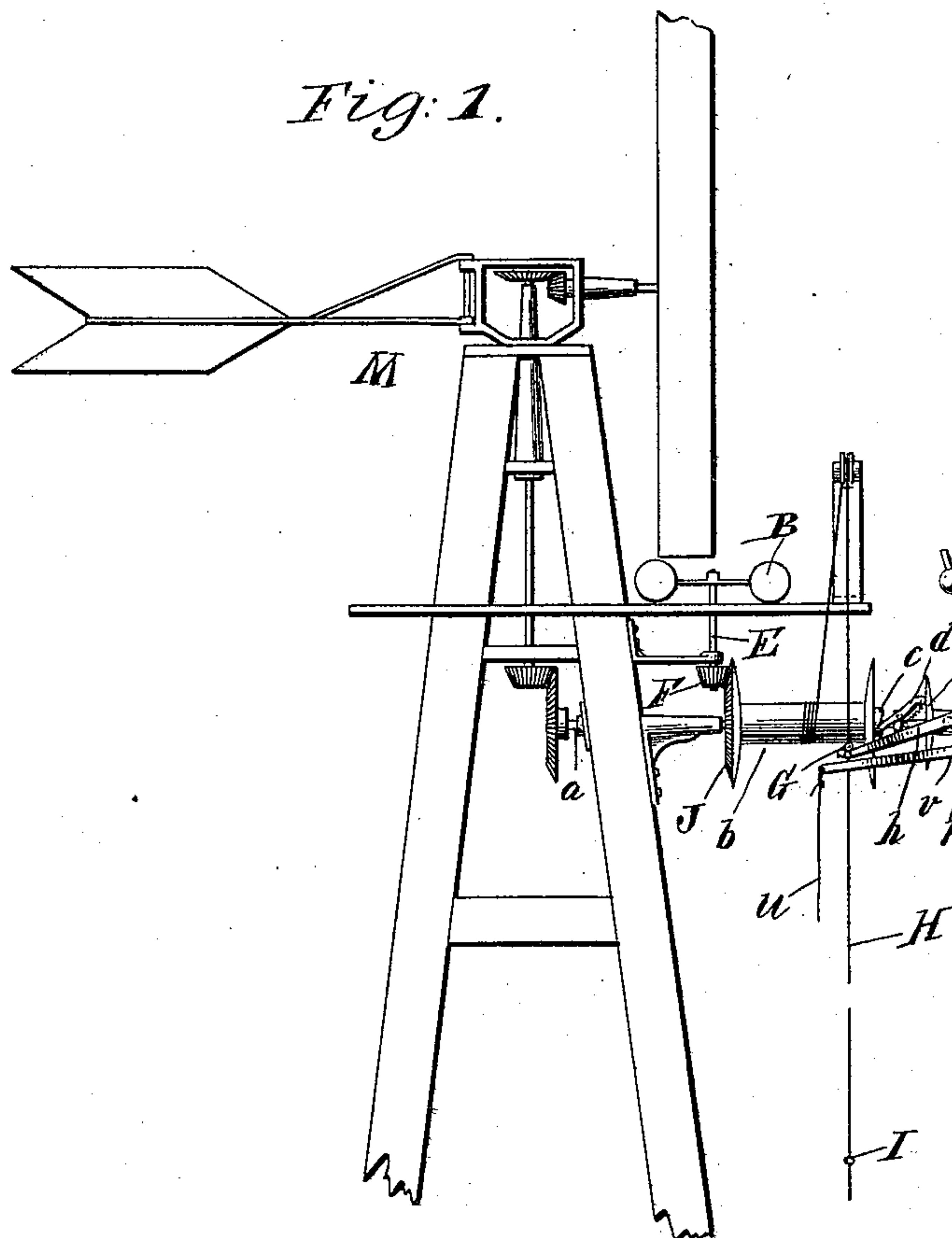


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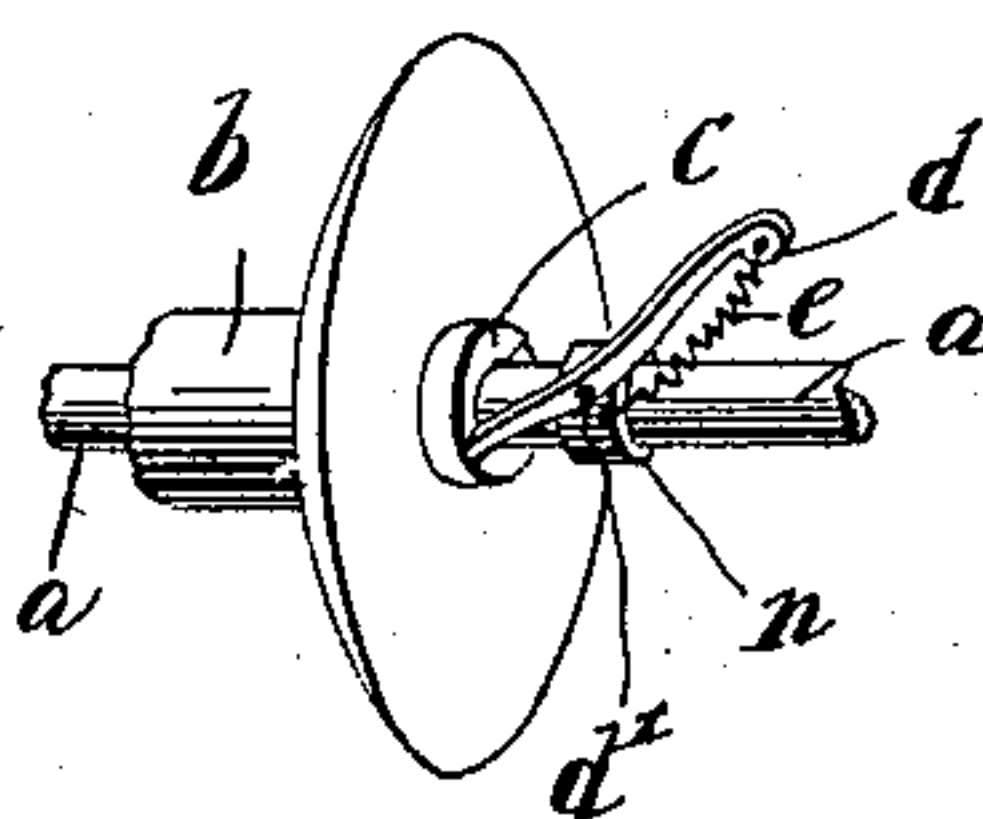
No. 583,768.

Patented June 1, 1897.

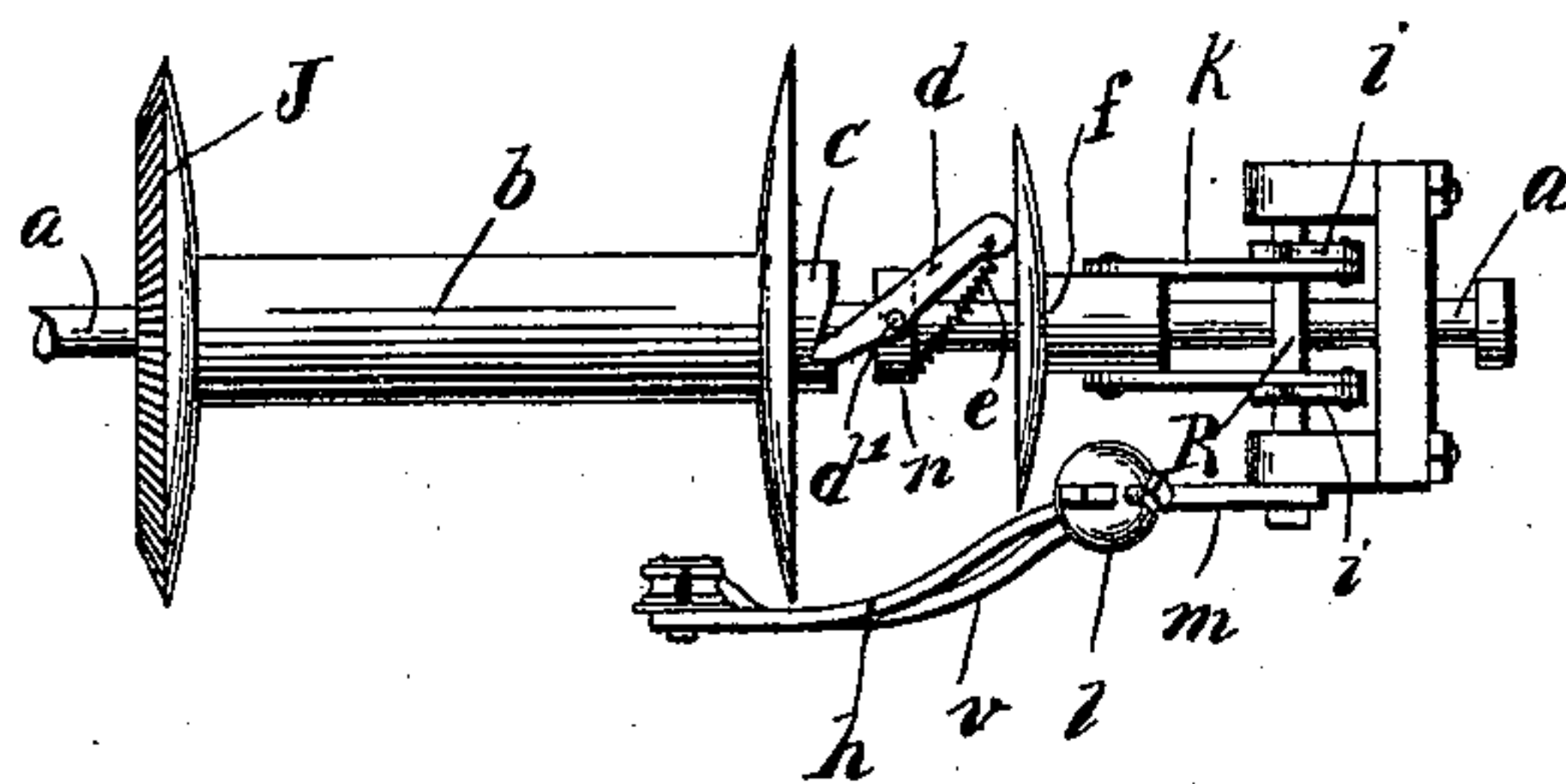
*Fig: 1.*



*Fig: 5.*



*Fig: 6.*



**WITNESSES:**

WITNESSES:  
J. A. Rennie  
John Lotta

## INVENTORS

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BY W. L. Sparkman  
Munroe  
ATTORNEYS.

(No Model.)

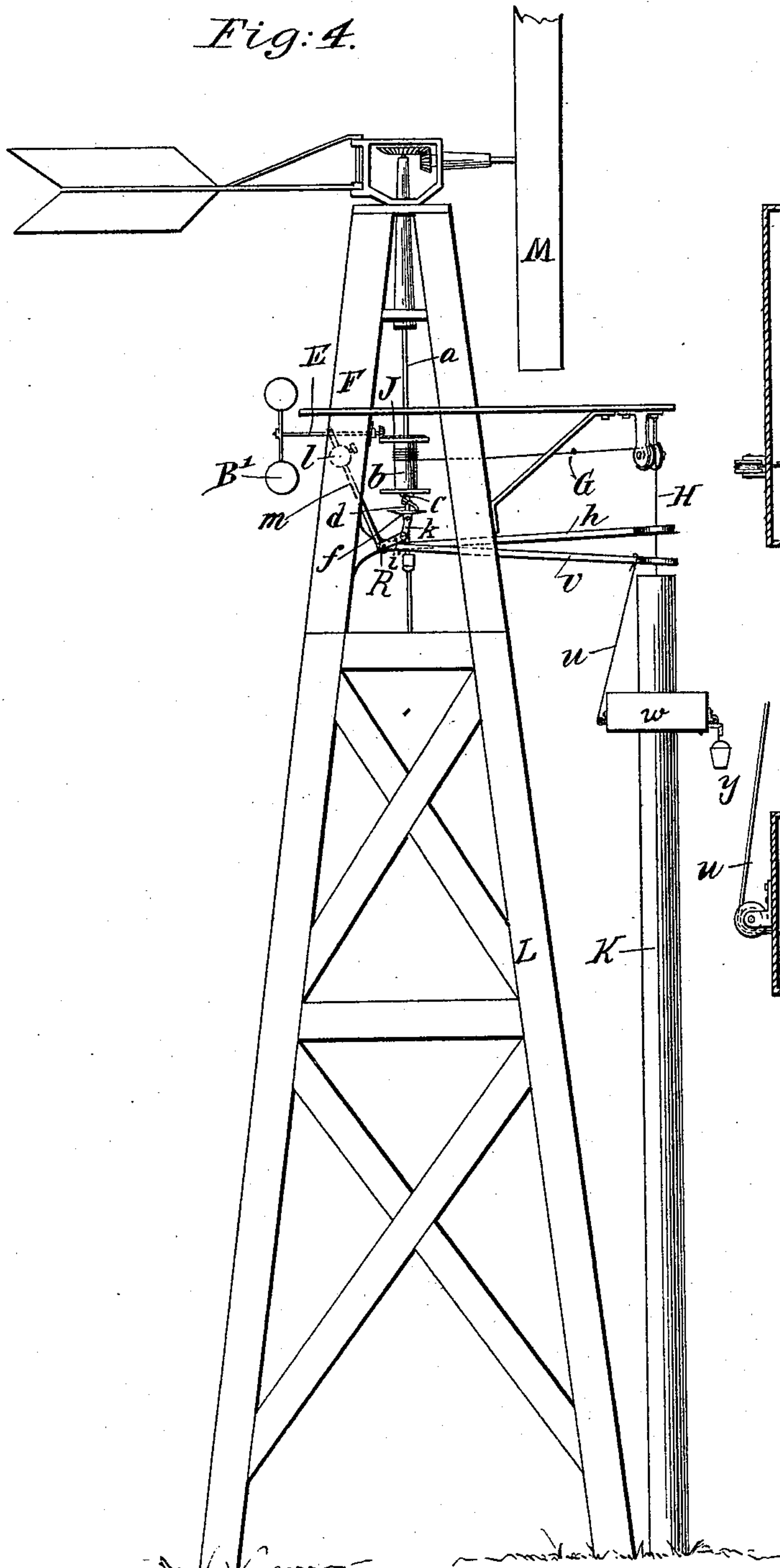
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H. L. POE & W. C. SPARKMAN.  
DEVICE FOR RAISING WATER.

No. 583,768.

Patented June 1, 1897.

Fig. 4.



WITNESSES:

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Fig. 2.

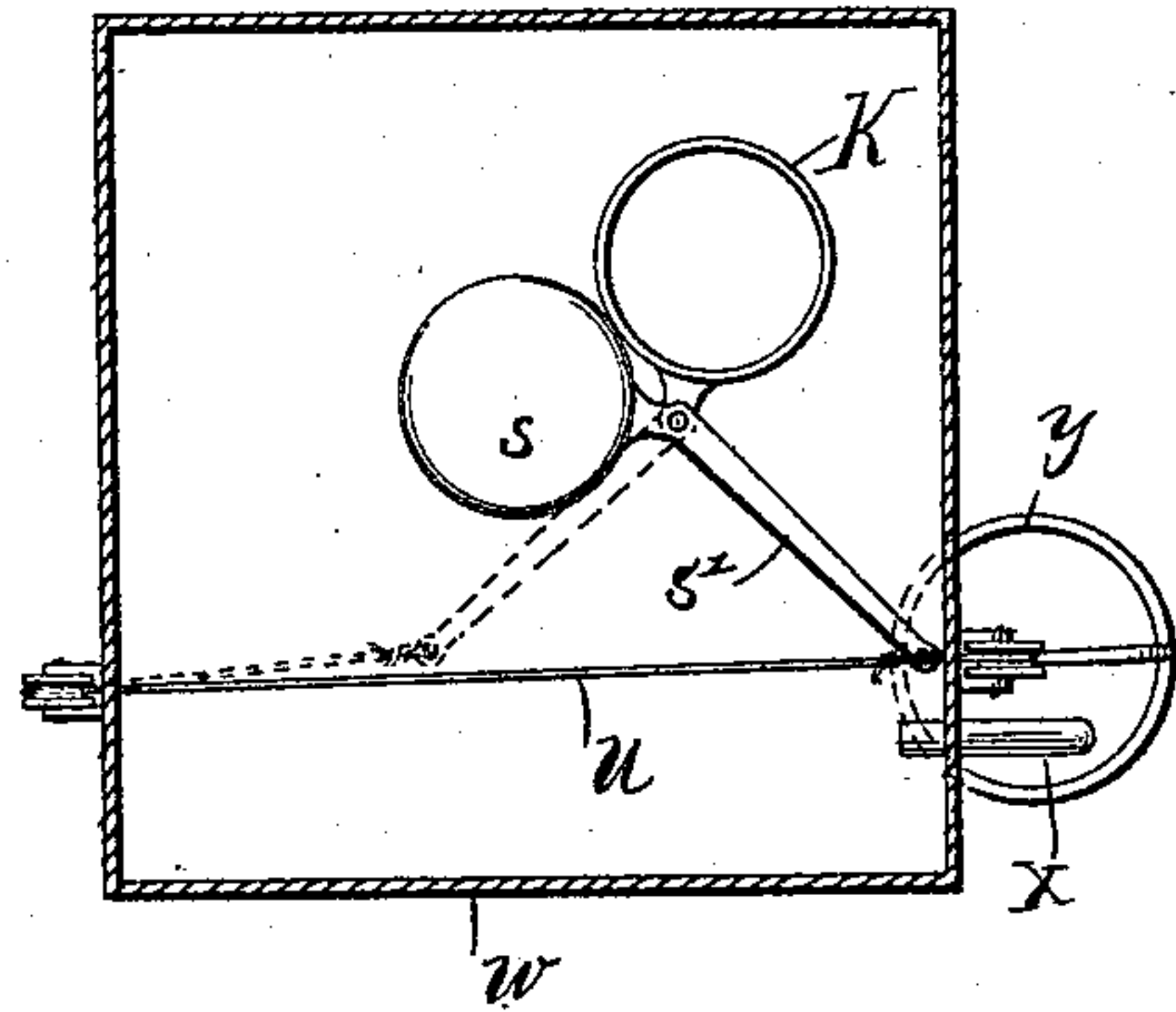
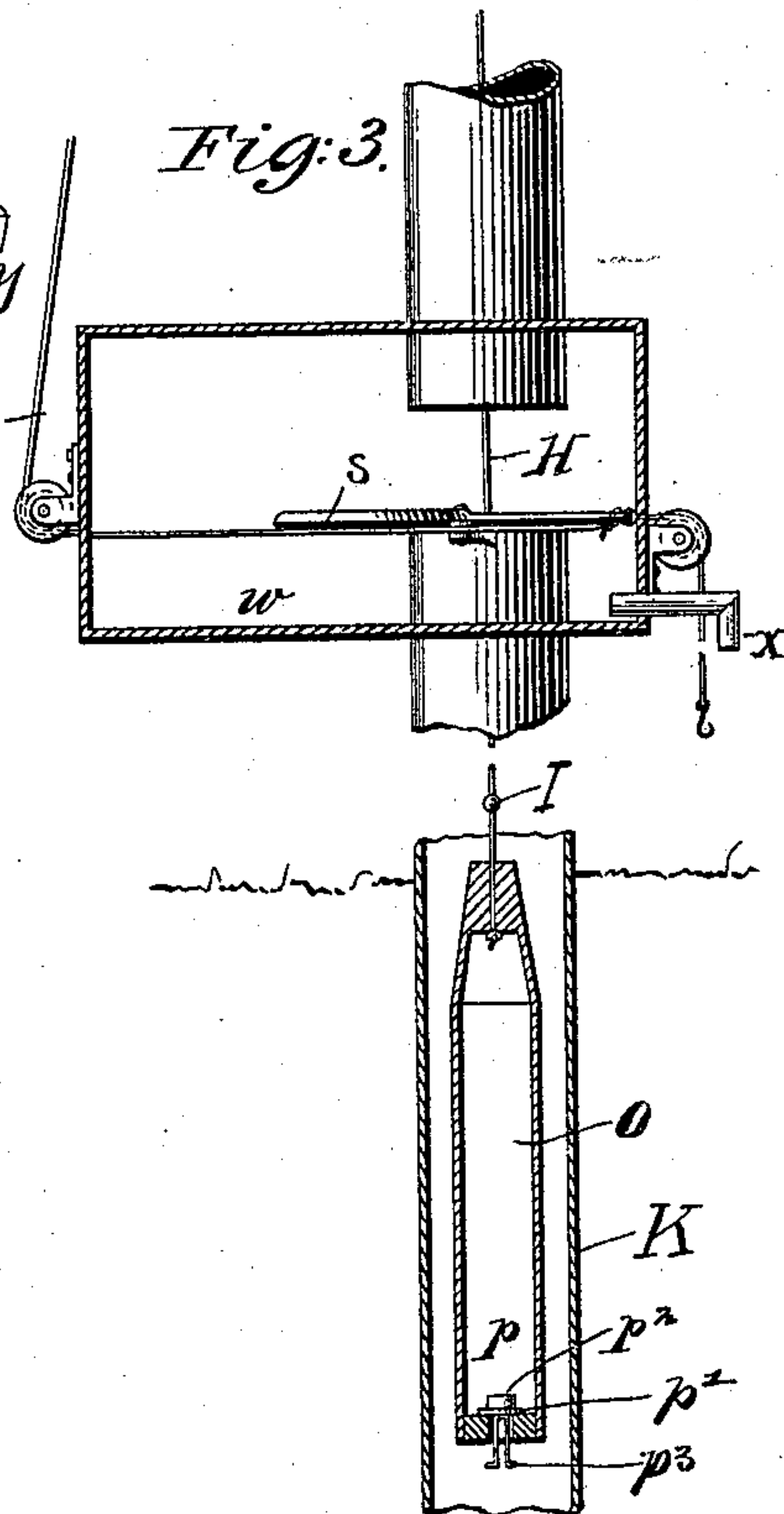


Fig. 3.



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# UNITED STATES PATENT OFFICE.

HERBERT L. POE AND WILLIAM C. SPARKMAN, OF SOUTHMAYD, TEXAS.

## DEVICE FOR RAISING WATER.

SPECIFICATION forming part of Letters Patent No. 583,768, dated June 1, 1897.

Application filed July 8, 1896. Serial No. 598,421. (No model.)

*To all whom it may concern:*

Be it known that we, HERBERT L. POE and WILLIAM C. SPARKMAN, of Southmayd, in the county of Grayson and State of Texas, have invented a new and Improved Device for Raising Water, of which the following is a full, clear, and exact description.

Our invention relates to water-elevators in which a bucket or like receptacle is periodically lowered into a well and then raised to be emptied.

Our invention has for its objects various improvements in elevators of the above-indicated class whereby the operation of the device will be rendered positive and automatic without the use of any complicated machinery.

The invention will be fully described hereinafter and the features of novelty pointed out in the claims.

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

Figure 1 is a broken elevation of one form of our invention. Fig. 2 is a horizontal section through the water-receptacle located at the top of the well. Fig. 3 is a vertical section through said receptacle and a part of the well, showing also the bucket in section. Fig. 4 is a side elevation showing another form of the invention, also the general arrangement of parts. Fig. 5 is a detail view of a clutch employed in our invention, and Fig. 6 is a plan view showing the mechanism connected to said clutch.

Our invention comprises a main shaft *a*, adapted to be driven in any suitable manner from an appropriate motor, such as a wind-motor *M*. The shaft *a* may be arranged in any desired position, Fig. 4 showing a vertical shaft, while in Fig. 1 the shaft *a* is horizontal. On the shaft is loosely mounted the rope-drum *b*, carrying at one of its ends a ratchet-wheel *c*, which is rigid with the drum. On the shaft *a* is keyed a sleeve *n* and to said sleeve is pivoted at *d'* a pawl *d*, adapted to engage the notches of the ratchet-wheel *c* and controlled by a spring *e*.

On the shaft *a* is further mounted to move longitudinally a disk *f*, adapted to engage the

end of the pawl *d*. This disk is pivotally connected to pitmen *k*, which are fastened to cranks *i*, rigidly secured to a rock-shaft *R*, journaled in stationary bearings. On said rock-shaft is secured a lever *h*, through the end of which passes the hoisting-rope *H*. Said rope is provided with two knots or buttons *G* and *I*, respectively, of such a size that they will carry the lever with them upon coming in contact therewith.

Another lever *v* is pivoted, as shown in Fig. 1, to a suitable bracket *v'*, and the rope *H* likewise passes through the said lever *v*, and to said lever is attached a cord or wire *u*, which extends into the water-receptacle *w*, located at the upper end of the well *K*. Said cord is attached to a lever *s'*, pivoted within said receptacle and carrying a plate or disk *s*, adapted to close the upper end of the well *K*. At the free end of the cord *u* is adapted to be secured a bucket *y*, which may be of the usual construction, but is provided with a hole in its bottom, said hole being smaller than the spout *x*, forming the outlet of the receptacle *w*. In practice we prefer to have the cord *u* extend to the front of the receptacle *w* and to locate the spout *x* at the rear of the receptacle, but to better show the said parts they have been shown in Fig. 4 as located upon the sides of the receptacle. To the end of the hoisting-rope *H* is secured a bucket *o*, which is provided with an opening at its bottom, said opening being adapted to be closed by a valve *p*, which, as shown, consists of a leather disk *p'*, held between a block of wood *p<sup>2</sup>* and metal arms *p<sup>3</sup>*, extending through the bottom of the bucket and projecting therefrom.

In order to hold the lever *h* in either position, said lever is provided with an arm *m*, carrying a weight *l*, so that whenever said weight is thrown to one side or the other of the vertical plane passing through the shaft *R* the lever *h* will be held in its position.

In order to limit the speed of the bucket, we provide a gear-wheel *J* on the drum *b*, said gear-wheel meshing with a pinion *F* on a shaft *E*, carrying a fan *B*, which will oppose a resistance to the unwinding of the rope *H* on the drum *b*.

The operation of the device is as follows: When the bucket has been lowered into the



well and is full of water, the upper knot or button G on the rope H has depressed the lever *h*, thereby moving the disk *f* away from the drum and causing the pawl *d* to engage the ratchet-wheel *c*, so that the drum will be compelled to rotate in unison with the shaft *a*. In consequence thereof the rope H will begin to wind on said drum and the bucket full of water will be raised. The valve *p* of course will remain closed. The hoisting operation continues until the lower knot or button I on the rope H engages the lever *v* and raises the same, whereupon said lever will come in contact with the lever *h* and thus throw the same into its upper position, causing the disk *f* to be moved toward the drum *b*, so that the pawl *d* will be thrown out of engagement with the ratchet-wheel *c* and the hoisting operation interrupted accordingly. At the same time the rising movement of the lever *v* pulls the cord *u* upward and causes the disk or plate *s* to cover the upper end of the well K, it being understood that at that time the bucket *o* will be above the said disk or plate. As the connection between the hoisting-drum *b* and the shaft *a* has been interrupted, the weight of the bucket *o* will cause the same to descend, but such descending movement will be stopped by the bucket coming to rest on the plate *s*. As the arm *p*<sup>3</sup> of the valve *p* projects from the bottom of the bucket, it will be obvious that the valve *p* will be opened and thus the contents of the bucket will be emptied into the receptacle *w*. The water will flow out through the spout *x* into the bucket *y*. As said bucket becomes weighted by the water flowing into it, a downward pull will be exerted on the cord *u*, and thus gradually the plate *s* will be moved to the side, so as to uncover the top of the well K. The obstacle preventing the descending movement of the bucket *o* having thus been removed, the said bucket will descend into the well, the speed of the said descent being controlled by the fan B, as above described. The bucket then upon reaching the water becomes filled, and the hoisting-drum is again coupled to the shaft *a*, as above described. Thus the operation will be repeated continuously in an automatic manner. While the bucket *o* descends into the well the water flows out from the bucket *y* through the aperture in the bottom thereof, so that when the bucket *o* is again emptied into the receptacle *w* the bucket *y* is empty and ready to receive the water discharged through the spout *x*.

The construction illustrated by Fig. 4 is substantially the same as that shown in the other figures of the drawings, the main difference residing in the vertical arrangement of the shaft *a*, with such changes as are made necessary by said alteration. Thus the shaft E' of the fan B' is horizontal instead of vertical; also, the levers *h*, *m*, and *v* are somewhat differently arranged, and the lever *v* is loosely mounted on the shaft R instead of being fulcrumed on a separate bracket, but in sub-

stance the construction is the same and the operation is exactly like the one described with reference to Fig. 1.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A water-elevator, comprising a receptacle or bucket provided with a valve, a device for hoisting and lowering said bucket, a plate or support movable in a horizontal plane transversely of the path of travel of the bucket when the latter is raised, to engage and open the bucket-valve, an operative connection from the hoisting device to said support, to move the latter under the bucket and means for moving the said support out of the bucket's path after the bucket has been emptied, substantially as described.

2. A water-elevator, comprising a receptacle or bucket provided with a valve, a device for hoisting and lowering said bucket, a pivoted plate or support mounted to swing in a horizontal plane and under the bucket when the same is raised, to engage and open the bucket-valve, and means for swinging the support back out of the bucket's path of travel, substantially as described.

3. A water-elevator, comprising a receptacle or bucket, a device for alternately hoisting and lowering the same, a bucket-emptying mechanism consisting of a plate or support adapted to move under the bucket when the same is raised, so that when the bucket descends it will collide with said support and become emptied, and an auxiliary bucket or receptacle arranged to receive the water discharged from the main bucket, said auxiliary bucket being connected to the movable support so that the weight of the water discharged into the auxiliary bucket will remove said support from under the main bucket, substantially as described.

4. A water-elevator, comprising a receptacle or bucket, a device for alternately hoisting and lowering the same, a bucket-emptying mechanism consisting of a plate or support adapted to move under the bucket when the same is raised, so that when the bucket descends it will collide with said support and become emptied, and an auxiliary bucket or receptacle having a discharge-aperture at or near its bottom, and being arranged to receive the water from the main bucket, said auxiliary bucket being connected to the movable support so that the weight of the water discharged into the auxiliary bucket will remove said support from under the main bucket, substantially as described.

5. A water-elevator, comprising a receptacle or bucket, a device for alternately hoisting and lowering the same, a stationary box into which the bucket is adapted to be raised, said box forming a receptacle for the water discharged from the bucket, and being provided with an outlet for the water, a movable plate or support located in said box and arranged to be moved under the bucket when



the same is raised, so that when the bucket descends it will collide with the said support and become emptied into the box, and means for removing said support from under the bucket after the latter has been emptied, substantially as described.

6. A water-elevator, comprising a receptacle or bucket, a device for alternately hoisting and lowering the same, a box into which the bucket is adapted to be raised, said box being provided with an outlet for the water, a movable plate or support located in said box and arranged to be moved under the bucket when the same is raised, so that when the bucket descends it will collide with the said support and become emptied, and a vertically-movable auxiliary receptacle or bucket arranged to receive the water discharged from the outlet of the said box, said auxiliary bucket being connected to the movable support so that the weight of the water discharged into the auxiliary bucket will remove said support from under the main bucket, substantially as described.

7. A water-elevator, comprising a receptacle or bucket, a device for alternately hoisting and lowering the same, a movable plate or support capable of being shifted into the

path of the bucket, a lever arranged to be operated by the hoisting device and connected to said support to move it under the bucket when the latter is raised, to empty the bucket when during its descent it collides with said support, and a weight likewise operatively connected to said support to remove it from under the bucket when the latter has been emptied, substantially as described.

8. A water-elevator, comprising a receptacle or bucket, a device for alternately hoisting and lowering the same, a plate or support arranged to move into the path of the bucket, an operative connection from said support to the hoisting device to move the support under the bucket when the latter is raised, so that the bucket during its descent will collide with said support and become emptied, and a movable auxiliary receptacle or bucket arranged to receive the water discharged from the main bucket and operatively connected to said support to withdraw it from under the main bucket, substantially as described.

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WILLIAM C. SPARKMAN.

Witnesses:

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R. S. FULTON.