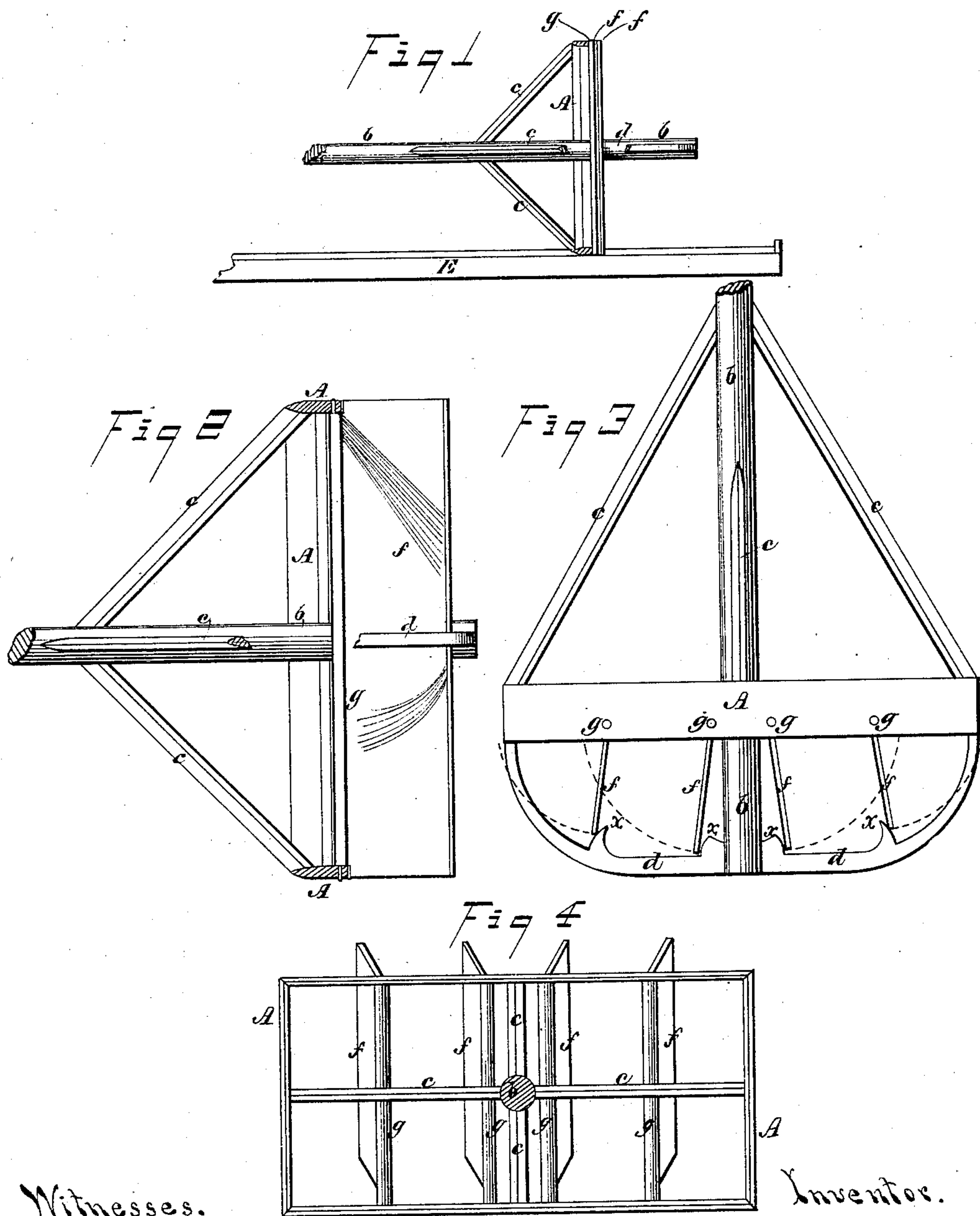


(No Model.)

P. GLEASON.
VIBRATING PROPELLER.

No. 285,480.

Patented Sept. 25, 1883.



Witnesses.

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PATRICK GLEASON, OF WAUSAU, WISCONSIN.

VIBRATING PROPELLER.

SPECIFICATION forming part of Letters Patent No. 285,480, dated September 25, 1883.

Application filed May 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, PATRICK GLEASON, a citizen of the United States, residing at Wausau, in the county of Marathon and State of Wisconsin, have invented certain new and useful Improvements in a Propeller; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention is a paddle-propeller, and embraces the following peculiar features: a metal frame in which are vertically hinged or pivoted two sets of paddles or floats, one on each side of the propeller-shaft, and counter-swinging or opening and closing in opposite directions; also, said frame adjusted and carried upon suitable beam-slides projecting horizontally backward from the stern-frame of the boat or vessel; also, said frame having a center shaft, by which it is suitably braced and supported in a vertical position, connected with a suitable motor, and moved horizontally back and forth; and, lastly, a semi-elliptical brace extending horizontally across and behind the frame through the rear end of said center shaft, and provided with a double set of check-spurs suitably projecting from its inner edge and conforming in number with said floats, all of which and their purposes are hereinafter more fully described, and illustrated by the accompanying drawings, in which the same letters designate identical parts of my invention in the different figures, respectively.

Figure 1 illustrates an end elevation of my device, showing the inner side of the farther end of the frame with the top and bottom in section, the center shaft with the inner ends of its horizontal braces cut off, the swinging and lapping floats closed upon the rear of the frame, and one of the timber-slides which carry the device. Fig. 2 illustrates the same view, but an enlarged view of my device, showing the top and bottom of the frame cut off just in front of the nearest valve-float, which is open.

Fig. 3 illustrates a top view of my device, showing the valve-floats swung open, with their outer or swinging edges resting against their respective check-spurs projecting from the inner edge of the curved rear brace; and Fig. 4 illustrates a front view of the frame, showing the floats open to the rear.

The letter A represents the said frame of my device, which is made of suitable metal and dimensions, and substantially of the form shown in the drawings, and is stayed or supported in a vertical position upon the horizontal center shaft, *b*, by the front braces, *c*, and the curved rear brace, *d*. The front edges of said frame and braces are beveled and thin, so as to present the least possible resistance to the water in the forward motion of the device. The said shaft *b* has its outer end passed through and is fixed in the center of said frame by the said mutual counter-braces, and has its other end made to fittingly couple, directly or otherwise, with a suitable motor in the hull of a boat or vessel.

The letter B represents one of the timber-slides, or that portion of the invention which forms the projective and connective part of the stern-frame of the boat, and carries the whole propelling device, and said part may be suitably constructed and joined to said stern-frame in any of the usual ways pertaining to propellers and stern-wheels of steamers without essentially changing or limiting the characteristic features of my device. The said paddles or floats *f* consist of suitable leaves or plates of metal or wood, and are of suitable shape, dimensions, and number to properly work in the frame A, in which they are vertically hinged, their hinging rods or pintles *g* having their ends journaled or secured into the top and bottom of said frame, as shown. The outer edges of said leaves swing automatically back and forth or open and shut as the frame is moved forward and backward in the water. The simultaneous swing of said floats is in two opposite directions, according to their position on either side of the shaft *b*, so that in opening they swing toward the said shaft, and in closing toward the ends of the frame. They also overlap, on either side of said shaft, toward the ends of the frame, and also the outside

edges of the same, in order to prevent any water from passing between the closed edges of the floats and the hinging-rods and the edges or jamb of the frame, and thereby present as much resisting and propelling surface as possible. Said floats are also limited in their outward swing, being prevented from opening to their fullest extent, and held with a slight incline toward the current passing through the open frame on either side of the center shaft by the check-spurs *x*, which project, as shown, from the inner edge of the said curved brace *d*, this provision being made for the purpose of not only causing said floats to quickly catch the first influence of the resisting current in the commencement of the backward motion of the propeller, but of preventing said current in said motion from swinging the floats still farther and the wrong way, instead of closing them as intended, so that the water in said backward motion of the device, when it has closed the floats, is forced back by their rear faces, and thus propels the boat; and in said forward motion the water, after opening said leaves, passes freely through the open frame, meeting with hardly any perceptible resistance by friction. Again, the above-described mode of propulsion by means of the said freely-swinging floats pushed horizontally backward on a parallel plane below the surface of the water, closely resembling the blade of an oar or sweep in the middle portion of its stroke,

does not create such a swell or such rollers as to wash the banks of any narrow or artificial channel of water, like unto the rapid beating and throwing process by the floats of paddle-wheels, or the churning of the water by the blades of propellers striking perpendicularly to the plane of the surface. Therefore,

What I claim as new, and desire to secure by Letters Patent, is—

A paddle-propeller consisting of a metallic frame, *A*, furnished with two sets, one on each side of the horizontal center shaft, *b*, of the vertically-hinged and automatically counter-swinging floats *f*, the outer end of said center shaft supporting the frame *A* in a vertical position upon the horizontal beam-slides *E* by the counter-braces *c* and the curved rear brace, *d*, and its inner end coupled with the machinery of any suitable motor in the hull of a boat or vessel, from the stern-frame of which the beam-slides *E* and other contributive parts of their supporting-frame are projected and stayed, also said rear brace, *d*, provided with the inwardly-projecting check-spurs *x*, substantially as and for the purposes herein specified.

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

PATRICK GLEASON.

Witnesses:

CHAS. V. BARDEEN,
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