(No Model.)

T. A. EVANS.

FILTER FOR QUICKSAND WELLS.

No. 563,712. Patented July 7, 1896.

FIG. 1.

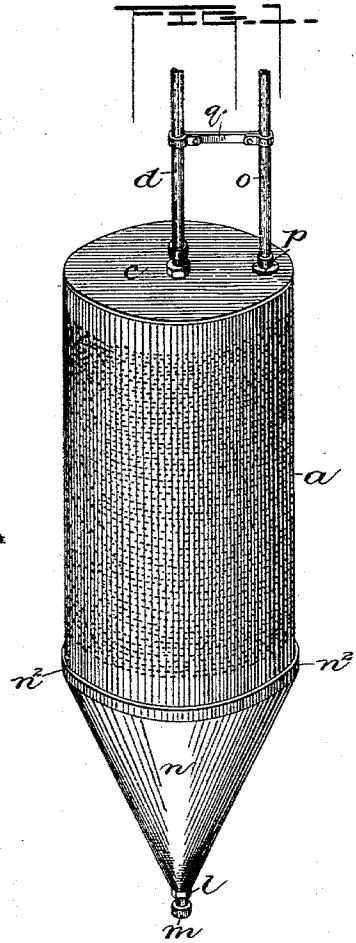


FIG. 3.

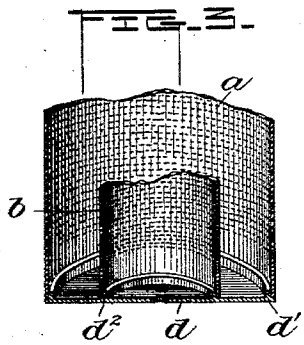
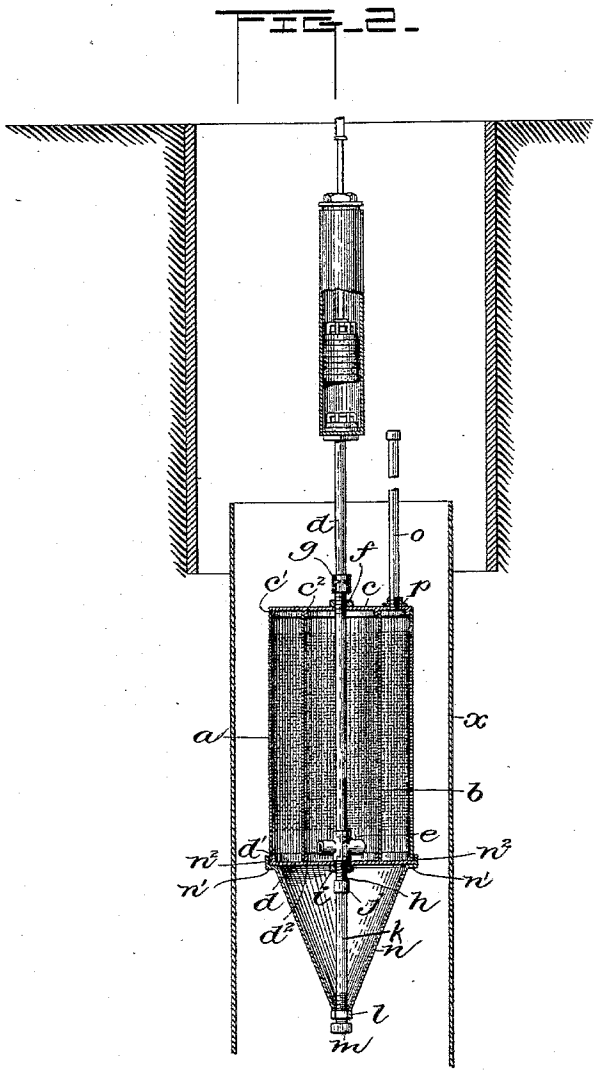


FIG. 2.



Witnesses;
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UNITED STATES PATENT OFFICE.

THOMAS ALBERT EVANS, OF MOUNT TABOR, OREGON.

FILTER FOR QUICKSAND WELLS.

SPECIFICATION forming part of Letters Patent No. 563,712, dated July 7, 1896.

Application filed November 25, 1895. Serial No. 570,132. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ALBERT EVANS, a citizen of the United States, residing at Mount Tabor, in the county of Multnomah, Oregon, have invented a new and useful Improvement in Filters for Quicksand Wells, of which the following is a specification, reference being had to the accompanying drawings as forming a part hereof.

The object of my invention is to obtain a simple and durable filter for quicksand wells, the same being constructed as shown in the accompanying drawings above referred to, the figures in which represent as follows:

Figure 1 is an elevation of my filter in perspective. Fig. 2 is a vertical section of a well provided with my filter, also shown in section, and of an auxiliary tube, designated as *x*, the use of which will be described in the body of this specification; and Fig. 3 is a detail showing the lower cylinder-head and part of the outer and inner cylinders in a partial perspective sectional view.

The letters designate the parts referred to.

My invention consists of an outer cylinder *a* and an inner cylinder *b*, held together by an upper and lower cylinder-head C *d*. For this purpose said cylinder-heads are provided with annular rims c' c^2 and d' d^2, on which and by which the said cylinders *a b* are held in place.

The upper cylinder-head has a central opening through which extends the suction-pipe *d*, the lower end of which is inserted in a cross *e*. The upper end of such suction-pipe is threaded and provided with a lock-nut *f*. The coupling *g* joins an extension of such suction-pipe to the base of the pump-cylinder. The horizontal ends of the cross *e* are open. The base of said cross is provided with a nipple *h*, which is run full of metal to close the same, and such nipple has a threaded periphery on which is inserted the lock-nut *i*.

The coupling *j* connects the nipple *h* and length of pipe *k*, the lower end of which is threaded and provided with a lock-nut *l* and a cap *m*.

n is a cone of sheet metal provided with a flange n' and a rim n^2, such cone being placed under the lower cylinder-head and secured in position by means of the lock-nut *l* and constitutes the "point" of my filter, to assist the same to be dropped or sunk in the quicksand. As will be apparent from the drawings, the cylinder-heads are drawn together, so as to securely hold between them the inner and outer cylinders by means of the lock-nuts *f i*.

Both the inner and outer cylinders are perforated, which perforation may be done by means of a punch, the holes being made close together, not more than one-eighth or one-fourth of an inch apart. Such perforations do not extend farther in either direction than within about two inches of the upper and lower cylinder-heads.

o is the sand-pipe, which is threaded at its lower end, and is inserted in the threaded neck *p*, provided in the upper cylinder-head, so that the base of such sand-pipe will be flush with the under surface of such upper cylinder-head.

q is a clamp to connect and steady the two pipe ends or extensions *d o*.

In the practical use of my invention, I first dig a well-hole as deep as I can go and then insert the tube *x*, which is at least one foot larger in diameter than my filter. Such tube *x* having been sunk as low as desired, my filter is then inserted inside of said tube *x*, and thereupon the interior of said tube is filled with ordinary sand, and while so doing gradually withdrawing the tube, which serves no further purpose than to enable the filter to be inserted lower than it otherwise could be, because of the banks of the well-hole dug into the quicksand caving in.

The space in the filter between the inner and outer cylinders *a b* is filled with sand which has first been sifted through an eight-mesh riddle, and which will not pass through a fourteen-mesh riddle. Such filling is done by means of the sand-pipe *o*, the upper end of which is extended until it reaches to the base of the pump-cylinder.

The filter having been placed in its proper position in the well as described and the extension of the suction-pipe connected to the pump, the water will flow through the perforated outer cylinder, the sand, and the inner cylinder, and fill the interior of the latter cylinder with water abundantly, from whence it can be drawn in a pure and clean state.

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

In a quicksand-filter, in combination, the upper and lower cylinder-heads *c d*, the perforated inner and outer cylinders *a b*, the suction-pipe *d*, extending upward through the upper cylinder-head to the pump, and being open at its base; the cone *n*, and attachments extending downward from the suction-pipe through the lower cylinder-head, to the base, or point of such cone *n*; lock-nuts on the upper and lower extensions of the suction-pipe, to hold the cylinder-heads on the cylinders; and the sand-pipe *o*, substantially as set forth.

In testimony whereof I have hereunto set my signature, in the presence of two witnesses, this 15th day of October, 1895.

THOMAS ALBERT EVANS.

Witnesses:
T. J. GEISLER,
E. D. TIMMS.