

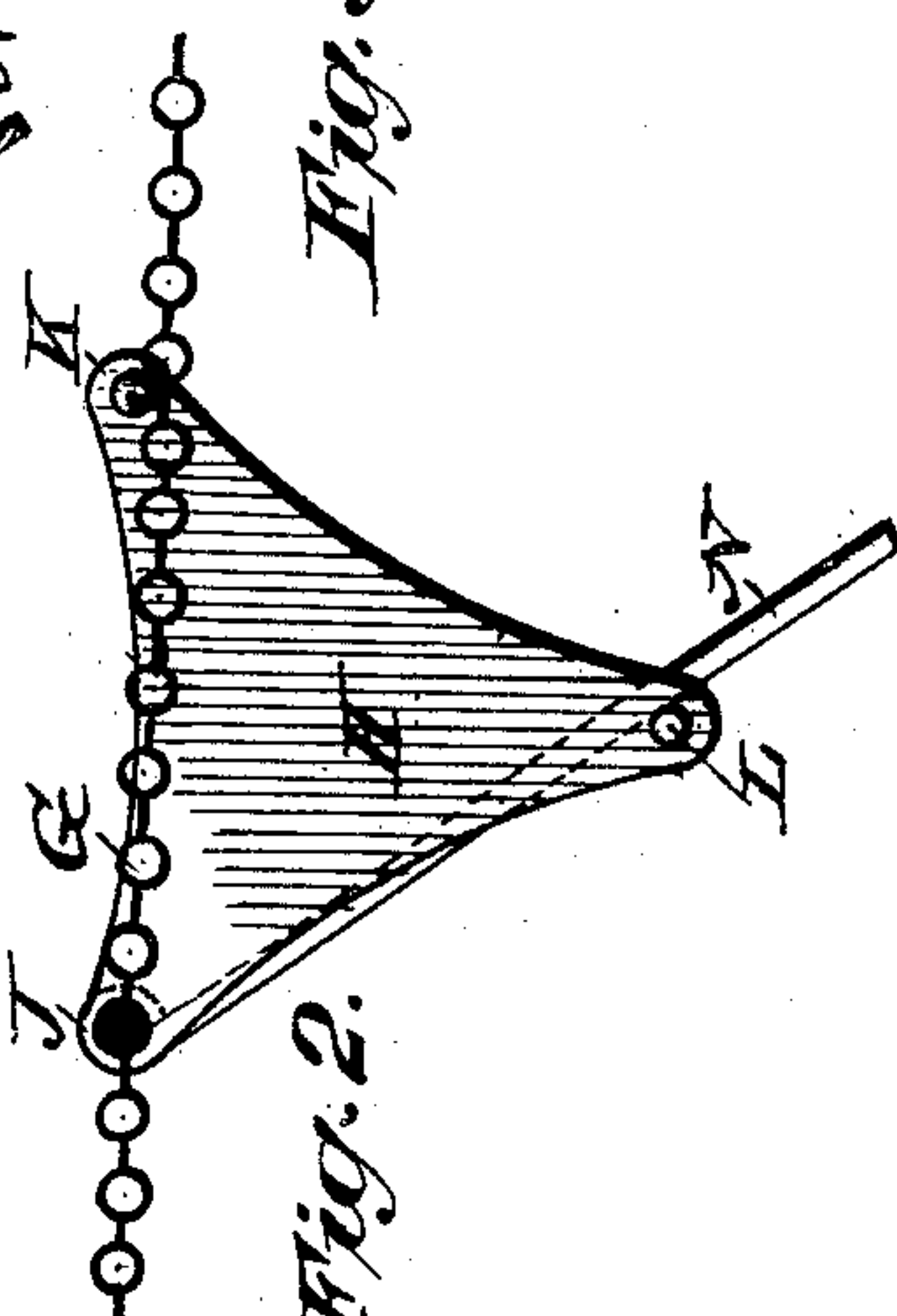
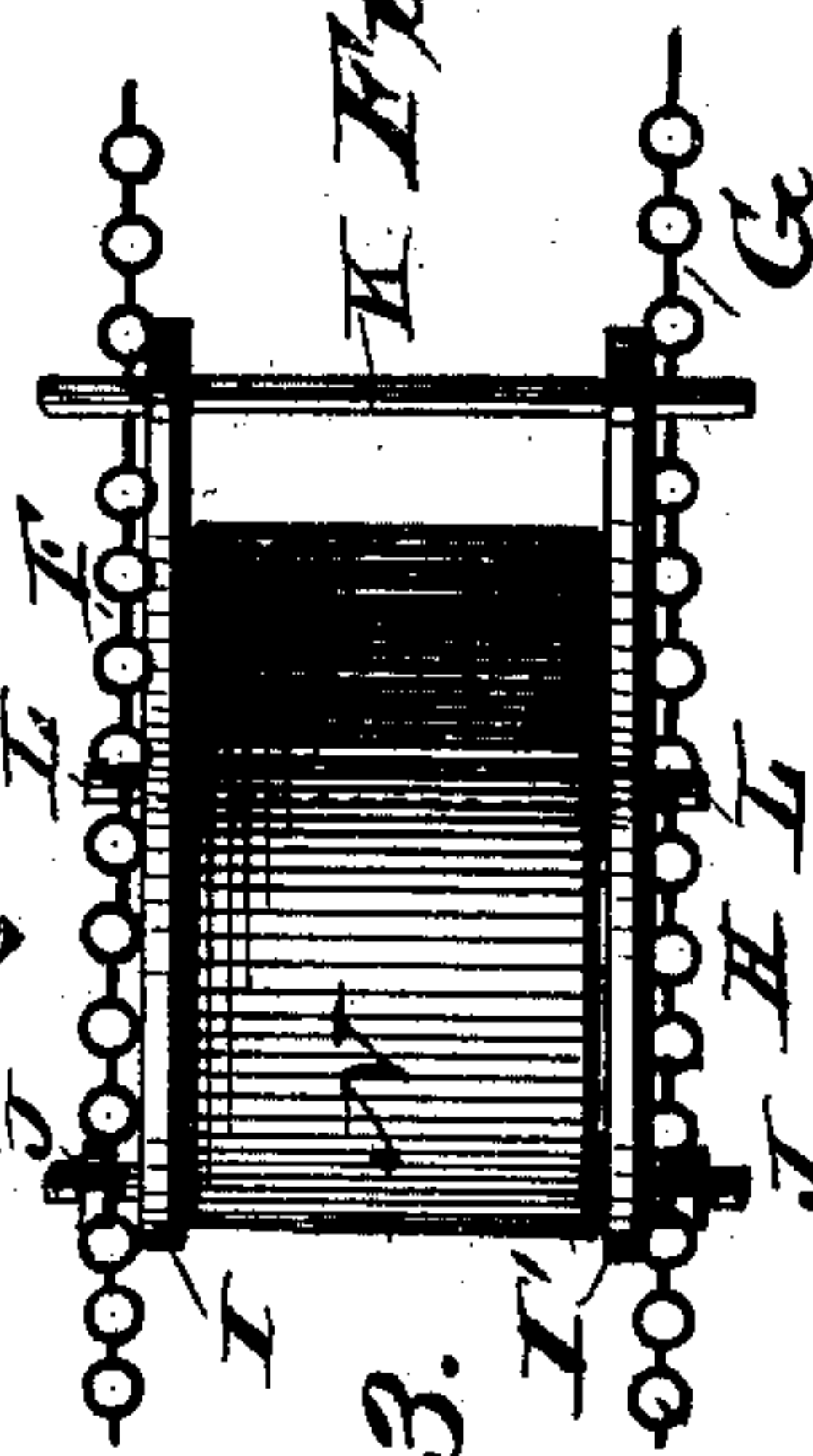
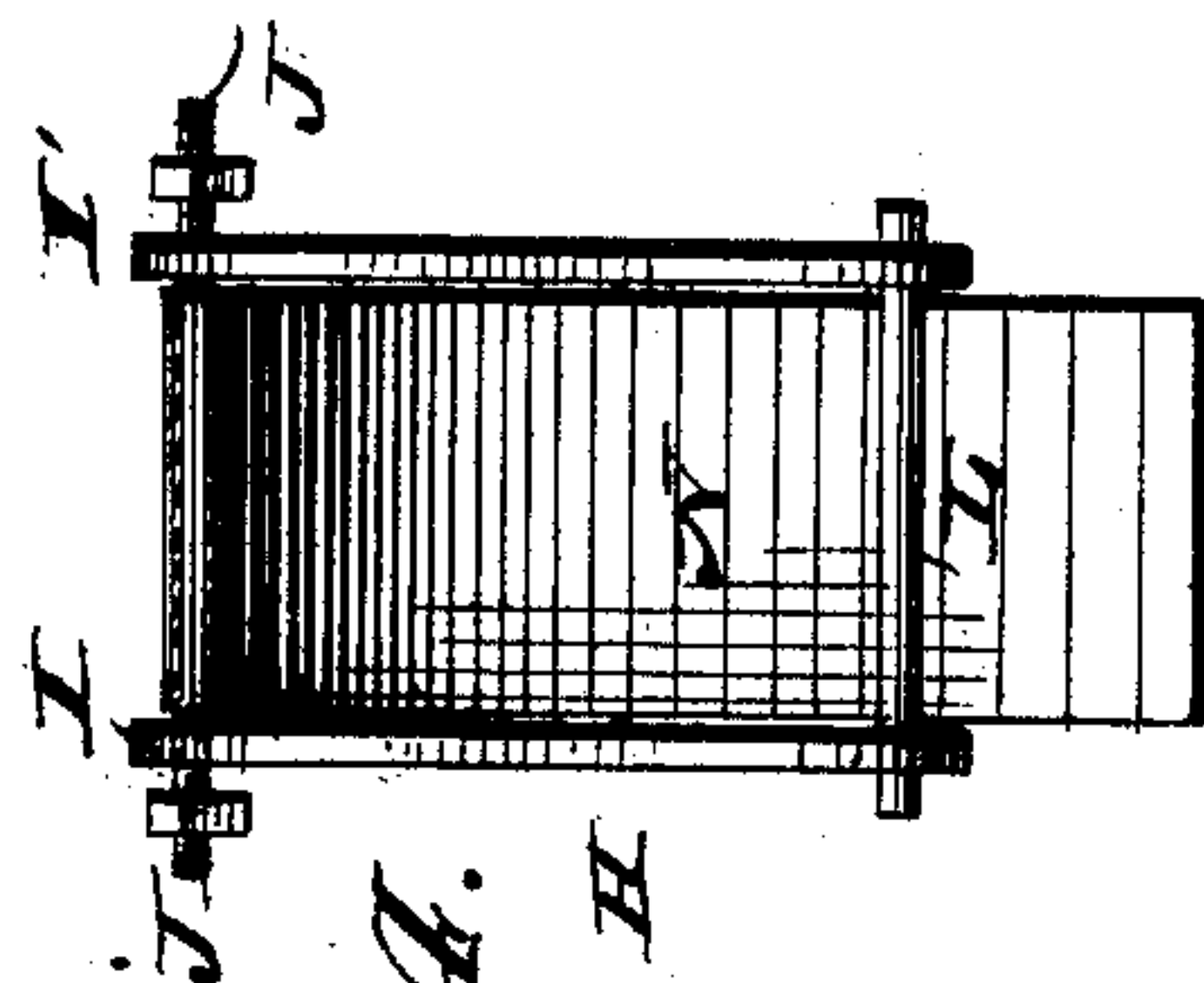
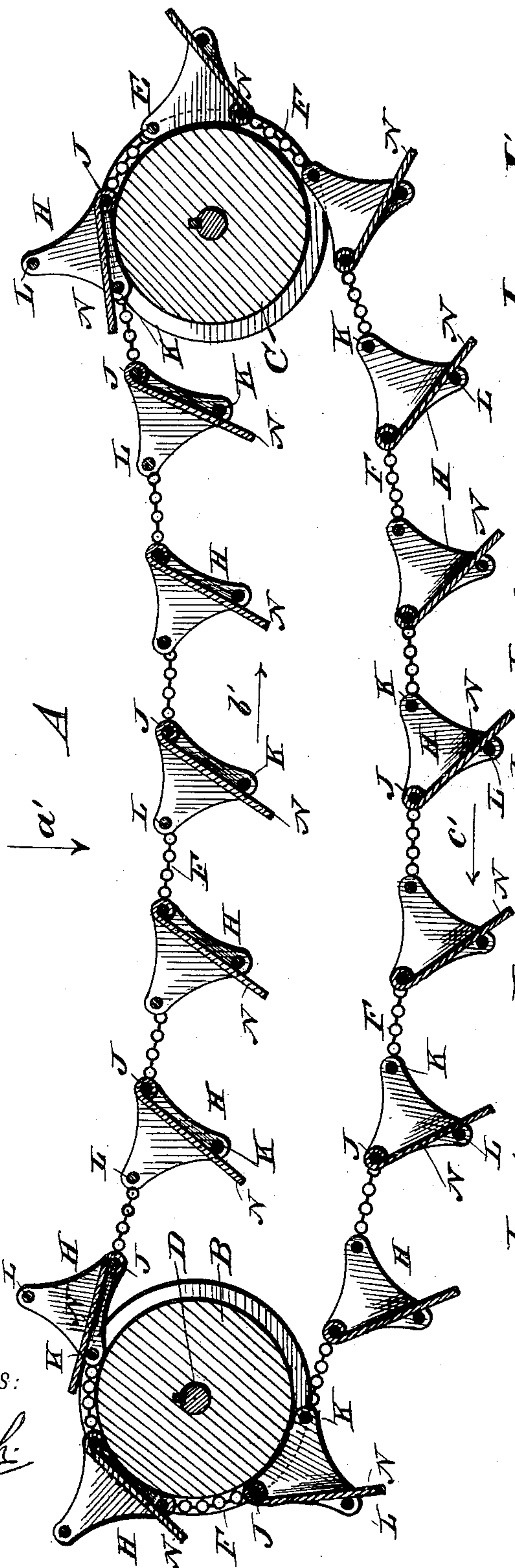
(No Model.)

L. P. SANTY.
WATER MOTOR.

No. 407,123.

Patented July 16, 1889.

Fig. 1.



WITNESSES:

Phil. Dieterich
Co. Sedgwick

INVENTOR
L. P. Santy

BY

Munn & Co
ATTORNEY

UNITED STATES PATENT OFFICE.

LOUIS P. SANTY, OF CLEMENTS, KANSAS.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 407,123, dated July 16, 1889.

Application filed March 27, 1889. Serial No. 305,017. (No model.)

To all whom it may concern.

Be it known that I, LOUIS P. SANTY, of Clements, in the county of Chase and State of Kansas, have invented a new and Improved
5 Water-Motor, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved water-motor, which is simple and durable in construction, effective in
10 operation, and adapted to be used under waterfalls, in the currents of streams, and in other places.

The invention consists of two endless chains passing over drums located on opposite shores
15 and buckets of special construction pivoted on the said chains and operated on by the force of the water.

The invention also consists of certain parts and details and combinations of the same, as
20 will be fully described hereinafter, and then pointed out in the claims.

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

Figure 1 is a side elevation of the improvement as applied under a waterfall. Fig. 2 is an enlarged sectional side elevation of one of the buckets. Fig. 3 is a plan view of the same,
30 and Fig. 4 is an end elevation of the same.

The improved water-motor A is provided with the two drums B and C, located opposite each other and fastened on the shafts D and E, respectively, mounted to turn in suitable
35 bearings and connected with other machinery to be driven. Over the drums B and C pass the chains F and G, carrying a number of buckets H, each of which is provided with two side plates I and I' of triangular form and connected with each other by rigid transverse stays J, K, and L, placed equal distances apart, as is plainly shown in the drawings. Each of the stays projects a short distance beyond the side plates I and I', and the stay J
40 is pivotally connected at its outer end with the chains F and G, so that the bucket can swing up and down when passing over the drums B and C.

On the stay J, between the side plates I and I', is pivoted a gate N, forming the bottom of the bucket and extending at its free end be-
50

tween the stays L and K, so as to swing between the same from the stay J, which is the pivot. Between the outer ends of the stays J and L pass the two chains F and G, so that
55 the ends of the said stay K rest on top of the chains F and G when in their uppermost position, and when the chains are in their lowermost position the ends of the stay L rest on top of the chains. 60

The operation is as follows: The current of the water running in the direction of the arrow *a'* first strikes the buckets on the upper parts of the chains F and G and strikes the gates N, which are held in an inclined position, so that the latter exert a pressure against the chains F and G in the direction of the arrow *b'*. The chains F and G thus impart a rotary motion to the drums B and C. The water, after leaving the upper row of buckets, passes from the gates N of the said buckets downward onto the gates in the lower row of buckets. As the gates in the lower row of buckets stand in an inverse direction from the gates in the upper row of buckets, the water falling onto the gates forces the same to exert a pressure against the chains F and G in the direction of the arrow *c'*, thus assisting in turning the drums B and C in the same direction they had before. It will be seen that
65 when the lower row of buckets passes over the drum B the projecting ends of the stay K become disengaged from the chains F and G as soon as the latter pass over the top of the drum. The buckets thus swing downward
70 until the projecting ends of the stays L fall on top of the chains F and G, and then they assume the position shown in the upper part of Fig. 1. A similar operation takes place when the uppermost row of buckets H passes over
75 the drum C. The projecting ends of the stay L then become disengaged from the chains F and G when the latter have passed the lower side of the drum, so that the buckets swing downward until the projecting ends of the
80 stays K rest on top of the chains F and G. Thus it will be seen that the buckets reverse automatically when passing over the drums B and C, and the force of the water is exerted against both the uppermost and the lowermost
85 rows of buckets, so that the drums B and C are turned in the same direction. When the 100

water-motor is placed in a stream or other current, the drums B and C are mounted vertically on the opposite shores of the stream, and the operation is the same as above described.

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

10 1. A water-motor comprising two traveling endless chains and buckets pivoted on the said chains, and each comprising side plates, stays connecting the said side plates with each other, one of the stays forming the pivot for the bucket, and a gate forming the bottom of the bucket pivoted on the pivotal stay
15 and free to swing between the other two stays, all arranged substantially as shown and described.

20 2. In a water-motor, a bucket comprising two side plates, stays for connecting the said side plates with each other, and a gate forming the bottom of the bucket pivoted on one of the said stays and free to swing between the other stays, substantially as shown and described.

25 3. In a water-motor, the combination, with two endless chains mounted to travel, of a bucket pivoted between the said chains and each comprising side plates fitted between the

said chains, stays connecting the said side plates with each other placed equidistant 30 apart, the said stays projecting at each end beyond the said plates to engage the chains, and a gate forming the bottom of the bucket pivoted on one of the said stays between the said side plates and free to swing between the 35 other stays, substantially as shown and described.

4. In a motor, the combination, with two parallel drums mounted to rotate, of endless chains passing over the said drums, and buckets pivoted on the said chains and each comprising side plates fitted between the said endless chains, stays connecting the said side plates with each other placed equidistant 40 apart, the said stays projecting at each end beyond the said plates to engage the chains, and a gate forming the bottom of the bucket pivoted on one of the said stays between the said side plates and free to swing between the other stays, substantially as shown and 50 described.

LOUIS P. SANTY.

Witnesses:

ELVIS C. NOEL,
EDWARD GRAHAM.