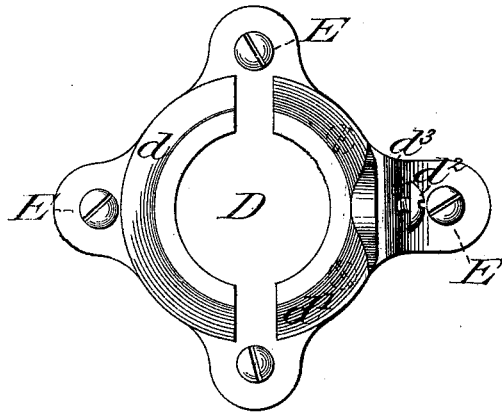


J. W. HEENAN.  
Rowing Exercise Machines.

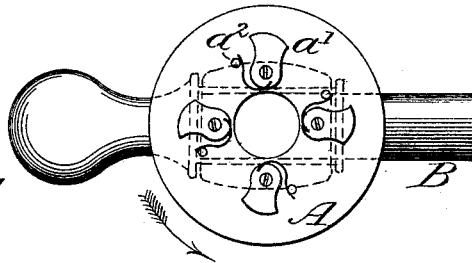
No. 218,736.

Patented Aug. 19, 1879.

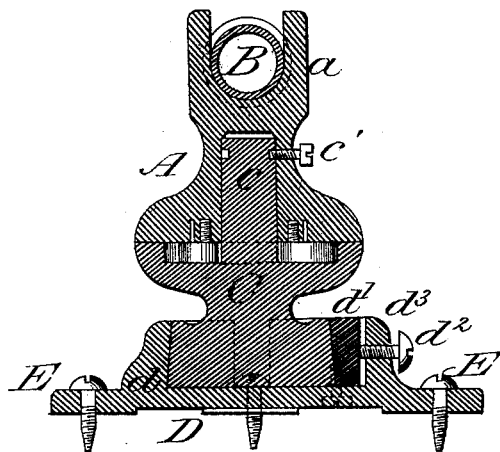
*Fig. 3.*



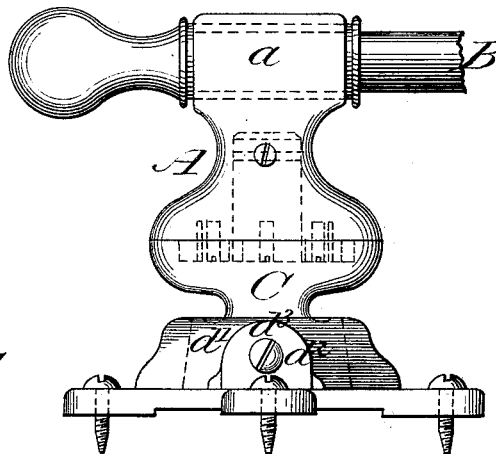
*Fig. 4.*



*Fig. 2.*



*Fig. 1.*



*Attest:*

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*John W. Heenan*  
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*attys-*

# UNITED STATES PATENT OFFICE.

JOHN W. HEENAN, OF CHELSEA, ASSIGNOR OF ONE-HALF HIS RIGHT TO  
WM. J. HICKEY, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN ROWING-EXERCISE MACHINES.

Specification forming part of Letters Patent No. **218,736**, dated August 19, 1879; application filed  
December 26, 1878.

*To all whom it may concern:*

Be it known that I, JOHN W. HEENAN, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Rowing-Machines, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, making a part hereof.

My invention relates to machines in which the force to be overcome by the person exercising is given by means of friction; and it consists in the combination of a piece carrying a rowlock, adapted to be rotated by means of a suitable handle with mechanism whereby a free rotation of the rowlock in one direction is allowed, but its rotation in the other direction is controlled by an adjustable friction-bearing, all as now to be more fully described.

In the drawings, Figure 1 is an elevation, and Fig. 2 a vertical section, of my improved machine. Fig. 3 shows the working of my friction device; and Fig. 4 is a plan of the bottom of the piece A, showing the clutch.

A is a piece of substantially the shape shown, and having a rowlock, *a*, at its upper part, adapted to receive the weighted oar-handle. This piece A is adapted to fit over and turn upon a stud, *c*, on the piece C, and is kept upon this stud *c* by means of the set-screw *c'*, which screws into a groove on the stud *c*, as will be readily understood.

A recess is sunk into the piece C, around the stud *c*, in which work the friction-clutches *a'*. These are best made of the shape shown, and attached to the piece A, being kept to their work by the springs *a''*.

The springs *a''* are arranged to act upon the piece C, and carry it around with the piece A when the piece A is rotated in one direction, and to release the piece C and allow it to remain unmoved during the rotation of the piece A in the other direction. This piece C is set into a standard, D, where it is held in place by the parts *d d'*. *d* is fixed, and *d'* is movable toward and from the part *d*, being made adjustable by means of a screw, *d''*, in the piece *d'*, so as to clamp the piece C more or less tightly between the parts *d d'*.

The machine is fastened to the floor by bolts at E.

The operation of my machine is as follows: The person who is to exercise sits down to this machine as he does to an oar in a boat, the handle B being of wood, weighted at the end farthest from the rower, so as to be balanced like an oar. The handle he can use as he does an oar, going through all the motions of rowing, and using a sliding seat or not, as he prefers.

It will be seen that whenever the piece A is moved in the direction indicated by the arrow, the clutches *a'* will bind upon the piece C, and hence will carry the piece C round with the piece A, thus causing it to revolve against whatever friction is applied to it in the standard D by the parts *d d'*.

When the piece A is revolved in the direction opposite to that in which the arrow points the clutches *a'* will release the piece C, and it will not be carried around by the motion of the piece A, and thus the person exercising will only have to work against a force during his backward stroke, as is the case in rowing a boat.

My machine above described is very simply and easily made, and is comparatively inexpensive. It is best built entirely of iron with steel springs *a''*.

The sides of the piece C, where it sets in the piece D, should be beveled outward slightly, and the parts *d d'* be adapted to fit it snugly, so as to hold the machine more securely.

It is obvious that, instead of the friction-clutches above described, any equivalent form of clutch can be used—for example, a pawl and ratchet, or a series of pawls.

What I claim as my invention is—

The improved rowing-machine above described, consisting of the pieces A and C, connected by a clutch, as described, the piece C being controlled by friction, all substantially as set forth.

JOHN WM. HEENAN.

Witnesses:

G. B. MAYNADIER,  
GEORGE O. G. COALE.