

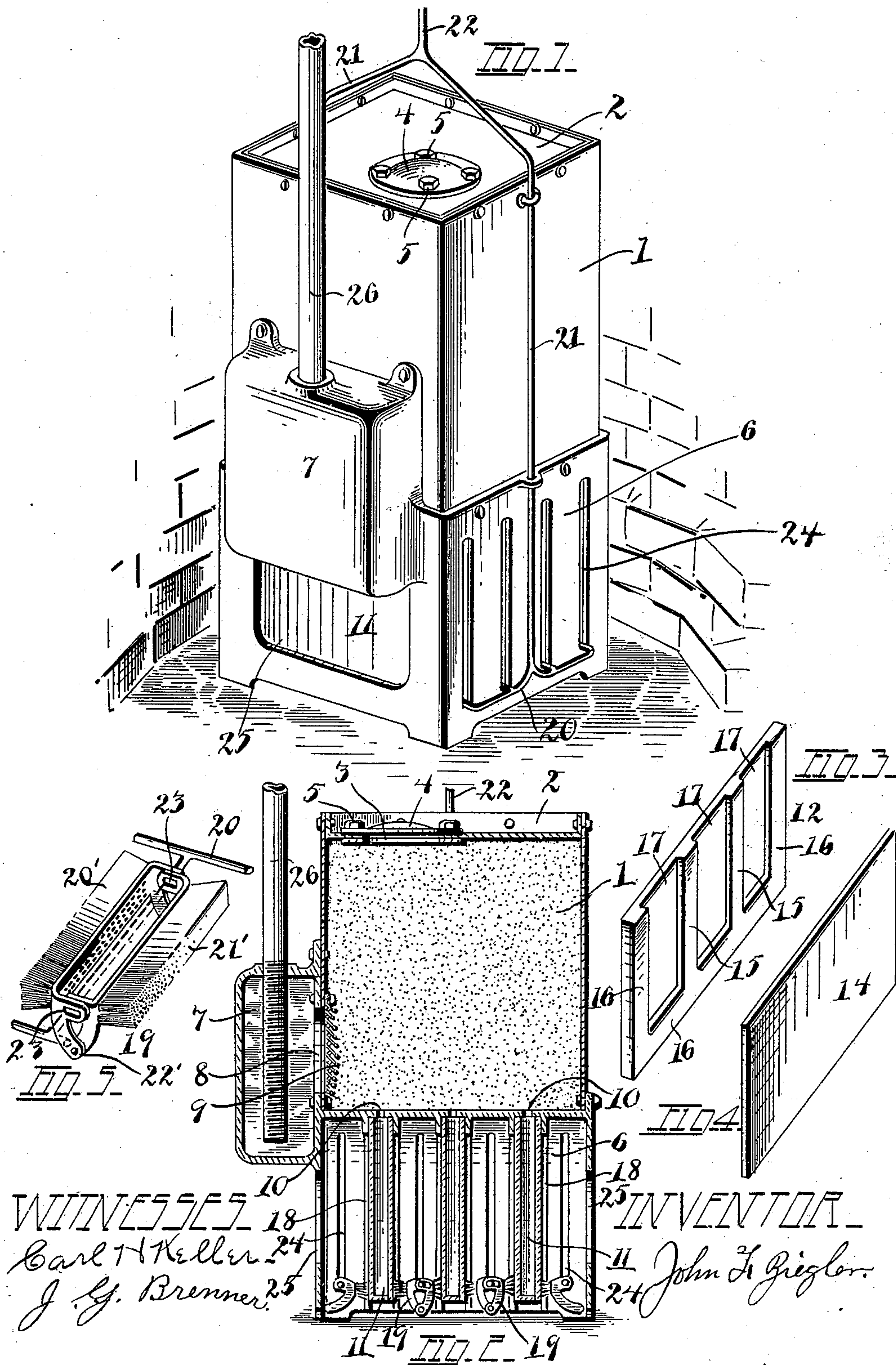
No. 620,208.

Patented Feb. 28, 1899.

J. F. ZIEGLER.
FILTER.

(Application filed Nov. 18, 1897.)

(No Model.)



UNITED STATES PATENT OFFICE.

JOHN F. ZIEGLER, OF TOLEDO, OHIO.

FILTER.

SPECIFICATION forming part of Letters Patent No. 620,208, dated February 28, 1899.

Application filed November 18, 1897. Serial No. 658,928. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. ZIEGLER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Filters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to use the same.

My invention has reference to a filter, and in particular to a filter to be employed in the purification of water in wells and cisterns.

One object of my invention is to furnish a thoroughly reliable and inexpensive filtering device capable of being inserted in any well or cistern.

A further object is to furnish a filter whereby several families may be supplied with pure and wholesome water by using this filtering device in common.

A further object is to supply a filtering device which shall be capable of insertion in any well or cistern and which shall be essentially portable in character.

A further object is to supply a filtering device with an easy means of cleaning the same without the removal thereof from the well or cistern in which it has been inserted.

A further object is to furnish a filtering device in connection with a well or cistern whereby the purified water is maintained at the same temperature of the water in the well or cistern, thereby dispensing with the use of ice to cool the same. In this way I effect the saving of the cost of the ice and avoid the inconvenience of handling the same.

A further object is to supply a filtering device in connection with wells and cisterns which shall have the effect of deodorizing the water in passing therethrough.

A further object is to furnish a filter which is so constructed that it may be placed in a well or cistern in working order without the necessity of removing the water in well or cistern.

With these objects in view I employ the parts and combination of parts hereinafter shown, described, and claimed.

In the drawings, Figure 1 is a perspective view of the filter in position at the bottom of an ordinary well. Fig. 2 is an elevation of

my filter in vertical section. Fig. 3 is an isometric view of one of the parts, there being two which I employ in building my filter-plates. Fig. 4 is an isometric view of the other part which, in connection with Fig. 3, forms a filter-plate. Fig. 5 is an isometric view of the brushes which I employ in cleaning the filter-plates.

1 is a body portion constructed of sheet metal or similar material, having a top 2 secured thereto, in which is a hand-hole 3, closed by a cover 4, secured by nuts 5. Body portion 1 is mounted on metallic base portion 6, being secured thereto by any suitable means. Integral with base portion 6 is pocket 7, which connects with the interior of body portion 1 through the medium of a passage 8. Passage 8 is covered by a screen or wire-netting 9.

10 are passages which lead to the interior of body portion 1.

11 are hollow filter-plates formed of parts 12 and 14, respectively. Part 12 is preferably ribbed, as at 15, and surrounded on three sides thereof by raised portion 16. Part 14 is in the form of a slab. When 12 and 14 are assembled to form a filter-plate, the top portion only remains open, as at 17, thereby forming a hollow filter-plate of extremely great strength as a consequence of the vertical ribs therein.

I may employ porous potter's material in the construction of my filter or I may employ a material stone for the purpose, as I wish it understood that I am not confined to employing a particular kind of material.

In the base portion 6 I construct flanges 18 to receive the filter-plates 11, which are slid between the flanges and rigidly held in position by cementing or by any suitable method. This not only secures the plates 11 to the base portion 6, but also prevents the impure water from passing to the interior, around the edges thereof, inasmuch as they are cemented together. Filter-plates are secured in position in such a manner that the opening 17 in the top of the filter-plates will take a position corresponding with openings 10. In this manner a direct passage is effected from the interior of the filter-plates to the interior of body portion 1. A space is left between the exterior of the filter-plates to permit the vertical movement of brushes 19, mounted on a frame

20, in connection with side rods 21, which are carried above the filter and united to form a single rod 22. This rod is carried upward through the cistern or well platform and terminates in a handle and is readily actuated from above. Brushes 19 are preferably assembled in pairs 20' and 21', hinged at 22', there being slots 23 through which the rods of frame 20 pass.

24 are slits in the base portion 6, which serve as guides for the frame 20 in the vertical movement thereof.

25 are enlarged openings in the base portion 6 to permit the water to enter freely and surround the filter-plates 11.

26 is the lower end of the suction-pipe of a pump or other raising device, terminating in the pocket 7.

In operation the body portion 1 of filter is first coated with a solution of water cement. This is done to prevent the water from acquiring a metallic taste. Body portion 1 is then filled with charcoal or other suitable deodorizing material. The top 2 is then secured in place and the hand-hole 3 sealed against the passage of impure water or other extraneous material. Filter-plates 11 are then slid into the base portion 6 between the flanges 18. Where the same are attached to the base portion 6, they are securely cemented to hold them in position. Suction-pipe 26 is secured to the filter by any suitable means and terminates near the bottom of pocket 7. The filter is then lowered into the well or cistern by any suitable means and rests in an upright position at the bottom thereof, being entirely submerged. The water in the well or cistern therefore passes through openings 25 in the base portion 6 and surrounds the filter-plates, and the water, percolating therethrough, passes upward and out of the filter-plates and through the openings 10 in body portion 1. After entering body portion 1 the water thoroughly mixes with the charcoal therein, which completes the process of deodorizing. The water, now being in a pure state, passes by gravity into the pocket 7 through the passage 8; the charcoal in body portion 1 being held from passing into the pocket 7 by the screen or wire-netting 9. From the pocket 7 the water is drawn by any suitable means for consumption, being at the same temperature as that surrounding the pocket. After the filter has been in operation for a period of time the exterior surfaces of

the filter-plates become clogged and dirty. The removal of this foreign material is effected by vertically reciprocating the brushes between the exterior of the filter-plates by actuating a handle above the well or cistern platform, which communicates motion to rod 22, rod 21, and frame 20 move in vertical slots 24. Brushes 19 are moved by frame 20, passing through slots 23 and are hinged at 22'. It will be seen that by this construction I accomplish a lateral adjustment of the brushes to compensate for any difference in space between the filter-plates. It is also evident that as the brushes are raised they will have a tendency to separate and bear heavily against the plates, thereby removing every vestige of foreign matter thereon. As the brushes are lowered they contract and press less heavily on the filter-plates.

It will be seen that I supply a filter for domestic use which at all times furnishes a supply of pure and wholesome water and that I furnish an efficient means of cleaning the same.

What I claim as new and useful, and which I wish to secure by Letters Patent, is—

1. In a filter a submerged body portion, a pocket connected therewith integral with a base portion having secured therein a plurality of filter-plates in parallel relation and connected with said body portion substantially as shown and for the purpose set forth.

2. In a filter a submerged body portion, a pocket in connection therewith, a base on which is mounted said body portion, filter-plates secured in said base portion in connection with said body portion, brushes secured between the plates, and means for actuating the brushes substantially as shown and for the purpose set forth.

3. In a filter a body portion, a base portion, filter-plates mounted in parallel relation in the base portion and in connection with the body portion, brushes mounted on a frame between the filter-plates, means for laterally moving the brushes and means for vertically reciprocating the brushes, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in the presence of two witnesses.

JOHN F. ZIEGLER.

Witnesses:

GEO. P. KING,
A. P. BURCH.