

No. 653,631.

Patented July 10, 1900.

J. C. WALLACE.
 FILTER BARREL OR TANK.

(Application filed Feb. 14, 1900.)

(No Model.)

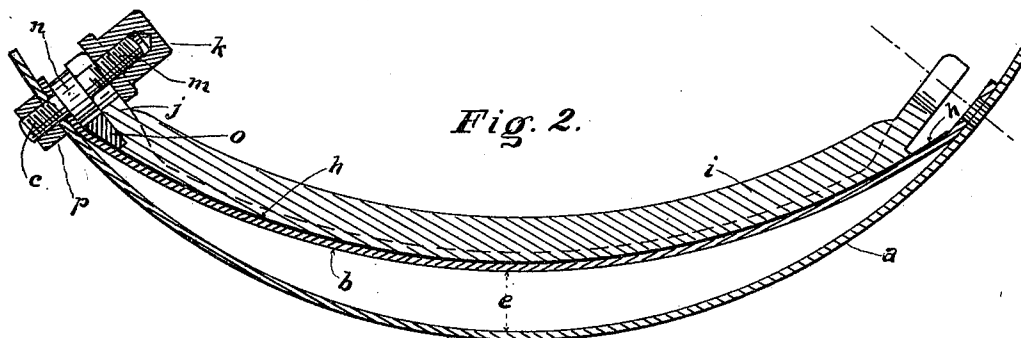
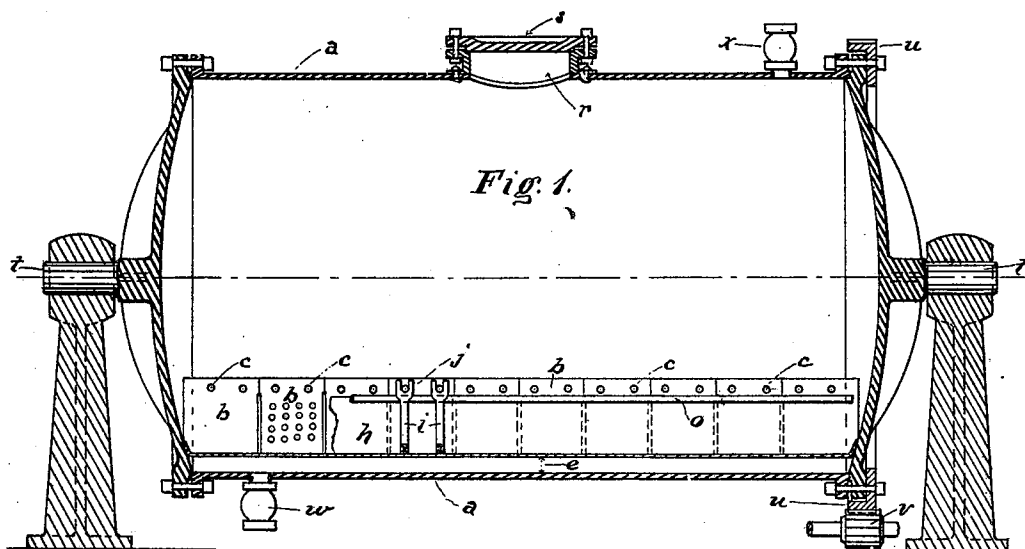


Fig. 3.

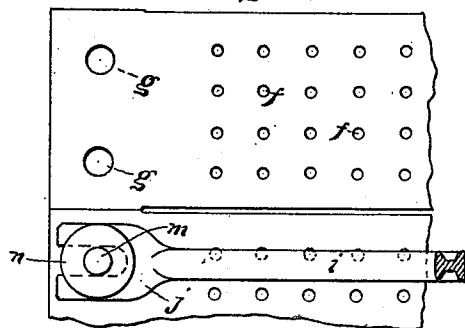
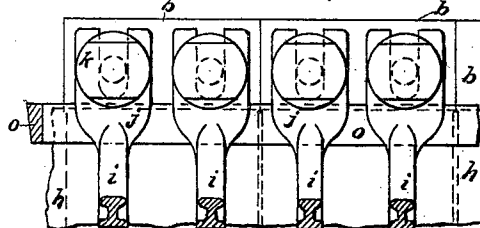


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

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FILTER BARREL OR TANK.

SPECIFICATION forming part of Letters Patent No. 653,631, dated July 10, 1900.

Application filed February 14, 1900. Serial No. 5,231. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. WALLACE, a prospective citizen of the United States, (having taken out first papers,) residing at Colorado City, in the county of El Paso and State of Colorado, have invented certain new and useful Improvements in Filter Barrels or Tanks, set forth in the annexed specification.

My invention is designed with special reference to the chlorination process of treating precious ores, and particularly applies to that device known as a "filtering-barrel." I claim nothing new in the use of filter-barrels for such purposes in the abstract, since such devices have been known and in use for some time; but my invention lies in certain improvements within said filter-barrel whereby it is rendered more efficient and economical in its operation.

The general purpose of a filter-barrel is as follows: Referring to Figure 1, which is a vertical longitudinal section through one, the pulverized ore is charged into the barrel through the manhole *r*, together with water and certain chemicals, such as chlorid of lime and sulfuric acid, used in and for the process of extracting the precious metal from the ore. When properly charged, the manhole *r* is securely closed by the cap *s*, and the barrel is caused to slowly revolve on its trunnions *t* by means of gearing *u v*. After sufficient treatment the liquor which has taken up the precious metal in solution is drawn off at cock or valve *w* and is further flushed through valve *x*. The ore is then removed through manhole *r*. Now in order that the liquor drawn off at valve *w* may be free from particles of pulverized ore it is necessary to interpose a filtering medium within the barrel, leaving some space at the bottom to collect the liquor.

My invention consists in the kind of device which I employ to effect this purpose and which is placed near the bottom of the barrel, the bottom of the barrel being here understood as that arc of the cylinder-wall directly opposite and under the manhole *r*.

The particulars of my device I will now describe, reference being made to the several figures of the drawings, in which—

Fig. 1 represents a longitudinal vertical section through the barrel; Fig. 2, a vertical

transverse section through the lower arc of the same; Fig. 3, a plan view, flattened out, of the elements *b i*; and Fig. 4, an enlarged view of a portion of Fig. 1.

To the inside cylindrical wall of the barrel *a*, in its lowest arc, I attach a continuous series of metal plates *b* by means of bolts *c*, as shown in Figs. 1 and 2, the plates *b*, which are curved, being thus held firmly at both ends and suspended in such wise as to leave a crescent-shaped space *e* between the bottom of said barrel-wall and the convex faces of the said plates extending the length of the barrel. These plates are perforated with drain-holes *f*, their general shape when flattened out being shown in plan view in Fig. 3. The holes for the bolts *c* are shown at *g*. Upon the concave surface of these plates *b* I spread a filtering-cloth *h*, completely covering over all the drain-holes *f* and reaching as a practically-continuous sheet from end to end of the barrel *a*. To keep this filtering-cloth *h* in close contact with the whole concave surface of the plates *b*, I place a series of convexly-bent bars *i*, whose ends *j* are fork-shaped to receive the inner shanks *m* of the bolts *c*, being clamped down by the inner nuts *k*. To insure the upper edges of this filtering-cloth *h* being kept down tight upon the plates *b*, I run a filling-strip *o* the entire length, said strip being likewise clamped down by the necks *j* of the bars *i*. In Fig. 1 the filtering-cloth *h* and filling-strip *o* are shown broken off for part of their length in order to better reveal the plates *b*, lying underneath. The bolts *c* are constructed with a solid head *n* about midway their length, dividing the bolt into two parts—an outwardly-projecting shank *c* and an inwardly-projecting shank *m*—the purpose of which is to allow of the plates *b* being permanently fastened between the head *n* and the nut *p* to the cylindrical shell *a* of the barrel, while the bars *i*, filling-strip *o*, and filter-cloth *h* may be removed and replaced as frequently as desired.

It will be understood that when this device is used in a chlorination process all metal parts within the barrel must be covered with a lead coating, as is well known.

A special advantage in my design and arrangement of parts is that it gives greater space for ore above the filter-cloth and for

liquor below than any device known to me now on the market, also a larger filtering area, also greater simplicity and durability.

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

1. In a filter barrel or tank a series of curved metal plates, perforated, held to the inside wall of said barrel by bolts through the opposite ends of said plates in such manner as to form a lunar space between the under surface of said plates and the bottom of said barrel; substantially as shown.

2. In a filter barrel or tank, a filtering device

consisting of a series of curved metal plates, perforated, fastened to the inside wall or walls of said barrel or tank: a filter-cloth upon the upper surface of said plates, secured thereon by a series of imposed metal bars and filling-strips secured in position by bolts or other fastening devices to the wall or walls of said barrel or tank.

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Witnesses:

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