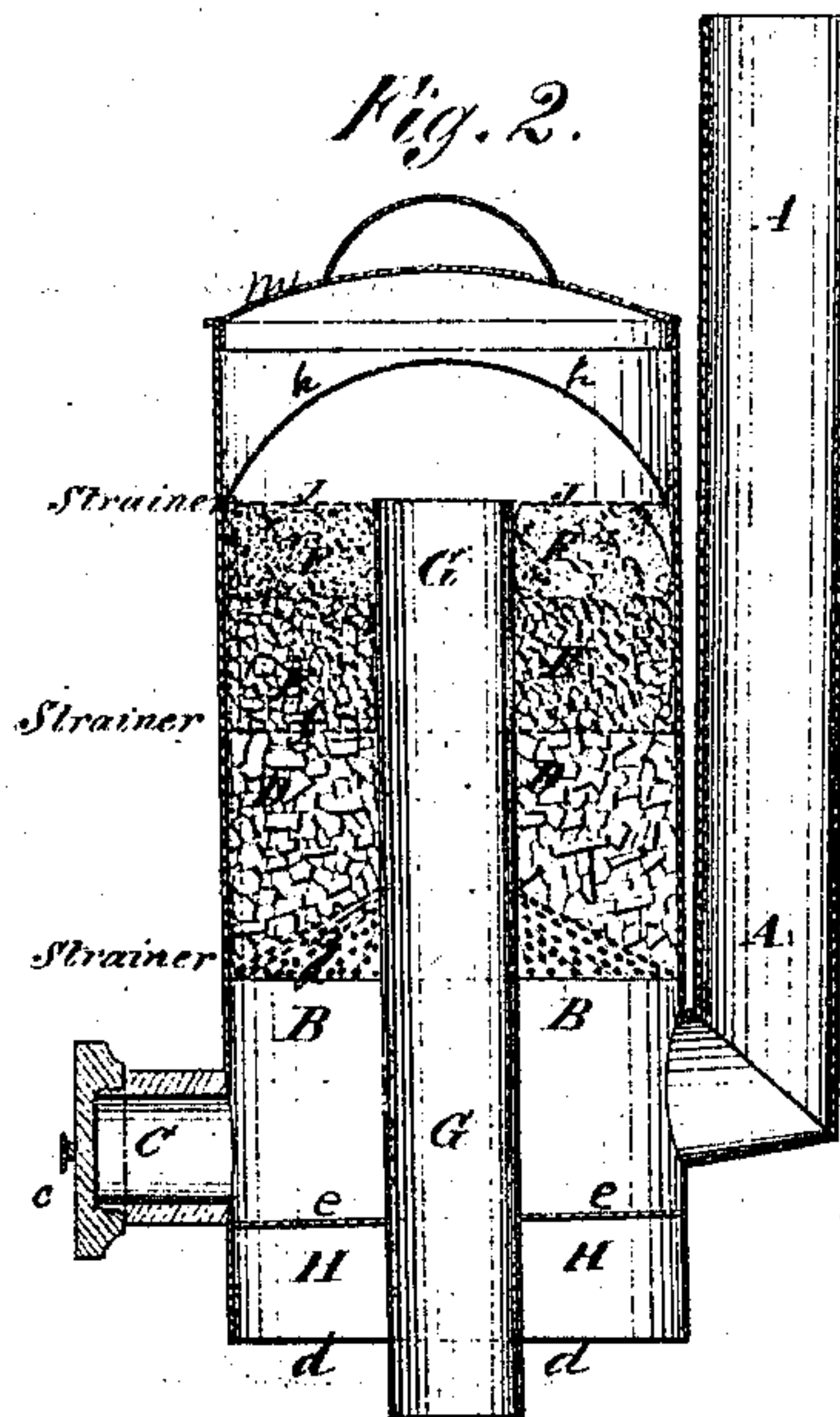
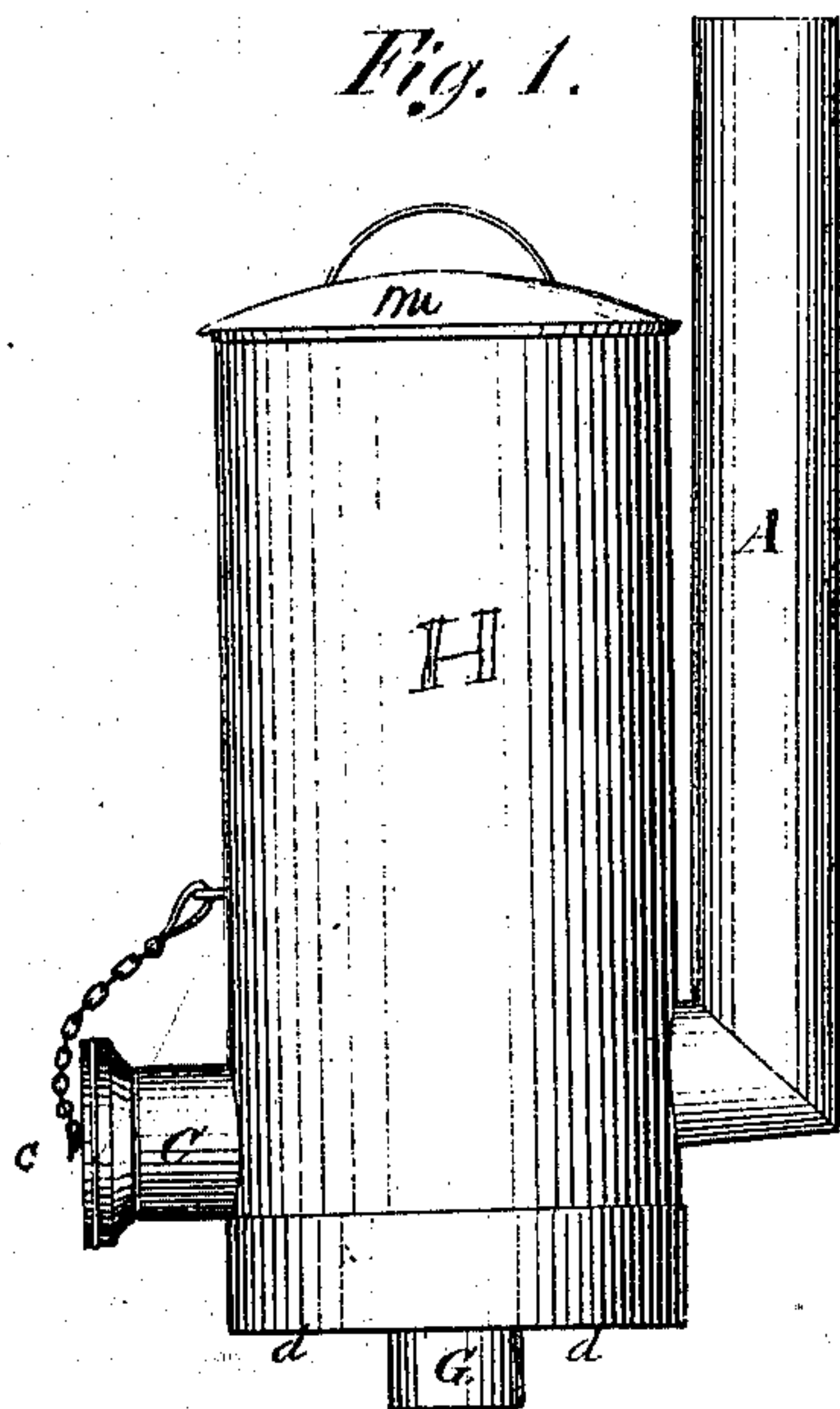


F. Laughlin,

Filter.

No. 100418.

Patented Mar. 1. 1870.



Patrick Laughlin

Inventor.

by A M Stout
attly in fact

Witnesses.

Wm S. Mumford

J M Doremus
H

United States Patent Office.

PATRICK LAUGHLIN, OF DANVILLE, KENTUCKY.

Letters Patent No. 100,418, dated March 1, 1870.

IMPROVEMENT IN CISTERN-FILTERS.

The Schedule referred to in these Letters Patent and making part of the same.

I, PATRICK LAUGHLIN, of the town of Danville, county of Boyle, and State of Kentucky, have invented certain Improvements in Water-Filters, of which the following is a specification.

The first part of my invention relates to the devices by which water passing through the filter into the cistern is forced up against the force of gravitation through a series of strainers, and through a series of beds of gravel, sand, or charcoal, as well as through a sponge, so as to arrest and hold back earth, sand, or any other impurities contained therein.

The second part relates to the speedy and effectual removal of such earth, sand, &c., from the beds of sand, gravel, charcoal, and sponge, by the device herein described, by a reversed action of the water in the apparatus.

In the accompanying drawing—

Figure 1 represents a side view of the filter, and

Figure 2, a vertical sectional view of the body H of the filter-pipes G and A A.

The outward form of the apparatus in fig. 1 is so simple as to be easily understood, and the interior construction is pretty fully shown by fig. 2.

The pipe G is a simple hollow cylinder, fixed in the center of the interior of the body H, extending from the strainer J down through its floor or bottom *ee* to a point below its outer shell. This pipe is for the discharge of the water after it has passed through the filter. It has no holes or openings in it except those at its ends.

The pipe A A is for the conveyance of the water from the roof of a house, or elsewhere, into the filter.

It conducts the water into the chamber B B, which is the space between the bottom *ee* and the strainer *f*.

The pipe C is for the discharge of the water made dirty in the process of cleaning the filter before mentioned, and *c* is a cap with a female screw in it, by which that pipe is closed when the filter is in use.

When water is admitted from above through the pipe A into the chamber B B, the pipe C being closed by the cap *c*, the weight of the column of water in the pipe A forces the water in the chamber to pass up through the holes in the strainer or perforated plate *g*, and thence up through the bed D D of broken stone, gravel, or charcoal, and thence up through another perforated plate or strainer, *f*, and another bed, E E,

of said gravel or charcoal, and through a layer, F F, of sponge or of any other similar porous and filter substance, and thence through the strainer J, and then it will fall into the top end of the pipe G, and discharge from the lower end into the cistern or other receptacle provided for it.

The minute division and subdivision of each drop of water while it is being forced by the weight of the column in the pipe A through the series of perforated plates and beds of charcoal, sand, &c., subject it to both the chemical and mechanical action of these substances, to which the impurities of the water will adhere.

Then, when these beds of material have become loaded with the impurities of the water, they may be easily and quickly cleansed by opening the pipe C, for then the water in the body of the vessel H will sink and pass down through these, and discharge through pipe C, and to make this process more effectual, the cover *m* may be removed and a stream of water from above be allowed to fall upon the strainer, (or the strainer may be removed by the handle *h h*,) and pass downward in such quantities as may be desirable until the cleansing is effected.

The apparatus stands upright, as shown in the drawing, and the most obvious use of it is to filter rain-water from the roofs of buildings during its passage to cisterns, but it is needless to say that its use may be greatly varied so as to suit different situations and purposes.

The body of the shell and the perforated plates and the pipes may be made of any suitable material.

This apparatus is so simply constructed and may be so cheaply manufactured as to be within the reach of almost every housekeeper.

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

The body H, with the pipes A, G, and C, bottom *e e*, when constructed, arranged, and proportioned substantially as described, in combination with the strainers J *f g*, beds D and E, and the layer of sponge F, as set forth, for the purposes described.

PATRICK LAUGHLIN.

Witnesses:

JOHN SHELLEY,
J. R. NICHOLS.