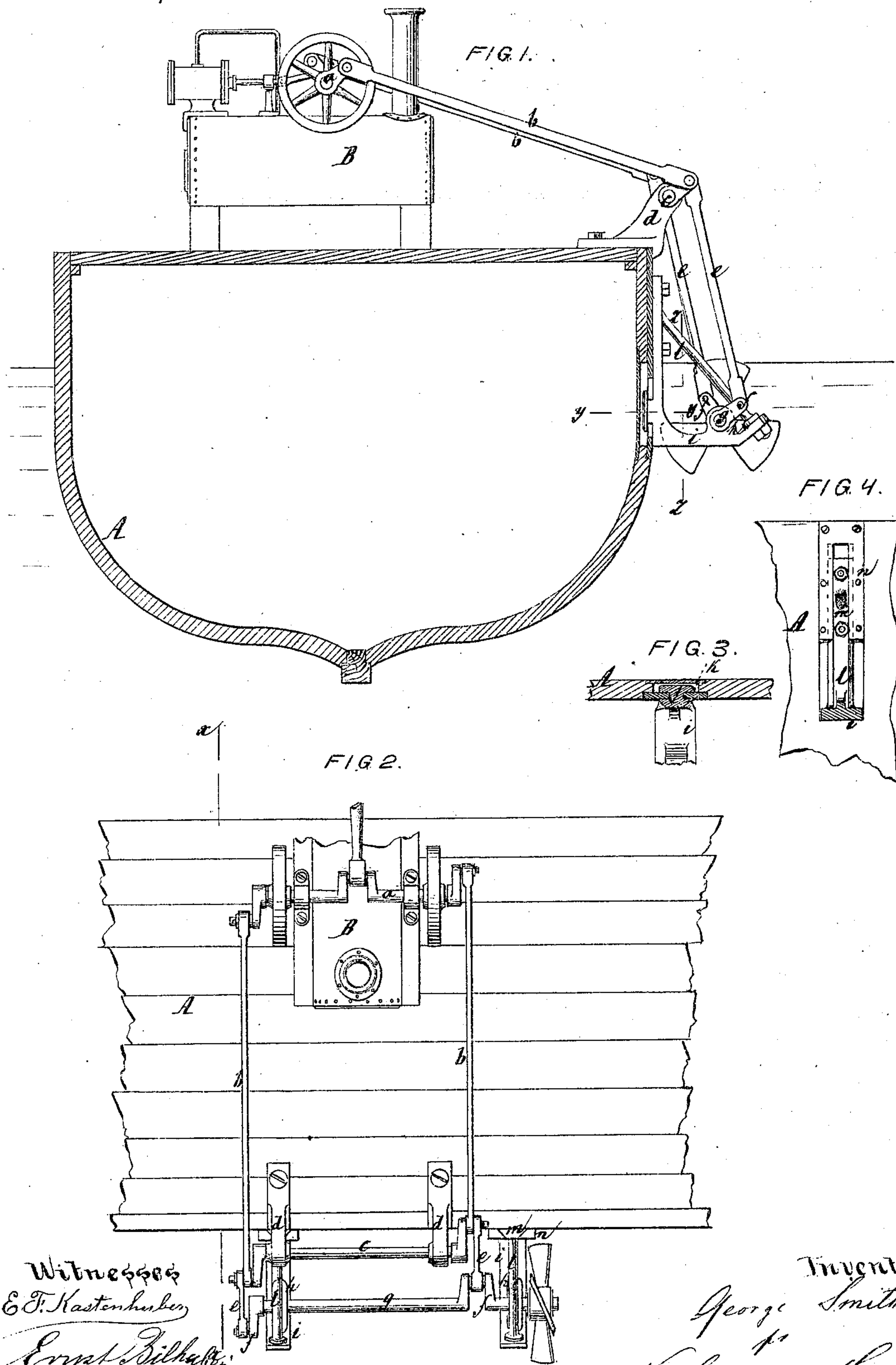


**GEORGE SMITH.**  
**Improvement in Attaching Propellers to Vessels.**  
 No. 124,170. Patented Feb. 27, 1872.





# UNITED STATES PATENT OFFICE.

GEORGE SMITH, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN MEANS OF ATTACHING PROPELLERS TO VESSELS.

Specification forming part of Letters Patent No. 124,170, dated February 27, 1872.

*To all whom it may concern:*

Be it known that I, GEORGE SMITH, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Propellers; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a sectional view of a vessel with my invention, the line *xx*, Fig. 2, indicating the plane of section. Fig. 2 is a plan or top view of the same. Fig. 3 is a horizontal section in the plane *yy*, Fig. 1. Fig. 4 is a vertical section in the plane *zz*, Fig. 1.

Similar letters indicate corresponding parts.

This invention relates to a screw-propeller, which is mounted in such a manner that it can be attached to the side of a vessel, and connected with an engine situated on the deck, or in any convenient position; and if the propeller is not needed, it can be readily detached from the engine, and removed from the side of the vessel, so as not to impede the vessel's progress. The bed-plate, which supports the pillow-blocks of the propeller-shaft, is provided with dovetailed lugs to catch in corresponding cavities in the vessel's side, and from said bed-plate rise standards connecting with dovetailed slides, which catch in corresponding guides attached to the vessel's side in such a manner that said bed-plate, together with the parts connected to it, can be readily attached to or detached from the vessel's side. The propeller-shaft carries two cranks set at an angle of ninety degrees to each other, and these cranks connect with a double crank-shaft, to which a revolving motion is imparted from the engine, and which has its bearings in standards mounted on the deck, and projecting over the side of the vessel.

In the drawing, the letter A designates a vessel of any suitable construction, though it must be remarked that my propeller is intended particularly for the purpose of propelling sailing-vessels in calms, or to serve as a substitute for a tug in bringing the vessel up to her dock in a harbor. On the deck of this vessel is placed a steam-boiler, B, which fur-

nishes steam to drive an engine, the crank-shaft *a* of which connects by rods *b* with a corresponding double crank-shaft, *c*, mounted in standards *d*, which project over the side of the vessel. The cranks of the shaft *c* connect by rods *e* with corresponding cranks *f* on the propeller-shaft *g*, which has its bearings in pillow-blocks *h*, supported by the bed-plate *i*. The cranks of all the shafts are set at angles of ninety degrees toward each other, so that the dead-points of one set of cranks are overcome by the action of the other set. The bed-plate *i* is provided with dovetailed lugs *j*, (see Fig. 3,) which project from its inner edge, and which can be made to catch in corresponding cavities *k* in the side of the vessel; and from the bed-plate rise inverted V-shaped standards *l*, which support dovetailed slides *m*, intended to engage with guides *n* attached to the sides of the vessel.

By disconnecting the rods *e* from the cranks of the shaft *c*, the bed-plate, together with all the machinery attached to it, can be readily raised and disengaged from the vessel when the propeller is not required; and if the vessel is going under sail, it is thus relieved from dragging the propeller in the water. If the vessel is becalmed, or if she enters a harbor, the bed-plate *i* is readily attached to the vessel's side, and the propeller can be connected to the engine and started with little loss of time.

If desired, two propellers may be attached to the vessel, one to each side; but in most cases one propeller will be sufficient.

The construction of the propeller itself forms no part of my invention, and I reserve the right to use a propeller of any approved construction.

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

The combination, substantially as described, of the propeller-frame, consisting of the bed-plate *i*, lugs *j*, standards *l*, and slides *m*, with cavities or catches on the side of a vessel, whereby a propeller may be readily attached and detached, as and for the purpose set forth.

GEORGE SMITH.

Witnesses:

THEO. F. HARTZ,  
J. FRANK JUESTA.