No. 609,956. Patented Aug. 30, 1898.

T. H. BROSNIHAN.

ROW BOAT.

(Application filed July 23, 1897.)

(No Model.) 2 Sheets—Sheet 1.

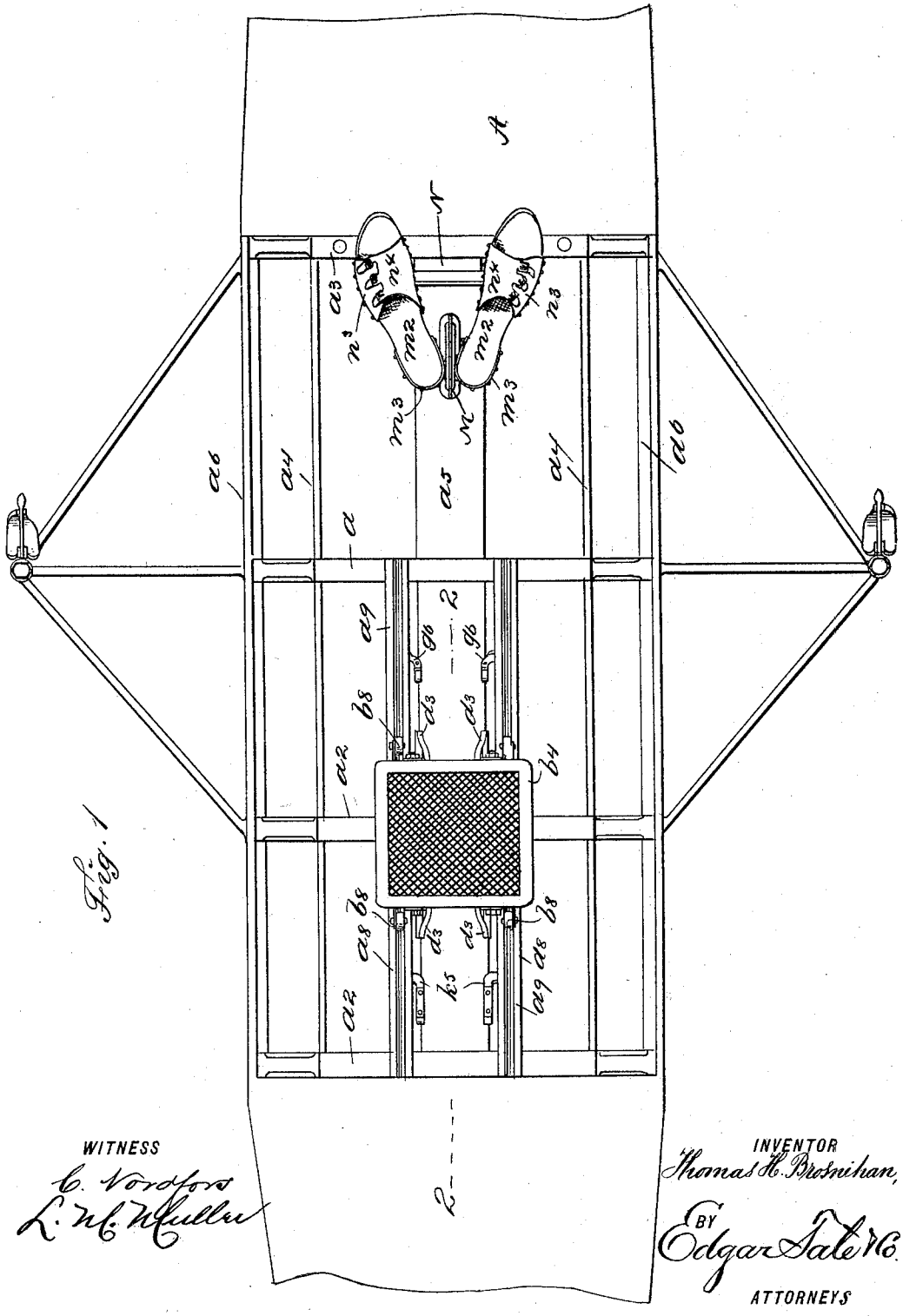


Fig. 1.

WITNESS
C. Vordfors
L. M. Muller

INVENTOR
Thomas H. Brosnihan,
BY
Edgar Tate & Co.
ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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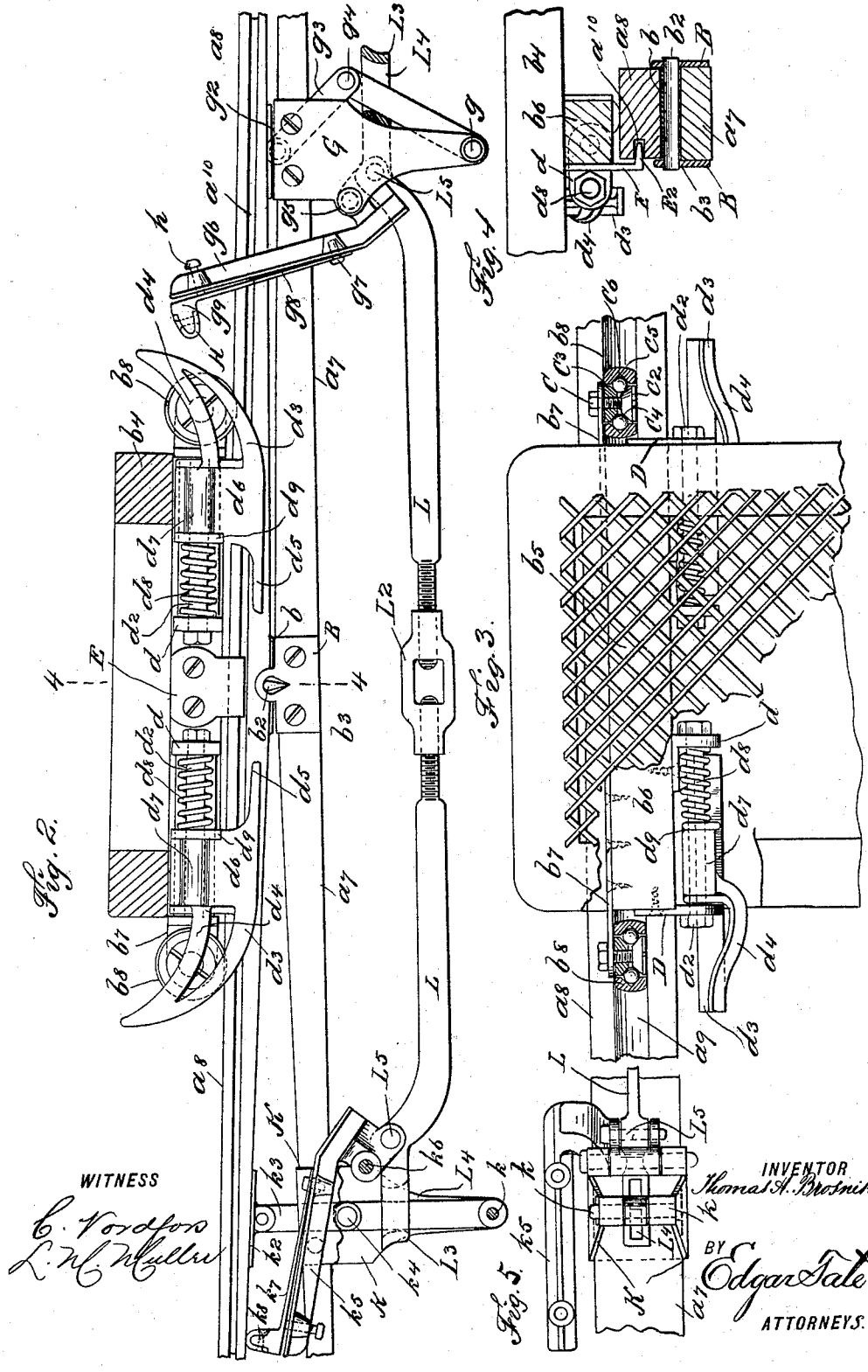


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

THOMAS H. BROSNIHAN, OF LIVERMORE FALLS, MAINE, ASSIGNOR TO MILLETT & BROSNIHAN, OF SAME PLACE.

ROW-BOAT.

SPECIFICATION forming part of Letters Patent No. 609,956, dated August 30, 1898.

Application filed July 23, 1897. Serial No. 645,728. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. BROSNIHAN, a citizen of the United States, residing at Livermore Falls, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Row-Boats, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to row-boats and to that class thereof provided with sliding seats and outriggers; and the object thereof is to provide an improved seat-support for boats of this class, also improved supports for the feet and improved rowlocks; and with these and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a plan view of the central part of a row-boat provided with my improvement; Fig. 2, a partial section on the line 2 2 of Fig. 1; Fig. 3, a plan view of the construction shown in Fig. 2; Fig. 4, a partial section on the line 4 4 of Fig. 2; Fig. 5, a bottom plan view of a detail of the construction.

My improvement is especially adapted for use in connection with what are known as "shell" or "racing" boats, and in Fig. 1 of the drawings I have shown at A a central portion of a boat of this class, and formed therein is the usual central opening, which is provided with a central cross-brace a, two forward cross-braces a^2, a rear cross-brace a^3, longitudinal braces a^4, a bottom longitudinal board a^5, and the usual gunwales a^6.

Mounted longitudinally over the cross-braces a and a^2 are longitudinal supports a^7, one of which is shown in Fig. 2, and mounted directly over said longitudinal bars or supports a^7, two of which are employed, are pivoted tracks or ways a^8, in the tops of which are formed longitudinal grooves a^9 and in the inner sides of each of which is formed a longitudinal groove a^{10}, this groove being best shown in Fig. 2.

The longitudinal tracks or ways a^8 are pivotally supported at their center on the longitudinal bars or supports a^7, and said longitudinal bars or supports a^7 are provided with side plates B, and the said tracks or ways are provided centrally thereof with bottom plates b, to which are secured transverse pivot-pins b^2, which are wedge-shaped in cross-section and the edges of which are directed downwardly and passed through similar openings b^3, formed in the plates B, and the ends of said bars or supports are downwardly inclined in both directions.

I also provide a seat b^4, which is preferably rectangular in form and open in the center and provided with a network seat b^5, and secured longitudinally of the bottom of the seat near each side thereof, directly over the tracks or ways a^8, are plates or bars b^6, to the opposite ends of which are secured plates b^7, which project outwardly beyond the seat in each direction and each of which carries a roller b^8, and the rollers b^8 move in the grooves a^9 in the tracks or ways a^8 and support the seat, and these rollers consist of a screw or bolt C, provided with a head C^2 and with a collar C^3, and between the head C^2 and the collar C^3 is an annular groove in which ball-bearings C^4 are placed, and these ball-bearings are held in position by a rim or band C^5, in the inner perimeter of which is also formed a groove C^6, and the rim or band is free to turn on the ball-bearings C^4, and the friction occasioned by these parts is therefore reduced to a minimum.

Secured to the opposite ends of the bars b^6 are bearings D, which project inwardly, and secured to the inner side of said bars b^6 are bearings d, which project inwardly, and these bearings support shafts d^2, on which are mounted runners d^3, which are curved upwardly, as clearly shown in Fig. 2, and which are provided with backwardly and downwardly directed brace-arms d^4, and which extend backwardly, as shown at d^5, and which are provided with upwardly-directed extensions d^6, on which are formed tubular bearings d^7, through which the shafts d^2 pass, and said shafts are also provided with springs d^8, which operate to force said runners outwardly, the bearings d^7 being provided with collars d^9, on which said springs bear. The

seat b^4 is also provided at each side with a plate E, which is secured thereto, and each of these plates is provided at its lower end with an inwardly-directed extension E^2, and these extensions E^2 fit in the grooves a^{10} at the inner side of the tracks or ways a^8, and by this means the seat is held in connection with said tracks or ways, and said tracks or ways are also braced and the seat is free to roll along said tracks or ways, as will be readily understood.

Secured to each of the horizontal bars or supports a^7, near the front end thereof, are hangers G, in the bottom of which is a pin or bolt g, and connected with each of the tracks or ways a^8 is a plate g^2, with which is pivotally connected one arm of a toggle-lever g^3, the other arm of which is mounted on the pin or bolt g, and said arms of the toggle-lever g^3 are pivotally connected at g^4, and pivotally connected with the inner hanger G at each side, as shown at g^5, is a lever g^6, which projects inwardly and upwardly, and secured to the front side of said lever, near the lower end thereof, as shown at g^7, is a spring g^8, the upper end of which is provided with a head g^9, which is covered with a cushion of rawhide or similar material, as shown at H, and said spring g^8 is provided near its upper end with a backwardly-directed pin h, which passes through the upper end of said lever and by means of which the position of the upper end of said spring may be regulated. The rear ends of the horizontal bars or supports a^7 are also provided at each side with hangers K similar to the hangers G, this construction being best shown in Figs. 2 and 5, the latter being a bottom plan view thereof, and these hangers K support a pin or bolt k, and secured to the bottom of the tracks or ways a^8, directly over the hangers K, are plates k^2, to which is pivoted one arm of a toggle-lever k^3, the other arm of which is pivotally connected therewith at k^4 and also with the pin or bolt k, and pivotally connected with the front of the hangers K at each side is a lever k^5, said pivotal connection being made at k^6, and these levers are also curved inwardly and upwardly and are provided with springs k^7 similar to those secured to the lever g^6, and which are also provided with padded heads, as shown at k^8.

I also provide tie rods or bars L, which are composed of two sections adjustably connected at L^2, and said tie rods or bars are provided at each end with a horizontal end piece L^3, in which is formed a vertical slot or opening L^4, through which the toggle-levers g^3 at the front and k^3 at the rear pass, the slot or opening L^4, through which the toggle-lever k^3 passes, being shown in dotted lines in Fig. 2 and in full lines in Fig. 5, and it will be understood that this construction is exactly the same on both sides or beneath each of the tracks or ways a^8. The separate sections of the tie rods or bars L are also pivotally connected with the levers g^6 and k^5, as shown at L^5, the connection between the said tie-rods and said levers being below that of the connection between said levers and the hangers G and K.

As thus constructed, supposing the parts to be in the position shown in Fig. 2, as the seat b^4 moves forwardly and reaches the forward end of its movement the runners d^3 strike the upper padded ends of the springs g^8 of the levers g^6 and force said levers forwardly, and this operation forces the tie-rods L backwardly and straightens the toggle-levers g^3 and raises the forward end of the tracks or ways a^8, so that the backward movement of the seat will be on a downwardly-inclined plane, and in this operation, as will be understood, the toggle-levers k^3 are also forced backwardly, so as to permit the rear ends of the tracks or ways a^8 to drop downwardly, and when the seat reaches the limit of its backward movement the runners d^3 at the rear end thereof strike the padded ends k^8 of the springs k^7, which are secured to the levers k^5, and said levers are forced backwardly, the tie-rods L are forced outwardly, and this operation straightens the toggle-levers k^3 and raises the rear ends of the tracks or ways a^8 and lowers the forward ends thereof, and the seat b^4 in its forward movement moves downwardly and forwardly over an inclined plane, and this operation is repeated as long as the seat is in use, the opposite ends of the tracks or ways a^8 being alternately raised and lowered as the seat reaches the limit of its movement in the opposite directions.

By means of this construction it will be seen that the movement of the seat is facilitated, said seat always moving downwardly over an inclined plane, no matter in which direction the seat is moving, and the motion of the seat is thus largely automatic.

My improvement is simple in construction and operation and is perfectly adapted to accomplish the result for which it is intended, and it will be apparent that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A row-boat provided with two longitudinal bars or supports, tracks or ways pivotally connected with said longitudinal bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and devices in operative connection with said longitudinal bars or supports, and with the opposite ends of said tracks or ways for raising and lowering the opposite ends of said tracks or ways, substantially as shown and described.

2. A row-boat provided with two longitudinal bars or supports, the opposite ends of which are downwardly inclined, tracks or ways pivotally connected with the upper side of said bars or supports, a longitudinally-mov-

able seat mounted on said tracks or ways, and devices connected with said longitudinal bars or supports and said tracks or ways, at the opposite ends thereof, for alternately raising and lowering the opposite ends of said tracks or ways, substantially as shown and described.

3. A row-boat provided with two longitudinal bars or supports, the opposite ends of which are downwardly inclined, tracks or ways pivotally connected with the upper side of said bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and devices connected with said longitudinal bars or supports and said tracks or ways, at the opposite ends thereof, for alternately raising and lowering the opposite ends of said tracks or ways, and said seat being provided with rollers which move in grooves formed in said tracks or ways, and at the front and rear thereof with spring-projected runners, by which said devices are operated, substantially as shown and described.

4. A row-boat provided with two longitudinal bars or supports, the ends of which are downwardly inclined, longitudinal tracks or ways pivotally supported on said bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and toggle-levers pivotally connected with said tracks or ways, and extending downwardly and pivotally connected with hangers secured to said bars or supports, levers pivotally connected with said hangers and extending upwardly, tie-rods connected with the lower ends of said levers, and provided at their ends with slots or openings through which said toggle-levers pass, and devices connected with said seat for operating said first-named levers, substantially as shown and described.

5. A row-boat provided with two longitudinal bars or supports, the ends of which are downwardly inclined, longitudinal tracks or ways pivotally supported on said bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and toggle-levers pivotally connected with said tracks or ways, and extending downwardly and pivotally connected with hangers secured to said bars or supports, levers pivotally connected with said hangers and extending upwardly, tie-rods connected with the lower ends of said levers, and provided at their ends with slots or openings through which said toggle-levers pass, and devices connected with said seat for operating said first-named levers, consisting of spring-operated runners which project from the front and rear of said seat, substantially as shown and described.

6. A row-boat provided with longitudinal bars or supports, the ends of which are inclined, tracks or ways pivotally mounted on said bars or supports, a seat mounted on said tracks or ways, and provided with rollers which move in grooves formed therein, said seat being also provided with side plates which engage with grooves formed in the inner sides of said tracks or ways, spring-operated runners connected with said seat and projecting forwardly and backwardly thereof, hangers connected with said bars or supports, and provided with toggle-levers which are pivotally connected with the opposite ends of said tracks or ways, tie-rods through the opposite ends of which said toggle-levers pass, and levers pivotally connected with said hangers, and with said tie-rods, substantially as shown and described.

7. A row-boat provided with two longitudinal pivotally-supported tracks or ways, a rolling seat mounted on said tracks or ways, and devices for alternately raising and lowering the opposite ends of said tracks or ways, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 21st day of July, 1897.

THOMAS H. BROSNIHAN.

Witnesses:
LINCOLN G. HATCH,
WALTER A. FRENCH.