(No Model.)

P. C. ROACH.

RUDDER ATTACHMENT.

No. 339,696. Patented Apr. 13, 1886.

Fig. 1.

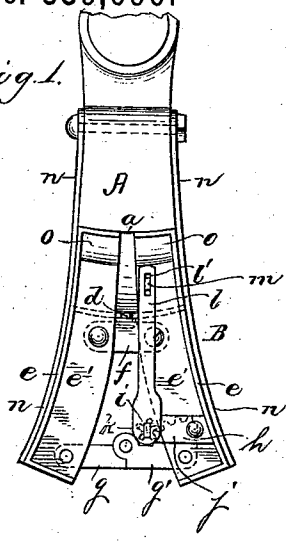


Fig. 2.

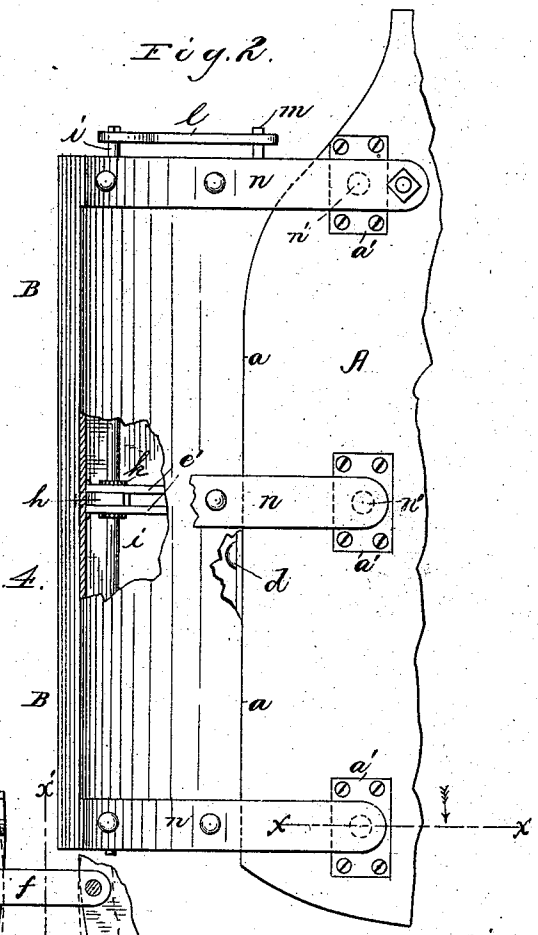


Fig. 3.

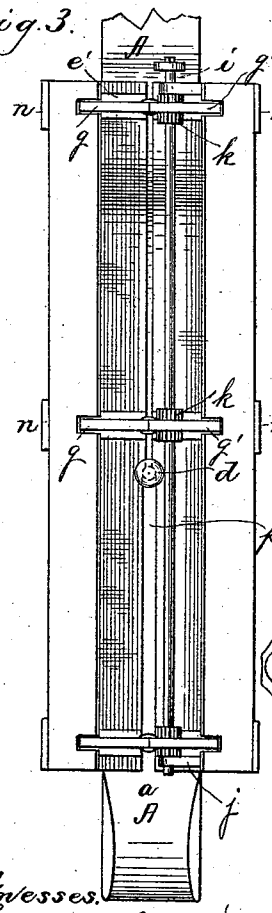


Fig. 4.

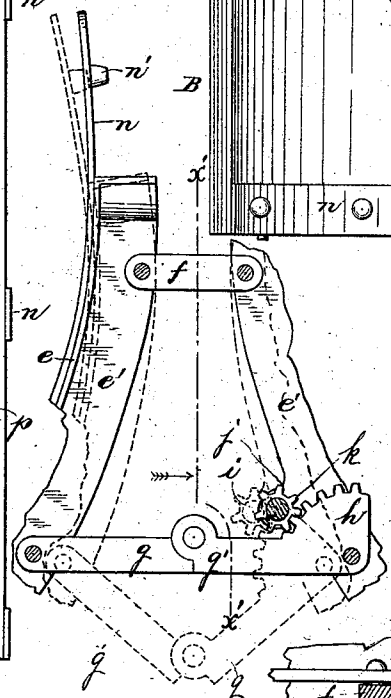


Fig. 5.

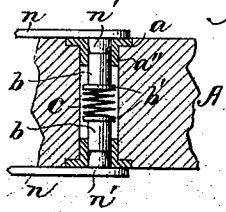
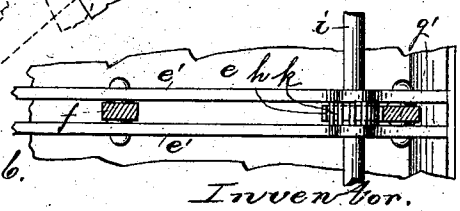


Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

PATRICK C. ROACH, OF CHICAGO, ILLINOIS.

RUDDER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 339,696, dated April 13, 1886.

Application filed September 29, 1885. Serial No. 178,499. (No model.)

To all whom it may concern:

Be it known that I, PATRICK C. ROACH, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rudder Attachments, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a top view of a rudder provided with my improvements. Fig. 2 is a side view thereof, the same being represented as partly broken away in order more clearly to show some of the means employed for expanding or widening the rudder attachment. Fig. 3 is an edge view of the rear edge of the rudder when provided with my attachment. Fig. 4 is a representation, upon an enlarged scale, like that shown in Fig. 1, but showing the parts of the rudder attachment in the different positions which they are capable of occupying. Fig. 5 is a section in the plane of the line *x x* of Fig. 2, and Fig. 6 is a section in the plane of the line *x' x'* of Fig. 4.

Like letters of reference indicate like parts.

A represents a rudder of a well-known form or class. In the sides of this rudder, and near its outer or rear edge, *a*, I set metallic plates *a' a'*, which have tubular extensions *a'' a''*, entering the rudder, as is clearly indicated in Fig. 5. The chief purpose of setting these plates into the rudder is to provide the latter with suitable means for permitting my rudder attachment to be secured to the rudder firmly and with facility, as will hereinafter be more fully explained. I may here state, however, that as the pockets or sockets thus formed in the rudder would be liable to become filled or clogged with mud or other extraneous matter, I have made provision for preventing such liability, but the means which I employ for that purpose, and which I will now proceed to describe, constitute only a minor feature of my invention.

b b are headed studs or pins freely entering the extensions or sockets *a'' a''*, the heads of the said studs or pins being inward, as shown at *b' b'*, and preventing the said studs from being pushed outward through the plates *a a*.

c is an expansible or open spiral spring bearing at its ends against the heads *b' b'*, thus retaining the studs *b b* yieldingly in the pockets *a'' a''*, so as to there fill the latter, and thus keeping out mud and dirt.

d is a headed pin entering the rear edge of the rudder about midway between the upper and lower ends of the latter. The head of this pin, however, stands out a little way from the rudder, as shown.

B is my rudder attachment or rudder extension. Forming a part of this attachment are two side plates, *e e*, at or near the ends of which are flanges or bars *e' e'* extending inward.

f f are links or bars pivoted at their ends to the flanges or bars *e' e'*, thus connecting the side pieces, *e e*, to each other in such a manner that they may be inclined more or less with relation to each other, as will hereinafter more fully appear.

g g are links or arms pivoted to one of the side pieces, *e e*, and *g' g'* are links or arms pivoted to the other of the said side pieces. The inner ends of the links *g* and *g'* meet, and are there pivoted or jointed to each other. The arms *g' g'* each have on one end thereof a segmental portion, *h*, which is cogged or toothed, as shown.

i is a rod or shaft turning in extensions *j j*, applied to one of the side pieces, *e e*, and *k k* are pinions rigidly attached to the said shaft and arranged to engage the segments *h h*, respectively.

l is a crank-arm on one end of the shaft *i*. The lower end of the arm or crank *l* is slotted, as shown at *l'*, and *m* is a fixed pin adapted to enter the said slot. It is to be understood that the crank *l* is by preference loosely and removably attachable to the shaft *i*.

n n are arms or extensions projecting in a forward direction from the side pieces, *e e*, and *n' n'* are studs or dowels projecting from the ends of the arms *n n* in such a direction as to enter the sockets *a'' a''*.

o o are inwardly-extending flanges at the upper and lower edges, respectively, of the pieces or parts *e e*.

To apply the attachment B to the rudder A, I turn the arm or crank *l* in such a direction as to spread the inner or forward ends of the arms *n n* apart from each other. They may then be slipped over the rear edge of the

rudder with facility. I next turn the crank *l* in the reverse direction, thus bringing the ends of the arms *n n* toward each other sufficiently to cause the studs *n' n'* to enter the sockets *a'' a''*. By this time the crank *l* is in such a position that its slotted end may be pushed down upon the pin *m*, thus temporarily holding the said crank in that position and locking the attachment B removably upon the rudder A, it being understood that to remove the attachment it will only be necessary to lift the shaft *l* from the pin *m* and turn the said shaft in such a direction as to draw the studs *n' n'* from their sockets in the rudder proper.

To aid in retaining the attachment upon the rudder I leave a space, *p*, between the flanges *o o* and slip the attachment down upon the rear edge of the rudder in such a manner that the pin *d* will enter this space, the head of the pin overlapping the said flanges. By the time the stem of the pin *d* reaches the upper end of the opening *p* the studs *n' n'* are directly opposite their sockets, and the attachment may then be clamped upon the rudder in the manner already described. I desire to state, however, that neither the flanges *o o* nor the pin *d* are absolutely essential, though preferable for the purpose already explained. I also desire to state that I do not here intend to confine myself to the particular means shown and described for rendering the rudder attachment expansible laterally in the manner specified, as various means or instrumentalities may be employed for the same purpose. The means described, however, are, in my opinion, suitable for the purpose intended, and I therefore make claim thereto as minor features of my invention.

I intend to make the rudder attachment principally or wholly of metal.

It will be perceived by those familiar with boating that such an attachment will be serviceable whenever a larger rudder than is commonly required may be needed or may be used with advantage.

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

1. A removable laterally-expansible and contractible rudder attachment or rudder extension, consisting, essentially, of the combination, substantially as specified, of the side plates, *e e*, linked or jointed to each other and adapted to clasp the rudder proper, and means for expanding and contracting the said plates and clamping them removably upon the rudder.

2. The combination, substantially as specified, of the rudder A, having therein the sockets *a'' a''*, the side pieces, *e e*, having thereon the extension *n n*, on which are the studs *n' n'*, the latter being arranged to enter the said sockets, the links or jointed bars *f f* in pivotal connection with the said side pieces, the jointed arms *g* and *g'*, also in pivotal connection with the said side pieces, and one pair of the said arms having thereon the segmental parts *h h*, the shaft I and its pinions the latter arranged to engage the said segmental parts, and an arm or lever for turning the said shaft, substantially as and for the purposes specified.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

PATRICK C. ROACH.

Witnesses:
JOSEPH J. HALL,
HENRY FRANKFURTER.