(No Model.)

W. & J. H. TRACY.

ROWING MACHINE.

No. 381,187. Patented Apr. 17, 1888.

Fig. 1.

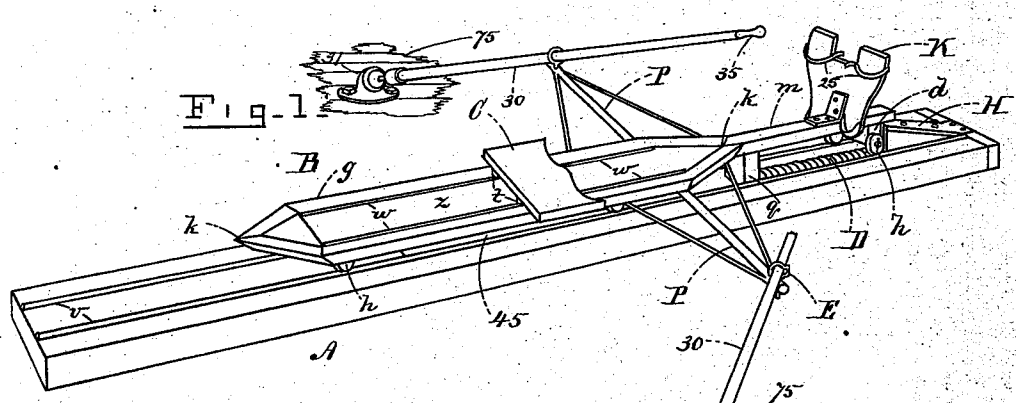


Fig. 2.

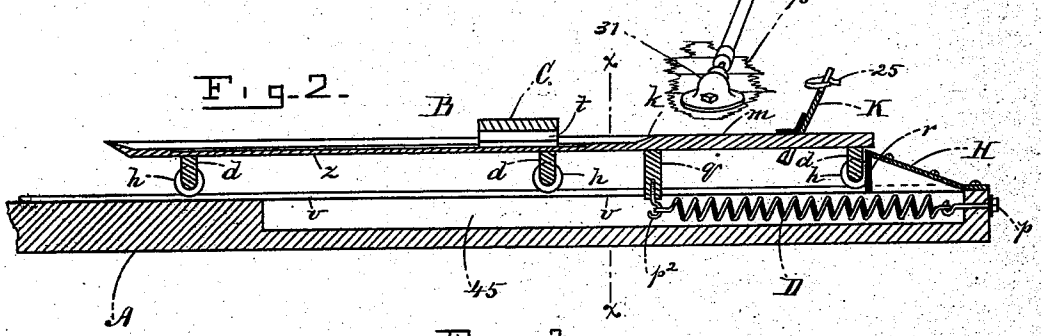


Fig. 3.

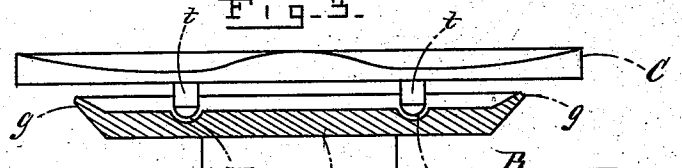
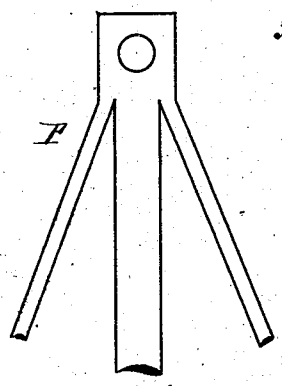


Fig. 4.



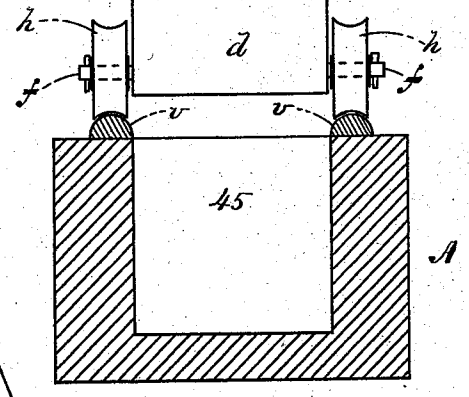


Fig. 5.

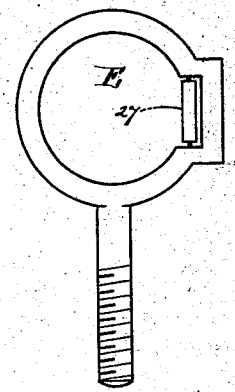
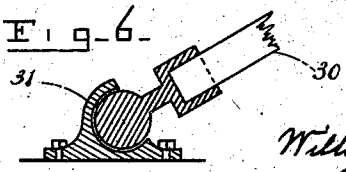


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM TRACY AND JACOB H. TRACY, OF CAMBRIDGE, MASSACHUSETTS.

ROWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 381,187, dated April 17, 1888.

Application filed January 10, 1888. Serial No. 260,348. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM TRACY and JACOB H. TRACY, of Cambridge, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Rowing-Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an isometrical perspective view of our improved rowing-machine represented in position for use; Fig. 2, a vertical longitudinal section of the same; Fig. 3, an enlarged transverse section taken on line *x x* in Fig. 2; and Figs. 4, 5, and 6, enlarged views showing certain details of construction.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

Our invention relates more especially to that class of rowing-machines which are designed for the use of oarsmen in practice and by athletes and others for exercise; and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation:

In the drawings, A represents the body of the machine, B the carriage, and C the seat.

The body A is composed of heavy plank or timber of suitable length and preferably of about the width of an ordinary rowing-shell, being designed to be secured to the floor of a room in any convenient position. A centrally and horizontally arranged groove or chamber, 45, is formed in the body A, said chamber extending from a point near the forward end of said body to the rear of its center, as best shown in Fig. 2. Two longitudinally-arranged parallel tracks, *v*, are secured to the upper side of the body A, upon which the carriage B is adapted to run.

The carriage B consists of a flat body portion, *z*, provided with standards *d*, which rest upon axles *f*, on which are journaled grooved wheels *h*, adapted to run on the tracks *v*. The body *z* of the carriage has its outer edge provided with an upwardly-turned flange, *g*, to prevent the seat C, hereinafter described, from accidentally slipping from said body, the ends of said body being pointed, as shown at *k* in Fig. 1. A horizontally-arranged bar, *m*, is secured to the forward end, *k*, of the carriage B, said bar being supported at its outer end by a standard, *d*, and wheels *h*, which run on the tracks *v*.

A horizontally-arranged stout coiled spring, D, is disposed in the chamber 45 of the body A, one end of said spring being secured to a hook, *f*, in the forward end of said body and the other end to a similar hook, *p*, on a downwardly-projecting arm or bracket, *q*, which is secured to the bar *m* on the carriage B, near its inner end.

A bumper, H, provided with an elastic cushion or face, *r*, adapted to engage the standard *d* on the bar *m* and stop the carriage, is secured to the forward end of the body A.

The seat C is of the form ordinarily used in rowing-shells and known as "sliding seats," being provided on its under side with two longitudinally-arranged shoes, *t*, adapted to slide in parallel grooves *w*, formed in the upper side of the body *z* of the carriage.

A foot-piece, K, provided with toe-straps 25 in the usual manner, is secured to the bar *m* near its outer end.

Projecting laterally from either side of the body *z* of the carriage B are three braces which form the outriggers P of the machine, and fitted in the usual manner in the outer end of each of said outriggers is a rowlock, E, (see Fig. 5,) which is preferably provided with a vertically-arranged anti-friction roll, 27.

Oars 30, having their outer ends secured to the floor 75 of the room by means of ball-and-socket joints 31, (see Fig. 6,) are disposed in the rowlocks E, and provided at their inner ends with handles 35, in the usual manner.

In the use of our improvement the oarsman mounts the seat C and places his feet against the rest K, in the ordinary position for rowing, the oars 30 being grasped by their handles 35 and strokes taken in the usual manner. The oars 30 being jointed to the floor 75, as

described, when a stroke is taken the carriage B will be forced backward on its tracks *v* on the body A, the spring D being gradually distended by the force exerted on the oars as the carriage retreats, while at the same time the seat C will be caused to slide on its tracks *w* on the carriage B as the legs of the oarsman are straightened in making the stroke.

In the "recover" the carriage is drawn back to its original position by the tension of the spring D, its progress being regulated by the speed with which the oarsman releases the strain on the oars.

The elastic cushion *r* on the bumper H is designed to break the force with which the carriage strikes the bumper on its return, when the recover is so rapid that the oars offer but little resistance to the contractile action of the spring.

The outer ends of the oars may be pivoted or jointed to the floor by any suitable means; but we consider the ball-and-socket joint described preferable, as by its use the oarsman is enabled to practice feathering the oars and to exercise in substantially the same manner as when rowing on the water.

It will be understood that by increasing the length of the carriage B, and the addition of seats C, foot-rests K, outriggers P, and oars 30, the machine may be readily adapted for use by two or more persons at the same time.

Having thus explained our invention, what we claim is—

1. In a rowing-machine, the combination of the following instrumentalities, to wit: a body provided with a longitudinally-arranged chamber, a carriage having trucks adapted to travel on tracks on said body and provided with outriggers carrying rowlocks, a foot-piece secured to a bar attached to the forward end of said carriage, oars disposed in said rowlocks and having their outer ends jointed to the floor, and a coiled spring connecting the said carriage and body and acting to force or draw it in the direction of the foot-piece, all being constructed, combined, and arranged to operate substantially as set forth.

2. In a rowing-machine, the body A, provided with the tracks *v* and chamber *x*, in combination with the carriage B, provided with the bar *m*, standards *d*, wheels *h*, and grooves *w*, the outriggers P, secured to said carriage, the rowlocks E, mounted in said outriggers, the foot rest K, secured to said bar, the seat C, provided with runners *t*, adapted to slide in grooves in said carriage, the bumper H, secured to said body and provided with the cushion *r*, the spiral spring D, connecting said carriage and body, oars 30, mounted in said rowlocks and having their outer ends jointed to the floor by the ball-and-socket joint 31, substantially as set forth.

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