(No Model.) 3 Sheets—Sheet 1.

J. D. HICKMAN.

DEVICE FOR SHIPPING BOATS' RUDDERS.

No. 456,820. Patented July 28, 1891.

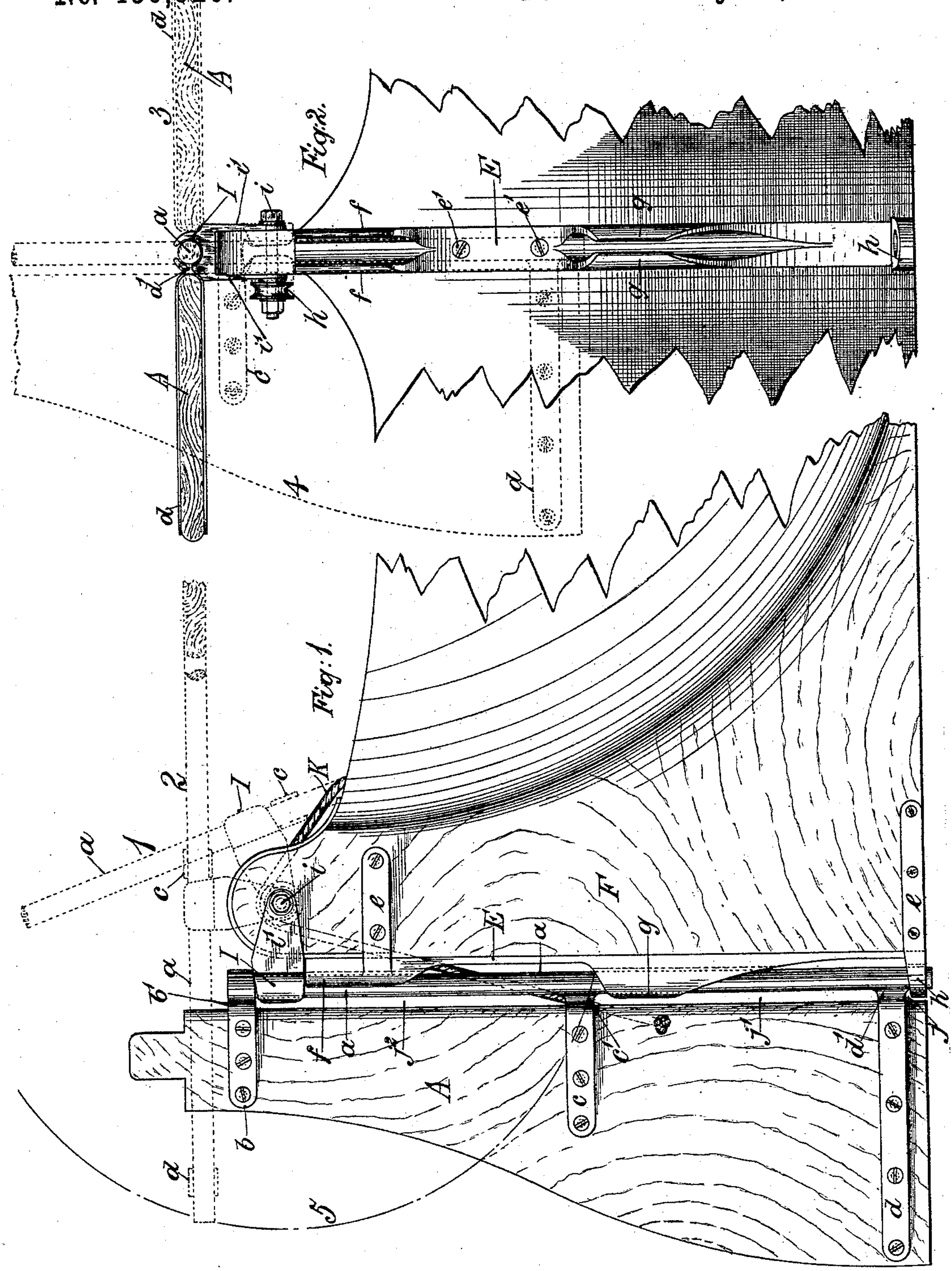

Fig. 2.

Fig. 1.

Witnesses

Chas. S. Woodroffe

Robt. A. Blake

Inventor:
John Dampier Hickman,
per Henry H. Leigh
Attorney.

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(No Model.) 3 Sheets—Sheet 2.

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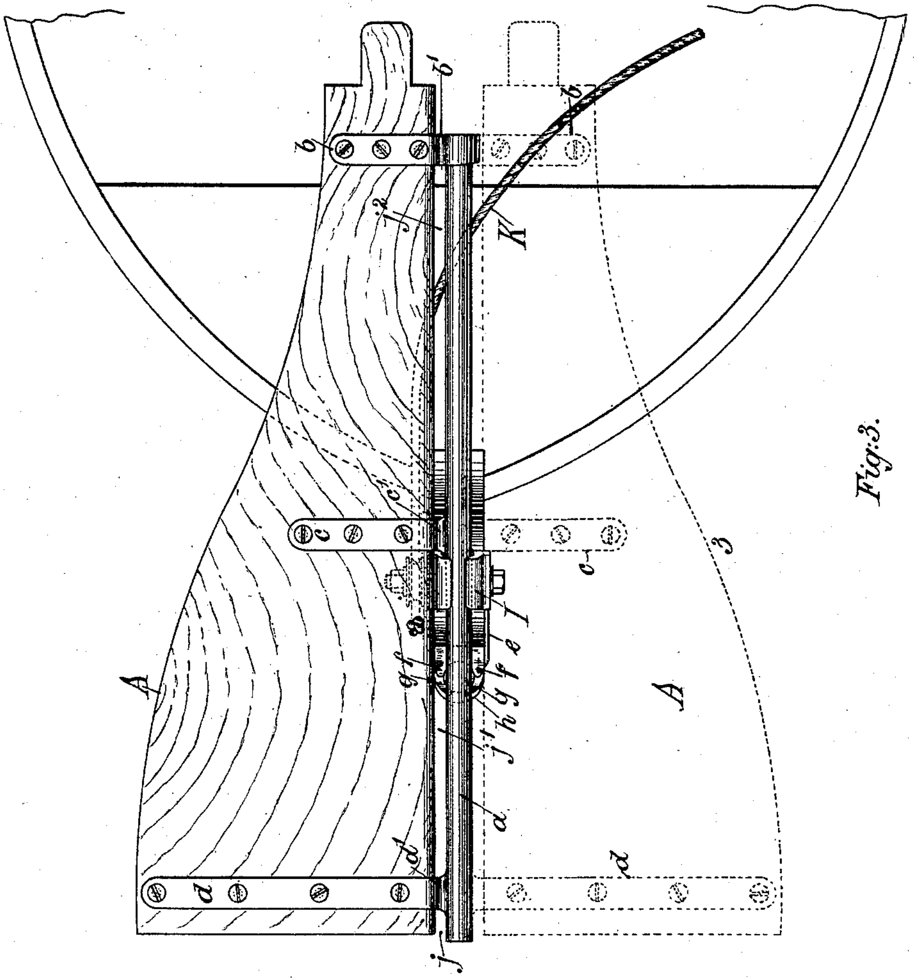

Fig: 3.

Witnesses
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(No Model.) 3 Sheets—Sheet 3.

J. D. HICKMAN.

DEVICE FOR SHIPPING BOATS' RUDDERS.

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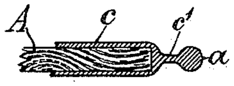

Fig: 5.

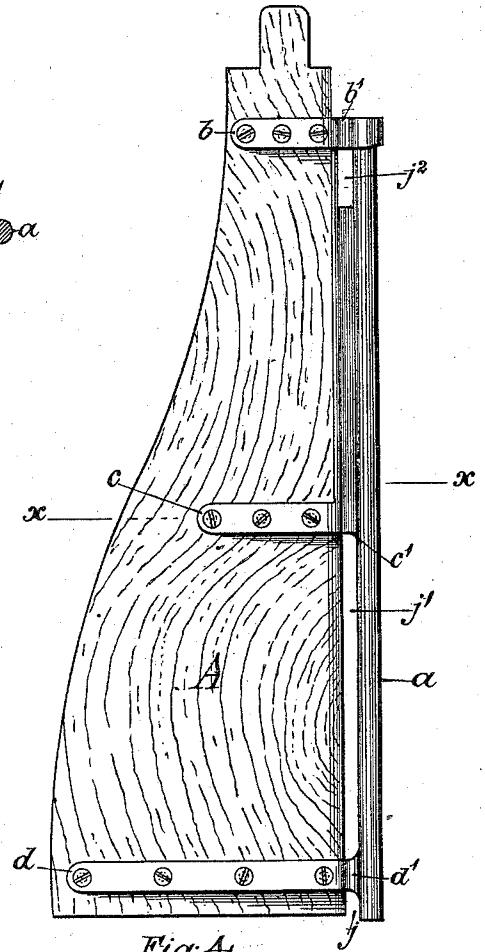

Fig: 4.

Witnesses:
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Robt. A. Blake

Inventor:
John Dampier Hickman,
per Henry H Leigh
Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN DAMPIER HICKMAN, OF LONDON, ENGLAND.

DEVICE FOR SHIPPING BOATS' RUDDERS.

SPECIFICATION forming part of Letters Patent No. 456,820, dated July 28, 1891.

Application filed March 3, 1891. Serial No. 383,644. (No model.) Patented in England January 1, 1891, No. 56.

To all whom it may concern:

Be it known that I, JOHN DAMPIER HICKMAN, engineer, of Portsmouth Road, Thames Ditton, London, in the county of Surrey, England, a subject of the Queen of Great Britain, have invented Improvements in Devices for Use in Shipping Boats' Rudders, (for which I have received Letters Patent in Great Britain, No. 56, dated January 1, 1891;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in devices for use in shipping boats' rudders, and has more especial reference to preventing a rudder slipping too far through a guide for a rudder to properly engage in the groove on the stern-post.

It consists in providing for the rudder being locked in a hinged guide at the proper point by its being turned over into the horizontal plane after the bar or rod (which is for the purpose of this present invention a round rod, held at a short distance clear of the back of the rudder) on the back of it has been entered into the guide and pushed outward, when the middle strap of the rudder or an equivalent extension of the rod on the back thereof will be stopped by one of the horns of the guide. The rudder is then to be swung up into the vertical position, turned back into the vertical plane of the keel until the nose of the rudder-rod bears against the groove on the rudder-post, and dropped, when the said nose will engage properly in the said groove.

Referring to the accompanying drawings, Figure 1 is, as to the full lines, a side elevation of a boat's stern and rudder post, with the rudder shipped and hanging in the plane of the keel. Fig. 2 is, as to the full lines, an elevation of the rudder-post and the rudder, when the latter is stopped by the guide. Fig. 3 is, as to its full lines, a plan corresponding with Fig. 2. Fig. 4 is an elevation illustrating a modification of my invention. Fig. 5 is a detail transverse section taken on the line *x x* of Fig. 4.

Referring to Figs. 1, 2, and 3, A is the rudder, and *a* a rod of circular cross-section. The latter is held at a short distance from the back of the rudder, but parallel with it, by double straps *b c d*, respectively, made fast onto the rod *a* by junction-pieces *b' c' d'*. The straps are made fast to the rudder in the well-known way. The distance between the rod *a* and the rudder A is not less than the thickness of one of the converging horn-like extensions described farther on.

E is a plate, preferably of metal. It is fixed vertically and centrally upon or to the face of the rudder-post or stern, according to the shape of the boat. Fig. 1 shows it as fixed by means of straps *e e* and screws *e'* to the rudder-post F. The top of the plate E is lower than the top of the rudder-post, which latter is made higher than usual, for a reason to be explained farther on.

f f are a pair of converging horn-like extensions of the face of the plate E. The distance separating their converging edges is not less than the diameter of the rod *a*, and, in respect to their length, these horns extend from the top of the plate E, preferably not more than half-way down it. Fig. 1 shows their length as about one-sixth that of the plate.

g g are a second pair of converging horn-like extensions of the plate E. The inner edges of both extensions are arcs of one and the same circle. The distance separating their converging edges is less than the diameter of the rod *a*. The top of this second pair of extensions is preferably just beneath the level of the middle strap, and they—*i. e.*, the extensions—may extend nearly to the bottom of the plate, or as far as the level of the top of the junction-piece *d'*.

h is a ring or socket at the foot of the plate E. This socket is beneath the level of the bottom strap *d*, and in any case the lengths of the two pairs of horn-like extensions above mentioned are adjusted to allow of the rudder being put hard about to either port or starboard.

I is the guide. It consists of a pair of converging horn-like extensions, the counterparts of those *g g*, already described. These are joined at their bases, thereby making this part of the guide identical in plan with a transverse section of the plate E and the pair of extensions *g g*. It is to be understood that the space embraced by either pair of horn-like extensions *g g* on the plate E or those of the guide I is circular and large enough to receive the rod *a*. It is hinged or pivoted upon the top of the rudder-post, or upon an equivalent vertical extension of the boat's stern, by means of any suitable device. The figure shows this device as consisting of a bolt *i*, passing through the cheeks *i' i'* and the top of the rudder-post F. The cheeks *i' i'* are of the proper length for allowing the guide to lie vertically coincident with the said extensions when it is in the position illustrated in Fig. 1. The said cheeks are made in one piece with the guide.

Fig. 1 shows the rod *a* as held to the rudder at a short distance therefrom by three duplex straps, one *b* at the top of the rod, one *d* a little above the bottom of the rod, and a third *c* half-way between. The junction-piece *b'* of the top strap *b* with the rod *a* acts as a stop and also supports the weight of the rudder upon the guide I. When there are three straps, as shown in the figures, there are three vacant spaces between the rudder and its rod. The lowest *j* provides room for the socket *h*. The middle one *j'* permits either of the horn-like extensions or sides of the guide I to enter between the rod and the rudder in front of the junction-piece *c'* and also to embrace the said rod when the rudder is turned over into the horizontal plane, as mentioned above and described more particularly further on. The junction-piece *c'* also serves as the locking-piece. In respect of thickness, this locking-piece is thin enough to pass between the converging edges of the horn-like extensions of the guide I, described hereinafter. The top space j^2 is only to receive one horn-like extension of the guide when the rudder is turned either to port or starboard, and may be as long as shown in Fig. 1 or as short as illustrated in Fig. 4, provided it is long enough to receive the said extension when the rudder is put about.

I do not confine myself to three duplex straps—the number shown—and if there be no middle strap to provide a junction-piece *c'* to act as the locking-piece, then a special locking-piece must be provided in the relative position shown in Figs. 1 and 4.

K is a line, and *k* an anti-friction pulley provided for unshipping the rudder.

My invention, constructed as above described, is used and operates as follows: The guide I is swung back toward the inside of the boat, and the boatman, holding the rudder in his hands, pushes the nose of the rod *a* into the guide, turns the rudder over to either hand through a quarter of a circle, and pushes it forward until the junction-piece *c'* bears against the guide. This position is shown by the dotted lines 1 in Fig. 1. The rudder is next raised into the horizontal position illustrated by the dotted lines 2 of Fig. 1, the full lines of Figs. 2 and 3, and the dotted lines 3 of the last-mentioned figures, according as to which hand it had been swung over to the right or the left after the rod had been entered into the guide. The rudder is now locked—*i. e.*, it is prevented from dropping when it is thrown up into a vertical position—by engagement of the locking-piece *c'* with the guide I. It is next swung up into the vertical plane until the rod *a* rests against the plate E, between the extensions *f f*. This position is illustrated by the dotted lines 4 of Fig. 2, from which it will appear that the relative positions of the locking-piece *c'* and the extensions *g g* hold the nose of the rod *a* just above the latter. The arc 5 of Fig. 1 shows the arc described by the said nose during the motion last described. The rudder is next turned into the plane of the keel, care being taken to keep the rod *a* in close contact the while with the plate E. This motion disengages the locking-piece *c'* from the guide, and the weight of the rudder takes the rod down between the said extensions *g g* and into the socket *h*, thereby completing the shipping of it. The line K may be used to steady its descent.

I claim—

The combination of guide consisting of a pair of converging horn-like extensions, whose inner edges are arcs of one and the same circle, and whose converging edges are separated by a distance less than the diameter of the rod on the back of the rudder, said guide adapted to be pivoted upon the top of the rudder-post or of the boat's stern, a rod fixed to the back of the rudder and separated from it by a distance not less than the maximum thickness of one of the said horn-like extensions, said rod being circular in cross-section and of a size adapted to fit and move within the said guide, a locking-piece between the rudder and the said rod, adapted to engage the horn-like extensions of the guides as the said rod is being pushed through the guide, the rudder being then held in the horizontal plane, and thin enough to pass between the said extensions, and a pair of horn-like extensions adapted to be fixed on the rudder-post, or on the boat's stern, of the same size and contour as those of the guide, as set forth.

In testimony whereof I have hereunto affixed my signature, in presence of two witnesses, this 26th day of January, 1891.

JOHN DAMPIER HICKMAN.

Witnesses:

WILMER M. HARRIS,
Notary Public, 17 *Gracechurch Street, London.*

JOSEPH LAKE,
Of same place, his Clerk.