

**May 9, 1933.**

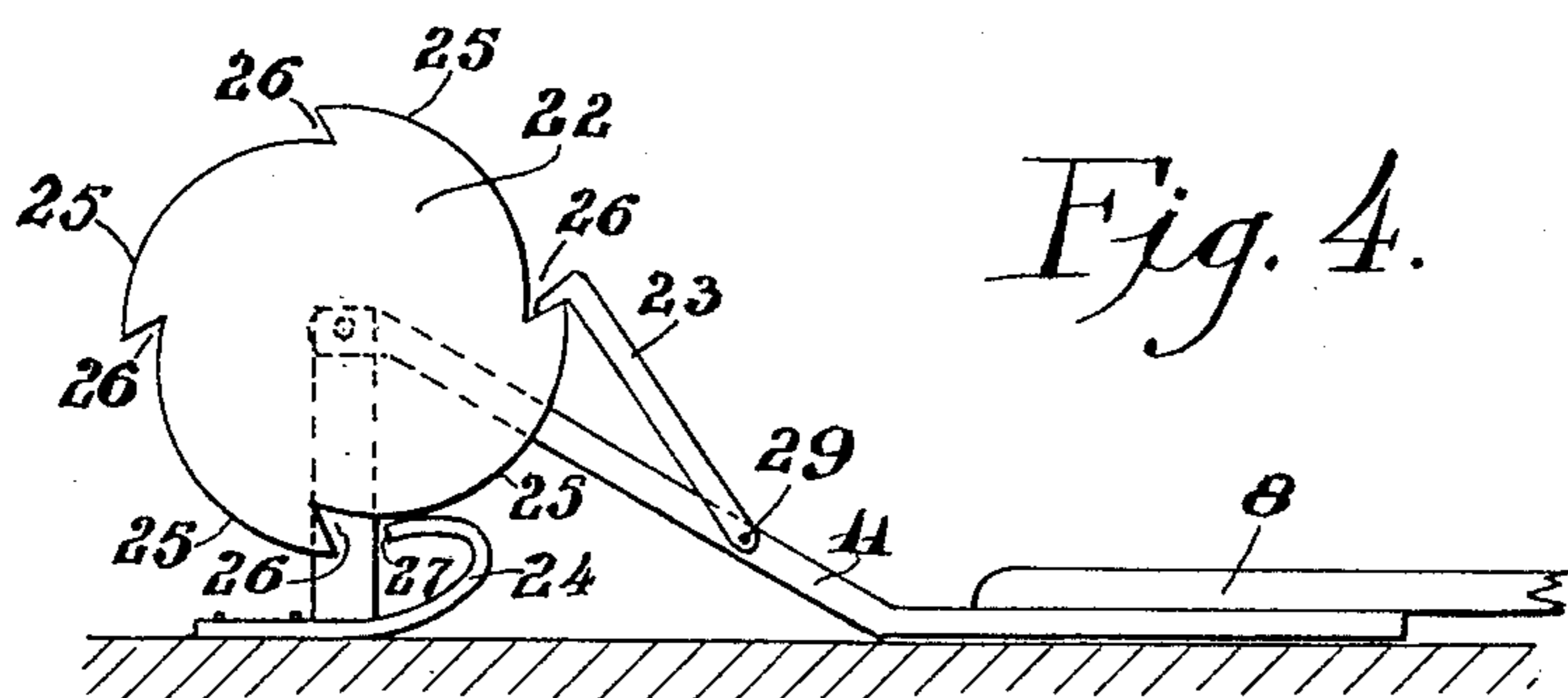
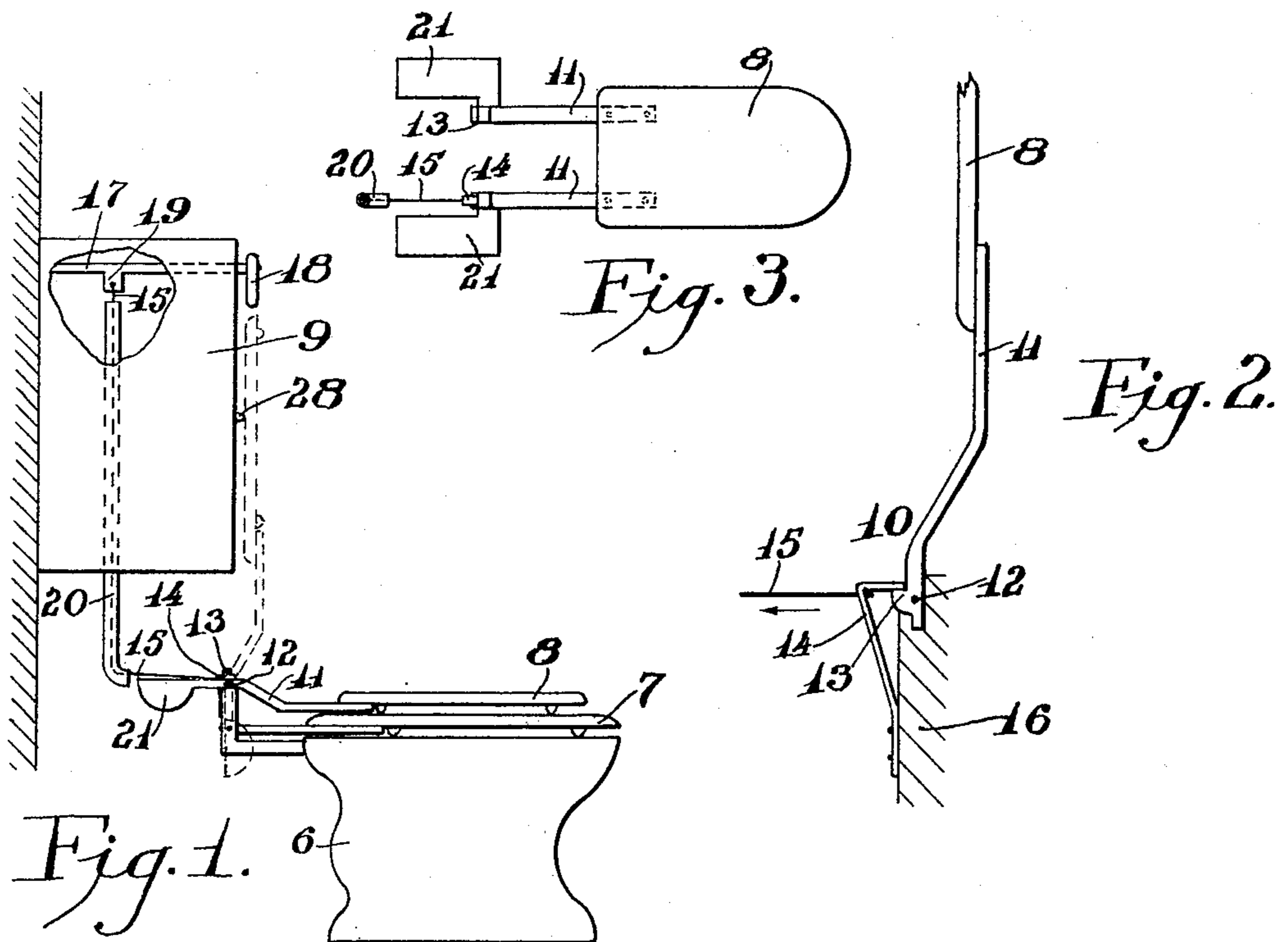
**D. KAPP**

**1,907,826**

# AUTOMATIC TOILET CLOSURE

Filed Nov. 14, 1930

2 Sheets-Sheet 1



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**May 9, 1933.**

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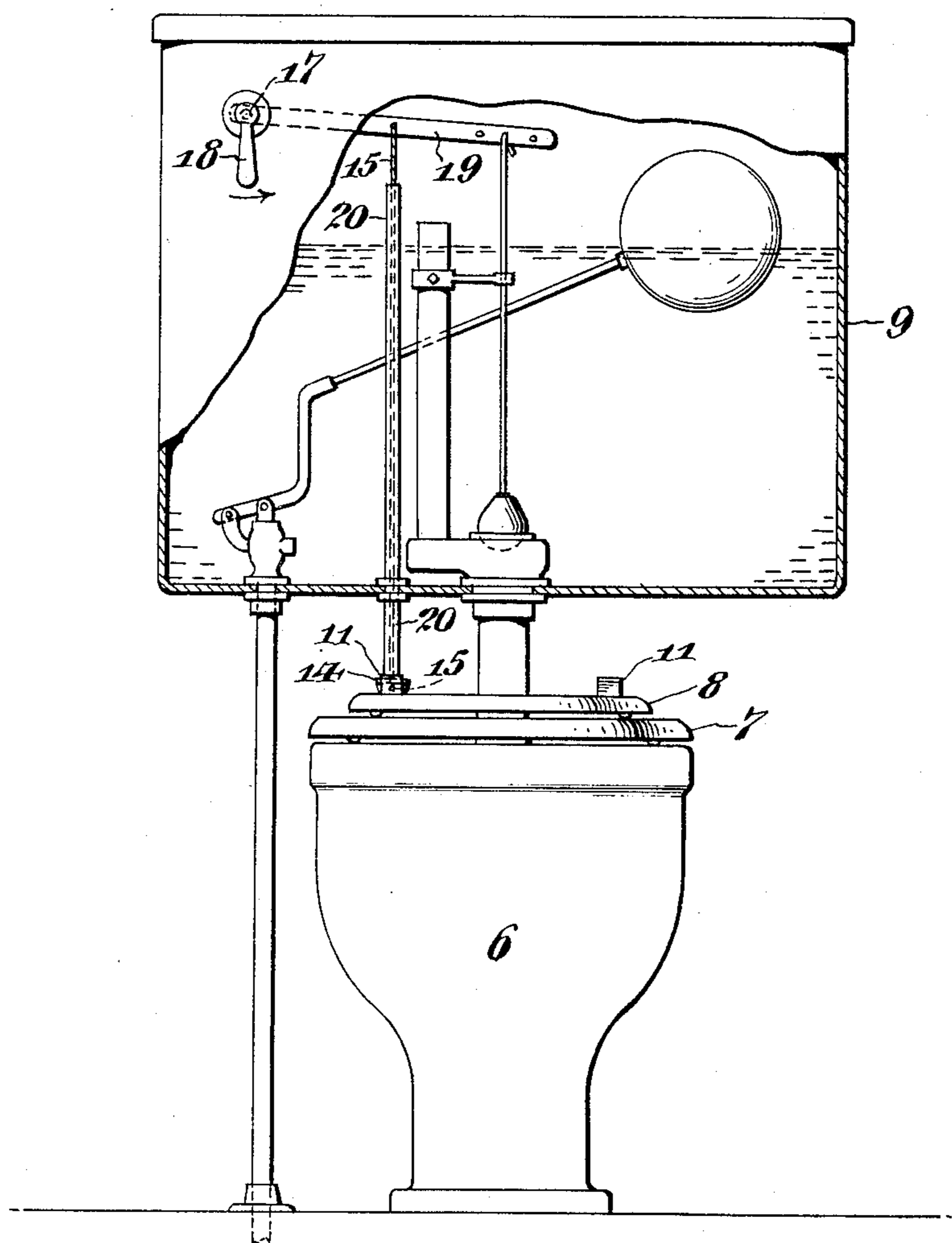
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## AUTOMATIC TOILET CLOSURE

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2 Sheets-Sheet 2

*Fig. 5.*



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## UNITED STATES PATENT OFFICE

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## AUTOMATIC TOILET CLOSURE

Application filed November 14, 1930. Serial No. 495,563.

My invention relates to toilet seat closures, and more particularly to a certain toilet seat closure which operates automatically when the toilet is flushed.

5 An object of my invention is to provide a toilet seat cover that will be sanitarily closed, without the usually necessary manual operation, when the toilet seat is not in use.

10 With the above and other objects in view, my invention consists broadly of a toilet lid in combination with a bowl and seat therefor, and a flushing device, means for retaining the lid in an upright position when in use, and means operable to release the retaining

15 means when the toilet is flushed, permitting the lid to drop.

20 More particularly, my invention consists of a toilet lid hinged to its support in an off-center manner so that it will tend to fall even when it is in an upright position, an elastic catch to hold the lid in the upright position, a means, such as a string, to transfer the motion of flushing to the spring catch, releasing it and thereby permitting the lid

25 to fall, and a counter-balancing medium to make the dropping of the seat noiseless.

30 For the purpose of illustrating my invention, I have shown in the accompanying drawings, forms thereof which are at present preferred by me, since the same have been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously

35 arranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

40 In the accompanying drawings, in which like reference characters indicate like parts: Figure 1 represents a side elevational view of a novel toilet closure embodying my invention.

45 Figure 2 represents a fragmentary side elevational view of the lid closing mechanism, omitting the counterbalance.

Figure 3 represents a plan view of the lid closing mechanism.

50 Figure 4 represents a fragmentary side ele-

vational view of a modified form of lid counterbalance.

Figure 5 represents a front elevational view (on a much enlarged scale) of a novel toilet flush closet and toilet closure embodying my invention, shown partly in section.

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My invention may be applied to any conventional form of water closet 5, including a bowl 6, seat 7, lid 8 and flush closet 9, as shown in Figure 1 flush closet 9 having any

60 suitable means (not shown) operatively connected therewith to flush the same.

According to my invention, the upright lid position may be somewhat different than the conventional form, in that it is kept off-center, favoring a forward drop. This may be accomplished by placing the lid stop 28 forward of the hinge pivot 12, thus keeping the center of gravity of the lid always forward of the pivot point. To counteract this dropping tendency, a cam and spring catch arrangement is provided on the hinge member to hold the lid upright until released by a

65 suitable mechanism. I have illustrated this by the cam on the hinge member 11 and the spring catch 14 attached to the hinge support 16.

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In water closets of former construction, in order to leave the closet in a sanitary manner after use, it is necessary to close the lid and turn the flushing handle. Oftentimes the lid is permitted to remain open. My present invention assures the closing of the lid when the bowl is flushed, by making the action of flushing result automatically in the closing of the lid.

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As will be seen in Figure 1, the flushing shaft 17, carrying the exterior flushing handle 18, has attached to it an arm 19 for raising the draw string 15 or the like. When the flushing handle 18 is turned, the draw string 15 is thereby raised, pulling the spring catch 14 from the cam 13, and permitting the toilet lid 8 to fall. As a means for permitting the draw string safely to pass through the flush closet 9, I may provide a conduit 20. Though I have used a draw string for purposes of illustration, I may provide any other suitable means for causing the motion of flushing to retract or release the spring catch.

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In this manner, I may provide a system of levers or the like for operatively interconnecting the flushing means with the lid release.

5 In order to prevent any unnecessary noise in the closing of the lid, I have also provided a counteracting medium such as the counterweight 21 to retard the fall of the lid.

10 In Figure 4, I have shown another form of counteracting medium for retarding the fall of the lid. This mechanism consists of a cam-peripheried ratchet wheel 22 turned by the fall of the lid 8 by means of the pawl 23, and a frictional retarding means such as  
15 the spring 24 to press against the cam surface 25 as the wheel is turned. In this manner every time the lid is raised, the pawl slides along the cam 25 until it falls in the ratchet 26. The raised end of the retarding  
20 spring acts against the ratchet 26 nearest it to keep the wheel from turning with the pawl as the lid is raised. When the lid begins to fall, as it does when released, it carries along with it the pawl 23, pivoted to the hinge member 11 at 29, turning the wheel 22, as the  
25 lid falls. As the wheel turns, however, the cam surface 25 exerts more and more pressure on the retarding spring 24. But inasmuch as the pawl 23 is caught in the ratchet 26, and the lid 8 cannot fall unless the wheel 22 turns, any retarding of the wheel 22 also  
30 retards the fall of the lid 8, thus making the fall of the lid noiseless.

35 Though I have illustrated only two forms of retarding means for noiselessly lowering the toilet lid, any suitable form may be used.

The advantages of my novel toilet closure system are several. Aside from eliminating a usually necessary manual operation, it has  
40 a sanitary advantage in assuring the closing of the lid and a further advantage in doing away with the necessity of handling.

I am aware that my invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present  
45 embodiments to be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having thus described my invention, what I hereby claim as new and desire to secure by Letters Patent, is:

55 1. The combination of a closet bowl with a seat therefor, a lid pivotally mounted in relation to the bowl and a stop limiting the upright open position of said lid so that its center of gravity is in front of the pivoted  
60 mounting, an automatic catch for keeping the lid in an upright open position, flushing means including a manually operated handle, and means operatively interposed between said handle and the automatic catch for re-  
65 tracting the catch upon the operation of the

handle to permit said lid to gravitate to a closed position.

2. In a device of the character stated, a combination of a flush closet, a bowl with a seat therefor, a lid pivotally mounted in relation to the bowl and a stop limiting the upright open position of said lid so that its center of gravity is in front of the pivoted mounting, a resilient catch for keeping the lid in an upright open position, a flexible connection attached to the flushing mechanism to retract the resilient catch by the action of the flushing, thereby permitting the lid to fall, and a friction wheel for retarding the fall of said lid.

3. The combination of a closet bowl with a seat therefor, a lid pivotally mounted in relation to the bowl and seat, means for automatically retaining the lid in a generally upright open position, flushing means including a manually operated handle adapted to be operated directly by the user, and means operatively interposed between said handle and said lid for causing the former to act upon the latter, thereby to cause the latter to gravitate into a closed position upon the operation of the former and as a result of the action of the handle upon the lid.

4. The combination of a water closet having a seat, a lid pivotally mounted in relation to the bowl and seat and adapted generally to cover the bowl and seat opening when in its lower or closed position, means for maintaining the lid in a generally upright open position, bowl flushing means including a manually operable handle, adapted to be operated directly by the user, and means operatively interposed between said handle and said lid for causing the former to act upon the latter, thereby to cause the latter automatically to descend into its lower or closed position as a result of the operation of the flusher handle and as a result of the action of the same upon the lid.

In testimony whereof I have hereunto set my hand and seal this 12th day of November, 1930.

DAVID KAPP.