W. McC. MATHES.

Water-Drawer.

No. 204,746. Patented June 11, 1878.

Fig. 1.

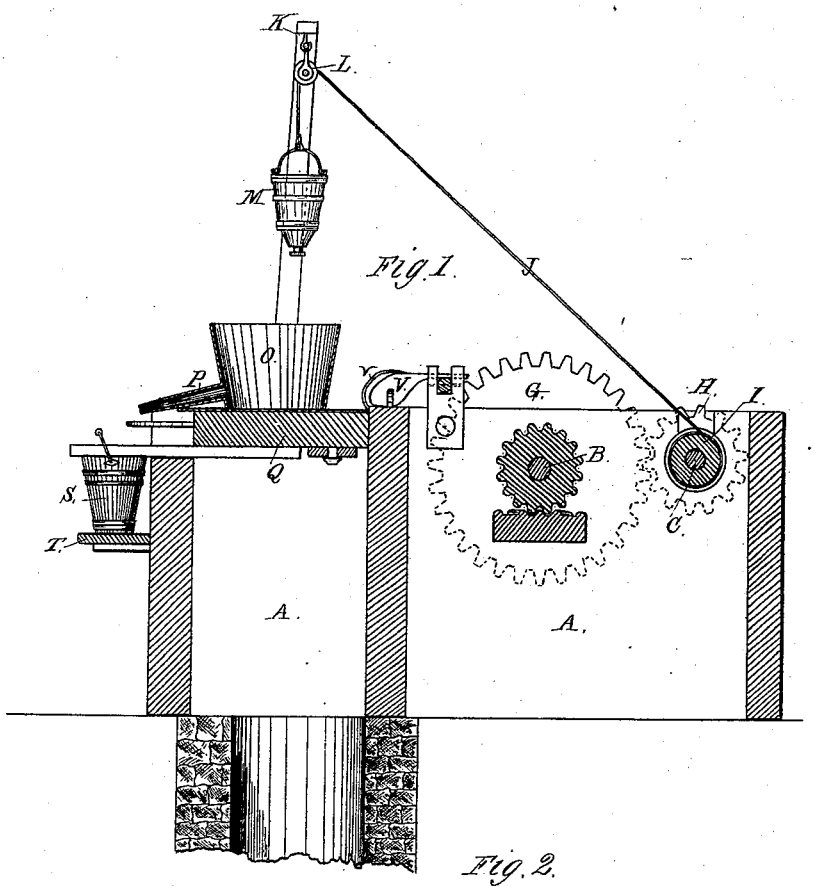


Fig. 2.

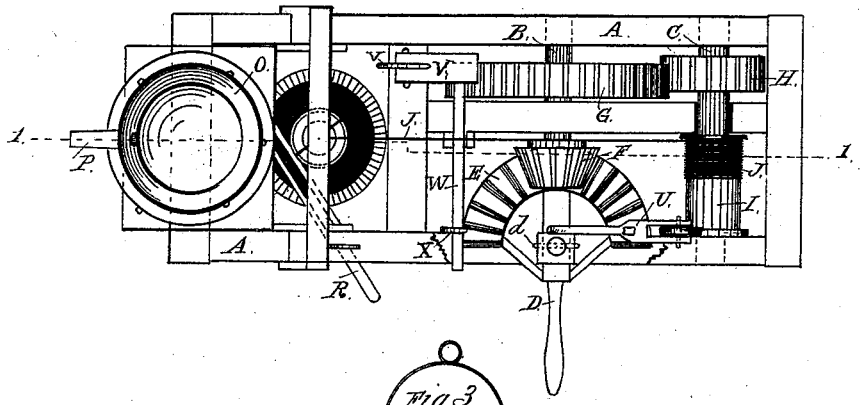
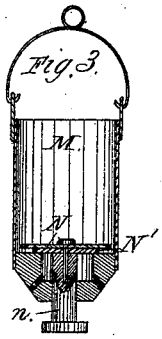


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM McC. MATHES, OF BRYAN, TEXAS.

IMPROVEMENT IN WATER-DRAWERS.

Specification forming part of Letters Patent No. **204,746**, dated June 11, 1878; application filed April 24, 1878.

To all whom it may concern:

Be it known that I, WILLIAM McC. MATHES, of Bryan, in the county of Brazos and State of Texas, have invented a certain new and Improved Water-Drawer, of which the following is a specification:

The object of my invention is to provide an easy, cheap, and quick way of drawing water in large or small quantities from wells, cisterns, tanks, &c. The apparatus is constructed with a segment-gear operated by a lever, and meshing with a pinion-shaft, which carries a larger gear, meshing with a second pinion on the drum-shaft, so as to elevate the bucket with multiplied speed. The bucket is of peculiar construction, having an automatic valve in the bottom, which is opened by dropping the bucket into a reciprocating receiver, said receiver being slid under the bucket after the latter is elevated, and serving to deposit the water in any receptacle, as hereinafter described.

The invention particularly consists in the provision of a lever carrying a beveled segment-gear, mounted on a universal joint, so as to permit both horizontal and vertical reciprocating movement, necessary for engaging and releasing the beveled pinion in raising and lowering the bucket; also, in the combination of gearing, detent mechanism, and brake mechanism each with the aforesaid reciprocating lever-gear, for the purposes hereinafter explained.

In the accompanying drawing, Figure 1 is a vertical section of the apparatus on the line 1 1, Fig. 2. Fig. 2 is a plan view. Fig. 3 is a vertical section of the well-bucket.

A may represent a stationary frame or well-curb, in which are mounted two shafts, B C, and a lever-arm, D, the latter being on a universal joint, *d*, so as to allow horizontal and vertical reciprocating movement. The said lever carries at its inner end a cog-segment, E, gearing with the pinion F on the shaft B, to which shaft is keyed a larger cog-wheel, G, which meshes with a pinion, H, on the shaft C. The shaft C carries the drum I, on which the bucket-rope, J, is wound. K is a standard, from which is suspended a pulley, L, over which the bucket-rope J is passed. To the extremity of the rope J is suspended a well-bucket, M, of peculiar construction, said bucket being provided at its bottom with an automatic valve, N N′, closing downward, and having a stem, *n*, which extends through the bottom of the bucket, so that when the bucket is lowered on any object or support the valve will be opened and the contents of the bucket discharged through its bottom. O is a receiver, provided with a spout, P, and fixed on a sliding board, Q, which is moved in and out by means of an arm, R, so that the receiver O may be placed beneath the bucket, as illustrated in Fig. 1, or may be slidden out, as illustrated in Fig. 2, to expose the well when the bucket is to be lowered into the same for filling. S represents an ordinary pail or bucket resting on a ledge or shelf, T, in suitable position to be filled by the water discharged from the well-bucket M into the receiver O.

U represents a brake bearing on the drum I, so as to check the movement of said drum when the bucket is running down. V is a pawl, pressed by a spring, *v*, for preventing backward movement of the gear-wheel G and drum I when the bucket is being raised. W is a lever, for raising the pawl V when the bucket is to be lowered. The lever W is held by a hook, X, when it is desired to retain the pawl V in its elevated position.

The operation is as follows: When water is to be drawn the receiver O and board Q are slidden outward, as shown in Fig. 2, so as to expose the well. The pawl V is then elevated and the lever D raised, so as to release the pinion F. The bucket is then allowed to run down at any necessary speed, and is checked by the brake U, and, on reaching the water, it instantly fills. The pawl V is then lowered, and, by means of the reciprocating lever D revolving the pinion F and the connected gearing, the bucket is raised. The valve N closes automatically as soon as the bucket reaches the surface of the water, so as to retain its load. When the bucket reaches its uppermost position, the slide Q is moved in with the receiver O. The bucket is then lowered into the said receiver, the valve N being raised by the contact of its stem *n* with the bottom of the receiver, transferring the water into the receiver, from which it flows into the pail S, which is placed to catch it.

The valve of the bucket M is made of an upper disk, N, of wood or metal, and a lower disk, N′, of leather or other soft material.

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

1. The combined lever and segment D E, mounted on a universal joint, *d*, and operating substantially as and for the purposes set forth.

2. The combination of the lever D, segment E, gearing F G H, drum I, cord J, and well-bucket M, as described.

3. The combination of the segment-lever D E, gearing F G H, and pawl V, as described, for the purposes set forth.

4. The combination of the segment D E, gearing F G H, drum I, bucket-cord J, and brake U, as and for the purposes set forth.

5. The combination of the reciprocating lever D, mounted on a universal joint, *d*, and carrying a beveled segment-gear, E, with the beveled pinion F, substantially as and for the purposes set forth.

W. McC. MATHES.

Witnesses:
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