(Model.)

2 Sheets—Sheet 1.

J. MATTHEWS.

SODA WATER FOUNTAIN.

No. 260,037. Patented June 27, 1882.

Fig: 1

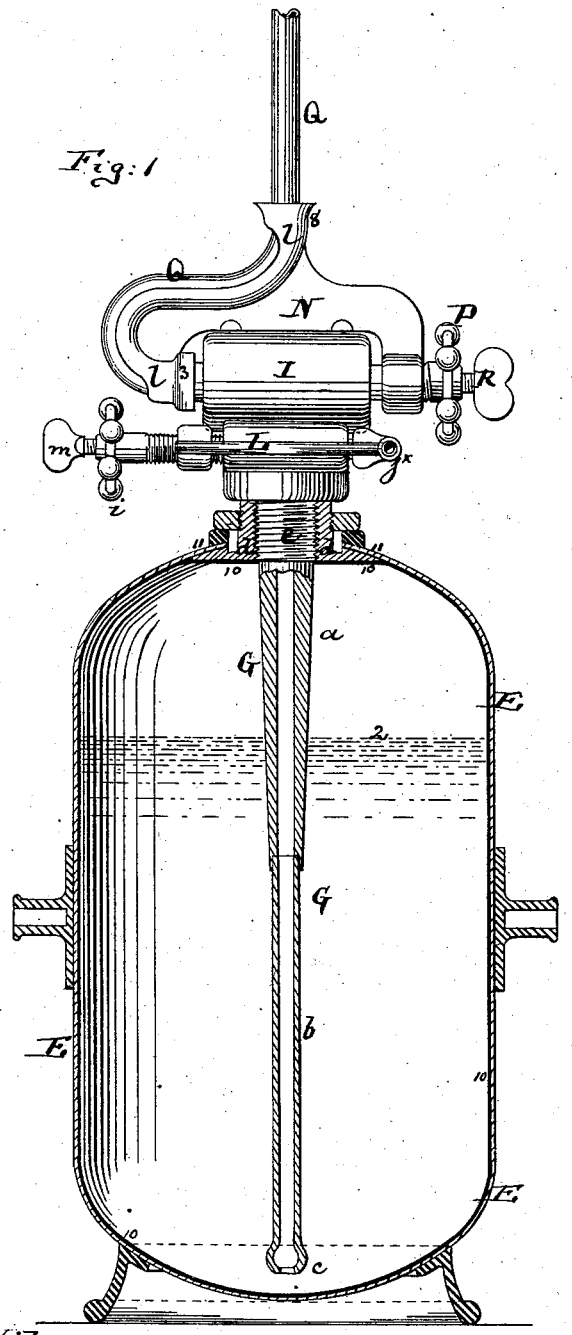


Fig: 2

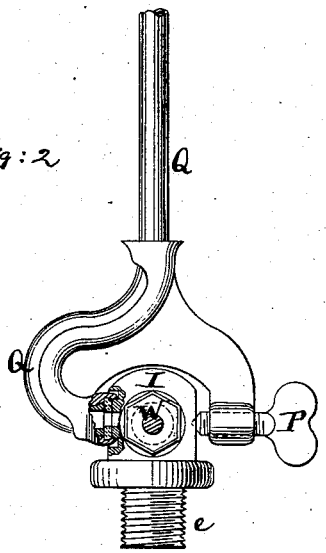
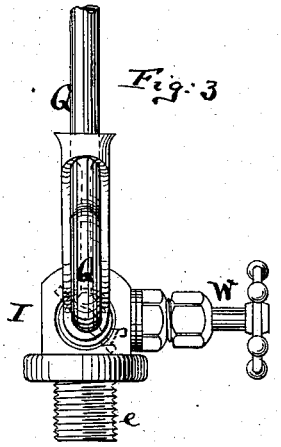


Fig: 3



Witnesses.
Henry F. Parker.
John C. Tumbridge

Inventor.
John Matthews
by his attorney
A. V. Briesen

(Model.)

2 Sheets—Sheet 2.

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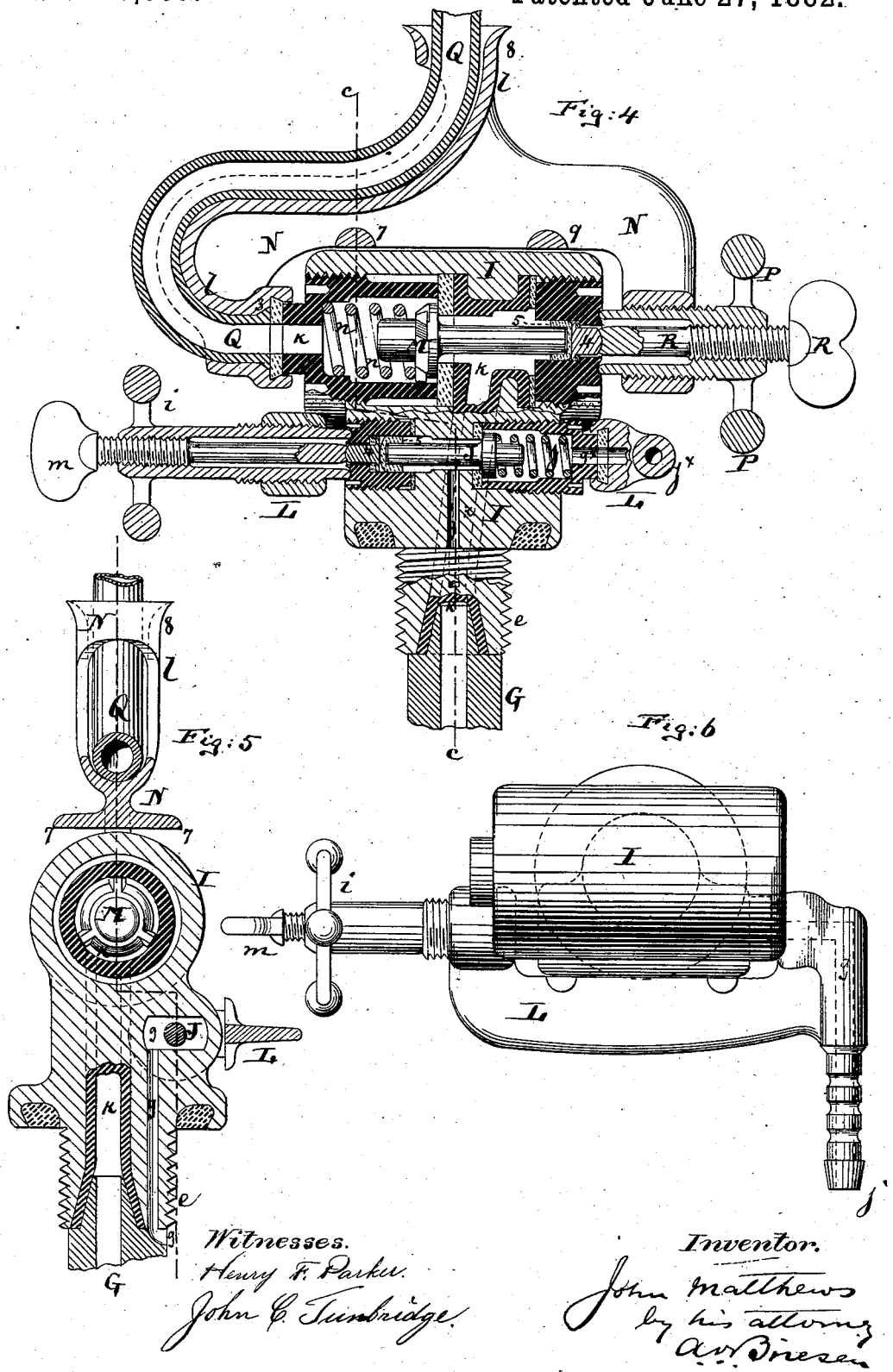

Witnesses.
Henry F. Parker.
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John Matthews
by his attorney
A. W. Briesen

UNITED STATES PATENT OFFICE.

JOHN MATTHEWS, OF NEW YORK, N. Y.

SODA-WATER FOUNTAIN.

SPECIFICATION forming part of Letters Patent No. 260,037, dated June 27, 1882.

Application filed February 14, 1881. (Model.)

To all whom it may concern:

Be it known that I, JOHN MATTHEWS, of the city of New York, county of New York, and State of New York, have invented an Improved Soda-Water Fountain, of which the following is a specification.

Figure 1 is a vertical section of my improved fountain, with the improved stop-cock attachment and clamp in side view. Fig. 2 is a side view, partly in section, of a modified form of the stop-cock and clamp attachment. Fig. 3 is an edge view of the same. Fig. 4 is a central longitudinal vertical section of the improved fountain stop-cock and its clamp attachment. Fig. 5 is a cross-section of the same on the line *c c*, Fig. 4. Fig. 6 is a top view of the stop-cock with the gas-clamp attached thereto.

My invention relates to improvements in the construction of the cocks that are applied to vessels which are known as "fountains" for containing soda-water or other carbonated or aerated beverages, and in the accessories thereof; and it consists in a new construction of cock for charging the fountain with the liquid and with the gas and for emptying it, and in a new clamp for joining it to the discharge-pipe of the dispensing apparatus, and also in a new construction of the tube that is attached to said cock.

The fountains as heretofore constructed were open to many objections as to the arrangement of the stop-cocks and of the couplings that join them to the pipes of the dispensing apparatus. The fountain-cocks as heretofore constructed were also objectionable for various reasons, principally because they are provided with projecting valve-spindles that are liable to break off during transportation or to be bent out of shape, and that enables careless or dishonest persons to empty the fountains of their contents by merely turning the projecting handles. Moreover, these stop-cocks caused a loss of the gas which remains in the fountain after the liquid contents have been discharged, and which, when saved, will prevent great loss to the manufacturer of the carbonated liquid. The tubing which projects from the stop-cock into the fountain-body is generally made of block-tin, and liable to be jarred and bent and to injure the lining of the fountain during the act of insertion, and also liable to be broken off at the upper end during the act of insertion if it should come in contact with the lining.

My invention consists, as far as the stop-cock is concerned, in concealing its working parts entirely within its shell, so that nothing projects that can be injured by contact during transportation, and so, also, that no one can have access to the contents or open the fountain who is not provided with the clamp-key, which alone permits the opening of the cock.

Other features of improvement in my improved stop-cock will be hereinafter more fully described.

The coupling devices for joining the fountains to the tubes of the dispensing apparatus have heretofore been made so that they were very liable to get out of order. Mostly they consist of swivel-nuts placed over the collars of the dispensing-tubes. Experience shows that these nuts, unless quite correctly placed upon the receiving-nipple of the fountain, would have their threads destroyed, and fail, therefore, to make proper joints, and they soon become useless for actual application. Wrenches and other instrumentalities were required in making and unmaking the connections, and in the effort the conducting-tube was frequently twisted or broken. Detached clamps are also sometimes employed, which, if accidentally mislaid, will prevent the consumer from making the necessary connection.

My invention, as to the coupling device, consists in providing the conducting-tube with a clamping attachment, which always remains in place on said tube, and which is provided with instrumentalities for opening the stop-cock of the fountain, and with instrumentalities for attaching it to the shell of the stop-cock, so that by my invention the consumer who orders the fountain from the manufacturer really has the key to the fountain, and is alone enabled to open the discharge-cock and draw the contents.

In the accompanying drawings, the letter E represents the body of the fountain.

I is the shell of the stop-cock, which shell is provided with a screw-projection, *e*, that enables it to be screwed into the bung *d*. This projection carries the tube G. Within this shell is the passage *k*, that connects the bore

of the tube G with that of the conducting-tube Q, the latter being attached to the end of the stop-cock shell by the instrumentalities hereinafter described, or otherwise. This passage *k* contains the valve M, which closes it normally by the action of a suitable spring, *n*.

The spindle of the valve M is by preference entirely contained within the shell I, its outer end having a flexible cap or cup-leather washer, 5, which prevents the escape of liquid outwardly, and which bears against a loose follower, 4, that is pressed against a suitable seat in the shell I, as shown in Fig. 4, whenever the valve M is closed by the spring *n*. Thus the valve, as constructed, cannot be conveniently opened without the use of my improved clamping device, because the valve-spindle is not exposed.

In order to utilize the carbonic-acid gas that remains in the fountain after the liquid portion of the beverage has been withdrawn, and also for the purpose of charging the fountain with gas without removing the stop-cock, I form in the shell I another passage, *g*, which reaches downward and communicates with the interior of the fountain at a point below the screw-thread of the bung, but above the ordinary line, 2, of the liquid. Into this passage *g*, whose outer end enters in a nipple, $g^{\times}$, (see Fig. 4,) is placed a valve, J, that is held closed by a suitable spring, *j*, and whose stem or spindle is provided with a cup-leather washer, 5, and loose follower 4, the same as has been described with reference to the valve M, so that the valve J cannot be conveniently opened without the use of my or another suitable clamping device.

The smaller valve J, which, as already stated, permits communication with the top of the fountain, may be used in charging the fountain with carbonic-acid gas; also for maintaining a constant pressure of gas in the fountain while the liquid is being drawn out, when such pressure is desirable—as, for example, in bottling operations. This valve I call the "gas-valve." The upper and larger valve, M, communicates by the tube G with the lower part of the fountain and by the tube Q with the dispensing apparatus, and is by me called the "beverage-valve."

The stop-cock is operated as follows: The fountain having been charged with the carbonated beverage, the liquid portion of the beverage is forced up in the tube G by the pressure of the gas on top of the liquid; but the liquid is prevented from escaping by the beverage-valve M, which is closed by the spring *n*. To operate the valve M and draw off the beverage, I attach to the shell I of the stop-cock my improved clamp N, and secure it in place by means of the screw P. The clamp N, which may be of bronze or other suitable metal, straddles the shell I, as shown, and has at one end the screw P, which can be turned to bind against one end of the shell I, and within the screw P, or near it, the screw R, which, when the clamp is in place, can be brought in contact with the follower 4 of the valve M. The other end of the clamp contains, in a trumpet-shaped guide, *l*, the end of the conducting-tube Q, and carries said end of said tube in line with the outer end of the liquid-passage *k*, as is clearly shown in Fig. 4.

The tube Q is attached to the clamp by carrying it through the flaring mouth 8 of the guide *l* at the top of said clamp, and then securing it to the end 3 of the said clamp. Thus the tube Q is firmly held in the canal-shaped or trumpet-shaped cavity of the clamp, and when the clamp is attached to the shell I of the cock it will establish communication between the tube Q and the passage *k*. Upon turning the screw R the follower 4 is forced inward, and with it the washer 5 and the valve-spindle M, thus allowing the liquid to escape. To release the clamp the valve M is first closed by unscrewing the screw R, and then the clamp is loosened from the stop-cock by unscrewing the screw P.

7 and 9 are guide-projections on the under edge of the clamp, which are intended to rest upon the shell I and to permit the axis of the screw P to be brought in line with that of the valve-spindle M.

In my improved clamp N, for connecting the conducting-tube to the fountain stop-cock, the objections to the coupling or clamping devices now in use, some of which objections I have already mentioned, are entirely overcome. My improved clamp is complete in itself. No part of it travels with the fountain. It is rigid and strong, requires no wrench to operate it, and is attached in such a manner to the conducting-tube Q that the latter is continuous to the outlet of the stop-cock. A similar clamp, L, which is more clearly shown in Fig. 6, and in section in Fig. 4, is used to connect the passage *g* with the gas-reservoir, that connects by suitable tube with the nipple $j^{\times}$ of the clamp L. The clamp L is held fast to the shell I of the stop-cock by means of a tubular or other screw, *i*, and has a screw, *m*, for moving the valve J, so as to establish communication when said valve J is opened between the end $g^{\times}$ of the passage *g* and the nipple $j^{\times}$.

In Figs. 2 and 3 is shown a modification of the clamp N, when the same is intended for application to a stop-cock, carrying a projecting spindle, but otherwise altered to adapt to my clamp. In this modified form the clamp carrying the tube Q and clamping-screw P is fastened to the shell of the fountain-cock in such manner that the tube Q will communicate with the channel leading to the tube G. The opening and closing of the valve is in this case effected by the valve-screw W, which here is a part of the cock, and remains therein, while in my preferred form the valve-screw forms part of the clamp and works within the clamping-screw, as already described. When the clamp is adjusted in position the valve-screw W may be turned to open the valve and allow the

liquid to flow into or out from the fountain through the internal tube, G.

Instead of using two clamps, N and L, on the stop-cock having the two valves, M and J, as shown in Figs. 1, 4, and 5, a single clamp, having the screws R and *m* in line, respectively, with said valves, will in many cases be preferable, especially for charging the fountain with liquid and with gas; but the consumer should receive only the clamp N, having the screw R for opening the beverage-valve, as in his hands the gas-valve should be always closed.

The tube G, which is attached to the fountain stop-cock, is constructed in such a manner as to overcome the objections to the fountain-tubes now in use.

To prevent injury to the lining of the fountain, I form at the lower end of the tube G a bulbous enlargement, as shown at *c*, by spinning or pressing the end of the tube into this form. This bulbous enlargement does away with the rough ends of the tubes, as heretofore formed, and is not liable to injure the lining of the fountain. On the contrary, if it should strike the lining, the effect will simply be to planish or polish the same. The upper part, *a*, of the tube G is made conical, being thicker toward the top, as clearly shown in Fig. 1. This conical portion is in suitable manner joined to the lower cylindrical portion, *b*. The larger end of the tube G, which is also, according to my construction, the strongest end, is attached to the stop-cock, and serves to guide the screw-thread *e* of the stop-cock to its place preparatory to screwing it into the fountain-bung.

By constructing the tube G as described great rigidity is attained, and as the upper portion may be easily cast in a mold it is, if at all, but very little more expensive than the ordinary plain flexible tubing.

I claim—

1. The clamp N, provided with channel *l* for the pipe Q, and with the fastening-screw P, substantially as described.

2. The clamp N, provided with means for attaching it to the pipe Q, and with clamping-screw P and valve-screw R, substantially as described.

3. The combination of the pipe Q with the clamp N, fountain-cock I, and fountain, the clamp carrying the means for opening the fountain-cock, substantially as described.

4. The combination of the fountain E and fountain-cock I with the valves M and J, having spindles concealed within the shell of the cock, said shell having passages *k* and *g*, which are respectively closed by said valves and communicate with said fountain, substantially as described.

5. In combination with the fountain E, the fountain-cock I, having valve-spindle J and passage *g*, which leads into the upper part of the fountain, the stem of the valve-spindle J being concealed, substantially as described.

6. The combination of the clamps N with the fountain-cock having two concealed valve-spindles, substantially as specified.

7. A soda-water fountain combined with the gas-cock and the concealed spring-valve J thereof, and with the fountain-cock, substantially as herein shown and described.

8. A soda-water fountain combined with the valve M, and with the valve J, and with the springs *n* and *j* for operating said valves, all concealed in the shell I of the cock, substantially as herein shown and described.

9. In combination with a fountain having a gas-cock and a fountain-cock, the tube carrying clamps L and N, and their screws *m* and R for opening the valves in said cocks, substantially as herein shown and described.

10. The clamp N, having one or more guide-pieces, 7 and 9, and provided with a screw, P, at one end and tube-holding nozzle 3 at the other end, substantially as described.

11. The valve M, combined in the shell I, with its actuating-spring *n* at one end, and with the packing-piece 5 and follower 4 at the other end, substantially as described.

12. The tube G, suspended from the stop-cock, and constructed with the bulbous enlargement *c* at the lower end, as a means of protection for the said tube and said fountain, substantially as specified.

13. The tube G, suspended from the stop-cock, and made with the enlarged and conical upper portion, *a*, and with the reduced lower portion, *b*, having bulb *c*, substantially as specified.

JOHN MATTHEWS.

Witnesses:
H. P. RAFTERY,
JOHN STEVENS.