

983,298.

FIG. 1

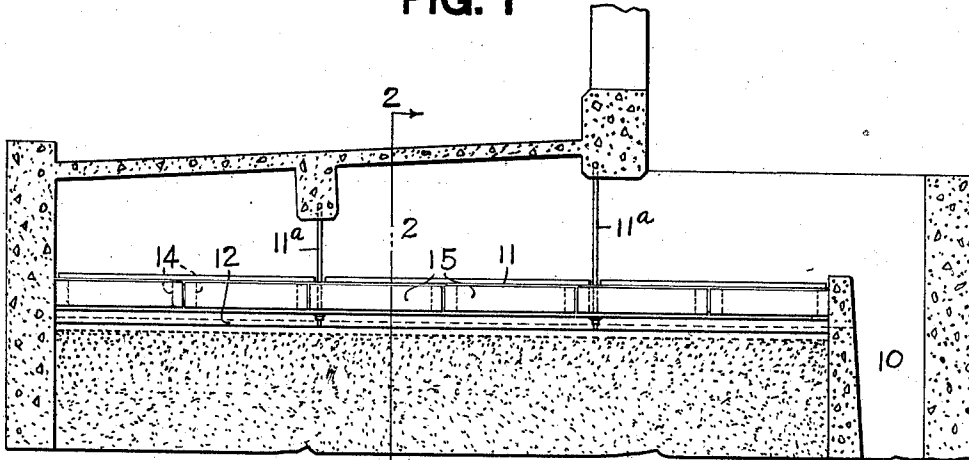


FIG. 2

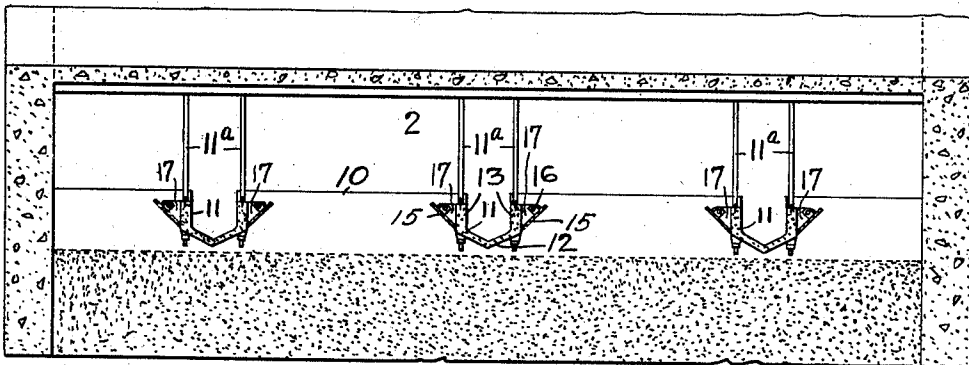
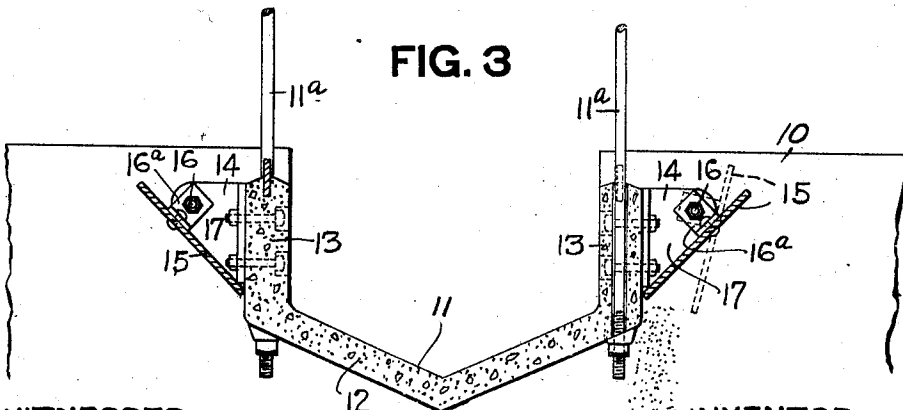


FIG. 3



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UNITED STATES PATENT OFFICE.

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TROUGH FOR FILTERS.

983,298.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed June 9, 1910. Serial No. 566,025.

To all whom it may concern:

Be it known that I, FREDERICK B. LEOPOLD, a resident of Sewickley, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Troughs for Filters; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to wash-troughs for filters.

The object of my invention is to provide a wash-trough of such construction that during the washing operation, the velocity of the upward flow of the wash-water will be reduced and greater opportunity given to the sand held in suspension to drop back into the filter-bed, and so prevent it from washing over into the trough.

To these ends my invention comprises, generally stated, a trough having movable flaring stilling plates projecting out beyond the walls of the trough, the space between said stilling plates and the sides of the trough forming pockets or receptacles to hold the sand deposited therein so that when said plates are moved the sand is dropped back into the filter bed.

In the drawings, Figure 1 is a longitudinal section of a filter bed showing my improved wash trough applied thereto; Fig. 2 is an enlarged section on line 2—2 Fig. 1; and Fig. 3 is an enlarged section of one of the troughs.

In the drawings the numeral 2 designates a tank of a sand filtration plant of ordinary construction which may be provided with a suitable inlet for raw water, air and water manifolds, etc., which it has not been deemed necessary to illustrate.

Arranged at one end of the filter is the gutter 10 which carries off the dirty water and scum removed in the cleaning operation. The troughs 11 which extend from one wall of the filter to the gutter 10 are supported by the rods 11^a. These troughs may be formed of concrete, metal or other suitable material, and said troughs have the sloping bottoms 12 and the vertical side portions 13. Secured to the sides 13 of the trough are the brackets 14 arranged at intervals along said trough. The stilling plates 15 are hinged or pivotally secured to the brackets 14 by the pins or bolts 16 passing through angles 16^a on said plates. The hinged point is located at such position that

the stilling plates have sufficient weight above the hinged point to hold the lower ends of said plates up in position against the inclined bottoms 12 of the trough, so as to form the pockets or receptacles 17 extending along the sides of the troughs.

When it is desired to wash the filter-bed, the wash-water and air are admitted from below in the ordinary manner and as the water rises in the filter it agitates and washes the same. As the water rises, it is directed by the inclined bottoms 12 and stilling plates 15 and travels up said surfaces until the water passing over the upper edges of the stilling plates passes into the pockets or receptacles 17, before it escapes over the sides 13 into the trough. The space between the upper edges of the stilling plates and the sides of the trough is free from eddies and currents, and the sand carried in suspension in the rising bubbles has greater opportunity to be deposited in the receptacles 17 before it passes into the trough. When sufficient sand is deposited in the receptacle 17 to overcome the weight of the stilling-plates, said stilling plates will swing into position indicated in dotted lines and the sand within the pockets 17 will be deposited back into the filter-bed. In case the stilling plate should stick for any reason, the operator can readily move the stilling plates into the position indicated to release the sand.

The stilling plates in conjunction with the inclined bottoms 12 form an extended surface up which the water travels and the sand is given an opportunity to drop back into the filter-bed while that which passes over the top of the stilling-plate forms a quiescent body of water which offers greater opportunity for the deposit of the sand in the pockets 17.

What I claim is:

1. In a wash trough for filters, the combination with the sides, of inclined stilling plates extending beyond said sides and forming pockets between the inner faces of said plates and the sides of the trough.

2. In a wash-trough for filters, the combination with the sides, of movable inclined stilling plates extending beyond said sides, and forming pockets between the same and said sides.

3. In a wash-trough for filters, the combination with the sides, of inclined swing-

ing stilling plates extending beyond said sides and forming recesses between same and said sides.

4. In a trough for filters, the combination
5 of the sides, of inclined hinged stilling plates extending beyond said sides forming pockets between same and said plates.

5. In a wash-trough for filters, the combination with the sides of brackets carried
10 thereby, and swinging inclined stilling plates supported by said brackets.

6. In a wash-trough for filters, the com-

bination with bottoms and vertical side portions, of movable stilling plates engaging said sides and extending beyond same forming pockets between same and said plates. 15

In testimony whereof, I the said FREDERICK B. LEOPOLD have hereunto set my hand.

FREDERICK B. LEOPOLD.

Witnesses:

GARNET R. SPEER,
ROBERT C. TOTEN.