

F. C. MAHONY & A. M. HOPEY, JR.
ICE BOAT.

APPLICATION FILED OCT. 26, 1907.

905,202.

Patented Dec. 1, 1908.

2 SHEETS—SHEET 1.

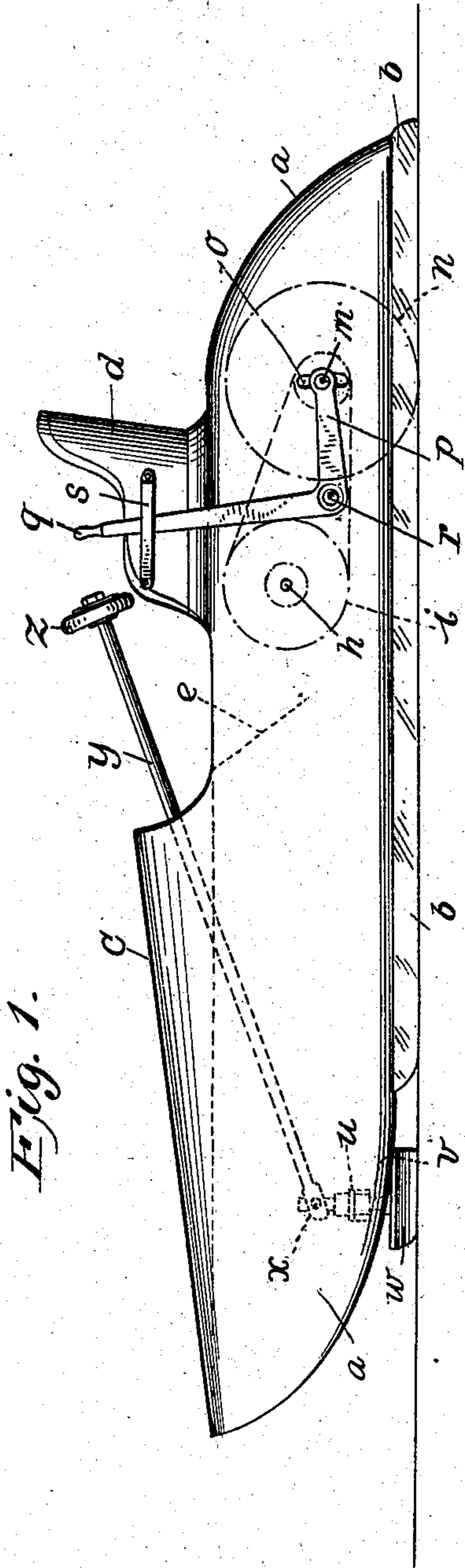


Fig. 1.

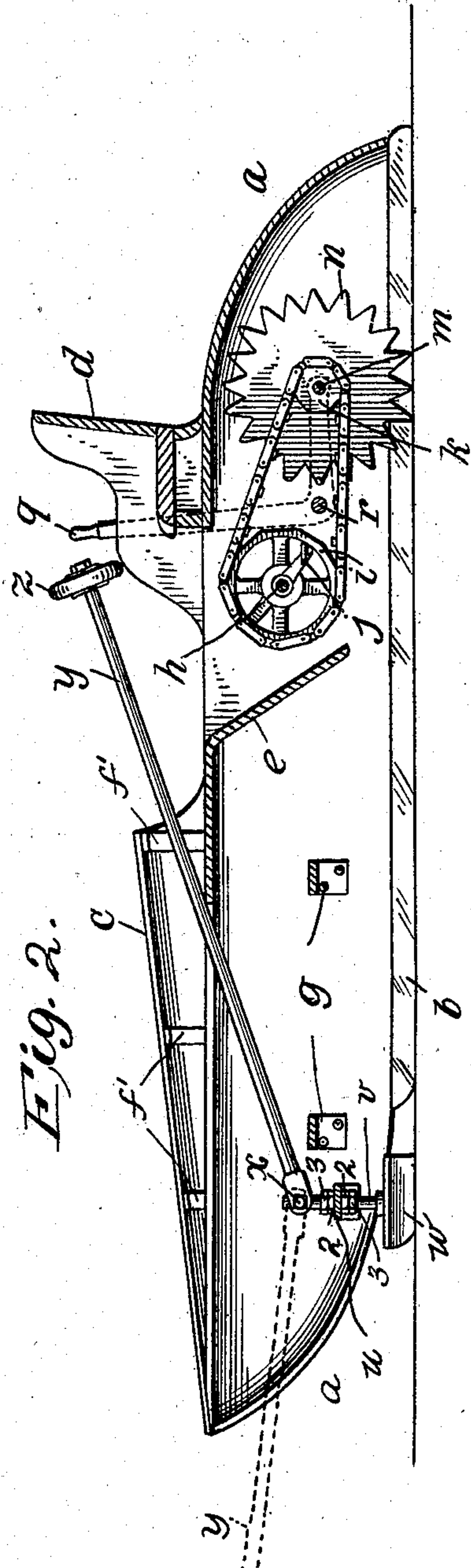


Fig. 2.

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By their Attorney
James Hamilton

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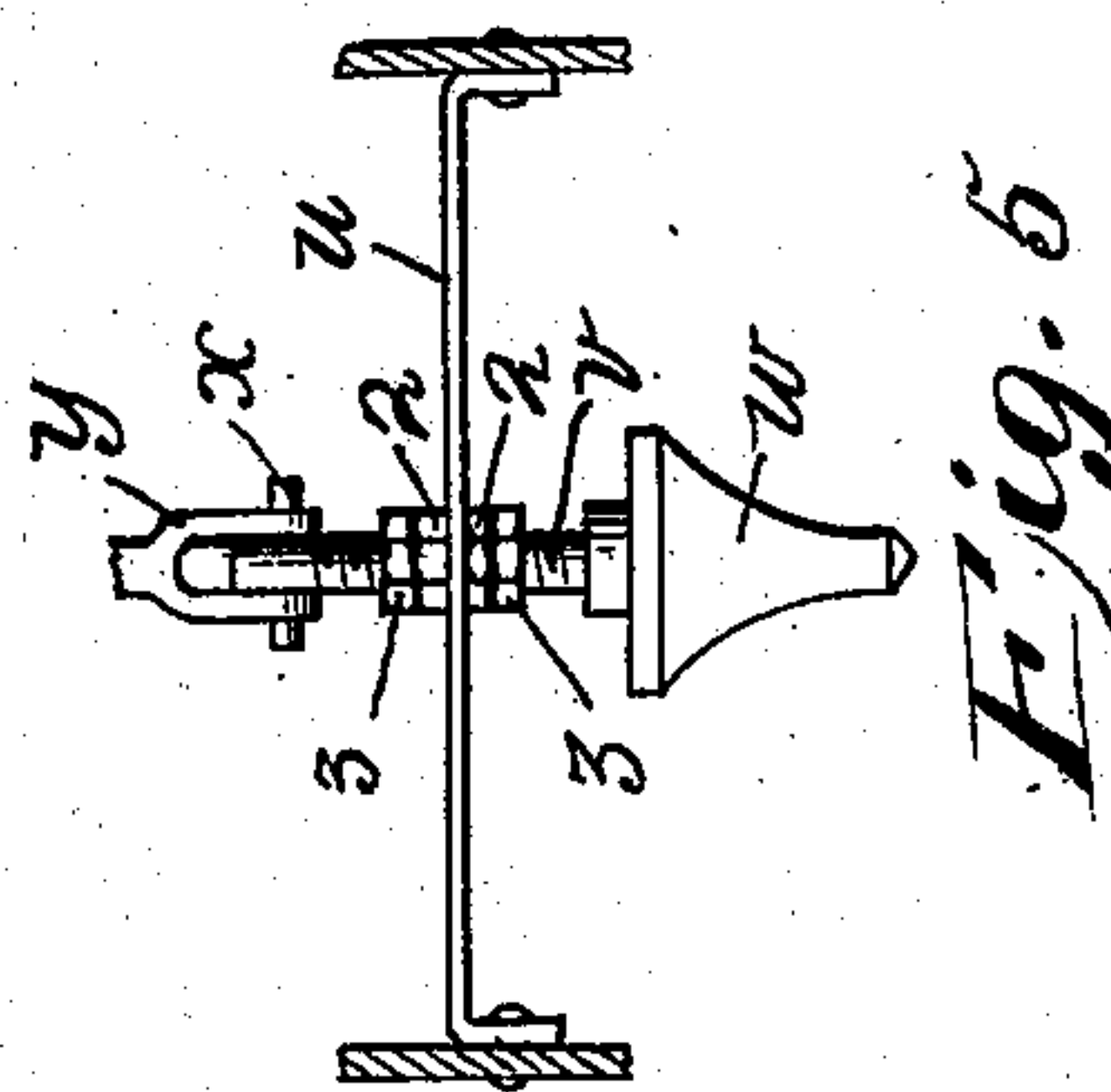
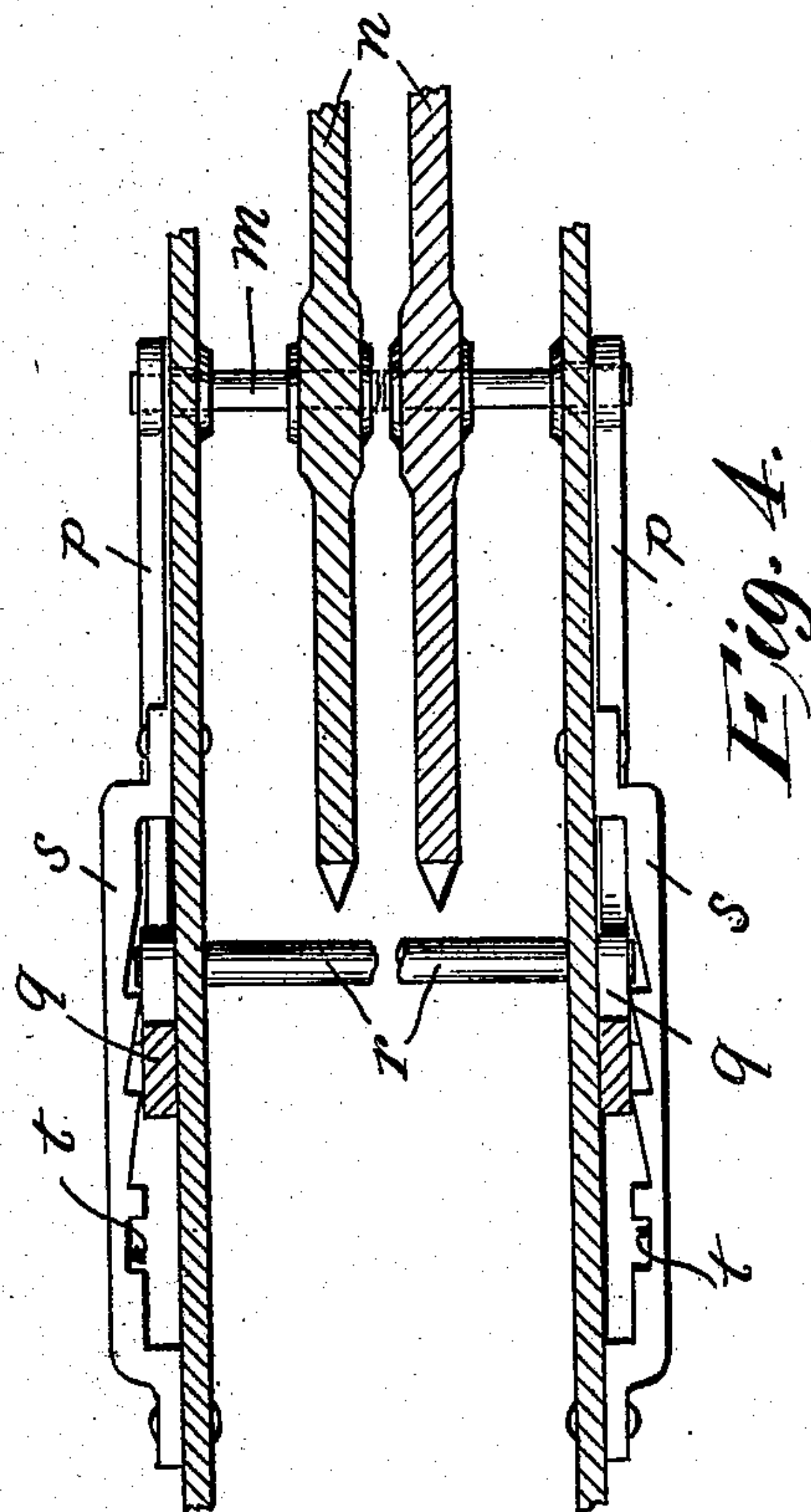
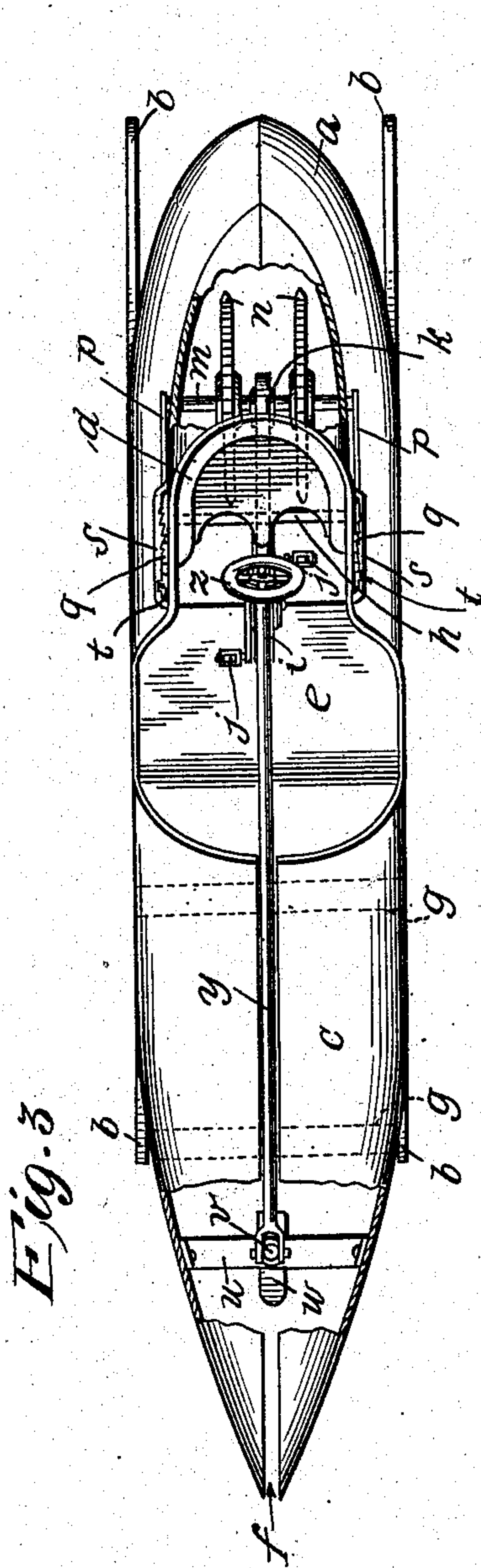
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FORDHAM COOPER MAHONY, OF NEW YORK, N. Y., AND AUSTIN MILES HOPEY, JR., OF
WEEHAWKEN, NEW JERSEY.

ICE-BOAT.

No. 905,202.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed October 26, 1907. Serial No. 399,293.

To all whom it may concern:

Be it known that we, FORDHAM COOPER MAHONY, residing at New York city, in the county of New York and State of New York, and AUSTIN MILES HOPEY, Jr., residing at Weehawken, in the county of Hudson and State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Ice-Boats, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

Our invention relates to improvements in vehicles adapted to be propelled along ice or hard snow and commonly called ice boats; and an object of our invention is to provide a vehicle of the class just described which will prove simple in construction, comparatively cheap in manufacture and readily controllable and dirigible in use.

Another object of our invention is to provide an ice boat which may be propelled by a young boy using his legs.

A further object of our invention is to provide an ice boat in which the propellers may in case of need be used as a brake.

Other features of our invention will be alluded to in the description and claims which follow.

In the drawings illustrating the principle of our invention and the best mode now known to us of applying that principle, Figure 1 is a side elevation of our new ice boat; Fig. 2 is a central vertical longitudinal section; Fig. 3 is a plan view; Fig. 4 is a sectional detail showing the devices for raising and lowering the propellers; and Fig. 5 is a detail of the rudder and its mounting.

The shell or hull *a* is mounted upon a pair of runners *b* and carries at its front end a hood *c* and at its rear a seat *d*. Between the sides of the shell near its middle is mounted a footboard *e* which serves as a rest for the feet of the operator or driver and also as a fender to protect his legs against the current of cold air and against drifting snow. As shown in Figs. 2 and 3, the hood *c* is formed with a central longitudinal slot *f* and each of its sides is supported by suitable braces *f'*, while transverse braces *g* extend between the sides of the shell.

Journaled in rear of the footboard *e* and suitably disposed with regard to the seat *d*

is a transverse shaft *h* upon which is centrally mounted the driving sprocket *i* provided with pedals *j* and chain-connected with the sprocket *k* which is fast upon the propeller-shaft *m*. Mounted fast upon the latter on each side of the sprocket *k* is a toothed propeller *n*; but the number of propellers may be varied to meet the exigencies of use. Each side of the shell *a* is formed with a slot *o* through which projects an end of the propeller-shaft *m*; and each end of the latter is carried by and journaled in the lower end of an elbow-lever *p* the upper end of which is formed with the hand-grasp *q*. The elbow-levers *p* are each fulcrumed upon an end of the transverse shaft *r* and extend upwardly between the side of the seat *d* and a toothed bar *s* fastened thereto (Fig. 4).

When the elbow levers *p* are engaged in the notches *t*, the propeller-shaft *m* is raised so that the teeth of the propellers do not touch the ice (or the crust of the snow) and the driver, resting his feet upon the footboard *e*, may coast. By throwing the elbow-levers *p* to the last notch in rear, the driver, back-pedaling at the same time, may use the propellers as a brake. In the position of the elbow-levers intermediate these extreme positions, the propellers will be engaged more or less with the ice for the purpose of driving the ice boat at the will of the operator.

Extending transversely between the sides of the shell *a* at its forward part is a spring or yielding rudder-bar *u* through which projects at its center the rudder-post *v* on the lower end of which is mounted the rudder *w* and on the upper end of which is mounted the transverse pin *x* by which the forked end of the steering-rod *y* is pivotally secured to the rudder-post *v*. The upper end of the steering-rod *y* is provided with a suitable grasp, as the hand-wheel *z*. By turning the adjusting nuts 2, after loosening the locking-nuts 3, the position of the rudder *w* may be changed relatively to the rudder-bar *u*. But the nuts 2 are so adjusted as to allow the rudder-post *v* to turn readily, as will be understood.

The longitudinal slot *f* in the hood *c* permits the steering-rod *y* to be thrown to the front (see dotted lines, Fig. 2) and to be then used for hauling the ice boat should occasion require.

The rudder-bar *u* being flexible, it allows the rudder *w* to give or yield in case it meets inequalities in the ice.

We claim:

- 5 1. In an ice-boat, the combination with a shell having walls provided with runners, of a seat for the driver suitably disposed in said shell; a foot-board mounted transversely of said shell between said walls; a foot-op-
10 erated wheel provided with pedals and arranged below said seat and in the rear of said foot-board, said foot-board serving to shield the legs of the driver while operating said wheel; a propeller shaft driven by said
15 wheel, said shaft being readily movable by the driver towards and away from the ice; a propelling device mounted on said shaft; and mechanism for moving said device free from the ice to allow the boat to coast, said
20 last named mechanism being under the control of the driver and readily operated by him.

2. In an ice boat, the combination with the shell, of a yielding transverse rudder bar se-
25 cured at each end to a side of said shell; a

rudder-post mounted free to turn in said rudder-bar; a rudder upon the lower end of said rudder post; and a steering rod connected with said rudder post, said yielding rudder-bar holding the rudder down upon
30 the ice and allowing the rudder to yield on meeting inequalities in the surface of the ice.

3. In an ice boat, the combination with the shell and steering mechanism therefor, said shell being formed with a longitudinal slot,
35 of a steering rod pivotally connected with said mechanism and free to be swung through said slot in front of the boat, whereby said rod may be used as a draft device to haul the boat.
40

In witness whereof we have hereunto set our hands at said New York city in the presence of the two undersigned witnesses this twenty-fifth day of October, 1907.

FORDHAM COOPER MAHONY.
AUSTIN MILES HOPEY, Jr.

Witnesses:

EMMA I. MCCARTHY,
JAMES HAMILTON.