

(No Model.)

A. D. PUFFER.

CRADLE FOR CARBONATING SODA OR OTHER MINERAL WATERS.

No. 347,378.

Patented Aug. 17, 1886.

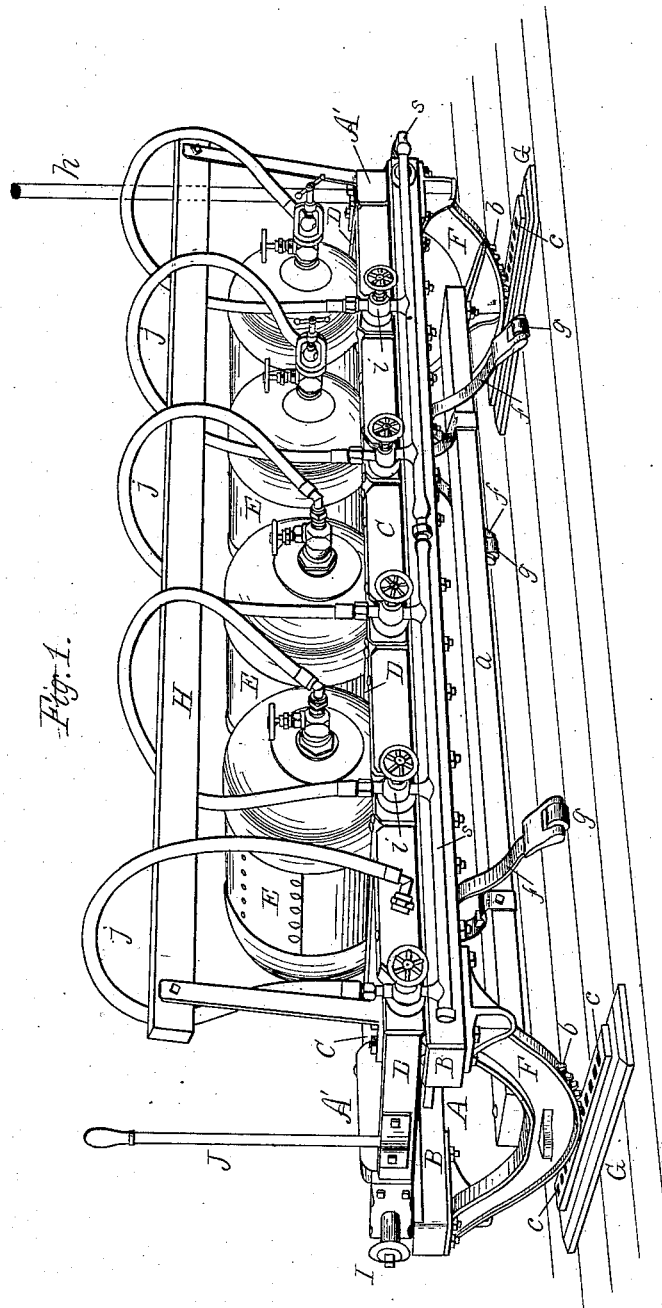


Fig. 1.

Witnesses.
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CRADLE FOR CARBONATING SODA OR OTHER MINERAL WATERS.

SPECIFICATION forming part of Letters Patent No. 347,378, dated August 17, 1886.

Application filed April 3, 1886. Serial No. 137,634. (No model.)

To all whom it may concern:

Be it known that I, ALVIN DAVIS PUFFER, a citizen of the United States, residing at Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Cradles for Carbonating Soda or other Mineral Waters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to soda-water apparatus for aerating or carbonating soda or other mineral waters contained in "fountains," so called; and it consists, in the present instance, in improvements in the structural arrangement, manner of mounting, and operation of a cradle for carbonating soda or other mineral waters.

One essential feature is in mounting the cradle, upon which are supported and removably-secured a series of fountains, and vibrating it upon a rocker-plate or segmental standard; hence, when the cradle is in motion, the point of support or pivot changes more slowly and is for the most of the time to one side of the center of gravity of the cradle and its series of fountains. Thus it is evident that the weight of the cradle and its component parts serves and tends to return said structure to a normal or horizontal position, in consequence of which the fountains are more easily rocked and their contents more thoroughly carbonated, or aerated, as the case may be.

A second and more prominent feature is in the arrangement upon the cradle-frame of the supply-pipes, valves, and other fittings which connect the fountains in series. By this method of attaching the said pipes and valves upon the cradle-frame the fountains and all the connecting apparatus are stationary with respect to each other, and hence there is little or no wear. Usually, in the methods now and heretofore practiced, the fountains are rocked, while the supply-pipes and regulating-valves are stationary at a point separate and distinct from the cradle.

A third feature in my invention is in the disposition of springs secured to the cradle, transversely of its longitudinal axis of vibration, whereby said vibrations of the cradle may be continued, not only for a longer period

of time, but more easily, while the change in the direction of such vibrations may be rendered less abrupt, and sudden shocks and jars to the apparatus thereby prevented.

The drawing represents in a perspective view a cradle containing a series of fountains for carbonating purposes, and embodying the several features of my invention. In said drawing one of the series of fountains has been removed.

In such drawing, A represents a stout rectangular frame composed of two longitudinally-disposed pieces, B B, suitably united. Such frame is surmounted by a second frame or bed, A', composed of the pieces C C D D, which support the fountains E E, serially disposed transversely of the cradle and resting upon said bed A'. Beneath this frame or cradle A, and at each end, I have securely affixed two curved metallic rockers or segmental standards, F F, which are strengthened and braced together by a longitudinally-disposed stringer, a. The active or bearing faces of these rocker-standards F are convex and provided with peripheral teeth b b, adapted to engage in corresponding slots, recesses, or dents c c, formed in the plane upper surface of bearing-plates G G. This arrangement is to prevent slip when the pivot or point of support is removed and considerable distance to one side the center of gravity of the cradle, as in the extreme of a vibration.

Transversely disposed with respect to the axis of vibration are four or more springs, f f, bolted or otherwise suitably fastened at one end to the strut a, and at their opposite or active extremities provided with anti-friction rollers g g. Thus, when the apparatus is being actively employed in the carbonating or aerating of liquid contained within the series of fountains mounted on the cradle, and at the end of each extreme of vibration, such springs are compressed against their tension, and thus store up power which otherwise would be lost, while the rollers reduce the friction upon the floor supporting the cradle; hence the momentum of the cradle and fountains carried thereon, due to each vibration, is gradually and gently diminished and overcome, and no sudden shock or severe strain or thrust is brought upon any of the parts which might tend to displace or break the latter were such vibrations suddenly checked.

Hitherto in apparatus of this class the fount-

ains have been supported and rocked upon an ordinary shaft, centrally located of the structure and suitably journaled; but it is evident by this method that when the structure is tipped and the liquid contained within the fountains has gravitated toward the depressed ends of the closed vessels, the center of body of the structure is below the pivot or point of support, and in consequence there is no tendency of the cradle to recover its equilibrium or horizontal balance since the pivot remains fixed.

In my present arrangement of the toothed segment or standard, it is very apparent that as the body is tilted the pivot or center of support moves toward the lowest part of the cradle which it sustains, and thereby the center of gravity of the body is separated from the center of support, and a strong force or couple is produced to return the cradle with its series of fountains back to a position where the two centers—that of support and gravity—are in the same vertical plane. This feature I consider to be of very great importance, since in my method of constructing the cradle the weight of the superstructure, with the series of fountains, especially when filled, all act unitedly to maintain and assist the vibrations of the cradle in its efforts to return to rest, and such vibrations will therefore be continued for a longer interval of time, which is the object sought. In the method heretofore practiced this weight is to be overcome and acts as an opposing force to stop any vibration. Again, in the mode of connecting the fountains, the latter were rocked, while the supply-pipes and operating-valves have been secured to a fixed or stationary support; hence there was continued wear upon such connecting fittings and leakage and waste were incurred.

In my improvements I have shown the main supply-pipe at *h*. This is united with a fixed or secondary part or extension, *s*, which is firmly attached to the side piece, *B*, of the cradle-frame *A*. Laterally disposed thereof and likewise secured to the cradle is a series of valves, *i i*, which operate to regulate the supply of gas to be admitted to and within the fountains by means of the supply-pipe *j j*.

Upon the front side of the apparatus I have erected a side frame, *H*, about which are coiled or wound the supply-pipes *j j*. This arrangement is to prevent sway or movement of the said pipes, which would be accompanied by chafing and wear incidental to the active employment of the cradle. In fact, the gist of this part of my invention is to make each and every component part of the apparatus immovable with respect to each other during the oscillations of the cradle. Thereby I obviate the wear and rapid deterioration of such parts, when each one has a distinct and separate movement, not only varying from each other in rapidity, but likewise in the direction it travels.

At *I* is represented a short pin or hand-bar,

by means of which the cradle is actuated in the process of carbonating soda or other mineral waters contained in the fountains; or in lieu of this a hand-lever, *J*, may be employed when the cradle is very large and heavy, at which time it is desirable to obtain a greater leverage to overcome the increase in the work.

As will be seen by the above description the cradle containing my improvement, is compact, effective, easy of operation, and, moreover, it contains, secured to it as integral portions, all the supply-pipes, valves, and fittings, which consequently partake of the same and have equal motions with the cradle and its fountains. This arrangement has a decided advantage over that heretofore employed, as thereby no friction ensues between the individual component parts, and wear and tear is very much diminished, if not entirely obviated. Moreover, the fittings remain tight for a much longer time.

I claim—

1. A fountain-supporting frame provided with rocker-standards having teeth *b* on their convex under edges, in combination with fixed plates provided with recesses which receive said teeth, substantially as set forth.

2. A cradle for carbonating soda or other mineral waters, upon which are secured a series of removable fountains containing the liquid, the supply connecting pipes and valves rigidly fastened to said cradle, whereby all the component parts move in unison during the vibrations of the cradle, substantially as and for the purposes set forth.

3. In combination with a series of fountains mounted upon a vibrating cradle, substantially as described, to which are firmly affixed the supply connecting pipes and valves of said fountains, the extension supporting-bar *H*, by means of which the supply-pipes *j j* are rendered an integral part of the apparatus and are thus moved in unison with the cradle-frame, as herein stated.

4. A fountain-supporting frame provided with rocker-standards having peripheral teeth *b*, in combination with fixed plates having recesses or detents *c*, which engage with said teeth, and the springs *g*, extending from the sides of said cradle, substantially as and for the purpose set forth.

5. In general combination, the cradle-frame *A*, vibrating upon the segmental rockers *F F*, and bearing-plates *G G*, the springs *f f*, the series of fountains *E*, with the main supply-pipes *h s* and connecting-valves *i i*, the extension-bar *H*, about which the secondary supply-pipes *j j* are coiled, and the lever *J*, all vibrating as an entirety, and co-operating substantially for purposes herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALVIN D. PUFFER.

Witnesses:

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E. K. BOYNTON.