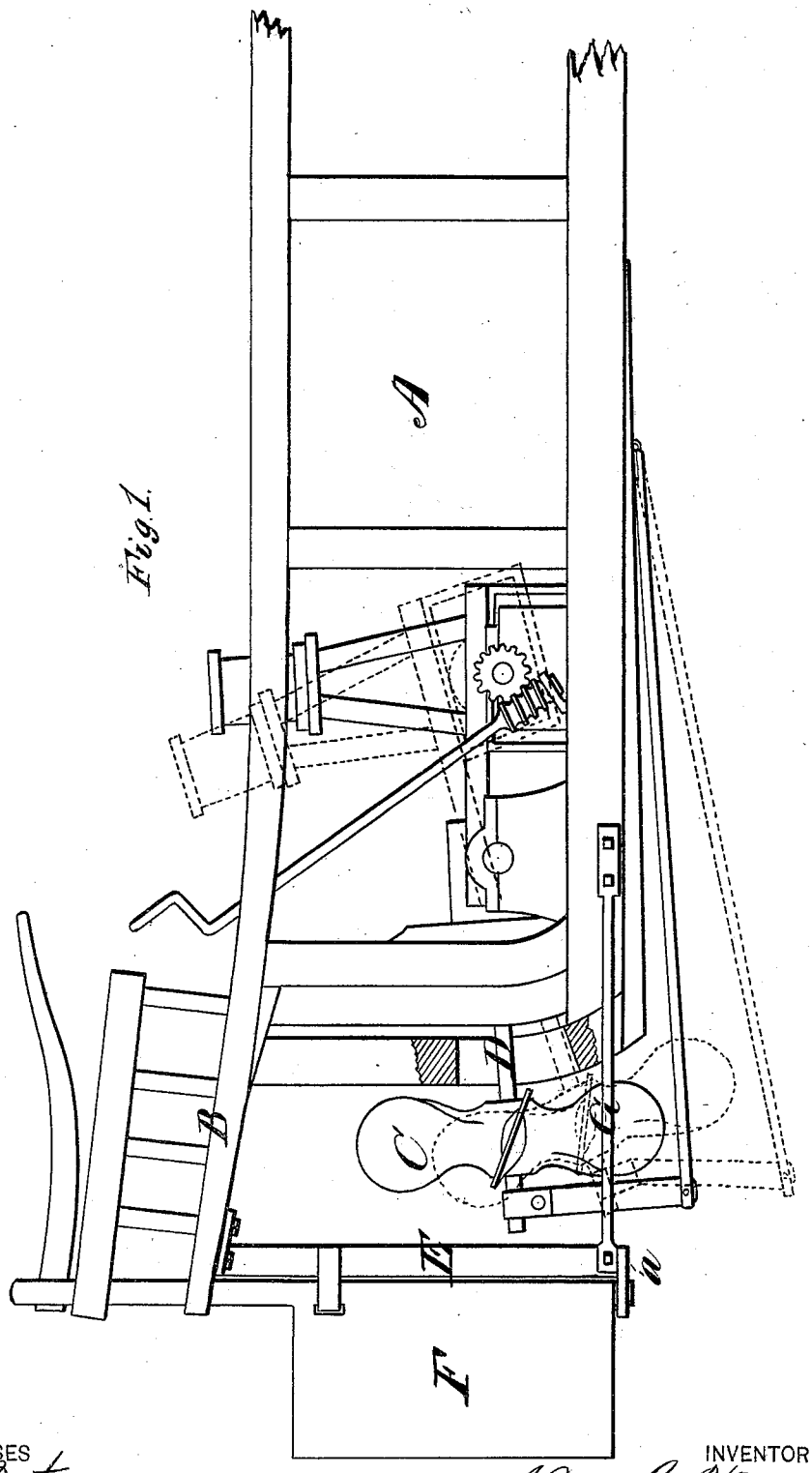
2 Sheets—Sheet 1.

H. G. WAGNER.

GUARDS FOR SCREW-PROPELLERS.

No. 170,608. Patented Nov. 30, 1875.

Fig. 1.



WITNESSES

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2 Sheets—Sheet 2.

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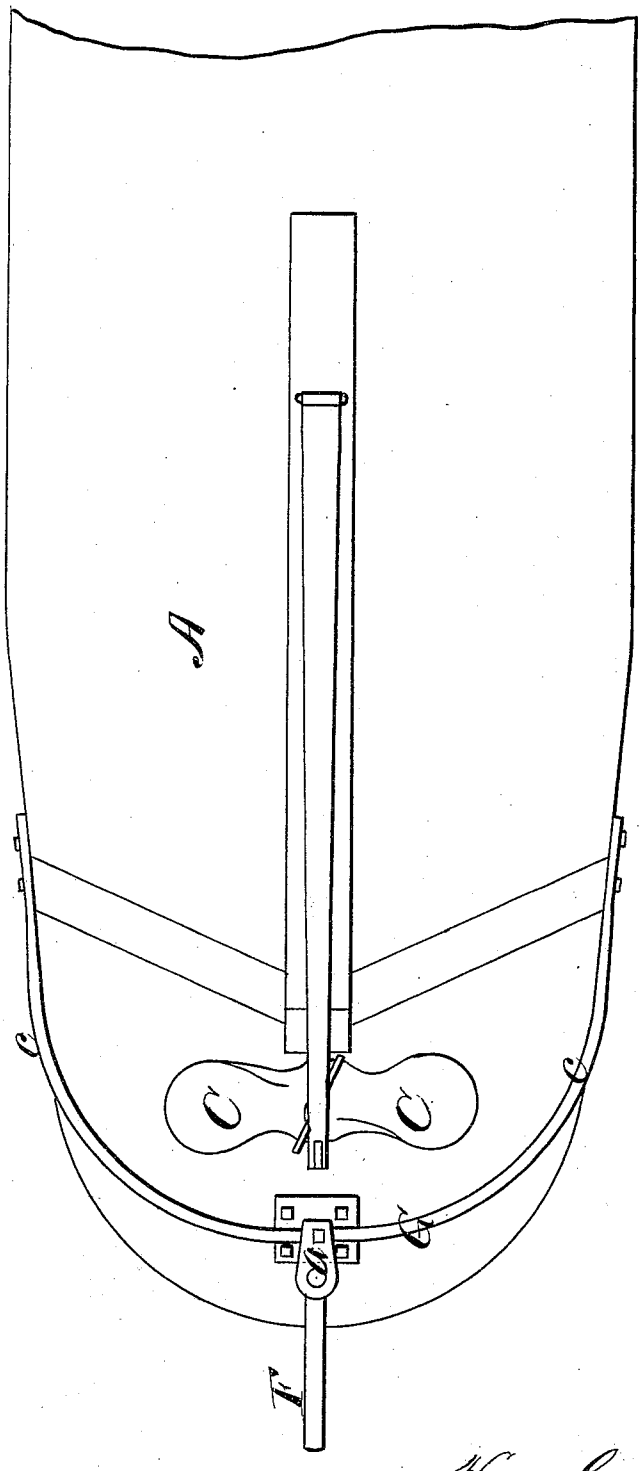
Fig. 2.



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UNITED STATES PATENT OFFICE.

HENRY G. WAGNER, OF GEORGETOWN, DISTRICT OF COLUMBIA.

IMPROVEMENT IN GUARDS FOR SCREW-PROPELLERS.

Specification forming part of Letters Patent No. **170,608**, dated November 30, 1875; application filed June 26, 1875.

To all whom it may concern:

Be it known that I, HENRY G. WAGNER, of Georgetown, in the District of Columbia, have invented a new and valuable Improvement in Screw-Propeller Attachments; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my device, and Fig. 2 is a plan view of the same.

This invention has relation to improvements in that class of screw-propellers for which Letters Patent of the United States were granted to Mahlon B. Atkinson, bearing date of April 21, 1874, and numbered 149,969; and the nature of the invention consists in combining with a propeller-screw which is vertically adjustable, as shown in the said Letters Patent, and with the stern-post of a vessel, two quadrant-shaped metallic guards or fenders, which are bolted to the lower end of the said post and to the rear end of the sides of the vessel, whereby the stern-post is provided with a suitable support, and the screw is prevented from coming in contact with the banks of the canal or lock or passing vessel, as will be fully understood from the following description.

The devices shown for raising or lowering the screw being fully explained in the above-cited Letters Patent, it is not deemed necessary to enter upon a description thereof in the present case. I shall, therefore, confine myself to the mechanical devices forming the gist of my invention.

In the annexed drawings, A designates a section of the frame of a vessel adapted from its shape to canal navigation, having an overhanging deck, B, at its rear end, under which is situated a propeller-screw, C, which is keyed in the usual manner upon a shaft, D, passing through a slot in the interior of the vessel, water being prevented from passing into the vessel by means of a suitable packing-box, through which the said shaft extends. E represents the stern-post, depending from, and rigidly secured to, overhanging deck B by means of suitable bolts. This post has upon its lower end, which extends down nearly to a level with the keel of the vessel, a shoe, *a*, in which is stepped a rudder, F, passing upward through deck B, as shown in Fig. 1. G represents a semicircular metallic guard or fender, which is rigidly bolted to the sides of the vessel, near its lower edge, and to the corresponding end of the stern-post. This fender or guard is made up of two sections, *c*, so that, in case of accidental breakage of one, the other will not be rendered useless, and the fender may be restored to its former condition by replacing the broken one, without interfering with the general structure.

Fender G serves to brace stern-post against vibration, and materially adds to its powers of resistance to strain, however occasioned. It also serves to prevent the blades of the screw from coming in contact with the banks of the canal or lock, or with any other object against which the stern of the vessel may be swung by wind or tide, and being broken off. This fender will, under certain circumstances, prevent floating logs and other débris from becoming caught in the screw, and either arresting its revolution or breaking off the blade.

It is evident from the above description that the guard G may be applied where two propellers are used, and that it will be equally effective whether the said propeller or propellers be vertically adjustable or stationary.

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

The fender G, made of two sections, *c c*, attached at their outer ends to the lower end of the stern-post E, and at their inner ends to the lower part of the hull, and surrounding and guarding the screw-propeller C, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HENRY G. WAGNER.

Witnesses:

WALTER C. MASI,

GEORGE E. UPHAM.