

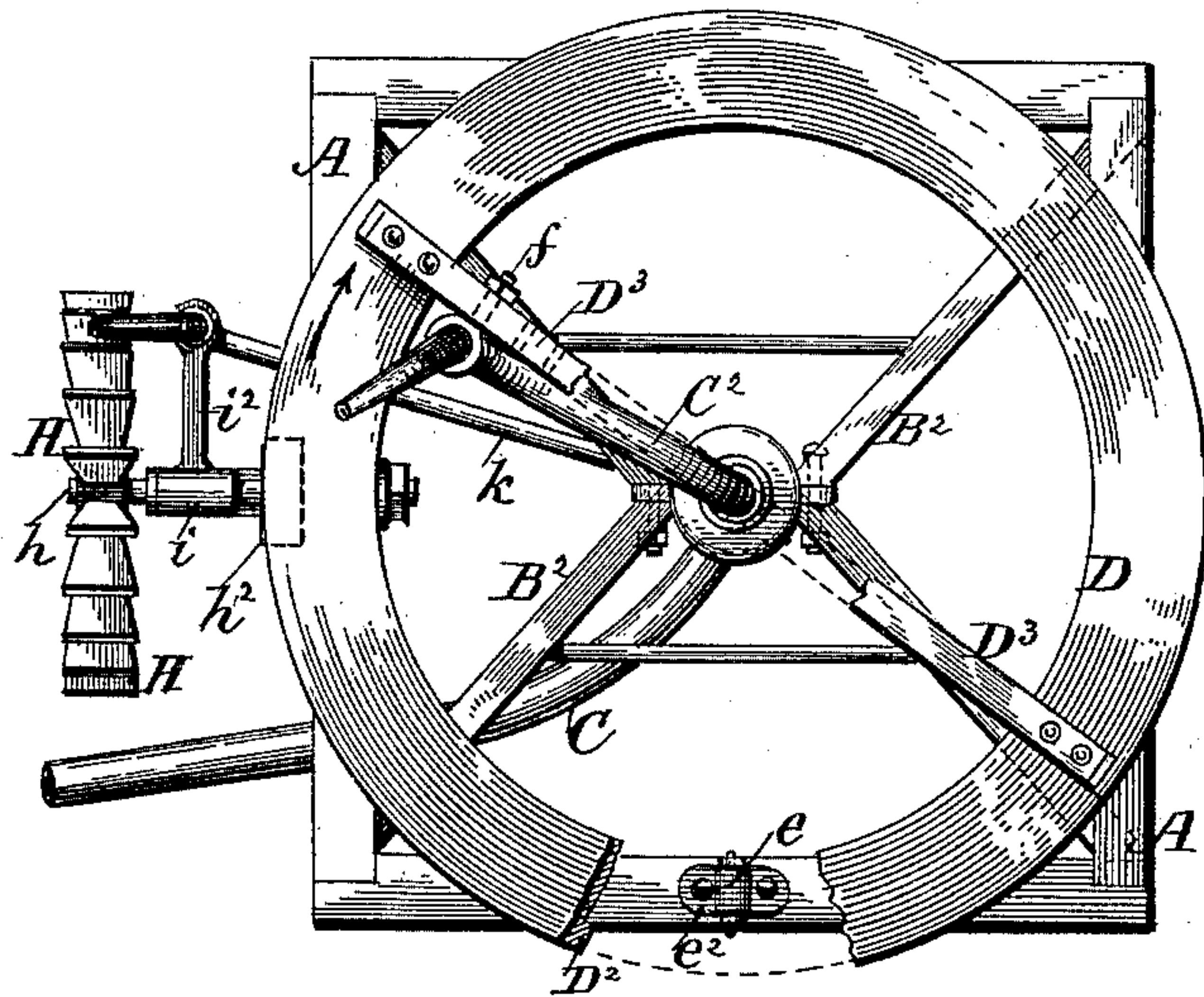
(No Model.)

D. A. HOYT.  
LAWN SPRINKLER.

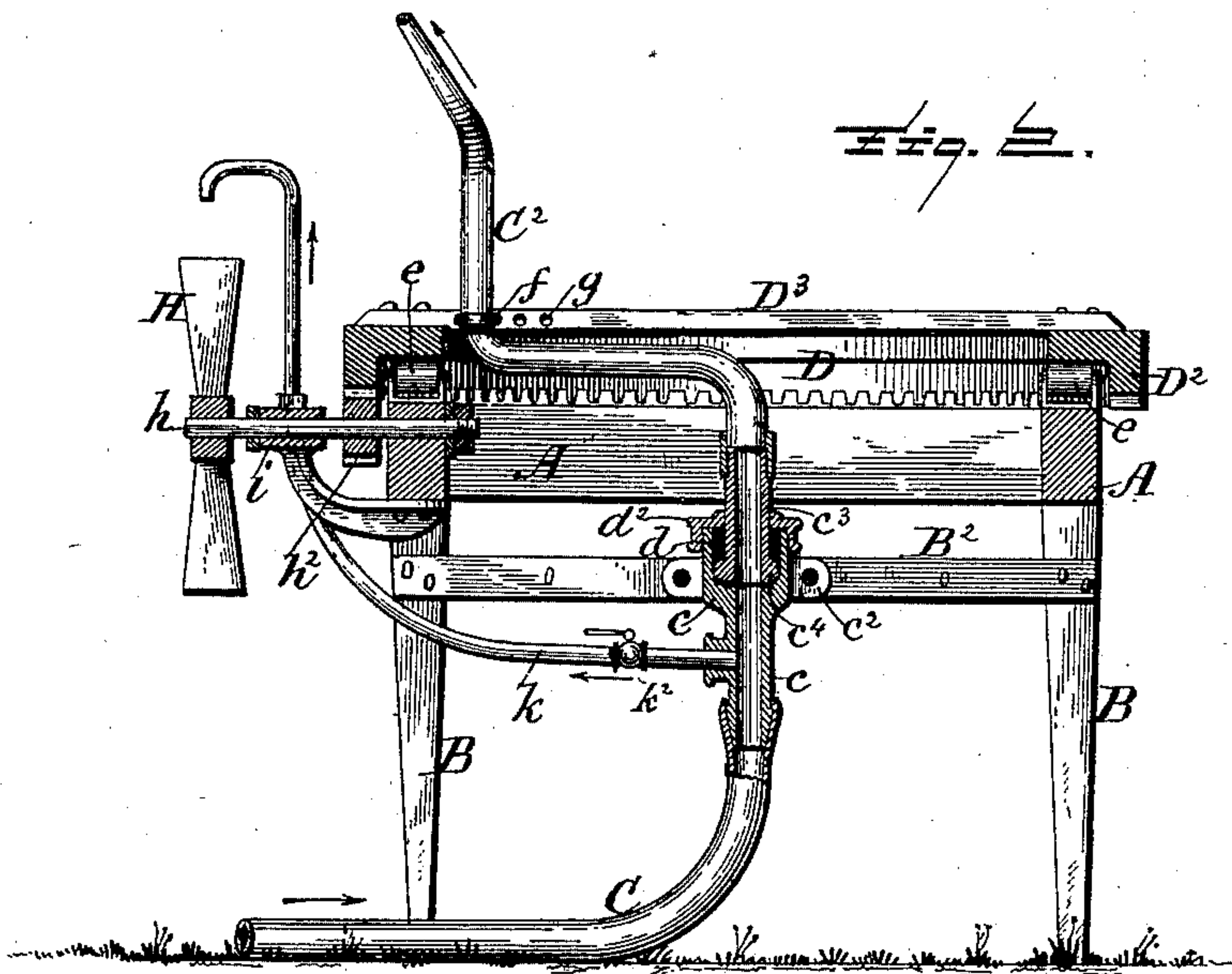
No. 418,181.

Patented Dec. 31, 1889.

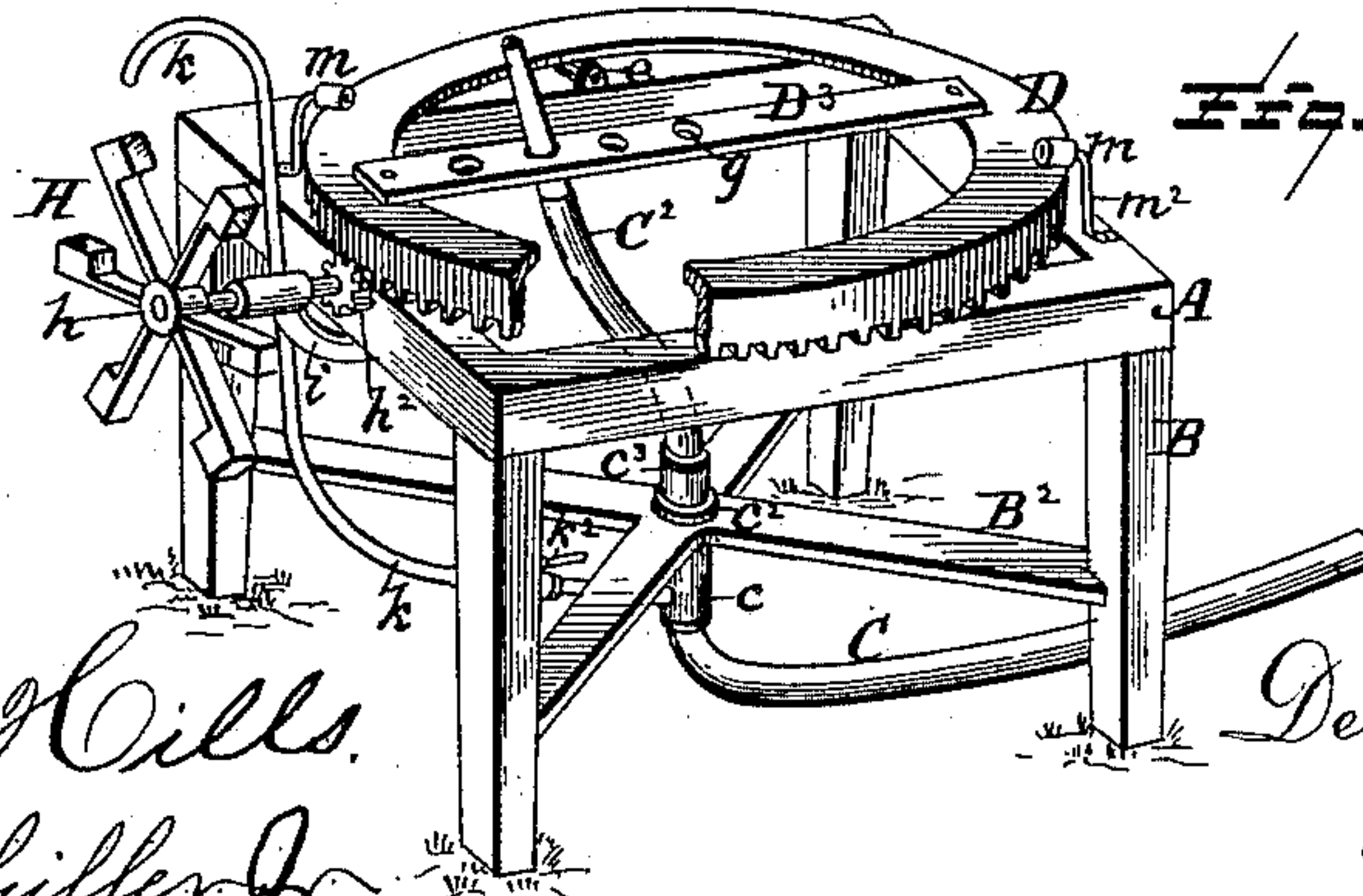
~~Fig. 1.~~



~~Fig. 2.~~



~~Fig. 3.~~



Witnesses

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# UNITED STATES PATENT OFFICE.

DENNIS A. HOYT, OF ST. CLOUD, MINNESOTA.

## LAWN-SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 418,181, dated December 31, 1889.

Application filed October 23, 1889. Serial No. 327,948. (No model.)

*To all whom it may concern:*

Be it known that I, DENNIS A. HOYT, a citizen of the United States, residing at St. Cloud, in the county of Stearns, State of Minnesota, have invented certain new and useful Improvements in Lawn-Sprinklers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to portable sprinklers of that class known as "revolving sprinklers" in which the force of the water issuing from the nozzle causes the latter to be revolved and uniformly distributes the water at a distance therefrom upon a large surface; and the objects of my invention are to produce a sprinkler of attractive appearance in which the direction and force of the current thereon can be regulated. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a sprinkler constructed in accordance with my invention. Fig. 2 is a central vertical section of the same. Fig. 3 is a perspective view of the same slightly modified.

In said drawings, A represents a rectangular frame, shown supported on vertical legs B; but said legs may be arranged as in a tripod and made to cross each other around the central bearing *c* of the hose C, where it is connected with its upper end or nozzle *C*<sup>2</sup> by means of said bearing or bushing *c*, having side lugs *c*<sup>2</sup>, by which it is connected to the braces *B*<sup>2</sup>, attached to the legs of the device.

To permit the upper end or nozzle of the hose to revolve, its lower end is attached to a coupling *c*<sup>3</sup>, that is received in the bushing *c*, and to prevent the separation of said parts the lower end of the coupling *c*<sup>3</sup> has a collar *c*<sup>4</sup>, upon which packing *d* can be placed and retained by a cap *d*<sup>2</sup>, screwed upon the bushing *c*. The joining and packing of the parts is not so close but that the nozzle can be made to revolve with a small effort.

The hose C is attached to the lower end of the bushing, either by means of a coupling or in any other well-known manner.

To retain the nozzle in an upward or slightly-inclined position, as may be desired, and cause it to revolve, it is retained by a metal ring or wheel D, having a flat top and

also a flat bottom, except adjacent to its periphery, where it is provided with a pendent flange *D*<sup>2</sup>, having radiating cogs upon its edge. This wheel has its flat under side resting upon a series of rollers *e*, each having its journal retained in the lugs of bearing-plates *e*<sup>2</sup>, secured upon the top of frame A, the outer lugs of said plate serving also as abutments against the inner side of the flange of the wheel D, to retain it in proper relation upon its rollers.

To retain the nozzle adjustably connected with the wheel D, the latter has a brace *D*<sup>3</sup>, extending, preferably, diametrically across said wheel and secured to its top, and to said brace is attached an eyebolt *f* in one of the perforations *g* formed in its side, the eye of said bolt being of such size relatively to the diameter of the nozzle as to permit the latter to revolve therein, as in a bushing. The brace *D*<sup>3</sup> may have its perforations *g* made vertically therein if the stem of the eyebolt is bent at right angle to its eye or the tip of the nozzle is retained in one of them.

To cause the wheel D and the nozzle to revolve, a short shaft *h* is passed through one side of the frame A and carried in a bearing *i*, secured to said frame. Upon this shaft *h* is secured a pinion *h*<sup>2</sup>, located thereon so as to gear with the cogs of the wheel D, and to revolve said shaft there is secured on its outer end a water-wheel H, of any suitable construction. To revolve this wheel, a small stream of the water brought from a hydrant or other water-reservoir by the hose C to the apparatus is directed by the pipe *k* to a point preferably above the wheel H, but nearly tangential thereto, so that in its escape it will impart motion to the water-wheel. The outer end of the pipe *k* is retained in proper position by an arm *i*<sup>2</sup>, extending laterally from the bearing *i*, and said pipe *k* is provided with a faucet *k*<sup>2</sup>, to regulate the flow of water, while the inner end of the pipe is connected with the bushing *c* of the hose.

To reduce to a minimum the amount of water needed to revolve the nozzle-carrying wheel D, the free end of the nozzle, although standing nearly vertically, so as to direct the water some distance upward, is also bent somewhat tangentially to the path of said



wheel to utilize the reaction of the water escaping from the end of the nozzle to revolve the nozzle-carrying wheel.

In Fig. 3 the arms of the water-wheel have 5 buckets on their outer ends. The upper end  $c^3$  of the hose-bushing is formed integral with its lower end  $c$ , and said part of the device is thus simplified. The lower end of the flexible nozzle  $C^2$  being secured to the upper end 10 of the bushing, the elasticity of said nozzle is made use of to bend around under the direction of its tip, loosely carried in one of the perforations of the cross-brace of the wheel D. Said wheel is retained in position upon 15 the frame A by guide-rolls  $m$ , journaled above said wheel upon braces  $m^2$ , secured to said frame.

Having now fully described my invention, I claim—

20 1. A lawn-sprinkler consisting of a frame having rollers on top thereof, a wheel resting on said rollers and having a pendent flange provided with cogs, a pinion meshing with

said wheel, and a water-wheel upon the shaft 25 of said pinion, a nozzle attached to the cogged wheel and adapted to revolve therewith, a bushing for said nozzle, and a hose attached to said bushing, with pipe adapted to lead water from said bushing to the water-wheel, substantially as and for the purpose described. 30

2. The combination of a frame having rollers on top thereof, a gear-wheel resting upon said rollers and provided with a rest for a nozzle, a bushing, and a coupling for the lower 35 end of said nozzle and for the upper end of a hose, and a pipe  $k$ , leading from said bushing, with a pinion meshing with the gear-wheel, and a water-wheel upon the shaft of said pinion, substantially as and for the purpose described. 40

In testimony whereof I affix my signature in presence of two witnesses.

DENNIS A. HOYT.

Witnesses:

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ANDREW C. ROBERTSON.