

No. 617,910.

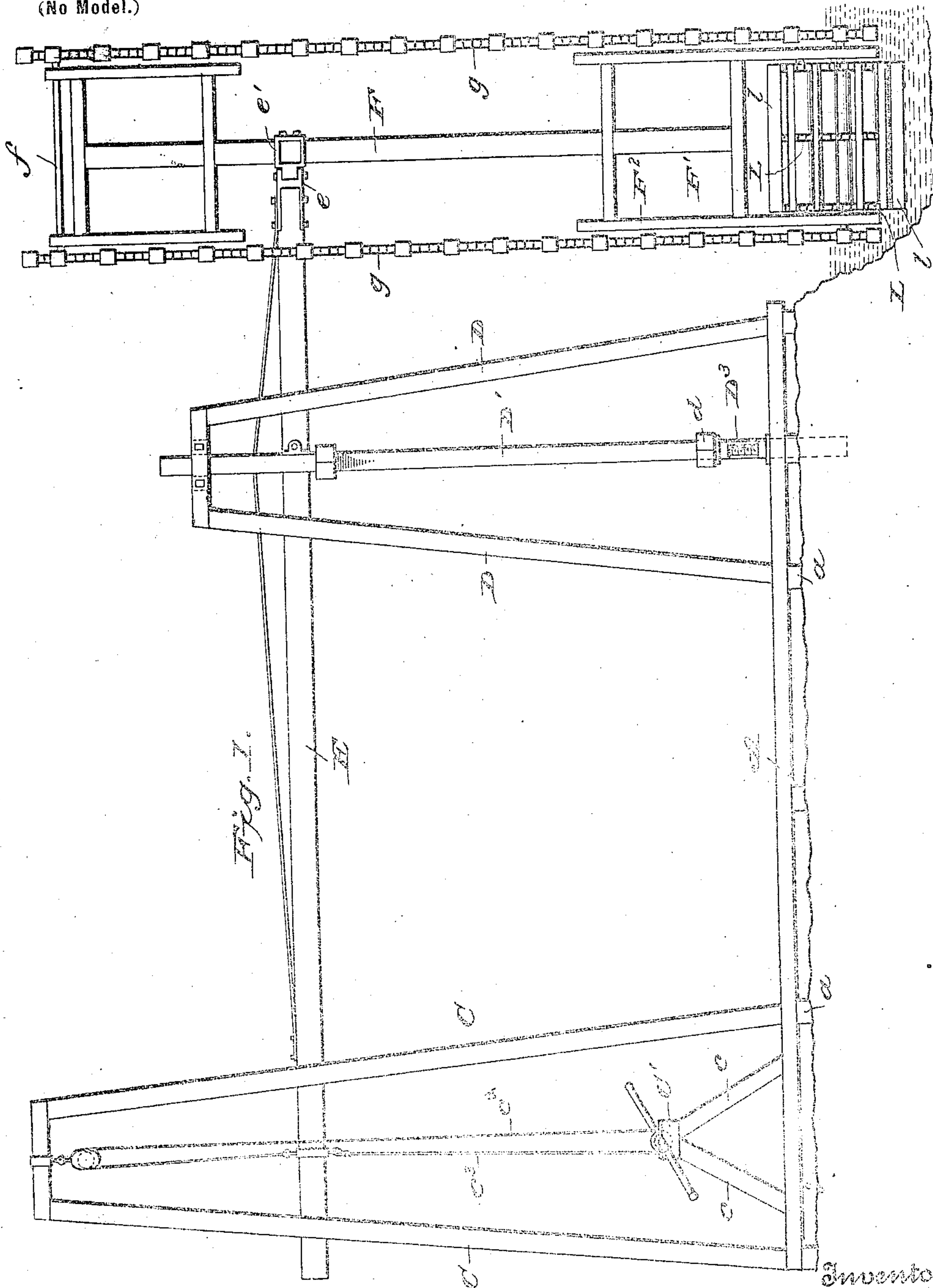
Patented Jan. 17, 1899.

H. ROOM.
WATER ELEVATOR.

(Application filed Mar. 29, 1898.)

2 Sheets—Sheet 1.

(No Model.)



Inventor:

Henry Room,

Witnesses
L. S. Elliott.
H. H. Johnson.

By: Eugene H. Johnson -
his Attorney.

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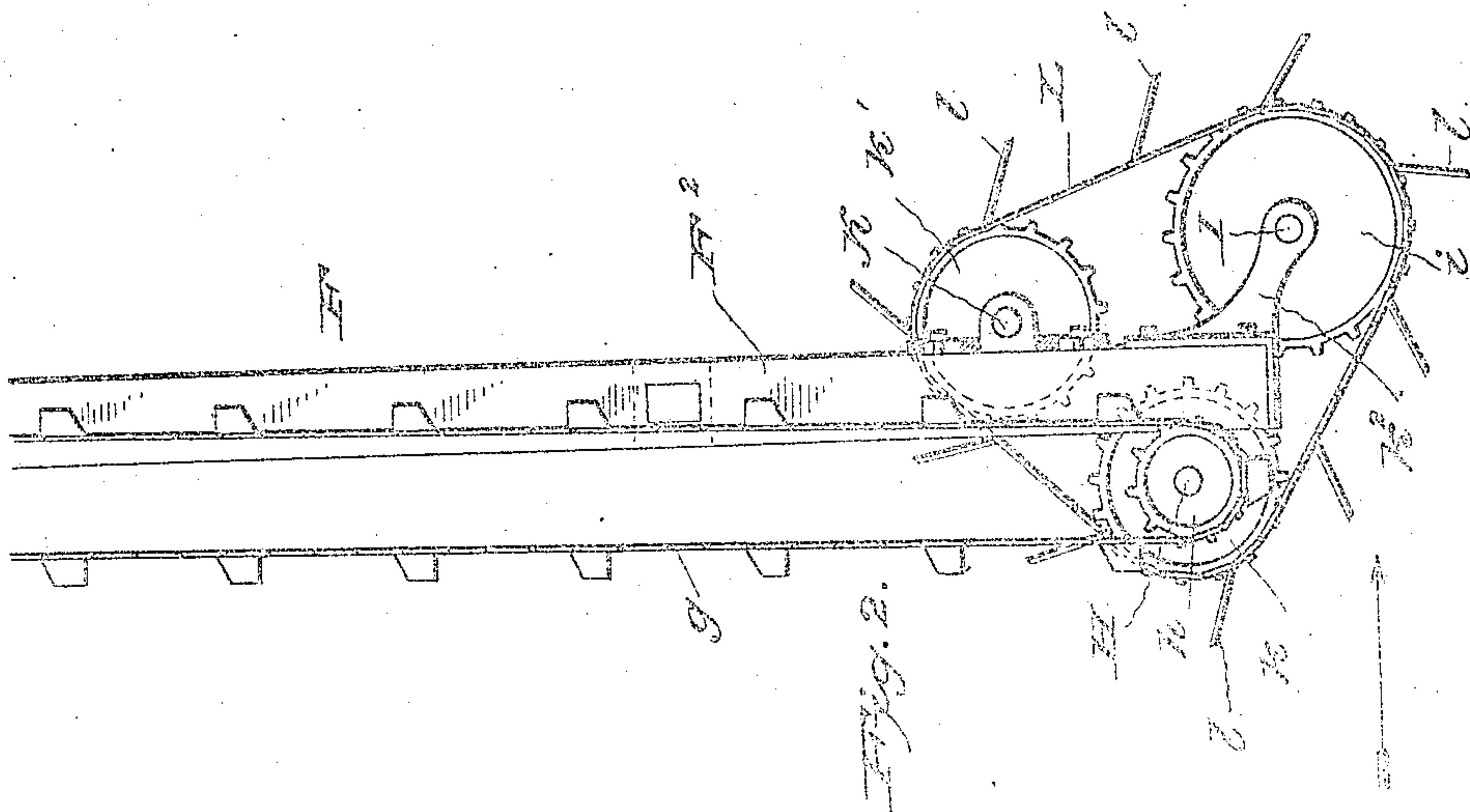
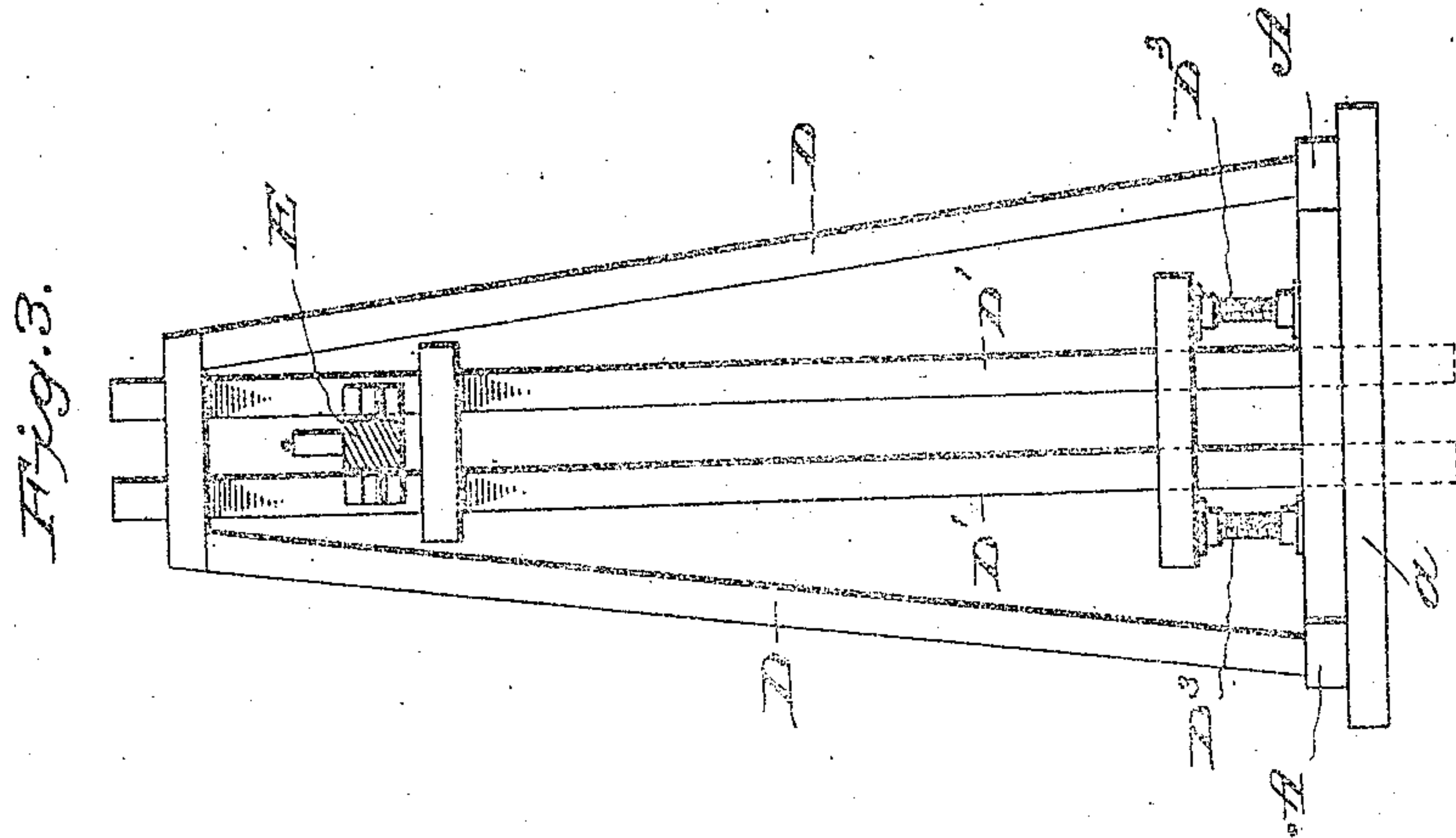
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UNITED STATES PATENT OFFICE.

HENRY ROOM, OF OLEMA, WASHINGTON.

WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 617,910, dated January 17, 1899.

Application filed March 29, 1898. Serial No. 675,544. (No model.)

To all whom it may concern:

Be it known that I, HENRY ROOM, a citizen of the United States, residing at Olema, in the county of Okanogan and State of Washington, have invented new and useful Improvements in Water-Elevators, of which the following is a specification.

This invention relates to certain new and useful improvements in water-elevators, the object of the invention being to provide a water-elevator which is so constructed that a water-wheel which is driven by the current of a river or stream may be raised or lowered to suit the water-level, the adjusting being done manually, the construction of the means for adjusting being such as to provide for two separate points of adjustment of the lever carrying the water-wheel.

In carrying out my invention I provide a vertically-adjustable water-wheel-supporting frame which is connected to a lever, the frame carrying the water-wheel having attached thereto gears, over which pass endless chains, with buckets adapted to raise the water from the river and discharge it at a suitable elevation into a trough or receptacle, from which it flows for use, as for irrigating lands and other purposes. The lever to which the frame carrying the water-wheel and endless chains or buckets is attached is supported upon a vertically-adjustable fulcrum, and the opposite end of the lever, to which the water-wheel is secured, is connected to means for changing the angle of the lever, so as to raise or lower the water-wheel to suit the condition of the river or stream.

The invention consists in the special construction and organization of the parts, as will be hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation showing the general arrangement and construction of a water-elevating apparatus made in accord with my improvement. Fig. 2 is a side view showing the lower portion of the frame which carries the water-wheel and the endless chain of buckets driven thereby. Fig. 3 is an end view, partly in section, of the frame to which the lever is fulcrumed.

In carrying out my invention there is erected adjacent to the banks of a river or stream

a suitable framework, comprising a series of cross-pieces *a*, to which are rigidly attached longitudinal sills *A A*. Upon the sills rest the lower ends of beams *C C* and *D D*, which beams have adjacent to their upper ends suitable cross-pieces.

C' refers to a windlass, the shaft upon which the drum thereof is mounted being supported in suitable bearing-boxes attached to blocks carried by inclined supports *c c*, which rest upon the sill-pieces *A*, the shaft of the windlass having a suitable drum, which has attached thereto ropes or flexible connections *c² c³*, one of the ropes *c²* extending from the drum upward over a pulley attached to a cross-piece secured to the upper ends of the beams *C C* and from thence downward to a suitable fixture attached to the lever *E*. To the other side of the fixture on the lever is secured a rope *c³*, which extends downward from said fixture and is attached to the drum of the windlass, it being wound thereon in an opposite direction from the rope *c²*. By this arrangement when the windlass is turned in one direction it will pay out one of the ropes and draw in on the other, the effect being to raise or lower the end of the lever.

D refers to the uprights of a frame designed to maintain in a vertical position a pair of beams *D'*, which are held in movable engagement with the supporting-frame to provide a vertically-adjustable fulcrum for the lever *E*. To the beams *D'* are attached cross-pieces *d*, with which jack-screws *D³* engage, and by adjusting said jack-screws the beams *D'* may be raised or lowered to change the elevation of the fulcrum of the lever. The beams *D'* are connected to each other below the fulcrum of the lever, and the ends of said beams are held in sliding engagement with cross-pieces attached to the sills and with cross-pieces attached to the upper end of the frame which supports the sliding beams *D'*. The beams *D'* are connected to each other below the fulcrum of the lever. The lever is provided with a pin which engages with bearing-blocks attached to the beams *D'*, and said lever is also provided with a suitable truss-rod or brace. To the short end of the lever *E* is rigidly secured a fixture *e*, having outwardly-projecting portions which are apertured for the passage of a bolt which connects thereto the sec-

tion of a fixture which embraces the vertical beam F of the frame to which the water-wheel is attached. This form of connection permits the beam F to be turned with respect to the lever, and it also provides for adjusting the vertical beam in the section *e'* of said fixture. Attached to the upper portion of the vertical beam F, carried by the short end of the lever E, is a suitable frame which serves as a support for a trough or receptacle (not shown) in which the water is deposited from endless chains of buckets which pass over sprocket-wheels mounted on the shaft *f*, and said shaft is journaled in bearing-boxes which are adjustable upon the side pieces of the frame, so as to take up the slack in the chains carrying the buckets when desired. The trough or receptacle may be of any suitable construction, and the water which is raised by the endless chains of buckets is deposited in the trough and is carried therefrom to where it may be needed for irrigating or other purposes.

To the lower part of the vertically-adjustable beam F is attached a frame F', made up of cross-bars and vertical side pieces, and below the lower cross-bar is attached a shaft II, supported in suitable bearing-boxes, said shaft having mounted on the end sprocket-wheels *h*, over which pass the endless chains of buckets *g*. The shaft II also carries sprocket-wheels *k*, said sprocket-wheels being positioned within the vertical side pieces F² of the frame F'.

k' refers to sprocket-wheels mounted on a shaft K, which is journaled in bearing-boxes attached to the beams F², on the opposite side thereof from the shaft II and above the plane of said shaft, and in bearings *k'*², having projecting portions, is journaled a shaft I, having sprocket-wheels *i*, said shaft I being considerably below the lower end of the side pieces F² of the frame, and the shaft is disposed so as to be out of vertical and horizontal line with the other two shafts. Over the sprocket-wheels pass chains L, having secured thereto paddles *l*, which are at an inclination with the chain, as shown. The current strikes against the submerged paddles and turns the water-wheel, the paddles inclining as they leave the water. The water-wheel is positioned in the water as shown in Fig. 2, the current of the river or stream flowing in the direction indicated by the arrow.

It will be noted that the frame which carries the water-wheel and endless chains of buckets is sustained at substantially right angles with respect to the length of the lever and that as the current turns the water-wheel said wheel will operate the endless chains and take the water from the river and raise it to a higher elevation. Should the river or stream rise or fall, the position of the water-wheel as to height can be varied by operating the windlass, and should this range of adjustment not be sufficient to meet the exigencies of the case the fulcrum of the lever may be raised or lowered by operating the jack-screws. It will be noted that the adjustments can be made manually and that comparatively little force is needed to operate the adjusting mechanism.

Having thus described my invention, I do not wish to limit myself to the particular style or shape of the elements herein set forth, as they may be varied without departing from my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus for raising water from a stream or river, the combination with a vertically-adjustable frame carrying a water-wheel and an endless chain of buckets, of means for raising and lowering the frame embodying a device for changing the elevation of the fulcrum of the lever and means for changing the inclination of the lever; substantially as shown and for the purpose set forth.

2. In a water-elevator, the combination with a lever and means substantially as shown for changing the angle of the lever and the position of its fulcrum, of a frame mounted on the short end of the lever and carrying at right angles to the length of the lever a water-wheel, said wheel operating a chain of buckets, said chain of buckets extending from the water-wheel to the upper end of the frame carried by the lever, substantially as shown.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY ROOM.

Witnesses:

EDW. B. FLANDERS,
L. H. DONER.