

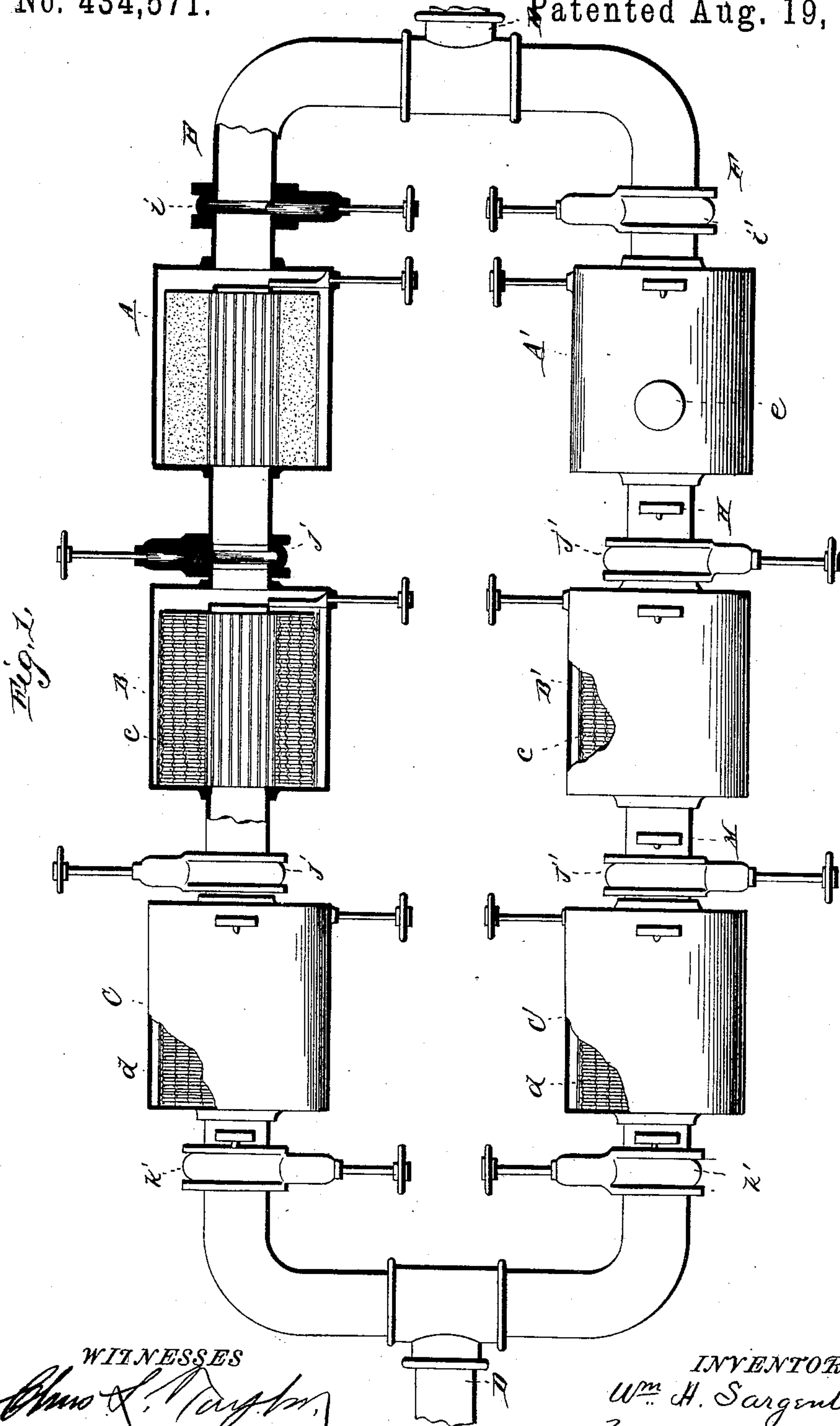
(No Model.)

2 Sheets—Sheet 1.

W. H. SARGENT.  
FILTER.

No. 434,571.

Patented Aug. 19, 1890.



WITNESSES  
*Chas. L. Taylor*  
*A. C. Jenkins*

INVENTOR  
*Wm. H. Sargent*  
by *O. W. Anderson*  
*his Attorney*

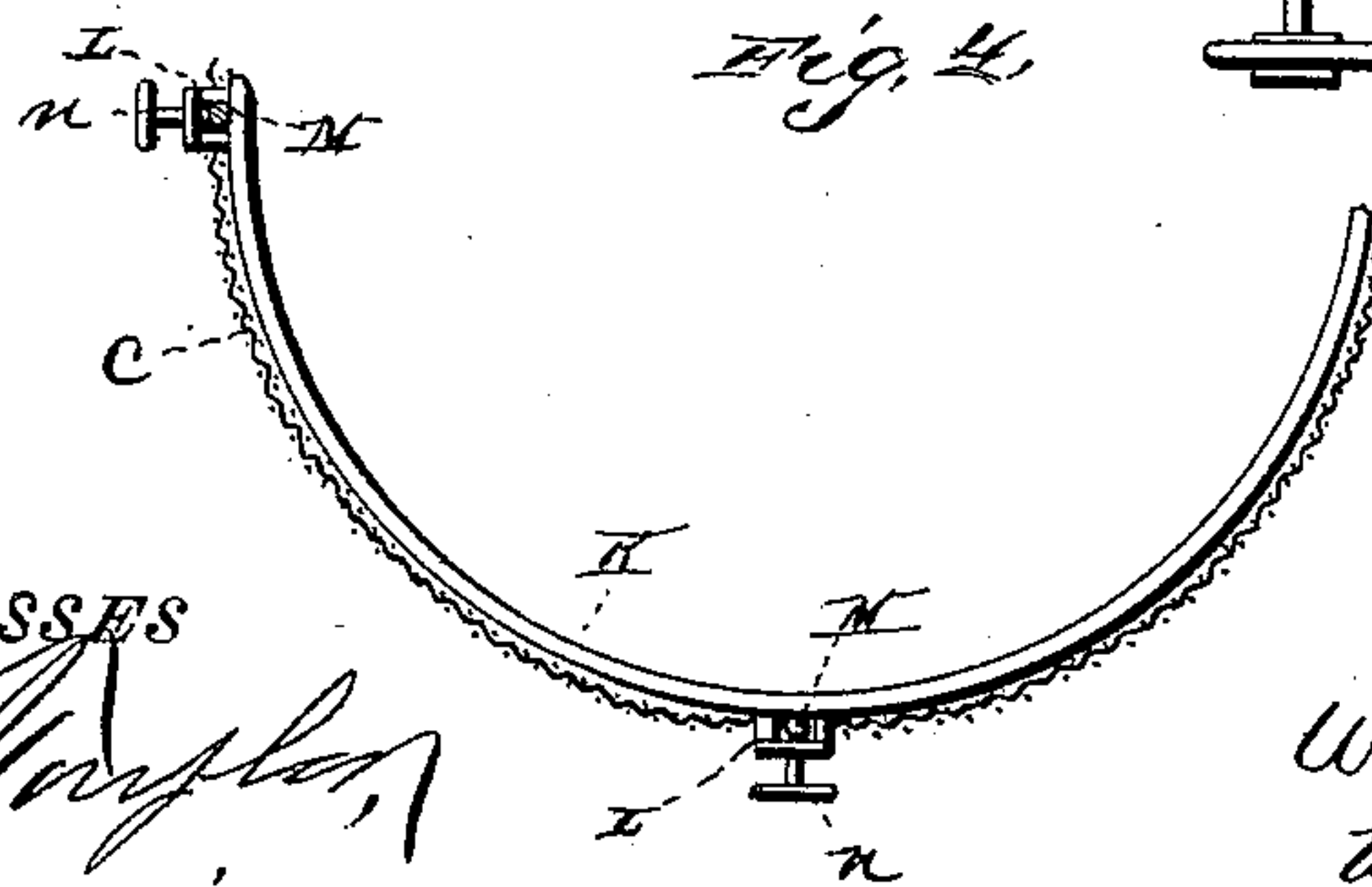
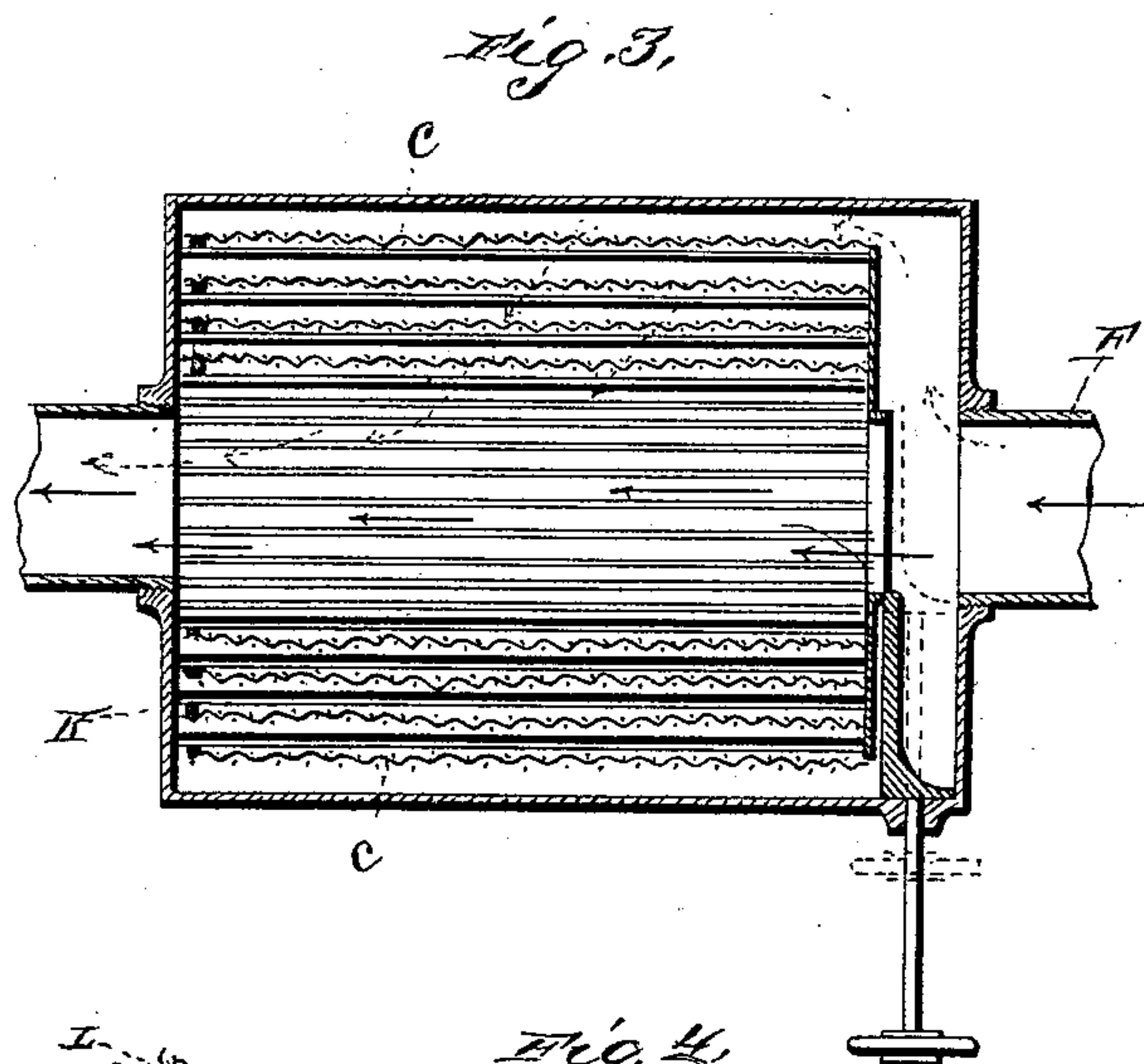
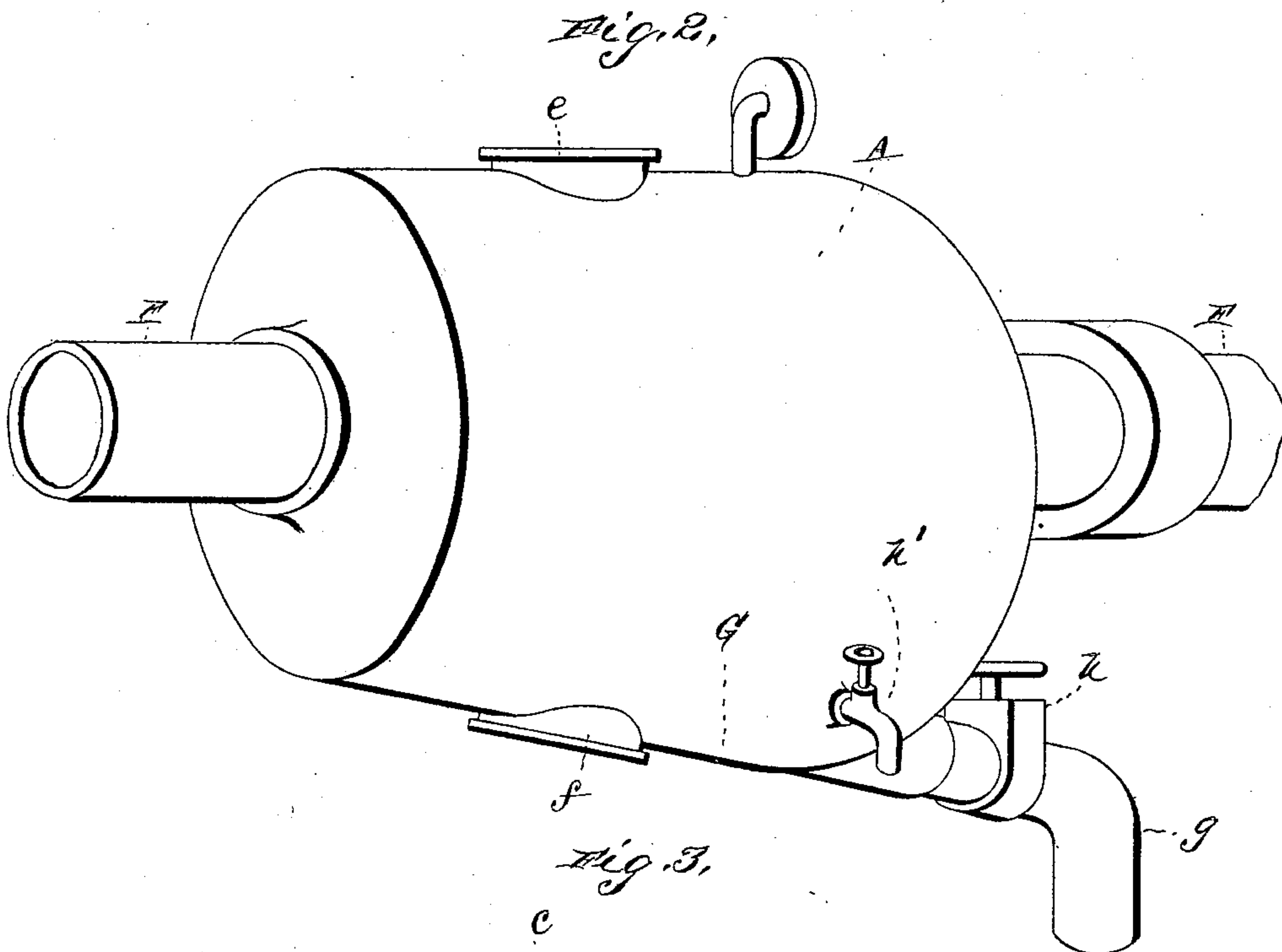
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*his Attorney*



# UNITED STATES PATENT OFFICE.

WILLIAM HENRY SARGENT, OF SOUTH WEYMOUTH, MASSACHUSETTS.

## FILTER.

SPECIFICATION forming part of Letters Patent No. 434,571, dated August 19, 1890.

Application filed March 19, 1890. Serial No. 344,495. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY SARGENT, a citizen of the United States, and a resident of South Weymouth, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Filters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of my filtering-chambers arranged in two series and shown in section. Fig. 2 is a perspective of one of the filtering-chambers. Fig. 3 is a detail of one form of screen employed. Fig. 4 is a detail of the means used for holding the screens in position.

My invention relates to improvements in water-filters, and particularly to that class of such articles as are used at pumping-stations, or wherever large quantities of water are used.

The object of the invention is to provide a device of the character named, which may be cleansed or renewed without stopping the pumps, which may be graded to any degree of filtering power, and which will be simple in construction, durable, and cheap.

With these objects in view my invention consists of filtering-chambers of different grades arranged in one or more series, each series being provided with valve arrangements whereby the water may be shut off from all or a part of the series and caused to flow therethrough in a reverse direction for the purpose of cleansing; further, in the provision in connection therewith of outlet-pipes and valves for the escape of waste water and impurities, and, finally, in the general construction and arrangement of the filtering-chambers, all of which will be hereinafter fully described and specifically claimed, reference being had to the accompanying drawings.

In the drawings A A' B B' C C' represent six of my filtering-chambers arranged in two series of three chambers each, the main supply-pipe D being formed in two branches E and F, one branch passing through each se-

ries of the chambers, the two branches again uniting after leaving the said chambers. The chambers A A', which are located nearest the pump or supply, are filled with any suitable loose filtering material. The chambers B B' and C C' are provided with one or more screens *c c d d*, such screens consisting of finely-woven wire-netting or of felt, or of felt placed between wire screens. If desired, the screens *c c* in chamber B B' may be of coarser material than the screens *d d* in chambers C C'. The chambers A A' are provided with openings *e e* for introducing the loose filtering material, and with outlets *f f*, by means of which it may be removed.

Each of the chambers is formed with an inclined bottom G, the lowest point in such incline being at the rear end of the chamber, at which point is provided an outlet communicating with pipe *g*, having the valves *h*, thus providing for the escape of the waste water used for cleansing the screens, the inclined bottom of the chamber causing such water and impurities, by reason of gravity, to escape into the outlet-pipe as soon as the valve therein is opened. The chambers are also provided with small faucets *h'*.

The pipes E and F are provided with the valves *i i'*, by the closing of which the water may be shut out from one or both series of chambers. The pipes are further provided at the head of each filtering-chamber with the valves *j j'*, by the opening of which the water may be made to pass directly through the pipes without entering the filtering-chambers. At the end of each series the pipes E and F are provided with valves *k k'*, which are kept open when both series are in use. When it is desired to cleanse either series of chambers without stopping the pumps, the valve *i* or *i'* is closed, thus stopping the water from passing through that series, which will cause the filtered water which has passed through the open series to flow through the closed series in the reverse direction, cleansing the chambers from impurities. If it is desired to renew the screens in either series, the valves *k* or *k'* and *i* or *i'* in such series may be closed, thus shutting the water entirely out of such series. The pipes E and F are also provided with the pressure-gages H, one for each chamber.



The screens are held in position in the filtering-chambers by means of the loose band K, which is provided at intervals with bifurcated arms L for holding in position the rods M, such rods serving to strengthen the screens and hold them in position. The band K engages the screens and clamps them in position by means of the thumb-screws n.

Although I have described the invention as consisting of two series of filtering-chambers—each series consisting of three—it will be understood that any number of chambers may be used in the series, or that but one series consisting of one or more chambers may be used, if desired.

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

1. A water-filter consisting, essentially, of one or more series of filtering-chambers connected with the supply-pipe, the first chamber in each series being provided with loose filtering material, the remaining chambers each consisting of an outer case, a filtering-chamber contained within, an outside and inside wall of perforated metal or wire, an open chamber inside and outside of such filtering-chamber, valve in head of chamber, and openings in the case for renewing the filtering material or screen, substantially as described.

2. A water-filter consisting, essentially, of one or more series of filtering-chambers connected with the supply-pipe, the first chamber in each series being provided with loose filtering material, the remaining chambers each consisting of an outer case, a filtering-chamber contained within, an outside and inside wall of perforated metal or wire, an open chamber inside and outside of such filtering-chamber, openings in the case for renewing the filtering material or screens, pressure-gages in the supply-pipes, and a series of valves for regulating the flow of water in each series of chambers, and for reversing the flow of the same, substantially as described.

3. A water-filter consisting of an outer case, a filtering-chamber contained within, an outside and inside wall of perforated metal or wire, an open chamber inside and outside of such filtering-chamber, valve in head of chamber, and openings in the case for renewing the filtering material or screens, substantially as described.

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

WILLIAM HENRY SARGENT.

Witnesses:

QUINCY L. REED.

WILLIAM H. REED.