

(No Model.)

H. F. CLAYTON & G. H. HOLDROYD.
FILTER.

No. 409,273.

Patented Aug 20, 1889.

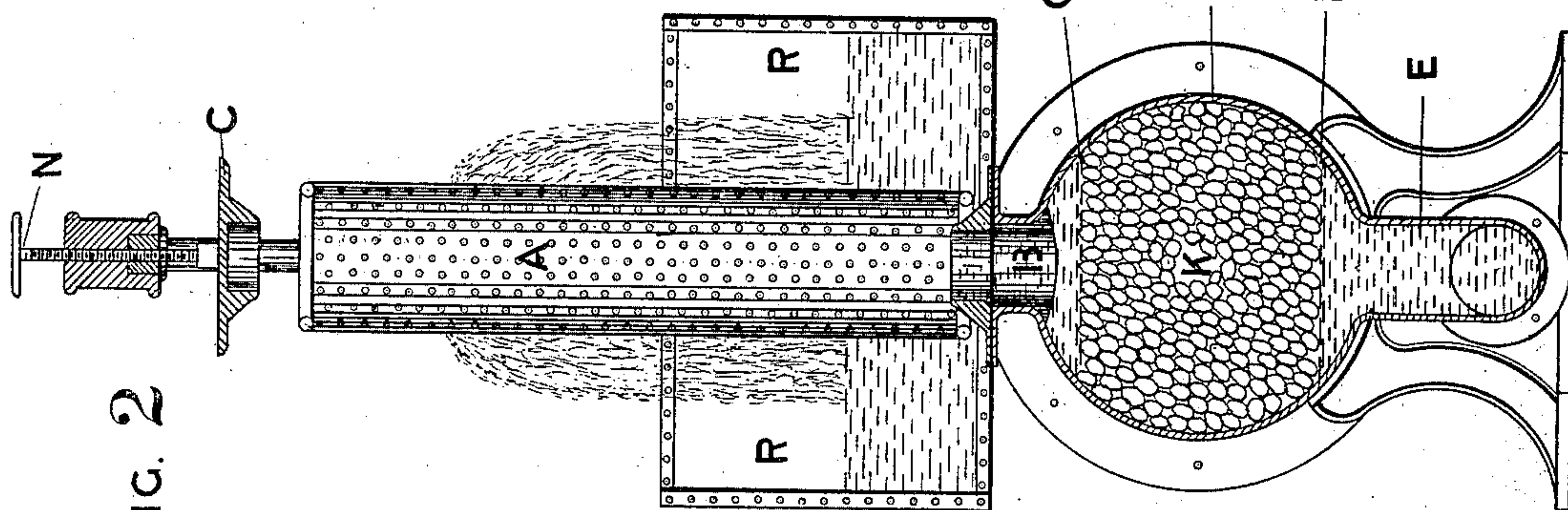


FIG. 2

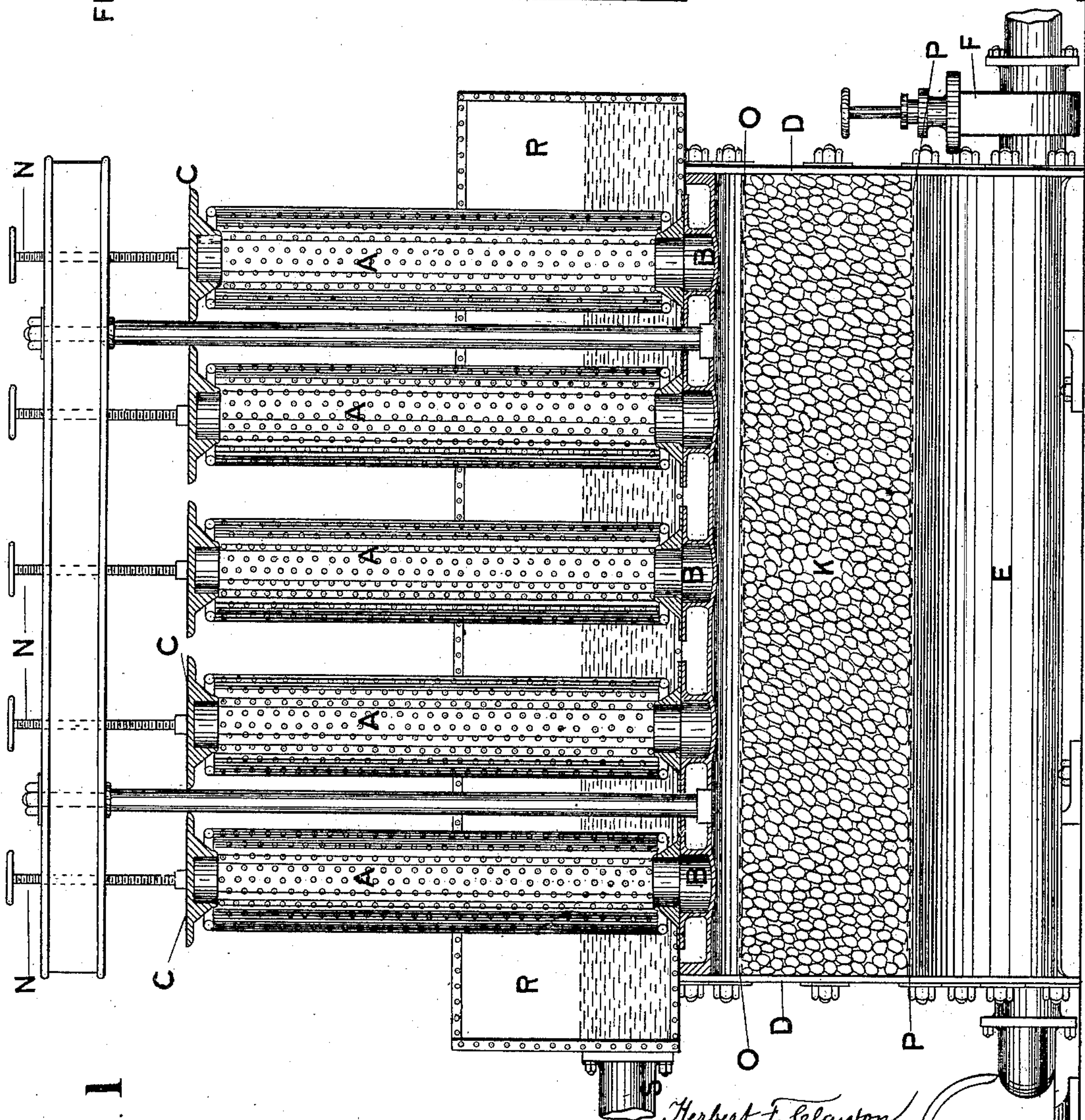


FIG. 1

Witnesses.

Wm. Norton
Shirley Belt.

Herbert F. Clayton
and George H. Holdroyd
Inventors.

by John J. Halsted & Son
their Attys.

UNITED STATES PATENT OFFICE.

HERBERT F. CLAYTON AND GEORGE H. HOLDROYD, OF HUDDERSFIELD,
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FILTER.

SPECIFICATION forming part of Letters Patent No. 409,273, dated August 20, 1889.

Application filed November 14, 1888. Serial No. 290,805. (No model.)

To all whom it may concern:

Be it known that we, HERBERT FITZROY CLAYTON and GEORGE HOLDEN HOLDROYD, subjects of the Queen of Great Britain, residing at Lockwood, Huddersfield, in the county of York, England, have invented a new and useful Improved Method of Filtering and Apparatus Therefor, of which the following is a specification.

This invention relates to an apparatus for filtering muddy or impure water; and it consists, essentially, in the combination of devices hereinafter described, and having for their object, first, partially or roughly filtering the muddy or impure water, the mud or sediment separated being retained below the filtering material and periodically discharged by flushing, and then causing the partially-filtered water to rise into cloth-covered perforated tubes, where it is still further filtered by being forced through the cloth, which can be easily removed in order to renew the same.

In order to enable our invention to be fully understood, we will describe how it can be carried into practice by reference to the accompanying drawings, in which—

Figures 1 and 2 are longitudinal and transverse sections, respectively, of an apparatus for filtering according to our invention.

A A are filter-tubes covered with filtering-cloth, which is turned in at both ends of the tubes and secured in position by means of tapering nozzles B and screw-plugs C, actuated by hand-wheels and screws N, all the said parts being similar to those described in the specification of the former application of ourselves and Robert Cooper, filed in the United States Patent Office on or about the 5th day of July, 1888, Serial No. 279,144; or the filter-cloth may be fixed inside the tubes instead of being rolled on the outside, as previously described. According to our present improvements we fix the said parts in a vertical position instead of horizontally by means of the girder A' and the standards B'. The water to be filtered is forced by the pump L through the pipe L' into a channel E, forming the lower part of the primary filtering chamber or cylinder D. The water rises from the channel E through the grating P, upon which is placed a filtering medium K, the latter being prevented by the top grating O from floating and from being displaced. The water rises through the filtering medium and through the nozzles B into the fil-

ter-pipes A, which are covered with filter-cloth, as described, and as the filtered water passes through the cloth it falls into the cistern or receiver R, whence it flows through a spout or pipe S to the required place.

The object of the chamber D, with the contained rough filtering medium, is to arrest a large portion of the sediment and heavier or more easily separable particles before they reach the filtering-tubes, whereby the filtering-cloth with which the tubes are surrounded is kept clean for a longer period than would otherwise be the case, and there is not so much liability to force accumulated dirt through the meshes of the cloth by the force of the water under pressure.

A large portion of mud and sediment accumulates in the channel E under the bottom grating P, and this is periodically washed away into a convenient drain by opening the valve F, through which water then rushes, carrying any accumulated sediment with it.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. The combination, with a series of vertical cloth-covered filtering-tubes, of a primary filtering-chamber communicating therewith and located beneath the same, and having at its under part a channel to receive the sediment, and provided with top and bottom gratings and a blow-out valve for discharging the sediment accumulated in said channel, a girder and standards to support the filter-tubes, and a receiving-tank through which the tubes pass and into which the water from the tube falls, all substantially as and for the purposes set forth.

2. In combination, a primary filtering-chamber having a sediment-channel, top and bottom gratings, inlet-pipe and drain-pipe, a series of vertical filter-pipes connected to and surmounting said chamber and provided with filter-cloth, as described, and a horizontal receiving-tank R, into which the water filtered through such filter-pipes falls, all substantially as shown and described.

H. F. CLAYTON,
G. H. HOLDROYD.

Witnesses:

W. J. BAKER,
PERCY BAKER.