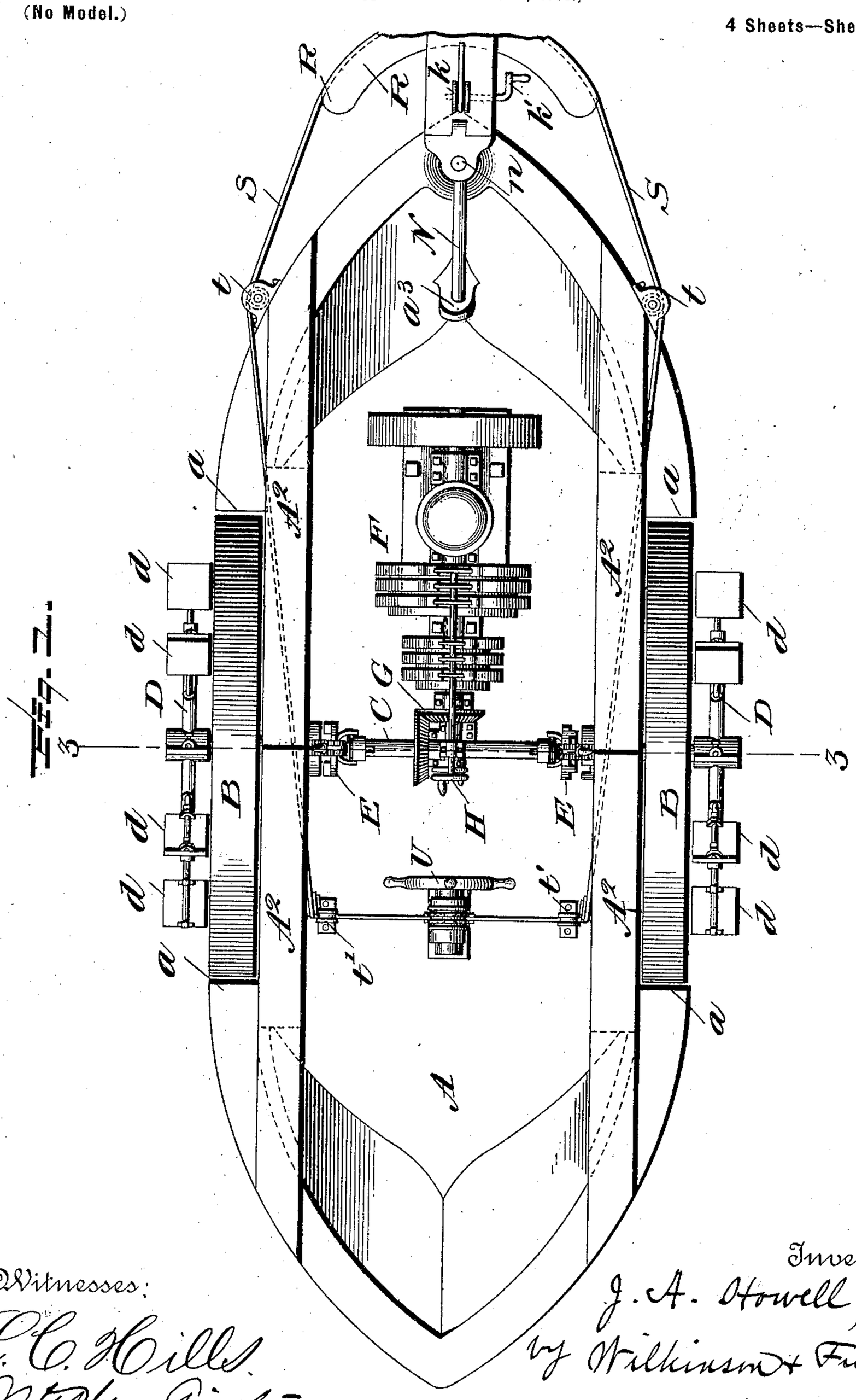
No. 652,184. Patented June 19, 1900.

J. A. HOWELL.

COMBINED BEACH WAGON AND SURF BOAT.

(Application filed Oct. 30, 1899.)

(No Model.) 4 Sheets—Sheet 1.



Witnesses:
L. C. Hills.
Stephen Gifford

Inventor.
J. A. Howell,
by Wilkinson & Fisher,
Attorneys.

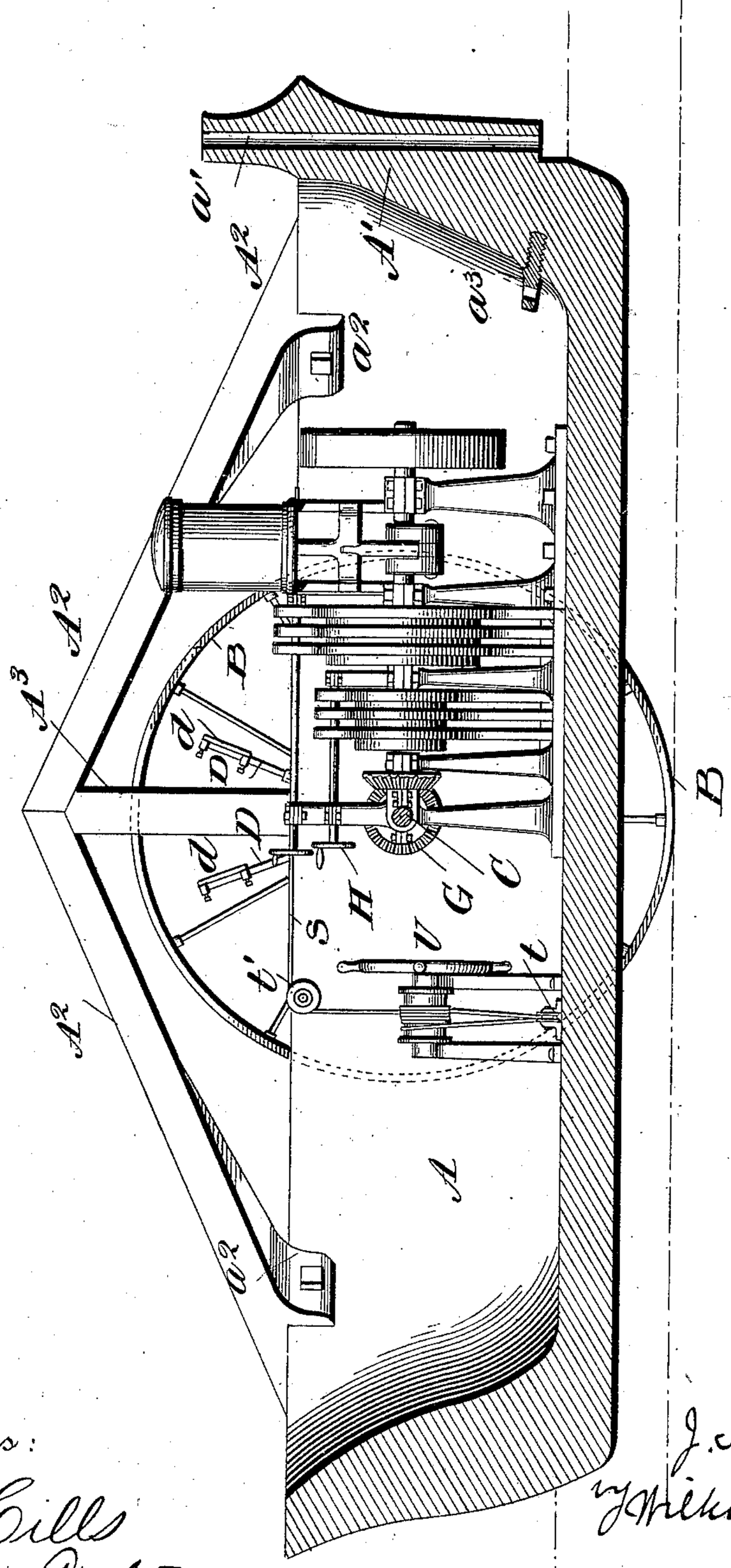
No. 652,184. Patented June 19, 1900.

J. A. HOWELL.

COMBINED BEACH WAGON AND SURF BOAT.

(Application filed Oct. 30, 1899.)

(No Model.) 4 Sheets—Sheet 2.



Witnesses:
L. C. Hills
J. Stephen Finala

Inventor
J. A. Howell,
by Wilkinson & Fisher,
Attorneys.

No. 652,184. Patented June 19, 1900.

J. A. HOWELL.

COMBINED BEACH WAGON AND SURF BOAT.

(Application filed Oct. 30, 1899.)

(No Model.) 4 Sheets—Sheet 3.

Fig. 5.

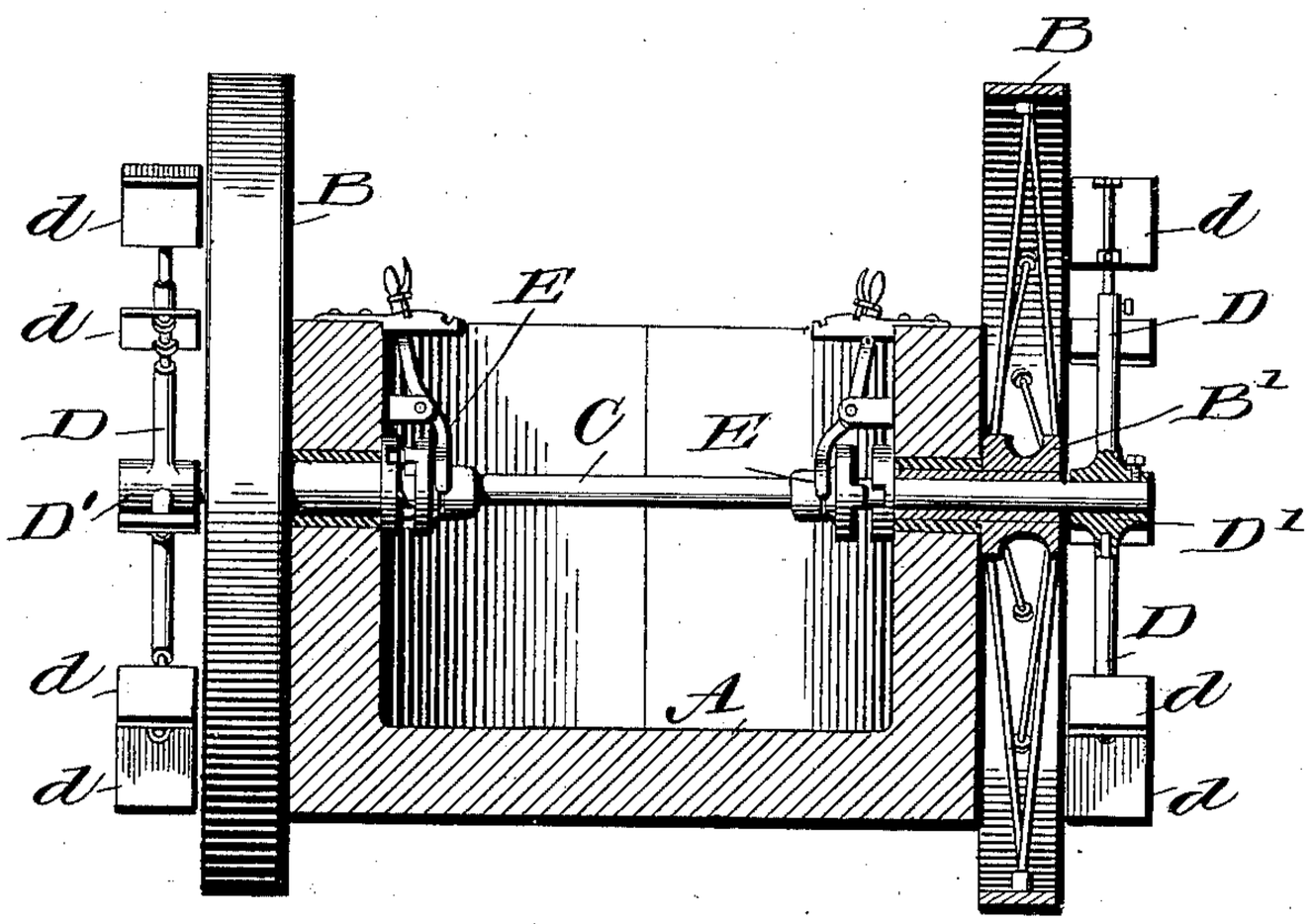
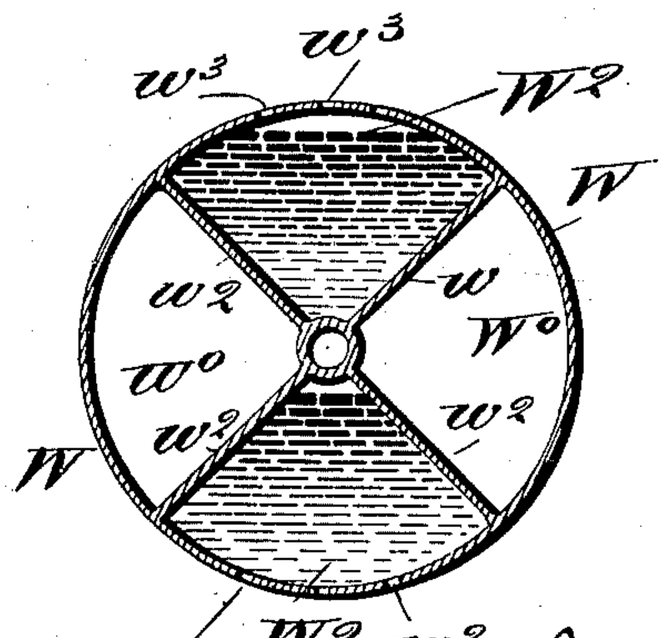


Fig. 7.



Witnesses:
L. C. Hills
J. Stephen Finch

Inventor
J. A. Howell,
by Wilkinson & Fisher,
Attorneys.

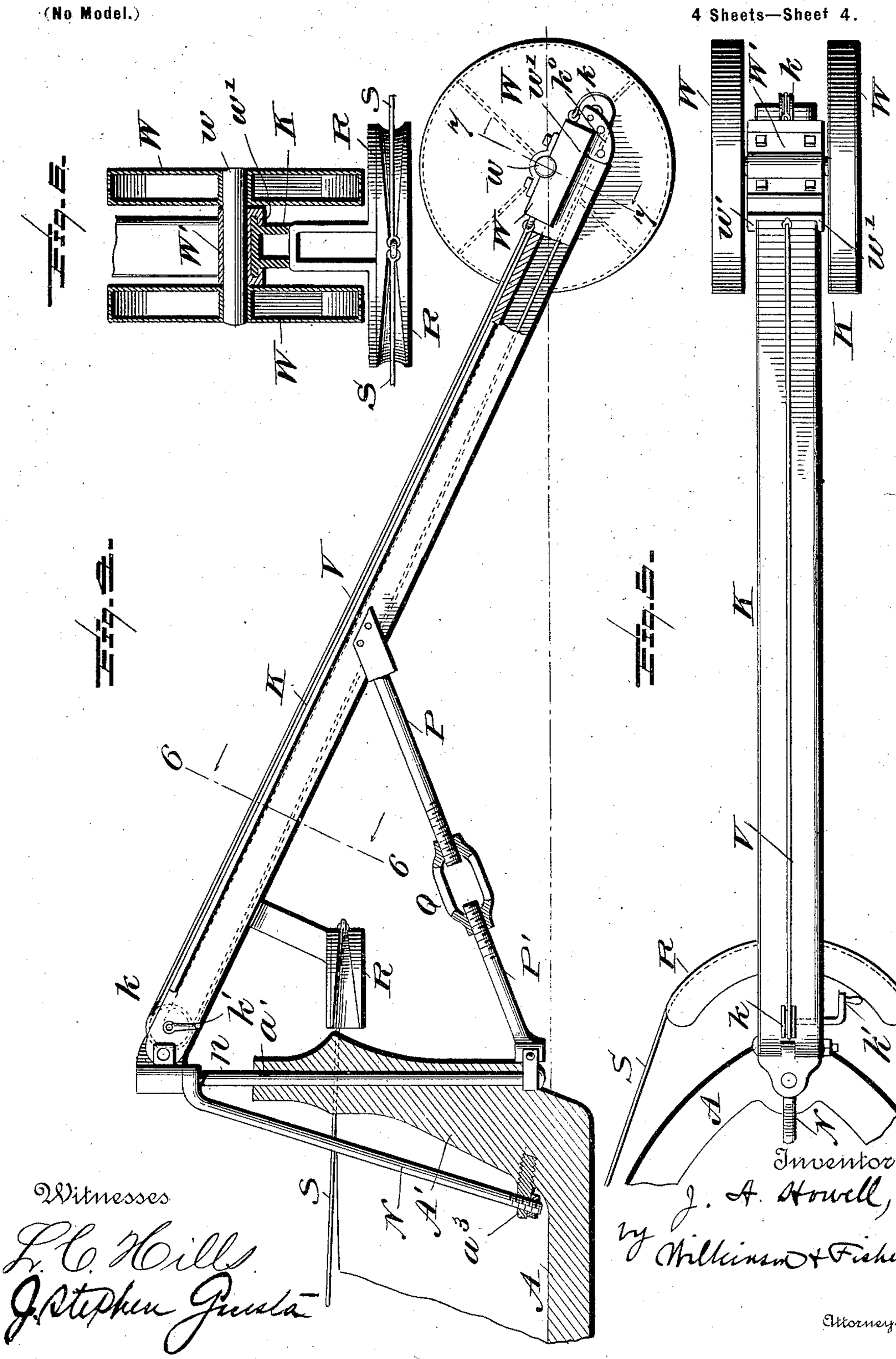
No. 652,184. Patented June 19, 1900.

J. A. HOWELL.

COMBINED BEACH WAGON AND SURF BOAT.

(Application filed Oct. 30, 1899.)

(No Model.) 4 Sheets—Sheet 4.



Inventor
J. A. Howell,
by Wilkinson & Fisher,
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN A. HOWELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

COMBINED BEACH-WAGON AND SURF-BOAT.

SPECIFICATION forming part of Letters Patent No. 652,184, dated June 19, 1900.

Application filed October 30, 1899. Serial No. 735,296. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. HOWELL, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a certain new and useful Improvement in a Combined Beach-Wagon and Surf-Boat; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a combined beach-wagon and surf-boat or a vehicle suitable for coasting along beaches and taking to the water whenever desired. The ocean-beaches between high and low water marks ordinarily present favorable conditions to a proper vehicle—they are level, smooth, and sufficiently hard—while inshore of the beach, above high-water mark, the sand forms irregular shifting heaps, which are practically impassable to any vehicle. Again, the ordinary beach often presents obstructions, either natural or artificial, such as piers, inlets, mud banks, rocks, &c.

The object of my invention is to provide a combined beach-wagon and surf-boat which is capable of locomotion along the smooth part of the beach and which may be put to sea and navigated past obstructions.

My invention consists, primarily, in the combination of a wagon-body which also serves as a boat when afloat, wheels propelling this wagon-body on land or water, and a trail adapted for use either for a steering device on land or in the water and also capable of being used as a drag or as a steadying-arm when the wagon is afloat.

My invention will be understood by reference to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 is a plan view of the improved wagon-body and float, a part only of the trail being shown. Fig. 2 represents a central vertical section through the wagon-body or float, the trail being wholly omitted. Fig. 3 represents a transverse section along the line 3 3 of Fig. 1 looking forward, the wheel and hogstays being omitted. Fig. 4 represents a sectional elevation of the trailer and its connection to the rear of the wagon-body or float, and Fig. 5 represents a plan view of the device shown in Fig. 4. Fig. 6 is a sectional elevation along the line 6 6 of Fig. 4 and looking in the direction of the arrows, in which figure the trail has been moved from the position shown in Fig. 4 to its upper position, where it is clear of the water. Fig. 7 represents a section of one of the trail-wheels along the line 7 7 of Figs. 4, 5, and 6.

A represents the wagon-body, which is preferably in the form of a boat, and this boat should preferably be constructed like an ordinary life-boat, with double bottoms and sides; but as the boat proper does not form a part of my invention I have illustrated it diagrammatically in the drawings. The entire body is stiffened by means of the hogstays A^2 and stanchions A^3, which hogstays may be secured to the boat by flanges a^2 or any other convenient way. These hogstays support the two ends of the boat when it is on land, at which time the weight of the boat is mainly taken up near its center on the main shaft C and wheels B. The construction of these hogstays may be varied at will. The land-wheels B have their hubs B′ loosely mounted on the main shaft C, to which they may be rigidly attached, however, when desired, by means of suitable clutch-couplings E, as shown in Fig. 3. Instead of two clutch-couplings a single clutch-coupling may be used for both wheels, if desired. The paddle-wheels D have their hubs D′ keyed fast to the main shaft C and always turn therewith. The buckets *d* on these paddle-wheels D are preferably made adjustable radially, so that the diameter of the wheel may be increased or diminished as desired, and thus these paddle-wheels may be adjusted to dip deep or lightly in the water, as may be desired, and, moreover, the distance of the outer edge of each bucket from the periphery of the land-wheel may be varied to suit the conditions that normally prevail on any particular beach.

The main shaft C is driven by any suitable engine, preferably a gasolene or naphtha engine, such as F, with suitable gearing, such as G, by means of which the speed of the shaft is reduced the necessary amount under that of the engine.

H represents any suitable reversing-gear. The engine is not a part of my present invention and any suitable engine may be applied.

A long trail K, preferably made of resilient sheet metal, is swung over the stern of the boat, as from the spindle *n*, mounted in the bearing *a'* in the stern-post A' of the boat. This spindle *n* may be supported against backward strains by means of the brace N, secured to the bolt a^3 in the stern-post A'. The trail is stayed at the right angle with a horizontal plane by means of the braces P P', connected together by the turnbuckle Q, and by screwing up or down on this turnbuckle the inclination of the trail may be adjusted as desired. At the outer end of the trail I provide two trail-wheels W, mounted on the shaft *w*, which is journaled on the frame W', having overhanging dips *w'*, engaging beneath the shoulder on the sides of the trail K. Near the upper and lower ends of the trail K, I provide pulleys *k*, over which passes the rope or chain V, secured at each end of the frame W' and to the shaft. To the upper one of these pulleys I attach a hand-crank *k'*, by means of which the carriage W' and trail-wheels W may be drawn up or pulled down on the trailer. Thus where the water is smooth it would be preferable to haul the trail-wheels up out of the water and allow the trail itself to drag therein, while in a seaway it would be desirable to have the trail-wheels down in the lowest position or even to immerse the same, having them as a drag beneath the water, which may be done by running the trail-wheels down to the lowest point and then screwing up on the turnbuckle Q. In order that these trail-wheels may serve as a drag to steady and balance the boat when in the water, I preferably divide each trail-wheel up into a plurality of chambers, as by means of the partitions w^2. (Indicated in Fig. 7.) In this figure four of these chambers are shown, two of which W^0 are allowed to remain filled with air, while the other two W^2 have openings w^3 in the periphery thereof to allow the influx of water when the boat is launched, and this water will add to the weight of the trail-wheels, causing them to act more efficiently as a drag and to steady the boat. When the vehicle is once more on the land, the water will run out of these chambers. If the beach is smooth enough, when the vehicle is on land the trail-wheels may be run up, and the shoe k^0 at the end of the trail will then slip along the sand.

The boat is steered by means of the yoke R, fast to the trail K, the yoke-ropes S passing over the pulleys *t* on the counter of the boat and the fair-leaders *t'* to the wheel U. The trail K thus serves as an elongated rudder to steer the boat either in the water or on the land. By swinging the trail K athwartships, which may be done by turning the wheel U far enough, when the boat is in the water the trail, and especially the trail-wheels, will serve as a float at the end of an outrigger to steady the boat. Moreover, by uncoupling the turnbuckle Q and swinging the trailer vertically upward about its pivot from the body of the boat it may be used as a ridge-pole for an awning or tent. Thus it will be seen that I provide a vehicle which is suitable for traveling along the beach and yet which may be run out into deep water and navigated there when desired.

By having the land-wheels B hooded by the shoulders *a* of the float A they will offer little resistance in the water when the boat is afloat. Both land and water wheels may be covered over with paddle-boxes, if desired.

It will be seen that by having an adjustable float and weight mounted on a resilient or approximately-rigid arm projecting from the boat the moment of inertia of the combination is materially altered, and its motion in a seaway is thereby largely controlled, and the farther off this float is placed the more effective it will be, since the moment of inertia varies as the square of the distance from the axis of rotation. In this way a small float may be used having little resistance to longitudinal motion through the water, but which will greatly affect and reduce the pitching or rolling of the boat.

It will be obvious that various modifications might be made in the herein-described device which could be used without departing from the spirit of my invention, and I do not intend to limit myself to specific details; but

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a combined beach-wagon and surf-boat, the combination with a wagon-body or float, a main shaft and means for driving said shaft, of paddle-wheels fast on said shaft for propelling said boat, and land-wheels normally loose on said shaft and of greater diameter than said paddle-wheels, with means for rigidly connecting said land-wheels to said shaft when desired; substantially as described.

2. In a combined beach-wagon and surf-boat, the combination with a combined wagon-body and float, and wheels for propelling the same, of a trail pivoted to and projecting rearward from said float, and means for swinging said trail about its pivot; substantially as described.

3. In a combined beach-wagon and surf-boat, the combination with a float forming the wagon-body, a main shaft, means for driving said shaft, wheels mounted on said shaft for propelling said vehicle, a trail pivoted to said vehicle and projecting rearward therefrom, and means for swinging said trail laterally; substantially as described.

4. In a combined beach-wagon and surf-boat, the combination with a wagon-body or float, a main shaft and means for driving said shaft, of paddle-wheels, with adjustable buck-

ets, fast on said shaft for propelling said boat, and land-wheels loose on said shaft and of greater diameter than said paddle-wheels, with clutch-couplings for connecting said land-wheels to said shaft when desired; substantially as described.

5. In a combined beach-wagon and surf-boat, the combination with a wagon-body or float, a main shaft and means for driving said shaft, of paddle-wheels fast on said shaft for propelling said boat, and land-wheels loose on said shaft and of greater diameter than said paddle-wheels, with means for connecting said land-wheels to said shaft when desired, and a trail pivoted to the rear end of said float, with means for swinging said trail about its pivot; substantially as described.

6. In a combined beach-wagon and surf-boat, the combination with a combined wagon-body and float, of wheels for propelling the same, a trail pivoted to and projecting rearward from said float, a trail-wheel journaled near the end of said trail, and means for swinging said trail about its pivot; substantially as described.

7. In a combined beach-wagon and surf-boat, the combination with a combined wagon-body and float, of wheels for propelling the same, a trail pivoted to and projecting rearward from said float, a trail-wheel adjustably mounted on said trail, and means for swinging said trail about its pivot; substantially as described.

8. In a combined beach-wagon and surf-boat, the combination with a combined wagon-body and float, of wheels mounted on a single shaft for propelling the same, a trail pivoted to and projecting rearward from said float, trail-wheels adjustably mounted on said trail, and means for swinging said trail about its pivot; substantially as described.

9. In a combined beach-wagon and surf-boat, the combination with a float forming the wagon-body, a main shaft, means for driving said shaft, wheels mounted on said shaft for propelling said vehicle, a trail pivoted to said vehicle and projecting rearward therefrom, means for swinging said trail laterally, and a hollow trail-wheel perforated to permit the ingress and egress of water; substantially as described.

10. In a combined beach-wagon and surf-boat, the combination with a wagon-body or float, a main shaft and means for driving said shaft, of paddle-wheels fast on said shaft for propelling said boat, and land-wheels partly fitting in recesses in the sides of said float and screened thereby, the said wheels being normally loose on said shaft and of greater diameter than said paddle-wheels, with means for rigidly connecting said land-wheels to said shaft when desired; substantially as described.

11. In a combined beach-wagon and surf-boat, the combination with a combined wagon-body and float and wheels for propelling the same, of a trail pivoted to and projecting rearward from said float, a hollow trail-wheel perforated as shown, mounted in said trail, and means for swinging said trail about its pivot; substantially as described.

12. In a combined beach-wagon and surf-boat, the combination with a float forming the wagon-body, a main shaft, means for driving said shaft, wheels mounted on said shaft for propelling said vehicle, a trail pivoted to said vehicle and projecting rearward therefrom, means for swinging said trail laterally, and a pair of hollow trail-wheels perforated to permit the ingress and egress of water, adjustably mounted on said trail; substantially as described.

13. In a combined beach-wagon and surf-boat, the combination with a wagon-body or float, a main shaft and means for driving said shaft, of paddle-wheels, with adjustable buckets, fast on said shaft for propelling said boat, and land-wheels loose on said shaft and of greater diameter than said paddle-wheels, the said land-wheels fitting in recesses in and partly screened by said float, with clutch-couplings for connecting said land-wheels to said shaft when desired; substantially as described.

14. In a combined beach-wagon and surf-boat, the combination with a wagon-body or float, a main shaft and means for driving said shaft, of paddle-wheels fast on said shaft for propelling said boat, and land-wheels loose on said shaft and of greater diameter than said paddle-wheels, with means for connecting said land-wheels to said shaft when desired, a trail pivoted to the rear end of said float, with means for swinging said trail about its pivot, and hollow trail-wheels adjustably secured to said trail, and perforated to permit the ingress and egress of water; substantially as described.

15. A combined drag and steering device for use in boats of the character described, comprising a trail pivoted in the stern of the boat, with means for swinging said trail laterally, and one or more trail-wheels mounted on said trail; substantially as described.

16. A combined drag and steering device for use in boats of the character described, comprising a trail pivoted in the stern of the boat, with means for swinging said trail laterally, and one or more trail-wheels adjustably mounted on said trail; substantially as described.

17. A combined drag and steering device for use in boats of the character described, comprising a trail pivoted in the stern of the boat, with means for swinging said trail laterally, and one or more hollow trail-wheels mounted on said trail and perforated to permit the ingress and egress of water; substantially as described.

18. A combined drag and steering device for use in boats of the character described,

comprising a trail pivoted in the stern of the boat, with means for swinging said trail laterally, and one or more hollow trail-wheels adjustably mounted on said trail and perforated to permit the ingress and egress of water; substantially as described.

19. A combined wagon-body and track-boat mounted on a single axle, and hog-braces leading from each end of said boat and supported above said axle; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. HOWELL.

Witnesses:

GUSTAVE R. THOMPSON,

FRANK D. BLACKISTONE.