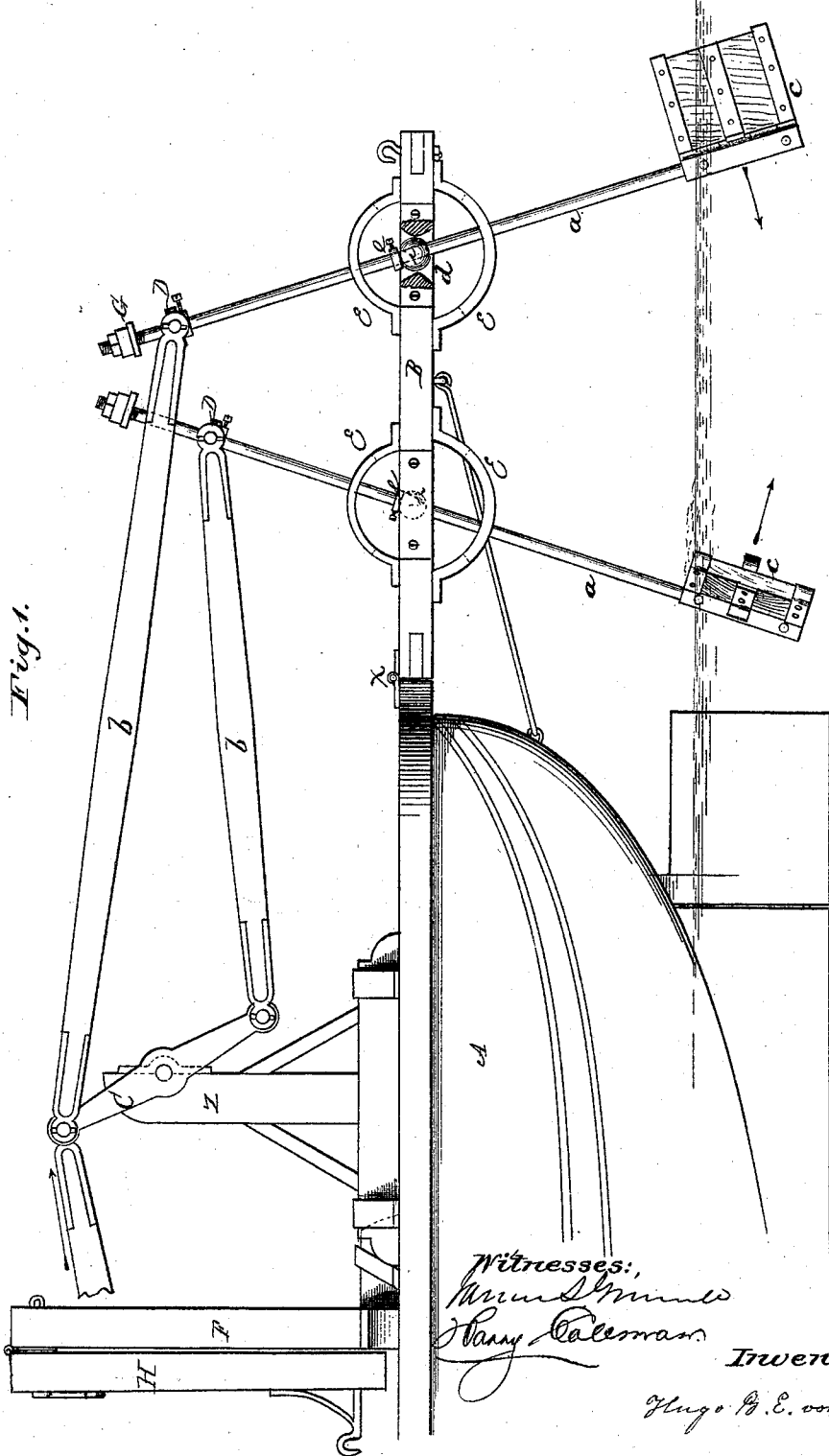


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Means for Propelling Vessels.

No. 150,915.

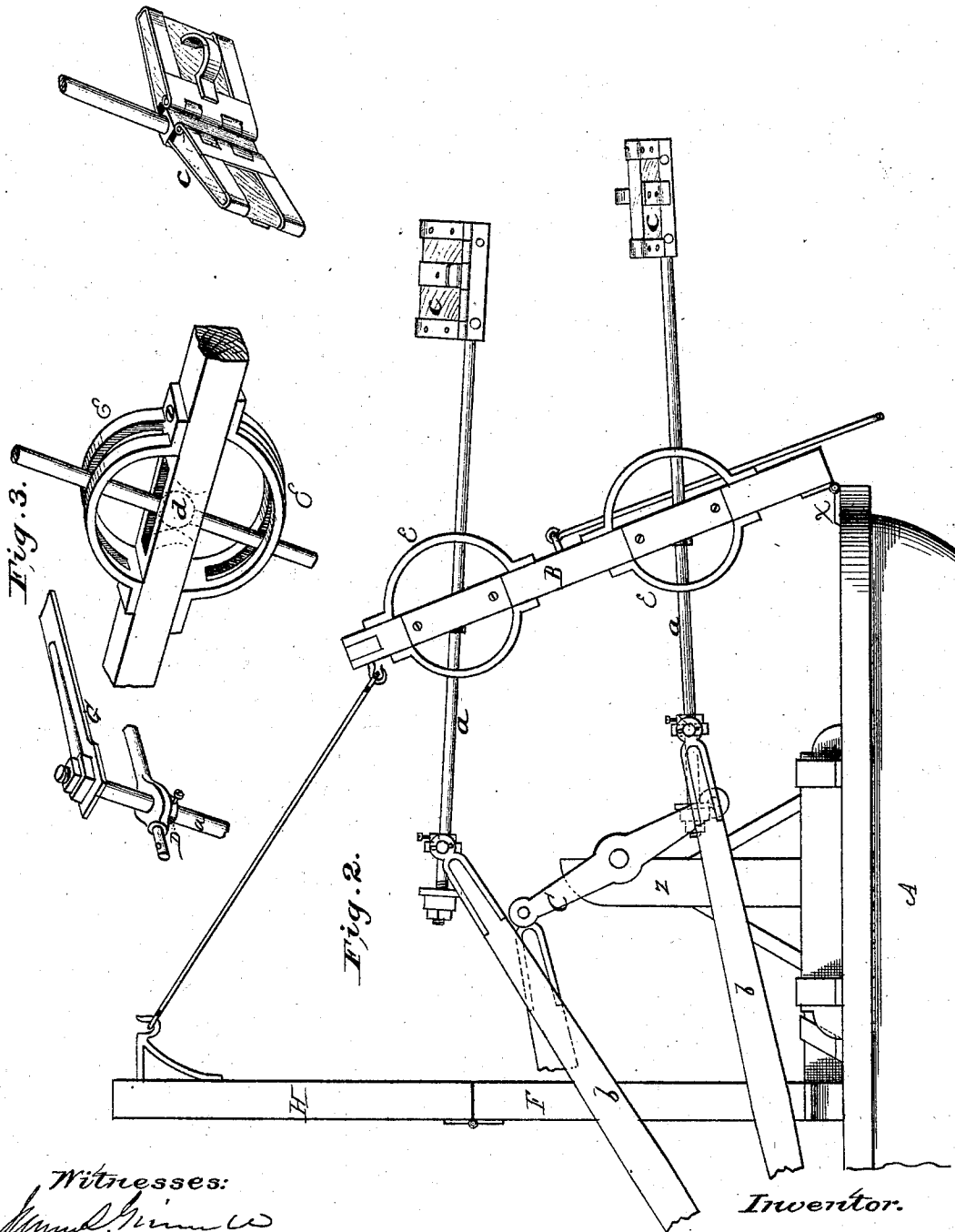
Patented May 12, 1874.



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Witnesses:
H. B. E. von Elsnér
Harry Coleman.

Inventor.
H. B. E. von Elsnér

UNITED STATES PATENT OFFICE.

HUGO B. E. VON ELSNER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN THE MEANS FOR PROPELLING VESSELS.

Specification forming part of Letters Patent No. **150,915**, dated May 12, 1874; application filed March 20, 1874.

To all whom it may concern:

Be it known that I, H. B. E. VON ELSNER, of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in Propelling Canal-Boats; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a side view of the stern of a boat with my improved mechanism applied thereto, and in position for practical operation. Fig. 2 shows the said mechanism elevated or hoisted on the boat. Fig. 3 shows detail views of the propelling mechanism.

The invention is an improvement in the class of propellers for canal-boats and other navigable vessels in which oars or paddles are reciprocated by suitable means. The improvement relates to the arrangement of slotted guides and adjustable collars or bearing-blocks with the paddle-levers, for the purposes, respectively, of maintaining them in a vertical plane while vibrating, and adjusting the leverage of the paddles, and also the depth to which they shall work in the water, as hereinafter described.

The paddles *c* are formed of two parts or leaves, of like form and size, which are hinged to the rods or levers *a a*, so as to open laterally when moving backward, and close together when moving in the opposite direction. They are prevented coming into actual contact in thus closing by a small curved plate-spring, Fig. 3. The levers *a a* are pivoted at the middle of their length, or thereabout, in a horizontal bar or frame, B, and operated by a walking-beam, C, and suitable pitmen or connecting rods *b b*. The walking-beam is pivoted to a post or standard, *z*, and vibrated by a suitable connection with the crank-shaft of the engine or other motor. The rods *b b* are connected to the paddle-levers *a a* by means of collars D, which are made adjustable by means of clamp-screws. Thus the leverage and length of stroke of the paddles may be increased or diminished by adjusting the collars D higher or lower on the levers *a*—that is to say, the leverage will be

decreased by lowering the collars, while the length of stroke will be increased correspondingly; but the depth to which the paddles enter or work in the water often requires to be varied, also, in order to produce the best results, the essential or determining conditions being the number of feet drawn by the boat or vessel and the place of adjustment of the levers. I hence apply collars *ee* to the paddle-levers to support them in their bearings. By means of screws the collars may be adjusted higher or lower to lengthen or shorten the lower arm of the lever. The levers *a* are guided and steadied in their vertical movement by means of curved slotted plates E, which are applied to the beam B on both the upper and under side. There may be one or more pairs of levers and paddles, those of each pair being connected at the top by a cross-bar, G, Fig. 3. When in practical operation, it is evident the paddles of one pair will always move reversely to those of the pair behind or in front of them, so that a continuous and equable propulsive effect is maintained.

The paddles and levers are hoisted out of the water and partly on board the boat when passing locks, or on other occasions where there is danger of injury or want of space for the boat. The beam is, therefore, hinged to the stern of the boat A, at *x*, to adapt it to be turned up into an inclined position, the rods or pitmen *b b* being in that case detached from the walking-beam and drawn back on the deck. The beam is held thus elevated by hook X and a rod connection with the hinged part H of a post, F, fixed vertically to the deck.

What I claim is—

1. The combination, with the pivoted vibrating paddle-levers *a a*, of the slotted guides E E, arranged as shown and described.
2. The combination, with the paddle-levers, of the adjustable collars D D and *ee*, as and for the purpose specified.

HUGO B. E. VON ELSNER.

Witnesses:

JAMES S. GRINNELL,
HARRY COLEMAN.