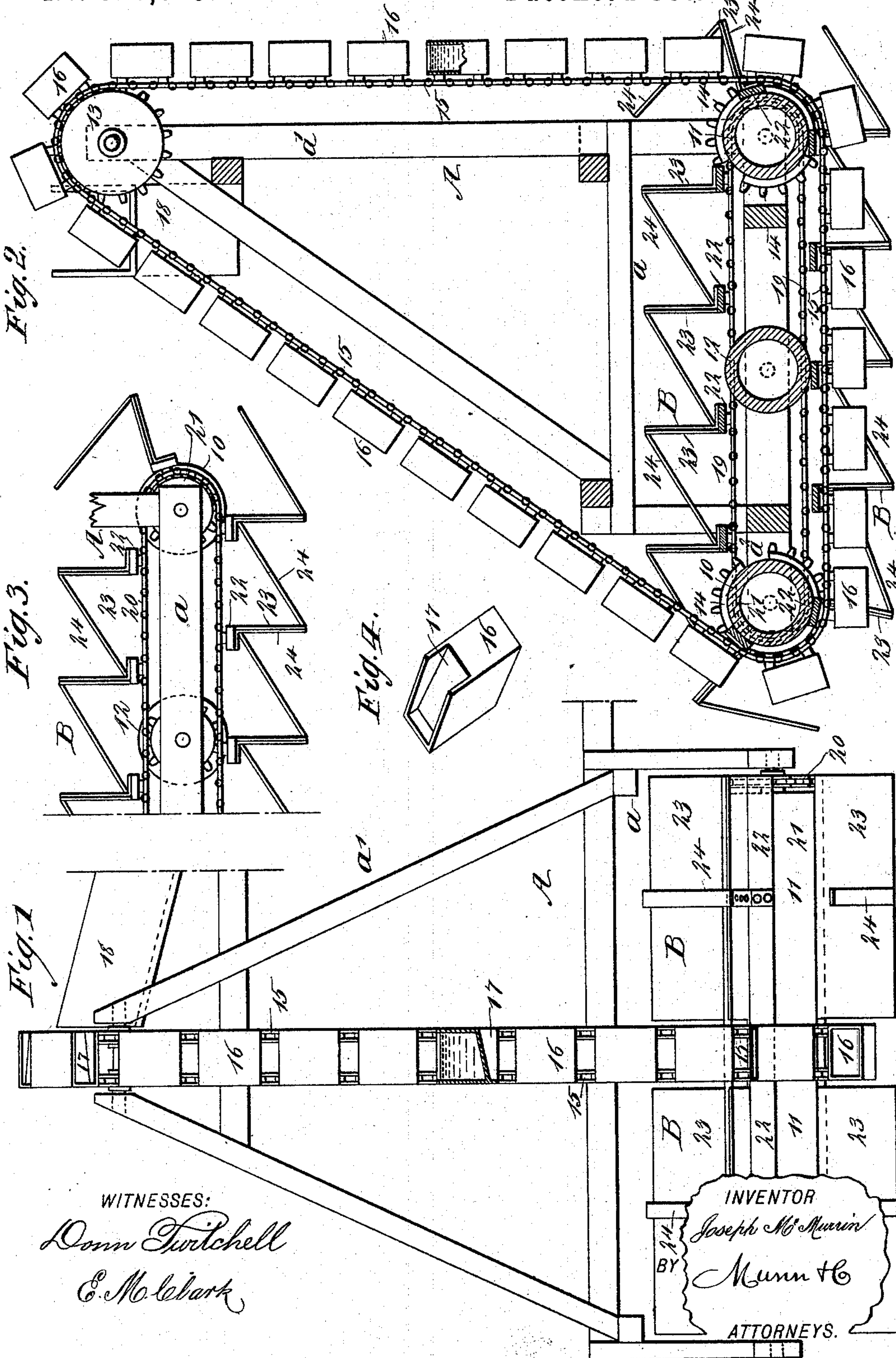


(No Model.)

J. McMURRIN.
WATER ELEVATOR.

No. 528,015.

Patented Oct. 23, 1894.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH McMURRIN, OF SHOSHONE, IDAHO.

WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 528,015, dated October 23, 1894.

Application filed September 19, 1893. Serial No. 485,821. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH McMURRIN, of Shoshone, in the county of Logan and State of Idaho, have invented a new and Improved Water-Elevator, of which the following is a full, clear, and exact description.

My invention is an improvement in the class of water-elevators, which are adapted to be placed in a running stream and operated by the current of the stream. The novel features of the apparatus will be hereinafter set forth.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a rear elevation of the machine, partially in section. Fig. 2 is a section through the frame, taken at one side of the chain of buckets and illustrating said chain of buckets in side elevation. Fig. 3 is a partial side elevation of the lower portion of the frame, illustrating the construction of the water wheel; and Fig. 4 is a detail perspective view of one of the buckets viewed from the bottom.

In carrying out the invention a frame A, is constructed, adapted to be anchored in a stream of running water or to be permanently placed therein in any suitable or approved manner. The frame comprises practically a lower rectangular section a and an upper, substantially triangular section a' . The lower rectangular base section of the frame is provided at the bottom portion of its forward end with an extension a^2 , and in this extension a drum 10, is journaled, while a second drum 11, is journaled at the opposite lower end of the base of the frame, and a third drum 12, is journaled parallel with the two end drums at or near the central portion of the base. In the upper portion of the triangular upper section a' of the frame a sprocket wheel 13, is mounted to turn; and upon the central portion of the front and rear lower drums 10 and 11, segmental sprocket sections 14, are secured.

An endless chain belt 15, is made to pass beneath all of the drums, engaging with the sprocket sections 14 of the end drums, and the said belt likewise passes over the sprocket

wheel 13. The belt is adapted to carry a series of buckets 16, which are secured upon its outer surface in any suitable or approved manner. The bottom 17 of each bucket, as shown in Fig. 4, is inclined upwardly from one end in direction of the opposite end, and at the deepest point in the recessed portion of the bottom of the bucket the end portion is broken away, whereby when the bucket is turned bottom side upward and water is poured into the recessed or inclined portion thereof, it will run off at the open end portion of the bucket. In fact, the bottom of each bucket when turned uppermost serves as a chute, and when a bucket reaches the upper surface of the sprocket wheel 13 the bucket below it will have its recessed bottom uppermost, and the said bottom will receive the water from the bucket emptying and will conduct the water into a main chute or flume 18, secured upon the upper portion of the frame A, and arranged transversely between the ascending and descending columns of buckets, so that the water is discharged laterally and conveyed to any desired point.

The endless chain of buckets is driven through the medium of the end drums 10 and 11, and the said end drums are in their turn driven through the medium of paddle wheels B, propelled by the current of the stream in which the elevator is placed. The wheel consists of two endless chain belts 19 and 20, which belts are passed over sprocket wheels 21, shown in positive lines Fig. 1 and in dotted lines in Fig. 2, which wheels are mounted upon the end portions of the drums 10 and 11, and may be also mounted upon the ends of the intermediate drum 12; or the intermediate drum may be simply employed to hold and guide the chain belts between the end drums.

A series of beams or plates 22, is secured upon the chain belts 19 and 20 at intervals, and serves to connect the same; and the paddles 23, are located at each side of the center of the drums 10 and 11, and consist of blades of suitable length secured to the beams or plates 22, and standing at a right angle thereto. Each blade is provided with an angled brace bar 24, secured to the beam upon which the blade is attached, and preferably to the central portion of the forward face of

the blade, the brace bar of one blade being carried rearwardly in direction of the next blade, and normally resting upon the beam of the latter blade and bearing against the base
5 of the blade attached to such rear cross beam. In this manner the blades are braced against the action of the water. By constructing the water wheel in this manner a space is left between the paddles, as shown in Fig. 1, for
10 the passage of the chain of buckets.

When placing the machine in a stream, as heretofore stated it is either temporarily anchored or permanently placed in position; and the machine is so located that when the
15 paddles on the lower stretch of the belts 19 and 20 are being acted upon by the stream, the paddles upon the upper stretch will be out of the water.

It is obvious that the current striking the
20 paddles of the wheel at the front will carry them rearwardly, and thus will impart rotary

motion to the drums, which in turn will impart a like movement to the endless chain of buckets.

Having thus described my invention, I 25 claim as new and desire to secure by Letters Patent—

The combination with the cross-beams, separated by wide spaces, and endless chains to which they are rigidly attached, of a series of 30 paddles, one being secured to each cross-beam at the rearward edge of the latter, and a series of acute-angle braces, each being attached at one end to a paddle, and its free end extending rearward and normally resting upon 35 the portion of the adjacent cross-beam which projects from the base of the next rear paddle, as shown and described.

JOSEPH McMURRIN.

Witnesses:

W. J. SMITH,
H. J. SYMS.