No. 725,451. PATENTED APR. 14, 1903.

J. KELLER.

AUTOMATIC GATE VALVE FOR RAIN CONDUCTOR PIPES.

APPLICATION FILED DEC. 11, 1902.

NO MODEL.

Fig. 1.

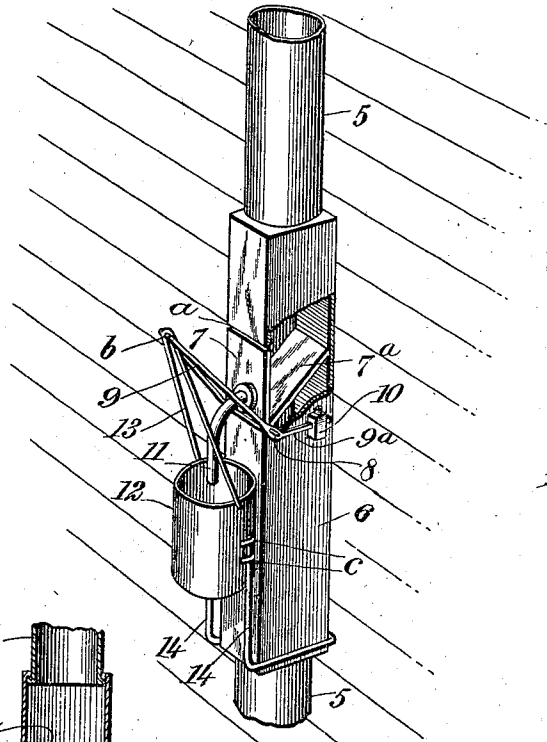


Fig. 2.

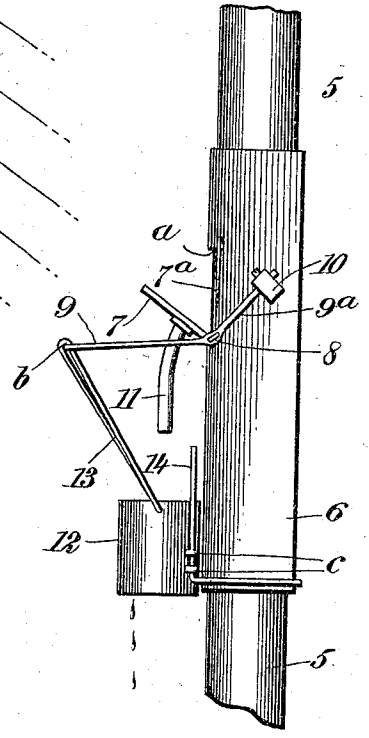
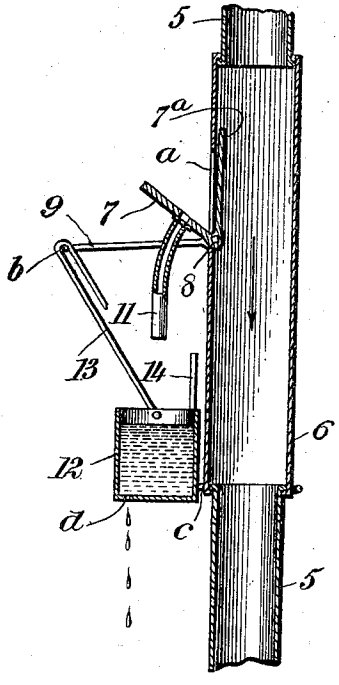


Fig. 3



WITNESSES:

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AUTOMATIC GATE-VALVE FOR RAIN CONDUCTOR-PIPES.

SPECIFICATION forming part of Letters Patent No. 725,451, dated April 14, 1903.

Application filed December 11, 1902. Serial No. 134,772. (No model.)

To all whom it may concern:

Be it known that I, JOHN KELLER, a citizen of the United States, and a resident of Ottoville, in the county of Putnam and State of Ohio, have invented a new and Improved Automatic Gate-Valve for Rain Conductor-Pipes, of which the following is a full, clear, and exact description.

Rain-water when pure is preferably used as a potable liquid in many places throughout the country, it being transferred, as it falls upon the roofs of houses, into cisterns, from which the water is elevated as required.

Owing to the impurities of different kinds that during dry weather fall upon the house-roof the rain-water becomes contaminated therewith and in some localities is rendered so impure as to be unfit for drinking or cooking purposes.

The object of this invention is to provide a novel, simple, and inexpensive attachment for a rain-water drain-spout or conductor-pipe that will automatically operate to prevent the fouled water that first washes the roof of a building from passing into the storage-cistern or like receptacle, and after a predetermined quantity of the rainfall has cleansed the roof to change the flow of clean water, so as to conduct it into the storage-receptacle.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended 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 figures.

Figure 1 is a perspective view of the improvement applied to a rain-water conductor and shown in normal adjustment for cutting off the flow of impure rain-water from the storage-receptacle. Fig. 2 is a side view of the attachment, showing the parts adjusted for the flow of clean water from the roof of the building to a storage-receptacle; and Fig. 3 is a sectional side view of the device, representing the working parts adjusted as indicated in Fig. 2.

The rain-water conductor 5, that is shown broken away, in complete form extends, as usual, from the gutter or eaves-trough on a building (not shown) toward the ground and thence to a receptacle for conveyance of rain-water into the latter.

The improvement is introduced into the rain-water conductor 5 as a portion thereof and may be located at any desired point therein. Preferably the hollow body portion 6 of the improved attachment is rectangular in cross-section, having suitable length, and is connected at its ends in a water-tight manner with the ends of the conductor 5. In the front wall of the body portion 6 an opening *a* is formed, the upper and lower edges of which are parallel with each other, and, as indicated in Fig. 1, the opening *a* extends the full width of the passage through the body 6.

A two-part valve is an essential detail of the attachment and, as shown, comprises two plate-like gates 7 7^a, joined together at their lower transverse edges, preferably at an angle of forty-five degrees. The two-part valve is held to rock in the opening *a* by a shaft 8, affixed to the valve at the angle between the two gates 7 7^a, said shaft having projecting journal ends that loosely pass through opposite perforations in the side walls of the body 6, whereby the gates are held to rock, and thus dispose either gate within the opening *a*, which they nearly equal in dimensions.

Two rock-arms 9, preferably bent from a single metal rod, so as to provide a journal *b* where they diverge from each other, are oppositely affixed upon the projecting journal ends of the transverse shaft 8, one of said arms being extended beyond the journal-shaft, as at 9^a, to receive an adjustable weight 10.

Upon the gate 7 one end of a water-delivering spout 11 is secured, the spout passing through the gate, so as to receive water that may be deposited in the angular space defined by the divergent gates 7 7^a and the opposite side walls of the conductor 5, between which said gates rock. The spout 11 is bent so as to project the free lower end thereof above a water-receiving vessel 12, the bail-handle 13 of which is rockably connected with the journal *b*.

Two stationary guide-bars 14 are held vertically at the front of the body 6 near the corners thereof, and these guides are loosely engaged by looped projections *c*, secured upon

the exterior of the vessel 12, so that the latter vessel is adapted for a vertical sliding movement upon the guides. Normally the empty vessel 12 is held elevated on the guides 14 by the gravity of the weight-block 10, the descent of said weight and of the arm 9^a being defined by the contact of the gate 7^a upon the rear wall of the body 5, as represented in Fig. 1. In the bottom wall of the vessel 12 a small perforation d is formed, through which water may slowly drop and gradually empty the vessel if the latter is filled with water.

In operation, assuming that the device is adjusted as shown in Fig. 1, the vessel 12 being empty, then the contact of the gate 7^a with the rear wall of the hollow body 5 disposes the gate 7 in vertical position and within the opening a. The fall of rain upon the roof of the building having the improvement will wash the roof, and this impure water will be arrested and occupy the space between the gates 7 7^a. An accumulation of foul water in said space is conveyed into the vessel 12 through the spout 11 and adds weight to the vessel, so that the heft of the weight-block 10 will be preponderated by the accumulation of water in the vessel and the latter will descend until arrested at the bottom ends of the guides 14, which movement will rock the gate 7^a into the opening a and permit a free flow of clean water down the conductor 5.

The perforation d may be closed until the rainfall ceases and then be opened to permit the gradual escape of the liquid contents of the vessel 12, or if the perforation is quite fine and the vessel is of a capacity to require several hours to empty it through the perforation the latter may remain open continuously.

As soon as the vessel 12 is emptied sufficiently to allow the weight-block 10 to overbalance the vessel and the bail thereon said vessel will be automatically elevated and the device will be adjusted for a repetition of the operation.

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

1. The combination with a hollow body having an opening on one side, of a valve comprising two angularly-divergent gates, held together to rock at their junction in said opening, the front one of said gates being normally held over said opening, and the other diagonally disposed across the central opening of the pipe to close the same, a spout in the front one of said gates, a guided vessel into which the spout discharges water from the space between the gates of the two-part valve, a lever for rocking said gates, means for pivotally supporting the vessel at one end of said lever, and a weight on said lever to counterbalance the weight of the bucket, as specified and shown.

2. The combination with a hollow body, forming a portion of a rain-conductor and having an opening in one wall thereof, of a valve comprising two angularly-divergent gates, a journal-shaft adapted to pivot the valve in the opening so as to rock therein and impose the inner gate diagonally against the wall of the hollow body opposite the opening therein and bring the outer gate to a position closing said opening, a spout in the outer gate, a guided vessel into which the spout discharges water from the space between the gates, and means for loosely connecting the vessel with the journal-shaft, so as to rock the valve and open the passage through the body, when the vessel is surcharged with water, and means for rocking said valve and counterbalancing said bucket.

3. The combination with a tubular rain-conductor, and a rectangular walled body forming a part of the conductor, said body having a rectangular aperture in one of the walls, of a valve comprising two angularly-divergent gates, a journal-shaft engaged with the valve at the junction of its two gates, said shaft pivoting the valve in the opening so as to rock therein and impose the end of one gate upon a wall of the hollow body opposite the opening, a spout in one of said gates, a guided vessel having a bail-handle, and also having a fine perforation in the bottom wall, a forked arm fixed on the ends of the journal-shaft and loosely connected with the bail-handle, one member of said forked arm extending beyond the journal-shaft, and a counterbalance-weight adjustably mounted on said extension.

4. The combination with a hollow body forming a portion of a rain-conductor and having an opening in one wall thereof, of a valve comprising two angularly-divergent gates, a journaled shaft at the lower end of the opening, adapted to pivot the valve at that point so as to rock in said opening and impose the inner gate diagonally against the wall of the hollow body opposite the opening, and bring the outer gate to a position closing said opening, a spout in the outer gate, a vessel into which the spout discharges water from the space between the gates, means for loosely connecting the vessel with the journal-shaft whereby to rock the valve and open the passage through the body when the vessel is surcharged with water, a lever for rocking said valve, and an adjustable weight carried on said lever for counterbalancing the weight of said bucket, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN KELLER.

Witnesses:
HORACE R. REEVE,
JOHN F. LINDEMANN.