

(No Model.)

G. HENKEL.  
WATER CUT-OFF.

No. 470,489.

Patented Mar. 8, 1892.

Fig. 1.

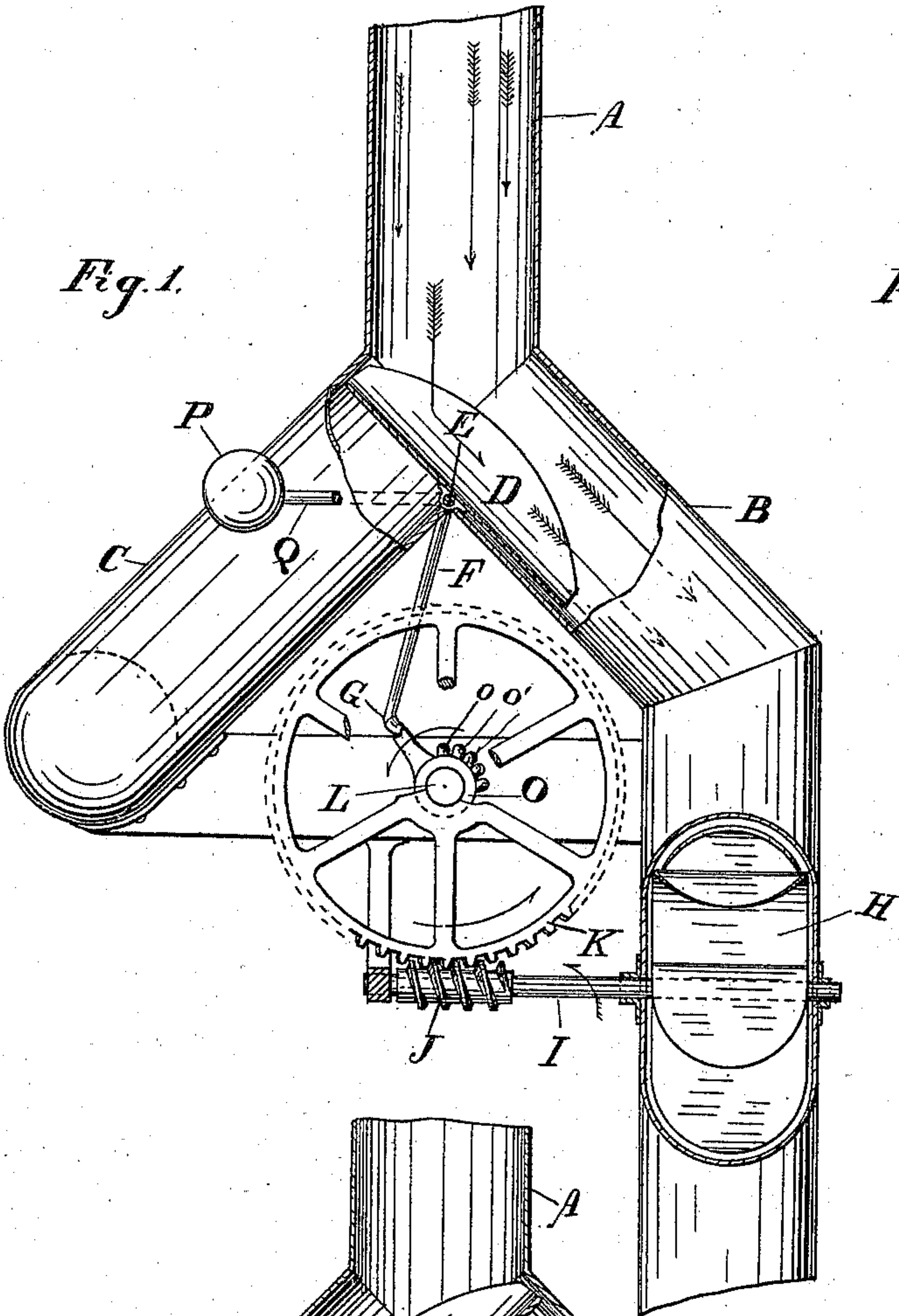


Fig. 2.

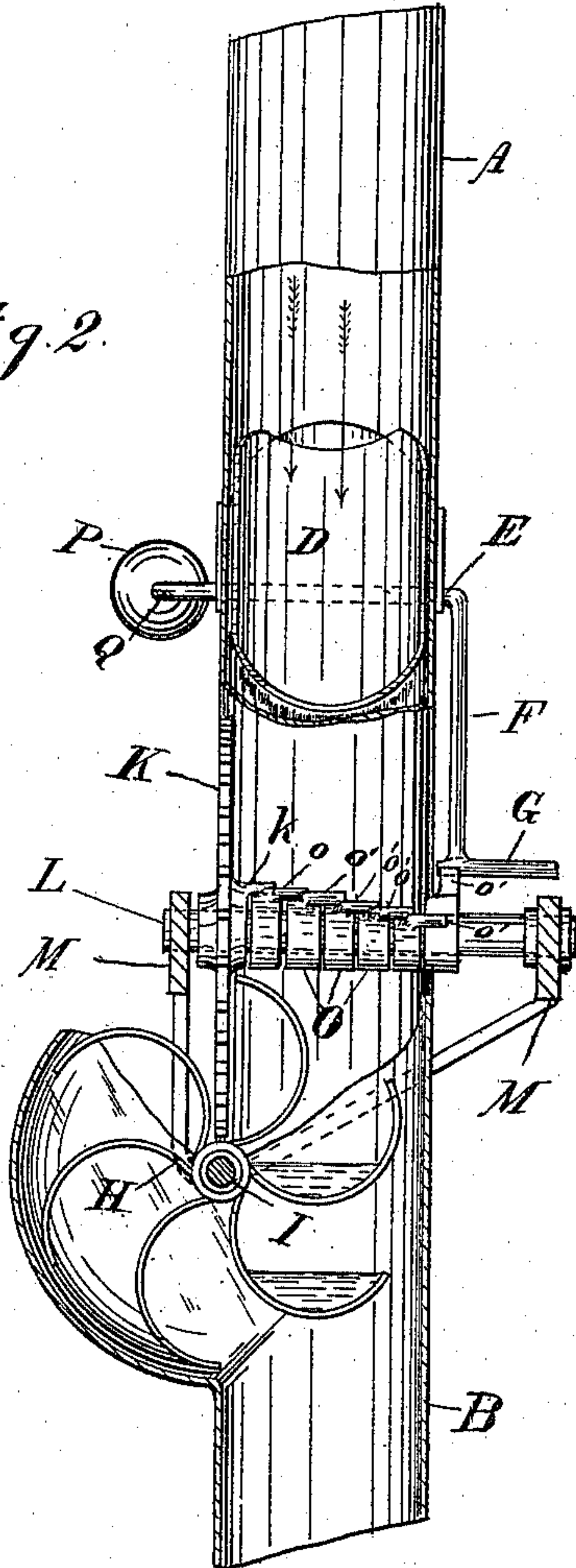
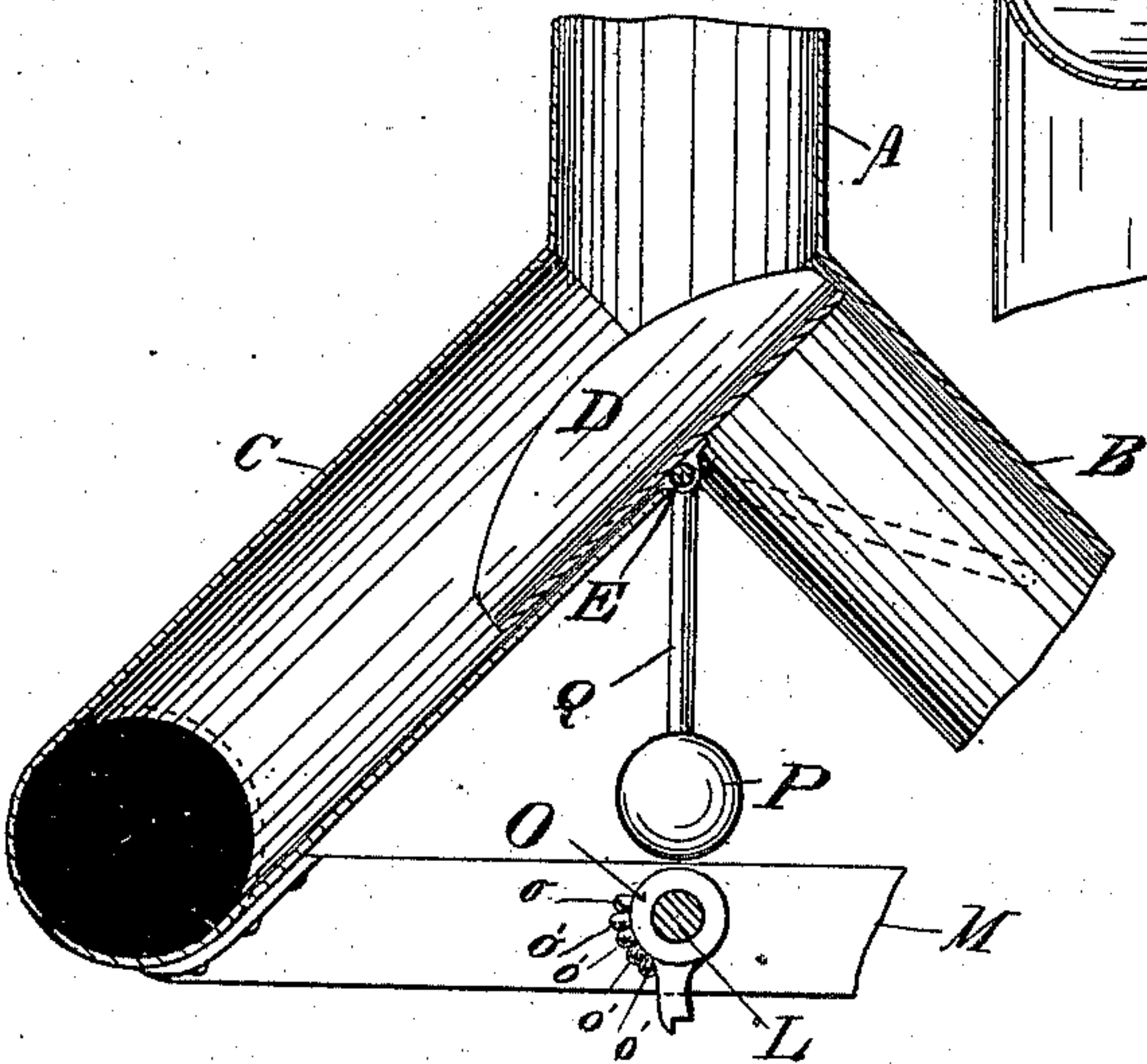


Fig. 3.



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# UNITED STATES PATENT OFFICE.

GEORGE HENKEL, OF SPRINGFIELD, OHIO.

## WATER CUT-OFF.

SPECIFICATION forming part of Letters Patent No. 470,489, dated March 8, 1892.

Application filed November 4, 1891. Serial No. 410,873. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE HENKEL, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Water Cut-Offs, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain new and useful improvements in water cut-offs; and the object of my improvements is to provide means to direct a stream of water from one conduit into another, such means being operated automatically by a regulated quantity of water passing through the first conduit, whereby the stream will flow through one conduit for the desired length of time and then be directed automatically into another conduit. The water discharged from the roof of a building during a rain-storm carries with it the deposits of dust and other matter lying on said roof, causing the first portion of the stream to be unfit for delivery to the cistern. It is my object to deliver this initial portion of the stream discharged from the conduit upon the ground or elsewhere till the stream runs clear and then deflect the stream into the cistern, the first portion of the stream acting, however, to operate automatically the deflecting mechanism.

Further peculiarities will hereinafter appear, and be particularly pointed out in the claims.

In the accompanying drawings, on which like reference-letters indicate corresponding parts, Figure 1 represents a portion of the discharge-pipe from the roof, its branch pipes, and my improvements applied thereto; Fig. 2, an edge view of my improvements, portions of the pipe adjacent thereto being broken away to illustrate the operation thereof; and Fig. 3 a sectional view of the conduits, the parts being shown as adapted to deliver into the cistern.

The letter A designates the discharge-pipe from the roof of a building, provided with branch conduits B and C, adapted to deliver the stream upon the ground and to the cistern, respectively. At the junction of these branch conduits is mounted pivotally or otherwise a deflector D, adapted to deliver the water from one conduit to the other, accord-

ing to its adjusted position. The axle E of the deflector is provided with an arm F, the lower end G of which is engaged with suitable mechanism to retain the deflector in a position to discharge the water upon the ground for a certain length of time, depending on the size of roof from which the water is discharged. Any suitable mechanism may be employed to operate this deflector; but I will now describe one form, consisting of a wheel H, having buckets adapted to receive the water from the conduit B and mounted on a shaft I, carrying a worm J, engaging with a screw-gear K, mounted on a shaft L, supported by bearings M, as shown in Figs. 1 and 2. Upon the shaft L is loosely and rotatably mounted one or more rings or collars O, each having a lug or projection adapted to engage with the adjacent collar on one side, the last collar of the series being adapted to engage with the lever-arm F of the deflector and act as a catch or detent for the same, the same being under the influence of the gravitating weight P, acting on the axle E by the arm Q or otherwise to throw the deflector into the position shown in Fig. 3, and thus deflect the stream from one branch of the conduit to the other. The screw-gear K is also provided with a lug or projection k or otherwise adapted to engage with the first of the series of collars O when rotated in the direction of the arrow, Fig. 1. The wheel H will rotate readily in the stream of water and bring the projection k of the gear-wheel K into engagement with the lug o of the first collar and cause it to rotate there-with after one revolution of the wheel from the position shown in Figs. 1 and 2. The lug o will engage with the adjacent lug o' on the next revolution of the wheel in the direction of the arrow Fig. 1, and so on, the succeeding collars and lugs engaging with each other till the last collar is rotated to free the arm F and allow the deflector to rotate on its axis under the influence of the gravitating weight P to the position shown in Fig. 3. The water descending from the roof will then be directed into the cistern.

It will be observed that by means of the collars O and the ratio of the gear K to its worm the water-wheel will rotate a sufficient length of time to allow the discharge of the dirty water from the roof. More or less of these



collars O may be employed, and thus the length of time and also the amount of water discharged may be regulated according to the size of roof or the amount of dirt deposited thereon. In any case, however, the device operates automatically and without other attention after being set.

When it is desired to rotate the deflector and reset it to discharge into the conduit B, the collars O are reversed by hand till they are in the position shown in Figs. 1 and 2, in which they will engage successively with each other till all revolve together in the direction of the arrow, Fig. 1, and free the deflector-arm from its engagement with the last of the series.

While I have described my device as adapted to the use of conduits for rain-water and applied to buildings, I do not wish to limit it to this use, since it is evident that it may be employed for other purposes; also, I wish to be understood as laying claim, broadly, to a deflector adapted to direct a stream of water from one direction or conduit into another, such deflector being operated automatically by one portion of the stream to direct a succeeding portion in another direction.

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

1. In a water cut-off, the combination, with an entering conduit and branch conduits discharging therefrom, of a pivoted deflector mounted at the junction of the said conduits, a lever-arm carried by the said deflector, a catch for said arm, means to operate said deflector when freed from said catch, a series of interlocking pieces adapted to engage successively with each other and finally with said catch, and means mounted in the path of the stream adapted to operate the first of said series.

2. In a water cut-off, the combination, with an entering conduit having discharge-openings, of a pivoted deflector adapted to deflect the water from one discharge-opening and prevent its exit from the other alternately, a series of collars each having a lug adapted to engage with the succeeding collar to rotate in connection therewith, a supporting-axle for said collars, interconnections between the last of said series of collars and said pivoted deflector to operate the latter, a screw-gear adapted to engage with the first of said series of collars, a worm meshing with said gear, and a water-wheel to rotate said worm and mounted in the path of the stream, whereby the rotation of said water-wheel will effect the operation of said deflector after a predetermined length of time or quantity of water has passed through said wheel.

3. In a water cut-off, the combination, with a water-conduit having discharge-openings and a deflector mounted in said conduit, of a plurality of collars adapted to interlock with each other and rotate as one piece, a support for said collars adapted to receive a more or less number of the same, an intermediate connection between the last of said collars and said deflector, means to operate the deflector, a water-wheel mounted in the path of the stream, and an intermediate connection between said water-wheel and the first of said series of collars, whereby the rotation of said wheel will continue a period of time corresponding to the number of collars before actuating said deflector.

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

GEORGE HENKEL.

Witnesses:

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V. Y. SMITH.