

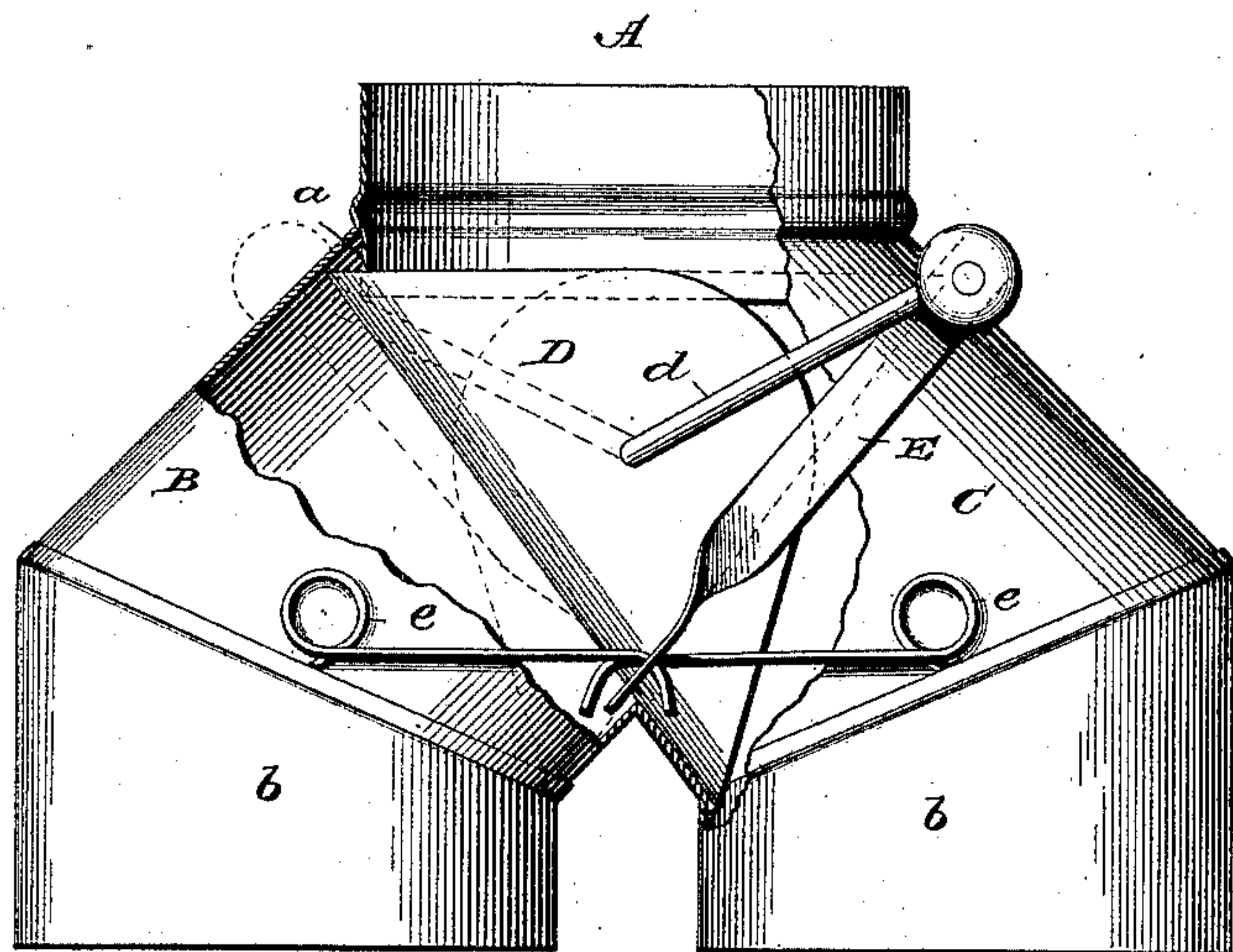
(Model.)

W. A. SMITH & W. W. DUTTON.  
CUT-OFF FOR PIPES.

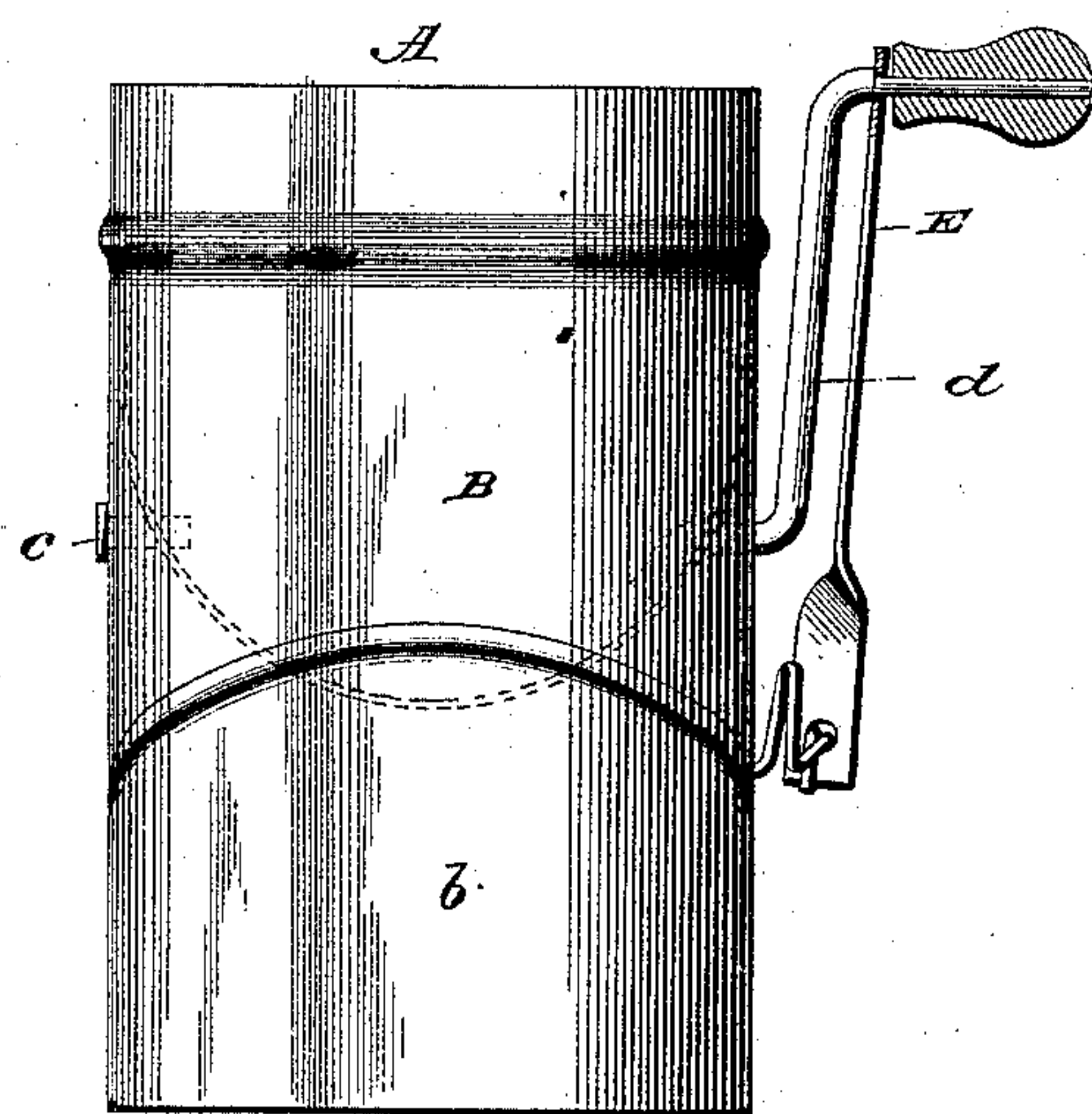
No. 424,368.

Patented Mar. 25, 1890.

*Fig. 1.*



*Fig. 2.*



*William A. Smith.*  
*and*  
*William W. Dutton.*

Witnesses

*L. S. Elliott.*  
*W. Johnson*

Inventor

By Their Attorney

*W. W. Dutton*



# UNITED STATES PATENT OFFICE.

WILLIAM A. SMITH AND WILLIAM W. DUTTON, OF LIMA, OHIO; SAID  
DUTTON ASSIGNOR TO SAID SMITH.

## CUT-OFF FOR PIPES.

SPECIFICATION forming part of Letters Patent No. 424,368, dated March 25, 1890.

Application filed March 20, 1888. Serial No. 267,905. (Model.)

*To all whom it may concern:*

Be it known that we, WILLIAM A. SMITH and WILLIAM W. DUTTON, citizens of the United States, and residents of Lima, in the county of Allen and State of Ohio, have invented a new and useful Cut-Off for Pipes, of which the following is a specification.

Our invention relates to rain-water cut-offs; and it consists in the improvements hereinafter described and set forth, whereby a simple and efficient arrangement is provided that will enable the cut-off plate to be readily and conveniently operated and automatically locked in position at the limit of its throw in either direction by means of springs, which are connected to the handle-bar by a link, the upper portion of which is adapted to lie to one side of the pivots of the cut-off plate, so as to hold the cut-off plate as shown.

Prior to our invention rain-water cut-offs have been devised wherein a central supply-pipe communicating with diverging branches, the flow being controlled by a movable cut-off plate pivotally mounted within the device and controlled by operating means located externally at one side. In one leading instance one of the pivots was extended to form a vertical crank-handle freely moving in an arc of a circle, and retained at the limit of its movement in either direction by engaging the recessed portion of a wire loop located horizontally on the side of the cut-off device. Another arrangement of cut-off operating means consists in a flattened head on one of the pivots, notched on its under side for the passage of the horizontal portion of a spring wire having its ends secured to the outer face of the cut-off, the disposition of parts being such that said plate cannot be turned from one inclined position to another without meeting with some resistance from said spring as said head passes its dead-center.

Our improvement will be readily distinguished from such prior construction in that we provide an extended crank for the convenient and ready operation of the cut-off plate and at the same time connect the same by means of a link with a flexion spring independently located relative to said crank, and peculiarly formed to positively throw

and held automatically and retain the crank and cut-off plate when the crank passes its dead-center and retain said plate in either of its cut-off positions. These objects are attained by the improved construction described and claimed in this specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side view, partly in section, of a cut-off device embodying our improvements; and Fig. 2 an end view.

The main body of our improved cut-off device consists of a short section of inlet-pipe A, the lower terminal portion of which extends for a short distance within the upper part of the converged pipes B C, to present an internal stop-flange *a*. From the lower portion of each branch-pipe B C depends a short vertical flange *b*, for connection with continued pipes.

Within the device is located a cut-off plate D, of concave form, the vertical side portions of which have pivots *c d* seated in the body. This said cut-off section, as will be well understood, is designed to be moved to either of two positions, so that it will close the communication between the main section A and either of the branches alternately, as will be apparent. One of the pivots *d* is extended and bent to form a crank-handle, which occupies the relative position shown. On one side of the body and on each portion B C is secured one end of a horizontal wire *e*, looped adjacent to its connection to give it a spring character, and having its free end extended beyond the center of the device and bent downwardly, as shown. The bent ends of both wires extend beyond each other and are embraced by the lower end of a link E. This latter consists of an extended flat strip, the lower portion of which is bent at a right angle relative to the balance, the upper portion of the strip being parallel with the side of the body and perforated for the bearing of the crank-handle, while the lower portion is perforated for the engagement of the free end portions of the wires *e e*, such engagement being maintained by the bent ends of the wires.

In operation, when the crank is moved in



an arc of a circle to change it from the position represented by full lines to that indicated by dotted lines, it will up to the point of its dead-center with the link-connection exert a tension upon the wires *e e*, and after passing said point will be thrown to the limit of its movement in the other direction, so that the cut-off will be automatically locked against accidental displacement or movement.

10 The construction set forth is not only simple and positive in its operation, but provides for the convenient movement of the crank-handle without the spring devices being inconveniently in the way. Moreover, the link and spring connection secures the maximum effect of the springs—something not attained in constructions wherein the spring acts directly upon the pivot.

What we claim is—

20 1. In a rain-water cut-off, the main supply and converging pipes and pivoted cut-off, arranged relatively to the same, so that said cut-off abuts against the lower portion of the supply-pipe, a combined handle and pivot at right angles with the cut-off, and a link carried by the projecting end of the handle and adapted to engage at its lower end with the free ends of springs *e e*, the opposite ends of said springs being rigidly secured to the converging sections below the cut-off, so that the free ends of the springs will be below the pivots of the cut-off, substantially as set forth.

2. In a rain-water cut-off, the combination

of the main and converging pipes and pivoted cut-off, arranged relatively to the same, combined handle and pivot at right angles to the cut-off, and a link carried by the projecting end of the handle and adapted to engage at its lower end with the free ends of springs *e e*, looped and rigidly secured to the converging sections, so as to exert at all times a downward pull upon the link and the handle, substantially as set forth.

3. The combination, with a rain-water cut-off, of a pivoted plate working therein, a spring secured on the side of the cut-off below one of the pivots, the latter being extended to form a handle, and a link connected to said handle and engaging the spring to retain the plate, substantially as set forth.

4. The combination, in a cut-off, of main and branch sections, a cut-off plate pivoted as described and having one of its pivots extended to form a crank, springs *e e*, secured to said branch section, the same being looped as shown and provided with free bent ends, which are adjacently located or crossed, and a link perforated for engagement with the ends of the springs and with the crank, substantially as set forth.

WILLIAM A. SMITH.  
WILLIAM W. DUTTON.

Witnesses:  
A. S. GRAHAM,  
CYRUS ANGELL.