

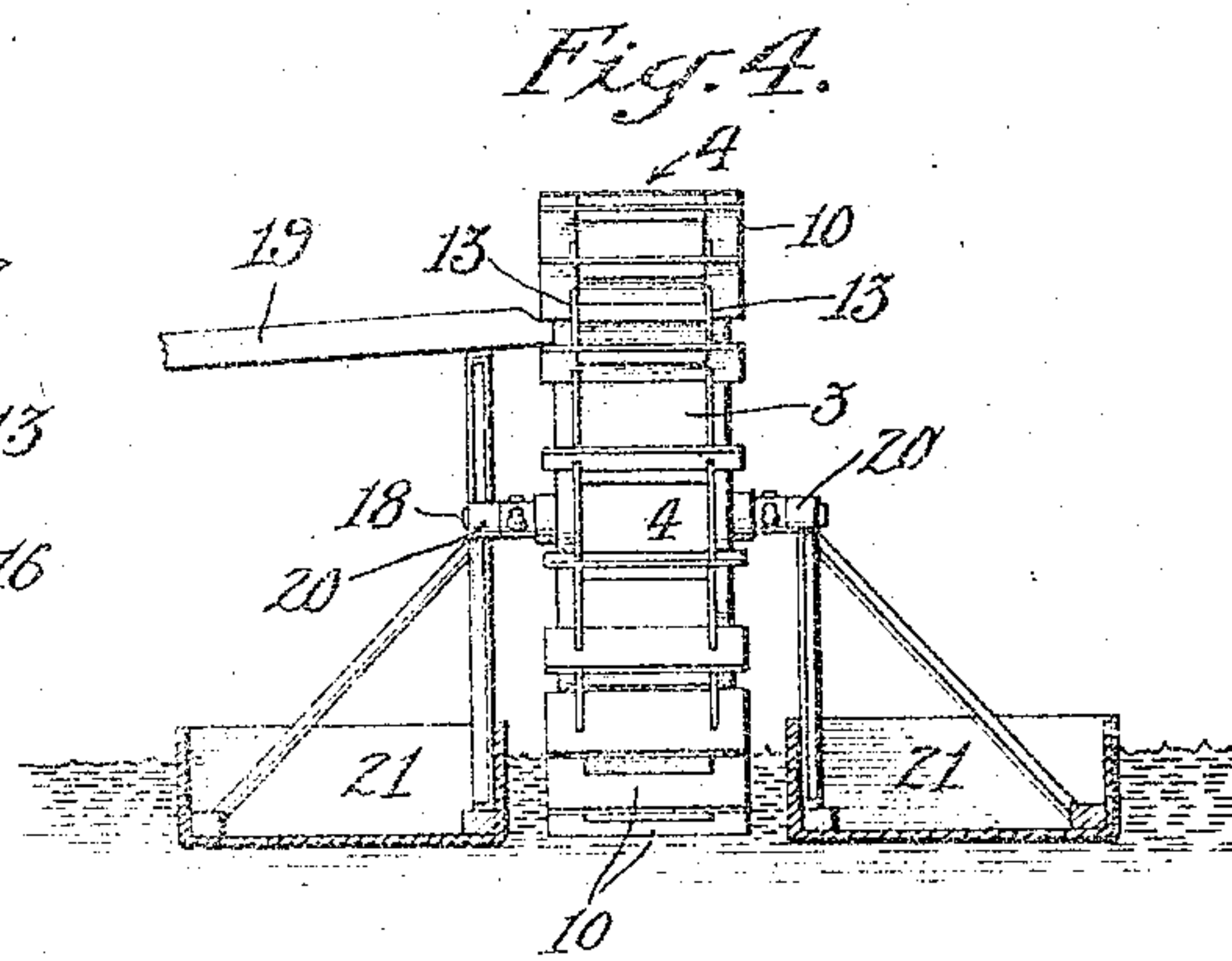
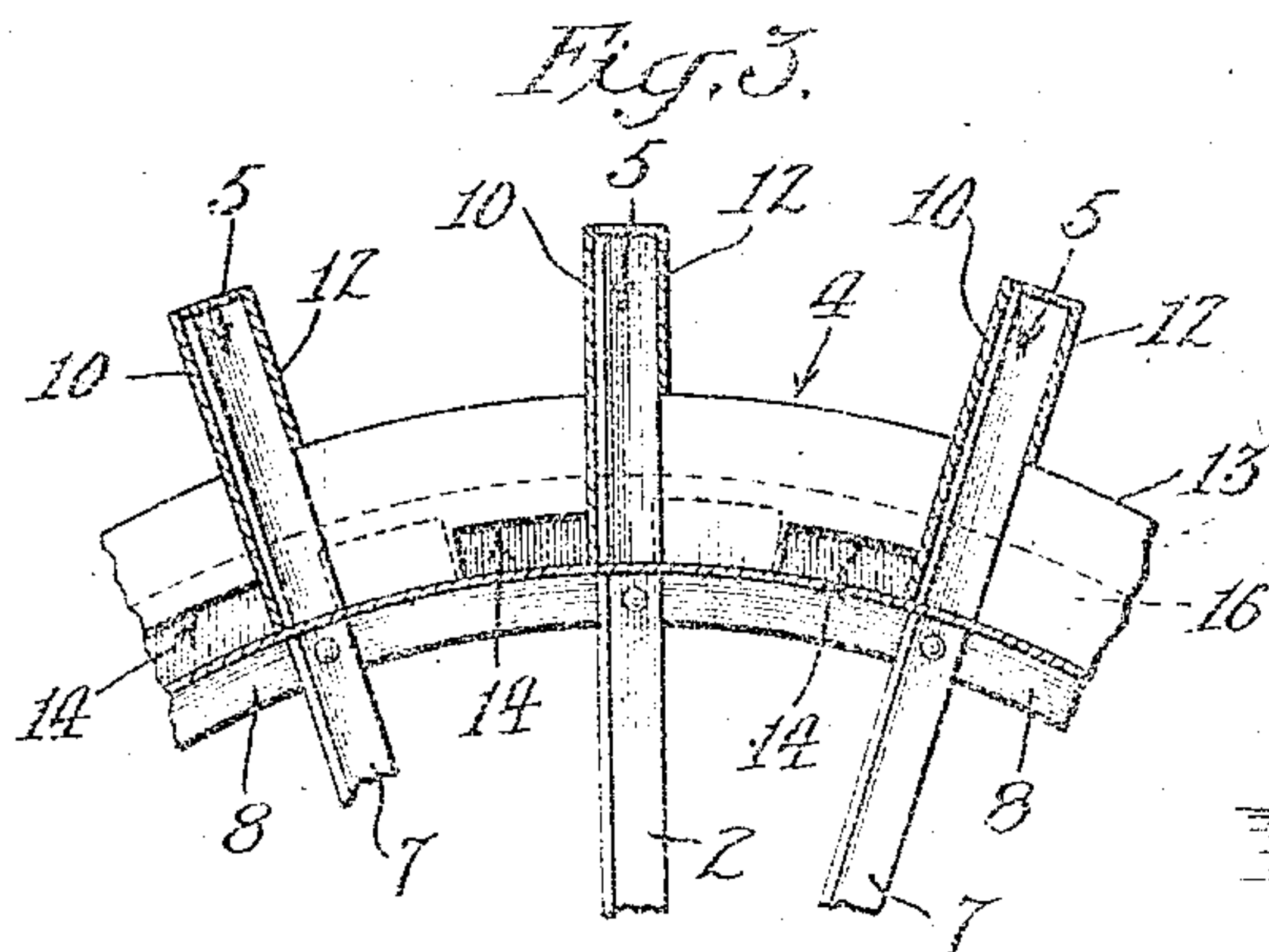
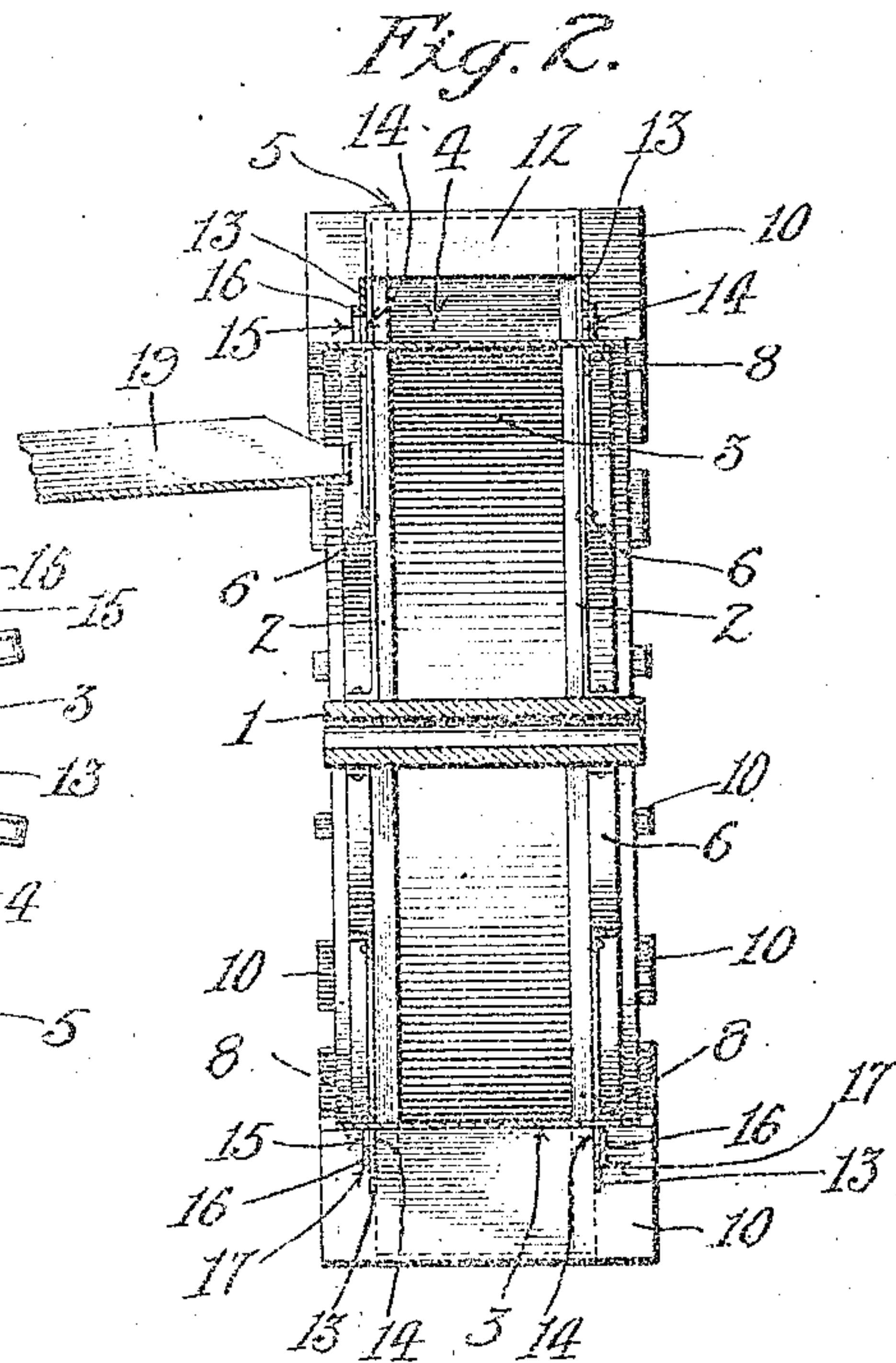
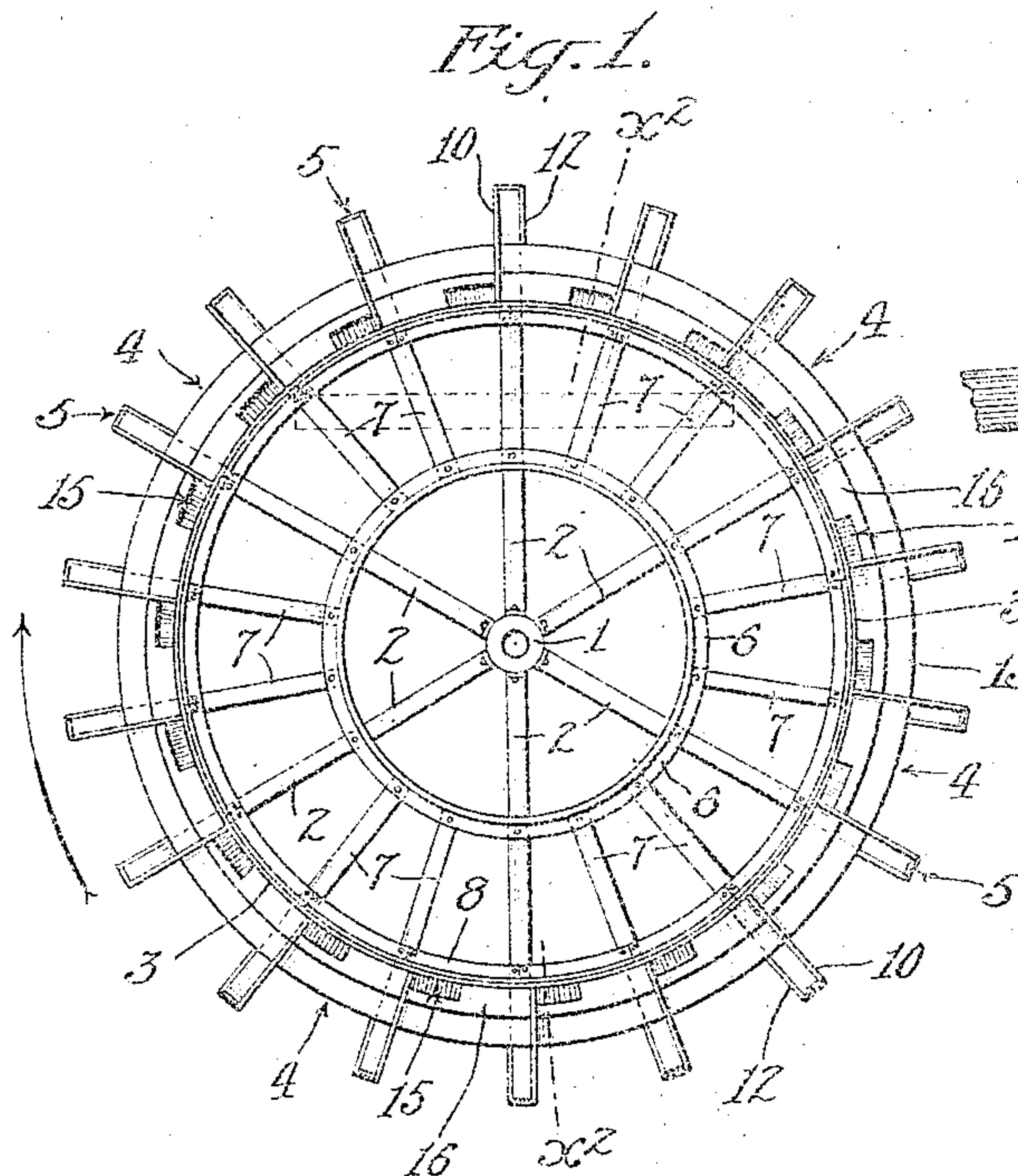
No. 855,855.

PATENTED JUNE 4, 1907.

A. N. JONES.

CURRENT OPERATED WATER ELEVATOR.

APPLICATION FILED OCT. 29, 1906.



Witnesses:
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By
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UNITED STATES PATENT OFFICE.

ALEXANDER N. JONES, OF SAN DIEGO, CALIFORNIA.

CURRENT-OPERATED WATER-ELEVATOR.

No. 855,855.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed October 29, 1906. Serial No. 341,191.

To all whom it may concern:

Be it known that I, ALEXANDER N. JONES, a citizen of the United States, residing at San Diego, county of San Diego, and State of California, have invented a new Current-Operated Water-Elevator, of which the following is a specification.

This invention relates to apparatus operated by the flow of water in a stream to elevate a portion of such water for irrigation and other purposes.

The main object of the invention is to provide means for this purpose which will be of extreme simplicity and cheapness of construction and effectiveness in operation.

Another object of the invention is to provide, in a device of this character, means adapting it for discharging at either side so as to enable it to be used on either bank of the river.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation of the device. Fig. 2 is a section on line x^2-x^2 , Fig. 1. Fig. 3 is a detail section of a portion of the rim and the attached buckets. Fig. 4 is an end view showing the application of the apparatus in the river.

The apparatus comprises a wheel formed preferably with a hub 1, spokes 2 extending therefrom, a cylindrical rim 3 supported on said spokes, buckets 4 and pockets 5, carried by or formed on said rim. Rings 6 are supported on the spokes 2 and supplementary spokes 7 extend outwardly from said rings, the spokes 2 and 7 being fastened to the rings 6 and to internal flanges 8 on the rim 3. Said spokes are preferably formed of angle iron, one arm of the angle lying against and fastened to flanges aforesaid and the other arm extending inwardly in a plane parallel to the axis of the wheel.

Plates 10 extend across from side to side and are fastened to the inwardly extending flanges of the angle iron spokes. Angle members or strips 12 also extend across from side to side, one arm or member of each angle strip resting against the forward face of the corresponding spokes and the other arm or member extending over the outer ends of the spokes into contact with the back plate 10 of the bucket so that said plate 10 and the angle strip 12 form between them the pocket 5. This pocket only extends part way toward the rim 3 of the wheel, terminating at the side plates 13 of the buckets. The pocket

thus extends outwardly from the bucket and opens inwardly thereinto. Plate 10 has two functions, its rear surface to receive the impact or action of the water running in the stream, to turn the wheel, and that portion of the plate which extends between the side plates 5 also serving as one wall of the buckets 4 and pockets 5. The buckets 5, formed by said side walls and the inner portions of plates 10, serve to receive and hold the water discharged from said pockets when the latter pass above the horizontal plane, and thus serve as supplementary means to elevate the water above the axis of rotation. The said side plates 13 are provided with means for discharging of the water near the top of the wheel, said means consisting of slots 14 which extend from about the middle of each supplementary bucket space forward, say to the back of the next bucket. To enable the discharge of the water from either side, the plates 13 on each side are preferably provided with these slots or openings, means being provided for closing the slots on one side when discharge at the other side is desired. Such means consist of valve rings 16 having openings 15 and surrounding the cylindrical rim 3 and fitting thereon so as to turn in contact with the rim and with the side walls or plates 13.

The cross plates 10 which serve as water blades and also as walls for the buckets and pockets, extend out beyond the side walls 13 and preferably beyond the rim 3, so as to properly direct the discharge of water, these plates being formed with slots 17 to receive and guide the valve rings 16.

The application of the device is shown in Fig. 4, the wheel being mounted by a shaft or arbor 18, on rings or supports 20 carried by floats or barges 21. A flume or trough 19 is supported in position to receive the discharge from the wheel, this trough being placed at either side according to which way the water is to be discharged. This trough is of sufficient width to extend under all of these outlets from which water is discharged.

The operation of the device is as follows:— Assuming that the trough 19 is placed as in Fig. 4, on the left side, the valve ring on the other side is turned to close all the bucket outlets on that side. The current in the stream acting on the plates 10 turns the wheel in the direction of the arrow in Fig. 1, and in this rotation the pockets continually dip up water and retain it until they reach

the level of the wheel axis, in passing this point, the water runs out of the pockets 5 into the buckets 4, and the buckets then raise it further and discharge it at the top of the wheel. In this discharge, the extensions or end portions of the cross plates 10 serve to direct the water and prevent it from running down the wheel rim.

What I claim is:—

10 1. A current operated water elevator comprising a wheel having a cylindrical rim, buckets on said rim having lateral outlets, and pockets extending outwardly of the buckets and opening thereunto.

15 2. A current operated water elevator comprising a wheel having a cylindrical rim forming the bottoms of the buckets, side walls forming the ends of the buckets, back plates separating the buckets, and pockets in front
20 of said back plates and opening into the buckets.

3. A current operated water elevator comprising a wheel having a cylindrical rim,

buckets on said rim having lateral outlets on each side, and closure means on the wheel for 25 closing the outlets on either side.

4. A current operated water elevator comprising a wheel having a cylindrical rim, buckets on said rim having lateral outlets, pockets extending outwardly from the buckets 30 and opening inwardly thereunto, and means for closing said outlets.

5. A current operated water elevator comprising a wheel having a cylindrical rim, buckets on said rim having lateral outlets on 35 each side, pockets extending outwardly from the buckets and opening inwardly thereunto, and means for closing the outlets on either side.

In testimony whereof, I have hereunto set 40 my hand at San Diego, California, this 23rd day of October, 1906.

ALEXANDER N. JONES.

In presence of—

A. E. DODSON,

F. M. LOCKWOOD.