

A. L. MUNN.
CURRENT MOTOR.

APPLICATION FILED AUG. 20, 1917.

1,326,769.

Patented Dec. 30, 1919.

3 SHEETS—SHEET 1.

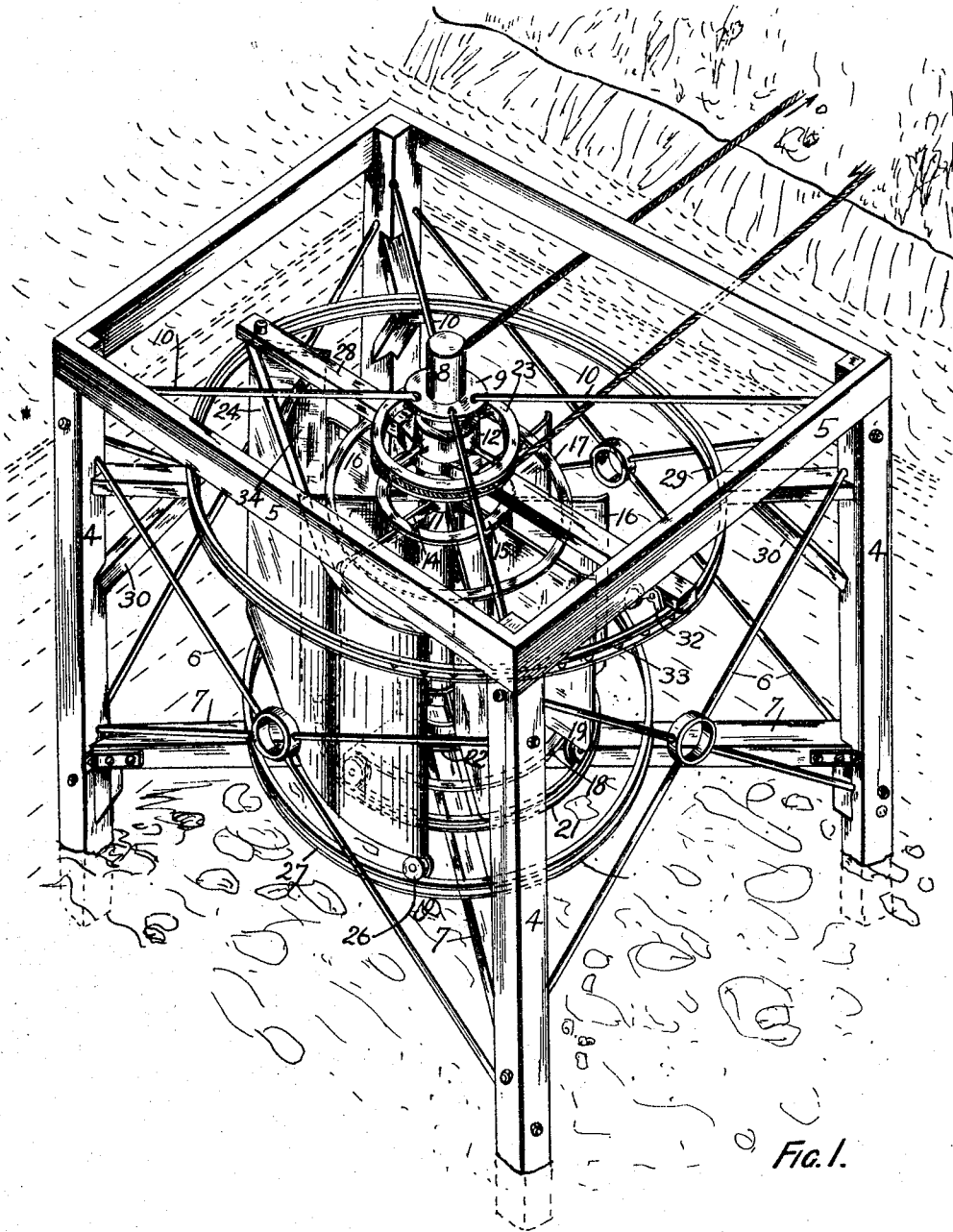


FIG. 1.

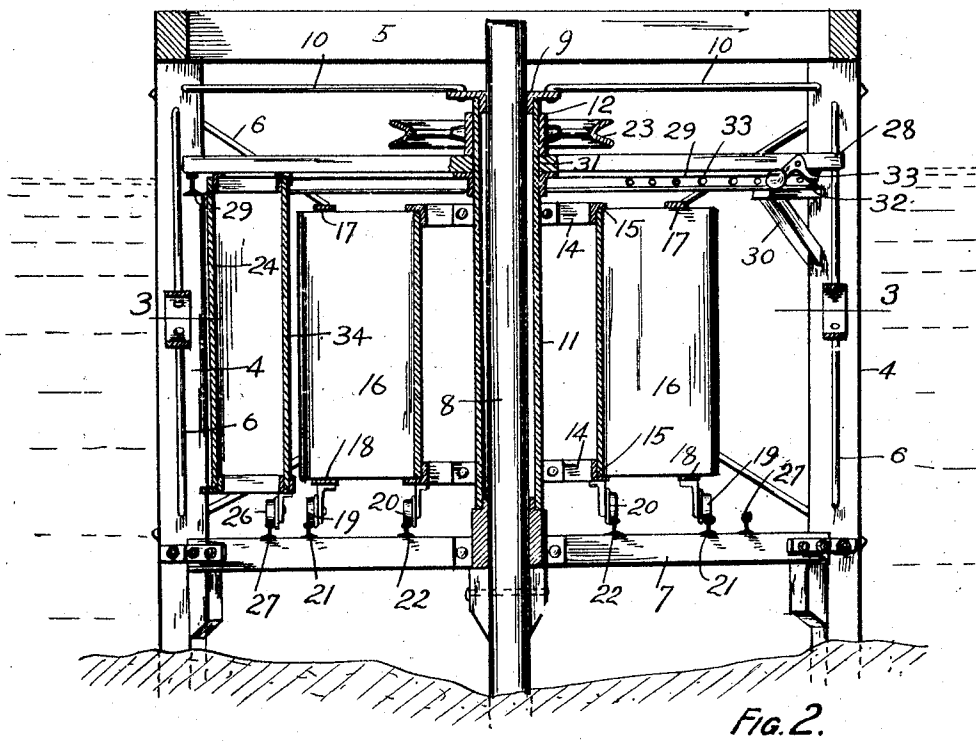
Witnesses
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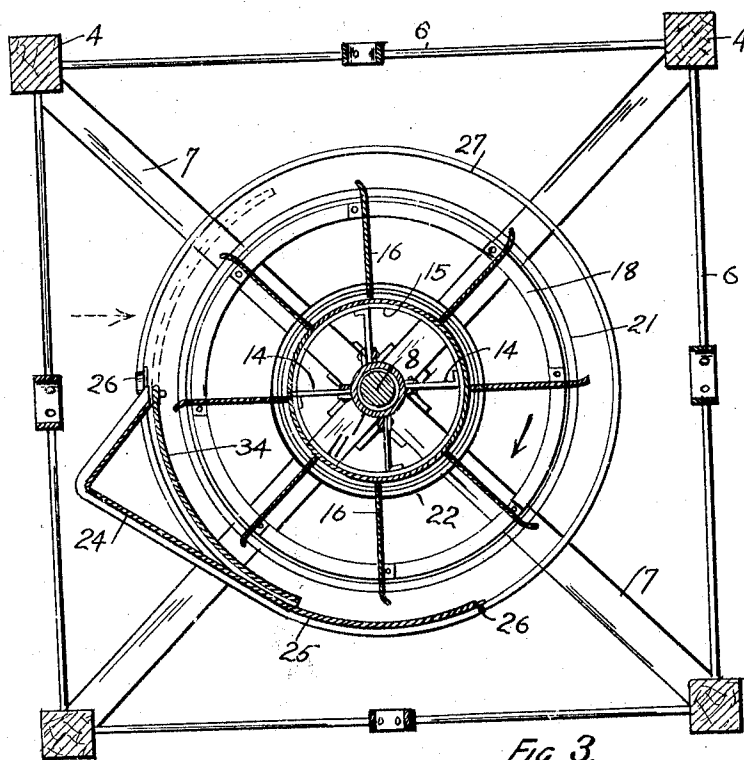


FIG. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

ARMSTRONG LOCKHART MUNN, OF MERIMBULA, NEW SOUTH WALES, AUSTRALIA.

CURRENT-MOTOR.

1,326,769.

Specification of Letters Patent.

Patented Dec. 30, 1919.

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To all whom it may concern:

Be it known that I, ARMSTRONG LOCKHART MUNN, a subject of the King of Great Britain, residing at Merimbula, in the State of New South Wales, Commonwealth of Australia, have invented certain new and useful Improvements in Current-Motors, of which the following is a specification.

This invention relates to improvements in current motors driven by the action of the tide or by the force of a stream, my object being to effectively utilize this power at a minimum outlay and running cost.

According to the invention on a foundation placed in a suitable position in the bed of the stream or other suitable subaqueous place I secure a vertical post or pillar and on same I arrange a loose sleeve or cylindrical frame on which are fastened the blades or vanes against which the flowing water impinges. This sleeve or frame extends downward almost the full depth of the post and to it are secured friction wheels or rollers capable of running on fixed rails concentric with the frame. Each end of the sleeve or frame carries a collar or the like and on the upper one is a grooved wheel in which takes a rope or belt to transmit the power to the desired point or I may transmit the power through suitable toothed gearing and shafting. The sleeve or frame may be in two vertical halves connected by bolts or rods so as to be readily disconnected or put together.

Adjacent to the blades which are preferably curved is a deflector to deflect the current to the blades on one side of the post and away from those on the opposite side. This deflector is adjustable especially in the case of tidal streams in order that on a change of tide it may be moved to an opposite position and deflect the water toward the blades on the opposite side of the post. It also may be regulated to vary the volume of water passing the blades. The deflector may be provided with friction wheels or rollers which run on ways or rails on a surrounding fixed framing. The deflector is moved manually by a lever or beam but I may have a tail vane secured thereto so that on change of the current's direction it will automatically force the deflector over to the desired position.

But in order that my invention may be

clearly comprehended, I will now refer to the drawings herewith, in which,

Figure 1 is a perspective view illustrating the current motor in position.

Fig. 2 is a central sectional elevation, while,

Fig. 3 is a sectional plan on the line 3—3, Fig. 2.

The same numerals indicate the same or corresponding parts.

The framing consists of posts or piles 4 having top plates or beams 5 and bracings 6 and bottom plates or beams 7 secured to the piles 4 and to the central post 8. The post 8 has near its upper end a flange 9 for the stay rods 10 which are secured to the corner piles 4. Surrounding the central post 8 is a loose sleeve 11 having bearings 12 and 13. To this sleeve are affixed radial arms 14 supporting the flanged rings 15 and to which are affixed the vanes or blades 16 secured together by the circular bands 17 and 18. Secured to the undersides of the circular band 18 and flanged ring 15 are the flanged rollers 19 and 20 respectively which take on the circular rails 21 and 22 secured to the bottom beams 7. To the loose sleeve 11 is fastened the driving pulley 23 or other suitable transmission gearing.

The deflector 24 is preferably V shaped, its longer side 25 extending so as to prevent the flowing water striking the vanes or blades 16 which are advancing. The deflector is mounted upon flanged rollers 26 taking on the circular rail 27 secured to the beams 7. The deflector is capable of being adjusted by a beam 28 to which it is secured, said beam normally resting upon the circular rail 29 which is supported by brackets 30 secured to the corner piles 4. The beam 28 is fulcrumed at 31 around the sleeve 11 and has a locking bolt 32 taking into holes or recesses 33 in the rail 29. Within the deflector is preferably a curved sliding gate 34 which when drawn out into the position shown in dotted lines in Fig. 3 will prevent the current acting on the vanes of the motor.

In some cases where the power required is small I may dispense with the fixed post and pivot the frame carrying the blades on a central pin taking in sockets or bearings above and below the water level.

All bearing surfaces may be provided with friction balls or rollers.

When a series of these motors are arranged in adjacent positions the fixed portions may be braced together to insure greater rigidity.

5 In order to provide for the rise in tidal waters I may arrange for the motor and its framing to be adjustably moved accordingly on the central post.

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

15 In a current motor, a fixed post forming a central pivot means, a loose sleeve rotatably mounted on the post, a plurality of blades secured at their inner terminals to the upper and lower portions of the sleeve, track rails concentric with the post and sleeve and arranged in fixed position below the blades, upper and lower circular bands
20 connected to the upper and lower edges of

the blades, a plurality of rollers connected to the lower portions of the blade and to the lower band and engaging the said track rails, a deflector of V-shaped form disposed in rotative coöperation with the blades and having its longer side arranged to prevent the flowing water striking the blades when the latter are advancing, the deflector having also a beam for adjusting the same and lower rollers engaging the outermost of the lower track rails, a solid curved shield having sliding mounting in the deflector, an upper outer circular track rail upon which the beam of the deflector has bearing, and means for transmitting motion from said rotatable sleeve.

In testimony whereof I have hereunto set my hand.

ARMSTRONG LOCKHART MUNN.