W. G. ODELL, Jr.

WATER CLOSET ATTACHMENT.

APPLICATION FILED OCT. 11, 1915.

1,177,962. Patented Apr. 4, 1916.

Fig. 1.

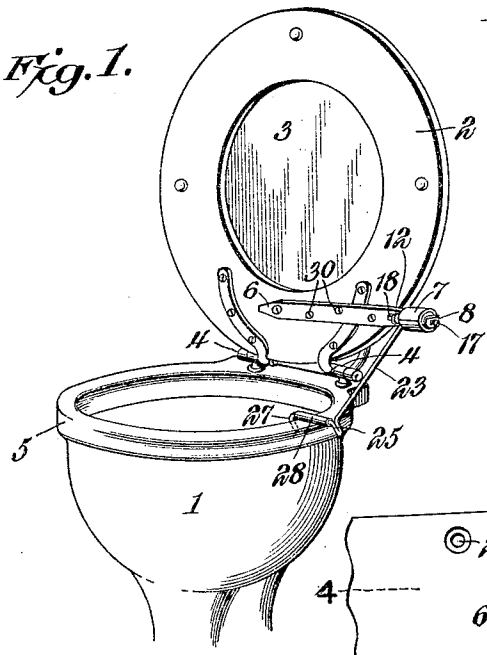


Fig. 2.

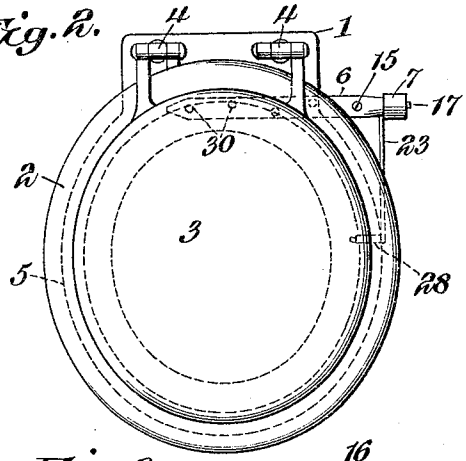


Fig. 3.

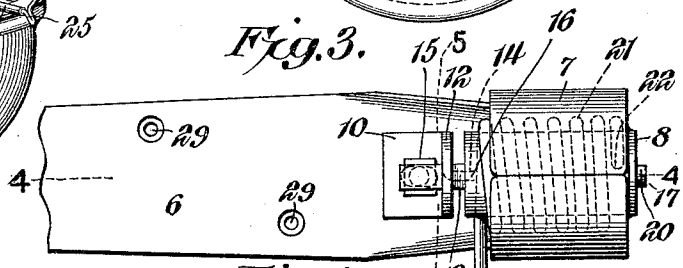


Fig. 7.

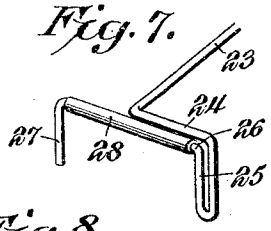


Fig. 4.

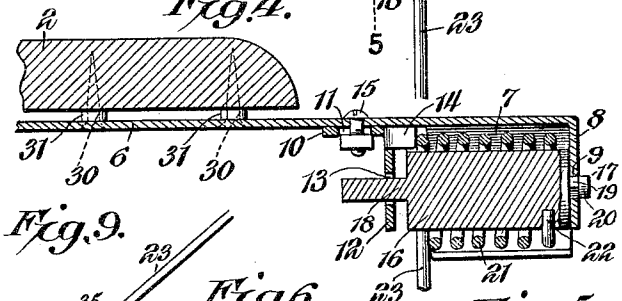


Fig. 8.

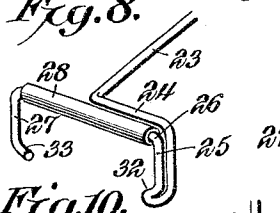


Fig. 9.

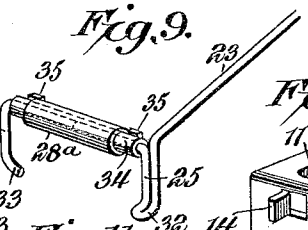


Fig. 6.

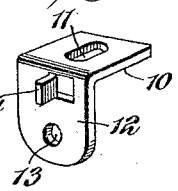


Fig. 5.

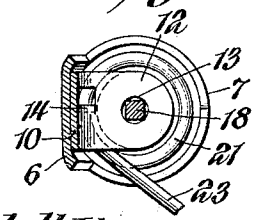


Fig. 10.

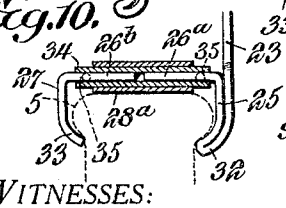
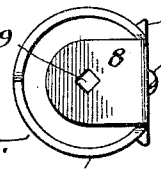


Fig. 11.



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UNITED STATES PATENT OFFICE.

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WATER-CLOSET ATTACHMENT.

1,177,962. Specification of Letters Patent. Patented Apr. 4, 1916.

Application filed October 11, 1915. Serial No. 55,327.

To all whom it may concern:

Be it known that I, WALTER G. ODELL, Jr., a citizen of the United States, residing at Baltimore, State of Maryland, have invented a new and useful Water-Closet Attachment, of which the following is a specification.

This invention has reference to attachments for water-closets, and its object is to provide a device which will automatically turn the seat on its hinge into and hold it in an upright position.

In accordance with the present invention an attachment is provided to be secured to the under face of the seat and by engagement with the rim of the bowl react thereon to hold the seat in an upright position, and in the event of a cover accompanying the seat, the cover is also raised to and held in the upright position.

The attachment comprises a casing with an extended basic portion adapted to be secured to the under face of the seat by screws or otherwise, and in the casing there is lodged a drum or spindle surrounded by and to which is attached one end of a spring, the other end of the spring being extended in the form of an arm terminating in a straddling member adapted to rest on and partially embrace the rim of the bowl, but in a manner permitting it to readily slide along the rim. Provision is made for tensioning the spring either before or after the device is attached to the seat, so that one type of seat-raising structure may be readily adapted to water-closet seats of different weights.

The invention will be best understood from a consideration of the following detailed description, taken in connection with the accompanying drawings forming part of this specification, with the further understanding that while the drawings show a practical form of the invention, the latter is not confined to any strict conformity with the showing of the drawings, but may be changed and modified so long as such changes and modifications come within the scope of the appended claims.

In the drawings: Figure 1 is a perspective view of a water-closet with the attachment applied and with the seat raised. Fig. 2 is a plan view of the structure of Fig. 1 with the seat and its cover lowered. Fig. 3 is a plan view of a portion of the attachment on a larger scale than Figs. 1 and 2. Fig. 4 is a section on the line 4—4 of Fig. 3, and showing the structure attached to a seat. Fig. 5 is a section on the line 5—5 of Fig. 3. Fig. 6 is a perspective view of a removable journal bracket for the spring spindle. Fig. 7 is a perspective view of one form of rim-engaging member. Fig. 8 is a perspective view of another form of rim-engaging member. Fig. 9 is a perspective view of still another form of rim-engaging member. Fig. 10 is a longitudinal section of the rim-engaging portion of the structure of Fig. 9. Fig. 11 is an elevation of the spring casing as seen on the right hand end of Fig. 3.

Referring to the drawings there is shown a water-closet bowl 1, seat 2 and cover 3 with the usual combined seat and cover hinges 4. The bowl is, as is customary, provided with a marginal rim 5.

The showing of the water-closet structure is that of a known form and is to be taken as indicative of any form of water-closet to which the present invention is applicable.

The attachment comprises an elongated strap 6 terminating at one end in a casing 7. The strap and casing are readily made of sheet metal of suitable gage stamped or cut into shape, with the casing comprising oppositely bent lateral wings on the strap at one end of the latter. That end of the casing remote from the strap 6 is in part closed by a bent-over continuation 8 of the strap, so that the continuation 8 extends transversely of the corresponding end of the casing to an extent greater than half the width of the casing. At an appropriate point, which may be about coincident with the longitudinal axis of the casing, the latter being usually cylindrical, the extension 8 has a passage 9 therethrough, which passage is ordinarily, though not necessarily, of square form.

Close to that end of the casing 7 remote from the extension 8 is a bracket 10 shown separately in Fig. 6. This bracket has a foot piece provided with an elongated slot 11 and an angle extension 12 at one end having a round passage 13 through it in position to aline with the passage 9. Furthermore, the angle extension 12 has a stop piece 14 struck out therefrom in a direction away from the base of the bracket. A bolt 15 or other appropriate fastening device serves to secure the bracket to the strap 6 with the

bracket having a range of adjustment lengthwise of the strap provided by the slot 11.

Within the casing 7 is a drum 16 with an axial spindle extension 17 at one end and another axial spindle extension 18 at the other end. The spindle 17 has a square portion 19 adapted to the passage 9 and a round portion 20, which, when the square portion 19 is withdrawn from the passage 9, will still remain in the passage, thus supporting the corresponding end of the drum, but in a manner permitting rotation of the drum. The spindle extension 18 is of square cross-section of a size to snugly yet freely fit the passage 13, which latter is round. Encircling the drum 16 is a helical spring 21 having one end 22 extending into the drum so as to anchor the spring thereto. At the end of the spring remote from the anchoring extension 22 is an elongated arm 23, which may be an integral part of the spring, and this arm is of sufficient length for the purpose intended, which purpose will presently appear. When the drum 16 is in place that turn of the spring continued into the arm 23 is engaged or in close relation to the stop piece 14, wherefore the spring, which may be under slight longitudinal compression because of engagement with the stop piece, has the spindle end 17 effectively held with the square portion 19 seated in the square passage 9. The length of the spring 21 is such that when the spindle is so seated the arm 23 is close to the corresponding end of the casing 7 between the latter and the bracket 10, which latter constitutes a supporting bearing for the spindle 18.

When it is desired to increase or decrease the tension which may be upon the spring, it is only necessary to grasp the protruding end of the spindle 18 with a suitable tool, such as a pair of pliers, and draw the drum toward the bracket 10 against the normal tendency of the spring 21 which then is engaged by the stop piece 14. The extent of movement of the drum lengthwise of its axis is such that the square portion 19 of the spindle 17 is drawn out of the square hole 9, whereupon the spindle 18 being in a round hole 13 and the round portion 20 of the spindle 17 being in the square hole 9, the drum may be rotated in either direction and on an easing of the withdrawing force the expansion of the spring 21 then forces the square portion 19 of the spindle 17 into the square hole 9, thus holding the spring in its new condition of tension.

That end of the arm 23 remote from the spring 16 is bent at an angle to form a lateral extension 24 in turn at the end remote from the arm 23 bent at an angle to itself and then returned upon itself, as indicated at 25. From the extremity of the return portion 25 there is an extension 26 substantially parallel with the bent portion 24 and spaced a short distance therefrom and of a length to project beyond the arm 23 to an extent approaching that of the projection of the angle extension 24 from said arm. Finally the extension 26 is bent at substantially right angles, as indicated at 27, into substantially parallelism with the return bend 25, but spaced therefrom a sufficient distance so that the return bend 25 may extend along one side of the rim 5 with the angle extension 27 on the other side thereof, and under such circumstances the extension 26 would rest upon the bead, although ordinarily the extension 26 has an elongated rotatable sleeve 28 thereon constituting a roller intended to directly bear upon the rim 5.

The strap 6 is provided with screw holes 29 at appropriate points for the reception of screws 30, whereby the strap is made fast to the under face of the seat 2 near the hinges 4 and extends transversely of the longer axis of the seat, the latter being usually elliptical in form. Since it is quite customary to fasten the strap ends of the hinges 4 to the under face of the seat on the surface thereof, such hinge straps project a short distance from the under face of the seat, wherefore it is advisable to space the strap 6 from the under face of the seat 2 by washers 31 or otherwise.

When the structure is installed the spring is tensioned sufficiently by properly rotating the drum 16 in the manner already stated, so that the rim straddling yoke end of the arm 23 bears upon the rim 5 with sufficient force to overcome the weight of the seat and the cover when present, and, therefore, elevate the seat to an upright position, such as indicated in Fig. 1. Under such circumstances the arm 23 presses under the action of the spring 16 upon the rim 5 in a direction tending to turn the strap 6 about its longitudinal axis, but because the strap is fast to the seat the tendency of the spring is transmitted to the seat itself, and the latter is turned about the axis of the hinges 4 to the upright position whenever the seat is free to move to such position. The seat and cover or the seat alone is readily lowered on to the bowl against the action of the spring by the exertion of a comparatively moderate force.

With heavy seats the spring 16 is put under considerable tension, which is always sufficient to move the seat to the upright position when released from a constraining force. Of course, with light seats the spring is tensioned to a less degree and the same is true when no cover is present.

The yoke end of the arm 23 readily slides along the rim 5, engaging the latter at one side of the bowl, while the spring casing 7 may be so located as to be entirely out of

reach of the bowl and, therefore, not at all liable to injure the bowl. The yoke end of the arm 23 simply slides back and forth on the rim 5 without injury to the latter and its angle of leverage correspondingly changes. When the angle is least effective the spring is at its greatest tension and when the angle of leverage is most effective the spring is under its least tension.

Sometimes it is advisable to have the yoke end of the arm 23 so shaped as to not only embrace the rim of the bowl on opposite sides thereof, but to underride the under edges of the rim where they project laterally from the body of the bowl. For this purpose the extremities of the return portion 25 and the angle extension 27 are bent toward each other, as indicated at 32, 33, respectively, in Fig. 8.

Some rims may be wider than others, in which case the yoke portion instead of having a continuous extension 26 has such extension divided into two parts 26^a, 26^b, respectively, as best shown in Fig. 10. These parts enter opposite ends of a tubular connector 34 held to the respective parts 26^a and 26^b by set screws 35, whereby the sections 26^a, 26^b may be spread apart to be placed into embracing relation to the rim 5 and then drawn together and secured in the last-named position, a loose sleeve 28^a having previously been lodged on the tube 34 between the set screws 35 and designed to roll upon the rim 5 for the same purpose as the sleeve 28 of the other figures.

The only part of the attachment fixed to any part of the water-closet structure is the strap 6 fixed to the seat, which latter is customarily of wood and, therefore, the strap 6 is handily made fast to the seat by screws. No part of the water-closet structure is changed, detached or disturbed in any manner for the application of the seat raising attachment of the present invention. Moreover, the seat raising attachment is of particularly simple construction and is adapted to practically all types of water-closets including those with porcelain bowls and with such last-named types the seat raising attachment is particularly useful, because there is no liability of harm to the porcelain material, since the only parts engaging such material are of relatively extensive surface, and at best have no more than a sliding engagement therewith, thus avoiding any strains liable to be harmful or destructive to brittle porcelain material.

The strap 6 and casing 7 may be of cast metal instead of sheet metal, but the sheet-metal construction is to be preferred because of cheapness.

What is claimed is:—

1. A seat raising attachment for water-closets comprising a spring with means adapted to engage the rim of the bowl of the closet and slide therealong, and a holder for the spring adapted to be attached to the under face of the seat of the closet adjacent to the hinges thereof.

2. A seat raising attachment for water-closets comprising a coiled spring with a carrier therefor adapted to be secured to the seat member of the water-closet adjacent to the hinged end thereof, said spring having an arm extension with means at the end remote from the spring for engaging and sliding along the ring of the bowl of the closet.

3. A seat raising attachment for water-closets, comprising a spring with means securing it to the seat of the closet, said spring having an arm extension terminating in a portion shaped to straddle and slide along the rim portion of the bowl of the closet.

4. A seat raising attachment for water-closets comprising a spring with means securing it to the seat of the closet, said spring having an arm extension terminating in a portion shaped to straddle and slide along the rim portion of the bowl of the closet, said spring having means for varying its tension at will.

5. A seat raising attachment for water-closets comprising a coiled spring, a drum to which one end of the spring is secured, said spring having an arm extension at the other end with means at its extremity for engaging the rim portion of the closet bowl to slide therealong, and a carrying member for the spring drum adapted to be secured to the seat portion of the closet.

6. A seat raising attachment for water-closets comprising a coiled spring, a drum to which one end of the spring is secured, said spring having an arm extension at the other end with means at its extremity for engaging the rim portion of the closet bowl to slide therealong, and a carrying member for the spring drum adapted to be secured to the seat portion of the closet, said drum having axial spindle projections at the ends with one spindle shaped to lock the drum against rotation, and said drum being movable against the normal tendency of the spring to release the drum from the locked position.

7. A seat raising attachment for water closets comprising a coiled spring, a drum extending through the spring and to which the latter is secured, said spring being capable of contraction by an axially applied force, journal bearings for the drum at opposite ends, journal spindles adapted to said bearings, one of the spindles on the corresponding bearing being shaped to lock the drum against rotation and the axially directed expansive force of the spring holding the spindle in the locked position, the spring drum and spring having carrying means for securing them to the closet seat,

and a bowl engaging member projecting from the spring with means at the end remote from the spring for engaging and sliding along the rim of the bowl.

8. A seat raising attachment for water closets comprising a coiled spring, a drum extending through the spring and to which the latter is secured, said spring being capable of contraction by an axially applied force, journal bearings for the drum at opposite ends, journal spindles on the drum adapted to said bearings, one of the spindles and the corresponding bearing being shaped to lock the drum against rotation and the axially directed expansive force of the spring holding the spindle in the locked position, the spring drum and spring having carrying means for securing them to the closet seat, and a bowl engaging member projecting from the spring with means at the end remote from the spring for engaging and sliding along the rim of the bowl, said rim engaging portion having projecting parts adapted to extend along the side portions of the rim of the bowl in a direction toward the base of the bowl.

9. A seat raising attachment for water closets comprising a strap with a casing at one end and journal supports alined with the longitudinal axis of the casing, said strap being adapted to be attached to the seat of the water closet, a spring drum in the casing, and a coiled spring mounted on the drum and secured thereto, said spring being provided with an arm extension at one end terminating in a straddling member adapted to engage and embrace the rim portion of the bowl of the water closet to slide along said rim.

10. A seat raising attachment for water closets comprising a strap with a casing at one end and journal supports alined with the longitudinal axis of the casing, said strap being adapted to be attached to the seat of the water closet, a spring drum in the casing, and a coiled spring mounted on the drum and secured thereto, said spring being provided with an arm extension at one end terminating in a straddling member adapted to engage and embrace the rim portion of the bowl of the water closet to slide along said rim, said spindle being movable lengthwise of its longitudinal axis in its journal bearings with one journal bearing and the portion of the drum mounted therein being coactively shaped to lock the drum against rotation at one limit of its longitudinal movement, and the other journal bearing having means for engaging the spring to tension it longitudinally and thereby hold the drum in the locked position.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WALTER GEORGE ODELL, JR.

Witnesses:

ALLISON V. MINTERN,

W. WELLFORD WILSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."