D. CRAIG.

STOOL FOR WATER CLOSETS.

APPLICATION FILED OCT. 31, 1904.

940,435.

Patented Nov. 16, 1909.

4 SHEETS—SHEET 1.

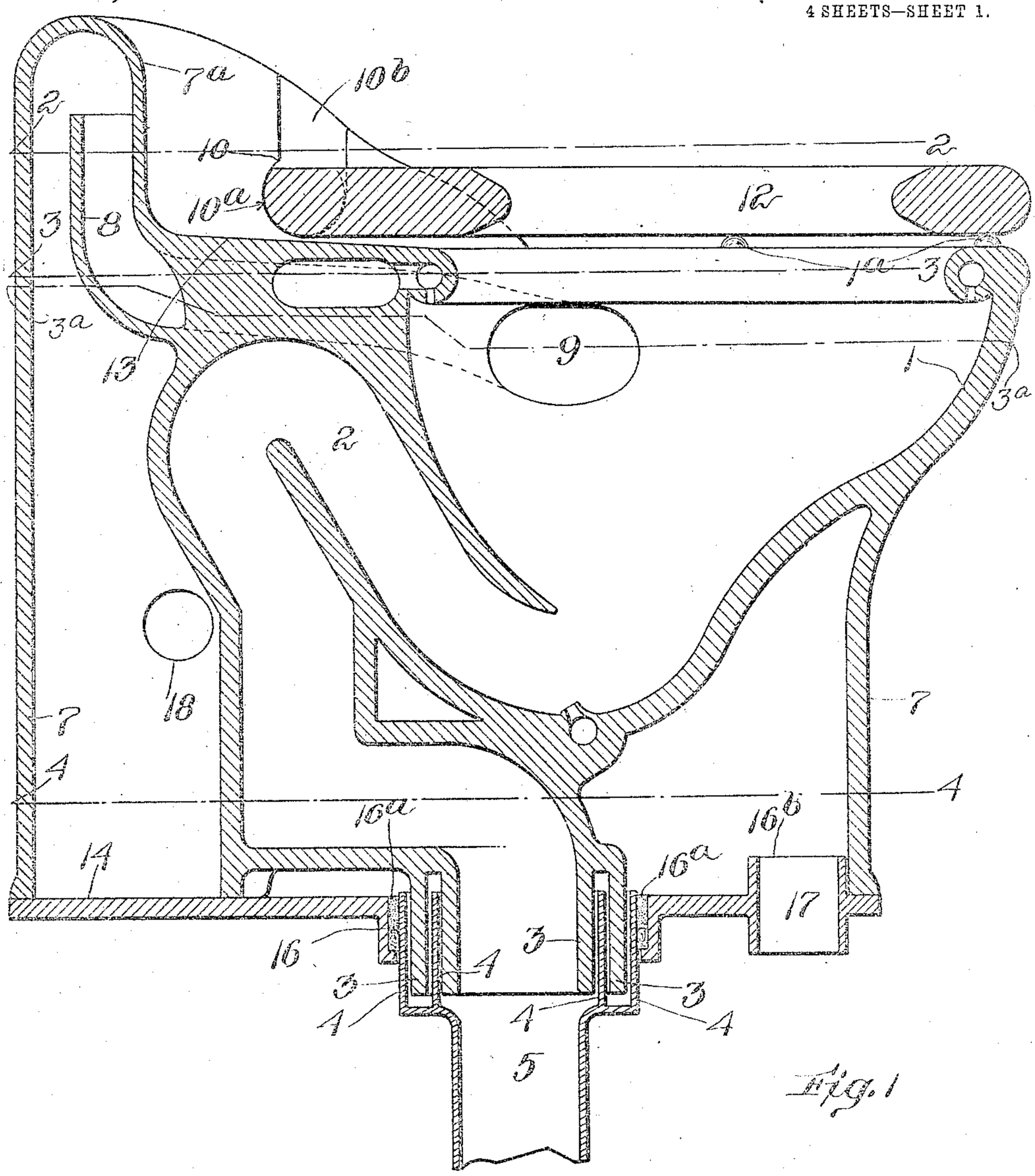

Fig. 1

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4 SHEETS—SHEET 2.

Fig. 2.

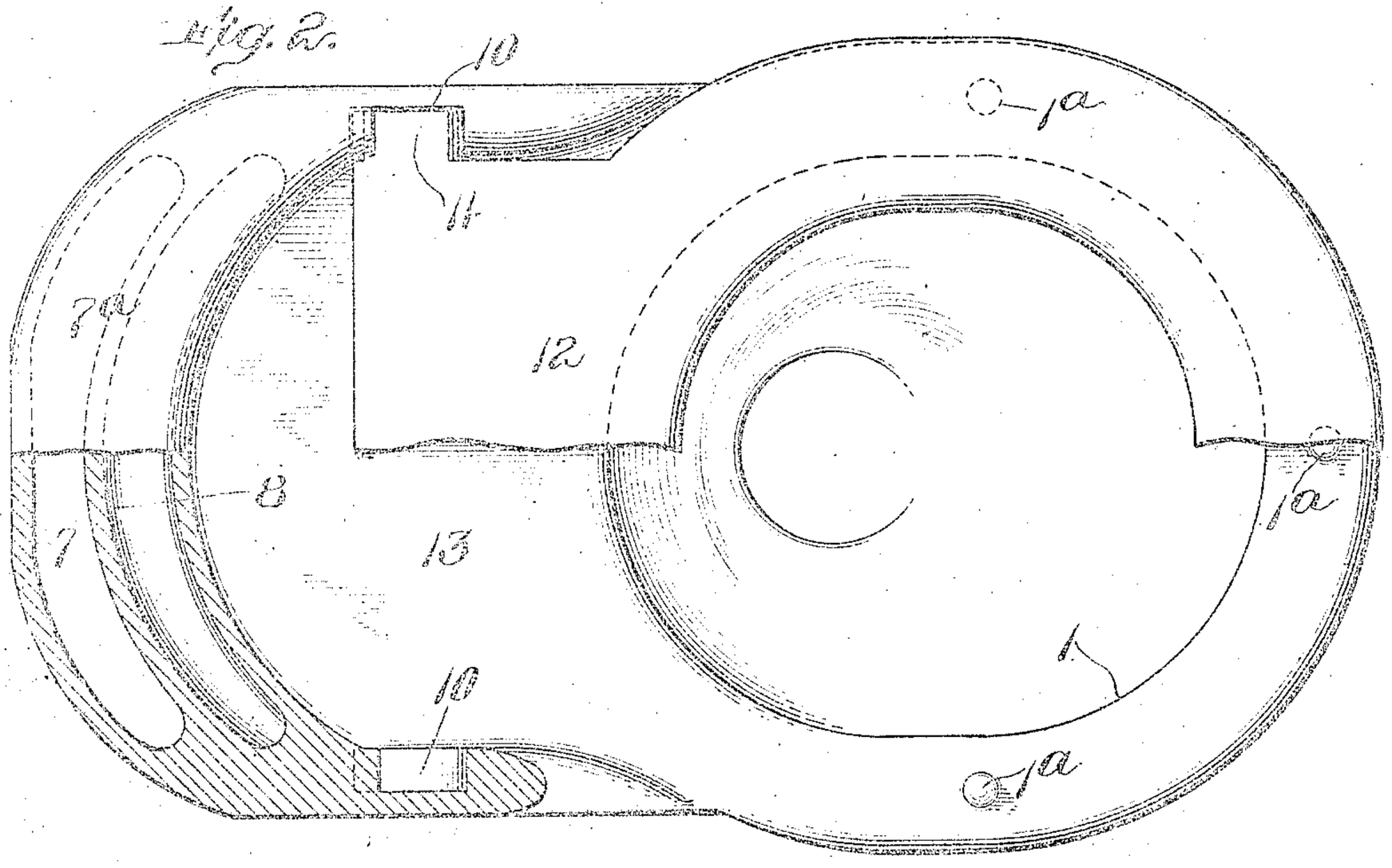
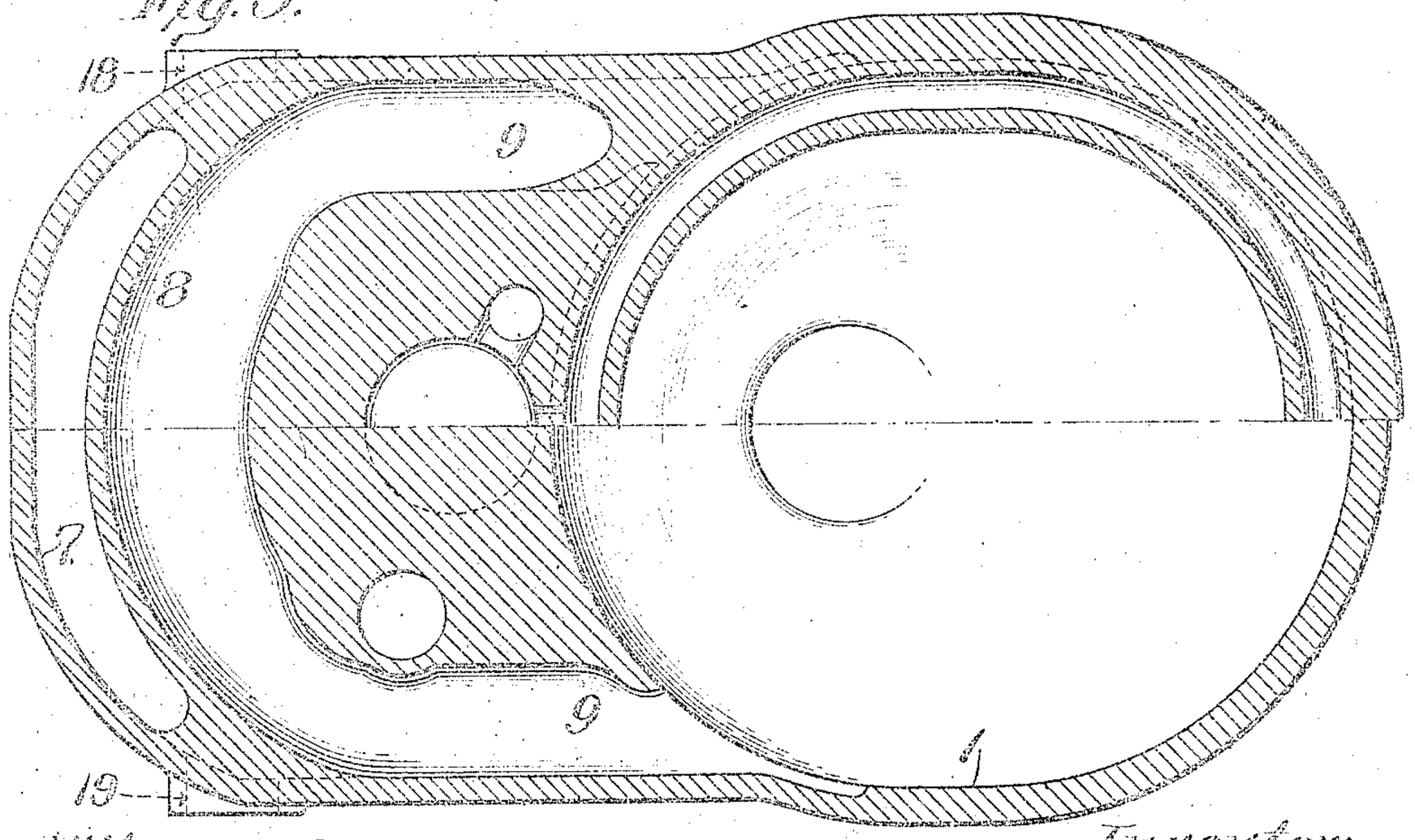


Fig. 3.



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4 SHEETS—SHEET 3.

Fig. 4.

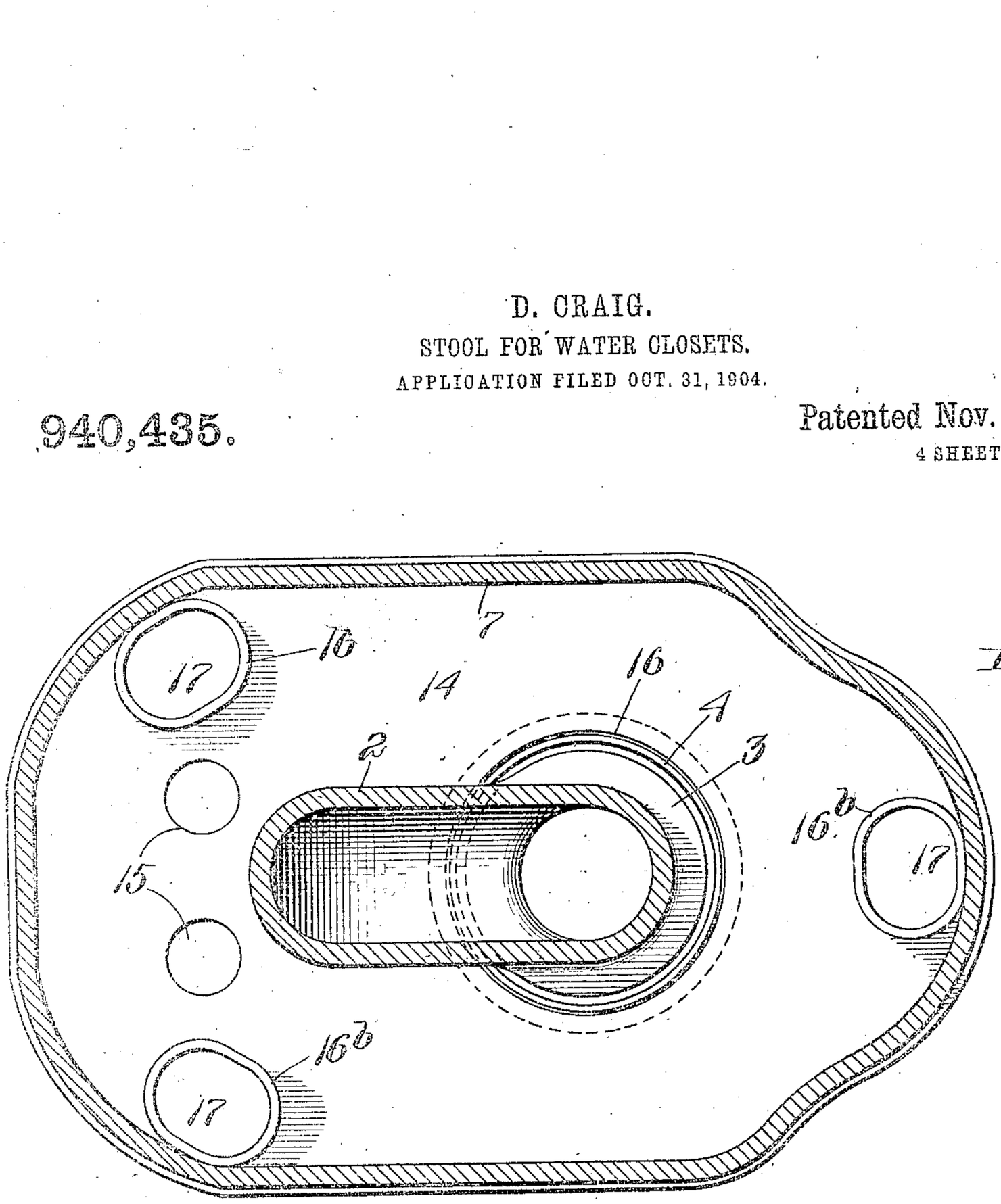


Fig. 5.

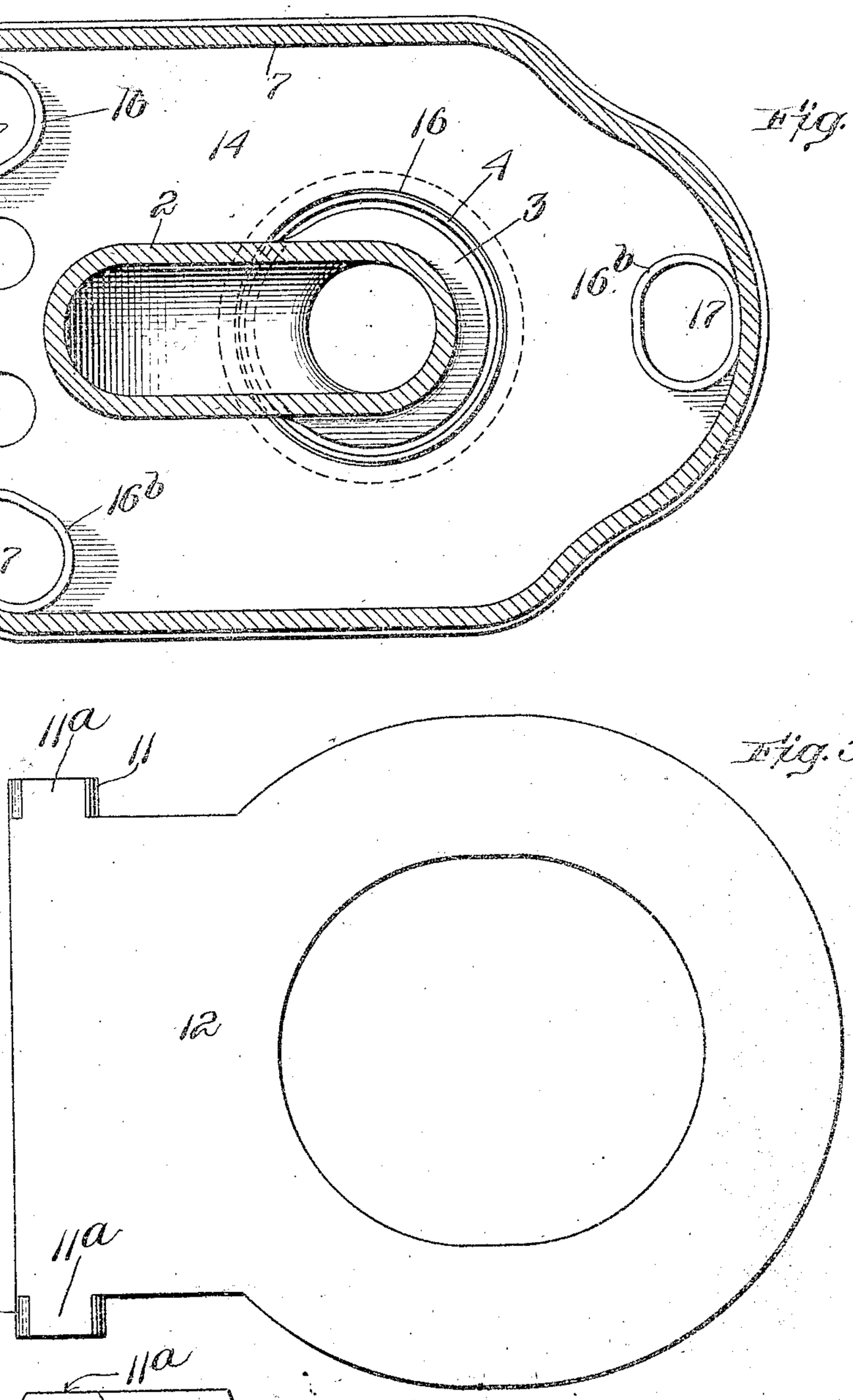
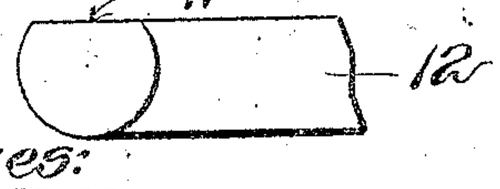


Fig. 6.



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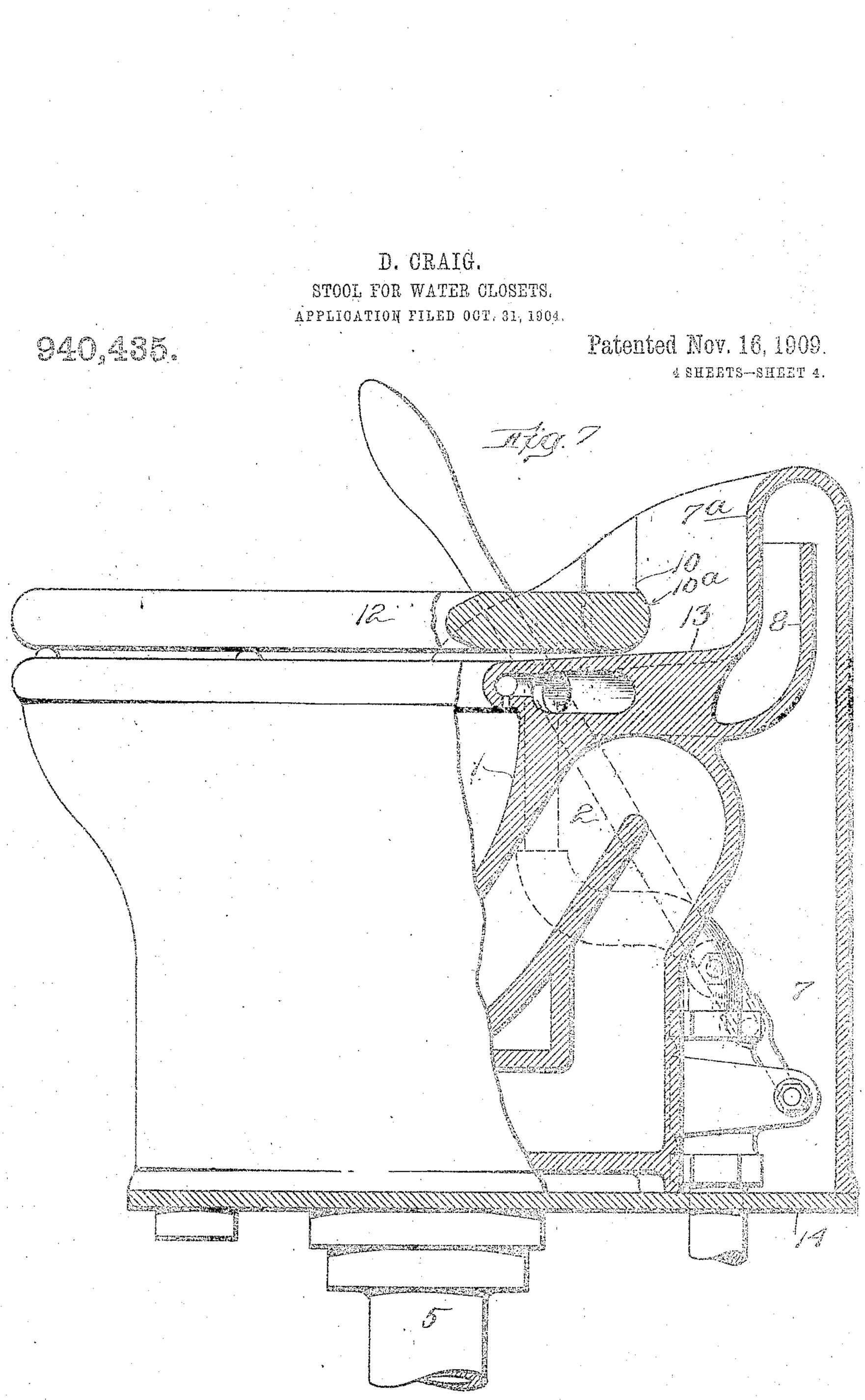
4 SHEETS—SHEET 4.

Fig. 7



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UNITED STATES PATENT OFFICE.

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STOOL FOR WATER-CLOSETS.

940,435. Specification of Letters Patent. Patented Nov. 16, 1909.

Application filed October 31, 1904. Serial No. 230,660.

To all whom it may concern:

Be it known that I, DAVID CRAIG, a citizen of the United States, and resident of Melrose, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Stools for Water-Closets, of which the following is a specification.

My invention relates to stools for water closets and its object is to provide an improved article of this class.

Stools for water closets, as heretofore constructed, have usually comprised a great many metal parts, such as hinges, bolts and the like exteriorly located which in time have tended to become discolored, unsightly and unsanitary. Another existing disadvantage has been the absence of provision for effectively preventing objectionable odors escaping from the bowl into the room in which the bowl is located. A still further problem has been the keeping of the seat of the stool clean and presentable for use. The principal objects of my invention are to obviate these objectionable features, and also to improve otherwise the construction of stools for water closets.

My improved stool which is preferably of porcelain comprises a bowl discharging through a trap-shaped outlet as usual; but one of its distinguishing features is that a skirt depending from the basin surrounds and incloses the lower portion of said basin and the trap, so that not only is a very pleasing and neat appearance given to the fitting concealing the pipe connection but an inclosed space is provided within the skirt closed at its top by the basin at its sides by the skirt and at its bottom by the floor or base upon which the bowl is set. This chamber can be utilized to contain the parts of the flushing apparatus. In the best form of my invention the chamber within the skirt performs still another function. It communicates with the basin through a conduit which opens at one end into the basin at a point above the normal water level therein and at its other end into said chamber at a point above the rim of the basin; so that should the trap clog, and the basin overflow, none of the liquid contents of the latter will enter the chamber within the skirt. The chamber within the skirt is adapted to be connected through a suitable outlet with a hot air flue or the like by which a draft is created from the bowl through the conduit connecting the latter with the chamber within the skirt, and from the latter through said outlet into the hot air flue or the like, thus carrying off objectionable odors.

Another distinguishing feature of my invention consists in providing the bowl with a two sided reversible seat so arranged that when the top side of the seat is soiled the seat can be reversed to present the other side for use. This construction also admits of thoroughly cleaning the entire seat, not only on both sides but on its pivot parts which is impossible unless the seat be removable.

Other features of my invention are hereinafter pointed out.

In the accompanying drawings which show one embodiment of my invention: Figure 1 is a central vertical sectional view of a stool for water closets embodying my invention. Fig. 2 is a plan view of the stool shown in Fig. 1 the lower half thereof being shown in section on the plane indicated in Fig. 1 by the line 2—2. Fig. 3 is a sectional plan view, the upper half being taken on the plane of line 3—3 of Fig. 1 and the lower half being taken on the plane of line 3ª—3ª of Fig. 1. Fig. 4 is a section on line 4—4 of Fig. 1. Fig. 5 is a plan view of the two sided cover hereinafter described. Fig. 6 is a detail hereinafter described. Fig. 7 is a side elevation partly broken away.

Having reference to the drawings 1 represents the bowl of my improved stool, said bowl discharging into a trap shaped pipe 2 as usual, but in this case pipe 2 terminates at its lower end in two concentric flanges 3, 3 which intermesh with two flanges, 4, 4 at the top of a pipe 5 leading to the sewer. The space between the flanges 4, 4 serves as an annular receptacle to hold a sealing fluid such as mercury or water. This provides a seal of the same type and operating in the same manner as the seal shown and described in Letters Patent of the United States No. 725,937, granted to me April 21, 1903.

Integral with the bowl 1 is a skirt 7 which completely encircles the fitting, but at the front of the bowl the skirt need only surround the lower portion thereof though if desired it may depend from the upper edge of the bowl. At the rear the skirt first extends upward over a trough 8 and then

downward to the floor, thus forming an upward fold or extension 7ª which constitutes a back for the stool and also serves to protect the wall of the room within which the stool may be placed. A pair of conduits 9 connect the trough 8 with the bowl near the top of the latter and at a point above the normal water level, thus affording communication for ventilating purposes between the bowl and the interior of the chamber. The extension 7ª upon its inner side is made with two sockets 10 to receive trunnions 11 on a seat 12 which can be raised and lowered by swinging it on said trunnions. The seat is supported at one end by the trunnions 11 and at its other end by three bosses 1ª integral with the top of bowl 1. The trunnions are cylindrical except for a flattened part 11ª so disposed that normally the trunnions are locked in the lower enlarged portions 10ª of sockets 10, but by swinging the seat into a vertical position the trunnions 11 can be lifted from their sockets 10 through the restricted entrances 10ᵇ of the latter. The seat 12 is preferably made with two, usable sides, that is, it is what may be termed two sided and reversible; and when one side is soiled the seat can be removed, as described, reversed and returned to position. Also when desired, the seat can be readily removed for cleaning and washing. It will be seen that the truncated trunnion portion 11ª is a continuation of the plane of the seat surface, so that it is formed in the work of making the seat 12 without the necessity of subjecting the trunnion to special shaping to secure a truncated cylindrical form, and this novel construction, from a practical standpoint, is of great value.

Between the rim of bowl 1 and extension 7ª the top of the stool is made with a shelf 13 provided to serve as a resting place or "slop seat" for vessels of any kind, while they are being cleaned. This shelf or ledge is made available by removing the seat 12. Heretofore "slop hoppers" so called have been provided which were entirely independent of the bowl, but by making the shelf 13 part of the stool and arranging it with relation to the bowl as described, not only is it more convenient than the independent slop hopper heretofore used but said shelf with extension 7ª serves to arrest splashings or splatterings and return the same to the bowl.

The top of trough 8 is situated considerably above the top or rim of bowl 1 for the purpose of preventing the contents of the bowl flowing back through conduits 9 into the inaccessible chamber within the skirt 7 in the event of clogging of pipe 2.

A base 14 is provided on which rests the lower rim of skirt 7 and this base is made near its center with an opening 16 into which the flanges 3 and 4 project so as to intermesh the joint around the flanges being sealed by oakum and lead as indicated at 16ª. Base 14 is also made with bosses 16ᵇ so arranged as to engage the skirt 7 at three points and prevent lateral movement of the skirt on the base. These bosses 16ᵇ are hollow as shown at 17, so as to permit connecting the one most convenient to use with a hot air flue or the like. The presence of flues, pipes, rafters or other objects, under some of the bosses 16ᵇ might prevent their being connected with the hot air flue but owing to the number and arrangement of the bosses it seldom occurs that all of them are rendered inaccessible through such cause and one of the accessible ones would then be used while the others would be plugged or otherwise closed. By thus connecting the chamber within the skirt 7 with a hot air flue, a circulation is established from bowl 1 through conduits 9, the chamber within skirt 7, and the open boss 16ᵇ to the hot air flue, so that obnoxious gases and odors are carried away over the same route.

15 represents holes in the base through which water supply pipes may pass from below the floor to the usual flushing conduit at the rim of the bowl.

That portion of the chamber within skirt 7 at the rear of bowl 1 is well adapted to accommodate the flushing apparatus. Therefore through the sides of skirt 7 near this locality are provided two holes 18 and 19, one for the passage therethrough of the handle for operating the flushing apparatus, and the other for the passage therethrough of the regulator of the flushing apparatus. These holes 18 and 19 not only serve to receive the handle and operating member referred to, but by their engagement therewith serve also to hold the stool down upon base 14, thus dispensing with bolts and other fastenings which have heretofore necessarily been located upon the outside of the stool, and have therefore been subject to corrosion.

The base 14 can be set in position with its top side flush with the floor of the room in which the stool is located, or below the boards or tiling of the floor, or otherwise as may be desired. But in all cases it is practically or entirely out of sight when the stool is set up so that the only metal parts visible from the exterior of the stool are the handle and regulator of the flushing apparatus referred to above, thus giving to the stool a novel and attractive appearance and at the same time the advantage that there are practically no metal parts upon the exterior to corrode and become uncleanly or unsightly. This base also serves as a gage for positioning the pipe 5 with respect to the wall of the room in which the stool is to be located.

The chamber within skirt 7 is of sufficient size to receive the flushing apparatus and in order to connect said apparatus with the

water supply the base 14 is made with two openings 15 either of which can be used to admit the supply pipe and the other closed in any suitable manner.

The stool above described requires no bolts, screws, or other fastenings to keep it in place. It is held with sufficient security by the engagement of the operating handle and regulator of the flushing apparatus with holes 18 and 19 and by the engagement of bosses 16[b] with skirt 7. In addition to the advantages above pointed out it will be seen that the stool may be installed by simply setting it upon base 14 and connecting the flushing apparatus, thus saving a large part of the trouble, inconvenience and danger of breaking incident to the installation of stools as hitherto constructed.

What I claim is:—

1. A stool for water closets comprising a bowl made with a skirt surrounding the same, and a conduit having a point of elevation above the rim of the bowl, and communicating at one end with the interior of the bowl at a point above the normal water level therein, and at its other end with the interior of the skirt.

2. A stool for water closets comprising a bowl made with a skirt surrounding the same, the skirt having an upward fold or extension, and a conduit communicating at one end with the interior of the bowl at a point above the normal water level therein, and at its other end with the interior of the upward fold of the skirt, at a point above the rim of the bowl.

3. As a new article of manufacture, a stool for water closets, comprising a bowl provided at each side near the rear with an integral projection extending above the rim of the bowl, each projection being provided with a socket having a restricted opening and a relatively larger inner end, and a seat having a pair of trunnions removably mounted in said sockets, each trunnion being in the form of a truncated cylinder whereby it may be passed through the restricted opening of its socket, and when turned in the enlarged inner end will be held therein against dislodgment.

4. As a new article of manufacture, a stool for water closets, comprising a bowl provided at its rear with an integral projection extending upward above the rim of the bowl and in a curved line about the rear side of the bowl, said projection being provided at each end with a socket having a restricted opening and a relatively larger inner end, and a seat having a pair of trunnions removably mounted in said socket, each trunnion being in the form of a truncated cylinder whereby it may be passed through the restricted opening of its socket, and when turned in the enlarged inner end will be held therein against dislodgment.

5. A stool for water closets comprising a bowl made with a skirt surrounding and supporting the same, said skirt being made with integral projections extending above the rim of the bowl, one at either side near the rear, each projection being provided with a socket having a restricted opening and a relatively larger inner end, and a seat having a pair of trunnions removably mounted in said sockets, each trunnion being in the form of a truncated cylinder, whereby it may be passed through the restricted opening of its socket, and when turned in the enlarged inner end will be held therein against dislodgment.

6. A closet bowl having an integral upwardly-projecting extension at its rear and sides, the side members having trunnion sockets formed therein, and a seat provided with trunnions to engage said sockets.

7. A closet bowl having integral upwardly projecting side extensions provided with open trunnion-receiving sockets, and a seat provided with trunnions which removably engage said sockets.

8. A closet bowl having an integral upwardly-projecting extension at its rear and sides, the side members of said extension being inclined downwardly at their ends to the bowl top and having trunnion sockets formed therein, and a seat having trunnions engaging said sockets.

9. A closet bowl having open trunnion-receiving sockets with restricted entrances and enlarged trunnion seats, and a removable seat having trunnions of truncated cylindrical form with the truncate surfaces in the plane of the seat surface.

10. A removable seat for closets having socket-engaging trunnions of truncated cylindrical form, the turncate surfaces of the trunnions lying in the plane of the seat surface.

11. A stool for water closets comprising a bowl made with a skirt surrounding the same said skirt having an upward fold or extension at the rear of the bowl, a trough upon the rear of the bowl projecting up into the fold or extension of the skirt to a point above the rim of the bowl, and a conduit communicating at one end with the bowl at a point above the normal water level therein and at its other end with said trough.

12. A stool for water closets comprising a bowl made with a skirt surrounding and supporting the same, and a base on which the skirt stands said base closing the bottom of the skirt and provided upon its upper face with bosses or the like for holding the stool in position.

13. In a stool for water closets, in combination a bowl made with a supporting skirt surrounding the same said skirt having an upward fold or extension at the rear of the bowl; a trough upon the rear of the bowl

projecting up into the extension of the skirt to a point above the rim of the bowl; a conduit communicating at one end with the bowl at a point above the normal water level therein, and at its other end with the trough, a base closing the bottom of the skirt, and means to provide for connecting the chamber within the skirt with a hot air flue or the like.

14. In a stool for water closets, in combination, a bowl made with a supporting skirt surrounding the same having an upward fold or extension at the rear of the bowl, a trough upon the rear of the bowl projecting up into the extension of the skirt to a point above the rim of the bowl; a conduit communicating at one end with the bowl at a point above the normal water level therein, and at its other end with the trough, and a base for closing the bottom of the skirt made upon its top side with one or more skirt positioning bosses, one or more of which is made hollow to adapt it to be used also to connect the chamber within the skirt with a hot air flue or the like.

15. In a stool for water closets, in combination, a bowl made with a supporting skirt surrounding the same, said skirt having an upward fold or extension at the rear of the bowl, the front side of said extension being provided with a pair of sockets; a seat made with trunnions mounted in the sockets; a trough upon the rear of the bowl projecting up into the extension of the skirt to a point above the rim of the bowl and a conduit communicating at one end with the bowl at a point above the normal water level therein and at its other end with the trough.

16. In a stool for water closets, in combination, a bowl made with a skirt surrounding the same, said skirt having an upward fold or extension at the rear of the bowl provided upon its exterior with a pair of sockets; a shelf between the extension and the rim of the bowl; a seat made with trunnions removably mounted in the sockets; a trough upon the rear of the bowl projecting up into the extension of the skirt to a point above the rim of the bowl, and a conduit communicating at one end with the bowl at a point above the normal water level therein and at its other end with the trough.

17. In a stool for water closets, in combination, a bowl made with a supporting skirt surrounding the same, said skirt having an upward fold or extension at the rear of the bowl provided upon its exterior with a pair of open sockets each made with a restricted entrance and an enlarged inner end, a seat made with a pair of trunnions flattened so as to be passed through the restricted entrance of the sockets and locked in said sockets when the seat occupies its normal position; a trough upon the rear of the bowl projecting up into the extension of the skirt to a point above the rim of the bowl, and a conduit communicating at one end with the bowl at a point above the normal water level therein and at its other end with the trough.

18. A closet bowl having a raised, forwardly-draining portion at its rear with seat trunnion-sockets formed therein.

19. A closet bowl having a raised forwardly-draining portion at its rear, side webs projecting forwardly from such raised portion, and seat trunnion sockets formed in said webs.

Signed by me at Boston, Massachusetts, this twenty-seventh day of October 1904.

DAVID CRAIG.

Witnesses:
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