

A. W. MORGAN.  
Self-Adjusting Filterer and Cut-Off.

No. 219,591.

Patented Sept. 16, 1879.

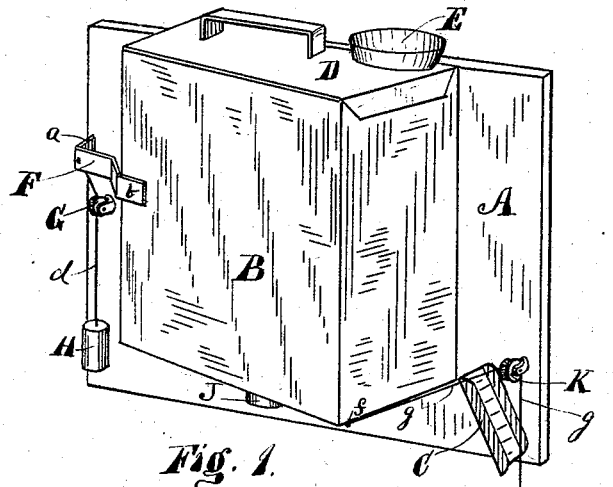


Fig. 1.

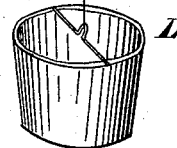


Fig. 2.

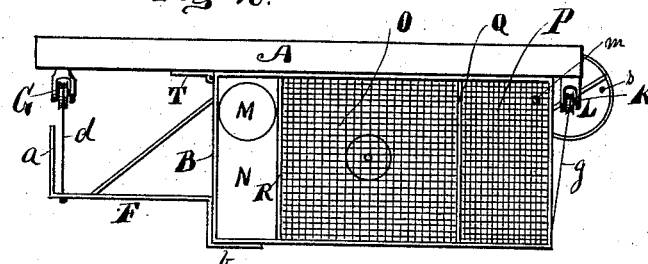


Fig. 3.

WITNESSES;  
C. H. Dike  
G. Remutt.

INVENTOR.  
Alfred W. Morgan  
Per  
C. H. Dike  
his Atty

# UNITED STATES PATENT OFFICE.

ALFRED W. MORGAN, OF INDIANAPOLIS, INDIANA.

## IMPROVEMENT IN SELF-ADJUSTING FILTERER AND CUT-OFF.

Specification forming part of Letters Patent No. **219,591**, dated September 16, 1879; application filed August 2, 1879.

*To all whom it may concern:*

Be it known that I, ALFRED W. MORGAN, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improved Self-Adjusting Filterer and Cut-Off, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to provide a self-operating device for filtering water for cisterns, by means of which the dirty water from a roof is allowed to pass off, the clean water allowed to pass through the filterer, and the filterer adjusted after a rain so that no water can pass through it until the roof is first washed.

My invention consists, first, in the new construction and arrangement of the filtering-box and filtering material; second, in the new construction of the self-adjustable cut-off; and, third, in the new combination of elements which are deemed essential in my newly-organized automatic cut-off and filterer, as will be hereinafter first fully described in the specification, and then set forth in the claims.

In the accompanying drawings, in which like letters of reference in the different figures indicate like parts, Figure 1 represents a perspective view of my self-operating filterer and cut-off, showing its position when no water is passing through it. Fig. 2 is a top view of the same, showing it in position for water to pass through; and Fig. 3 is an upright vertical section of the same, showing the general arrangement of parts on the inside.

A represents the side of a building, or a board fastened thereto, to which the filter-box B is secured by hinges T T at one of its vertical corners, as shown in Figs. 2 and 3. The hinges T T permit the filter-case B to swing away from the wall, as shown in Fig. 1, or to be adjusted close to the wall, as shown in Fig. 2.

The arm F is soldered or otherwise made fast to the filter, as at *b*, and projects back, and is provided with a bent arm, *a*, as shown, for the purpose of forming a stop and preventing the filter from swinging too far away from the building at its front side.

The cord *d* is attached to the arm F and passes over a sheave, G, attached to the board

A, and is provided with a weight, H, which is designed to overbalance the bucket L at the front of the filter. The cord *g* is secured to the filter at *f*, and passes over the sheave K, and is secured to the bucket L, as shown, the operation of which will be hereinafter fully described.

The filter B is divided into several compartments, S, V, U, and N, by the solid partitions R Q and perforated partitions or bottoms P O, as shown in Fig. 3.

The bottom of the filter is provided with a spout, M, which leads from the chamber N to the cistern or reservoir, and the chamber V is provided with two openings in the bottom, as follows, to wit: first, the opening J, which is provided with a cap or plug, to be removed, when it becomes necessary, to clean out any dirt or sediment that may accumulate therein; and, second, the small opening *m*, through which a small quantity of water is permitted to leak into the bucket L, which will also be described hereinafter.

The trough C is attached to the side of the board A or building, as shown, and is made adjustable backward and forward to conduct a large or small quantity of water into the bucket L, as may be desired. The cover D is provided with an opening, E, at one end to permit the water to flow into the chamber S.

The operation of my improved self-adjustable filter and cut-off is as follows, to wit: The board A or filter B is attached to the side of the house so that the opening E will come immediately under the end of the water-spout from the roof, and the opening or spout M immediately over the spout that leads to the cistern or reservoir. When in this position the weight H and cord *d* overbalance the bucket L and draw the front side of the filter away from the board A or building, as in Fig. 1, thus leaving the end of the spout from the roof (which is not shown) directly over the trough C. When a shower occurs the dirty water from the roof runs down the spout (not shown) and is delivered partly on the trough C, which is adjustable, and partly on the ground. After a sufficient quantity of water has flowed into the bucket L the bucket overbalances the weight H and draws the filter up against the board A or building, as shown in Fig. 2. The

clean water from the roof then flows through the opening E at the top of the filter into the chamber S and passes through the perforated bottom P into the chamber V below. The water then rises in the chamber U, and is filtered in its passage through the movable perforated bottom O and sponge X until the chamber U is filled to the top of the partition R, over which the filtered water runs in the direction of the arrow *e* into the chamber N, from which it is conducted into the cistern or reservoir by means of the pipe M.

The clean water will thus continue to flow through the filter into the cistern until the water ceases to run from the roof and the water in the chambers S, V, and U has all run out through the hole *m* at the bottom into the bucket L, after which the water in the bucket L leaks out through the hole *s* until the weight H overbalances the bucket, when the filter is again moved to one side, as in Fig. 1, ready to have the next shower wash off the roof before the filter adjusts itself for the purpose of conducting the clean water to the cistern.

It will be seen from the foregoing that the water at all times when it is raining is leaking from the bucket through the hole *s*, and at the same time water is leaking from the chamber V through the hole *m* into the bucket to keep up the required weight of water in the bucket; but when the water leaks out of the bucket the weight H predominates and cuts off or adjusts the filter.

The movable perforated plate O in the chamber U is provided with a rod, *w*, for the pur-

pose of drawing out the perforated bottom and the filtering-sponge X when it is desired to do so.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a self-adjusting filterer and cut-off, the filter B, hinged to the board A or building, and provided with an arm, F, combined with the weight H and bucket L, as and for the purpose specified.

2. In a self-adjusting filterer and cut-off, the filter-box B, provided with the chambers S, V, U, and N, as shown, combined with the stationary perforated bottom P, the movable perforated bottom O, and sponge X, as and for the purpose specified.

3. In a self-adjusting filterer and cut-off, the filter-box B, provided with a drip-opening, *m*, and hinged at T T to the board A or building, combined with the bucket L, also provided with a drip-hole, *s*, substantially as and for the purpose specified.

4. In combination with a swinging filter, B, operated by a weight, H, to swing open, and the water in the bucket L to swing shut, the adjustable trough C, as and for the purpose specified.

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

ALFRED W. MORGAN.

Witnesses:

E. O. FRINK,

G. H. RENNETT.