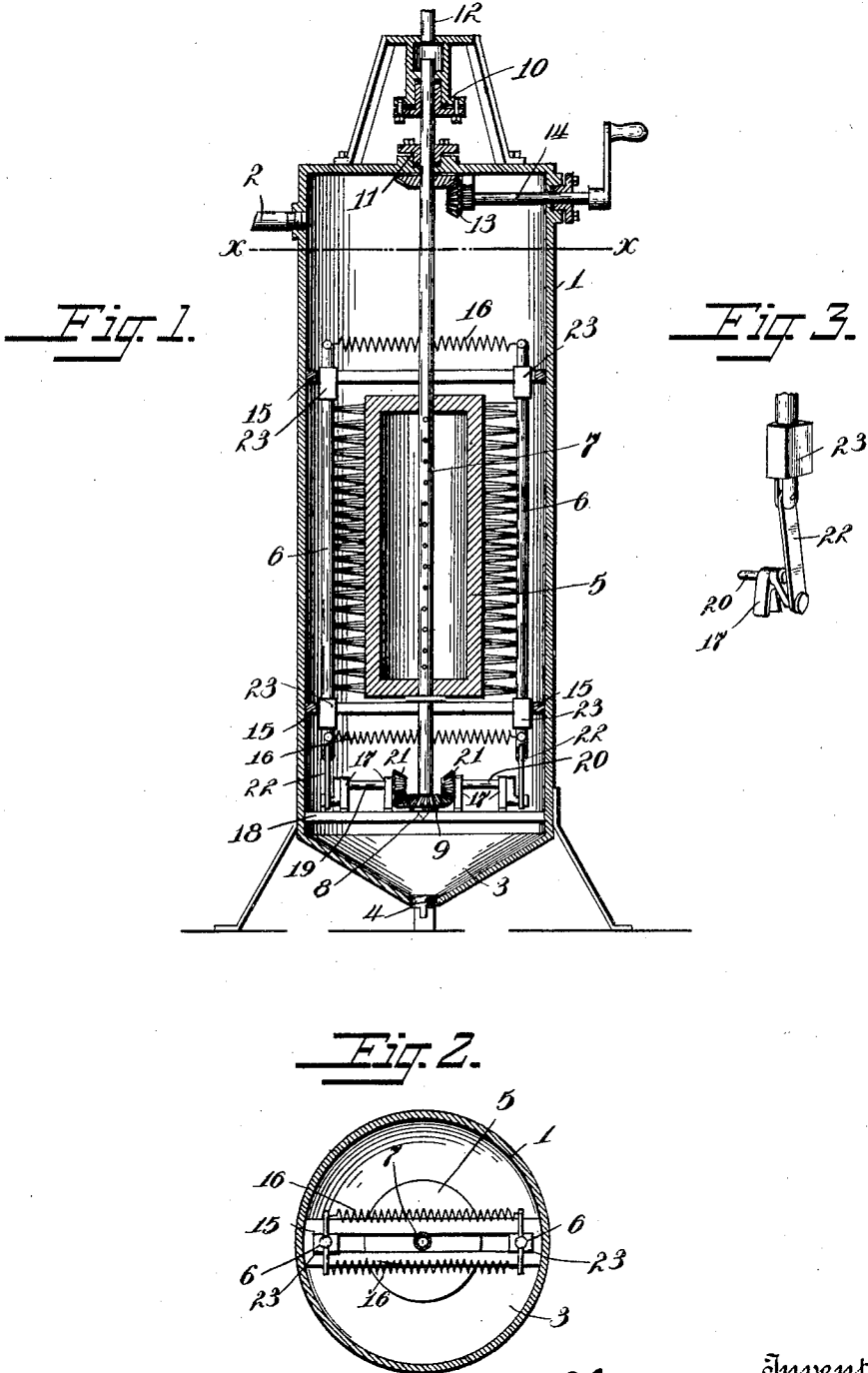


No. 810,020.

PATENTED JAN. 16, 1906.

C. R. APPLGATE.
FILTER.

APPLICATION FILED JULY 25, 1905.



Witnesses
Milton C. Givner.
Geo. Hamilton.

Inventor
Clarence R. Applgate
by Frank C. Gore
his Attorney

UNITED STATES PATENT OFFICE.

CLARENCE R. APPLGATE, OF EVANSVILLE, INDIANA, ASSIGNOR OF FIVE-EIGHTHS TO SIMON A. SCHMITT, OF VANDERBURG COUNTY, INDIANA.

FILTER.

No. 810,020.

Specification of Letters Patent.

Patented Jan. 16, 1906.

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To all whom it may concern:

Be it known that I, CLARENCE R. APPLGATE, a citizen of the United States, residing at Evansville, county of Vanderburg, and State of Indiana, have invented certain new and useful Improvements in Filters, of which the following is a specification.

This invention relates to filters of the hollow rotary porous-cylinder type, and particularly to filter-cleaning mechanism therefor.

The objects of this invention are the provision of an improved filter-bottom for the collection and removal of these diment, thereby obviating the necessity for flushing each time the porous cylinder is cleaned, and the provision of novel cleaning mechanism which will be operated longitudinally of the porous cylinder while the latter is being rotated, all combined in an improved manner, whereby a most satisfactory cleansing of the filter can be obtained with rapidity and ease.

The invention is set forth in detail in the following specification, and the novel features and combinations thereof are embodied in the appended claims.

In the accompanying drawings, Figure 1 is a vertical section; Fig. 2, a cross-section on line *x x* of Fig. 1, and Fig. 3 a detail of the brush-operating pitmen and related parts.

The filter shell or casing 1 has a water-inlet 2 near its top, and its lower portion 3 is made conical and provided with a sediment-outlet 4. This conical bottom is very useful, as it forms a receptacle for the settling of the sediment, besides receiving the sediment which may be removed from the hollow porous filtering-cylinder 5 by the action of the brushes 6, and thus the blowing out of the filter when cleansed becomes an unnecessary operation, as the sediment will pass off when the outlet 4 is opened.

The filtering-cylinder 5 is secured in any desired manner to the perforated outlet-pipe 7, so as to be adapted to turn therewith. This pipe is stepped in a bearing 8 and thereat provided with bevel-gear 9, while its upper end is passed through a gland-bearing 11 and then into a pipe-coupling 10, secured to a bracket surmounting casing 1. The filtered-water pipe 12 connects with the coupling 10. Secured on the upper end of pipe 7 is a bevel-gear meshing with another bevel-gear 13, while the usual filter-cylinder-turning mechanism is shown at 14.

Extending across the casing 1 above and below the filtering-cylinder are slotted bars 15, which constitute guides for the brushes 6 as they move up and down and also keeping them in proper position lengthwise of the cylinder at all times. Springs 16 constantly draw the brushes toward each other and keep them against the filtering-cylinder.

Journalled in bearings 17 on the cross-bar 18, which also carries the step-bearing 8, are short shafts 19 and 20, having bevel-gears 21, meshing with gear 9, while the outer ends of said shafts have pitmen 22, which connect with and support the brushes 6. The brushes where they pass through the slotted guides 15 are provided with slides 23.

On turning the operating means 14 the filtering-cylinder is rotated, and at the same time the brushes 6 are reciprocated up and down or lengthwise of the cylinder, and this combined movement—the rotation of the filtering-cylinder and the reciprocation of the brushes—gives the cylinder a much more effectual cleansing than having the brushes or the cylinder stationary, as in earlier constructions known to this art.

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

1. In a filter, the combination with a porous filtering-cylinder and a cleaning-brush therefor, of means coöperating with the brush and filtering-cylinder whereby relative turning or rotation of the brush and filtering-cylinder continuously in a given direction and relative simultaneous reciprocation or to-and-fro movement of said brush and filtering-cylinder may be obtained.

2. In a filter, the combination with a rotary porous filtering-cylinder, of a reciprocating brush bearing thereagainst, and means for rotating said cylinder and reciprocating said brush at the same time to cleanse the cylinder.

3. In a filter, the combination with a rotary porous filtering-cylinder and a rotary pipe on which said cylinder is carried, of a reciprocating brush bearing against said cylinder and gearing and a pitman operatively connecting said brush with the rotary pipe aforesaid, whereby the brush is reciprocated as the cylinder rotates.

4. In a filter, the combination with a porous filtering-cylinder and a rotary pipe on which said cylinder is carried, of a reciprocating brush bearing against said cylinder and means for rotating said cylinder and reciprocating said brush at the same time to cleanse the cylinder.

catory brush bearing against said cylinder, upper and lower guides for said brush, and means operated from said rotary pipe for reciprocating said brush.

- 5 5. In a filter, the combination with a filter-casing, of a porous filtering-cylinder, a rotary pipe on which said cylinder is carried, upper and lower slotted guides extending across said filter-casing, brushes playing in said slot-
10 ted guides, springs connecting the brushes together to keep them against the cylinder,

and gearing and pitmen connecting the rotary pipe with the brushes, whereby the brushes are made to reciprocate as the cylinder revolves.

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

CLARENCE R. APPLGATE.

Witnesses:

LESLIE LAWRENCE,
FRANK C. GORE.