N. S. GRAVES.

ROW-LOCK.

No. 186,005. Patented Jan. 9, 1877.

Fig. 1.

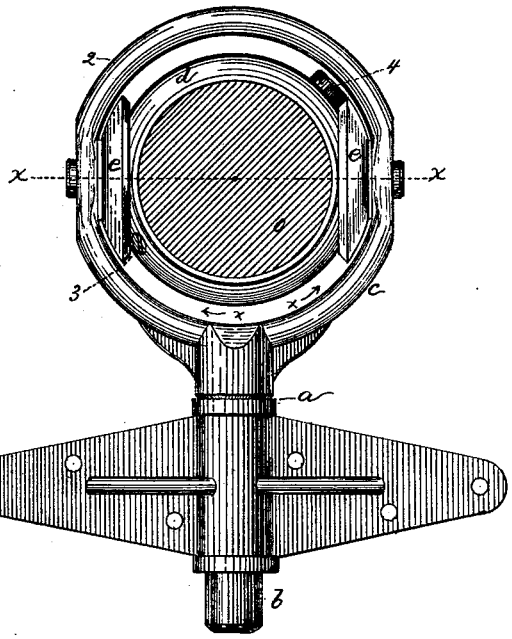


Fig. 2.

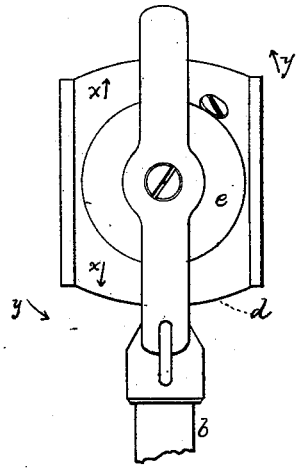
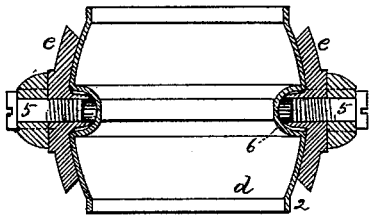


Fig. 3.



Witnesses.

L. H. Latimer.

W. J. Pratt.

Inventor.

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per Crosby & Gregory Attys.

UNITED STATES PATENT OFFICE.

NATHANIEL S. GRAVES, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND FRANK F. WOODS, OF SAME PLACE.

IMPROVEMENT IN ROWLOCKS.

Specification forming part of Letters Patent No. **186,005**, dated January 9, 1877; application filed May 16, 1876.

To all whom it may concern:

Be it known that I, NATHANIEL S. GRAVES, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Rowlock, of which the following is a specification:

This invention relates to an improved rowlock; and consists in the combination, with the rowlock, of concaved holders, adapted to embrace a spherical or convex sleeve attached to the oar, the holders retaining the oar in position with relation to the rowlock, and permitting it to be moved to properly propel the boat and to "feather" the oar.

Figure 1 represents this improved rowlock in side elevation, the oar being shown in cross-section. Fig. 2 represents the rowlock viewing it from the right or left hand side of Fig. 1; and Fig. 3 is a section on line *x x*, the oar being removed.

The socket-plate *a* to receive the pintle *b* of the rowlock *c* is secured to the rail or gunwale, or to an outrigger on the boat. A metallic sleeve, *d*, provided with a globular surface, is adjustably connected with the oar *o* by one or more set-screws, 3 4, and this sleeve is confined or held in the rowlock between the concaved plates or holders *e*, supported by screws 5, projecting through the rowlocks, the inner or concaved faces of these holders being provided with projections 6, to afford more metal to receive the screw 5. These projections 6 enter a groove formed in the sleeve, but preferably they will not touch the sleeve; and, if desired, these projections may be entirely omitted, or the projections may be caused to project from the convex side and enter a hole in the rowlock, (see dotted lines at left of Fig. 1,) and in this case there will be no wear on the screw 5.

The oar *o* may be moved up and down in the arc of a vertical circle, (see arrows *y*,) and may be rotated in the direction of arrows *x*, and may be moved in the arc of a horizontal circle, the pintle of the rowlock then revolving in its socket, and in this way the oar is retained by a ball-and-socket joint, having practically a universal motion.

The upper portion 2 of the rowlock acts as a brace to keep the lower part from spreading, and the screw 4, acting against the holders *e*, forms a forward and a feathering stop for the oar in its axial rotations, and at the same time serves to hold the oar in the sleeve, and permit it to be adjusted to place the handle of the oar so as to project more or less toward the center of the boat.

The oar, it will be noticed, is not cut or weakened in being attached to the sleeve or rowlock.

I claim—

1. The pivoted rowlock, in combination with the globular sleeve and concaved holders, adapted to fit the sleeve, substantially as described.

2. The oar and its globular sleeve and set-screw 4, in combination with the rowlock and concaved holders, to operate in connection with the oar and holders, substantially as described.

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

NATHANIEL S. GRAVES.

Witnesses:
G. W. GREGORY,
FRANK F. WOODS.