No. 830,846. PATENTED SEPT. 11, 1906.

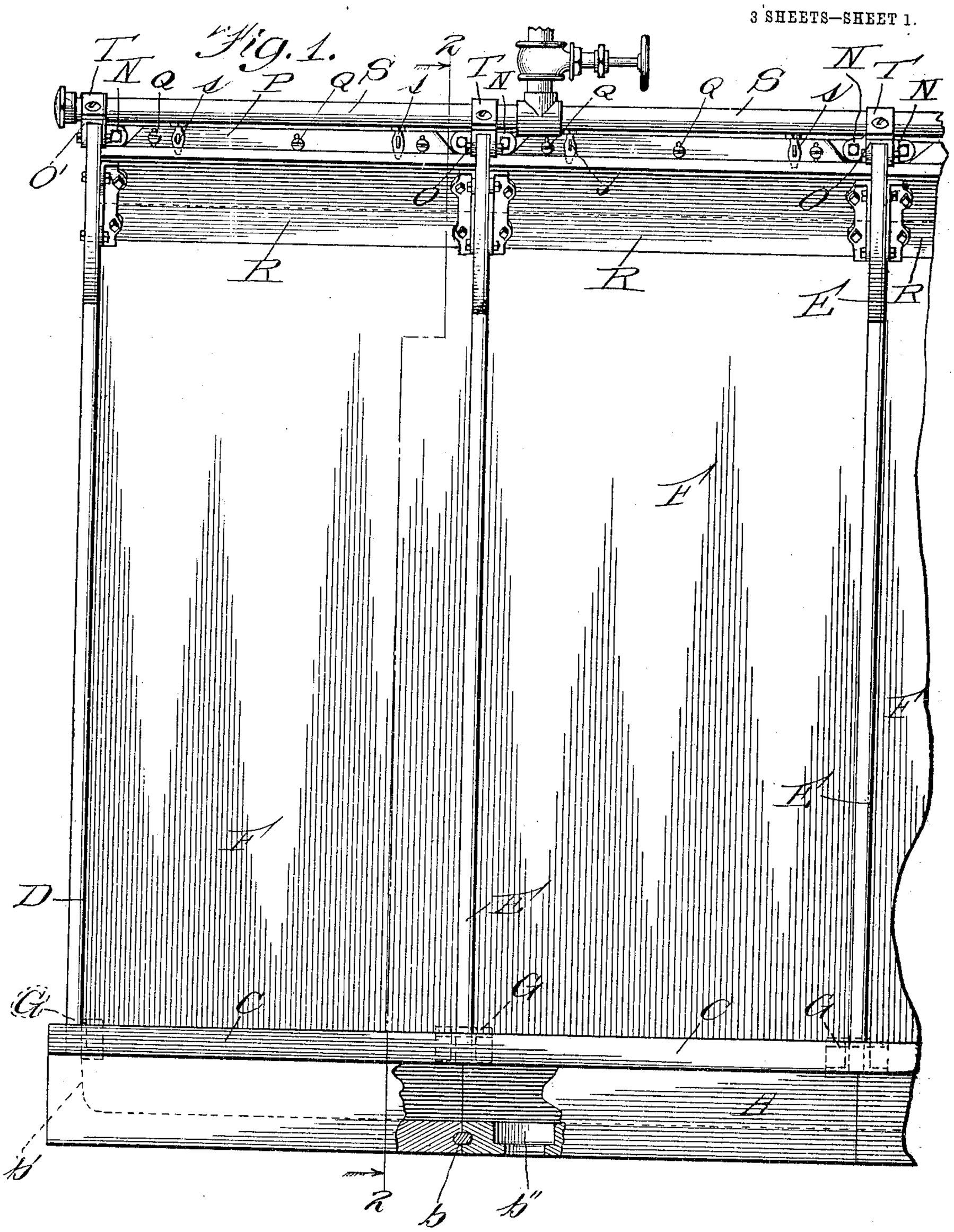
L. H. PLEINS.

URINAL.

APPLICATION FILED JUNE 24, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

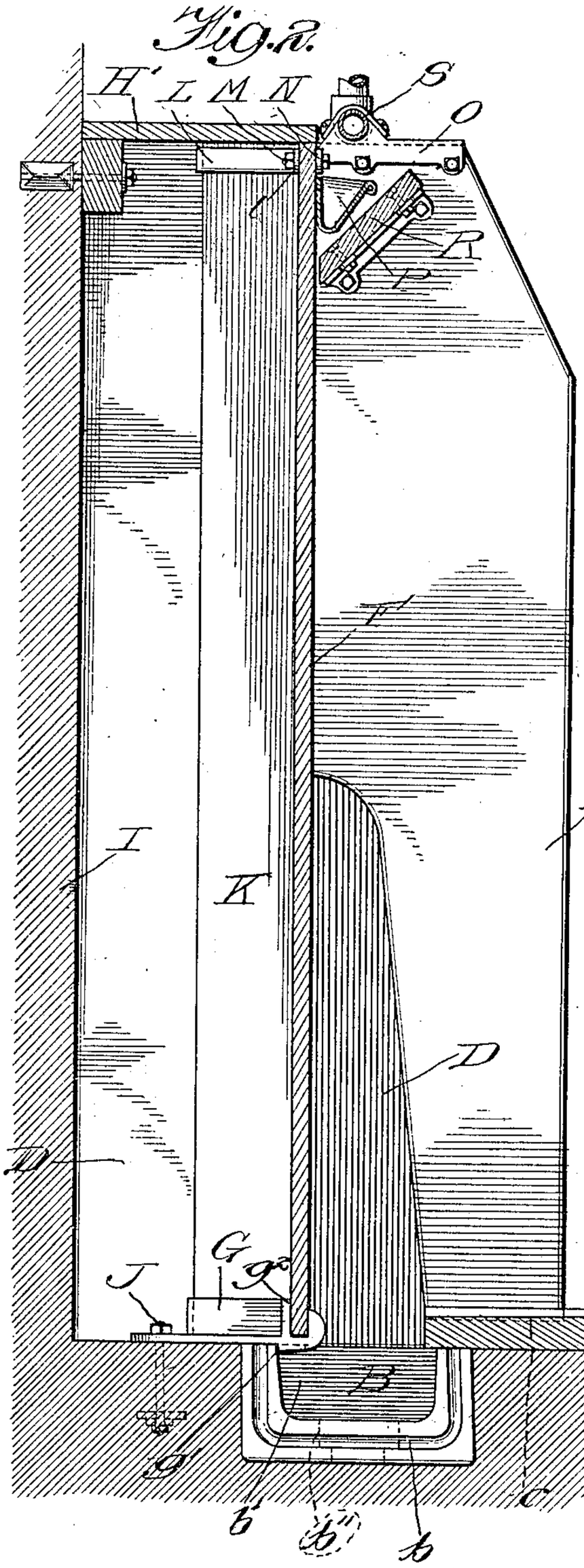


Fig. 3.

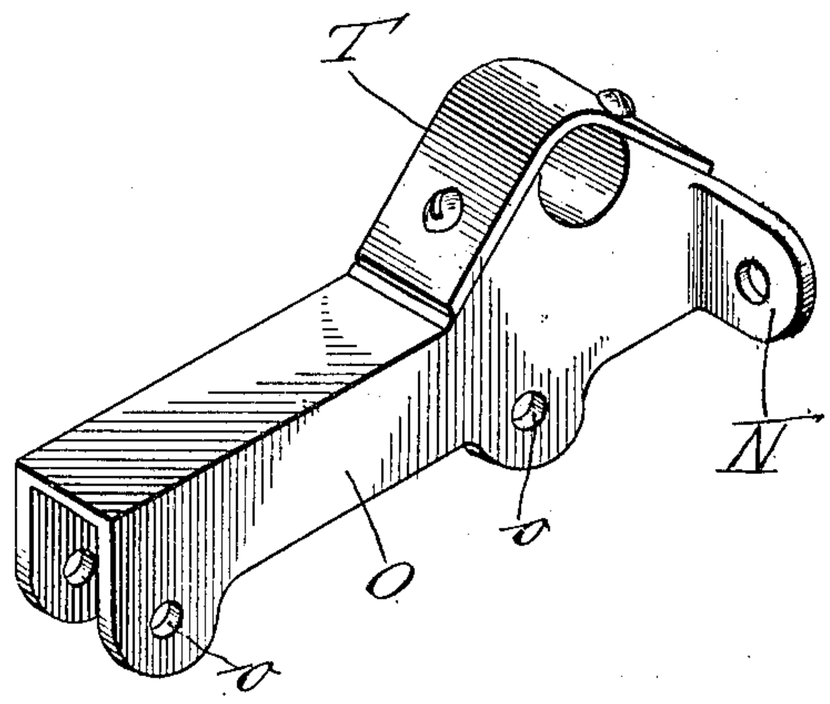
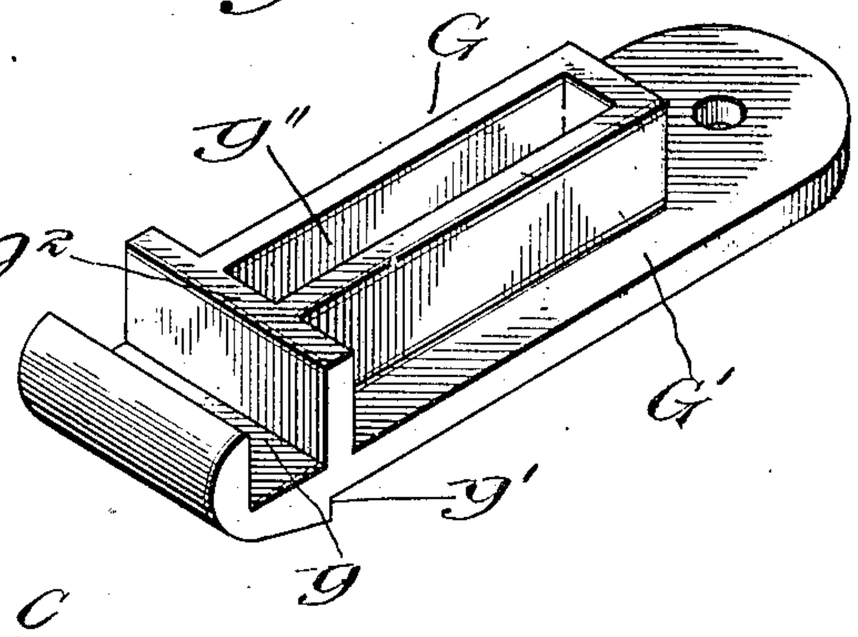


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

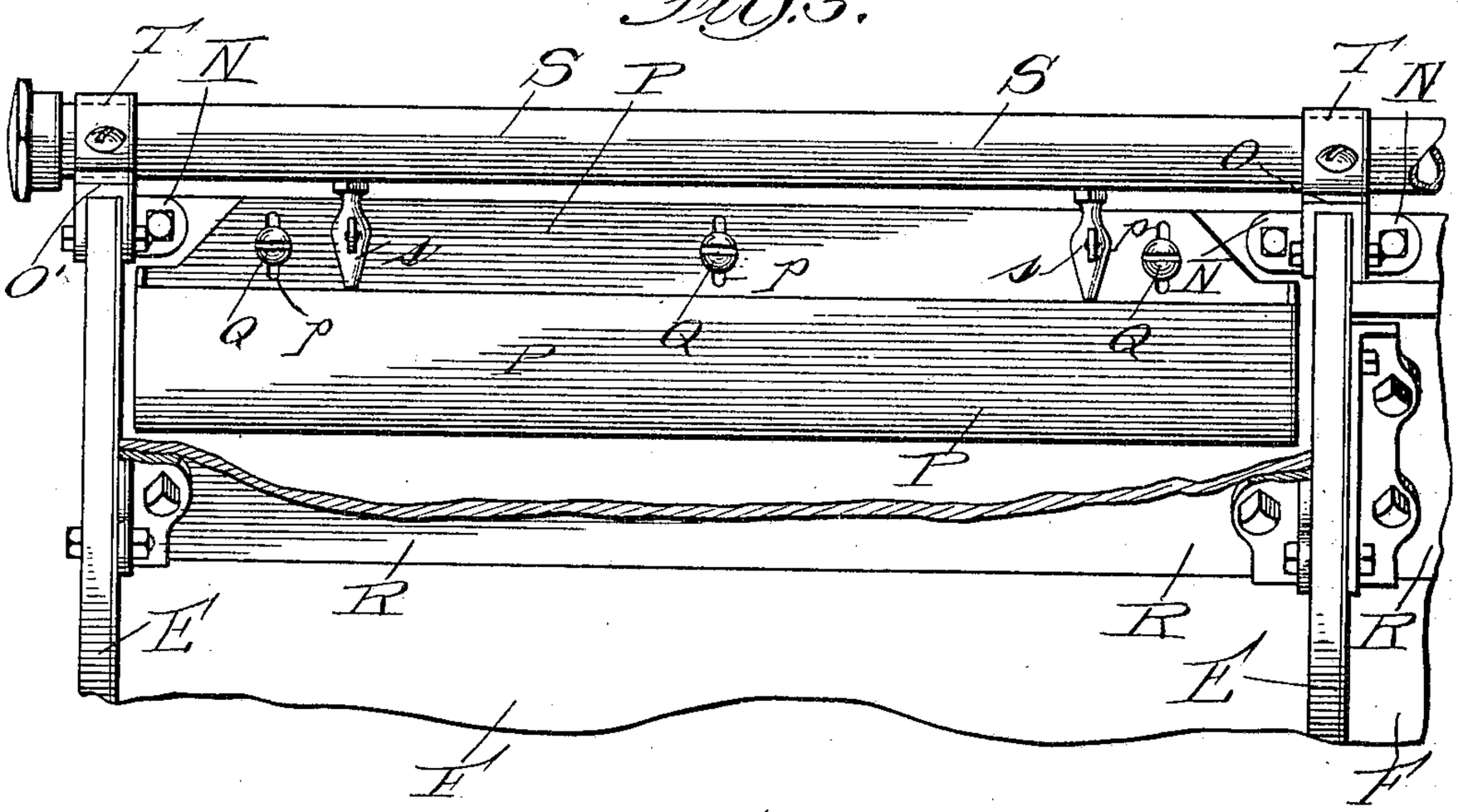
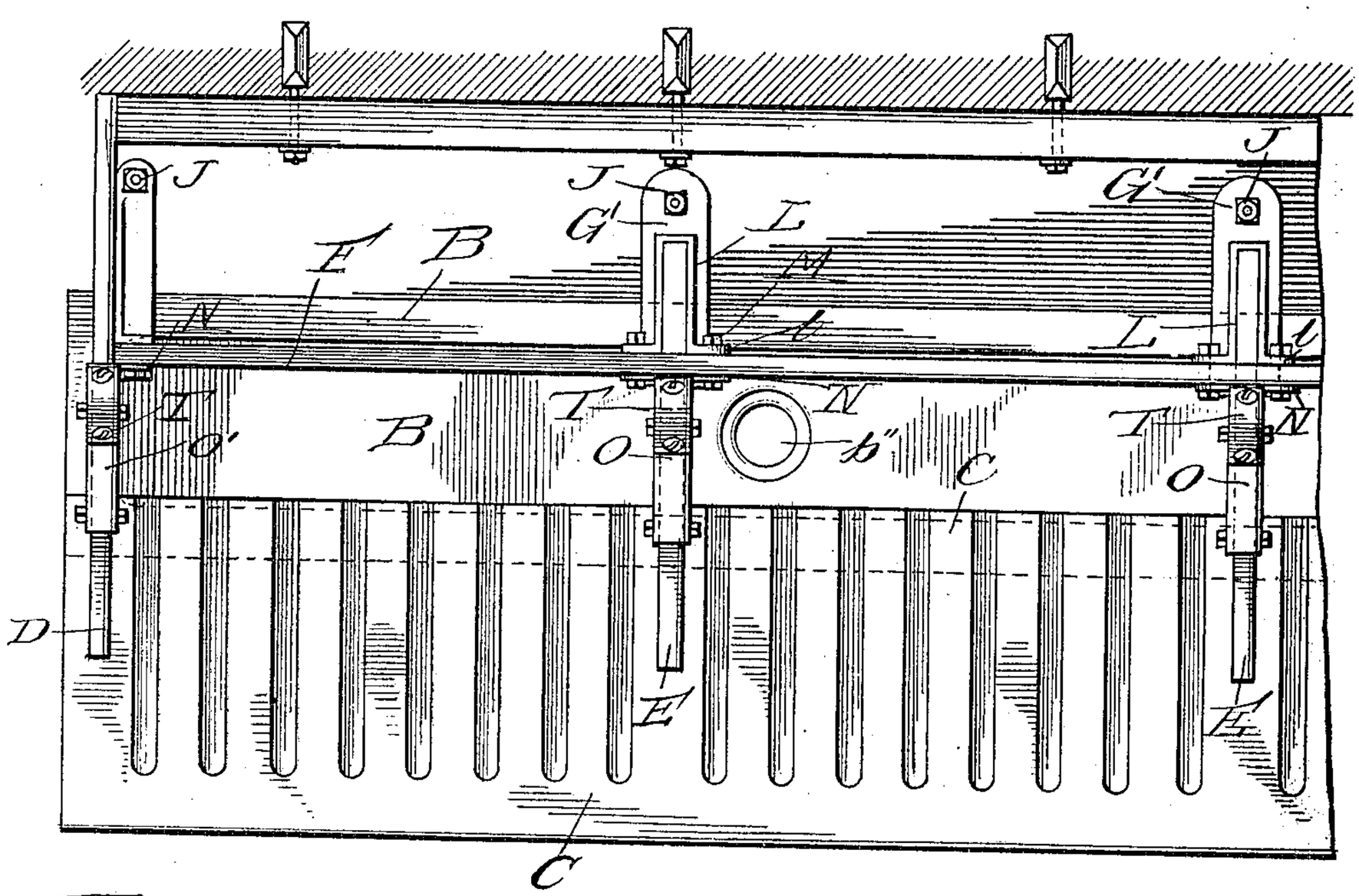


Fig. 6.



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UNITED STATES PATENT OFFICE.

LEO H. PLEINS, OF CHICAGO, ILLINOIS.

URINAL.

No. 830,846. Specification of Letters Patent. Patented Sept. 11, 1906.

Application filed June 24, 1905. Serial No. 266,891.

To all whom it may concern:

Be it known that I, LEO H. PLEINS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Urinals, of which the following is a specification.

The invention relates in part to the construction of the stalls, and this part of the invention is especially adapted to those urinals in which a considerable number of stalls are arranged side by side. The object of this part of the invention is to provide a self-supporting structure which is wholly independent of the wall of the building as a means for supporting or bracing any of the upright parts of which it is built, so that said parts will not be injuriously affected by the uneven settling of the wall or even of the floor.

The invention relates in part also to the means for flushing the back slab; and the object of this part of the invention is to provide improved means whereby a uniform sheet or film of water may be delivered over the entire surface of the slab regardless of untrueness of the slab or other parts.

To these ends the invention consists in the features of novelty that are hereinafter described with reference to the accompanying drawings, which are made a part of this specification, and in which—

Figure 1 is a front elevation of a urinal embodying the invention and having but two complete stalls. Fig. 2 is a vertical section thereof on the line 2 2, Fig. 1, looking in the direction of the arrow. Fig. 3 is a perspective view of the cap of one of the intermediate partitions. Fig. 4 is a perspective view of the step for the bottom of the pilaster and bottom of the back slab. Fig. 5 is a front elevation of the upper portion of one of the stalls on a larger scale and with the spatter-board broken away to show the trough. Fig. 6 is a plan view with the cap-plate of the ventilating-flue, the water-supply pipe, and the spatter-board omitted.

In the drawings I have shown but two complete stalls, but these two stalls contain specimens of all of the parts that would be present in a urinal having any greater number of stalls. To produce a urinal having any desired number of stalls, it is simply necessary to select the requisite number of structural units and assemble them, as shown in the drawings and as hereinafter described.

A represents the floor, which may be of any desired construction, but which is shown as being made of concrete. In it is sunk the gutter B, which is made up of any desired number of trough-shaped sections, the meeting ends of which are provided with oppositely-located grooves *b*, which register and form a duct or passage which is closed save at its ends, which latter open at the tops of the side walls of the gutter. Into this duct or passage is run a grouting or cement filling whereby the adjacent sections are united and a water-tight joint formed. I am aware that gutters have been made of trough-shaped sections placed end to end and having interlocking tongues and grooves; but this is not so desirable, because where there is no tongue it is possible to dress off the end of the section and make it absolutely true. The end sections of which the gutter is made are provided with end walls *b'*, and one of the sections is provided with a drain-opening *b''*, which is preferably located at about the center of the range of stalls. The tops of the side walls of the gutter are flush with the floor, and the foot-slab C is laid so as to rest upon the floor and also upon the top of one of the walls of the gutter and to project inward slightly beyond the side wall, whereby the grouted joints are protected. The end walls D (only one of which is shown in the drawings) and the intermediate walls or portions E of which the stalls are made are stepped in grooves *c* in the foot-slab C. The back slab or wall F of the stalls inclines slightly in customary manner, and it is supported at bottom by a step G, which rests partly upon the floor and partly upon the top of the rear wall of the gutter, beyond which it projects over the gutter. The projecting portion has a groove *g* for receiving the bottom of the slab and aiding in supporting it, and this groove is so located that between the several steps G a space is left between the bottom of the slab and the back wall of the gutter. This is for ventilating purposes and allows the air to freely pass upward into the space H, which is bounded by the slab F, the end walls D, and the wall I, which may be considered either as a wall of the building or as a back slab of a second range of stalls. To all intents and purposes this space H is a ventilating-space and will be so called hereinafter. It is provided at any desired point with an outlet-opening from which the vent-flue

leads to the atmosphere. The projecting portion of the step has a shoulder g', that engages the side wall of the gutter and prevents the step from moving about its single retaining-bolt J. This bolt passes through a part G′ of the step, which may be called a "floor-flange" or "plate." If the floor is of concrete, the bolt may be anchored in it, as indicated by dotted lines in Fig. 2, with its threaded end projecting far enough to pass through the floor-plate G and receive a nut.

In addition to supporting the slab F the step supports the pilaster K, and to this end the step is provided with a socket g'', which the bottom of the pilaster fits snugly, the pilaster being notched in order to accommodate the front wall g^2 of the socket. The rear side of the pilaster is vertical, while the front side slopes for the purpose of giving the slab F the desired slope. The weight of the slab which falls upon the projecting end of the step G will tend to throw the rear end of the step upward; but to the extent of its weight this tendency is counteracted by the pilaster which is located behind the gutter.

At its upper end the pilaster is surrounded on three sides by a stirrup-iron L, which has flanges l, resting against the rear side of the slab and perforated for the passage of bolts M. These bolts pass also through the slab F and through perforated ears N on a cap O, which is secured to the top of the partition E by means of bolts o.

Both the pilaster and partition aid somewhat in supporting the weight of the slab through the medium of the parts just described.

The latter part of the foregoing description has been confined to a single pilaster, slab, and partition; but it will be understood that the same description applies equally to similar parts throughout a range of any number of stalls.

The end walls D differ from the partition both in form and in the means for supporting them. Instead of terminating at the slab they extend quite to the real wall I. Furthermore, the cap O′ has a perforated ear N′ on only one side, and this ear is secured to the slab F by means of a bolt which performs no other duty.

By constructing the stalls as above described any untrueness or inaccuracies in the walls or in the roughing-in work becomes absolutely immaterial. Heretofore it has been the practice to support the top of the slab F by means of the cap H′ of the ventilating-space H, which in turn was supported at its rear side by the wall or an attachment thereto. This made it absolutely essential that the work be perfectly true in all respects; but with the construction above described such nicety is not necessary. It is always possible to find a level seat on the floor for the steps G, which support the pilasters and slab, and equally possible to find a level seat for the foot-slab, which supports the bottoms of the partitions. In fact, the walls of the gutter afford these supports. The foot-slab C rests upon one wall and the steps G rest upon the other wall, so that with these bearings or supports given and the pilasters, the slab and the partition being all rigidly united at top, they become an independent structure in the form of a cross, the pilaster and partition being located in the same vertical plane, capable of standing alone and requiring no support whatever from the wall I or the cap H′ of the flue H.

In each of the stalls is located, near the top thereof, a trough P, which is a trifle less in length than the width of the stall. The back wall of this trough rests flat against the slab F and extends upward beyond the other walls and is provided with slots p for the reception of screws Q, by which it is secured to the slab. The front wall of the trough is somewhat lower than the other walls, so that assuming the trough to be exactly horizontal water overflowing it will pass over the top of the front wall in a continuous sheet. This sheet falls upon a spatter-board R, which is supported at its ends by the adjacent partitions, (or by a partition and an adjacent end wall.) This spatter-board conceals the trough from view and slopes toward the slab, terminating only a small fraction of an inch therefrom, so that the water falling upon it will be evenly distributed and delivered to the slab F throughout its entire width.

The troughs of the several stalls are supplied with water through a pipe S, which is seated upon the caps O O′ and held in place thereon by straps T. At suitable intervals the pipe is provided with nozzles s, which discharge into the troughs.

Heretofore it has been customary to arrange a water-box behind the upper part of the slab and to cut notches in the top of the slab for the water to trickle through. With this arrangement the proper distribution of the water over the entire surface of the slab from side to side demanded that the bottoms of all the notches be exactly in the same horizontal plane. Untrueness in the seating of the slab would make it necessary after it is seated to dress out the notches in order to obtain the desired results, and this was expensive. Furthermore, unequal settling of the slab made it necessary to repeat the operation from time to time. In order to overcome this, I use the trough P, supported by the screws Q, arranged in the slots in the back of the trough, so that the trough may be raised or lowered at one end or the other, as may be necessary in order to bring the top of its front wall into a strictly horizontal position.

What I claim as new, and desire to secure by Letters Patent, is—

1. A urinal, having an open gutter made of

a number of trough-shaped sections placed end to end, the meeting ends of adjacent sections being provided with grooves which register and form a duct or passage, closed excepting at its ends, which latter open at the tops of the side walls of the gutter, and a grouting filling the duct or passage and forming a liquid-tight joint between the sections, substantially as set forth.

2. A urinal having an open gutter, made of a number of trough-shaped sections placed end to end, the meeting ends of adjacent sections being provided with grooves which register and form a duct or passage which is closed excepting at its ends, which latter open at the tops of the side walls of the gutter, a grouting filling the duct or passage and forming a liquid-tight joint between the sections, and a foot-slab resting upon one of the walls and covering the grouted joints, substantially as described.

3. In a urinal, the combination of a gutter, a back slab, a step for the bottom of the slab, a pilaster located behind the slab, a step for the bottom of the pilaster, and means for securing the slab to the pilaster, substantially as described.

4. In a urinal, the combination of a gutter, a back slab, a step for the bottom of the slab, a pilaster located behind the slab, a step for the bottom of the pilaster, means for securing the slab to the pilaster, a partition located in front of the slab, a step for the bottom of the partition, and means for securing the partition to the slab, substantially as described.

5. In a urinal, the combination of a gutter, a back slab, a step for the bottom of the slab, a pilaster located behind the slab, a step for the bottom of the pilaster, means for securing the top of the slab to the pilaster, a partition located in front of the slab, a step for the bottom of the partition, and means for securing the partition to the slab, the means for securing the slab to the pilaster and the partition to the slab including bolts common to both of said means, substantially as described.

6. In a urinal, the combination of a gutter, a back slab, a pilaster located behind the slab, a part secured to the floor and comprising a step for the bottom of the pilaster, and a step for the bottom of the slab, the step for the bottom of the pilaster being directly supported by the floor and having a socket for receiving said bottom, and the step for the bottom of the slab being formed on a portion which projects over the gutter, a partition located in front of the slab, a step for the bottom of said partition, and means for securing the partition to the slab, substantially as described.

7. In a urinal, the combination of a gutter, a back slab. a pilaster located behind the slab, a part having a portion resting directly upon the floor and providing a step for the bottom of the pilaster and a portion projecting over the gutter and providing a step for the bottom of the slab, the step for the pilaster having a socket for receiving it, and the step for the slab having a groove for receiving it, whereby the bottom of the slab is supported some distance in front of the rear wall of the gutter, means for securing the top of the slab to the pilaster, a partition arranged in front of the slab, a step for the bottom of the partition and means connecting the partition and pilaster, substantially as described.

8. In a urinal, the combination of a gutter, a slab, a step for the bottom of the slab, a pilaster located behind the slab, a step for the bottom of the pilaster, means for securing the pilaster to the slab, a partition located in front of the slab and in the vertical plane of the pilaster, a step for the bottom of the partition, and means for securing the partition to the slab, substantially as described.

9. In a urinal, the combination of a back slab, a trough, means for adjusting said trough vertically, means for supplying the trough with water and means for directing the water overflowing the trough against the surface of the slab, substantially as described.

10. In a urinal, the combination of a back slab, a trough having vertically-elongated slots, devices passing through said slots and into the back slab whereby the trough may be adjusted vertically, a pipe for supplying said trough with water, and means for directing the water overflowing the trough onto the front face of the slab, substantially as described.

11. In a urinal, the combination of a slab, a trough, a pipe for supplying said trough with water and a spatter-board arranged in front of the trough and inclined toward the slab, terminating a short distance therefrom, substantially as described.

12. In a urinal, the combination of a plurality of stalls having back slabs and partitions, a trough in each stall, means for securing said troughs to the stalls, a spatter-board arranged in front of each trough and inclined toward the back slab and terminating a short distance therefrom, an overhead pipe for supplying said troughs with water, said pipe having at intervals discharge-nozzles, cap-plates secured to the tops of the partitions and having seats for the pipe and straps by which the pipe is held in said seats, substantially as described.

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