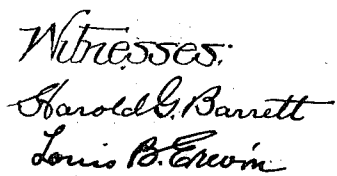


BASIN COCK.

974,938.

Patented Nov. 8, 1910.



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UNITED STATES PATENT OFFICE.

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BASIN-COCK.

974,938.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed December 18, 1909. Serial No. 533,909.

To all whom it may concern:

Be it known that I, EARL G. WATROUS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Basin-Cocks, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates more particularly to that class of basin-cocks in which the valve is opened by depressing a push-button located in the top of the casing, and it has for its object the increased simplicity and efficiency of basin-cocks of this character.

In the accompanying drawings, Figure 1 is a middle vertical section of my improved basin cock in the plane of the spout, the depending threaded stem of the cock being left in elevation; Fig. 2 is an approximately middle vertical section at right angles to that in Fig. 1, the view deviating from an exact middle vertical section sufficiently to pass through the pivotal supports of the lever through the medium of which the valve is lifted from its seat by depressing the push-button, as indicated by the dotted lines 2—2 of Fig. 1; Fig. 2^a a detail view of the lever intermediate the stem of the push-button and the valve-carrier for causing the lifting and opening of the valve when the button is depressed; Fig. 3 is a front elevation of the complete basin-cock, with the spout cut away to expose the delivery end of the water passage leading into the same; and Fig. 4 a detail perspective view of the cage which carries and guides the valve and through the medium of which the valve is lifted from and restored to its seat.

The same letters of reference are used to indicate corresponding parts in the several views.

The casing of my improved basin-cock comprises a body portion A having a flanged base B and depending threaded stem C and spout D, cast in one piece, and a cap piece E. The upper end of the portion A of the casing and the lower end of the cap E are internally threaded and engaged by an externally threaded ring G whose inner surface forms a guide for the cylindrical upper end of an open-sided valve-carrying cage H, whose contracted lower end is formed into a cylindrical guide I which fits in a corre-

sponding guide-way formed for it in the body of the casing and carries upon its under side the valve J. The valve J normally rests upon a seat formed for it in the flanged base of the casing at the upper end of the central passage through the stem C, and serves to control communication between said central passage and an annular chamber K formed in the base of the casing, said chamber K being separated from the interior of the body portion A of the casing above it by a horizontal diaphragm or partition formed in the casing and provided with a central cylindrical opening in which the guiding member I of the valve-carrier H fits and travels. The chamber K communicates with the spout D through an internal spout or passage L formed in the casing. A coiled spring M surrounds the cage H beneath the threaded ring G in which its upper end is guided and bears at its lower end against outwardly projecting lugs or flanges *a* formed upon said cage, Fig. 4, said spring thus serving to press the cage H downward and yieldingly hold the valve J to its seat. When the cage and valve are lifted, against the resistance of said spring, the water passes from the stem C into the chamber K in the base of the casing, and thence through the passage L to the spout D.

Centrally guided in the upper end of the cap piece E is the push-button N having a vertically depending central stem O which passes loosely through a tubular guide-way P carried by arms Q extending radially inward from the threaded ring G, said ring and arms and tubular guideway being cast integrally with each other in the present instance. Projecting at a rearward angle from the lower end of the central stem O of the push-button is an arm R, whose lower end engages the rear end of a lever S carried by and projecting rearwardly from a short rock-shaft or pair of trunnions T, Fig. 2^a, resting at its outer ends in suitable U-shaped bearings V V provided for it upon the inner faces of the sides of the body portion A of the casing, Fig. 2. The rearwardly extending arm S of the lever projects through and plays up and down in a vertical slot *b* in the rear side of the cage H, while its forwardly projecting arm S' extends through a shorter slot *c* in the front side of the cage H, Fig. 4, immediately be-

neath the upper end of such slot, so that when the rear end of the lever S is depressed and its forward end S' thereby lifted said forward end of the lever will carry the cage
 5 H upward with it and lift the valve J from its seat. The rear end of the lever S is depressed, to thus lift the valve from its seat, by depressing the push-button N, the spring M resisting such movement of the
 10 parts and serving to restore them to normal position when the pressure upon the push-button is removed.

The downward pressure of the spring M upon the cage H may be regulated as desired
 15 by turning the threaded ring G in one direction or the other, and will be preferably so adjusted as to be just sufficient to overcome the pressure of the water against the under side of the valve J and normally hold
 20 the latter to its seat, so as to offer a minimum resistance to the downward movement of the push-button when the latter is depressed to open the valve.

The pressure of the water in the chamber
 25 K, after the valve J has been lifted from its seat, acting upwardly upon the under side of the valve J and the surrounding area of the cylindrical guiding member I which carries the valve, will serve to assist
 30 the downward pressure upon the push-button N in maintaining the valve in open position. This water pressure in the chamber K will be governed, under any given pressure in the supply pipe leading to the
 35 cock, by the relative sizes of the inlet passage to said chamber through the stem C and the outlet passage L leading therefrom to the spout D, and may be increased as desired by reducing the size of the latter pas-
 40 sage relatively to the former.

The discharge of the water through the internal spout or passage L into and through the spout D produces an ejector action or effect, which results in drawing outward
 45 into the spout D any water which may pass into the interior of the body portion A of the casing, around the guiding member I or otherwise, so that there is no tendency whatever for the water to escape through
 50 the upper part of the casing, and no stuffing boxes or tight joints are therefore necessary.

As will be understood from the foregoing description, I have produced a simple and efficient basin-cock of the character de-
 55 scribed, in which the valve and the push button for opening it are located centrally of the cock and in axial line with each other, in which depression of the push-button serves to lift the valve and open it in the di-
 60 rection of the water pressure and against the regulated pressure of a spring and in which the valve is closed by such spring against the water pressure when pressure on the push-button is relieved, and in which
 65 the discharge of the water through the main

spout of the cock serves to effectively drain the interior of the casing and render tight joints and stuffing boxes unnecessary.

Having thus fully described my invention, I claim:

1. In a basin-cock of the character de-
 70 scribed, the combination with the casing having an inlet opening in its bottom portion, of a valve controlling said inlet opening, a push-button located in the top of
 75 the casing, and means intermediate said push-button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

2. In a basin-cock of the character de-
 80 scribed, the combination with the casing having an inlet opening in its bottom portion, of a valve controlling said inlet opening, a spring for normally holding said valve to its seat, a push-button located in
 85 the top of the casing, and means intermediate said push button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

3. In a basin-cock of the character de-
 90 scribed, the combination with the casing having an inlet opening in its bottom portion, of a valve controlling said inlet opening, a spring for normally holding said valve to its seat, adjustable means for regu-
 95 lating the pressure of said spring upon the valve, a push-button located in the top of the casing, and means intermediate said push button and valve adapted to lift and
 100 open the valve when the push button is depressed, substantially as described.

4. In a basin-cock of the character de-
 105 scribed, the combination of a casing having a laterally projecting discharge spout, a chamber formed in the lower portion of said casing and communicating with said discharge spout, a central chamber within the body of the casing separated from and above the first mentioned chamber and also communicating with the discharge spout, an
 110 inlet passage opening into the first-mentioned chamber, a valve controlling said passage, a push-button located in the top of the casing, and means intermediate said
 115 push-button and valve adapted to lift and open the valve when the push button is depressed and admit the water supply to the chamber.

5. In a basin-cock of the character de-
 120 scribed, the combination of a casing having a laterally projecting discharge spout, a chamber formed in the lower portion of said casing and communicating with said discharge spout, a central chamber within the body of the casing separated from and
 125 above the first mentioned chamber and also communicating with the discharge spout, an inlet passage opening into the first-mentioned chamber, a valve controlling said pas-
 130 sage, a spring for normally holding said

valve to its seat, a push-button located in the top of the casing, and means intermediate said push-button and valve adapted to lift and open the valve when the push button is depressed and admit the water supply to the chamber in the bottom of the casing and thence through its discharge passage into the spout, substantially as described.

6. In a basin-cock of the character described, the combination with a casing having a centrally located inlet opening at its bottom, a vertically movable valve controlling said inlet opening, a spring for normally holding said valve to its seat, a push-button centrally located in the top of the casing, in axial line with the valve, and means intermediate said push-button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

7. In a basin-cock of the character described, the combination with the casing having a centrally located inlet opening at its bottom, of a vertically movable valve controlling said opening, a spring for normally holding the valve to its seat, adjustable means for regulating the pressure of the spring upon the valve, a push-button centrally located in the top of the casing in axial line with the valve, and means intermediate said push button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

8. In a basin-cock of the character described, the combination with a casing having an inlet opening in its bottom portion, of a vertically movable valve controlling said inlet opening, a push-button located in the top of the casing, and a lever and connections intermediate said push-button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

9. In a basin-cock of the character described, the combination with a casing having an inlet opening in its bottom portion, of a vertically movable valve controlling said inlet opening, a spring for normally holding said valve to its seat, a push-button located in the top of the casing, and a lever and connections intermediate said push-button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

10. In a basin-cock of the character described, the combination with a casing having an inlet opening in its bottom portion, of a vertically movable valve controlling said inlet opening, a spring for normally holding said valve to its seat, adjustable means for regulating the pressure of the spring upon the valve, a push-button located in the top of the casing, and a lever

and connections intermediate said push-button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

11. In a basin-cock of the character described, the combination with the casing having an inlet opening centrally located in its bottom portion, of a vertically movable valve controlling said opening, a push-button centrally located in the top of the casing in axial line with the valve, and a lever and connections intermediate said push-button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

12. In a basin-cock of the character described, the combination with the casing having an inlet opening centrally located in its bottom portion, of a vertically movable valve controlling said inlet opening, a spring for normally holding said valve to its seat, a push-button centrally located in the top of the casing in axial line with the valve, and a lever and connections intermediate said push-button and valve adapted to lift and open the valve when the push button is depressed, substantially as described.

13. In a basin-cock of the character described, the combination of a casing having an inlet opening in its bottom portion, a valve J controlling said opening, a vertically guided and movable cage H carrying said valve, a spring M exerting a downward pressure upon said cage to hold the valve to its seat, a push button N located in the upper part of the casing and having a depending stem, and a lever intermediate said stem and the cage H adapted to lift and open the valve when the push button is depressed; substantially as described.

14. In a basin-cock of the character described, the combination of a casing comprising the body portion A having the projecting spout D and the base portion B having the depending stem C, the valve J, the vertically guided and movable cage H carrying said valve, the spring M exerting a downward pressure on said cage to hold the valve to its seat, the push button N having the depending stem, and the lever intermediate said stem and the cage H adapted to lift and open the valve when the push button is depressed, substantially as described.

15. In a basin-cock of the character described, the combination of the casing comprising the body portion A having the discharge spout D, the base portion B having the depending stem C and containing the chamber K separated from the interior of the body portion A of the casing and communicating with the spout D by the discharge passage L, a diaphragm separating the chamber K from the body portion A the valve J controlling communication between the chamber K and the inlet passage in the

stem C, the cage H having an upper portion suitably guided in the casing and a contracted lower portion I carrying the valve J and guided in the diaphragm or partition separating the chamber K from the interior of the casing above it, the spring M operating to press the cage H downward and hold the valve to its seat, the push-button N having the depending stem, and the lever intermediate said stem and the cage H adapted to lift and open the valve when the push button is depressed, substantially as described.

16. In a basin cock of the character described, the combination of the casing comprising the body portion A having the spout D and the base portion B having the depending stem C, the threaded ring G screwed in the upper end of the body portion A, the cap piece E screwed upon said ring, the cage H having its upper end guided in said ring and provided at its lower end with the portion I suitably guided in the casing and carrying the valve J projections *a* upon the cage, the coiled spring M surrounding the cage H between the ring G and projections *a* upon said cage, the push-button N fitting in the cap piece E and having the depending stem O, and the lever intermediate said stem and the cage H adapted to lift and open the valve when the push button is depressed, substantially as described.

17. In a basin-cock of the character described, the combination of the casing comprising the body portion A having the spout D and the base portion B having the depending stem C, the threaded ring G screwed in the upper end of the body portion A and carrying the central guide P, the cap-piece E screwed upon the ring G, the push-button N fitting in said cap-piece and having the depending stem extending through the guide P, the cage H having its upper end guided in the ring G and its contracted lower end I

guided in the casing and carrying the valve J projections *a* upon said cage, the coiled spring M surrounding the cage H between the ring G and projections *a* upon said cage, and the lever S S' intermediate said cage and the stem of the push-button adapted to lift and open the valve when the push button is depressed, substantially as described.

18. In a basin-cock of the character described, the combination of the casing comprising the body portion A having the spout D, the base portion B having the depending stem C and the chamber K separated from the interior of the body portion of the casing A above it and communicating by the passage L with the spout D, a diaphragm separating the chamber K from the interior of the body portion of the casing A, the ring G screwed into the upper part of the casing A and carrying the central guide P, the cap-piece screwed upon the ring G, the push-button N fitting in the cap-piece E and having the depending stem O extending through the guide P and provided at its lower end with the angular extension R, the cage H guided at its upper end in the ring G and having its contracted lower end I guided in the diaphragm or partition separating the chamber K from the interior of the body portion of the casing above it, the valve J and projections *a* carried by the cage H, the coiled spring M surrounding said cage between the ring G and projections *a* upon the cage, and the lever S S' carried by the rock shaft or trunnions T journaled in the casing and coöperating at one end with the cage H and at its other end with the angular extension R of the stem of the push-button, substantially as described.

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Witnesses:

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