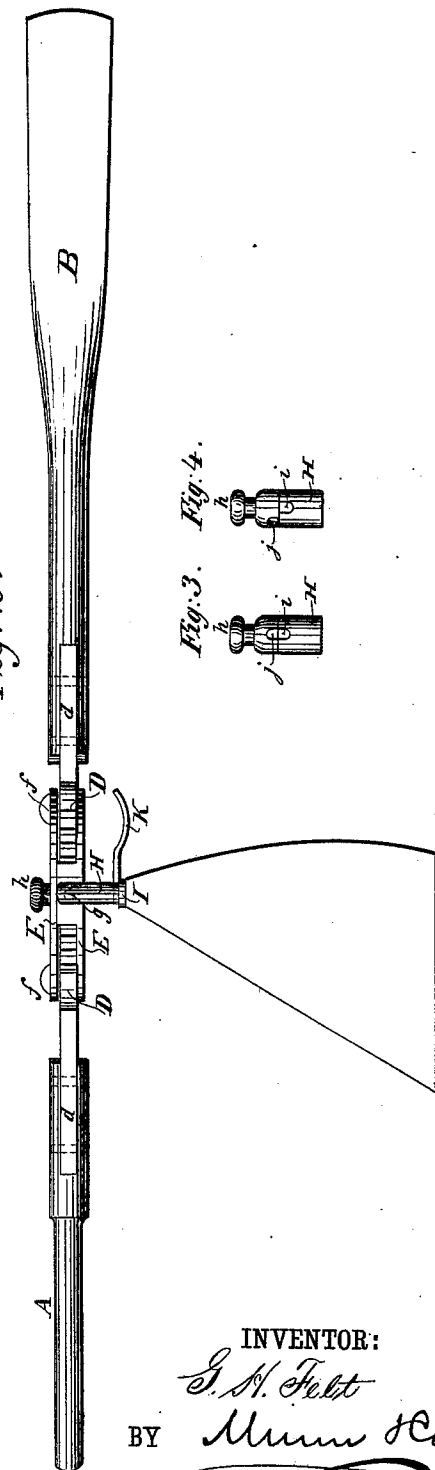
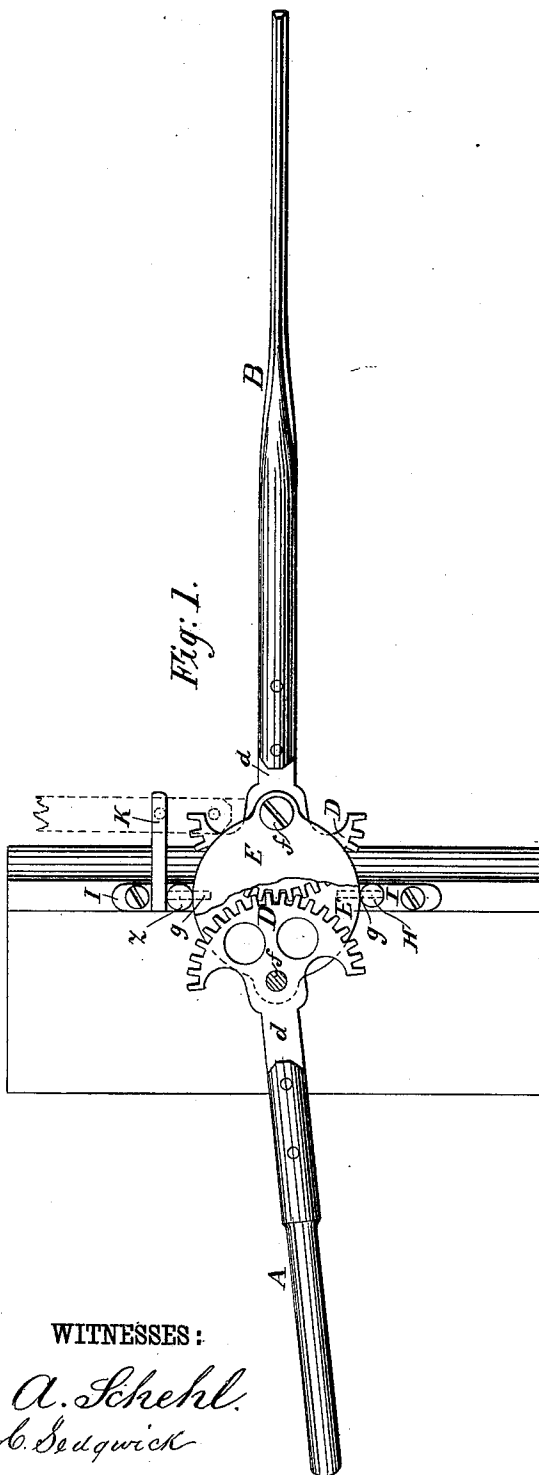


G. H. FELT.
Rowing Apparatus.

No. 213,557.

Patented Mar. 25, 1879.



WITNESSES:

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GEORGE H. FELT, OF BROOKLYN, MICHIGAN, ASSIGNOR TO HIMSELF
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IMPROVEMENT IN ROWING APPARATUS.

Specification forming part of Letters Patent No. **213,557**, dated March 25, 1879; application filed August 12, 1878.

To all whom it may concern:

Be it known that I, GEORGE H. FELT, of Brooklyn, in the county of Jackson and State of Michigan, have invented a new and Improved Rowing Apparatus, of which the following is a specification:

The object of this invention is to enable a rower to sit facing toward the bow of the boat instead of toward the stern, and to preserve the same motions as those observed in the ordinary method of rowing, so as to be able to see in the direction in which the boat is traveling without the necessity for turning around or looking over the shoulder.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

The accompanying drawings illustrate the manner of carrying out the invention.

Figure 1 represents a top view of a portion of the gunwale of a boat, with one of the oars in position for use, and Fig. 2 a horizontal view of the same looking toward the stern, Figs. 3 and 4 are detail views, hereinafter referred to.

Similar letters of reference indicate corresponding parts.

The handle A and blade B are in two separate pieces, and the inner end of each is attached to a toothed sector. The sectors D D are formed with arms *d d*, extending from their centers, for attachment to the blade and the handle; and these arms may be inserted in openings in the oar and handle, as shown in the drawings, or the arms may be hollow and the blade and handle inserted in them.

The toothed sectors D D are pivoted between two plates, E E, so as to mesh into each other. The pivots consist of bolts or screws *f f*, which at once form the fulcrum for the levers A B, and serve to hold the plates E E firmly together, and yet allow the upper plate to be removed when it is desired to change the relative engagement of the sectors, as hereinafter referred to.

The lower plate, E, is provided with journals or gudgeons *g g*, diametrically opposite each other, and at right angles to the pivots *f f*. These gudgeons have their bearings in two posts, H H, carried by a plate, I, which plate

is attached to the gunwale of the boat, so that the posts occupy a position similar to the ordinary rowlock. One of the posts H is provided with a screw-cap, *h*, in which is a recess, *j*, corresponding in size with the recess *i* of the post H, in which the gudgeon *g* has its bearing. (See Figs. 3 and 4.) In order to ship the oar, or place it in position for use, the cap *h* is turned so as to bring the recess *j* immediately over the recess *i*, as shown in Fig. 3. The plate E is then inclined so as to insert one of the gudgeons in its bearing in the post opposite to the one provided with the cap, and the other gudgeon can then be readily inserted in its bearing in the recess *i* by first passing it through the recess *j*; then, by turning the cap *h*, so as to bring the recess *j* farther away from the recess *i*, as shown in Fig. 4, the edge of the cap bears upon the gudgeon and holds it securely in place. The oar may be readily "unshipped" by turning the cap to the position shown in Fig. 3, so as to allow the gudgeon to be removed from its bearing.

An arm, K, is attached to the plate I, or to the gunwale of the boat, and extends transversely outward therefrom. The arm may be curved downward and upward, as shown in Fig. 2, to correspond with the rounded portion of the blade B. When it is desired to "boat the oar" when not in use, instead of taking it inboard, as in the ordinary method, the handle and blade are, by means of the toothed sectors, brought to such position with relation to each other as to place the blade parallel with the side of the boat. The blade may then be made to rest on the arm K, as shown by dotted lines in Fig. 1.

In using this invention the rower sits facing the bow of the boat, and goes through the same motions as in the ordinary method, giving the same motion to the blade, and at the same time has the advantage of being able to see ahead of the boat, and in the same general direction in which the boat is traveling, without the necessity for turning around or changing the position of the body.

By removing one of the screws *f* the plate E may be swung around, so as to expose the teeth of the sectors, and allow their relative engagement to be changed, by which means

the rower may obtain greater or less leverage, as desired.

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

1. The cap *h*, having the recess *j*, in combination with the post *H*, recess *i*, and gudgeon *g*, as shown and described, for the purpose specified.

2. In a rowing apparatus, the arm *K*, attached to the gunwale of boat and extended outward, to support the blade when the oar is "boated," as and for the purpose specified.

GEORGE H. FELT.

Witnesses:

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