W. W. SHOE.

Steering-Propeller.

No. 198,053. Patented Dec. 11, 1877

Fig. 1.

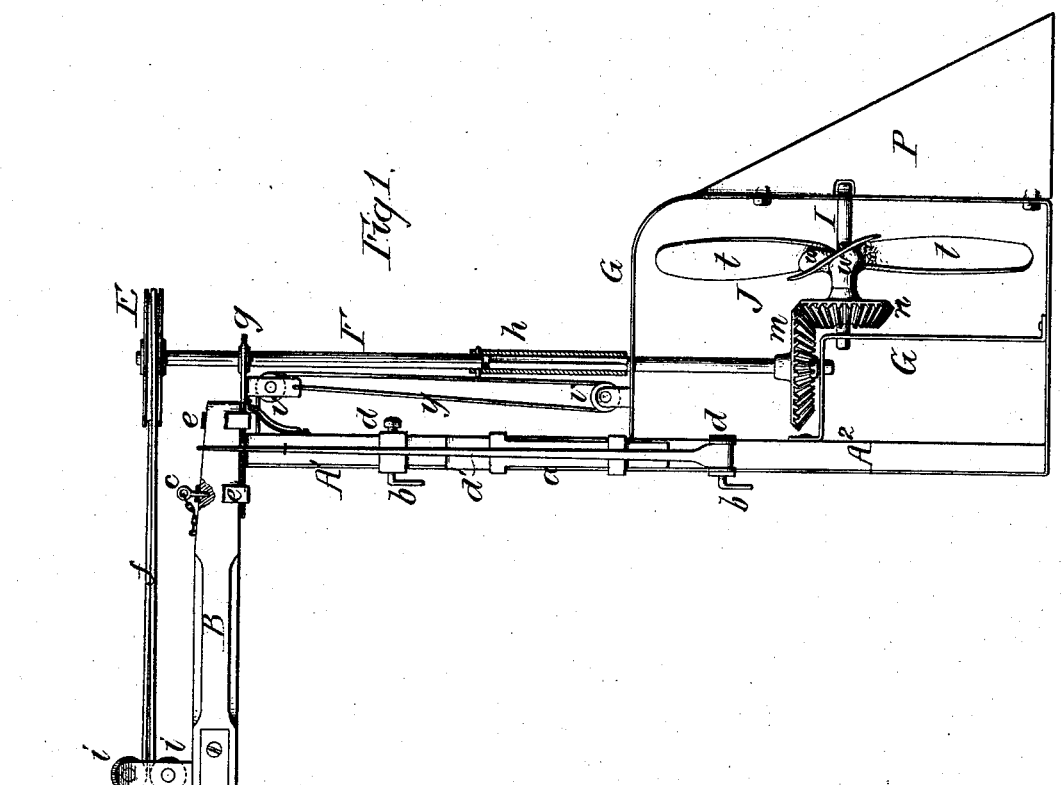
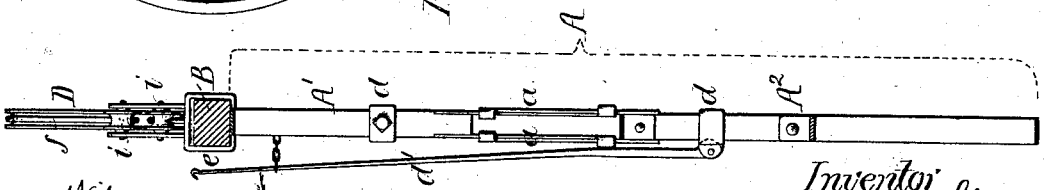


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM W. SHOE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STEERING-PROPELLERS.

Specification forming part of Letters Patent No. **198,053**, dated December 11, 1877; application filed September 24, 1877.

To all whom it may concern:

Be it known that I, WILLIAM W. SHOE, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Devices for Propelling and Steering Boats, of which the following is a specification:

The object of my invention is to construct a light and compact but effective steering and propelling device, adapted especially for small boats, canal-boats, lighters, &c., an object which I attain in the following manner, reference being had to the accompanying drawing, in which—

Figure 1 is a side view, partly in section, of my improved steering and propelling device; and Fig. 2, a transverse section.

The rudder-post is made in two parts, A^1 and A^2, connected together by means of side plates *a*, which can slide on and are guided by each other, so that the lower part A^2 of the post can be adjusted vertically on the upper part A^1. The post is hung to eyes on the stern-post of the boat by means of pintles *b*, in the same manner as an ordinary rudder. Each of the pintles *b* is carried by a sleeve, *d*, which embraces the rudder-post A, and can slide vertically thereon, the upper sleeve being secured after adjustment by means of a set-screw or otherwise, and the lower one by means of a cam-lever, *d'*, hung to the sleeve, and extending upward to such a height that it can be operated from the boat. The upper end of the post A is provided with eyes *e e*, to which is adapted the tapering end of the tiller B, which may be secured in position by means of a pin, *c*. The tiller carries near its outer end a driving-pulley, D, the shaft of which is furnished with crank-handles, to be operated by the occupants of the boat. Motion is communicated from the driving-pulley D to a pulley, E, on the top of the shaft F by means of the belt *f*, which is properly directed by idler-pulleys *i i*. The shaft F is made in two parts, the upper of which has its bearing in a bracket, *g*, projecting from the upper portion A^1 of the rudder-post, while the lower portion of the shaft has its bearing in a frame, G, carried by the lower portion A^2 of said post, the upper end of the said lower portion of the shaft F being of a square or angular section, and being adapted to the similarly-shaped interior of a sleeve, *h*, secured to the lower end of the upper portion of the shaft. Near the lower end of the shaft F is secured a bevel-wheel, *m*, which gears into a bevel-pinion, *n*, on the propeller-shaft I, the latter also turning in bearings in the frame G, and carrying, in the present instance, a four-bladed wheel, J, the blades *t* being secured by suitable bolts to projections *w* on the hub M, so that they can be readily removed and replaced when necessary.

The particular construction of the propeller need not be described here, as it will form the subject of a separate application for a patent.

To the rear of the frame G is secured a plate, P, which serves to aid the propeller J in steering the boat when the frame G is turned to one side or the other.

The pintles *b b* are made adjustable vertically, in order that the device may be applied to boats having eyes at different distances apart, the upper pintle being first adjusted to the upper eye, and the sleeve carrying the lower pintle being then released from the post A by moving the cam-lever *d'* in the direction of the arrow, Fig. 2, after which the sleeve is adjusted vertically to the desired position, and again secured by restoring the said lever *d'* to its former position.

The object of making the post A and shaft F in two parts, and connecting the parts of the post by the sliding plates *a* and the parts of the shaft by the sleeve *h*, is to permit the lower portion A^2 of the post A and the frame G carried by the same to be adjusted vertically, so that the propeller J shall always be properly submerged whether the boat be light or loaded.

By the use of the plates *a*, also, a space is provided between the same for the reception of the bolt with which the stern of the boat is generally provided, and by which it is suspended from the davits. Moreover, the plates, by coming in contact with the sides of the stern-post, prevent undue movement in either direction of the post A and the propeller-wheel.

The raising and lowering of the lower portion A^2 of the post A and the parts carried by the same may be readily effected from on board

the boat by means of a cord or chain, *y*, and pulleys *v v*, the upper end of the cord being secured by passing it round a suitable cleat.

The above-described steering device is light, weighing but little, if any, more than an ordinary rudder, and, owing to the fact that the driving-pulley D is carried by the end of the tiller-arm B, the boat may, while the wheel is being operated, be steered by turning the tiller-arm in one direction or the other in the same manner as, and with no more exertion than, in using a rudder.

As the tiller-arm B is detachable from the post A it may be removed, so as to permit the compact packing of the device for storage or transportation.

The post A and its connections being removable from the boat, the device is not subjected to the risk of being damaged when the boat is not in use, or is lifted out of the water. Furthermore, it does not prevent the use of the ordinary rudder when it is desirable to propel the boat by sail or oars.

I do not desire to confine myself to the belt-and-pulley mechanism shown and described for operating the shaft F, as bevel-gear or an arrangement of levers might be substituted for the same in some cases. The pulleys and belt, however, are to be preferred.

I claim as my invention—

1. The combination of the propeller-wheel J, shaft F, and intervening gears with the post A, hung to pintles on the stern-post of a boat, so as to be readily turned on or removed therefrom, all substantially as and for the purpose set forth.

2. The combination of the post, carrying the propeller-wheel and shaft F, with the tiller-arm B, carrying the driving appliances, all substantially as specified.

3. The combination of the post A, carrying the wheel J and shaft F, with the tiller-arm B, carrying the device to which the power is applied, and rendered detachable from the post A, as specified.

4. The combination of the wheel J and its driving mechanism, the post A, and shaft F, each made in two parts, connected together so as to permit vertical adjustment of the lower part in respect to the upper part, and a device, substantially as described, for retaining said lower part in the position to which it may be adjusted.

5. The combination of the upper and lower portions A^1 and A^2 of the post A with the side plates *a*, serving to connect the two parts together, all substantially as described.

6. The combination of the post A with sleeves *d*, carrying pintles *b*, and capable of being adjusted vertically on said post A, as set forth.

7. The combination of the post A with the lower sleeve *d* and its cam-lever *d'*, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM W. SHOE.

Witnesses:
HERMANN MOESSNER,
HARRY SMITH.