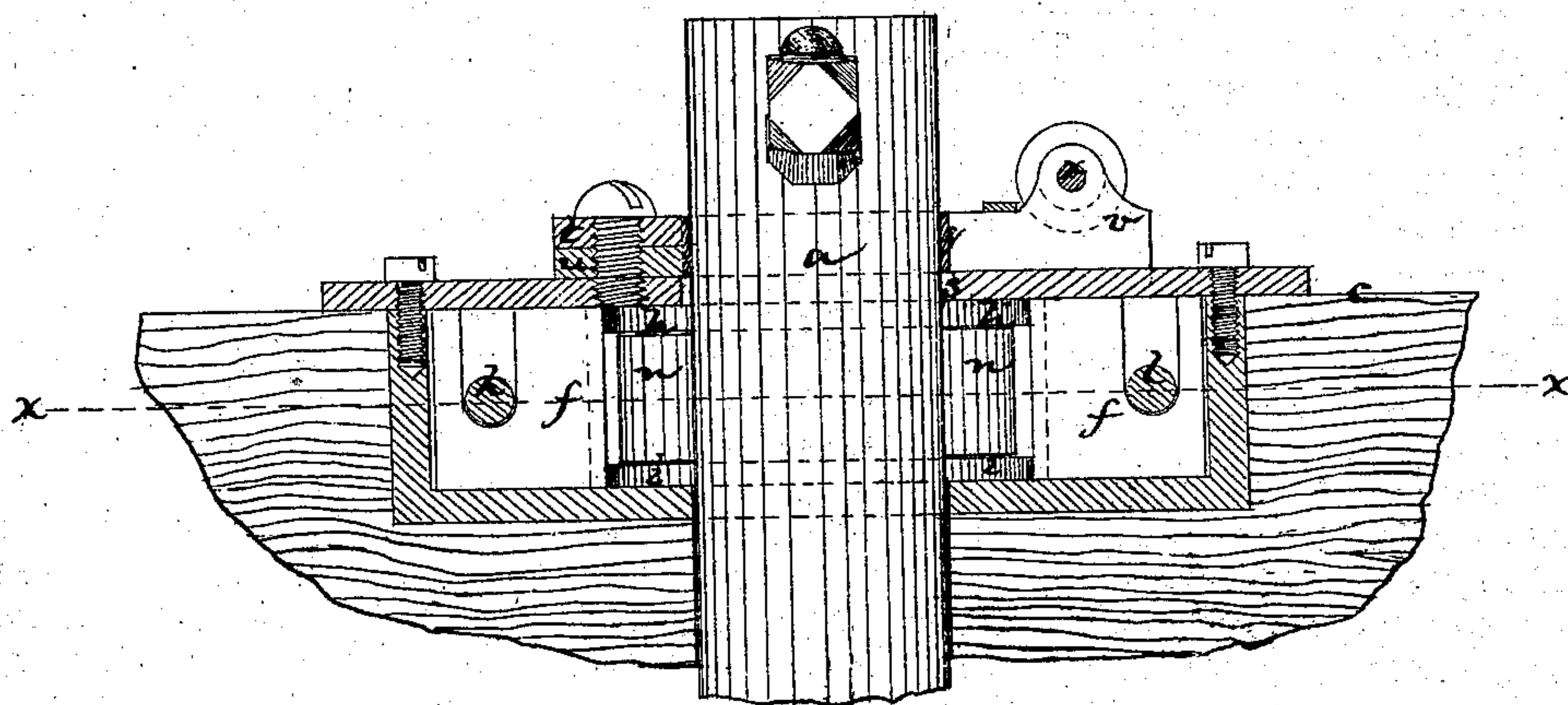
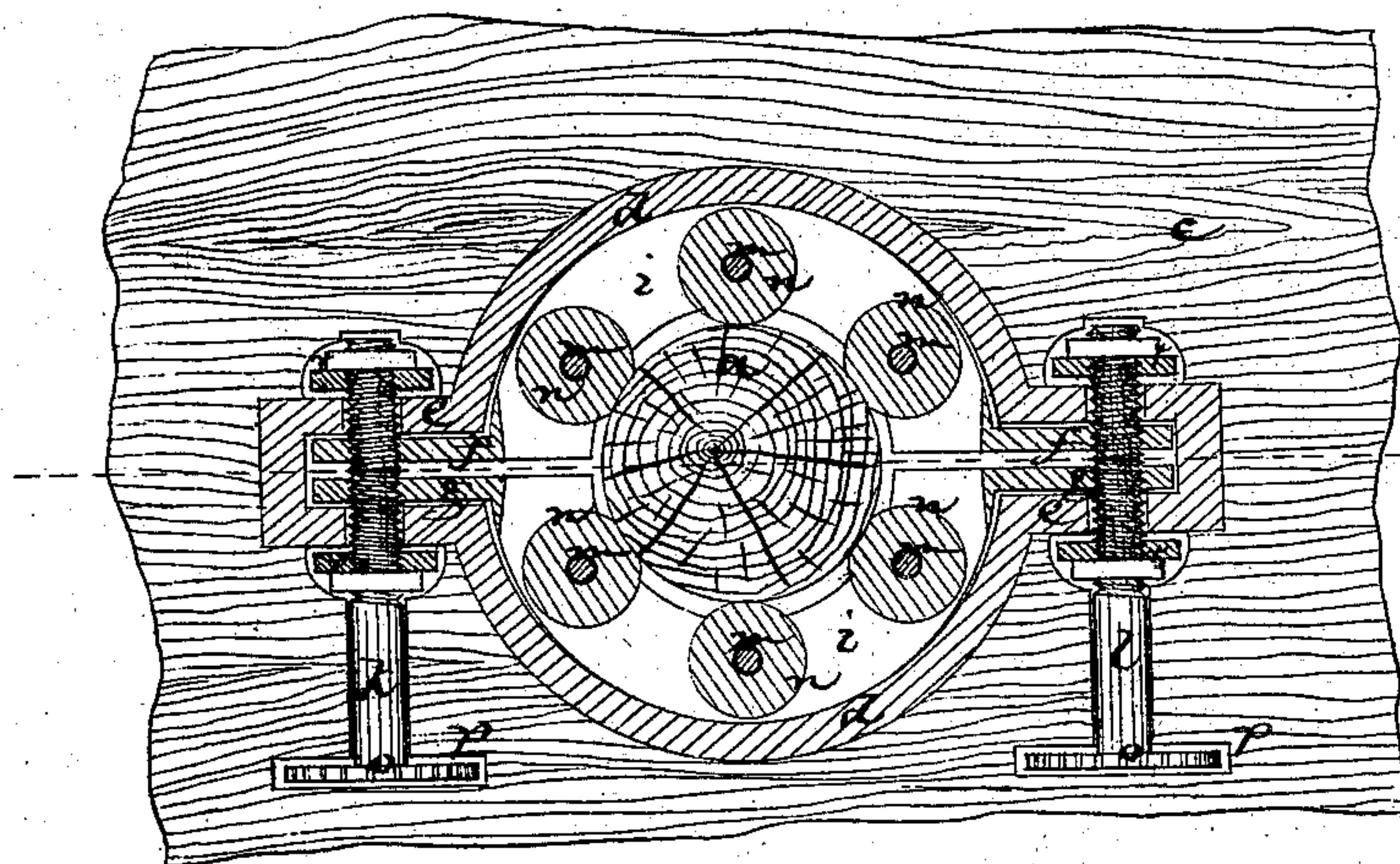
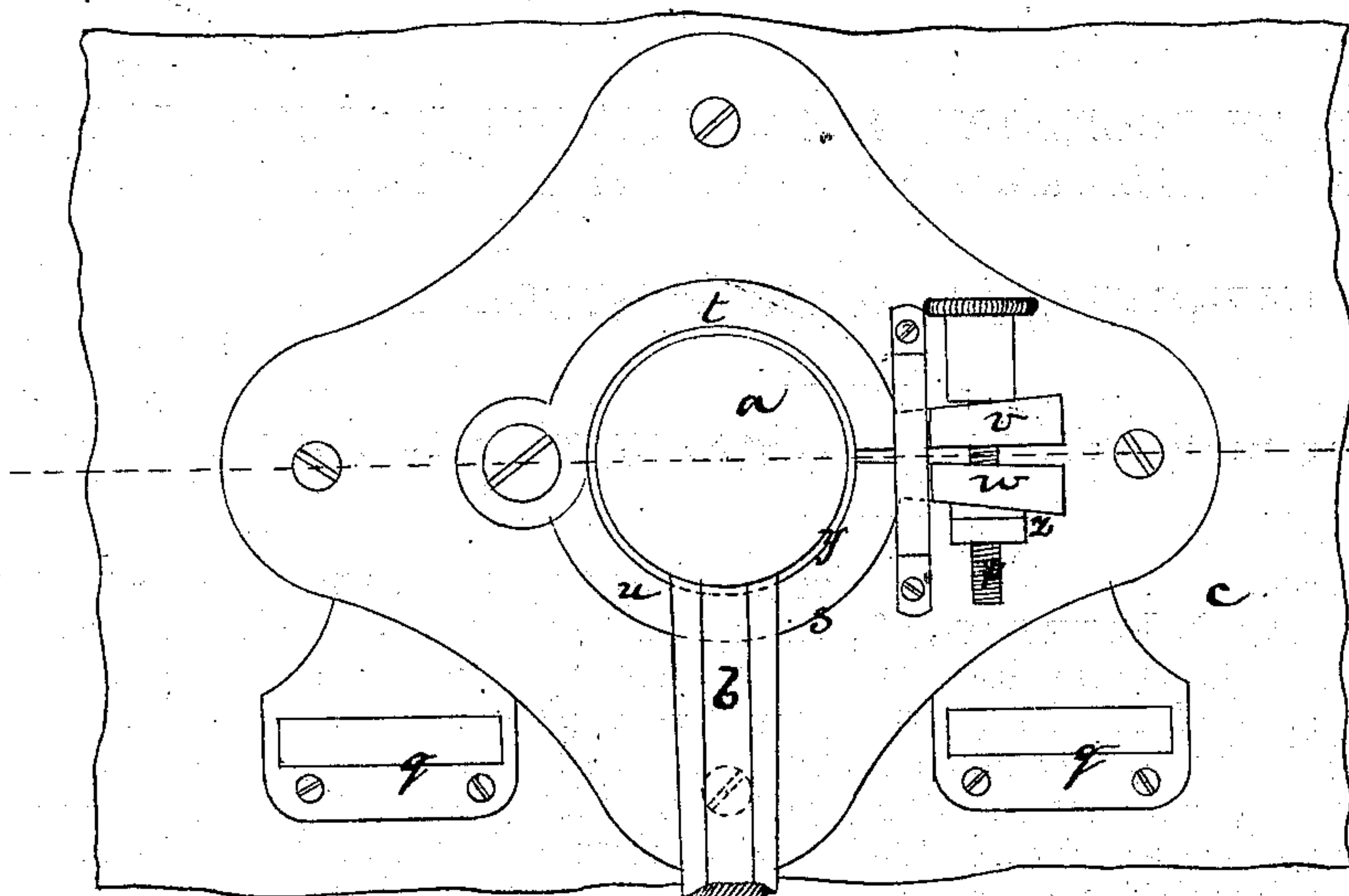


L. P. THURSTON.

## Improvement in Ship's Rudders.

No. 115,991.

Patented June 13, 1871.





# UNITED STATES PATENT OFFICE.

LEVI P. THURSTON, OF ROCKPORT, MASS., ASSIGNOR TO HIMSELF, ALFRED PARSONS, AND WILLIAM KNUTSFORD, JR., OF SAME PLACE.

## IMPROVEMENT IN SHIPS' RUDDERS.

Specification forming part of Letters Patent No. 115,991, dated June 13, 1871.

*To all whom it may concern:*

Be it known that I, LEVI P. THURSTON, of Rockport, in the county of Essex and State of Massachusetts, have invented an Improved Rudder Mechanism; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In all sea-going craft, especially such as have to lie at anchor, as do fishing-vessels, much injury is occasioned by the pounding of the rudder-posts in their ports, the constant abrasion of the post "chawing" into its surface until the post is so weakened as to be often broken off, the vessel being often left at the mercy of the sea in heavy storms by reason of such breakage of the rudder-post. In most sea-vessels there is also great annoyance from the noise of the thumping or pounding rudder-post, especially in rough weather.

My invention has particular reference to a provision for clamping the post in stationary position, so that not only is the thumping or pounding of the rudder-post entirely arrested, but the rudder can be secured in position by appliances acting directly upon the post, and so encompassing and binding upon it as to render its rotary motion impossible. The invention may, therefore, be stated as consisting in the combination, with the rudder-post, of a port provided with elastic friction-rolls, against which the post is directly supported, these rolls being preferably made adjustable, so that their wear can be compensated for by bringing their axes of rotation nearer to the axis of the rudder-post.

The drawing represents, in plan, in horizontal section on the line *x x*, and in vertical central section, a rudder-post and mechanism embodying my invention.

*a* denotes the rudder-post; *b*, the tiller; *c*, the deck. Sunk into a recess made in the deck around the rudder is a round metal box, *d*, having two opposite diametric wings, *e*, into each of which wings extend two vertical plates, *f g*, each two diametrically opposite plates

connecting two upper and lower semicircular rings or half-rings, *h i*, which are placed at a little distance apart, as seen in the sectional plan, the rings extending around the rudder-post and the two rings on one side being connected to the opposite two by right-and-left-hand screws *k l*, which work through nut-threads in the vertical web-plates connecting the respective upper and lower half-rings. The half-rings support a circular series of pins or shafts, *m*, extending from ring to ring, on each of which pins or shafts is an elastic roll, *n*, preferably made of caoutchouc or caoutchouc compounds, and of such diameter that they all bear against the rudder-post when the two journal-frames are at some distance apart, as seen in the sectional plan. The rudder-post is kept in position by these rolls, and by them is prevented from coming into contact with the cap-plate or rudder-port *s*; and as the surfaces of the rolls wear they are brought up to and kept against the post by turning the screws *k l*, each screw-shank having at one end a head, *o*, for which a recess, *p*, is made in the deck, each recess and the screw-head being covered by a plate, *q*, which is removed when access is needed to the screw-head. To keep the screws from turning back check-nuts *r* may be employed, these nuts being turned up against the outer surfaces of the rings of the box *d*. It will be obvious that all jar and thumping of the rudder-head are prevented by these rolls, and all wear of the rudder-post consequent upon contact of the post and the rudder-port. The box is covered by a port or cap-plate, *s*, secured to the deck by screws or other fastenings, and to this plate are pivoted two jaws, *t u*, which embrace the post, arms *v w*, extending from the ends of the jaws opposite the pivot, being connected by a screw, *x*, which turns loosely on one jaw and works in a screw-thread in the other, so that, by turning the screw in one direction, the two jaws may be brought hard against the rudder-post or against a metal ring, *y*, encompassing the post, the bite of the jaws locking the rudder-post and rudder firmly in stationary position. A check-nut, *z*, may be used to pre-

vent the screw from turning back when the rudder post is thus locked.

*Claim.*

I claim—

In combination with the rudder-post, the two sets of roll-frames and their adjusting-screws, by means of which the frames which

support the rolls can be simultaneously adjusted and kept up to the post as they wear, substantially as described.

Executed January 24, A. D. 1871.

LEVI P. THURSTON.

Witnesses:

FRANCIS GOULD,  
S. B. KIDDER.