

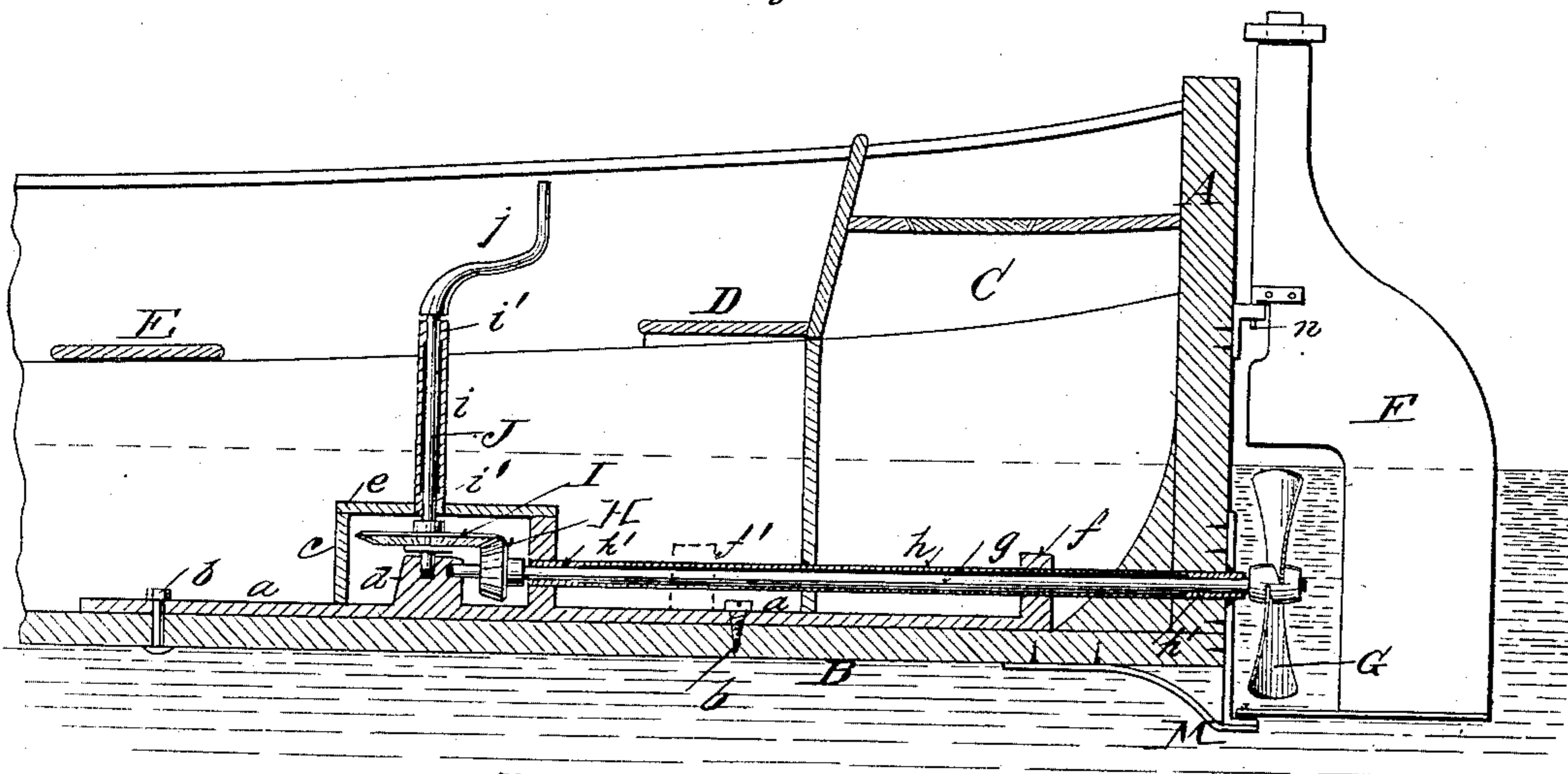
(No Model.)

R. FORSHOLM.  
MOUNTING SCREW PROPELLERS.

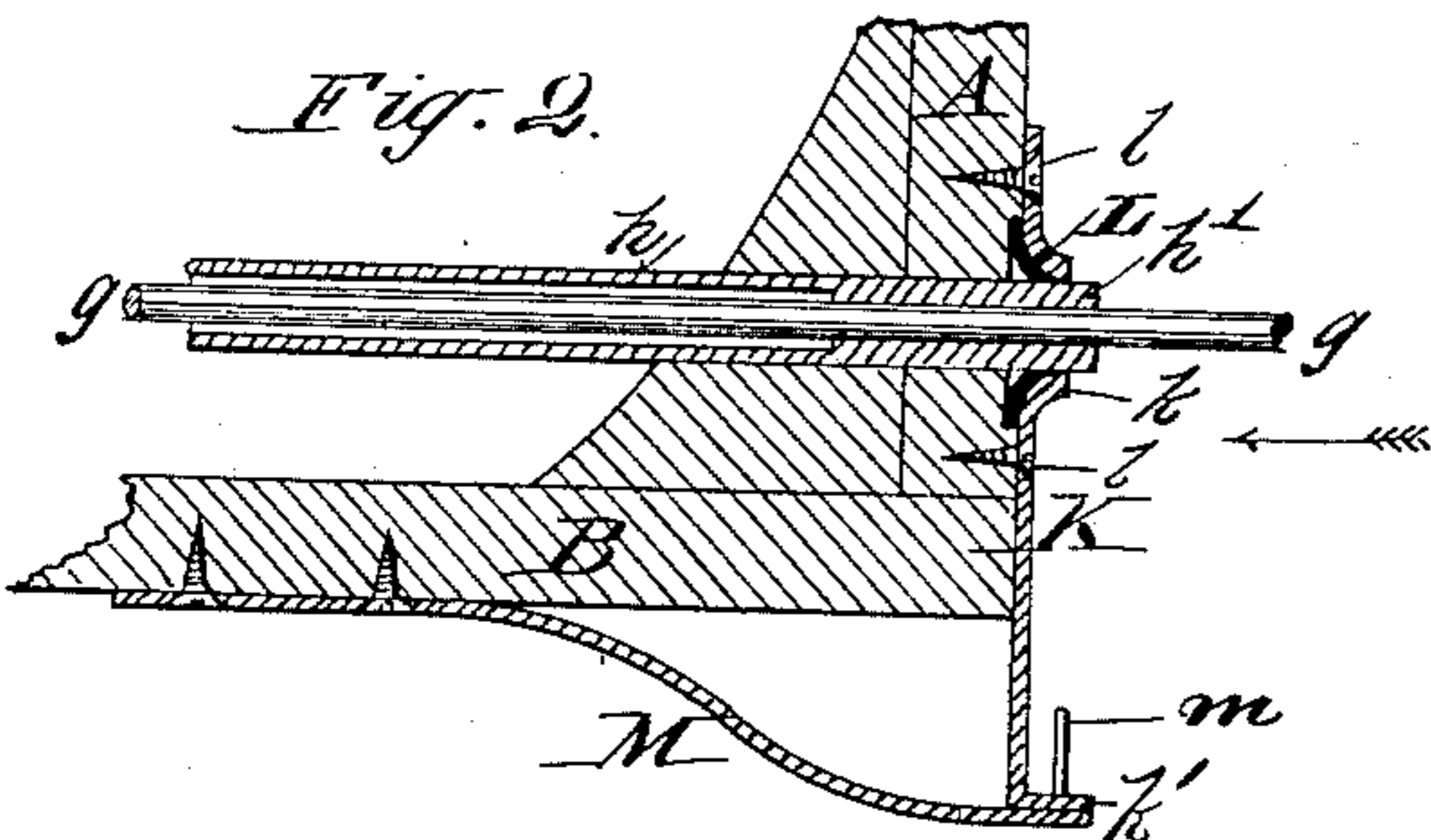
No. 315,136.

Patented Apr. 7, 1885.

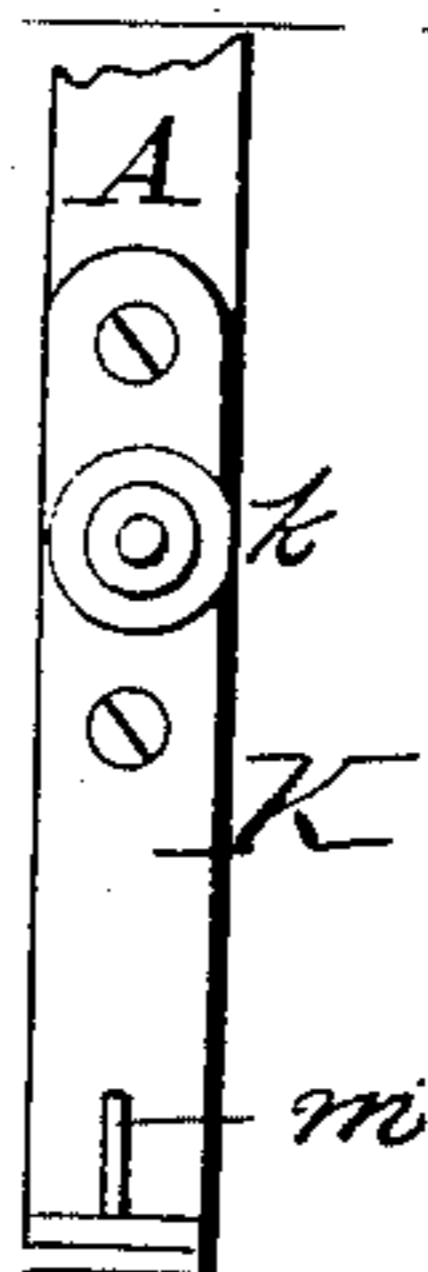
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:

Robert W. Matthews.  
Johnston Miller

Inventor:

Rasmus Forsholm,  
by A. W. Almqvist  
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# UNITED STATES PATENT OFFICE.

RASMUS FORSHOLM, OF NEW YORK, N. Y.

## MOUNTING SCREW-PROPELLERS.

SPECIFICATION forming part of Letters Patent No. 315,136, dated April 7, 1885.

Application filed May 24, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, RASMUS FORSHOLM, a citizen of Sweden, and a resident of New York, in the county and State of New York, have  
5 invented a new and useful Improvement in Mounting Screw-Propellers, of which the following is a specification.

My invention comprises an improved, simple, and convenient manner and device for  
10 mounting screw-propellers in vessels, more especially in row-boats and small pleasure-boats, whereby the insertion of a propeller in new or old boats is considerably facilitated, stuffing-boxes with accompanying friction are  
15 obviated, the water is allowed free access to lubricate the journals of the shafts, without, however, leaking from them into the boat.

The invention will be hereinafter described and claimed with reference to the accompanying  
20 drawings, in which—

Figure 1 represents a longitudinal vertical central section of the aft part of a boat with my present improvement applied to it. Fig. 2 is a detail similar section on a larger scale  
25 than Fig. 1, showing the means of attaching the propeller-sleeve to the stern-post. Fig. 3 is a rear view of the stern-post, showing the face view of the bracket or plate by which the outer end of the propeller-sleeve is held,  
30 or as if seen in the direction of the arrow in Fig. 2.

A is the stern-post; B, the keel; C, the ordinary locker at the stern of the boat; and D, the stern-seat, upon which a person is generally  
35 seated in steering a boat. E is the first thwart in front of the stern-seat D. F is the rudder. G is the propeller proper, and *g* the propeller-shaft. The horizontal propeller-shaft *g* is provided on its inner end with a small conical  
40 gear-wheel, H, which gears with a larger horizontally-arranged conical gear-wheel, I, mounted upon the lower end of an upright shaft, J, at the upper end of which latter is attached a winch or crank, *j*, or other suitable  
45 means by which to turn the shaft J with moderate velocity, and thereby to impart by means of the wheels I H a faster velocity to the propeller G. The parts as thus far described are old.

50 In order now to readily provide a boat with a screw-propeller and insure the easy work-

ing of the shafts without liability of leaking, as aforesaid, I have provided the following devices: A flat bar or plate, *a*, securable above the keel of the boat by bolts or screws  
55 *b*, is provided with a box or casing, *c*, for enclosing the gear-wheels I H, and with a central stud or projection, *d*, in which the inner ends of the shafts J and *g* have their bearings, as shown in Fig. 1. The box or casing  
60 *c* is provided on top with a water-tight fitted cap or cover, *e*. In rear of the casing *c* the plate *a* is provided with an upright lug, *f*, which may be arranged at a greater or less  
65 distance from the box *c*—for instance, as where indicated by dotted lines at *f'*, and the object of which is to insure the proper location of the propeller-shaft relative to the gearing with its shaft J. The shaft *g* and the upright  
70 shaft J, instead of having their bearings in stuffing-boxes (to prevent the entrance of water, but at the same time causing a great deal of friction to be overcome in the propulsion) are mounted in sleeves or tubes *h i*, provided  
75 interiorly at their ends with bearings *h' i'*, for the respective shafts *g* J. The sleeves or tubes *i h* are secured water-tight in holes through the cover *e*, and the rear wall of the box *c*, respectively, the said rear wall and  
80 aforesaid lug *f* being bored through at the same time, so as to be in axial line with each other and with the bearing, in *d*, of the inner end of the shaft *g*. When the last-mentioned bearing is used, the inner bearing, *h'*, may be  
85 dispensed with. For inserting the propeller in the boat it is only necessary to bore through the stern-post a hole of proper size to receive the aforesaid sleeve *h*, the outer end of which, projecting a little beyond the stern-post, is  
90 fitted water-tight in the latter. This is done by means of a plate, K, (see Figs. 2 and 3,) which is provided with a perforated boss, *k*, which surrounds the outer end of the sleeve  
95 *h*, a nipple or packing, L, of rubber or other suitable material, being inserted between the said boss and the tube *h* and clamped between the latter and the end surface of the stern by means of suitable screws, *l*, by which the  
100 plate K is secured in place. The propeller may be arranged so as to project with its blades below the keel, as shown in the drawings, or to end flush with or a little above the

lower surface of the keel. In either case, for the sake of convenience, I form upon the lower end of the plate K a horizontal lug, *k'*, and attach to the latter the lower pintle, *m*, for the rudder F, while the upper pintle, *n*, may be moving in a lug attached to the stern-post directly, or may be attached to the stern-post, and a lug on the rudder working upon it.

For the sake of strength, I arrange underneath the keel a brace, M, and secure the rear end thereof to the lower end of the plate K, or its lug, and the forward end to the keel, as shown in the drawings. By this construction, it is evident that the ends of the tubes *h i* being packed water-tight, as aforesaid, no water can enter the boat through them, nor from the box *c* with the water-tight packed cover *e*, but the water has free access between the shafts and their bearings in the ends of the aforesaid sleeves or tubes, thus acting as a lubricator for the journals and obviating the friction due to the use of stuffing-boxes. It should be observed, however, that the upright sleeve or tube *i* should extend a little above the water-line for the purpose of preventing the water rising in the said tube around the upright shaft J from overflowing the said tube.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the propeller-shafts *g J* and their connecting gearing with an inclosing continuous water-tight casing, *h e i*, projecting with its upper inner end above the water-line, and packed around its lower outer end to the boat, substantially as set forth. 35

2. As a ready device for applying screw-propellers to boats, a fastening-plate, *a*, carrying a continuous water-tight casing formed of a chamber, *c*, and sleeves or tubes, *h i*, secured at an angle to each other, with their inner ends to the said chamber, and having also shafts *g J* mounted in bearings within the said casing and gearing together within the said chamber *c*, substantially as set forth. 40 45

3. The combination, with the stern of a boat and with a sleeve or tube, *h*, incasing the propeller-shaft and protruding through the said stern, of an exteriorly-attachable stern plate, K, having a perforated boss, *k*, surrounding the outer end of the said tube, and a packing, L, interposed between the said boss and tube, substantially as set forth. 50

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 22d day of April, 1884. 55

RASMUS FORSHOLM.

Witnesses:

R. W. MATTHEWS,

A. W. ALMQVIST.