

I. M. DOTSON.
MOTOR.

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969,685.

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Fig. 1.

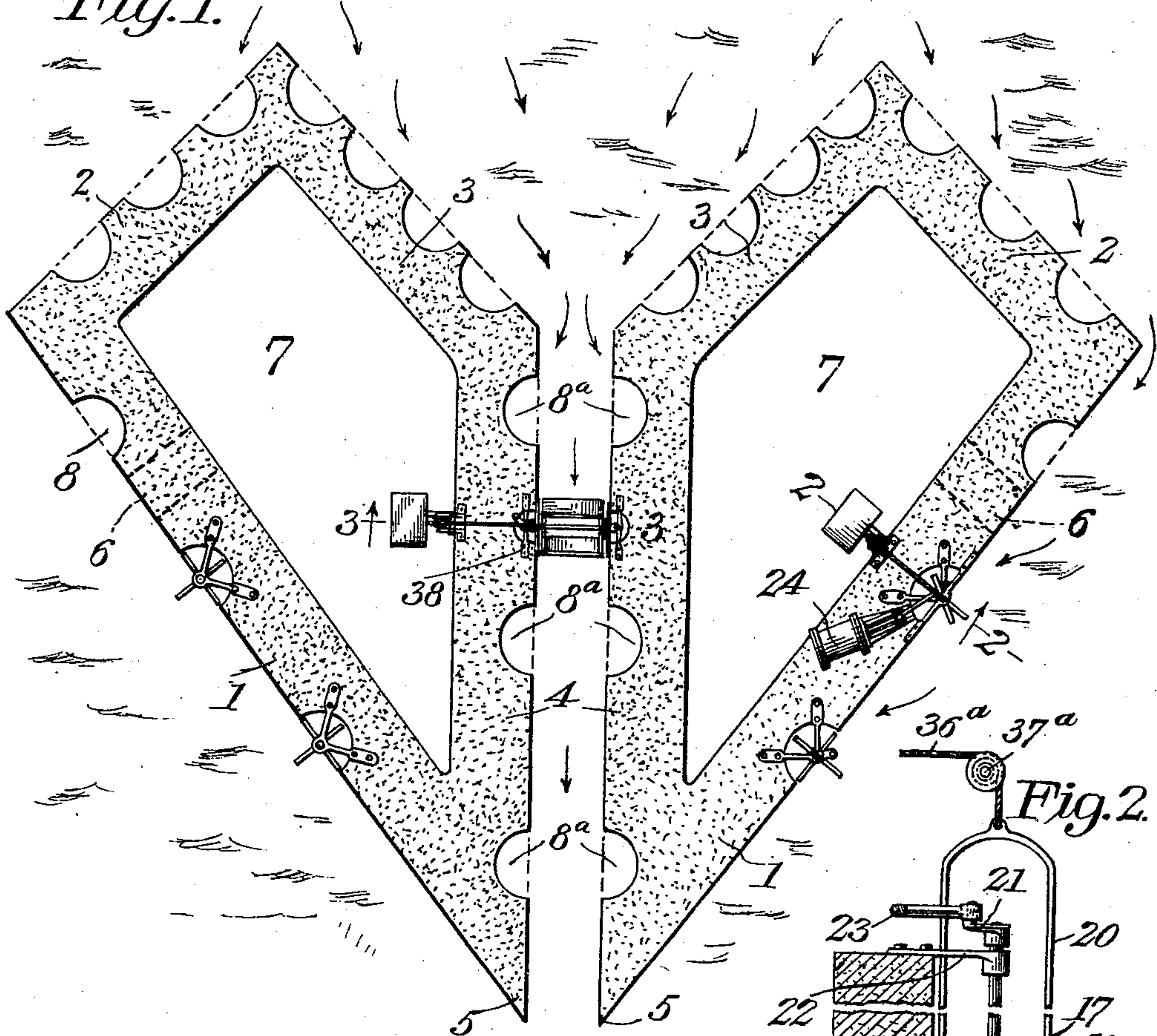


Fig. 2.

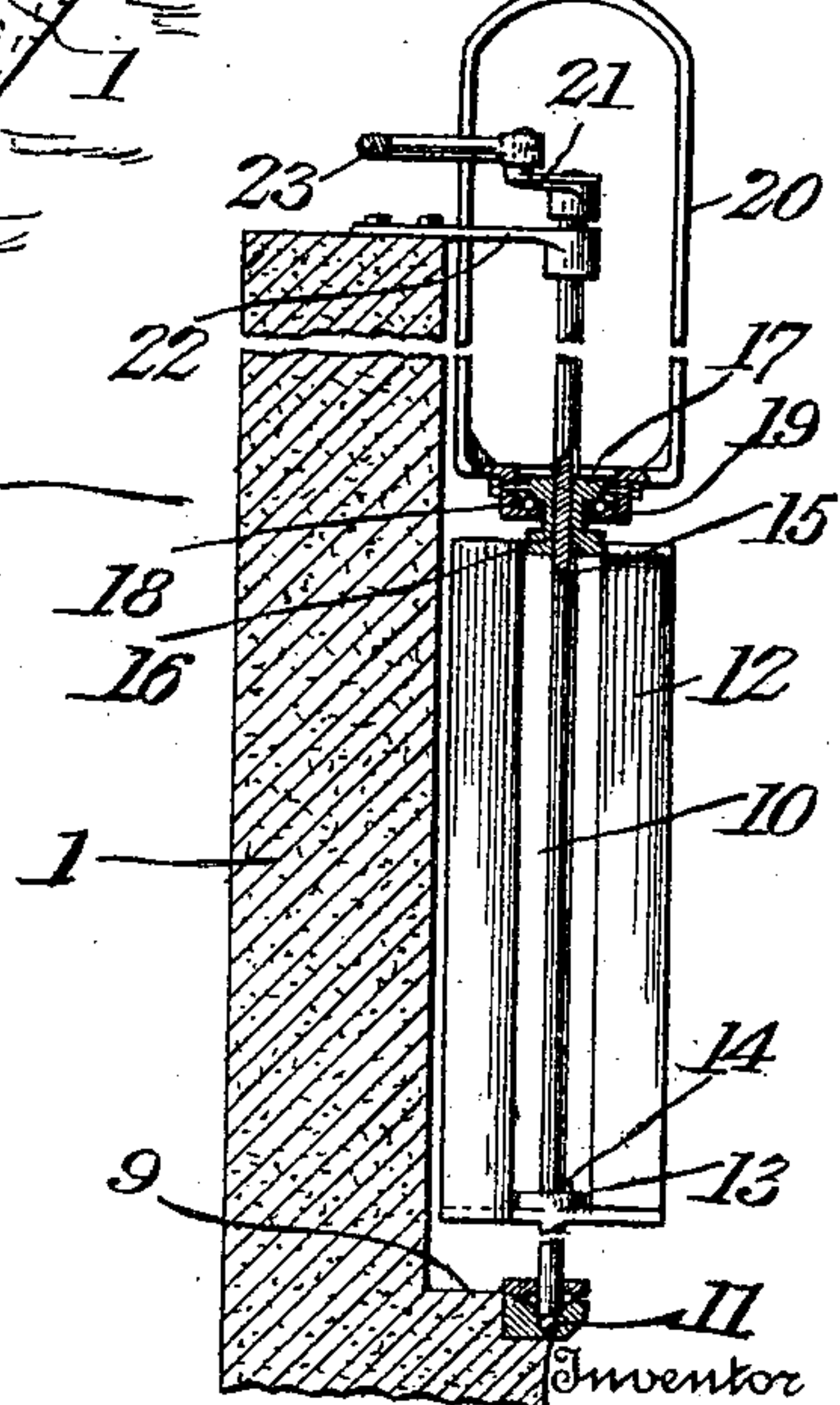
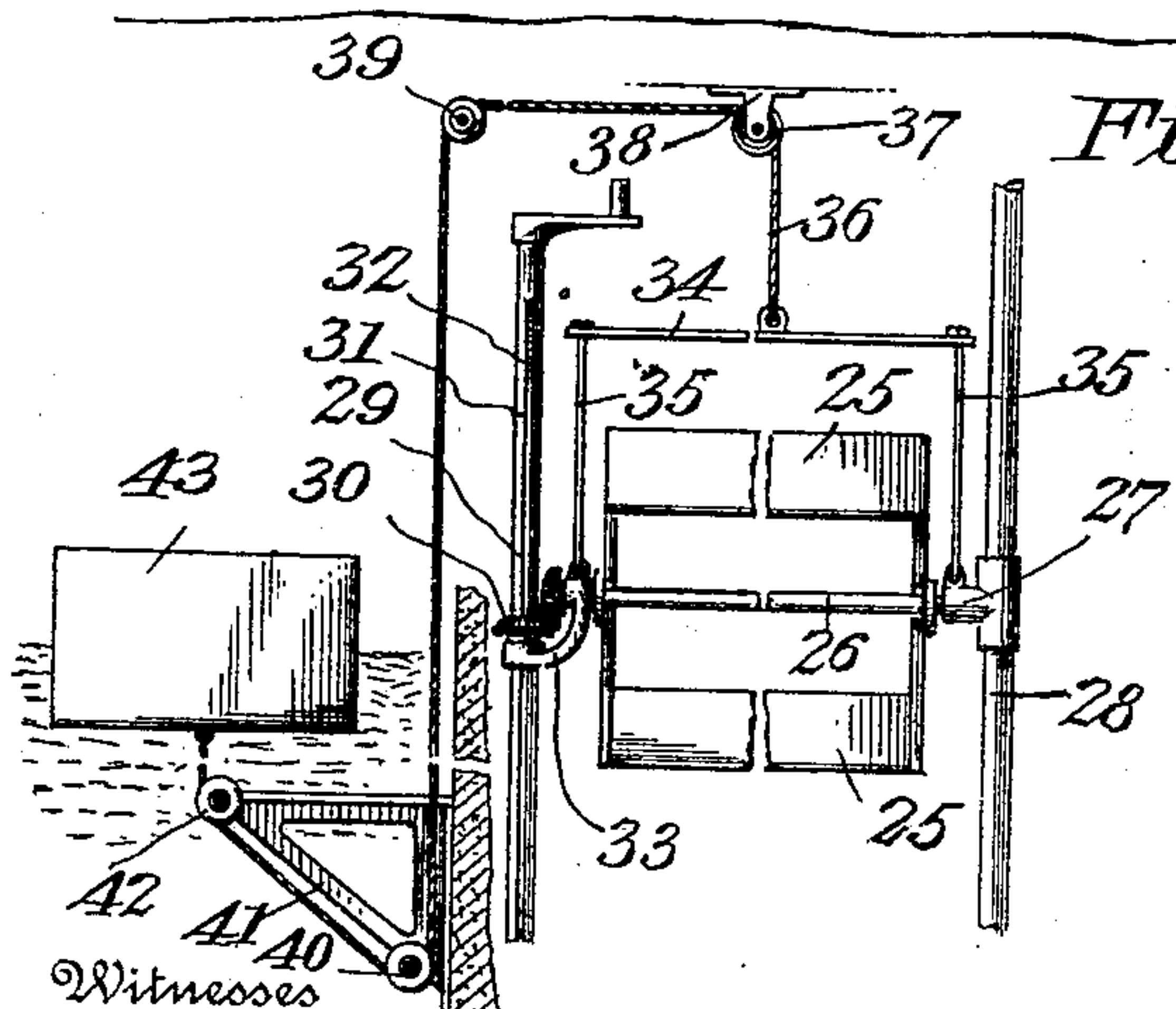


Fig. 3.



Witnesses
Fenton & Belt
J. P. Bunge

Ira M. Dotson

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

IRA M. DOTSON, OF SANTA CRUZ, CALIFORNIA.

MOTOR.

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To all whom it may concern:

Be it known that I, IRA M. DOTSON, a citizen of the United States of America, residing at Santa Cruz, in the county of Santa Cruz and State of California, have invented new and useful Improvements in Motors, of which the following is a specification.

This invention relates to wave or current motors, and one of the principal objects of the same is to provide simple and reliable means for utilizing the force or impact of waves or currents of water to rotate water wheels for compressing air in tanks to be used at will.

Another object of the invention is to provide a motor plant especially designed for use adjacent to the shore and of the construction designed to take advantage of the impact of the waves or currents of water to the end that the same may be converted into power without any special attention on the part of an operator.

These and other objects may be attained by means of the construction illustrated in the accompanying drawing, in which—

Figure 1 is a plan view of a water motor plant embodying my invention. Fig. 2 is a vertical sectional view through one of the sea walls on the line 2—2 of Fig. 1. Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

In carrying out my invention I build at a point adjacent to the shore a pair of basins or reservoirs of concrete or other similar material, said basins each comprising oblique walls 1, outer end walls 2, oppositely diverging walls 3 and parallel walls 4, between the latter of which a flume or passageway is formed or created for the incoming waves. As shown in the drawing, the points 5 are directed toward the shore line, and the arrows serve to indicate the general direction of the impact of the waves against the walls. In each of the walls 1 is formed an opening 6 which leads into the interior reservoir or basin 7. Formed in each of the walls referred to at various points within their length are concaved or semi-cylindrical pockets 8, said pockets at their lower ends being provided with shoulders 9 for supporting the water wheels. In each of the pockets 8 is mounted a water wheel, those upon the outer walls each comprising a shaft 10, the lower end of which is mounted on a ball bearing 11, as

shown in Fig. 2. Mounted to slide upon the rod 11 is a water wheel comprising vertical blades 12, at the lower end of which the collar 13 is provided with a spline 14 mounted in a groove 15 extending longitudinally of the shaft 10. At the upper end of the water wheel a collar 16 is connected to the blades, and this collar is provided with an enlargement 17 at the upper end thereof which is mounted upon balls 18 resting upon a raceway 19 formed on a yoke 20, said yoke extending upward and being of sufficient area to permit the rotative movement of a crank 21 connected to the upper end of the shaft 10. A bracket 22 is secured to the wall 1, and the shaft 10 is mounted in said bracket. Connected to the crank 21 is a rod 23 which leads to a pump 24 for compressing air to be utilized for any required purpose.

Mounted between the parallel walls 4 is a water wheel journaled horizontally and provided with blades 25. The shaft 26 upon which this water wheel is mounted is journaled in a sliding collar 27 mounted to slide upon a vertical rod or standard 28. The inner end of the shaft 26 is provided with a beveled gear wheel 29 adapted to mesh with a similar gear 30 which is mounted to slide on a shaft 31 supported in one of the pockets 8^a in the walls 4. The shaft 31 is provided with a longitudinal groove 32, and the beveled wheel 30 is provided with a spline which fits within said groove and permits said wheel to slide on the rod. A bracket 33 is mounted upon the shaft 31, said bracket also having an arm through which the shaft 26 extends, both of said shafts being mounted to rotate freely therein. A yoke comprising a bar 34 and vertical members 35 is provided for connection to the collar 27 at one side and the bracket 32 at the opposite side, as shown in Fig. 3. Connected to the bar 34 is a cable 36 passing over a pulley 37 mounted on a bracket 38, said cable passing over a pulley 39 supported in a bracket on the wall. This cable extends under a pulley 40 journaled in a triangular bracket 41 secured to the inner surface of the wall 4 within the basin 7. The bracket 41 is also provided at its outer end with a grooved pulley 42 around which the cable 36 extends. Connected to the end of the cable 36 is a float 43. By this arrangement it will be observed that as the float 43 rises it pulls upward upon the cable 36 and raises

the water wheel and blade 25. Thus the water wheel is raised and lowered by the tide to be at the desired relative depth in the water to secure the best results. Connected to the yoke 20 is a cable 36^a passing over a pulley 37^a, said cable extending to a float of the same character as that previously described, the purpose being to raise and lower the blades 12 on the shaft 10, as the tide rises and falls. The pump 24 is of the air compressor type, and a delivery pipe may lead from said pump to any suitable storage tank.

It will be understood that each of the water wheels may be connected to a separate air compressor or pump, as indicated in Fig. 1. Advantage may also be taken of the swift current passing through the flume between the walls 4 to rotate the horizontally mounted water wheels.

From the foregoing it will be obvious that a motor made in accordance with my invention, while simple in construction, is automatic in operation, can be installed without great cost and will be found very efficient for constantly storing power.

I claim:—

1. In water power apparatus, a sea wall arranged at an angle to the current of water and provided with a plurality of semi-cylindrical pockets, and a corresponding series of water wheels partially housed within said pockets and partially projecting beyond the exposed face of the wall, substantially as described.

2. In water power apparatus, substantially parallel sea walls provided in their adjacent faces with semi-cylindrical pockets and forming a flume, and water wheels journaled in said pockets and partially housed therein, the remainder of said wheels projecting beyond the faces of the walls into the flume.

3. In water power apparatus, oppositely arranged basins having their inner walls

arranged parallel to each other and spaced apart to form a straight flume, water wheels mounted in said flume, sea walls extending obliquely from said parallel walls and provided in their outer faces with semi-cylindrical pockets, and water wheels supported by said walls and partially housed within said pockets, the remainder of said wheels projecting beyond the faces of the walls, substantially as described.

4. In water power apparatus, the combination with a sea wall having its outer face arranged at an angle to the current of water and formed with a semi-cylindrical pocket, a water wheel having a vertical shaft and partially housed in said pocket, the remainder of said wheel projecting beyond the face of the wall, and a pump supported by the wall and geared to the shaft of said wheel, substantially as described.

5. In a water power apparatus, basins comprising walls and interior spaces, side walls each being provided with semi-cylindrical pockets, water wheels mounted in said pockets, said water wheels being mounted to slide vertically upon their shafts, and floats in said basins connected to the frames of said water wheels for raising and lowering the same automatically as the tide rises and falls.

6. In a water power apparatus of the character described, a series of walls forming an interior basin, wheels mounted in pockets in said walls, said wheels being mounted upon shafts and permitted to slide thereon, a yoke, a cable connected to said yoke, and a float in said basin connected to said cable for permitting the wheels to rise and fall with the tide.

In testimony whereof I affix my signature in presence of two witnesses.

IRA M. DOTSON.

Witnesses:

LILLIE M. LYNAM,
JAMES O. WANZER.