

No. 897,914.

P. J. MADDEN.  
PLUMBING FIXTURE.

APPLICATION FILED MAY 24, 1906.

PATENTED SEPT. 8, 1908.

3 SHEETS—SHEET 1.

Fig. 2.

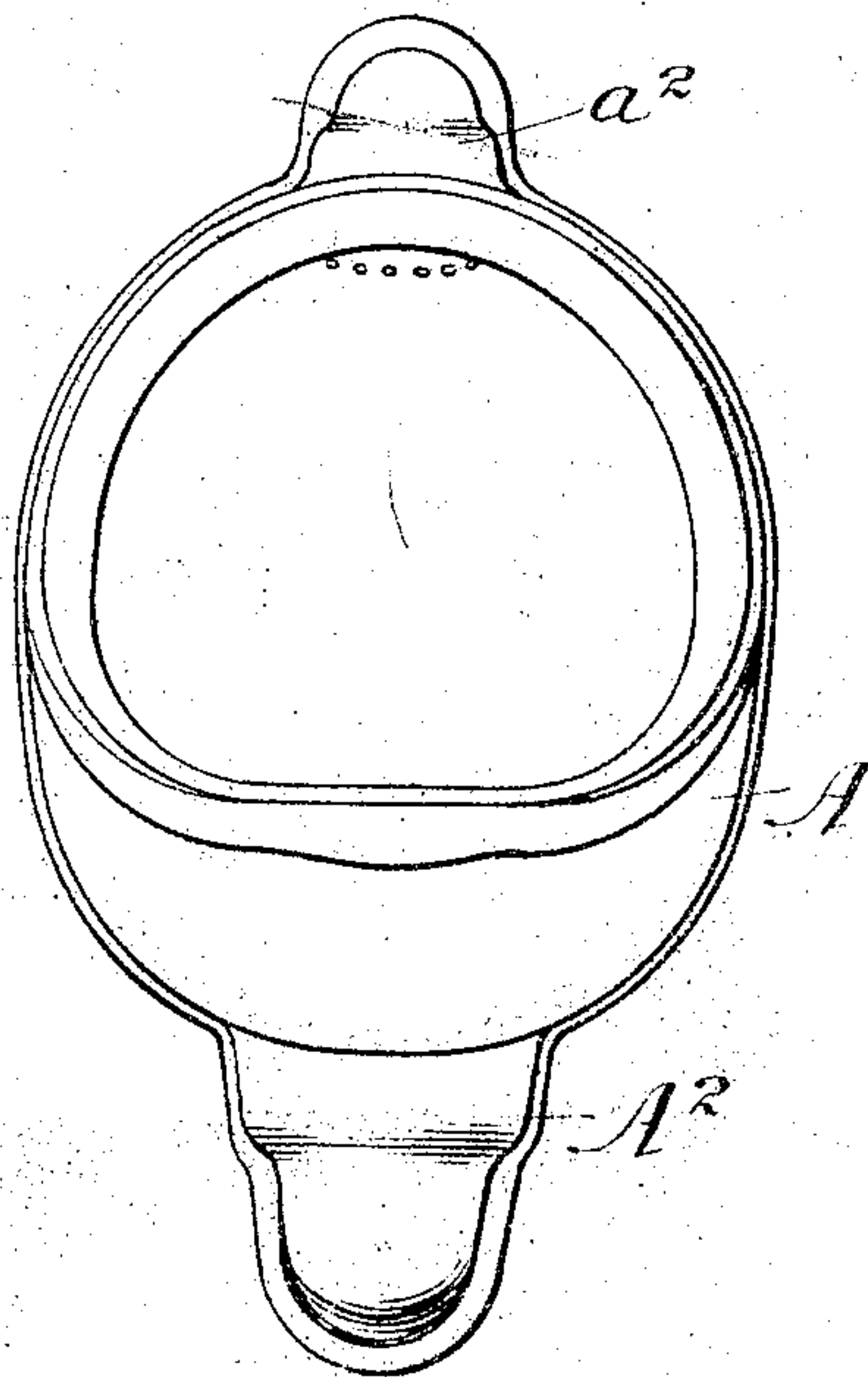
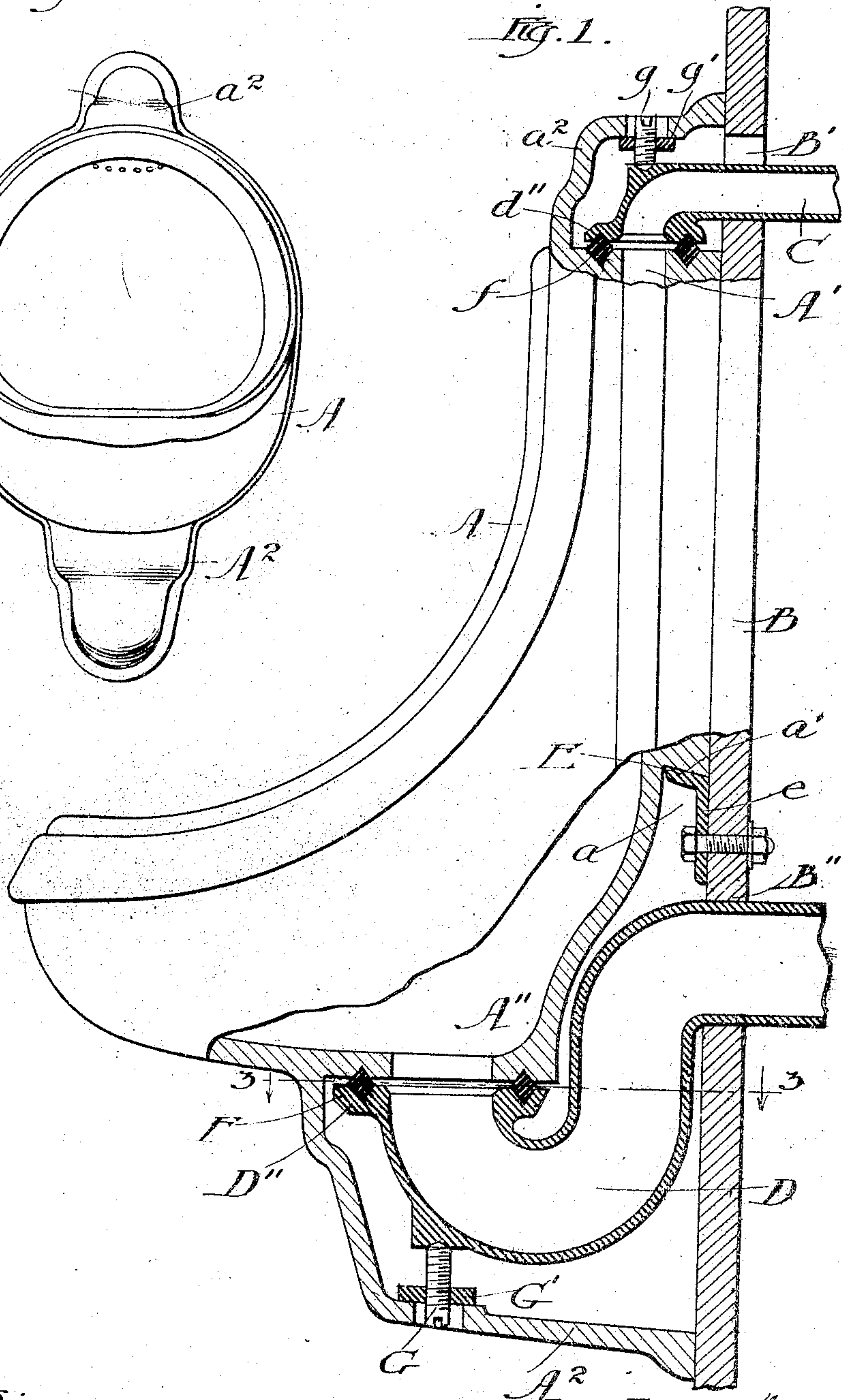


Fig. 1.



Witnesses:  
Jas. Blanchard  
W. Meyer

Inventor:  
Patrick J. Madden  
By *[Signature]*  
Attorney.

No. 897,914.

P. J. MADDEN.

PATENTED SEPT. 8, 1908.

PLUMBING FIXTURE.

APPLICATION FILED MAY 24, 1906.

3 SHEETS—SHEET 2.

Fig. 3.

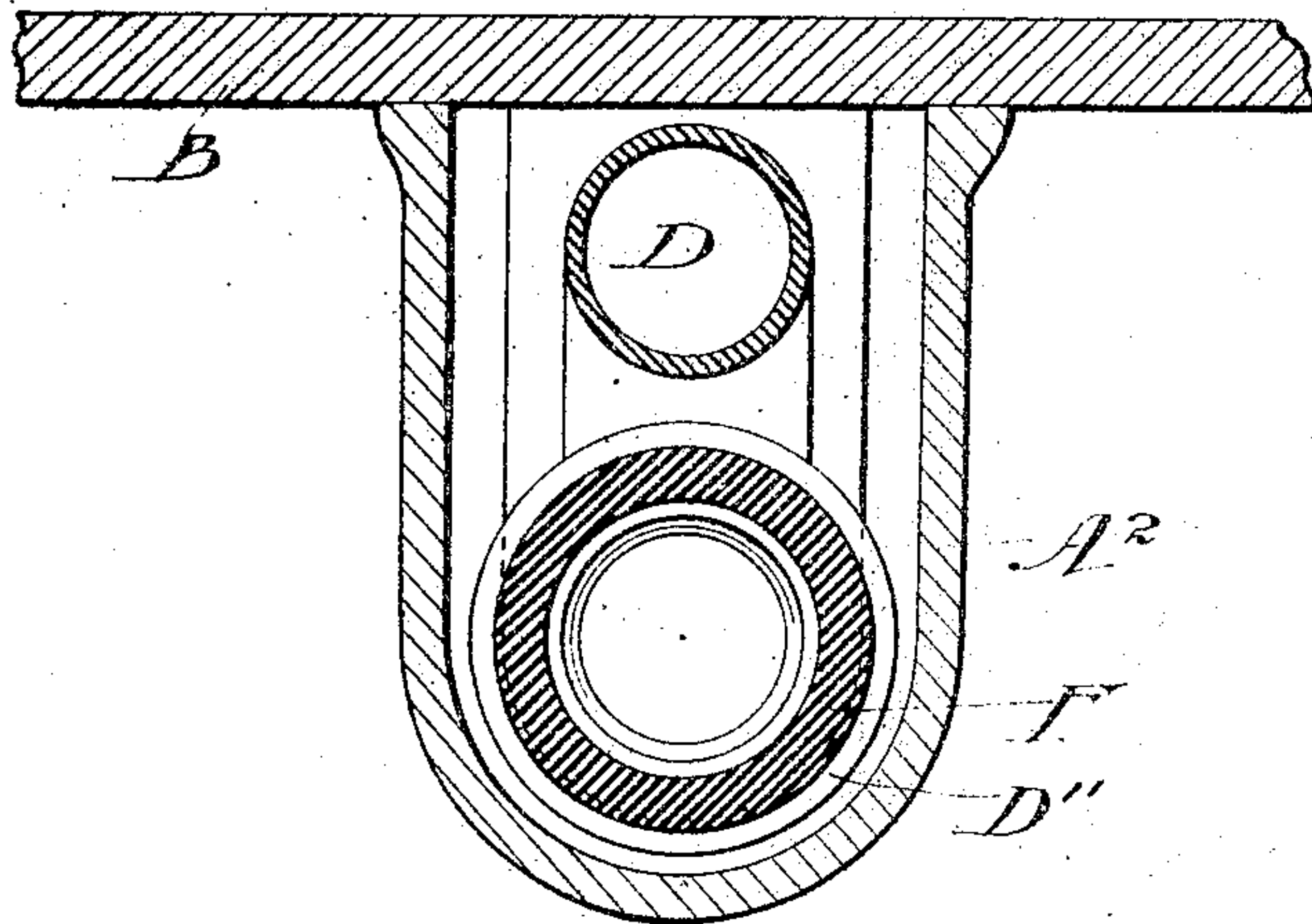
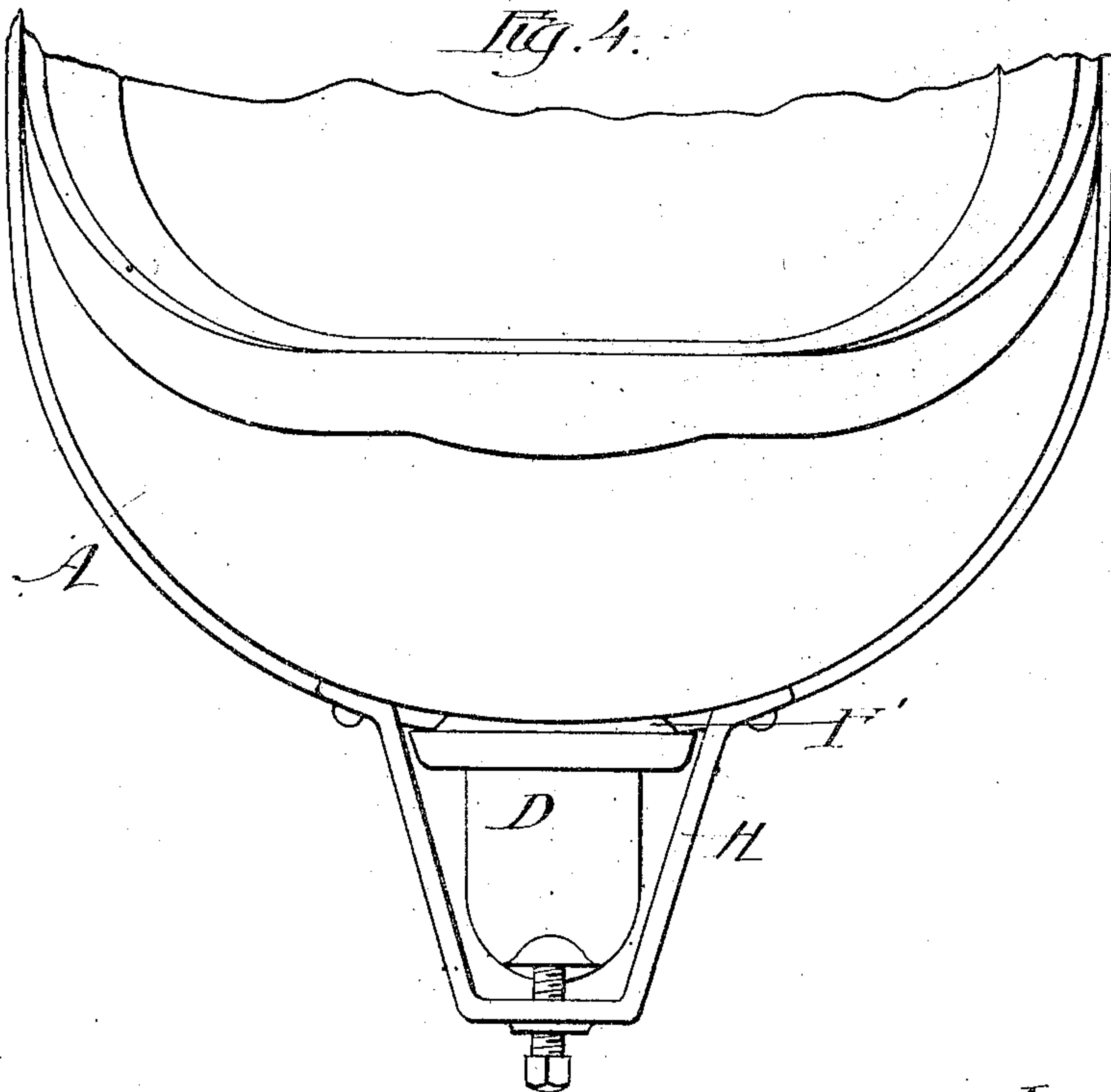


Fig. 4.



Witnesses:

Frank Blanchard  
W. Moyer

Inventor:

Patrick J. Madden

By J. Hopkins

Attorney



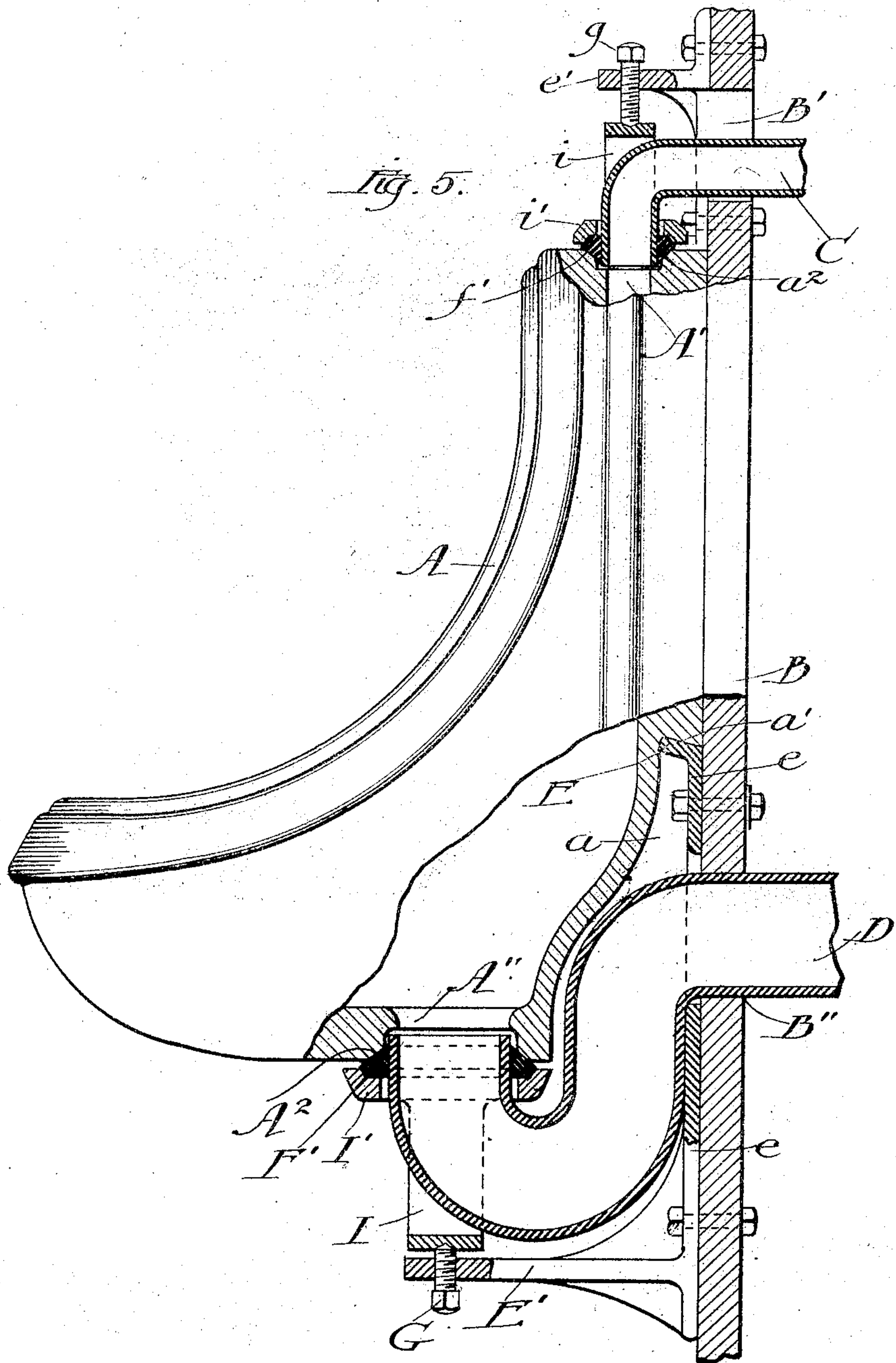
No. 897,914.

PATENTED SEPT. 8, 1908.

P. J. MADDEN.  
PLUMBING FIXTURE.

APPLICATION FILED MAY 24, 1906.

3 SHEETS—SHEET 3.



Witnesses:  
Frank Blanchard  
W. Moyer

Inventor:  
Patrick J. Madden  
By *[Signature]*  
Attorney



# UNITED STATES PATENT OFFICE.

PATRICK J. MADDEN, OF CHICAGO, ILLINOIS

## PLUMBING-FIXTURE.

No. 897,914.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed May 24, 1906. Serial No. 318,512.

*To all whom it may concern:*

Be it known that I, PATRICK J. MADDEN, 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 Plumbing-Fixtures, of which the following is a specification.

The term "fixtures" as used in this specification is intended to comprehend water closets, urinals, sinks, bath tubs, wash basins, and all other plumbing devices in the nature of receptacles with which it is necessary to make a pipe-connection for either supplying or evacuating the receptacle.

In its broadest aspect the invention covers and includes either an inlet or an outlet pipe, and in a more limited aspect it includes features peculiar to each, and in a still more limited aspect it includes a coöperative relation of both, with respect to the bowl.

For the sake of brevity the term "bowl" will be hereinafter used to denote the receptacle of the fixture, but with the understanding that any other specific name for a receptacle of any particular type or character may be read for it.

The invention is particularly well adapted to that class of fixtures in which the bowl has to be removed from time to time for the purpose of removing obstructions or for repair purposes, and with fixtures of this class, especially those in which the bowl must be removed and put in place from "in front" (*i. e.*, without going back of the wall or slab through which the pipe connection or connections extend), facility of removal and replacement, is, of course, important.

As before intimated, the invention is applicable to all classes of plumbing fixtures, but my original aim was to provide an improved urinal, and since it is to this class of fixtures that the invention is particularly adapted, I have selected such a fixture for illustration and will hereinafter particularly describe this embodiment of it, with the understanding, however, that excepting as to those features which are peculiar to this class of fixtures the invention includes fixtures of all classes to which it is applicable.

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 vertical section of a urinal embodying the invention in its preferred

form. Fig. 2 is a front elevation thereof on a smaller scale. Fig. 3 is a horizontal section on the line 3—3 Fig. 1, looking downward. Fig. 4 is a front elevation of a fragment of a bowl, showing a modification. Fig. 5 is a vertical section of a bowl, showing another modification.

A represents the bowl (of a urinal) having at top an inlet opening A' and at bottom an outlet opening A'', both of which, in the instances given, are disposed vertically. The bowl shown in the drawings has a vertical back adapted to fit against a wall, a slab, or other suitable support, B, that side of the wall upon which the bowl is located being the side herein referred to as the "front side". The wall has through it two openings B' and B'', through the former of which extends an inlet or supply pipe C and through the latter of which extends an outlet or discharge pipe D. The horizontal portion of the outlet pipe D preferably fits the opening B'' snugly so that it is incapable of any vertical movement, while, for reasons that will appear hereinafter clearance is provided between the inlet pipe C and the wall B in order to permit limited vertical movement of the inlet pipe in the opening B', it being understood that the inlet pipe is movable vertically to a limited extent. This vertical movement may be provided for by making the pipe itself of sufficient length to give it the necessary flexibility, or by connecting it with a flexible section made of lead. This, however, is a detail which may be left to the discretion of the plumber. The drawings show the several parts of the fixtures in their final or ultimate positions (excepting the shape of the gasket) and for the time being the following description will be confined to these relations, a description of the manner of assembling them being given later on.

The bowl has in its rear side a recess or cavity *a* the top of which preferably slopes downward and rearward so as to provide an inclined overhanging shoulder *a'* and this shoulder rests upon a correspondingly inclined surface of a lateral arm of a bracket E which is secured to the wall B through the medium of a wall plate *e*. This bracket, in itself, may be sufficient to support the weight of the bowl, and the complementary, inclined engaging surfaces of the shoulder and bracket form interlocking features that prevent the horizontal movement of the bowl away from the wall B, unless such horizontal movement



be accompanied by a sufficient vertical movement to clear the shoulder  $a'$ . The bowl is, however, additionally supported by the pipes C and D, and its upward movement is prevented by means now to be described.

The outlet pipe D has its in-take end deflected downward and upward so as to form what is known in the art as a P-trap, located wholly in front of the wall, the in-take end or mouth of which is vertical, registering with the outlet  $A''$  of the bowl, and in the form shown in Figs. 1 and 3 carries an integral flange  $D''$  provided with a V-shaped groove in which is seated the lower side of an elastic packing or gasket F, the upper side of which is received in a corresponding groove in the bowl A, surrounding the outlet opening  $A''$ .

The fixture is provided opposite the outlet opening  $A''$  with means for supporting a pressure device which preferably includes a set screw G disposed with its axis coincident with the projected axis of the outlet opening and the in-take end of the pipe D. In that form of the invention which is specific to this application, the upper end of the screw engages the outlet pipe D (which latter is provided with a socket or depression for receiving it) so that when the screw is driven home it will tend to force the outlet pipe upward, but its upward movement being prevented by its contact with the wall B at the upper side of the opening  $B''$ , the result will be the drawing of the bowl downward, compressing the gasket F and drawing the shoulder  $a'$  to a firm seat upon the bracket E. It is unnecessary to here give dimensions and measurements which the parts must have in order to accomplish this result. Suffice it to say that the parts must be so proportioned that when the bowl is presented in a horizontal direction toward the wall it will pass, without contacting therewith, both the gasket F and the bracket E and then, when it reaches contact with the wall, it may be lowered so that it rests upon the gasket F, compressing the latter to a limited extent (proportional to the weight of the bowl) in which condition the shoulder  $a'$  will be slightly out of contact with the bracket E. Thereafter, the driving home of the screw G will draw the bowl downward, with the double effect of compressing the gasket F and bringing the shoulder  $a'$  to a firm seat on the bracket E.

In that class of fixtures in which appearance is a desideratum the end of the outlet pipe D is concealed by a housing  $A^2$  on the bottom of the bowl. The housing is preferably integral with the bowl so that there is no joint through which liquid trickling down the front or side of the bowl can enter the housing there to become foul, or to come in contact with the outlet pipe and corrode it. Furthermore, the outlet pipe being completely concealed, it is unnecessary to give it a fine finish by polishing, nickel plating or

otherwise, and a cheaper grade of metal may be used for making it, thus effecting a very material saving in the cost of manufacture. In the form of the invention which is specific to this application, the housing forms the support for the pressure-device above mentioned. If the housing is of earthenware a nut  $G'$  for receiving the pressure screw G is placed inside of it, and an opening is made through the bottom of it for giving access to the screw for turning it. In any event the housing is open at back for admitting the outlet pipe as the bowl is being placed against the wall.

The means for connecting the inlet pipe to the bowl are similar to those just described for connecting the outlet pipe, and similar features of both are indicated by similar reference letters but for the sake of distinction small letters have been used for the parts accessory to the inlet pipe.

As already explained, in order to place the bowl against the wall it is necessary to lift it high enough for the shoulder  $a'$  to clear the bracket E and at the same time it is equally necessary that the gasket  $f$  (having previously been put in place) shall clear the flanged mouth of the inlet pipe C and to this end the normal position of the inlet pipe must, during this operation, be sufficiently high. It is for this reason that the opening  $B'$  is made in the form of a vertical slot long enough to provide clearance for the pipe C. The bowl having been put in place, brought to a bearing upon the bracket E, and the screw  $g$  having been driven home, the screw  $g$  is driven home, thereby forcing the inlet pipe C downward so that its flanged mouth compresses the gasket  $f$  against the bowl. If the parts are nicely proportioned, in their final positions the inlet pipe C will come to a bearing upon the wall B at the bottom of the opening  $B'$  so that the bowl will have three points of support, namely, at the openings  $B'$  and  $B''$  and at the bracket E. I desire to have it understood, however, that with a snug fit between the outlet pipe D and the walls of the opening  $B''$  the bracket E may be dispensed with and, furthermore, that it will not be necessary for the inlet pipe C to have a bearing upon the wall at the bottom of the opening  $B'$ . When the screw G is driven home, the pipe D will of itself prevent either the upward or the downward movement of the bowl and the screws G and  $g$ , the ends of which are received in sockets in the pipes D and C, respectively, will prevent the bowl from moving away from the wall, assuming that said pipes are themselves incapable of any outward movement. On the other hand the bracket E, alone, may be relied upon for wholly supporting the bowl and holding it against outward movement, but in this event it will be necessary for one, at least, of the pipes to have contact with the



wall B at the top of the opening through which it passes. I prefer, however, to construct the bowl precisely as shown in the drawings.

5 It will be observed that both the inlet and the outlet pipes have bends near their open ends, and that when the parts of the fixture are assembled in proper relations to each other the bends proceed in opposite direc-  
10 tions so that the mouth or terminus of the inlet pipe is presented downward while the mouth or terminus of the outlet pipe is presented upward. With this arrangement it will be seen that by tightening the pressure  
15 screws G and g the ends of the two pipes will be forced toward each other, and thereby compress the gaskets and firmly clamp the bowl between them, but without putting  
20 upon it any considerable amount of strain that will have a tendency to break it. It is in order that the screws may produce this pressure upon the pipes that the latter are provided with the bends and these bends make it possible to arrange a pressure pro-  
25 ducing device directly opposite the openings in the bowl. This arrangement has the advantage of enabling the bowl to be either put in place or removed with great facility.

It will be observed that in the preferred  
30 form of the invention hereinbefore described the part A<sup>2</sup> serves the double purpose of a support for the pressure device and a housing for concealing the pipe connection. In addition to the functions above described the  
35 housing affords means for ornamentation, but in some grades of fixtures ornamentation is practically left out of consideration. In such fixtures, the housing feature may be omitted and the support for the pressure de-  
40 vice may be of such a nature that the pipe connections are more or less exposed. For instance, in Fig. 4 is shown a modification in which the support for the pressure device is  
45 in the form of a hanger or stirrup II attached to the bottom of the bowl. Assuming the bowl to be of metal the attachment may be made by means of screws, bolts or other  
50 suitable devices. The hanger or stirrup being made of metal the screw G may have direct threaded engagement therewith and the nut G', which is necessary in the event of a housing or support of earthenware, is dispensed with.

In the form of the invention shown in Fig.  
55 5 the support is in the form of a bracket E' attached to the wall B through the medium of the wall plate e. In this form of the invention the two brackets E and E' are integral with the wall plate e and the wall plate  
60 is provided with an opening for the pipe D.

In the form of the invention shown in Fig. 1 the inlet and outlet pipes C and D have what may be called butt-joints with the bowl, nothing save the packing rings F and f being interposed between them, while in the

form of the invention shown in Fig. 5 the inlet and outlet pipes have slip joints with the bowl. In other words the ends of the pipes enter the inlet and outlet openings of the bowl. In this form of the invention the  
70 pressure screw G bears against a yoke I which carries a ring I' surrounding the pipe and this ring, in turn, bears against a packing ring or gasket F' which surrounds the pipe and occupies an enlargement or counter-  
75 bore A<sup>2</sup> of the opening A''. In this as in the preferred form of the invention the accessories of the inlet and outlet pipes are of similar construction, small letters being used for the accessories of the inlet pipe for the sake  
80 of distinction.

The specific form of the invention shown in Fig. 5, in which the end of the pipe (inlet or outlet) extends into the opening of the bowl so as to form a slip joint therewith, and  
85 in which the packing is compressed against the bowl and pipe by a loose follower which surrounds the pipe and is carried by a yoke, which latter is borne upon by a set screw carried by a bracket supported independently  
90 of the bowl, is not specifically claimed in this application. It forms the subject of a separate application of even date herewith bearing Serial No. 318,513 and needs no further  
95 description in this specification. It is included in this application only as a species of the generic invention.

It will be observed that in all of the several forms or species of the invention the bowl has vertical inlet and outlet openings.  
100 The inlet and outlet pipes terminate in vertical branches presented downward and upward, respectively, and there are means for exerting pressure downward and upward for forming tight joints between the bowl and  
105 the inlet and outlet pipes, respectively.

In the several forms of the invention the bracket E is an element in the means for supporting the bowl but, as before intimated, this bracket may be entirely dispensed with.  
110 In the several forms the bowl is clamped between the pressure device acting vertically, upward and downward, against it. In the form shown in Fig. 1 the pressure devices act directly against the pipes C and D so that  
115 they enter into the means for supporting the bowl while in the form shown in Fig. 5 the pressure devices have no direct action upon the pipes but act upon them only through the frictional contact therewith of the gas-  
120 kets F' and f'.

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

1. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet  
125 openings, inlet and outlet pipes having vertical ends registering with the inlet and outlet openings, respectively, gaskets interposed between the bowl and pipes and surrounding the inlet and outlet openings and means for  
130



compressing the gaskets between the bowl and pipes, substantially as described.

2. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly respectively and registering with said openings, gaskets interposed between the bowl and pipes and surrounding the openings, and pressure devices arranged to exert their pressure vertically, the one upward and the other downward, for compressing the gaskets between the bowl and pipes, substantially as described.

3. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes registering with said openings, gaskets interposed between the bowl and the pipes and pressure devices including screws for compressing the gaskets between the bowl and pipes, substantially as described.

4. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, horizontal inlet and outlet pipes having their ends bent and presented downwardly and upwardly respectively, and registering with said openings, and means for forming liquid tight joints between the bowl and pipes, substantially as described.

5. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly, respectively, and registering with said openings, gaskets interposed between the bowl and pipes, and means for forcing the pipes toward each other and thereby compressing the gaskets and clamping the bowl, substantially as described.

6. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having ends presented downwardly and upwardly, respectively, said pipes terminating in annular flanges, gaskets interposed between the bowl and said flanges and means for forcing the pipes toward each other and thereby compressing the gaskets and clamping the bowl, substantially as described.

7. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly, respectively, and registering with said openings, gaskets interposed between the bowl and pipes and pressure devices carried by the bowl and engaging the pipes for forcing them toward each other, substantially as described.

8. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly, respectively, and registering with said openings, gaskets interposed between the bowl

and pipes, pressure screws engaging the pipes, and supports, carried by the bowl, against which said pressure screws react in opposite directions, substantially as described.

9. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly, respectively, and registering with said openings, pressure screws engaging the pipes, nuts engaging the pressure screws and supports carried by the bowl and in turn engaging the nuts, substantially as described.

10. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly, respectively, and registering with said openings, housings carried by the bowl and covering the ends of the pipes and devices for forcing the pipes toward each other, substantially as described.

11. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly, respectively, said pipes having bends adjacent to their ends, pressure screws engaging the pipes at the bends and means against which said pressure screws react, whereby the pipes may be forced toward each other, substantially as described.

12. In a plumbing fixture, the combination of a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly, respectively, and registering with said openings, said pipes having bends near their ends, set-screws engaging said pipes, means against which the set-screws react, and housings covering the ends of the pipes, substantially as described.

13. In a plumbing fixture, a bowl having vertical inlet and outlet openings, inlet and outlet pipes having their ends presented downwardly and upwardly, respectively, and registering with said openings, said pipes having bends near their ends, screws engaging said pipes at their bends, nuts engaging the screws and housings carried by the bowl and engaging the nuts, substantially as described.

14. In a plumbing fixture, the combination of a bowl having a vertical opening, a pipe having a vertical end registering with said opening, means for forcing the bowl and pipe toward each other and holding them against relative vertical movement, and means for supporting the bowl, substantially as described.

15. In a plumbing fixture the combination with a bowl having a vertical opening, a pipe having a vertical end registering with said opening, a gasket surrounding the open-

70

75

80

85

90

95

100

105

110

115

120

125

130



ing and contacting with the bowl and pipe, means for compressing the gasket, and means for thereafter preventing the relative vertical movement of the bowl and pipe.

5 16. In a plumbing fixture, the combination of a bowl having a vertical opening, a pipe having a vertical end registering with said opening, said pipe having a flange, a gasket interposed between the bowl and  
10 flange, means for forcing the bowl and pipe toward each other and holding them against relative vertical movement, thereby compressing the gasket, and means for supporting the bowl, substantially as described.

15 17. In a plumbing fixture, the combination of a bowl having a vertical opening, a pipe having a vertical end registering with said opening, means reacting in one direction against the bowl and in the other direction  
20 against the pipe for forcing the bowl and pipe toward each other and holding them against relative vertical movement, and means for supporting the bowl, substantially as described.

25 18. In a plumbing fixture, the combination of a bowl having a vertical opening, a pipe having a vertical end registering with said opening, means for forcing the bowl and pipe toward each other and holding them  
30 against relative vertical movement, and means for supporting the pipe whereby the bowl is at least partly supported, substantially as described.

35 19. In a plumbing fixture, the combination of a bowl, having at its bottom a vertical opening, a pipe having a vertical end, presented upward and registering with said opening, means for forcing the bowl downward toward the pipe and holding it against  
40 upward movement relatively thereto, and means independent of the pipe for supporting the bowl, substantially as described.

20. In a plumbing fixture the combination of a bowl having at its bottom a vertical  
45 opening, a pipe having a vertical end presented upward and registering with said opening, a gasket interposed between the bowl and pipe, and means for forcing the bowl downward toward the pipe and holding  
50 it against upward movement relatively thereto, thereby compressing the gasket, substantially as described.

21. In a plumbing fixture, the combination of a bowl having at its bottom a vertical  
55 opening, a pipe having a vertical end presented upward and registering with the said opening, a gasket interposed between the bowl and pipe, and means reacting in one direction against the bowl and in the opposite  
60 direction against the pipe for compressing the gasket, substantially as described.

22. In a plumbing fixture, the combination of a bowl having at its bottom a vertical  
35 opening, a pipe having a vertical end presented upward and registering with said

opening, means for forcing the bowl toward the pipe and holding it against upward movement relatively thereto, and means for supporting the pipe, whereby it affords a support for the bowl, substantially as described. 70

23. In a plumbing fixture, the combination of a bowl having a vertical opening, a pipe having a vertical end presented upward and registering with said opening, means  
75 for preventing either upward or downward movement of the pipe, and means for forcing the bowl downward and holding it against upward movement relatively to the pipe, substantially as described. 80

24. In a plumbing fixture, the combination of a wall, a bowl having an opening, a pipe registering with said opening, and devices carried by the wall and bowl and having interlocking features for preventing the  
85 horizontal movement of the bowl away from the wall, said devices being adapted to be engaged and disengaged by moving the bowl in a plane parallel with the face of the wall, substantially as described. 90

25. In a plumbing fixture, the combination of a wall, a bowl having a vertical opening presented downward, a pipe having a vertical end presented upward and registering with said opening, devices carried by  
95 the wall and bowl and having interlocking features for preventing the horizontal movement of the bowl away from the wall, and means for forcing the bowl and pipe toward each other and simultaneously moving said  
100 interlocking features into engagement with each other, substantially as described.

26. In a plumbing fixture, the combination of a wall, a bowl having an opening, a pipe registering with said opening, a bracket  
105 carried by the wall, a shoulder on the bowl, and means for forcing the bowl downward to seat said shoulder on said bracket, substantially as described.

27. In a plumbing fixture, the combination of a wall, a bowl having a vertical opening, a pipe having a vertical end registering with said opening, a support for the bowl  
110 carried by the wall, and means for simultaneously forcing the bowl and pipe toward each other and forcing the bowl to its support, substantially as described. 115

28. In a plumbing fixture, the combination of a wall, a bowl having an opening, a pipe registering with said opening, a bracket  
120 carried by the wall, a shoulder on the bowl adapted to rest upon said bracket, said bracket and shoulder having interlocking features for preventing the bowl from moving horizontally away from the wall and  
125 means for forcing the bowl downward, substantially as described.

29. In a plumbing fixture, the combination of a wall, a bowl having an opening, a pipe registering with said opening, a bracket  
130



carried by the wall, a shoulder on the bowl, said bracket and shoulder having interlocking features, means for forcing the bowl downward, and means for preventing the relative movement of the pipe and bracket toward each other, substantially as described.

30. In a plumbing fixture, the combination of a wall, a bowl having a vertical opening, a pipe having a vertical end registering with said opening, a bracket carried by the wall, a shoulder on the bowl adapted to rest upon said bracket, said bracket and shoulder having interlocking features for preventing the bowl from moving horizontally away from the wall, means for forcing the bowl downward to bring its shoulder into engagement with the bracket, and means for preventing the relative movement of the pipe and bracket toward each other, substantially as described.

31. In a plumbing fixture, the combination of a slab or wall having an opening through it, a bowl having a vertical opening, a pipe having a horizontal portion occupying the opening of the wall and a vertical end registering with the opening of the bowl, said bowl having also a shoulder presented downward, a bracket secured to the wall and engaging said shoulder, and a pressure device for forcing the bowl and pipe toward each other, the pipe having a bearing against the wall whereby the relative movement of the pipe and bracket under the influence of the pressure device is prevented when the parts are in normal positions, substantially as described.

32. In a plumbing fixture, the combination of a slab or wall having an opening through it, a bowl having at bottom a vertical opening, a pipe passing through the opening of the wall and having contact with the wall at the top side of the opening, said pipe having a vertical end registering with the opening of the bowl, a bracket secured to the wall, the bowl having a shoulder presented downward and engaging the bracket, and a pressure device for forcing the bowl downward so as to bring its shoulder into engagement with the bracket, substantially as described.

33. In a plumbing fixture, the combination of a wall or slab having an opening through it, a pipe having a horizontal portion passing through said opening and engaging the wall at the top side of the opening, the end of the pipe being presented upward, a bowl having in the bottom an opening registering with the end of the pipe, a gasket interposed between the bowl and the pipe, a bracket secured to the wall, the bowl being provided with a shoulder adapted to engage said bracket, and a pressure device reacting in opposite directions against the bowl and pipe, substantially as described.

34. In a plumbing fixture the combination

of a bowl having an opening, a pipe registering with the opening, a pressure device engaging the pipe for forcing it toward the bowl, and means for resisting the movement of the bowl under the influence of said pressure device, substantially as described.

35. In a plumbing fixture, the combination of a bowl having an opening, a pipe registering with the opening, a pressure screw engaging the pipe for forcing it toward the bowl, and a support for the pressure screw, carried by the bowl, substantially as described.

36. The combination, in a plumbing fixture, of a bowl having an opening, a support located opposite said opening, a pipe having an open end registering with said opening, and means for forming a tight joint between the bowl and pipe, said means including a gasket and a pressure screw reacting in one direction against said support and in the other direction against the bowl, substantially as described.

37. The combination, in a plumbing fixture, of a bowl having an opening, a support located opposite said opening, a pipe having an open end located between the bowl and support, and registering with said opening, said pipe also having a bend near its end, and means for forming a tight joint between the bowl and pipe, said means including a screw reacting in opposite directions against the support and the pipe, substantially as described.

38. The combination, in a plumbing fixture, of a bowl having an opening, a support located opposite said opening, a pipe having an open end registering with said opening, a gasket interposed between the bowl and pipe, and means for compressing said gasket, said means including a screw reacting in one direction against said support, and in the opposite direction against the pipe, substantially as described.

39. The combination, in a plumbing fixture, of a bowl having an opening, a pipe having an open end registering with said opening, a housing carried by the bowl and inclosing the end of the pipe, and means reacting in opposite directions against the housing and pipe for forming a tight joint between the pipe and bowl, substantially as described.

40. The combination, in a plumbing fixture, of a bowl having an opening in the bottom thereof, an outlet pipe having an open end registering with said opening, said pipe being bent in the vicinity of its open end to form a trap, a housing carried by the bowl and inclosing said trap, and means reacting in opposite directions against the housing and pipe for forcing the bowl and pipe toward each other, substantially as described.

41. The combination, in a plumbing fixture, of a bowl having at back a shoulder and having also an opening, a bracket upon



which said shoulder rests, a pipe having an open end registering with said opening, means for supporting the bracket and means for forcing the bowl downward onto said bracket, substantially as described.

42. The combination, in a plumbing fixture, of a bowl having a shoulder at back thereof and having an opening, a bracket upon which said shoulder rests, a pipe having an open end registering with the opening, means for preventing the movement of the pipe and bracket toward each other and means for forcing the bowl and pipe toward each other, substantially as described.

43. The combination, in a plumbing fixture, of a bowl having at the back thereof an inclined shoulder and having an opening, a bracket having an inclined arm upon which said shoulder rests, a pipe having an open end registering with said opening, means for limiting the movement of the pipe and bracket toward each other, and means for forcing the bowl and pipe toward each other, substantially as described.

44. The combination in a plumbing fixture, of a bowl having an opening, a pipe having an open end registering with said opening, a housing integral with the bowl and inclosing the end of the pipe, said housing being open at back for the admission of said end of the pipe, and means reacting in opposite directions against the bowl and pipe for forming a tight joint between them, substantially as described.

45. In a plumbing fixture, the combination of a wall having an opening through it, a bowl having an opening, a pipe extending through the opening of the wall and having in front of the wall a bend having a vertical open end registering with the opening of the bowl, a pressure device for forming a tight joint between the bowl and pipe, and a housing, integral with the bowl, covering the

bend and pressure device, said housing being open at back for admitting the bend, and having also an opening through which the pressure device is accessible while the bowl and housing are in place, substantially as described.

46. As a new article of manufacture, a bowl having a vertical opening, a housing, integral with the bowl, covering said opening, the interiors of the bowl and housing being in communication with each other through said opening, said housing being open at back for the admission of a pipe adapted to register with said opening, and said housing having also an opening for affording access to the means for securing the bowl and pipe together, substantially as described.

47. As a new article of manufacture, a bowl having a vertical opening through its bottom, and a housing, integral with the bowl, covering said opening and into which said opening leads, said housing being open at back for the admission of a pipe adapted to register with said opening, and said housing having also an opening for affording access to the means for securing the bowl and pipe together, substantially as described.

48. As a new article of manufacture, a bowl having vertical openings at top and bottom, respectively, and housings integral with the bowl, covering said openings and into which said openings lead, respectively, said housings being open at back for the admission of pipes adapted to register with said openings, respectively, and said housings having also openings for affording access to the means for securing the bowl and pipes together, substantially as described.

PATRICK J. MADDEN.

Witnesses:

GEO. A. HARTKE,  
L. M. HOPKINS.