Sept. 26, 1933. M. F. QUIGLEY 1,927,952

AMPHIBIAN, FISHING, LIFE SAVING, AND TRANSPORTING DEVICE

Filed Sept. 8, 1932 8 Sheets-Sheet 1

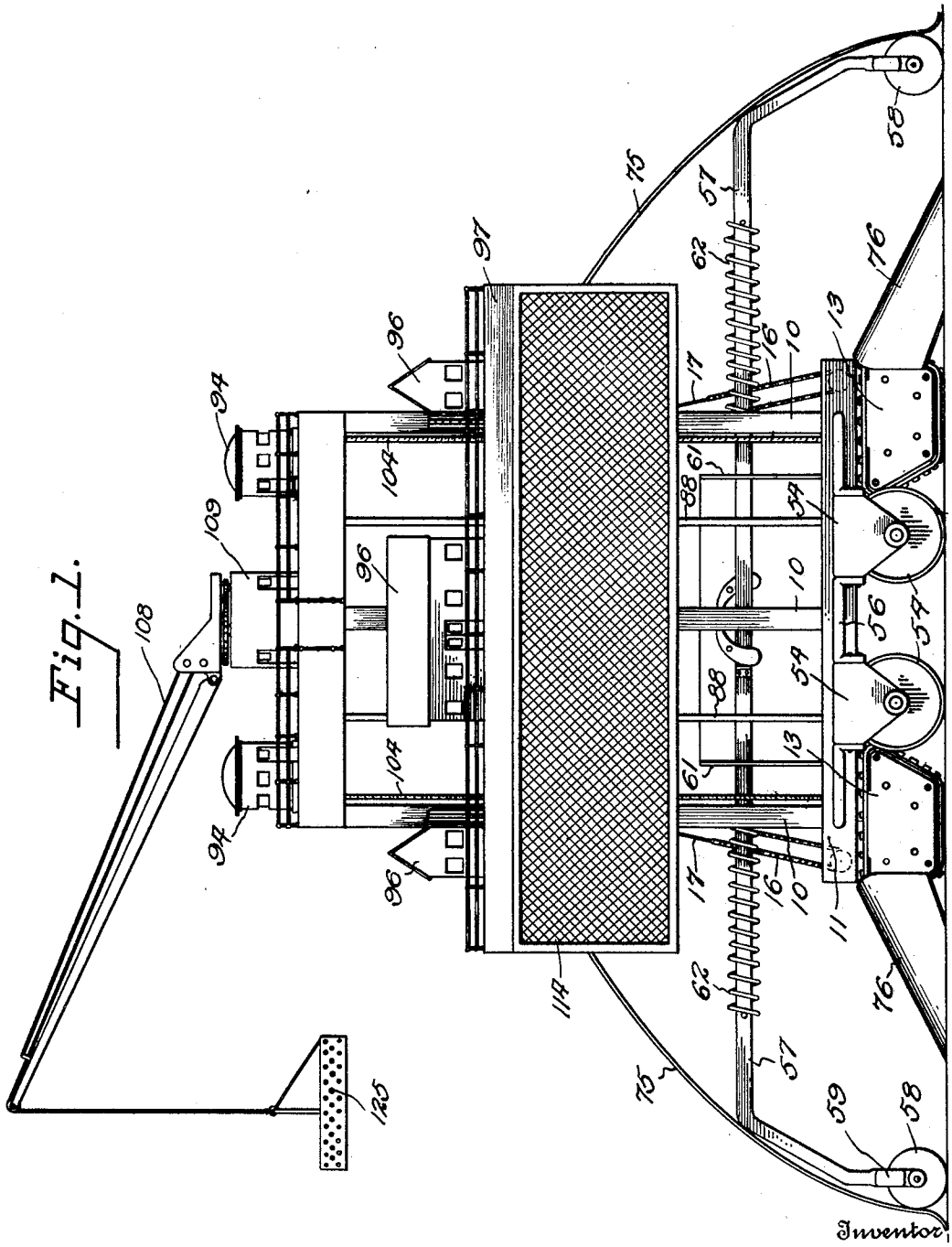


Fig. 1.

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AMPHIBIAN, FISHING, LIFE SAVING, AND TRANSPORTING DEVICE

Filed Sept. 8, 1932 8 Sheets-Sheet 2

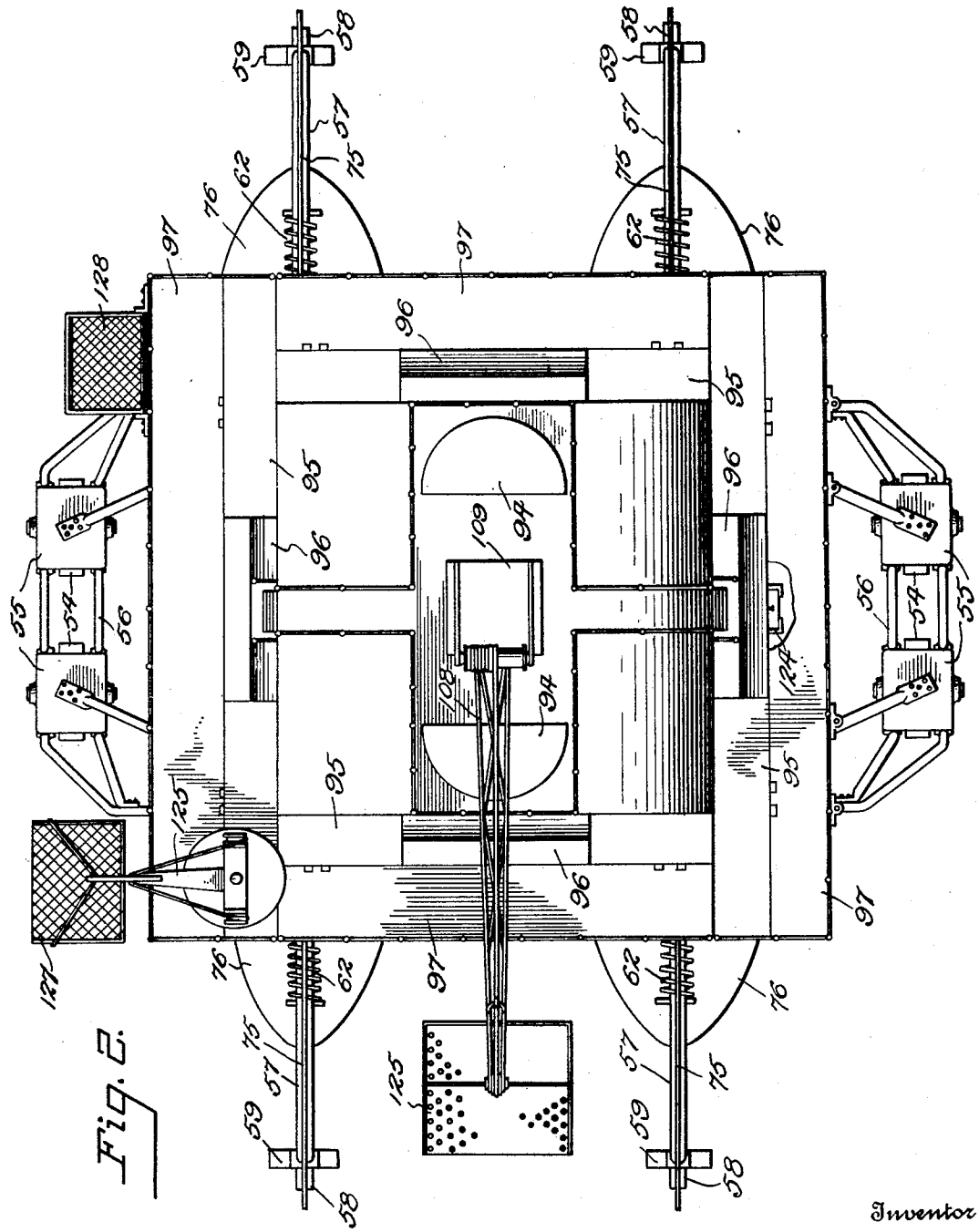


Fig. 2.

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AMPHIBIAN, FISHING, LIFE SAVING, AND TRANSPORTING DEVICE

Filed Sept. 8, 1932 8 Sheets-Sheet 3

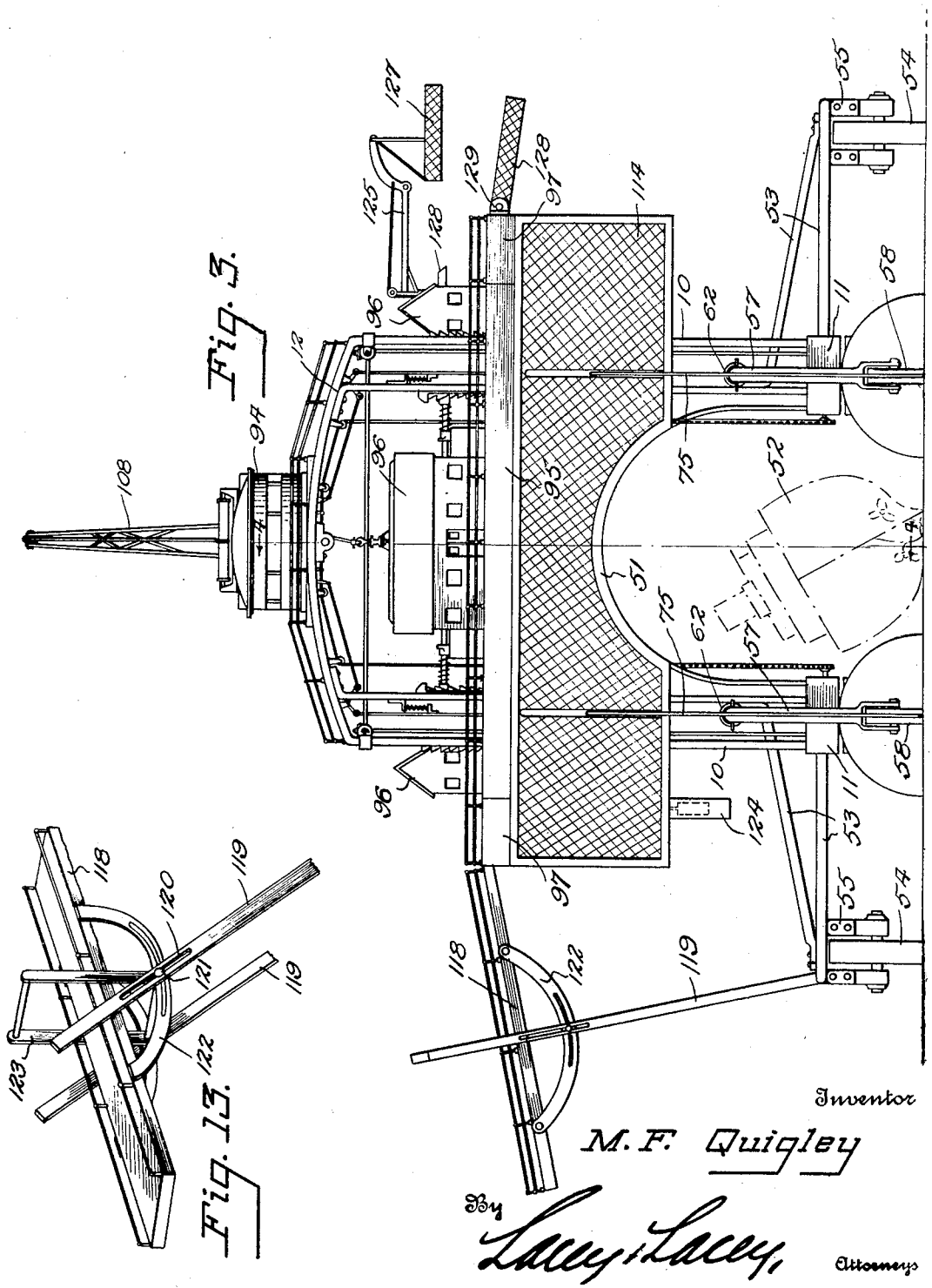


Fig. 13.

Inventor

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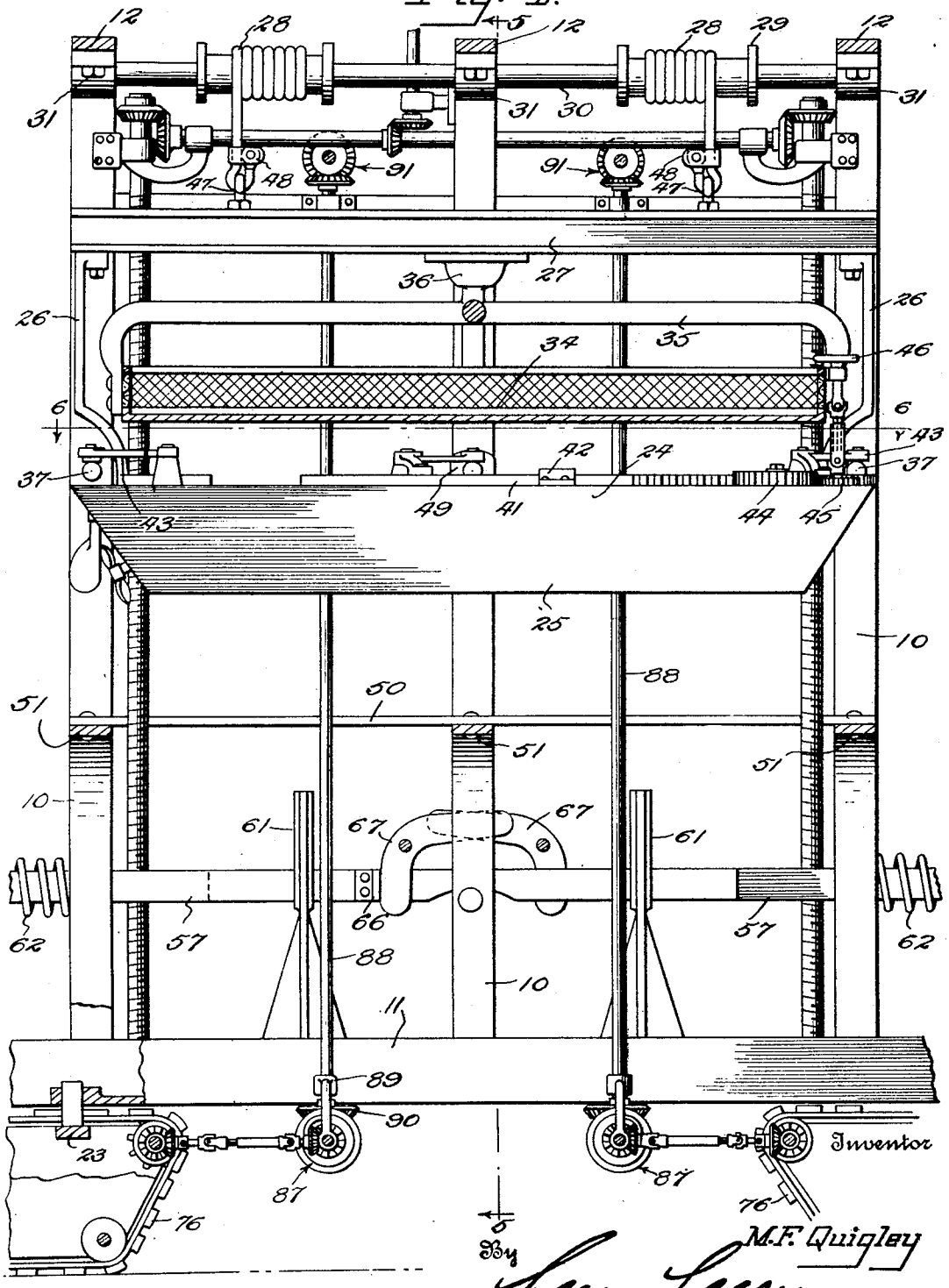
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Sept. 26, 1933. M. F. QUIGLEY 1,927,952

AMPHIBIAN, FISHING, LIFE SAVING, AND TRANSPORTING DEVICE

Filed Sept. 8, 1932 8 Sheets-Sheet 4

Fig. 4.



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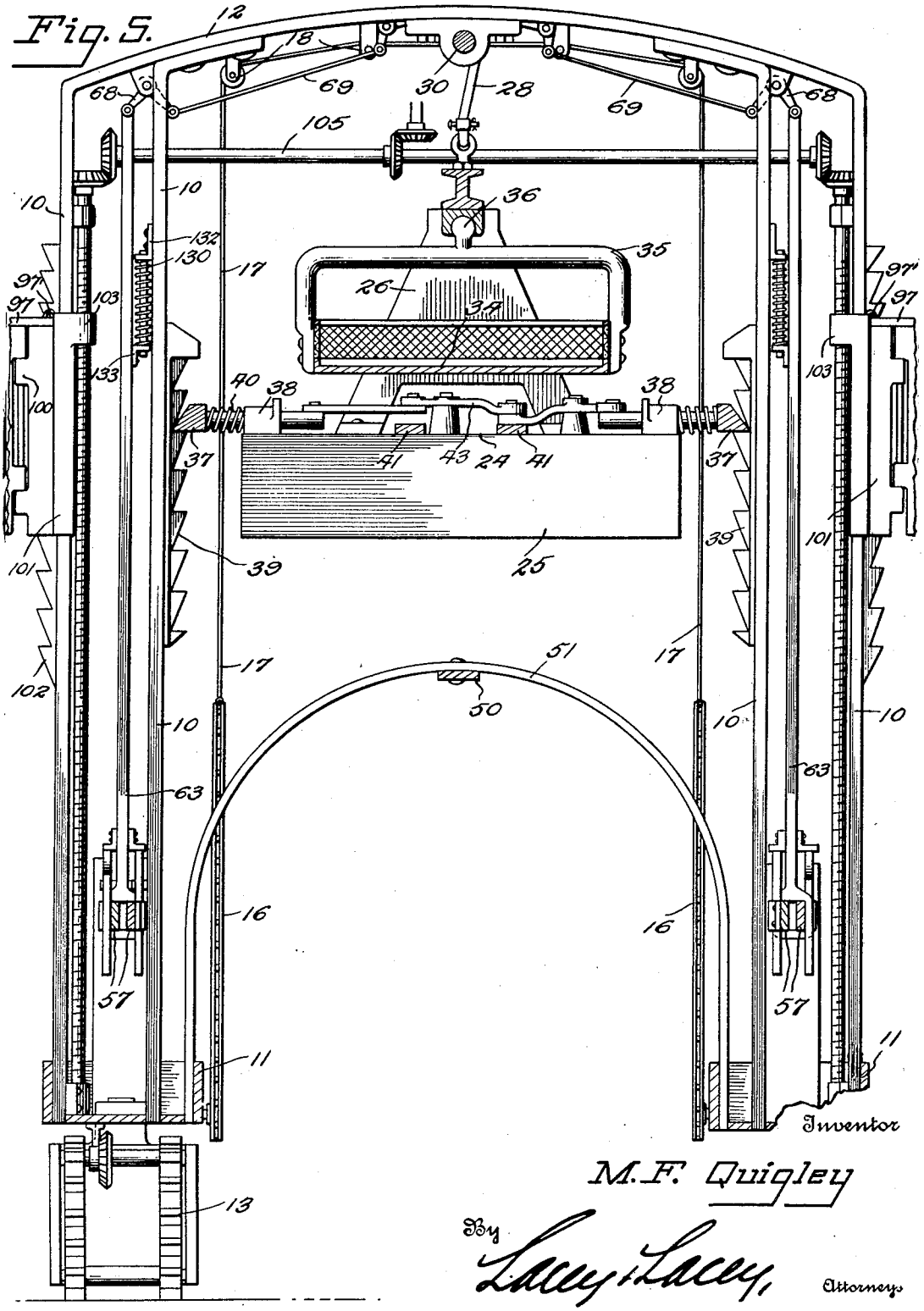
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AMPHIBIAN, FISHING, LIFE SAVING, AND TRANSPORTING DEVICE

Filed Sept. 8, 1932 8 Sheets-Sheet 5

Fig. 5.



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AMPHIBIAN, FISHING, LIFE SAVING, AND TRANSPORTING DEVICE

Filed Sept. 8, 1932 8 Sheets-Sheet 6

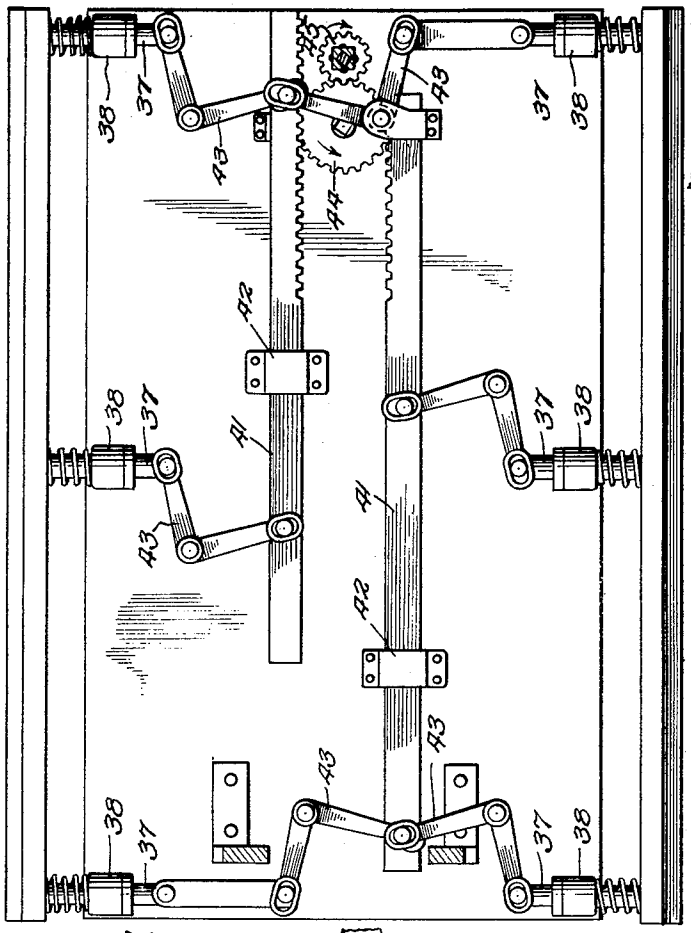


Fig. 6.

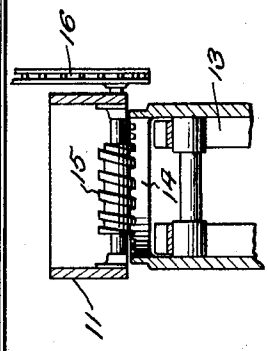


Fig. 9.

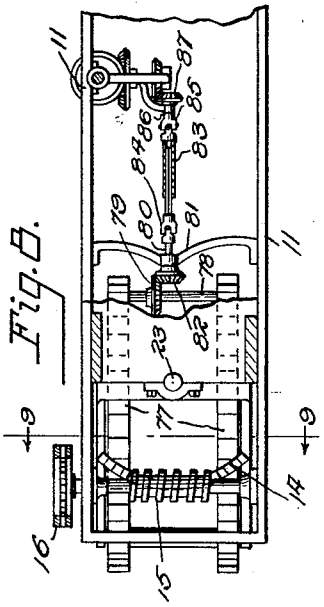


Fig. 8.

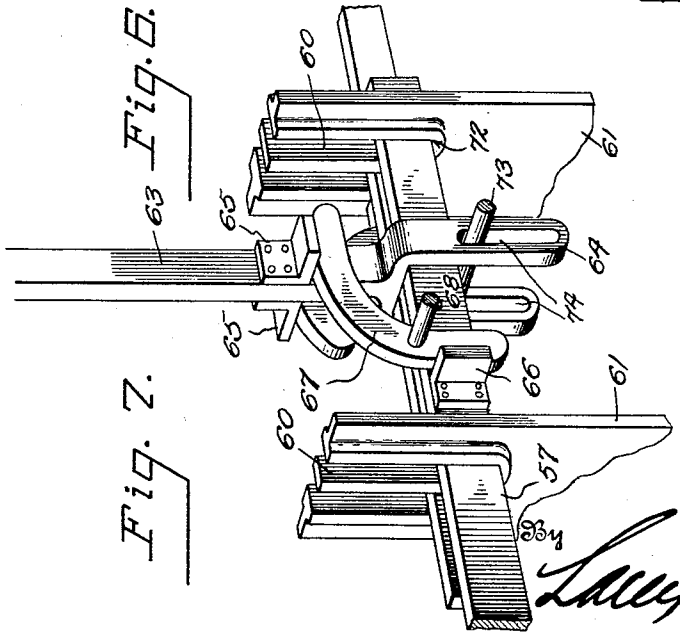


Fig. 7.

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Sept. 26, 1933. M. F. QUIGLEY 1,927,952

AMPHIBIAN, FISHING, LIFE SAVING, AND TRANSPORTING DEVICE

Filed Sept. 8, 1932 8 Sheets-Sheet 7

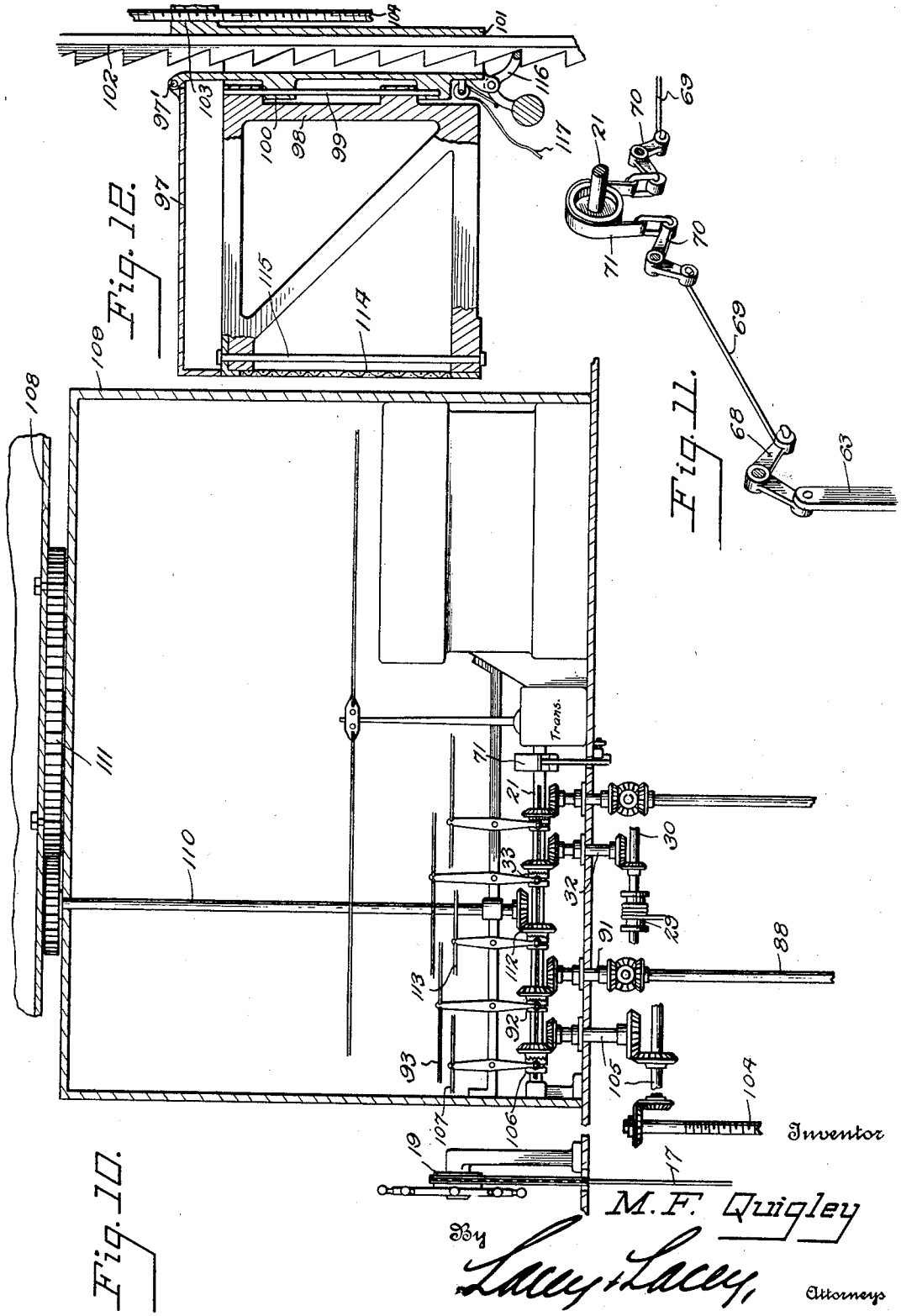


Fig. 12.

Fig. 11.

Fig. 10.

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Sept. 26, 1933. M. F. QUIGLEY 1,927,952

AMPHIBIAN, FISHING, LIFE SAVING, AND TRANSPORTING DEVICE

Filed Sept. 8, 1932 8 Sheets-Sheet 8

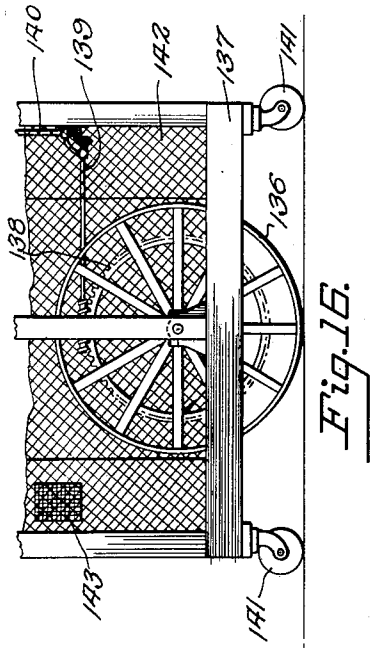


Fig. 16.

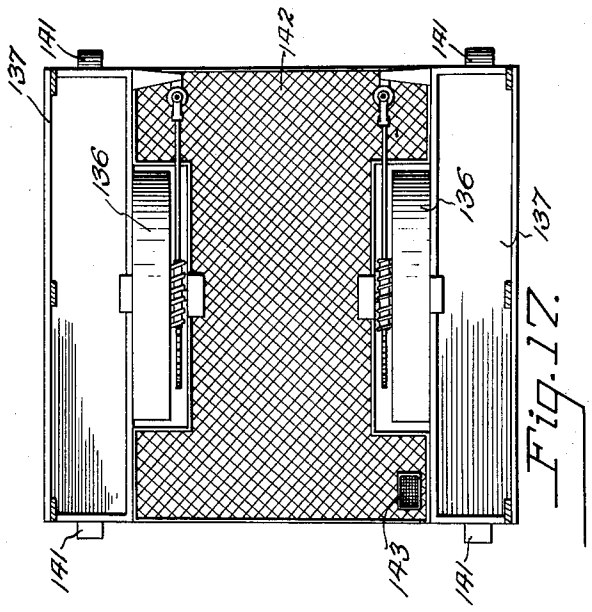


Fig. 17.

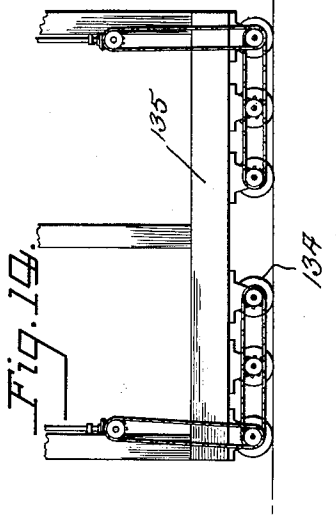


Fig. 18.

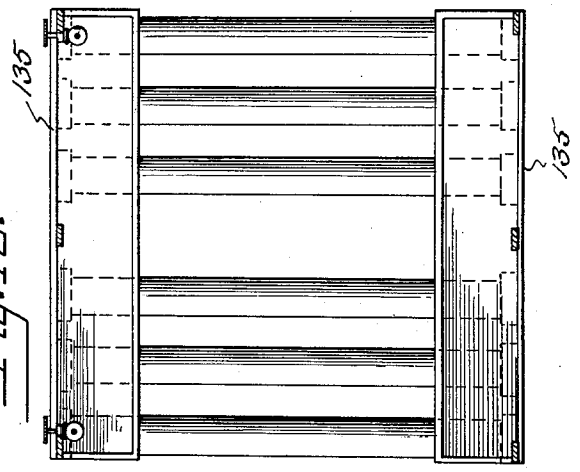


Fig. 15.

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Patented Sept. 26, 1933 1,927,952

UNITED STATES PATENT OFFICE

1,927,952

AMPHIBIAN, FISHING, LIFESAVING, AND TRANSPORTING DEVICE

Michael F. Quigley, Port Richmond, N. Y.

Application September 8, 1932. Serial No. 632,240

17 Claims. (Cl. 114—44)

This invention relates to amphibian devices that may be operated on land or water and will have manifold uses such as taking passengers off of stranded ships, troop and passenger transportation, fishing in places hitherto inaccessible, and other uses.

An object of the invention is to provide a device of this character having an arched frame for supporting the device and adapted to straddle large obstructions such as rocks, stranded vessels and the like.

A further object is to provide dirigible tractors or their equivalent for maneuvering the device upon land and water.

A further object is to provide a central vertically movable deck adapted to be raised or lowered according to the height of the water traversed.

A further object is to provide a pontoon attached to the central deck and adapted to carry with it the central deck in an emergency and transport passengers to land if necessary and also adapted to support the entire device in deep water and serve as a barge to float the device until the tractors again touch bottom.

A further object is to provide a pivotally mounted passenger deck above the pontoon adapted to remain level regardless of what direction the device may be listed in traversing uneven bottoms, or terrain.

A further object is to provide lateral idling wheels outside of the tractors for supporting the device level should any one of the tractors drop into a surf hole or other depression.

A further object is to provide charting arms and wheels which extend beyond the tractors and yield when striking an obstruction or dropping into a hole to sound an alarm or shut off the engine prior to the device encountering the hole or obstruction.

A further object is to provide shields over the tractors for plowing away obstructions to some extent, these shields being supplemented by guards over the charting arms and wheels for the same purpose.

A further object is to provide adjustable ramps adapted to be used as deck extensions for accommodating passengers or bridging a plurality of the devices as needs may require.

A further object is to provide a pile driver for building a coffer dam on the windward side of a stranded vessel so that when the device is rescuing passengers the wrecked vessel will be protected from the pounding of the waves until the rescue is effected.

A further object is to provide suitable nets for holding fish as well as effecting the landing of the same.

A further object is to provide control cabins as well as an engine room and suitable connections in the engine room and pilot cabins for controlling the maneuvering of the device as well as the raising, lowering of the decks, and other necessary power operations.

With the above and other objects in view the invention consists in certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of this specification,

Figure 1 is a side elevation of the device,

Figure 2 is a plan view,

Figure 3 is a front elevation,

Figure 4 is a longitudinal section taken on the line 4—4 of Figure 3 with parts in elevation,

Figure 5 is a cross section taken on the line 5—5 of Figure 4 with parts in elevation,

Figure 6 is a plan view of the center deck locking and releasing mechanism,

Figure 7 is a perspective view of the charting arm controlled mechanism,

Figure 8 is a plan view of the steering mechanism of one of the tractors,

Figure 9 is a detail section taken on the line 9—9 of Figure 8,

Figure 10 is a diagrammatic view showing the control mechanism in the engine room,

Figure 11 is a detail perspective showing the brake for stopping the motor and the operative connections between the brake and the charting arm controlled lever,

Figure 12 is a detail vertical section showing the extension deck operating mechanism,

Figure 13 is a detail perspective view of the adjustable ramp,

Figure 14 is a side elevation showing rollers substituted for the tractors,

Figure 15 is a plan view of the parts shown in Figure 14,

Figure 16 is a side elevation showing large supporting wheels substituted for the tractors, and

Figure 17 is a plan view of the parts shown in Figure 16.

Referring now to the drawings in which like characters of reference designate similar parts

in the various views, the device is shown to comprise a frame including uprights 10 connected at the bottom by sills 11 and at the top by girders 12, as best seen in Figure 4, so that the frame work is skeleton inverted U-shape in outline, as best shown in Figure 5, the purpose being that sufficient height and width will be provided to permit the frame work to straddle large obstructions such as rocks, sunken ships, and the like.

The frame is supported at the lower corners by tractors 13 which may be of any approved type. Each tractor is dirigible, as will be seen by referring to Figure 8, wherein a quadrant rack 14 is attached to the tractor and is operated by a worm 15 carried by the frame sill 11 and operatively connected by a chain 16, as shown in Figure 9, to a double cable 17, as shown in Figure 1, which, in turn, is trained over sheaves 18, as shown in Figure 5, and wound upon a drum 19, as shown in Figure 10, which latter is operated by a conventional pilot wheel 20 to turn the tractor on its vertical pivot 23, as shown best in Figures 4 and 8.

Referring now more particulary to Figures 4 and 5, it will be seen that a centrally located vertically movable deck 24 is mounted within the enclosure of the frame and comprises a pontoon 25 of sufficient magnitude to support and float the entire apparatus across deep bodies of water when the tractors cannot touch bottom, and also to carry passengers to shore in case of accident. The pontoon is provided with upright brackets 26 at the front and back, best shown in Figure 5. The brackets are bolted to a longitudinally disposed I beam 27, best shown in Figure 4. A pair of supporting cables 28 are wound over drums 29, carried by a shaft 30 which is supported in bearing boxes 31 carried by the girders 12 so that the pontoon deck may be raised and lowered when the drums are rotated by suitable shaft and gear connections 32 which are driven by the gas or steam engine shaft 21 through a clutch 33, as shown in Figure 10.

Superposed above the pontoon central deck is a pivoted central deck 34 which is carried on a suitable hanger 35 that has a ball and socket connection 36 with the supporting I beam 27. This superposed central deck is thus hung by a universal joint from the beam above the pontoon so that it will remain level regardless of the list either forward, backward, or to the side of the frame and pontoon when driven over rough bottoms in water or rough terrain on land.

The pontoon central deck 25 is supported in any desired elevated position according to the depth of the water by additional locking devices to take the weight off the cables 28, as will now be described. By referring to Figures 5 and 6, it will be seen that a plurality of spring pressed bolts 37 are carried in guides 38 on the pontoon deck and engage vertical racks 39, carried by the uprights 10 of the frame. The controlling springs 40 of the bolts normally hold the bolts seated in the racks so that the pontoon will be supported by the racks. For withdrawing the bolts rack bars 41 are mounted in guides 42 on the pontoon deck and are operatively connected by bell cranks 43 to the bolts. A gear 44 meshes with both racks and is driven by a pinion 45 which is operated by a hand wheel 46, carried by the pivoted deck 34, as shown in Figure 4, to move the rack bars and withdraw the bolts 37 from the racks 39 when the pontoon must be raised or lowered.

In order that the pontoon 25, pivoted deck 34, brackets 26, and beam 27, may be cast adrift as a unit in case of accident, the cables 28 are looped through eyes 47 on the beam and secured by clevises 48, which latter may be unfastened to detach the unit from the cables. The pontoon may be power driven by a motor 49 to transport the passengers to safety and it is obvious that this motor may be used when the device is being floated by the pontoon in deep water for the purpose of transportation to and from a given destination.

Downward movement of the pontoon and pivoted deck is limited by a stop bar 50 which is secured to the uprights 10 by cross bars 51, as shown in Figure 4. The stop bar is elevated sufficiently above the tractors 13 to permit the apparatus to be driven astride a sunken vessel 52 of considerable dimensions, as shown in Figure 3, it being well known that around sunken vessels good fishing may be obtained on account of the shell life, etc., attached to the wreck.

By now referring to Figures 2 and 3, it will be seen that outriggers 53 are carried by the sills 11. A pair of wheels 54 are carried by the outriggers on each side of the device and these wheels are carried by suitable bearing boxes 55 which are rigidly connected together by links 56. The purpose of these wheels is to ride on the bottom of a body of water and on irregular ground when the device is traveling on land and maintain the device level in the event that one or more of the tractors drop into a surf hole or other depression. The wheels thus give great lateral stability to the device as well as coacting with the tractors in supporting the weight of the device.

To prevent the device from encountering obstructions or holes without warning to the operator charting arms 57 are mounted to extend in advance of the tractors, as shown in Figures 1 and 2. Each arm is substantially straight for the major portion of its length and is terminally directed downwardly and equipped with a wheel 58 which is held down by a weight 59. The straight horizontal portion of the charting arm extends into a guide groove 60 formed in an upright plate 61, as best shown in Figure 7, secured in any suitable manner rigidly to the skeleton frame of the device. A strong helical spring 62, shown in Figure 1, surrounds the arm and bears, at one end, against the adjacent upright 10 of the frame and, at the other end, against a stop pin carried by the arm and normally holds the arm at its outer limit of movement to position the wheel 58, a considerable distance in advance of the corresponding tractor 13. The wheel may be lifted up by an obstruction to lift the arm or may be pressed back by an obstruction to move the arm against the tension of the spring 62, in either case such movement being utilized to sound an alarm or apply a brake to the engine by a mechanism which will now be described.

By now referring to Figure 7, it will be seen that a stand rod 63 is provided at the bottom with a yoke 64 which is disposed astride each pair of charting arms on the same side of the device between the plates 61. The stand rod is equipped on opposite sides with angle iron stop lugs 65. Each arm is equipped with an angle iron stop lug 66. An arcuate rocker arm 67 is pivoted on a stationary pivot pin 68 which may be attached to any suitable part of the frame work and the ends of the rocker arm engage the stop lugs 65 and 66. As a result, when one of the charting arms 57 is moved back against the tension of its spring by encountering an obstruction the stop lug 66 will rock the rocker arm 67, which, in turn, will lift the stop lug 65 to raise the stand rod 63.

As shown by Figure 11, elevation of the stand rod moves a bell crank 68, which is connected by a link 69, to a second bell crank 70 which, in turn, is connected to a brake band 71 of the engine shaft 21. Movement of the bell cranks and link sets the brake to stop the engine and prevent injury to parts of the device by preventing its advance on to the obstructions.

Should the charting arm 57 be elevated by the terminal wheel 58 riding up on to the obstruction the charting arm will pivot, at its end, in the groove 60 of the guide plate 61 most remote from the stop lug 66, at the point indicated by the numeral 72, and strike against the yoke 64 again elevating the stand rod 63 to apply the brake, as above described.

A stationary pin 73, attached to the frame of the device in any preferred manner, projects through guide slots 74 in the branches of the yoke and directs vertical movement of the stand rod 63 under both forward, horizontal and rearward movement of the charting arm 57 and pivotal movement of the charting arm.

To prevent fouling of the charting arms with lines and other obstructions, it will be seen by referring to Figure 1, that fenders 75, in the nature of curved rods are secured to the frame of the device above each charting arm and extend above and over the charting arm in position to ward off such entanglements as fishing lines and the like.

Likewise, each tractor is provided with a plow 76 which is suitably secured to the tractor frame and projects in advance of the tractor, the plow preferably being formed of sheet metal of a general inverted U-shape contour and being of sufficient length to extend downwardly to the bottom of the tractor and plow away from the advancing tractor any debris, shell life, or the like that might clog or otherwise interfere with the effective working of the tractor at all times.

For driving the endless traction belts 77, of each tractor, it will be seen by referring to Figures 4 and 8, that a cross shaft 78 is suitably mounted on the tractor and is provided with a bevel gear 79. A shaft 80 is mounted in a suitable bracket 81 carried by the tractor frame and is equipped with a bevel gear 82 which meshes with the bevel gear 79. An extensible shaft, designated in general by the numeral 83 is connected by knuckles 84 and 85 to the shaft 80 and a shaft 86 which is geared, as designated in general by the numeral 87, to a stand shaft 88, best shown in Figure 4, that is carried at the lower end in a suitable bracket 89 mounted on one of the sills 11. The gear train 87 may be proportioned or designed in any suitable manner to mesh with a bevel gear 90 on the lower end of the stand shaft. The jointed extensible shaft 83 transmits power from the shaft 88 to the shaft 78 of the tractor regardless of what angular position the tractor is turned while being steered.

By referring to Figures 4 and 10, it will be seen that the upper end of the stand shaft 88 is connected to the engine shaft 21 by means of a suitable shaft and gear device 91 and is controlled by a clutch 92 which is operated by suitable rod and lever controls 93 from either pilot house 94, shown in Figure 1.

It is highly desirable to provide additional deck space for fishing parties and other purposes and to accomplish this, by referring to Figures 1, 2, 3, 5 and 12, it will be seen that disposed on the uprights 10 is a platform 95 which runs outside of the device and all the way therearound, and on this platform may be located buildings 96 for the convenience of guests, and for other purposes. Disposed outside of the platform are decks 97, best shown in Figure 1. These decks, when not in use, are rocked upwardly to lie along the uprights so as to be out of the way, and when in use, are disposed horizontally, as shown in Figure 12.

The decks 97 are supported horizontally by frames 98, best shown in Figure 12, which are mounted to swing on vertical pivots 99 carried by eyes 100 that are carried by a sleeve 101 that encircles a vertical rack 102, the purpose of which will presently be explained. Each sleeve carries a threaded nut 103 which travels on a screw 104 that is connected by suitable shaft and gear trains 105, as shown in Figure 10, to the engine shaft 21, and is controlled by a clutch 106 that is operated by a suitable rod and lever connection 107 from the pilot house. Rotation of the screw raises and lowers the tube to elevate and lower the corresponding deck 97. The deck is hinged to the tube 101, as shown at 97′ in Figure 8, to be rocked up out of the way or down to the horizontal. The object of raising and lowering the deck is to accommodate the deck to various depths of water.

Obviously the frames 98 may be rocked on their vertical pivots to lie along the sides of the uprights 10 when it is desired to raise the decks so as to be out of the way. For raising the decks and for other purposes, a crane 108, best shown in Figures 1 and 3, is mounted on top of the engine room 109 and, as shown in Figure 10, is driven by a suitable shaft 110 and gears 111 from the engine shaft 21, a clutch 112 controlling the crane and being shifted by a suitable rod and lever connection 113 from the pilot house.

It will be observed by referring to Figures 1, 3 and 12, that each of the frames 98 is equipped with a wire mesh fender 114 which extends vertically downward from the frame and is of sufficient length and width to ward off floating debris which might otherwise enter the skeleton structures of the frame of the device and do damage. A pivot pin 115 pivotally mounts the ends of each screen to the corresponding frames for permitting folding of the screen along the frames when the frames are collapsed against the sides of the amphibian.

It will be observed by referring to Figure 12, that the deck 97 may be locked in each vertical adjusted position by means of a counterweighted dog 116 which engages the corresponding rack 102, heretofore mentioned. A cable 117, or other suitable connector, may be utilized to rock the dog from the rack, it being understood that the deck tube 101 must be slightly raised, by the screw 104, to permit such manipulation of the dog. The dog performs the additional function of supporting the weight of the deck in each adjusted position.

By referring to Figure 13 it will be seen that a gangplank or ramp 118 is provided for access to and departure from the amphibian. The gangplank is adjustably supported at various angular inclinations to the deck 97 or platform 95, as the case may be, by means of risers 119 which may be mounted upon the frame work of the amphibian, in any preferred manner, and are slotted, as shown at 120, to receive a pivot shaft 121 carried by arcuate brackets 122 that are secured to the ramp. An inverted U-shaped lever 123 bridges the ramp and is connected to the brackets

122 for changing the angular inclination of the ramp, as desired.

It will be pointed out that the ramp, above described, may be utilized as a connecting means between a plurality of amphibians whenever such need may arise.

It is desirable, in rescuing passengers from vessels which may be stranded on coasts, to protect the vessel during such rescue by a coffer dam on the windward side so that the vessel will not break up before the passengers can be all removed, in the event of protracted storms. For this purpose a pile driver 124, as shown best in Figures 2 and 3, is secured to the amphibian in any preferred manner, in the present instance, the pile driver being secured to one of the platforms 95. Piles may be carried on the various decks of the amphibian to be driven by the pile driver in the usual manner for building the coffer dam.

A life saving scoop 125, best shown in Figure 1, may be attached to the crane 108 for the rescue of individuals from the sea or even boat loads of passengers on the sea, according to the size of the scoop.

The amphibian may also be equipped with a jib-boom crane 126 having a scoop net 127 which is provided with a counterweight 128. Landing of fish and other articles, as well as persons may be effected by use of this net. Preferably also a landing net 129 is pivoted to the amphibian for the purpose of facilitating the landing of individual catches of fish and for other purposes.

By referring to Figure 5, it will be seen that the stand rod 63, which is operated by the charting arms 57, is normally held pressed downward by means of a helical spring 130 mounted on a rod 131 which is operatively connected to angle iron brackets 132 and 133 carried respectively by the adjacent frame upright 10 and the stand rod. The purpose of this spring is to hold the wheels of the charting arms against too free movement by unimportant obstructions so that proper progress of the amphibian under all conditions of service, will not be impaired by false control of the engine.

By referring to Figure 14, it will be observed that rollers 134 may be mounted on the lower sills 135 of the amphibian in lieu of the tractors and, as shown in Figure 15, these rollers may run entirely across the amphibian if desired. These rollers may be geared together and power driven in any preferred manner, or as above specified in connection with the description of the tractor mechanism.

By referring to Figure 16, it will be observed that large traction wheels 136 may be substituted for the rollers or tractors, if desired. These traction wheels may be mounted on the sills 137, in any preferred manner, so as to leave a considerable space between them for permitting the amphibian to straddle wrecks, boulders, and other obstructions. Each traction wheel may be equipped with a gear 138 which is driven by a worm 139 operated by a stand shaft 140 from the engine of the amphibian. Caster wheels 141 are secured to the sills laterally of the tractor wheels to maintain lateral stability and help support the device.

In both the preferred form and both modified forms of the invention nets may be supplied as appliances for the storing of bulk catches of fish, or protecting swimming spaces, and for the purpose of illustration Figures 16 and 17 show the use of such nets, the same being designated by the numeral 142. The nets may be made of wire mesh or other material suitably secured in any preferred manner to the frame work of the device. Individual nets 143 may also be scattered throughout the area of the major net 142 for the purpose of storing individual catches of fish.

Inasmuch as the operation and certain of the various uses of the device have been described as the specification progressed, it is deemed unnecessary to repeat such operations and uses. It will simply be added to what has been said in the foregoing that the amphibian is applicable for use under various conditions of land and water service such as fishing parties, rescue at sea or on the shore, transportation of troops across streams, accommodation of passengers for aquatic sports, and the like, and even as a dirigible hotel, as well as many other uses.

What is claimed is:

1. An amphibian device comprising a frame, a vertically movable pontoon deck supported by the frame, a swinging deck superposed above the pontoon deck, means for raising and lowering the pontoon deck and swinging deck as a unit on the frame, means for detaching and casting the pontoon deck and swinging deck adrift from the frame, and propulsion means for maneuvering the frame.

2. An amphibian device comprising an arched skeleton frame adapted to straddle large obstructions, a pontoon deck adjustably and removably secured to the frame between the sides of the frame, a pivoted deck superposed above the pontoon deck, a supporting beam for the pontoon deck, a universal joint connection between the beam and the pivoted deck permitting the pivoted deck remaining level when the frame lists, and propulsion means for maneuvering the frame.

3. An amphibian device comprising an arched frame, dirigible tractors on the sides of the frame, power driven means for driving the tractors carried by the frame, manually operatable means for steering the tractors, a deck adjustably mounted between the sides of the frame, and decks adjustably mounted outside the sides of the frame.

4. An amphibian device comprising an arched frame, tractors for supporting and maneuvering the frame, a pontoon deck adjustably mounted on the frame to be raised and lowered between the sides of the frame, a superposed pivoted deck carried by the pontoon deck, power driven means for raising and lowering both decks as a unit, means for locking both decks in each vertically adjusted position, and means for detaching and casting adrift both decks as a unit.

5. An amphibian device comprising an arched frame, a plurality of tractors carried by the sides of the frame, wheels carried on outriggers attached to the frame outside of the tractors for maintaining lateral stability of the frame should one or more of the tractors drop into a surf hole or other depression, power driven means carried by the frame for driving the tractors, manually operatable means for steering the tractors, and decks carried by the frame above the tractors and wheels.

6. An amphibian device comprising an arched skeleton frame, tractors carried at the corners of the frame, a motor carried by the frame, operative connections between the motor and the tractors for driving the tractors, a deck mounted for vertical movement between the sides of the frame, operative connections between the motor and the

deck for raising and lowering the deck, and means for locking the deck in each adjusted position.

7. An amphibian device comprising an arched frame, tractors at the bottom corners of the frame for supporting and maneuvering the frame, means for driving the tractors, means for steering the tractors, movable wheeled charting arms carried by the frame in advance of the tractors, and means operated by the charting arms for rendering the tractors inactive when the charting arms encounter harmful obstructions.

8. An amphibian device comprising an arched frame, tractors at the lower corners of the frame, wheels carried by outriggers attached to the frame and disposed outside the frame for maintaining lateral stability of the frame, charting arms movably mounted on the frame and extending in advance of the tractors, a motor carried by the frame, an operative connection between the motor and the tractors for driving the tractors, and an operative connection between the motor and the charting arms adapted to render the motor inactive when the charting arms encounter serious obstructions.

9. An amphibian device comprising a frame, dirigible means for supporting and moving the frame, charting arms pivotally and slidably mounted on the frame and extending in advance of said means, wheels on the charting arms in alignment with said means, a motor carried by the frame, a brake for the motor, and an operative connection between said charting arms and said brake adapted to set the brake upon either sliding or pivotal movement of the charting arms under impulse of the wheels encountering obstructions.

10. An amphibian device comprising an arched frame, tractors at the lower corners of the frame, plows in advance of the tractors charting arms movably mounted on the frame in advance of the tractors, fenders for the charting arms, a motor carried by the frame, an operative connection between the motor and the tractors for driving the tractors, and an operative connection between the motor and the charting arms adapted to render the motor inactive when the charting arms are moved by impact with an obstruction.

11. An amphibian device comprising an arched frame, tractors for supporting and maneuvering the frame, vertically adjustable decks carried between the sides of the frame above the tractors, vertically adjustable auxiliary decks carried by the frame outside of the first named decks, power driven means for elevating and depressing both decks to compensate for various depths of water, and means for collapsing the auxiliary decks against the sides of the frame so as to be out of the way when not needed.

12. An amphibian device comprising an arched frame, tractors at the corners of the frame for supporting and maneuvering the frame, a platform carried by the frame and extending thereabout outside of the frame, buildings on the platform, auxiliary decks carried by the frame and adapted to extend horizontally outside of the platform, a deck carried by the frame between the sides thereof contiguous to the platform, a motor carried by the frame, operative connections between the motor and the auxiliary deck for raising and lowering the auxiliary deck, an operative connection between the motor and the second named deck for raising and lowering said second named deck, and means for holding both decks in each vertically adjustable position.

13. An amphibian device comprising an arched frame adapted to straddle large obstructions, dirigible traction wheels carried by the sides of the frame, a vertically movable deck between the sides of the frame, an auxiliary deck adjustably mounted outside the sides of the frame, a motor carried by the frame, operative connections between the motor and both decks for raising or lowering the decks to compensate for various depths of water, said auxiliary deck being hinged to the frame and adapted to be swung from the horizontal to the vertical so as to be out of the way when not in use, and a crane carried by the frame for swinging the auxiliary deck on its hinges to both released and operative positions.

14. An amphibian device comprising an arched frame adapted to straddle sunken vessels, dirigible traction devices carried by the frame for supporting and maneuvering the frame, a vertically adjustable deck between the sides of the frame, a vertically adjustable auxiliary deck outside the sides of the frame, frames swinging on vertical pivots and adapted to extend underneath and hold said auxiliary deck horizontal, and a ramp operatively connected to the frame for affording access to and exit from both decks.

15. An amphibian device comprising a dirigible arched frame adapted to straddle sunken vessels, vertically movable decks carried by the frame and extending within the frame between the sides thereof and outside the frame and adapted to be raised and lowered according to the depth of water over the sunken vessel, fenders operatively supported by the frame for preventing damage to the decks by floating debris, and power actuated means for adjusting the decks.

16. An amphibian device comprising an arched frame adapted to straddle sunken vessels, dirigible traction devices for maneuvering the frame, a vertically movable deck between the sides of the frame, a vertically movable auxiliary deck outside the sides of the frame, and means for raising and lowering both decks to compensate for various depths of water.

17. An amphibian device comprising a skeleton arched frame, dirigible tractors at the corners of the frame, a pontoon operatively connected to the frame within the enclosure of the sides thereof, a motor carried by the pontoon, said pontoon being adapted to float the frame over deep water, a deck pivotally mounted above the pontoon and carried as a unit by the pontoon, and means for casting the pontoon and pivoted deck adrift as a unit from the frame.

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