

No. 629,402.

Patented July 25, 1899.

J. STEELE & A. OLSON.

BOW FACING OAR.

(Application filed Aug. 28, 1898.)

(No Model.)

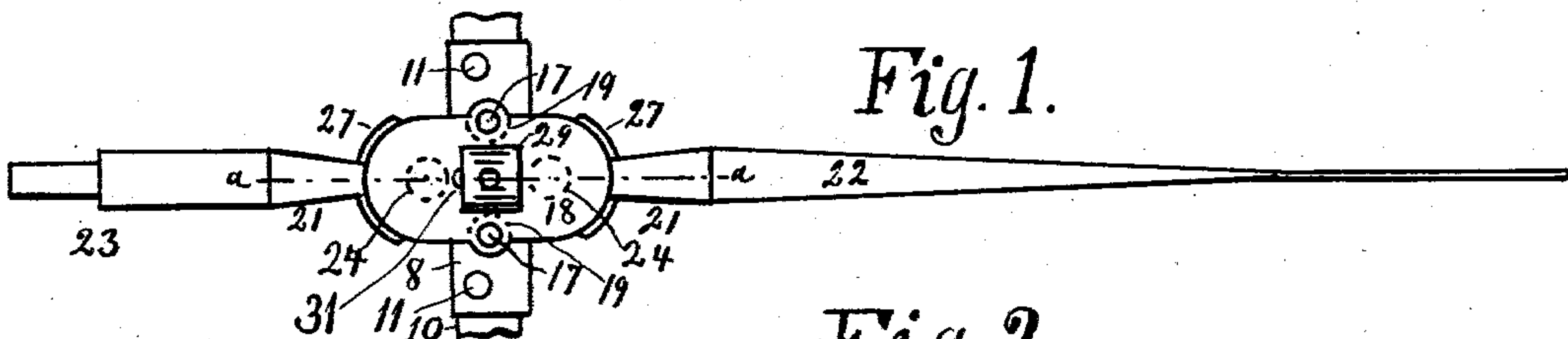


Fig. 1.

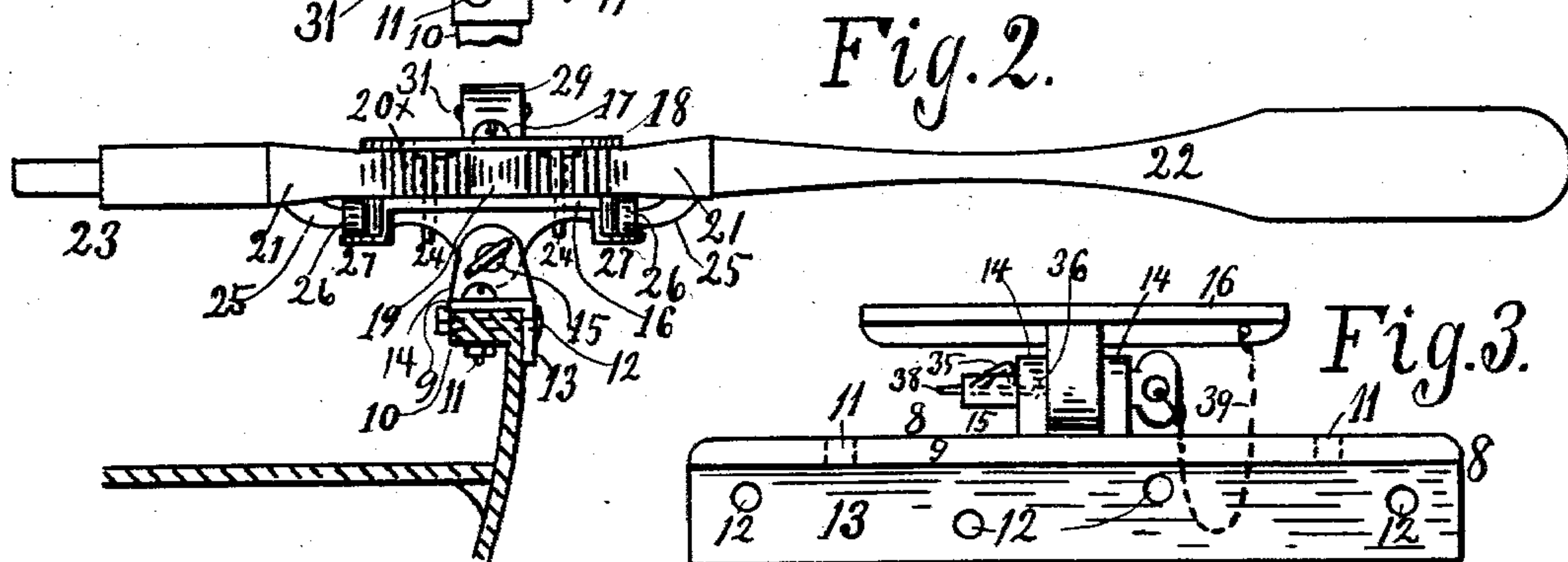


Fig. 2.

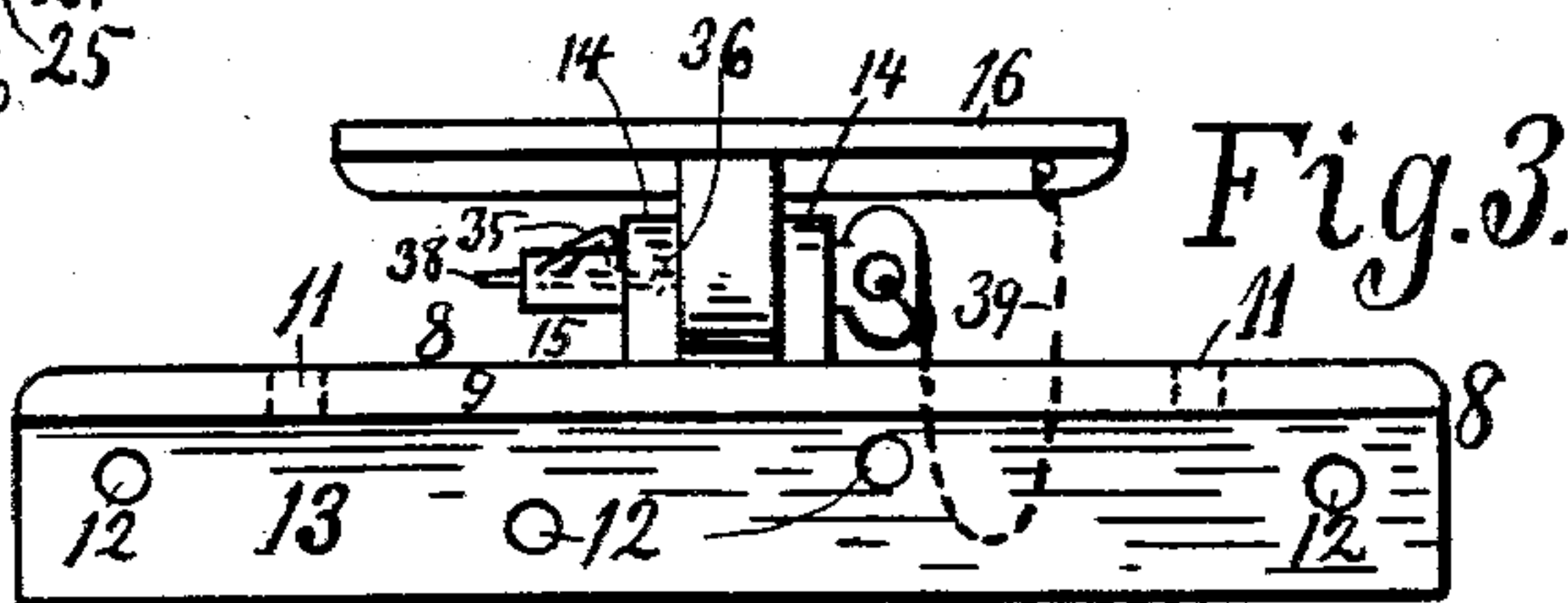


Fig. 3.

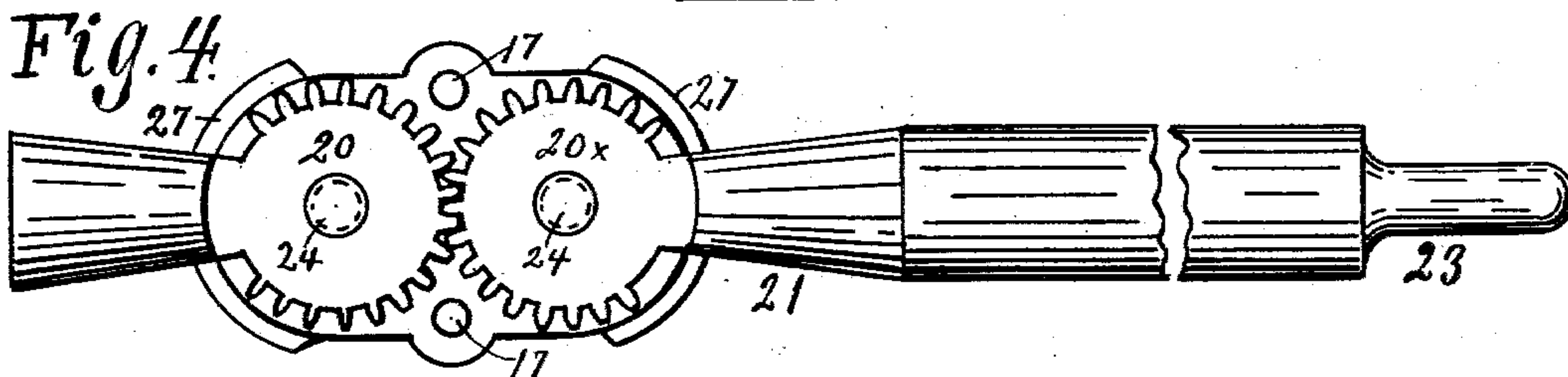


Fig. 4.

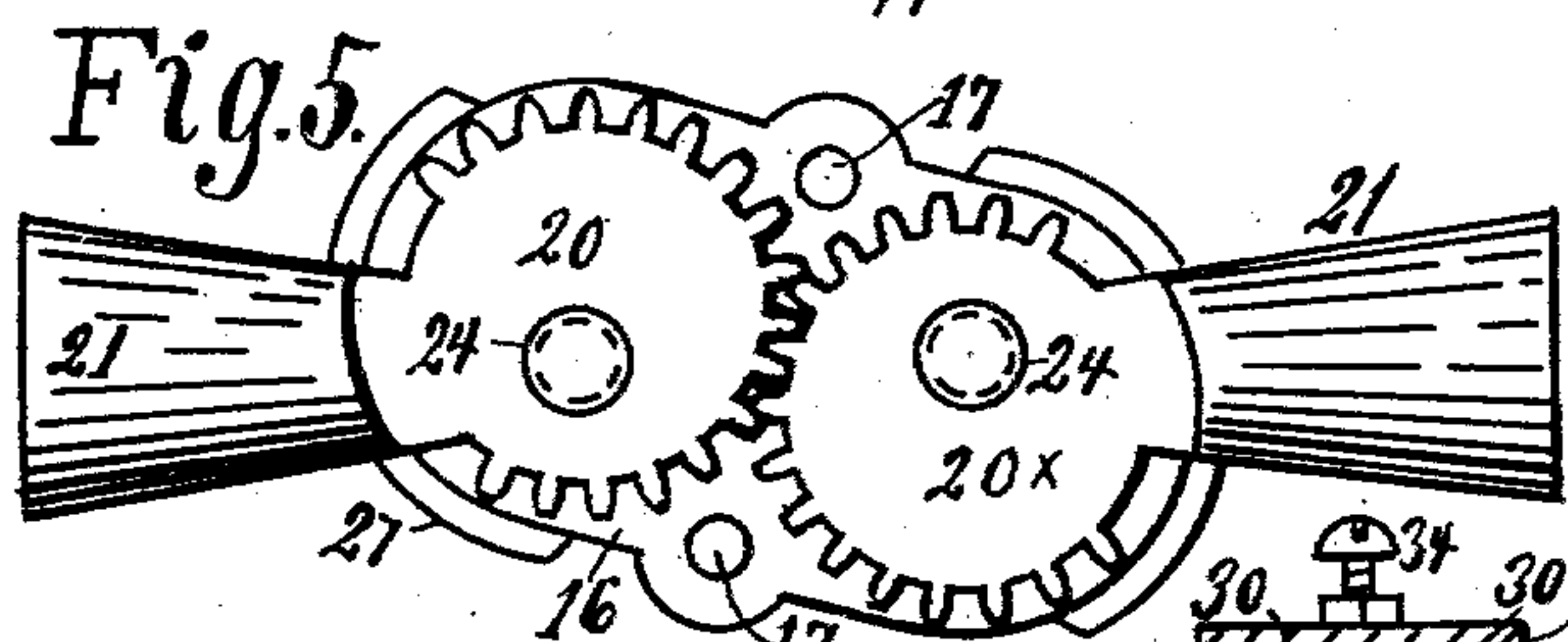


Fig. 5.

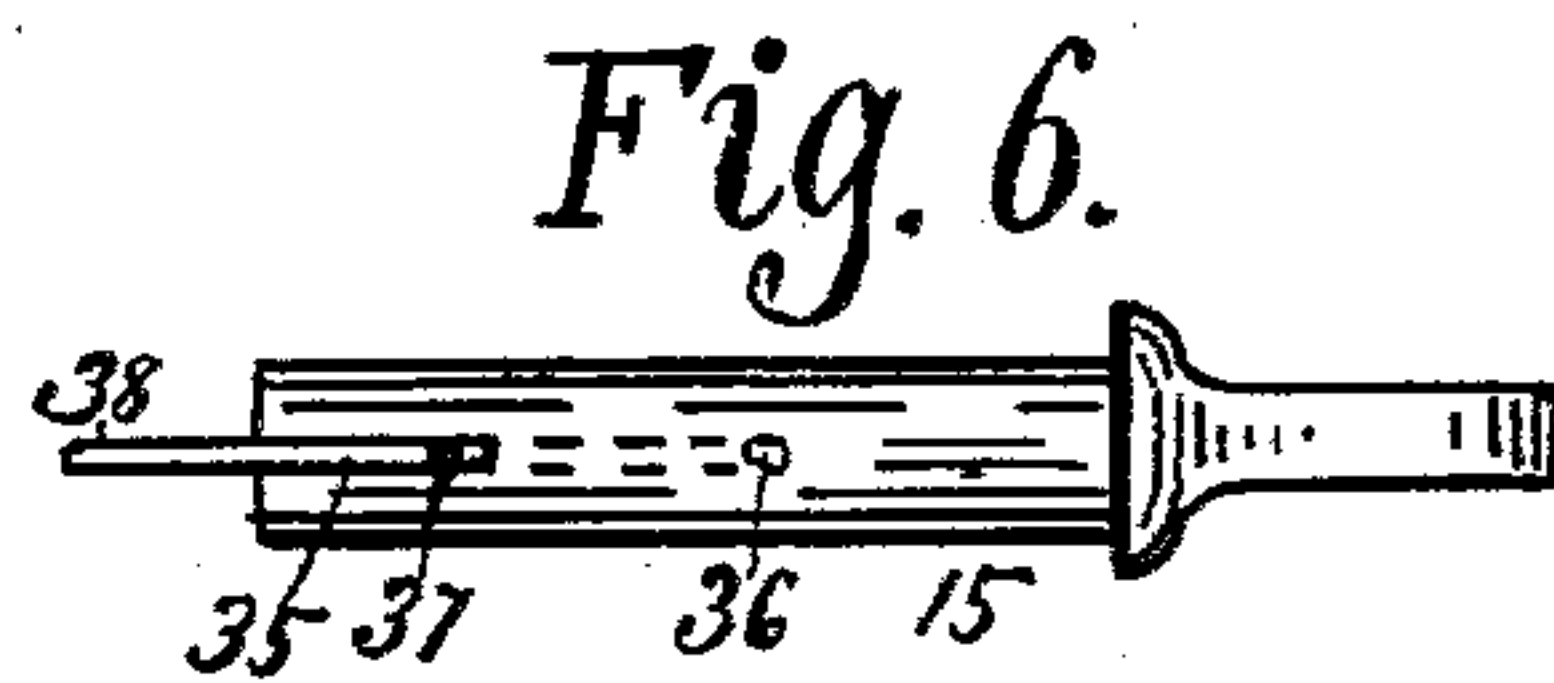


Fig. 6.

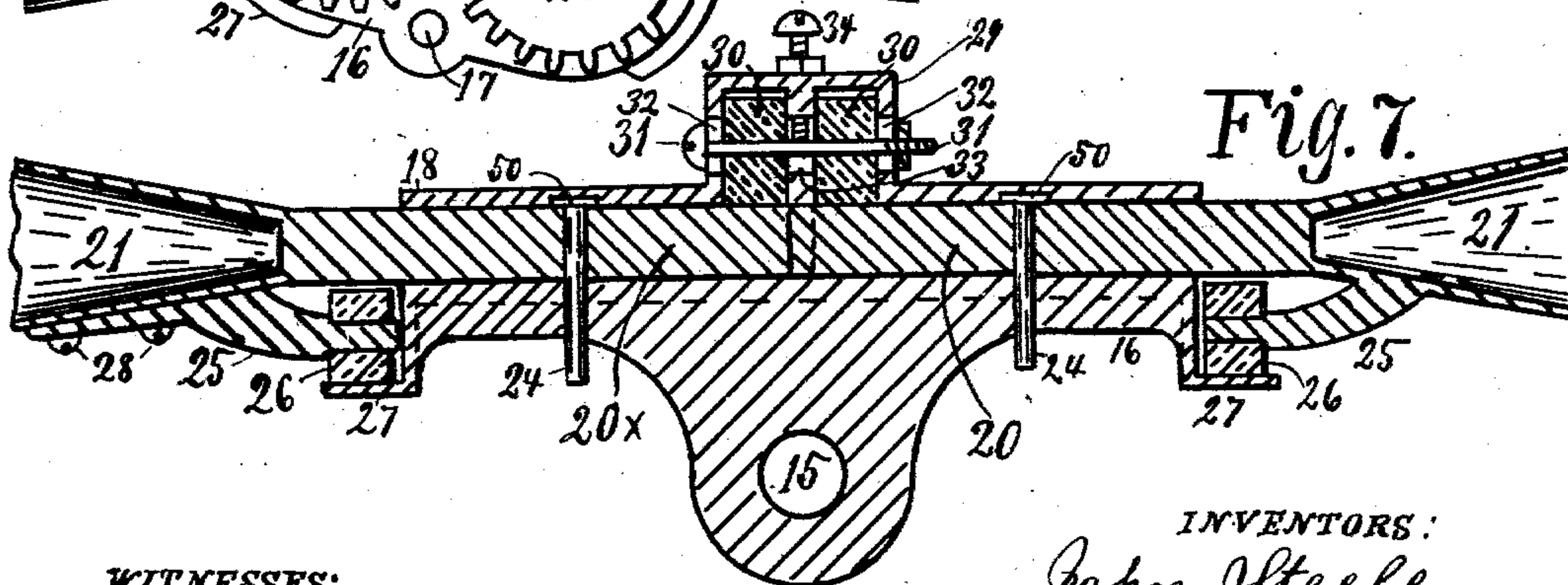


Fig. 7.

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# UNITED STATES PATENT OFFICE.

JOHN STEELE AND ANTON OLSON, OF ST. PAUL, MINNESOTA, ASSIGNORS OF ONE-THIRD TO PETER N. LINDQUIST, OF SAME PLACE; SAID STEELE ASSIGNOR TO SAID OLSON AND LINDQUIST.

## BOW-FACING OAR.

SPECIFICATION forming part of Letters Patent No. 629,402, dated July 25, 1899.

Application filed August 26, 1898. Serial No. 689,571. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN STEELE and ANTON OLSON, citizens of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Bow-Facing Oars; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in boat-oars; and the objects of the invention are, first, to provide an improved bow-facing oar, enabling a person to look in the direction he is rowing the boat; second, to provide a bow-facing oar in which all the parts work with great ease and still without rattling; third, to provide a bow-facing oar in which the wear of the parts may easily be taken up or adjusted; fourth, to provide a bow-facing oar of such construction that its speed and power may be increased toward either end of its stroke in either direction, and, fifth, to provide a bow-facing oar that may be very easily attached to and detached from the boat almost in an instant. These and other objects we attain by the novel construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of the oar attached to a portion of a boat. Fig. 2 is a side view of Fig. 1. Fig. 3 is an enlarged detail view of the plate secured to the boat as a seat for securing the oar to and the part pivoted thereto. Fig. 4 is an enlarged top view of the main mechanism with the top plate removed. Fig. 5 is a further improvement of the parts seen in Fig. 4. Fig. 6 is a detail view of the pivot or pin securing the oar to the boat. Fig. 7 is a substantially central sectional view on the line *a a* in Fig. 1.

Referring to the various parts in the drawings by reference-numerals, 8 is an elongated angle-plate forming the seat or supporting-base of the device. Its horizontal flange 9

may be bolted or screwed to the strip or molding 10 by the bolts or screws 11, or where the molding is too narrow for this the bolts may be passed horizontally, as at 12, through the vertical flange 13 of the plate. To the lugs 14 of said base-plate is pivoted by the pin 15 the frame-plate 16, upon which is secured by the screws 17 the cap-plate 18, provided with the two lugs or posts 19, holding the two plates the proper distance apart.

Between the elongated plates 16 and 18 are pivotally secured the two intergeared toothed segments or mutilated gear-wheels 20 and 20<sup>x</sup>, provided with the sockets 21, in one of which is secured the blade-section 22 and in the other the handle-section 23 of the oar. The pivots 24, on which said segments swing, may have their heads countersunk into the segments, as in Fig. 2, or into the cap-plate, as at 50 in Fig. 7. In either case the cap-plate covers the top ends of the pivots and prevents them from working out off their proper position while still allowing them to turn, so as not to wear flat or oval.

From the under side of each of the sockets 21 projects an arm 25, carrying an antifriction-roller 26, which rolls upon the shelf-like segment or recess 27, projecting from the plate 16. These arms 25 are, especially for large oars, made adjustable by being secured to the sockets with screws, as at 28 in Fig. 7, so that when the arm or roller wears the arm may be adjusted by filing off from a chipping-strip (not shown) at the inner side of the flat end of the arm or by putting a lining between its other end and the socket. The top plate 18 is provided with a central upwardly-projecting pocket 29, housing two rollers 30, (see Fig. 7,) which bear upon the segments 20 20<sup>x</sup> and keep them from frictional contact with the top plate the same as the rollers 26 keep the segments from frictional contact with the lower plate 16. The bolt 31, on which the rollers 30 revolve, is passed through vertically-slotted holes 32 in the sides and in the central wall 33 of the pocket, so that when it wears it may be adjusted downward by the screw 34, touching with its point at the middle of the bolt.



In Figs. 3 and 6 it will be seen that the pin 15 is provided with a spring-catch 35, secured at 36 and, plying in the slot 37 of the pin, takes a firm hold of one of the lips 14, so that the pin cannot possibly work out, while at the same time it may be touched on the side of the point 38, so as to disappear sideways into the pin, which may thus be removed in an instant when the oars are to be removed from the boat or exchanged from side to side, as below explained. 39 is a light chain or cord securing the pin to the oar, so that it will always be handy and not left in the base-plate, where children might remove and lose it.

In Fig. 5 a special construction of the segments 20 20<sup>x</sup> is shown in that the segments or gears are eccentric and turned each with its large radius toward the small radius of the other, so that when the operator makes an even motion with the handle of the oar the blade will move in one direction with an increased and in the other direction with a decreased speed. The three advantages gained by this arrangement will be best understood and appreciated by oarsmen who have used oars for various kinds of rowing. In the first place the speed of light boats and boats in general increases toward the end of the stroke of the oar in the water, and consequently calls for a speedier motion of the operator's body into a leaning position, from which it takes so much more exertion to return, as not only the weight, but also the increased momentum of the body must be overcome. The leaning of the body ought, therefore, to be reduced as much as possible and the motion of the body ought to decrease toward the returning point or greatest incline, and these two advantages it is obvious that we gain for ordinary rowing. The third advantage is that in towing vessels, logs, or other floats, which is quite frequently done by row-boats, the oars may readily be exchanged to the opposite sides of the boat and will then move slowly through the water toward the end of the stroke at the time the tow-line is stretched and almost arrest motion of the boat, and when the oars are lifted from the water and the sinking tow-line retracts the boat at an increasing speed the oars will move forward very quickly and take a new hold in the water before the boat has got well started on its rearward motion, which motion if allowed to go on a few moments produces a momentum of the boat and its occupants sufficient to waste half or more of the oarsman's power to overcome it.

From the above description it will be seen that we provide a simple, durable, adjustable, almost frictionless, bow-facing oar in which power and speed may be increased or decreased toward either end of the stroke, all without having the operator look in the opposite direction to that in which he is rowing, as is the regular old style of rowing.

As already above indicated, for light boats or boats using sails mostly and very little the

oars the friction-rollers 26 and 30 may be omitted, and the frame-plate 16 will then be, as in Fig. 3, without the recesses 27, and the upper or top plate 18 will then be without the pocket 29.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a bow-facing oar, the combination of an angle-plate-shaped support adapted to be secured to the side and top of the gunwale of the boat, the tilting frame-plate 16, pivoted thereto by a pin having an interlocking easily-operated spring-catch holding it in place; the intermeshing heads 20 and 20<sup>x</sup>, pivoted with headed pivots upon said frame-plate, and having the sockets 21, with the handle-section and blade-section of the oar secured therein; the cap or top plate 18, covering the heads of the pivots, the posts 19, located beyond the gears and holding the plates 16 and 18 apart, and bolts or screws about central with the posts, securing the plates firmly together, substantially as and for the purpose set forth.

2. In a bow-facing oar, the combination of a base-plate adapted to be secured to the boat, a tilting frame pivotally secured thereto, a pair of intermeshing mutilated gears or segments pivoted in the frame and having each a socket; the handle-section and blade-section of the oar secured in the sockets, and antifriction-rollers supporting the oar-sections, substantially as and for the purpose set forth.

3. In a bow-facing oar, the combination of a base-plate adapted to be secured to the boat, a tilting frame pivotally secured thereto, a pair of intermeshing gears or segments pivoted in the frame and having each a socket; the handle-section and blade-section of the oar secured in the sockets, and antifriction-rollers supporting the oar-sections near the outer edges of the frame and also antifriction-rollers holding down the segments or gears near their intermeshing point, substantially as and for the purpose set forth.

4. In a bow-facing oar, the combination of a base-plate adapted to be secured to the boat, a tilting frame supported thereby, a pair of intermeshing gears or segments pivotally mounted in the frame, and having each a socket; the handle-section and blade-section of the oar secured in the sockets; said intermeshing gears being eccentric and turned each with its largest radius toward the smallest radius of the other gear, substantially as and for the purpose set forth.

5. In a bow-facing oar, the combination of a base-plate adapted to be secured to the boat, a tilting frame supported thereby, a pair of intermeshing segments or gears pivotally mounted in the frame and having each a socket; the handle-section and blade-section of the oar secured in the sockets, and antifriction-rollers supporting the oar-sections near the outer edges of the frame and also antifriction-rollers holding down the seg-



ments or gears near their intermeshing point, said intermeshing gears being eccentric and turned each with its largest radius toward the smallest radius of the other gear, substantially as and for the purpose set forth.

6. In a bow-facing oar, the combination with a base-plate adapted to be secured to the boat, a tilting frame supported thereby, a pair of intermeshing segments or gears pivotally mounted in the frame and having each a socket; the handle-section and blade-section of the oar secured in the sockets and ad-

justable, antifriction-rollers supporting the oar-sections near the outer edges of the frame, and also antifriction-rollers holding down the intermeshing edges of the segments or gears, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN STEELE.

ANTON OLSON.

Witnesses:

J. P. ALLEN,

CHAS. W. ALLEN.