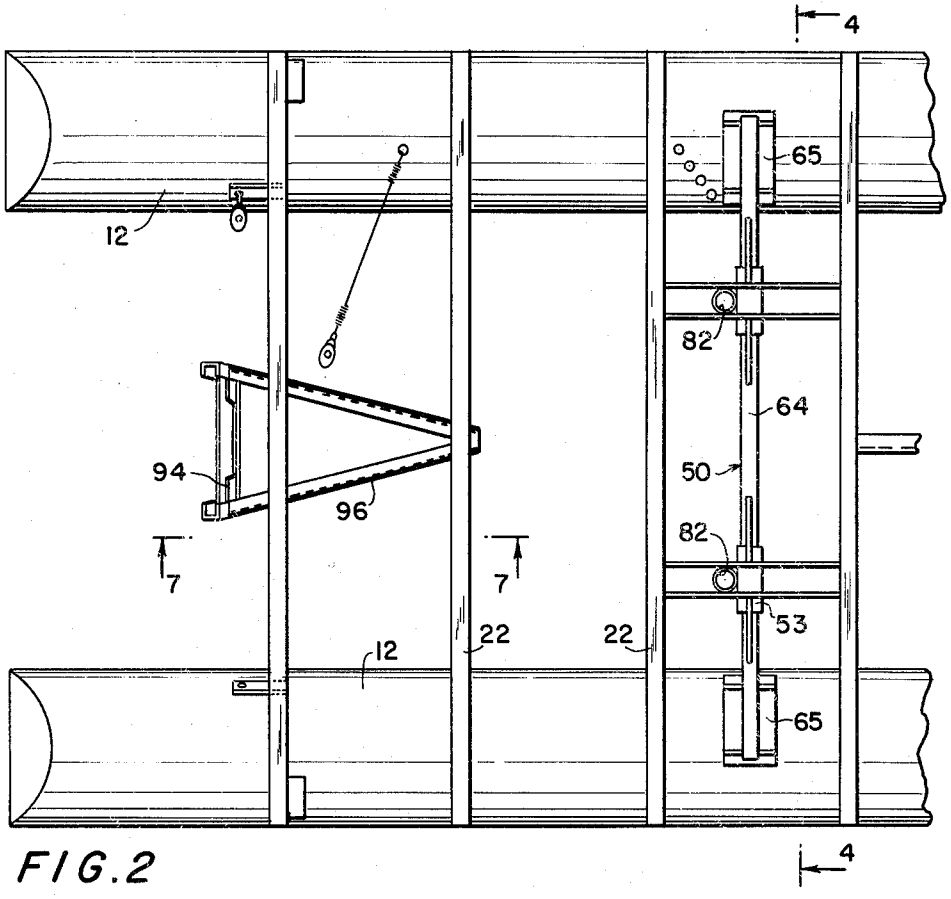


FIG. 2

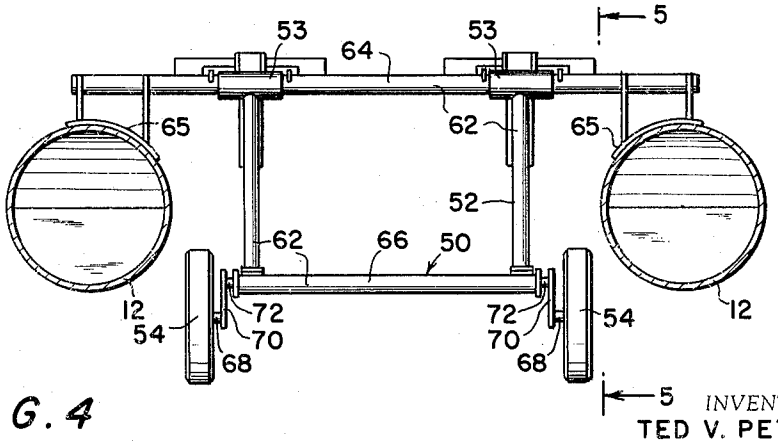


FIG. 4

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WATER VEHICLE

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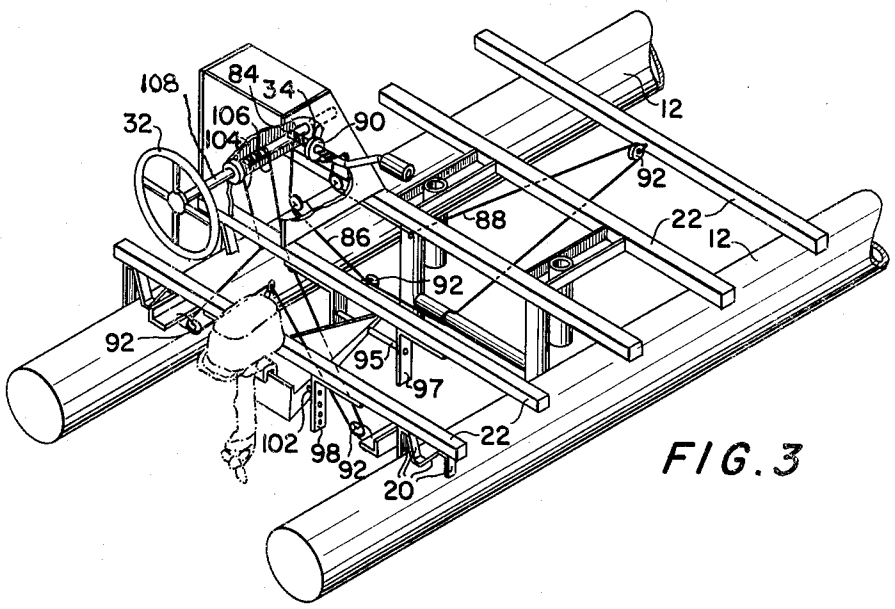


FIG. 3

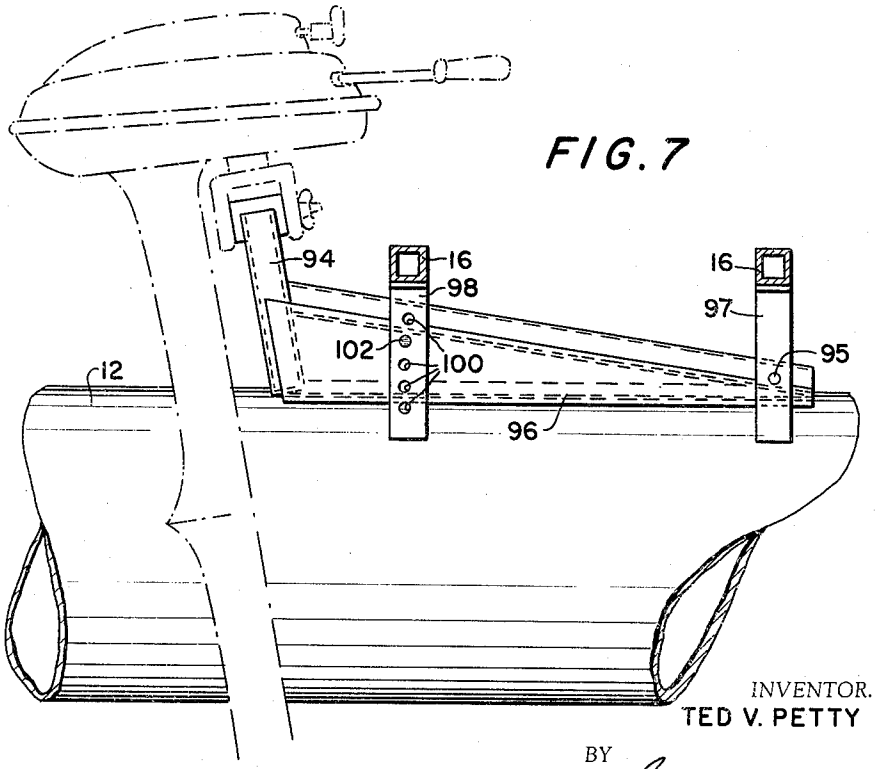


FIG. 7

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3,210,783

WATER VEHICLE

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Filed Feb. 25, 1964, Ser. No. 347,193
10 Claims. (Cl. 9—1)

The present invention relates to water vehicles and more particularly to pontoon boats or catamarans which are provided with an adjustable mount for an outboard motor to propel the vehicle through water and/or with a wheel mechanism movable to an operative position in which it is capable of supporting the vehicle for towing on land and to a retracted or inoperative position in which it offers minimum resistance to propulsion of the vehicle through water.

The invention will be described and illustrated in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view of the vehicle looking down from the bow and starboard with a part of the deck broken away to show framework details;

FIG. 2 is a fragmentary plan view of the stern portion of the vehicle with the deck removed to show details of the framework structure;

FIG. 3 is a fragmentary perspective view of the stern portion of the vehicle looking down from the stern and starboard with deck removed to show control moving parts;

FIG. 4 is a section on the line 4—4 of FIG. 2;

FIG. 5 is a section on the line of FIG. 5—5 of FIG. 4;

FIG. 6 is a view on the line 5—5 with the wheel in raised position; and

FIG. 7 is a fragmentary view on the line 7—7 of FIG. 2 with the outboard motor indicated in outline mounted on the adjustable transom.

Referring now more particularly to FIG. 1 the water vehicle or catamaran **10** comprises two spaced pontoons **12** of any desired construction, e.g., air-tight sheet metal cylinders with somewhat conical bow sections **14** to minimize the water resistance during forward movement of the vessel. Secured to the pontoons **12** is a framework **16** including an elongated deck **18**. The framework as illustrated comprises a plurality of struts **20** (FIG. 2) supporting cross beams **22** to which decking **24**, e.g., deck planks, are fastened in any desired manner. Guard rails **26** are provided at each side of the deck and a sun shade **28** may also be provided if desired. At an intermediate position fore and aft and toward one side is a control standard or box **30** on the stern side of which a wheel **32** is rotatably mounted for steering the craft in water by means described hereinafter and on another side of which a windless **34** having a crank **36** is also rotatably mounted for a purpose to be explained hereafter.

Midway between the pontoons **12** adjacent to the bow a tow bar tube **40** is suitably secured to the framework **16** below the deck to receive a tow bar **42** removably locked in place by a pin **44** passing through aligned holes in the deck, the tube **40** and the bar **42**. By removing the pin **44**, the bar **42** can be pulled from the tube **40**, if desired, so that it does not interfere with the operation of the boat in water. It can then be replaced and locked in the tube **40** by the pin **44** for attachment to an automobile or the like for towing on land.

A wheel mechanism **50** is provided which is movable to an operative position, in which it is capable of supporting the vehicle for towing on land, e.g., substantially at right angles to the deck, and to a retracted or inoperative position, e.g., substantially parallel to the deck, in which it offers minimum resistance to movement or propulsion of the boat through water. In general the wheel mechanism includes an arm **52** pivoted at one end to the framework **16**, a wheel **54** rotatably mounted in any suitable

manner on the other end of the arm and cooperating tubular recesses **56** and **58** formed by walls in the pivoted end of the arm and in the adjacent framework, respectively, and a pin or bolt **60** slidable in the two recesses to lock the wheel mechanism in operative position, and in one of them, e.g., **58**, to lock the wheel mechanism in inoperative position by extending an end outside the recess where it engages some part of the other, e.g., the wall surrounding recess **56**, which serves as a stop.

In the embodiment of the invention illustrated in the drawings the wheel mechanism comprises a tubular frame **62** having a top bar **64** secured in brackets **65** to the pontoons **12**, two side arms or legs **52** pivoted to **64** by fittings **53**, and a brace **66** connecting the arms adjacent to the free ends thereon on which two wheels **54** are rotatably mounted by any suitable means, e.g., a stub axle or shaft **68** provided with ball bearings (not shown) for the wheel, a link **70** to which an end of the axle **68** is secured adjacent to one end, a shaft **72** rotatably mounted in cross brace **66** secured adjacent to the other end of link **70** and spring means (not shown) in tube **66** biasing the wheel strongly in a counterclockwise direction, as seen in FIG. 5, to absorb shocks in road travel by a sort of knee action with which those skilled in the art are fully familiar.

The top bar **64** is secured between the two pontoons transversely of the deck slightly back of the center of gravity of the craft so that the tow bar **42** always exerts a downward component of force on the trailer hitch (not shown) on the automobile bumper or other towing vehicle in accordance with usual trailer practice.

The tubular recess **56** in the wheel mechanism may be formed in the tubular arm **52** itself but preferably a section of pipe **80** of somewhat larger diameter than the arm **52** is welded or otherwise secured to the wheel structure just at one side of the pivot axis, i.e., out of vertical alignment with the axis of the pivot, as seen in FIGS. 5 and 6. A similar length of pipe **82** is welded or otherwise secured in the framework **16** in axial alignment with the pipe section **80** in the operative position of the parts and with its upper end flush with the top of the deck so that a pin or bolt **60** dropped into pipe **82** from above deck will pass into pipe **80** and thus rigidly lock the wheel mechanism against movement relative to the framework **16** as long as the pin remains so disposed in both aligned recesses as shown in FIG. 5. The same pin serves to hold the wheel mechanism in its inoperative position, to which it can be moved when pin **60** is withdrawn, by dropping the pin back in recess **58** where it now engages the adjacent end of pipe **80** as seen in FIG. 6. Any desired number of such recesses and pins may be provided, two being specifically shown in the illustrated embodiment.

Any suitable means may be provided for moving the wheel mechanism **50** from one position to another. The particular means illustrated comprises the windlass **34** on the shaft **84** of which cables **86** and **88** may be wound and unwound by rotating the crank **36**. In order to prevent the cables from tangling one with the other a separating disc **90** may be provided. Cable **86** which has one end secured to the windlass **34** passes through a suitable number of eyes or pulleys **92** on the framework and pontoons to one side of the wheel mechanism **50**, preferably near the free end thereof, e.g., to one side of brace **66** where the other end is fastened. Also cable **88** has one end secured to the windlass and passes through similar eyes **92** to the other side of the wheel mechanism, e.g., to the other side of brace **66** where its other end is fastened. This arrangement of parts operates to raise and lower the wheel mechanism by turning the windlass **34** in one direction or the other when pin **60** is in unlocking position.

The vessel may be propelled through the water by any suitable means, e.g., an outboard motor for which provision is made by a transom **94** on the stern end of a scoop **96** which is pivoted by a pin **95** at its bow end to brackets **97** secured to the framework **16**, preferably centrally between the pontoons **12** adjacent to the stern of the framework. Means are provided for holding the transom in a desired position of adjustment relative to the framework **16**, depending upon the displacement of the pontoons **12** in the water, e.g., a pair of angle brackets **98** secured to the framework **16** with their vertical legs adjacent to the sides of the scoop **96** and having a series of holes **100** formed on an arc around the pivot pin **95** as a center through any selected pair of which a pin **102** may be placed through aligned holes in the scoop to hold it in this position of vertical adjustment.

The craft is steered by turning the outboard motor in customary way about its axis and the means for doing this illustrated in the drawing comprises the steering wheel **32** and a pair of cables **104** and **106**. Both cables have one end secured to and wound around the shaft or drum **108** of the steering wheel **32** in opposite directions so that when the wheel is turned one of them winds on and the other winds off the drum. The cable **104** passes through suitably placed eyes or pulleys **92** to one side of the outboard motor while cable **106** passes through other suitably placed eyes or pulleys **92** to the other side. Then by turning wheel **32** the outboard motor is also turned to steer the craft.

While the invention has been described and illustrated in connection with the best embodiments presently designed it is readily apparent to those skilled in the art that variations and modifications can be made without deviating from the spirit and scope of the invention as set forth in the following claims. Thus, for example, the wheel mechanism **50** may comprise a single arm, somewhat in the shape of an I in which the upper cross arm provides the pivot and the lower cross arm is a long enough shaft for a pair of wheels spaced far enough apart to be stable against overturning of the boat when it is towed.

Having thus described an illustrated the invention, what is claimed is:

1. An amphibious vehicle comprising:

(A) a structure capable of floating in and movement through water,

(B) a wheel mechanism movable to an operative position, in which it is capable of supporting the vehicle on land for towing, and to an inoperative position, in which it offers minimum resistance to propulsion through water, and

(C) means for locking said wheel mechanism selectively in each position comprising a wall forming a tubular recess on said wheel mechanism and another wall forming a tubular recess on said structure in alignment with the recess in said wheel mechanism in the operative position and out of alignment with the same in the inoperative position and a pin slidable in said tubular recesses adapted to lock the wheel mechanism

(a) in operative position when positioned in both recesses and

(b) in inoperative position when positioned in one of them with an end extending outside the recess.

2. An amphibious vehicle comprising:

(A) a structure capable of floating in and of being propelled through water and

(B) a wheel mechanism movable to an operative position, in which it is capable of supporting the vehicle on land for towing, and to a retracted position of minimum resistance to propulsion of the vehicle through water, including:

(1) an arm pivoted at one end to said structure having a tubular recess at that end,

(2) a wheel rotatably mounted on the other end of said arm,

(3) means forming a tubular recess in said structure aligned with the tubular recess in said arm when the wheel mechanism is in operative position, and

(4) a pin slidable in said tubular recesses adapted to lock the wheel mechanism

(a) in operative position when positioned in both of them and

(b) in retracted position when positioned on one of them with an end extending outside that recess.

3. An amphibious vehicle as set forth in claim **2** in which said wheel mechanism includes

(5) means for moving it to and from its operative and retracted positions.

4. An amphibious vehicle as set forth in claim **2** which includes

(C) a transom adapted to support an outboard motor for propelling the vehicle through water.

5. An amphibious vehicle comprising:

(A) a catamaran including:

(1) a pair of pontoons and

(2) a framework including an elongated deck securing said pontoons in spaced relation below and adjacent to the sides of said deck; and

(B) a wheel mechanism movable to an operative position for support of the boat on land for towing and to a retracted position in which it offers minimum resistance to propulsion of the vessel through water, including:

(1) two spaced arms, each arm being pivoted at one end to said framework between said pontoons and having a tubular recess at that end,

(2) a wheel rotatably mounted on the other end of each of said arms,

(3) means forming two tubular recesses in said framework, each aligned with the tubular recess in one of said arms when the wheel mechanism is in operative position, and

(4) a pin slidable in each pair of aligned tubular recesses adapted to lock the wheel mechanism selectively in operative and retracted positions.

6. An amphibious vehicle as set forth in claim **5** in which said wheel mechanism includes:

(5) means for moving it to and from its operative and retracted positions.

7. An amphibious vehicle as set forth in claim **5** in which there is also

(C) a transom secured to said framework below said deck adjacent to its stern adapted to support an outboard motor for propelling the vehicle through water.

8. An amphibious vehicle as set forth in claim **7** in which said transom is pivoted to said framework adjacent to its fore end and is provided with means to position its stern end on which it is adapted to support said motor at selected positions of vertical adjustment.

9. An amphibious vehicle comprising:

(A) a catamaran including:

(1) a pair of pontoons and

(2) a framework including an elongated deck securing said pontoons in spaced relation below and adjacent to the sides of said deck; and

(B) a tubular frame having a top bar, two side legs, and a brace, and being provided with a pivot relative to said framework below said deck and between said pontoons transversely of said deck,

(C) a wheel rotatably mounted on the free end of each said leg,

(D) a length of pipe secured to said frame out of vertical alignment with the axis of the pivot to form a tubular recess,

(E) a length of pipe secured to said catamaran to form a tubular recess aligned with the tubular recess on said frame when the frame is in its operative position substantially at right angles to said deck, and

(F) a pin slidable in said pipes adapted to lock the wheels

(1) in operative position when positioned in both of them and

(2) in retracted, position when positioned in one of them with an end extending outside that pipe into engagement with adjacent end of the other pipe.

10. An amphibious catamaran comprising two spaced pontoons and a framework including a deck connected thereto, a transom secured to and extending transversely of said framework below and behind the stern of said deck so that a person on the deck may have easy access to an outboard motor mounted on said transom, a wheel frame pivoted transversely to said framework, a control standard on said deck, a steering wheel on said control standard, cables connected to said steering wheel at one end and adapted to be connected to an outboard motor on said transom at the other end so that rotation of said

wheel moves said outboard motor to steer the catamaran, a windlass on said control standard, cables connected to said windlass and to said wheel frame remote from said pivot so that rotation of said windlass in one direction moves said frame to a retracted position substantially parallel to said framework and in the opposite direction to operative position substantially at right angles to said framework and means selectively to lock said wheel frame in operative and retracted positions.

References Cited by the Examiner

UNITED STATES PATENTS

2,588,084	3/52	Bushfield	9—1
2,748,740	6/56	Villar	9—1
2,759,201	8/56	McKinney	9—1
2,950,699	8/60	Ogden et al.	114—61
3,101,692	8/63	Snow	114—61
3,114,157	12/63	Stockmann	114—61 X

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