

(No Model.)

T. C. DAVISON.
WELL CLEANER.

No. 557,113.

Patented Mar. 31, 1896.

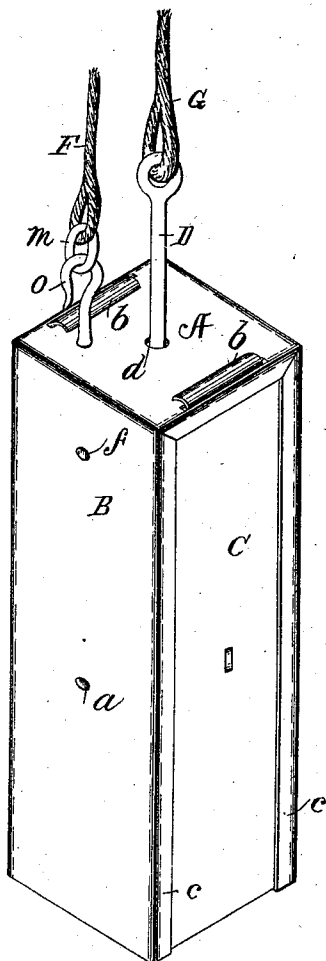


Fig. 1

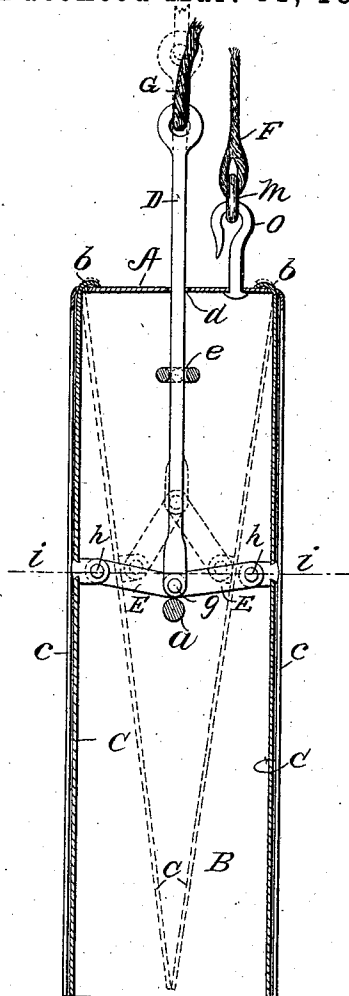


Fig. 2.

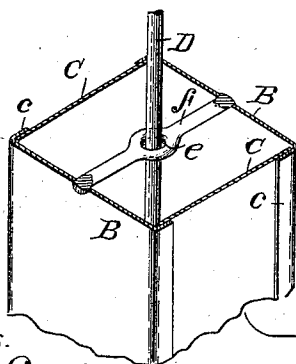
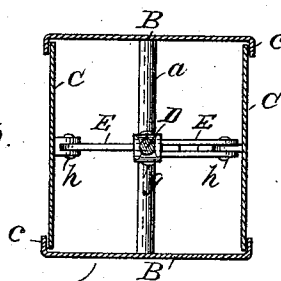


Fig. 3.



Witnesses.

W. Ross Edlin.

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UNITED STATES PATENT OFFICE.

THOMAS COBB DAVISON, OF WOODVILLE, GEORGIA.

WELL-CLEANER.

SPECIFICATION forming part of Letters Patent No. 557,113, dated March 31, 1896.

Application filed August 14, 1895. Serial No. 559,223. (No model.)

To all whom it may concern:

Be it known that I, THOMAS COBB DAVISON, of Woodville, in the county of Greene and State of Georgia, have invented a new and Improved Well-Cleaner, of which the following is a specification.

Bored wells are usually lined with boards or planks, forming a rectangular shaft. Frequently such well-shafts become obstructed through stones, sticks, &c., accidentally falling therein or being maliciously thrown in. The present improved well-cleaner is designed for removing obstructions from such wells, and it is illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of the cleaner. Fig. 2 is a vertical longitudinal section. Fig. 3 is a cross-section.

The improved cleaner is an inverted bucket having open bottom, closed top A, and rectangular side walls B B C C. Two of the side walls B B are parallel and rigid, being rigidly connected with the top A and braced by an intermediate tie-bar *a*, while the other two side walls C C are parallel with each other and perpendicular to the walls B B, and are pivoted at or near their upper ends by any suitable pivots or hinges *b b* to the rigid body of the bucket formed by the top A, side walls B B, and tie-bar *a*. The top A and side walls B B C C are preferably made of sheet-steel, the top A and rigid side walls B B being preferably bent or stamped into shape out of a single piece of metal. The side walls B B are provided with bent-in flanges or stops *c c*, which confine the swinging walls C C and limit their outward movement.

Extending vertically through the top A and suitably guided by an aperture *d* in the top A and by an eye *e* in a cross-bar *f*, between the fixed walls B B, is a manipulating-rod D. This rod D at its lower end is pivoted at *g* to the inner ends of two links E E, which at their outer ends are pivoted at *h* to the movable side walls C C, respectively. When, therefore, the rod D is elevated, the lower ends of the walls C C approach each other, closing the open bottom of the bucket. When the rod D is at right angles to the links E E, the walls C C are expanded as far as possible and then are in contact with the stops *c c* of the rigid walls B B. It is manifest that if the rod D

should then be lowered the movable walls would again approach each other. To prevent this, the further downward movement of the rod D is prevented by its lower end coming in contact with the tie-bar *a* just after the point of connection *g* between the rod and links has passed below the plane (indicated by the line *i i*) of the pivots *h*, between the links and movable walls. By this means also the movable walls are maintained in their expanded position.

The bucket, as shown, is shaped in cross-section to conform to the shape of the well-shaft and is just a trifle smaller than the well-shaft, so as to easily slide therein.

The bucket is provided with a lowering-rope F and a hoisting-rope G, which ropes may be cords, wires, or chains. The lowering-rope F is attached to the bucket-body, preferably by a ring *m* on the rope and a hook *o* on the body, as shown, so that the rope may be detached.

The hoisting-rope G is attached to the upper end of the rod D.

Operation: In case there is an obstruction—say a stone—in the well-shaft the bucket is lowered into the well-shaft by the rope F, open end down, during which descent the movable walls are in their expanded position, and the area of the mouth of the bucket is hence only slightly less than the area of the well-shaft. Since the bucket conforms externally to the shape of the well-shaft, and slides closely therein, the bucket consequently maintains the proper position relatively to the well-shaft during the descent. Hence when the obstruction is reached the bucket descends over and around the same. When the descent of the bucket is arrested, the lowering-rope F is slackened until its ring *m* is released from hook *o*, and then the rope F is pulled up out of the well-shaft. The hoisting-rope G is then pulled. The first effect of this pull is to advance the lower ends of the movable walls toward each other until they touch beneath the obstruction, or until they grip the obstruction between them. Then, thereafter, further pull on the hoisting-rope elevates the bucket, and with it the contained or gripped obstruction. The presence of the rigid side walls B B and the wide lower edges of the movable walls, extending across

between the rigid walls, prevent the obstruction falling out of the bucket during the ascent. The flanges *c* protect the movable wings during the descent and ascent.

5 I am aware that heretofore grapples have been used for raising and lowering tubing and tiles in wells, for raising drill-rods, and for removing obstructions from wells, and hence I do not claim such a grapple, broadly; but

10 What I do claim is—

An inverted well-cleaning bucket conforming in shape externally to the well-shaft and adapted to fit loosely therein, said bucket having, in combination, a body comprising
15 two rigid side walls connected at their middles by a tie-bar, two movable side walls perpendicular to said rigid walls and pivoted at their upper ends to said body between said

rigid side walls, a vertically-movable manipulating-rod movable and guided upon said 20 body, the downward movement of said rod being limited by said tie-bar, and links pivoted to said rod and said movable side walls, the pivotal points between said links and rod being below the plane of the pivots between 25 said links and movable side wall when said rod is at its downward limit of movement, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing 30 witnesses.

THOMAS COBB DAVISON.

Witnesses:

J. H. ARMSTRONG,
S. W. DURHAM.