A. D. PUFFER, Jr.
Soda-Fountain.

No. 226,195 Patented April 6, 1880.

Fig. 1.

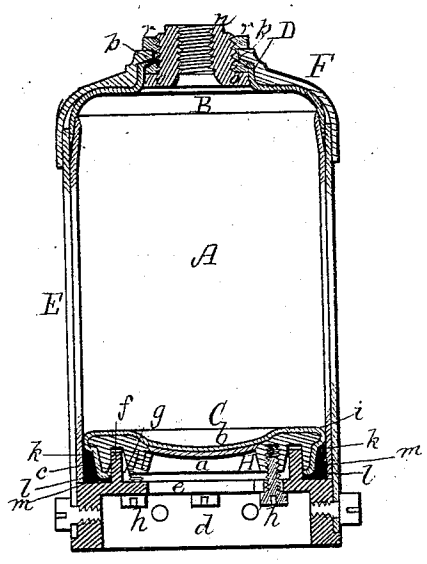


Fig. 2.

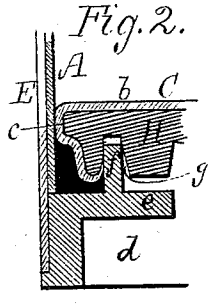


Fig. 3.

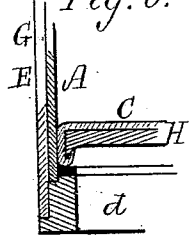


Fig. 4.

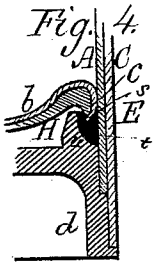
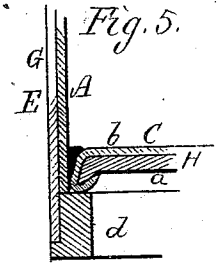


Fig. 5.



Witnesses.
Oscar Low
H. B. Lodge

Inventor.
Alvin D. Puffer Jr.
Y. Curtis. Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALVIN D. PUFFER, JR., OF BOSTON, MASSACHUSETTS, ASSIGNOR TO ALVIN D. PUFFER & SONS, OF SAME PLACE.

SODA-FOUNTAIN.

SPECIFICATION forming part of Letters Patent No. 226,195, dated April 6, 1880.

Application filed February 7, 1880.

To all whom it may concern:

Be it known that I, ALVIN D. PUFFER, Jr., of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Soda-Fountains, of which the following is a specification.

This invention relates to fountains for soda or other aerated water or liquids under pressure, in the construction of which a non-corrosive lining is employed inclosed in an outer shell or case of sheet metal, usually steel, the coupling-connection by which communication is had with the interior of the fountain being arranged centrally in one of the heads of the said fountain.

In my present fountain the lining as well as the outer case is open at bottom.

In my present fountain the bottom is independent from the rest of the lining and outer case, and is adapted to be readily separated from them and replaced should occasion require, and it is in this feature that the main point of my invention will be found to consist.

My invention further consists in the combination, with the movable bottom before mentioned, of means for packing the joint between it and the remainder of the fountain, whereby the pressure of contents of the fountain operates to crowd the packing into its receptacle and completely seal the joint. The greater the pressure from within the more secure the packing becomes.

My invention further consists in the peculiar construction of the movable bottom and its support, as hereinafter described.

The drawings accompanying this specification represent, in Figure 1, a vertical section of a fountain containing my improvements. Fig. 2 is a section, on an enlarged scale, of the joint between the movable bottom and the body of the fountain. Figs. 3 and 4 are modifications of this joint.

In the said drawings the lining of the fountain, which is usually of block-tin, is shown at A as a straight cylinder with a semi-spherical top or head, D, and with its lower end open, except when closed by the removable bottom, which is shown at C, the cylinder A and head or top D being united by any suitable joint, and a central orifice, B, being made in the head, through which the contents of the fountain find escape.

The outer shell or case of the fountain is shown at E as of a size and shape to tightly inclose the lining and its head, and extends somewhat below the lower end of the lining, the head or cap F of the said case being confined to its straight cylindrical portion E by any suitable joint, and an opening being made in the top of such head to correspond with the opening in the head of the lining.

The removable bottom C, as shown in the present instance, is composed of an annular disk or block, H, with its central portion, *a*, of thinner metal and joined to it in a suitable manner, while the bottom *b* of the lining of the fountain is secured to this disk or block and is removable with it, the edges of said bottom being turned over and down about the periphery of the block, as shown at *c* in the drawings, in order to prevent contact of the contents of the fountain with the said block.

The supporting-base or foundation of the removable bottom is shown in this instance as composed of a flat ring, *d*, terminating at top in a horizontal annular shelf or lip, *e*, while upon such shelf is erected an upright annular ledge, *f*, such ledge entering an annular channel, *g*, created in the under side of the removable bottom, the said base or support *d* being bolted or riveted to the outer shell.

To confine the removable bottom C to the base *d*, and consequently secure it in place within the fountain, I pass upward through the annular shelf or flange *e* of such base a number of bolts or screws, *h*, and screw these latter into the annular disk or circular block H, the heads of the bolts bringing up against the under side of the shelf.

The purpose of bolting the removable bottom to the base *d* is to retain such bottom in place while being moved about or transported, and the bolt will serve to maintain a tight joint between the bottom and lower part of the fountain under small pressure.

It may be observed that the upper edge, *i*, of the removable bottom is crowded close within the lower end of the lining-cylinder A; but as this would not provide a joint sufficiently tight to stand the pressure within the foun-

tain, I slope away the lower part of the periphery of the disk or block H, as shown at *k*, by which means I provide an annular triangular space or channel, which is bounded on its inner side by the said periphery of the block H, on its under side by the shelf *e* of the base *d*, and on its outer side by the inner periphery of the lower end of the lining C. Within the space or channel *l*, I place a ring, *m*, of india-rubber or other elastic or semi-elastic material, such as any of the well-known vulcanized rubber compounds capable of lateral distention, and when the bolts *h* are screwed up and the removable bottom drawn downward toward the base *d* the packing-ring *m* is distended laterally between the periphery of the block H and the inner wall of the lining, the result being that the joint between such parts is effectually sealed.

As before stated, the power of the bolts is capable of distending the packing to an extent sufficient to seal the joint against small pressures. When a considerable pressure exists within the fountain such pressure crowds the removable bottom downward toward the base *d* and the packing is distended or crowded into the passage *m* to a corresponding extent.

An interiorly-threaded nozzle or coupling-ring, *n*, is inserted within the orifice of the cap of the fountain from the inside, and has an annular outstanding lip, *o*, upon its lower edge, between which and an annular lip, *p*, surrounding the mouth of the cap, a packing-ring is inserted.

A nut, *r*, is screwed upon the upper part of the neck of the nozzle and against the lip *p*, above referred to, the result being that the joint about the opening in the head of the fountain is effectually sealed against escape of the contents of the latter.

In constructing this fountain the head of the lining is secured to its cylindrical body and placed within the outer shell, the head of which has previously been secured to it. The nozzle is now inserted from the inside of the lower end of the lining-cylinder with the packing-ring in place and the nut *r* screwed home, which completes the cap or head of the fountain. The removable bottom is now pushed into the lower open end or mouth of the lining-cylinder and the base *d* inserted below it within the lower end of the outer shell, the elastic ring or packing *m* being placed in position between them, as explained, and the base *d* securely bolted or otherwise fastened to the outer case, and the upright ledge or lip *f* of the base entering the annular groove or channel *g* in the removable bottom. The bolts *h* are now screwed into the under side of the removable bottom and the latter drawn down toward the base, and so as to compress the packing within its recess.

The lower end or mouth of the annular channel *g* should be flaring, as shown, in order that the lip *f* of the base may readily enter it.

I do not confine myself in any sense to the precise manner of securing the removable bottom in place within the fountain or the manner of securing and compressing the elastic packing, as herein shown, as these may be varied from to a wide extent without losing sight of the essential feature of my invention, which I consider to consist in a detachable bottom independent from the main body of the lining and susceptible of being readily removed from or applied to the fountain without unsoldering joints or injuring the parts.

I am aware that fountains have been heretofore made with so-called removable bottoms—that is to say, the lining has been entire and the base or support at the bottom of such lining removable, in order to permit the entire lining to be taken out of the case. This, however, does not permit of access to the interior of the lining, as in my construction, and is not literally a removable bottom.

In Fig. 3 of the accompanying drawings the periphery of the removable bottom is shown as abutting against the upper edge of the base *d*, which, in this instance, is a simple ring bolted to place, the packing *m* being inserted between the two; or this construction may be varied somewhat by leaving a space between the upper edge of the removable bottom and the wall of the lining, as shown in Fig. 5 of the drawings, in order that a packing may be inserted into this space from the nozzle *n* of the head, the pressure of the contents of the fountain directly upon this packing serving to seal the joint.

In Fig. 4 of the drawings the periphery of the removable bottom is turned under to form a lip, *s*, which rests upon and takes into the packing *m*, which is contained within a channel, *t*, formed by a rabbet, *u*, in the base *d* on one side, and on the other side by the inner wall of the lining C; and the lower edge of the lip *s* may be triangular or knife-edged, or it may be flat, or any other proper shape to effectually distend the packing.

I claim—

1. In a soda-water or other fountain, the combination, with the body and the lining thereof, of a detachable bottom united with the bottom lining and fitting within the said fountain-body, substantially as and for the purposes set forth.

2. In soda-water or other fountains, a removable bottom carrying the bottom of the lining, and adapted to operate with an elastic or semi-elastic packing and an abutment secured to the body of the fountain, to seal the joint between the removable bottom and the said fountain by the pressure of the contents of the latter body.

3. In soda-water or other fountains, a removable bottom entering the lower end of the body of the fountain and adapted to operate with and compress or distend an elastic or semi-elastic packing placed between them, both by the power of bolts and the pressure within the fountain, the bolts serving to compress the

packing sufficiently for low pressure, and the higher pressure serving to automatically distend the packing.

4. In soda-water or other fountains, the combination, with the body of the fountain and its lining, of a removable bottom inserted within the latter and an independent and separate abutment or base outside of such bottom and secured to the fountain-body.

5. The combination, with the body of the fountain, of the detachable bottom and the abutment or base formed and arranged substantially as described, so that there shall be formed between said parts an annular packing receptacle or recess, substantially as set forth.

6. The combination of the fountain-body, the bottom and support therefor, and packing, arranged and operating to seal the joint between the bottom and the body, substantially as and for the purposes hereinbefore set forth.

7. The combination, with the fountain-body and the removable bottom, of the base *d*, formed with the shelf *e* and with the vertical lip *f*, to enter a corresponding channel in the removable bottom.

8. In combination with the fountain-body and removable bottom with the channel in its under side, the independent base-piece *d*, formed with a lip, *f*, to enter said channel, substantially as hereinbefore set forth.

9. The combination, substantially as hereinbefore set forth, of the fountain-body, the removable bottom, the base *d*, the connecting-screws *h*, and the interposed packing *m*.

10. The combination of the body of the fountain, the detachable bottom, the base for confining the bottom in place, and the elastic packing.

ALVIN D. PUFFER, JR.

Witnesses:
H. E. LODGE,
M. BAILEY.