K. YOSHINAGA.

TOILET SEAT TILTING DEVICE.

APPLICATION FILED OCT. 8, 1919.

1,333,747.

Patented Mar. 16, 1920.

Fig. 1.

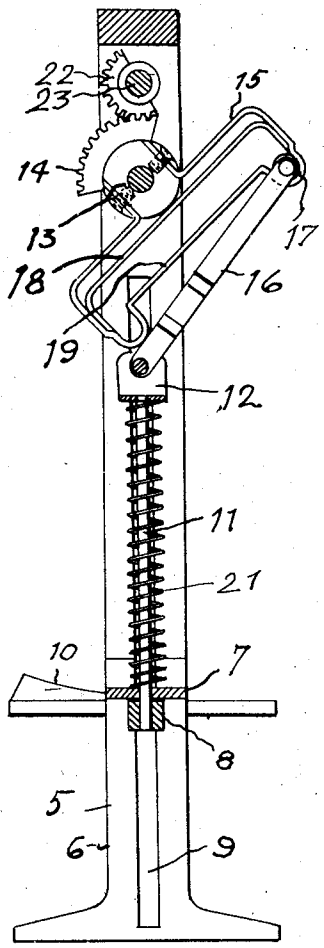


Fig. 2.

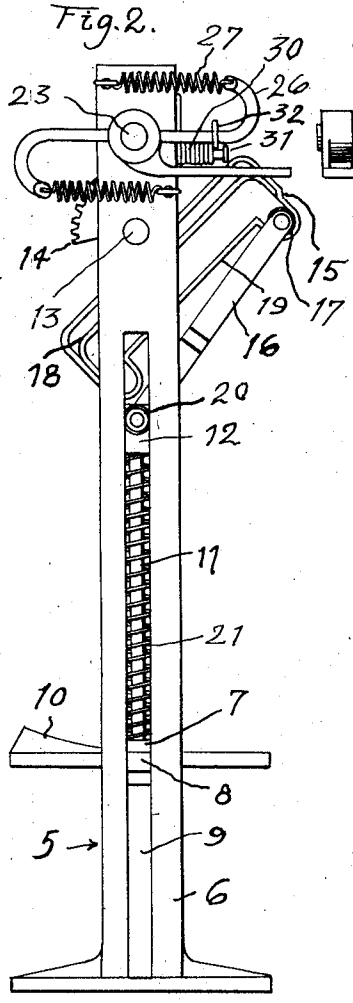


Fig. 3.

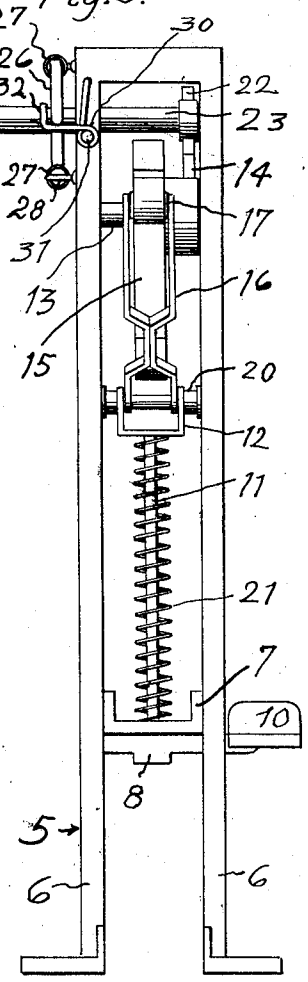
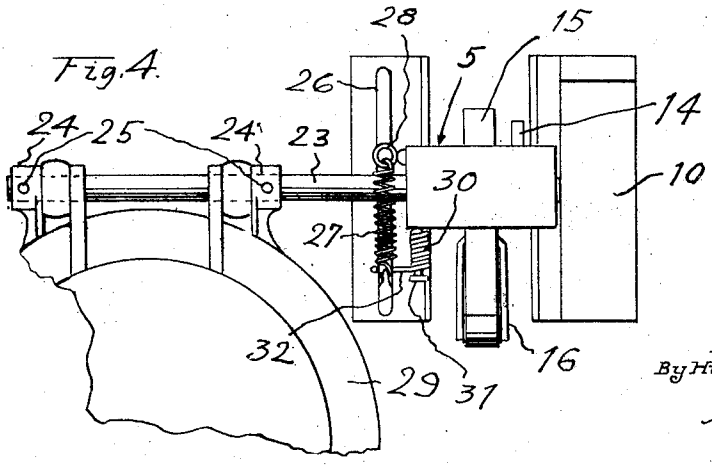


Fig. 4.



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TOILET-SEAT-TILTING DEVICE.

1,333,747. Specification of Letters Patent. Patented Mar. 16, 1920.

Application filed October 8, 1919. Serial No. 329,271.

To all whom it may concern:

Be it known that I, KUZO YOSHINAGA, a subject of the Emperor of Japan, residing in the city and county of Los Angeles and State of California, have invented a new and useful Toilet-Seat-Tilting Device, of which the following is a specification.

This invention relates to a device for raising and lowering a toilet seat, and its objects are to provide a simple and efficient apparatus whereby the toilet seat may be operated by depressing a foot pedal projecting from the side of the apparatus, the primary object being to tilt the toilet seat to open or closed position without using the hands.

Other objects and advantages may appear from the subjoined detail description.

Upon the annexed drawings, Figure 1 is a vertical and sectional view of my improved tilting device. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation of the same. Fig. 4 is a fragmentary view of a toilet seat cover, showing my device applied thereto.

Referring to the drawings, the standard 5, having the side members 6 and transverse brace 7, supports a reciprocatory member 8, working in the slots 9, in side members 6. The member 8 is provided with a pedal 10, adapted to be actuated by the foot. A rod 11 provided with a yoke 12, slides through the brace 7, and is fixed to member 8. A shaft 13, rotatively mounted in members 6, is provided with a toothed sector 14, and a yoke frame 15.

A link 16, pivotally connected to yoke 12, is provided on the opposite end with a roller 17, working between the members 18 and 19, of frame 15. When the pedal 10 is depressed, the frame 15 is tilted and swings through an arc of ninety degrees; moving synchronously with the toothed sector 14. The yoke 12 is provided with flanged rollers 20, working in slots 9, and a spring 21, interposed between the yoke 12 and brace 7, serves to retract the pedal 10 to its normal position. When the yoke 12 travels upwardly, the roller 17 operates in the frame 15, moving to its uppermost position, and the frame 15 will again be tilted when the pedal 10 is depressed.

The sector 14 is in mesh with a sector 22, on shaft 23, which is adapted to extend to the hinge knuckles 24, of a toilet seat cover, and, as shown in Fig. 4, the hinge knuckles 24 are secured by pins 25, to shaft 23. A rod 26 extends transversely through shaft 23. Springs 27, connected to the extremities of rod 26 and to eye-members 28, are arranged to cushion the downward movement of the toilet seat cover 29, the springs being under increased tension when the seat cover 29 is in a horizontal position. A coil spring 30, encircling a projecting member 31, has one extremity in engagement with the frame standard 5, and the opposite extremity 32 adapted to engage with the rod 26 when the seat cover 29 approaches its lowermost position, thus serving to cushion the falling movement thereof.

The sector member 14 is rotated through an arc of ninety degrees, thereby rotating the smaller sector member 22 through a slightly greater arc. The seat cover is thereby maintained in the uppermost position until the pedal is actuated to reverse the position of the seat cover.

From the foregoing it may be seen that I have provided a simple and efficient device for tilting a toilet seat cover to open or closed position without the use of the hands.

What is claimed is:

1. The combination with a standard, of rotary elements mounted therein, means for connecting the rotary elements with the hinge elements of a toilet seat cover, an oscillative frame carried by the rotary elements, reciprocatory elements mounted in the standard, a link connecting the reciprocatory elements and oscillative frame and adapted to engage alternately with the opposite extremities thereof, a pedal to actuate the reciprocatory elements from the uppermost to the lowermost position, and a spring to retract the reciprocatory elements to the uppermost position.

2. The combination with a supporting standard, and a brace extending transversely therein, of a reciprocatory member mounted in the standard, a pedal fixed to the reciprocatory member, a reciprocatory rod projecting from the reciprocatory member and extending through the brace, a yoke at the extremity of the reciprocatory rod, a spring interposed between the brace and yoke and serving to maintain the reciprocatory member and pedal in the uppermost position, a pintle shaft journaled in the standard and

adapted for fixed engagement with the hinge members of a toilet seat cover, a toothed sector fixed to the pintle shaft, a countershaft journaled in the standard, a sector fixed to the countershaft and in mesh with the first-named sector, an oscillative frame fixed to the countershaft and forming an angular cam-way, a link pivotally connected to the yoke, and a roller carried by the free extremity of the link and traveling in the angular cam-way and engaging with the extremities of the oscillative frame in the uppermost position of the reciprocatory member and pedal.

3. The combination with oscillative elements connected to the hinge members of a toilet seat cover, a standard supporting the oscillative elements, reciprocatory elements working in the standard, a manually operated pedal fixed to the reciprocatory elements, and a link connecting the reciprocatory elements and oscillative elements and engaging in the uppermost position of the reciprocatory elements with the uppermost extremity of the oscillative elements.

4. The combination with a supporting standard, of rotary and oscillative elements journaled therein and adapted for operative connection with a toilet seat cover, a camway frame fixed to the oscillative elements and alternately inclined in the uppermost and lowermost positions of the toilet seat cover, foot-operated reciprocatory elements mounted in the standard, a spring normally maintaining the reciprocatory elements in the uppermost position, link elements connected to the reciprocatory elements, and a roller carried by the free extremities of the link elements and engaging with the camway frame.

5. The combination with a supporting standard, of rotary and oscillative elements journaled therein and adapted for operative connection with a toilet seat cover, a camway frame fixed to the oscillative element and alternately inclined in the uppermost and lowermost positions of the toilet seat cover, spring elements having the extremities thereof connected to the standard and to the rotary elements and serving to cushion the movement of the toilet seat cover to the lowermost position, foot-operated reciprocatory elements mounted in the standard, and link elements connecting the reciprocatory elements and rotary and oscillative elements.

6. The combination with a supporting standard, of oscillative elements journaled therein, and adapted for operative connection with a seat cover, a camway frame moving synchronously with the oscillative elements and alternately inclined in the uppermost and lowermost positions of the seat cover and having angular extremities, reciprocatory elements mounted in the standard, a pedal fixed to the reciprocatory elements, spring means serving to maintain the reciprocatory elements in the uppermost position, a link pivotally connected to the reciprocatory elements, and a roller carried by the free extremity of the link and normally engaging with the uppermost extremity of the angular camway.

In testimony whereof, I hereunto affix my signature, this 24th day of September, 1919.

KUZO YOSHINAGA.