

(No Model.)

F. E. McNALL.
CISTERN CLEANER.

No. 385,869.

Patented July 10, 1888.

Fig. 1.

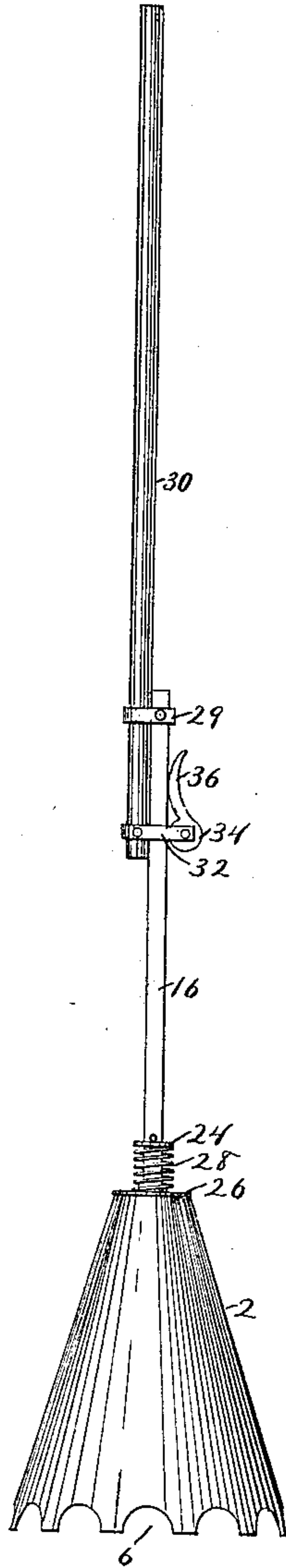


Fig. 2.

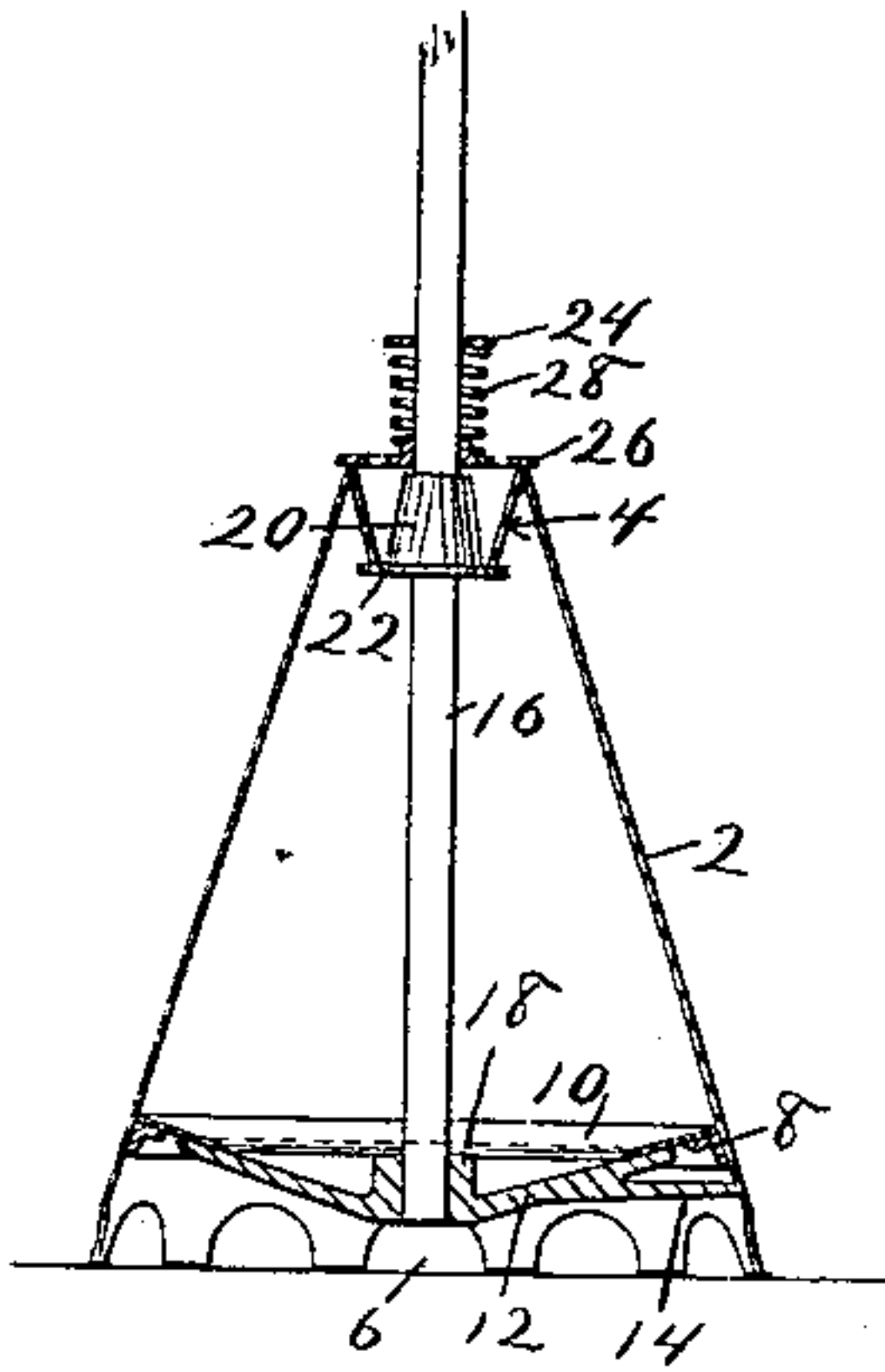


Fig. 3.

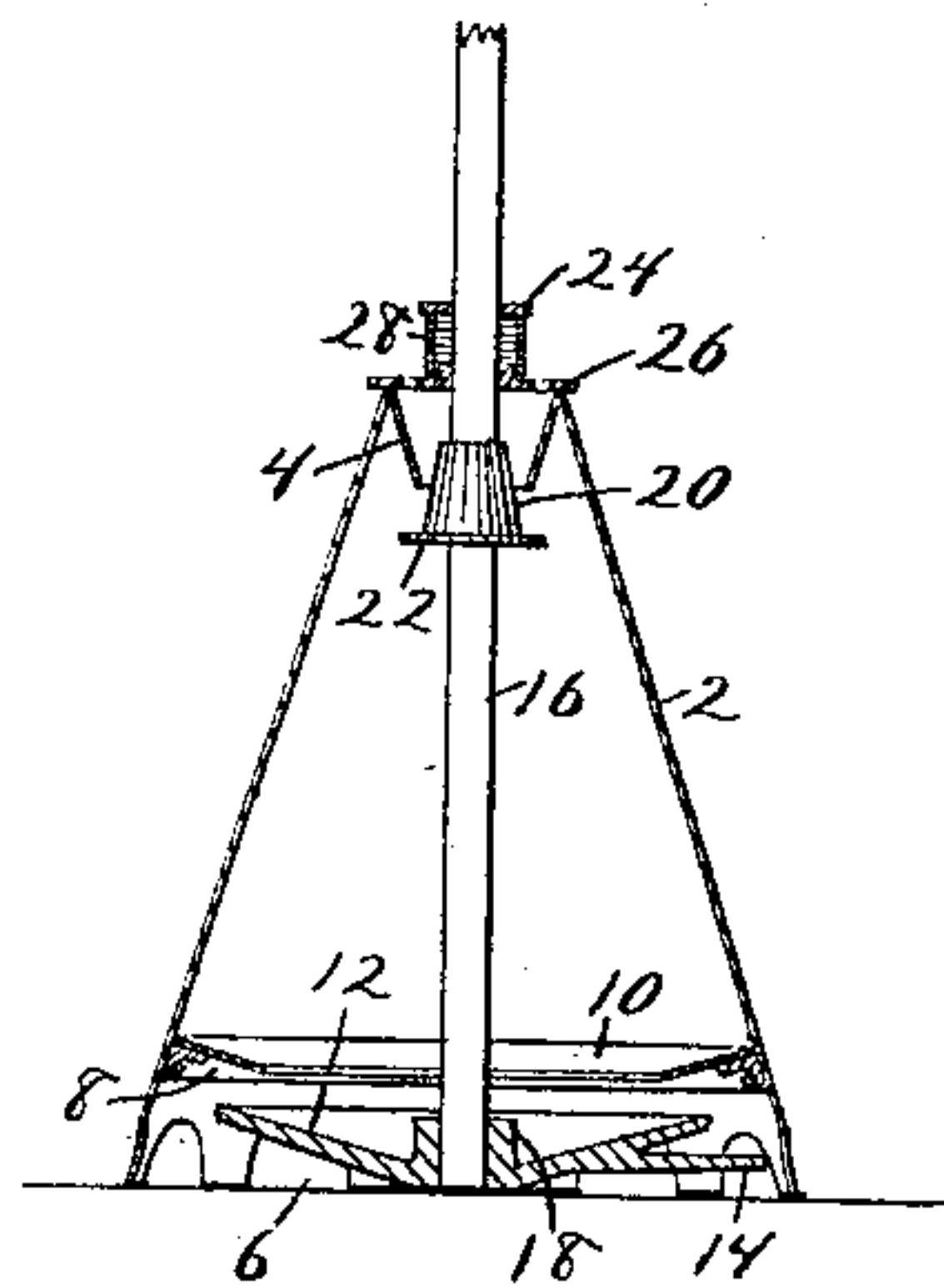
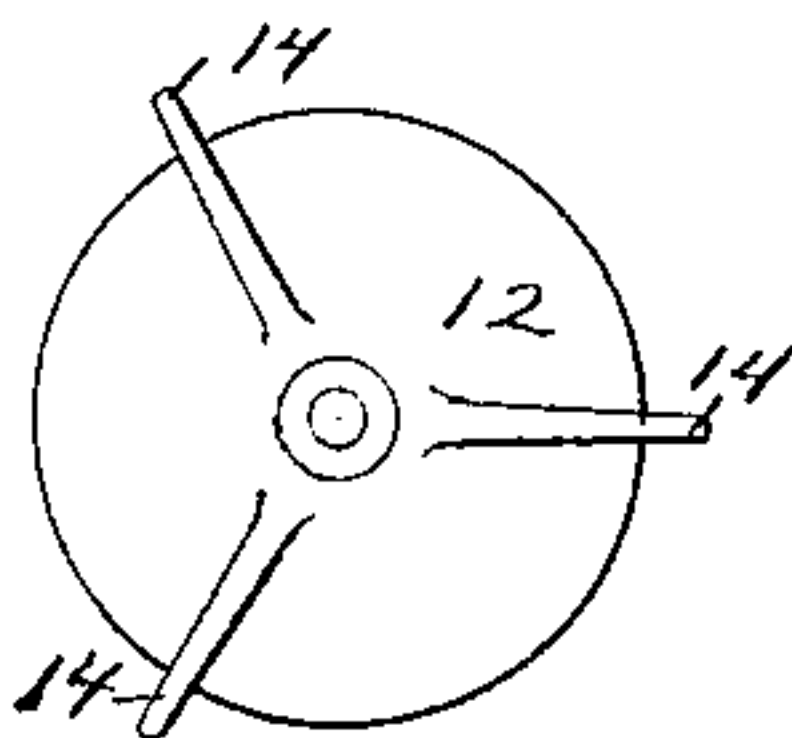


Fig. 4.



Witnesses.
S. J. Beardslee.
J. Jessen.

Inventor.
Frank E. McNall.
By Paul Sanford Merwin attys

UNITED STATES PATENT OFFICE.

FRANK. E. McNALL, OF MINNEAPOLIS, MINNESOTA.

CISTERN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 385,869, dated July 10, 1888.

Application filed November 14, 1887. Serial No. 255,162. (No model.)

To all whom it may concern:

Be it known that I, FRANK. E. McNALL, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Cistern-Cleaners, of which the following is a specification.

The object I have in view is to provide a simple and efficient mechanism for removing the sediment from the bottom of a cistern or reservoir; and to this end I construct a receiver in which the sediment is collected, a plate or disk arranged to slide into and close the opening in the lower end of the receiver and form a bottom therefor, and a rod or handle secured to the bottom and passing upward through the receiver, and means for opening and closing the aperture in the top of the receiver through which the said handle passes.

My invention consists, generally, in the construction and arrangement hereinafter described, and particularly pointed out in the claims.

In the drawings which form part of this specification, Figure 1 is a side elevation of my improved cistern-cleaner. Fig. 2 is a vertical section showing the receiver closed. Fig. 3 is a similar view showing the receiver open. Fig. 4 is a plan of the bottom to more clearly show the construction.

In the drawings, 2 represents the outer case of the receiver, which is preferably made of sheet metal and of conical shape, or of the form of a frustum of a cone. The top 4 is preferably of the form of an inverted cone, and is secured to the outer casing and extends inward toward the center, and is provided at the center with an aperture through which the handle passes. The bottom edge of the receiver 2 may be provided with the apertures 6 to allow the water to pass freely under the receiver. A flange may be attached to the inner surface of the receiver at a suitable distance from its lower edge, and preferably extends around its entire inner circumference. A gasket, 10, of rubber or other similar material, may be secured to the top of this flange and extends inwardly beyond the said flange. A plate, 12, preferably made slightly dish-shaped and provided with three or more projecting fingers or stops, 14, is preferably located in the lower portion of the receiver. The pro-

jecting fingers 14 strike against the inner surface of the receiver and serve to center the plate and to prevent it from being drawn up into the said receiver. When these fingers strike the receiver, the top edge of the solid plate will be in contact with the gasket 10.

A rod or handle, 16, is secured to the plate 12, preferably by means of the central socket, 18. This handle extends upward through the receiver, and at the point where it passes through the apertures in the cone 4 it is preferably provided with the collar 20, which may be made cone-shaped, in order to center this portion of the receiver as it is drawn upward into the aperture.

I prefer to place a flexible gasket, 22, upon the under side of this collar to make a tight joint between the said collar and the under side of the cone 4, and securely cover the opening and prevent the escape of the air from within the receiver.

A washer or flange, 24, may be secured to the handle 16 above the receiver. A perforated washer, 26, is arranged to bear upon the top of the receiver, and a spiral spring, 28, is preferably placed around the handle between these two washers. The tension of the spring bears against the washer 26 and causes it to press downward upon the receiver with sufficient force to overcome the buoyancy of the air contained in the receiver, which might otherwise tend to throw the collar 20 off its seat and allow the escape of the air before the receiver reached the bottom of the cistern. The perforations in the washer 26 will allow the air to escape without obstruction when the collar and gasket 22 are forced away from the aperture in the upper end of the receiver.

I prefer to provide my cistern-cleaner with an extension-handle, which is constructed as follows: The lower section of the handle, 16, which passes through the receiver, is provided at its top with a collar, which embraces and slides upon the upper section, 30, of the said handle. The lower extremity of this section is provided with the ears 32, which extend upward on either side of the section 16, and between these ears and pivoted to them I place the cam or eccentric 34, the face of which is arranged to be brought in contact with the opposite section of the handle, and by turning

the said cam the two sections are clamped together in any desired position, so that the handle can be lengthened or shortened at will.

For convenience in operation I prefer to provide the cam 34 with the handle 36, by which it is turned about its axis.

The operation is as follows: The receiver is placed in position on the rod and the plate resting against the gasket 10, and the gasket 22 covering the aperture in the top. The fingers 14 and the collar 20 will hold the said receiver centrally upon the handle, and the action of the spring 28 will hold the receiver firmly in this position, and it can now be lowered into the cistern or reservoir to be cleaned. The weight of the receiver and the resistance of the spring 28 will allow it to be lowered to the bottom without altering its position upon the handle, and the escape of the air contained within the receiver will be prevented by the gasket 22 covering the aperture in the top. When the lower rim of the receiver reaches the bottom, a still further downward pressure of the handle will cause the gasket 22 to be carried away from the edge of the cone 4 and leave an opening for the escape of the air. By the same operation the plate will be forced downward, leaving an annular opening between its outer edge and the flange 8. The water will now rush in to fill the space of the escaping air, and will carry with it any impurities which may be in its wake. When the receiver is filled, the handle is drawn upward, which operation closes the space between the plate 12 and the flange 8, and the gasket 10 will cover the joint between the two and prevent the escape of the material within the receiver. The fingers 14 again strike the inner surface of the cone-shaped receiver, and the whole is lifted to the surface, when the outer case of the receiver can be lifted up from the plate and the contents removed.

I claim as my invention—

1. In a cistern-cleaner, the combination, with

a suitable handle, of a movable receiver arranged to slide vertically on said handle, a bottom plate secured to said handle and adapted to close the opening in the bottom of said receiver, and a collar also secured to the handle and arranged to close an opening in the top of the said receiver, substantially as described.

2. In a cistern-cleaner, the combination, with the handle 16, of the outer case, 2, the movable bottom plate, 12, the gasket 10, secured to the case, the projecting fingers or stops 14, secured to said bottom plate and resting against the inner surface of said case, and the collar 20, provided with the gasket 22, arranged to fit an aperture in the top of said case and operate with the said bottom plate, substantially as described.

3. In a cistern cleaner, the combination, with the case 2, open at the bottom and provided with an air-exit opening at the top, of the bottom plate, 12, and collar 20, and the operating-handle 16, secured thereto and arranged to open or close the openings in the said receiver, and the spring 28, secured to the handle and acting upon the top of said receiver to hold it in position, substantially as described.

4. In a cistern-cleaner, the combination, with the case or receiver 2, the plate 12, opening or closing the space at the bottom of said receiver, the collar 20, opening or closing the air-escape at the top of said receiver, of the handle, the lower section, 16, of which is attached to the plate 12 and collar 20, and the upper section arranged to slide on said lower section, and the eccentric 34, for clamping the two sections together, substantially as described.

In testimony whereof I have hereunto set my hand this 3d day of November, 1887.

FRANK. E. McNALL.

In presence of—

R. H. SANFORD,
C. J. GOTSHALL.