

A. & C. VAICHIS & H. ARVAN.

WATER ELEVATOR.

APPLICATION FILED AUG. 26, 1910.

994,487.

Patented June 6, 1911.

2 SHEETS-SHEET 1.

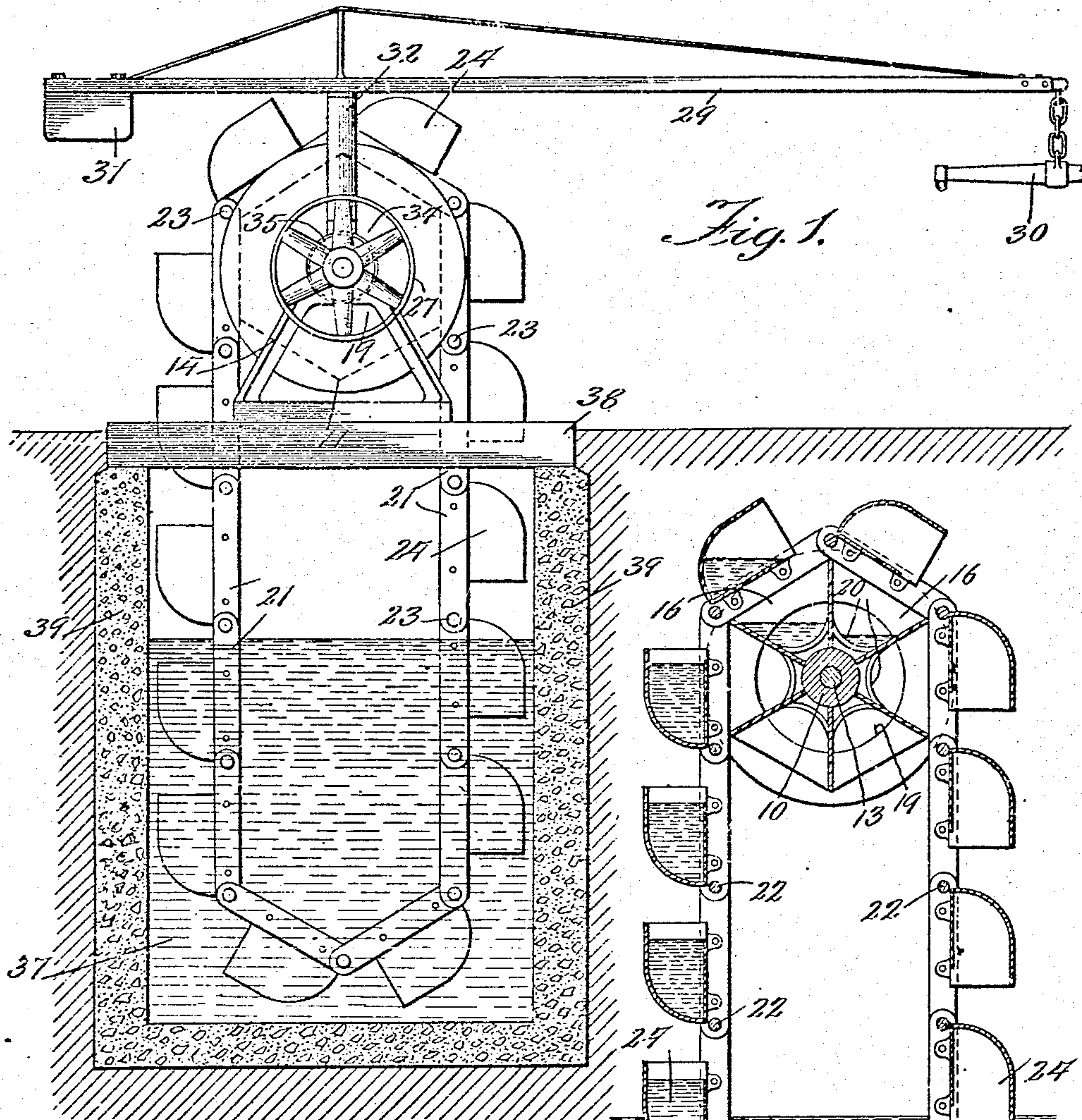
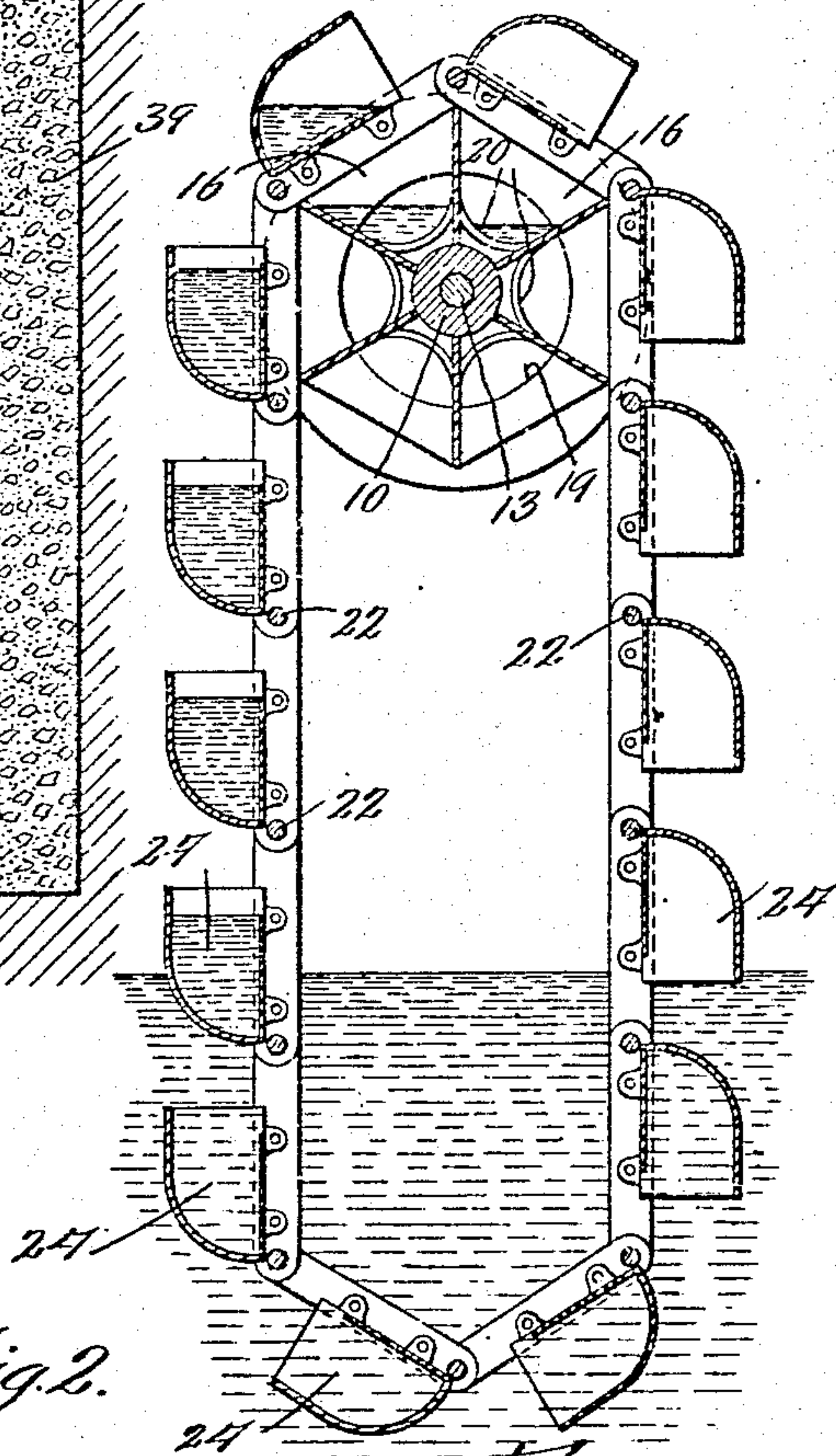


Fig. 2.



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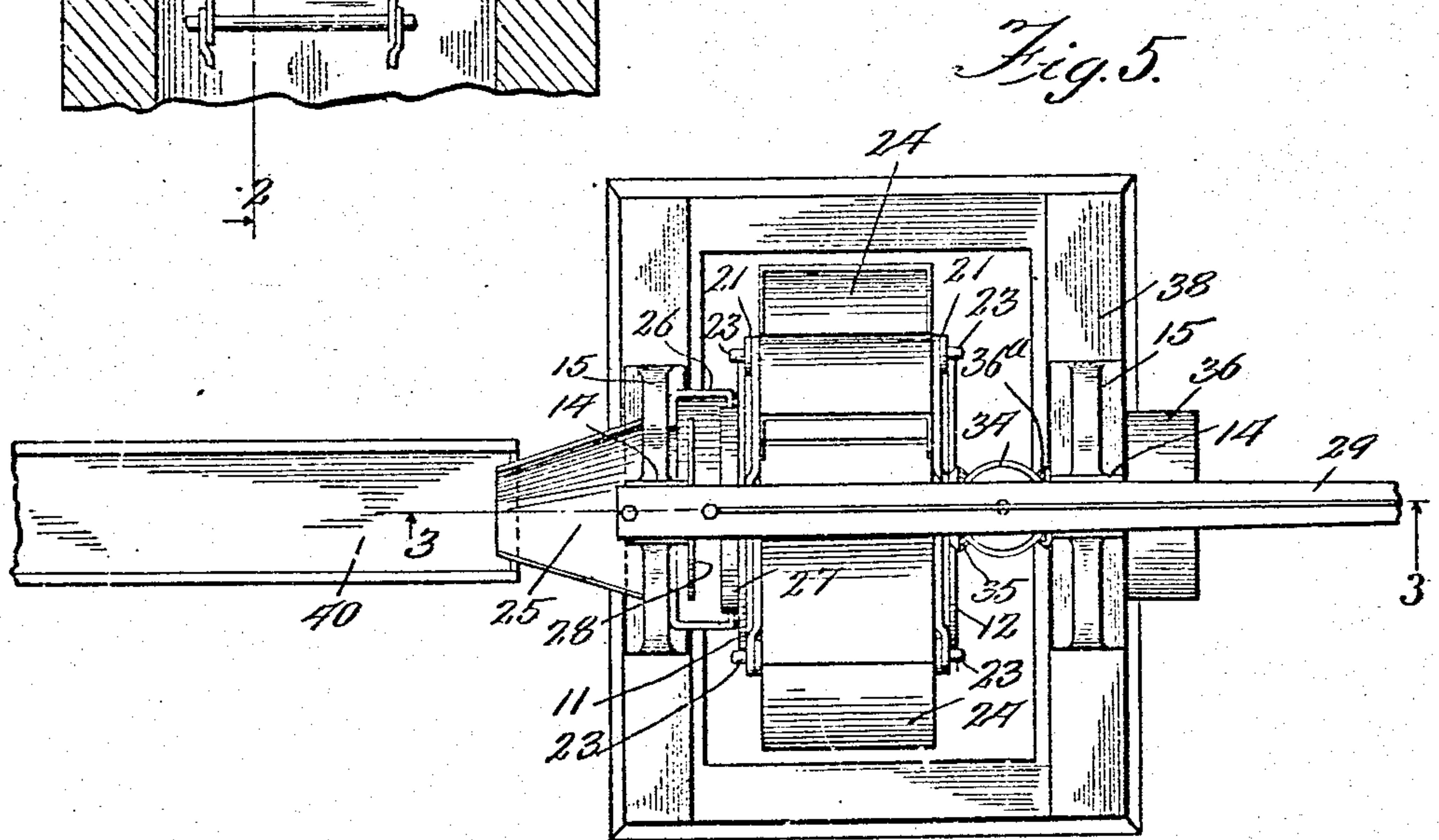
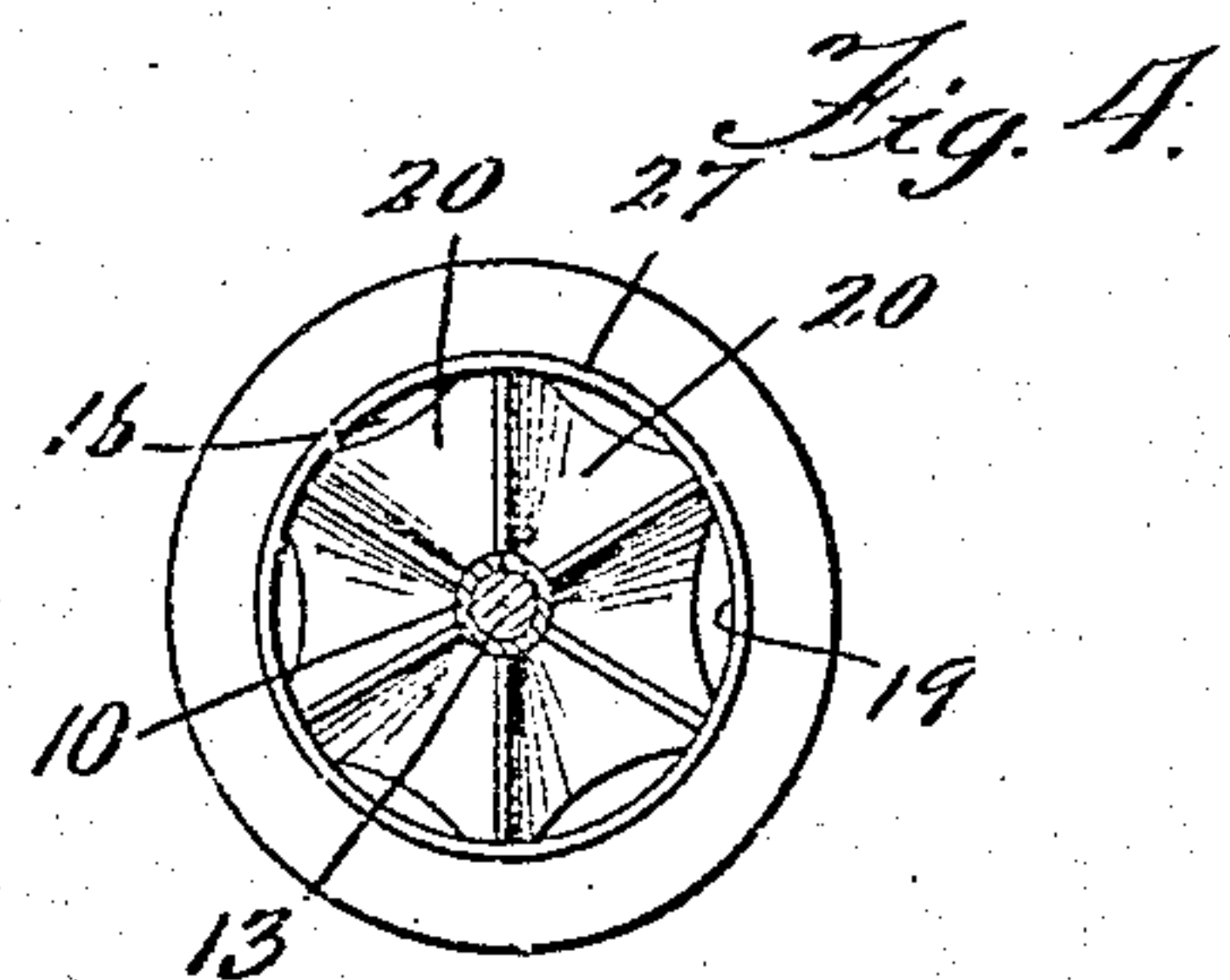
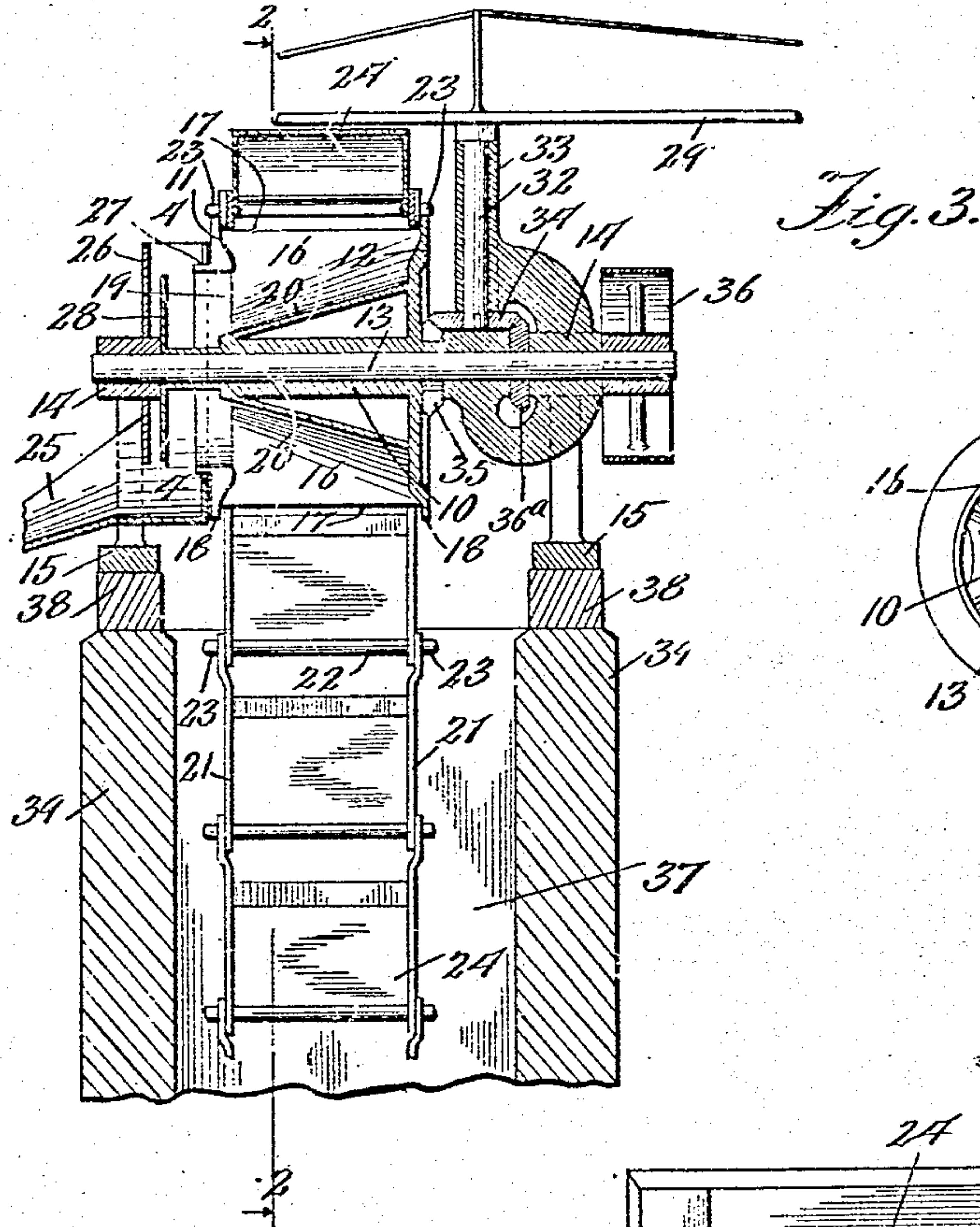
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Witnesses:  
*Wm. D. Perry*  
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Inventors:  
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# UNITED STATES PATENT OFFICE.

ARISTIDIS VAICHIS, COST VAICHIS, AND HARRY ARVAN, OF CHICAGO, ILLINOIS.

## WATER-ELEVATOR.

994,487.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed August 26, 1910. Serial No. 579,105.

*To all whom it may concern:*

Be it known that we, ARISTIDIS VAICHIS, COST VAICHIS, and HARRY ARVAN, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Water-Elevators, of which the following is a specification.

This invention relates to water elevators, particularly, though not necessarily adapted for use for irrigating purposes, and the object of the invention is to provide an improved device of this character which will be simple, durable and cheap in construction and efficient and effective in operation.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed, and shown in the accompanying drawings illustrating an embodiment of the invention, and in which—

Figure 1 is a side elevation of an improved device of this character constructed in accordance with the principles of this invention. Fig. 2 is a detail vertical sectional view taken on the line 2—2 Fig. 3. Fig. 3 is a detail vertical sectional view taken on the line 3—3 Fig. 5. Fig. 4 is a detail sectional view taken on the line 4—4, Fig. 3. Fig. 5 is a top plan view of Fig. 3.

Referring more particularly to the drawings, and in the present exemplification of the invention, the numeral 10 designates generally a drum comprising spaced heads 11, 12, which is secured to and loosely mounted upon the horizontal shaft 13. This shaft 13 is mounted for rotation in suitable bearings 14 provided in the supports 15. The drum is provided between its heads with a plurality of pockets 16, the top edges of the side walls 17 of which pockets terminate short of the periphery 18 of the heads 11, 12 of the drum. One of the heads of the drum is provided with an aperture 19 having communication with each of the pockets 16, and the bottom of each of the pockets is inclined as at 20 in a direction toward the aperture 19.

An endless conveyer comprising spaced pivotally connected links 21 surrounds the drum 10, and the links are connected by pivot pins 22. This endless conveyer is adapted to be supported by the drum 10 by means of the links 21 resting upon the upper

edges 17 of the sides of the pockets 16, and the links stand in close proximity to the portions of the heads of the drums which project beyond the edges 17 of the walls of the pockets, so that the conveyer will be held against lateral displacement with respect to the drum.

The endless conveyer is provided with laterally projecting portions or extensions preferably formed by the extremities of the pivot pins 22 which project beyond the outer faces of the links. These projecting portions 23 are adapted to engage and rest upon the periphery 18 of the drum heads 11, 12 to assist in supporting the conveyer. Buckets 24 are supported by the endless conveyer and are so arranged that they will empty their contents into the pockets 16 in the drum as the drum is rotated.

A discharge chute 25 is supported in any desired or suitable manner adjacent the head 11 of the drum, and this chute 25 forms a continuation of a receptacle 26 shown more clearly in Figs. 3 and 5, which receptacle is provided with an apertured wall adjacent the aperture 19, so as to receive the water from the pockets 16. The head 11 is preferably provided with an annular flange 27 surrounding the aperture 19, so as to direct the water into the receptacle 26.

This apparatus is adapted to be used in any convenient place where it may be supported over a supply of water in such a manner that the drum 10 and discharge chute 25 will be elevated above the surface of the water while the lower portion of the endless conveyer is adapted to be immersed or will travel through the water, so that when the drum 10 is rotated, the endless conveyer and the buckets 24 thereon will be correspondingly rotated to elevate water and discharge the same into the pockets as the respective buckets pass over the pockets 16. The endless conveyer is prevented from slipping or creeping with respect to the drum by means of the jointed connections of the links 21, as shown more clearly in Figs. 1 and 2.

In order to prevent the water from splashing over the sides of the receptacle 26, as it is discharged through the aperture 19, a suitable shield 28 may be provided adjacent but spaced from the outer extremity of the annular member 27, which surrounds the aperture 19. This shield 28 is preferably of a diameter substantially equal to the diameter of the aperture, so that the water being dis-



charged from the pockets will strike the shield and be deflected into the discharge chute 25. Obviously this portion of the mechanism may be constructed of any suitable material, and may be of any desired size.

Any suitable means may be provided for imparting rotation to the drum 10 and the endless conveyer. A suitable and efficient means for accomplishing this result comprises a sweep 29, to one end of which a horse may be attached by means of the swingletree 30. The other extremity of the sweep may be weighted, as at 31, to counterbalance the sweep. This sweep is arranged to rotate about an upright axis 32 journaled in a suitable bearing 33, and secured to the axis 32 is a gear 34 which meshes with a gear 35 secured to the drum 10. These gears 34, 35 are so arranged that when the sweep 29 is rotated, motion will be imparted to the drum to rotate the latter. A drive pulley 36 is also provided by means of which the drum 10 may be connected to any suitable source of power, such as an engine, or the like, and this pulley 36 is secured to the shaft 13, preferably to one extremity thereof, which latter projects through and beyond one of the bearings 14. A gear 36<sup>a</sup> is also provided on the shaft 13 which meshes with the gear 34, so that when the pulley 36 is rotated, the drum will be rotated through the medium of the shaft 13, the gears 36<sup>a</sup>, 35 and 34.

In the present exemplification of the invention, this elevator is shown in a position so that the endless conveyer will depend or project into a well 37, while the supports 15 are mounted upon suitable bases 38, the latter resting upon the walls 39 of the well.

While in the present exemplification of the invention this elevator is shown in connection with a well, it is to be understood that it is not to be limited to this specific use, as the apparatus may be employed in any manner and at any place in which it is possible to permit the lower portion of the endless conveyer or elevator to travel through a supply of water.

As the water is elevated by the bucket 24 and discharged into the pockets 16, it will be directed by means of the inclined bottom 20 of the pockets through the aperture 19 in the head 11 of the drum, and discharged into the receptacle 26, from which latter it will flow or be directed by means of the discharge chute 25 into a trench or runway 40.

What is claimed as new is:

1. In a device of the character described, the combination of a drum rotatable about a horizontal axis and provided with a plurality of pockets located entirely within the plane of the ends of the drum and also within the periphery of the drum, means

for rotating the drum, said drum being provided with an opening through one end thereof within its periphery and with which each of the pockets has communication, a discharge chute with which each of the pockets also has communication through the opening, an endless conveyer operatively connected with the drum for operation thereby, and buckets connected with the conveyer for elevating and depositing liquid into the pockets successively.

2. In a device of the character described, the combination of a drum rotatable on a horizontal axis, said drum comprising connected spaced heads and provided with a plurality of pockets within and opening through the periphery between the heads, one of the said heads having an opening therethrough within its periphery and with which opening each of the pockets has communication, a discharge chute with which each of the pockets also has communication, an endless conveyer supported and rotatable by the drum for elevating and depositing water into the pockets successively, and means for rotating the drum.

3. In a device of the character described, the combination of a drum rotatable on a horizontal axis, said drum comprising connected spaced heads and provided with a plurality of pockets within and opening through the periphery between the heads, one of said heads being provided with an opening therethrough adjacent its axis of rotation and with which each of the pockets has communication through one end thereof, a chute with which said opening has communication, an endless conveyer comprising pivotally connected links, means projecting beyond the outer faces of the links adapted to engage and rest upon the periphery of the heads for supporting the conveyer, buckets secured to the conveyer adapted to elevate and deposit water into the pockets successively, and means for rotating the drum.

4. In a device of the character described, the combination of a drum rotatable on a horizontal axis, said drum comprising connected spaced heads and provided with a plurality of pockets within and opening through the periphery between the heads, one of said heads being provided with an opening adjacent its axis of rotation and with which all of the pockets have communication through one end, a discharge chute with which the opening has communication, means for rotating the drum, and an endless conveyer comprising buckets and pivotally connected links, said links standing between the heads and resting upon the edges of the walls of the pockets for holding the conveyer and buckets against lateral displacement with respect to the drum.

5. In a device of the character described,



the combination of a drum rotatable on a horizontal axis, said drum comprising spaced connected heads and provided with a plurality of pockets entirely within the ends and periphery thereof and opening through the periphery between the heads, one of the heads being provided with an aperture therethrough adjacent its axis of rotation and communicating with each of the pockets, the bottom of each of the pockets inclining toward the aperture, a discharge chute adjacent the aperture for receiving the water from the pockets, means supported by and operated by the drum for elevating water and discharging it into the pockets successively, and means for rotating the drum.

6. In a device of the character described, the combination of a drum rotatable on a horizontal axis, said drum comprising spaced connected heads and provided with a plurality of pockets entirely within the ends and periphery thereof and opening

through the periphery between the heads, one of the heads being provided with an aperture therethrough adjacent its axis of rotation and communicating with each of the pockets, a discharge chute adjacent the aperture for receiving the water from the pockets, means operated by and supported by the drum for elevating water and discharging it into the pockets successively, means for rotating the drum, and a shield supported adjacent, extending across and spaced from the said aperture.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 13th day of August A. D. 1910.

ARISTIDIS VAICHIS.  
COST VAICHIS.

HARRY <sup>his</sup> X ARVAN.  
mark

Witnesses:

WILLIS SAFFIS,  
MIKE SAFFIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."