United States Patent [19]

Kraff

[11] **3,715,549**

[45] **Feb. 6, 1973**

[54] MUSICAL WATER CLOSET

[76] Inventor: **Lillian G. Kraff,** 468 South Roxbury Drive, Beverly Hills, Calif. 90212

[22] Filed: **May 22, 1972**

[21] Appl. No.: **255,552**

[52] **U.S. Cl.** .....**200/172 A,** 84/94 C, 4/1

[51] **Int. Cl.** **H01h 3/02**

[58] **Field of Search** .....4/1, 224; 84/94 C, 95 C; 200/172 A

[56] **References Cited**

UNITED STATES PATENTS

3,172,390	3/1965	Garthofner	84/95 C X
2,847,891	8/1958	Scott	84/94 C
2,721,531	10/1955	Findley, Jr.	84/94 C X
3,059,608	10/1962	Lee	84/94 C X

Primary Examiner—H. O. Jones

Attorney—C. A. Miketta et al.

[57] **ABSTRACT**

In combination with a conventional water closet having a water box, bowl, and flushing means, there is provided a music box or sound emitting device which will produce a pleasant sound in response to manual flushing of the water closet.

7 Claims, 4 Drawing Figures

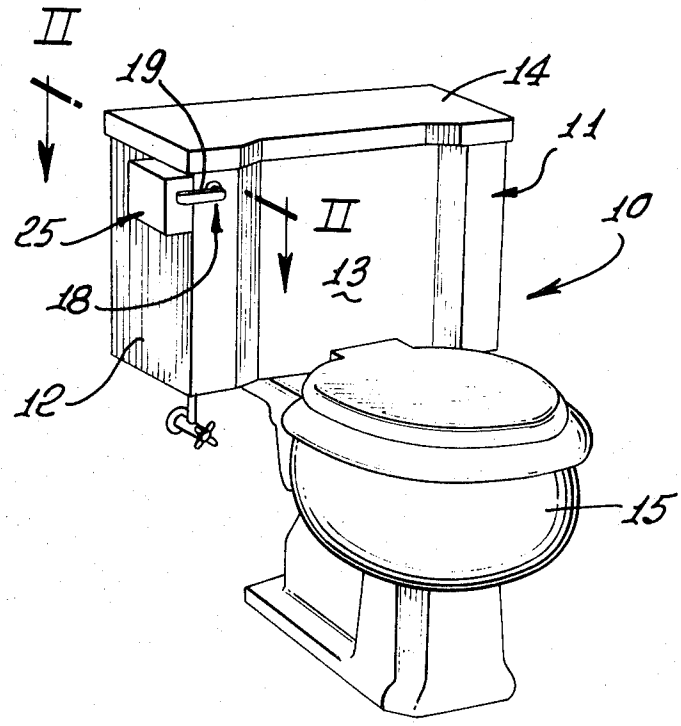


FIG. 1.

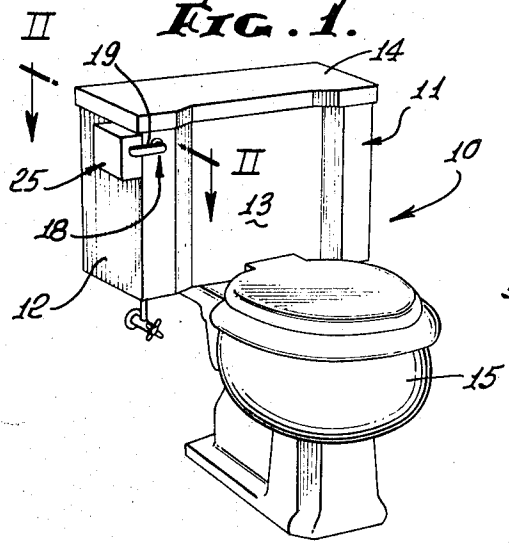


FIG. 4.

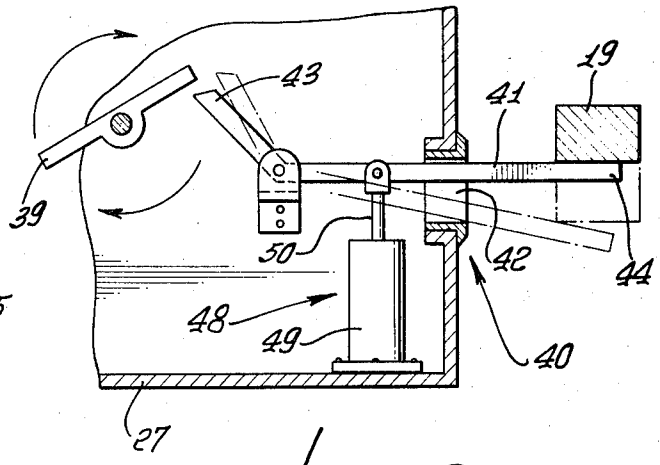


FIG. 3.

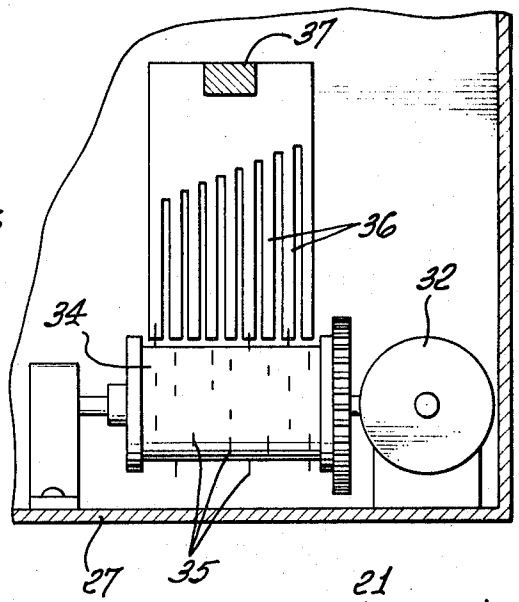


FIG. 2.

MUSICAL WATER CLOSET

BACKGROUND OF THE INVENTION

In the conventional water closet the device operates by discharging a volume of water held in a reservoir or water box and this water is selectively discharged into the bowl by a flushing mechanism which is manually operated. When the water is discharged into the bowl and during the water inlet to refill the water box, there is a noise associated with the water closet that is deemed by some persons to be unpleasant and annoying. Attempts to overcome this undesirable aspect of the conventional water closet by providing relatively silent water closets have only been midly effective since there is only limited solutions available to the problem. Moreover, although the more modern conventional water closets that are being installed in homes and buildings today are relatively silent, there remains numerous water closets in millions of homes and buildings which, because they are nether obsolete nor require replacement, still produce the noise during the flushing operation.

Accordingly, it is one object of the present invention to provide a sound emitting device which may be simply and easily detachably secured to the water box of the water closet which will emit sound, such as music, in response to the manual operation of the flushing mechanism and during the period of the flushing operation overcoming the noise normally associated with the flushing and refilling operation. It is a further object to provide such a device which is inexpensive, simple in design and will operate for a pre-selected period of time. Such device when attached to the wall of the water closet will advantageously employ the water box to resonate and amplify the sound emitted by the device.

SUMMARY OF THE INVENTION

The combination of a water closet comprising a bowl, water box, and flushing mechanism including an exterior manually operated handle for pivotal movement to operate the flushing means, a sound emitting device comprising a housing attached to a wall of the water box, music producing means including a source of power, and switch means including a pivotally mounted trip arm extending from the device in selective operable engagement with the flushing means whereby manual operation of the handle activates the music producing means to provide music during the period of flushing. In one exemplary embodiment, the music producing means may comprise a mechanical or electrical power source which drives a conventional drum and tine arrangement for producing the sounds.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a water closet and sound emitting device constructed in accordance with the present invention;

FIG. 2 is a top view of the water box of the water closet showing the sound emitting device;

FIG. 3 is a partial side elevation view of portions of the sound emitting device; and

FIG. 4 is a detailed view of the switch means of the sound emitting device showing the trip arm in alternative positions.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawing, there is shown, with particular reference to FIG. 1, a conventional or ordinary water closet **10** generally comprising a water box **11**, a bowl **15**, and flushing means a portion of which is shown at **18**. The water box **11** includes side walls **12** and a front wall **13** as well as a cover which includes a top wall **14**. The flushing means **18** is conventional and well known in the art and may comprise various arrangements or configurations which perform the function of storing water in the water box **11** and selectively discharging such water into the bowl **15** upon manual operation of the flushing means at which time the water box will automatically refill through a suitable water inlet. The portion of the flushing means which is pertinent to the present invention is illustrated in FIG. 2 and may comprise an exteriorly mounted, manually operated handle **19**, mounted on a rotatable shaft extending through the forward wall **13** of the water box and limited for pivotal movement. The interior of the water box there is mounted a rod **21** for operation of the plunger that opens and closes the water inlet from the water box to the bowl in conventional and well known manner. The water box, as is common, may be constructed of ceramic material and will enclose a space of several cubic feet. The water box will amplify a sound which is directly transmitted to one of the walls of the water box particularly when the ceramic box is empty as when the water is discharged out of the box during the flushing operation.

A sound emitting device **25** is provided which includes attaching means **26** and a housing **27**. The device is secured to one wall of the water box by the attaching means which may comprise a pair of metallic or plastic hook-shaped clips **28** that are positioned over the top edge of one wall of the water box when the cover is removed. The clips **28** are relatively thin permitting the proper fit of the cover on the top of the water box as required to minimize the sound emitted when the water box is refilled. The clips **28** are preferably strong so as to urge the housing **27** of the sound emitting device in intimate engaging contact with the wall of the water box so that the sound emitted will be amplified through the water box itself.

The sound emitting device **25** also includes music producing means **30** which in the exemplary embodiment is of entirely conventional construction used in jewelry music boxes, childrens' toys, and various other devices. While such mechanical music producing means is well known in the art, briefly, such means includes a power source **31** which in the exemplary embodiment comprises a mechanical spring motor **32** and a key **33** for winding the motor. More preferably, in the present invention, the motor may comprise a battery operated motor as a power source. The music producing means generally comprises a drum **34**, having a plurality of peripherally disposed pins **35** located about the periphery of the drum at various positions in circular rows which are in registery with tines **36** mounted on an integral arm **37** extending from one wall of the housing **27**. As is well known, rotation of the drum will cause vibration of the tines thus producing a musical sound which may correspond to a musical arrangement as desired. The drum **34** is driven through a gear train in-

dicated generally at **38** which in turn drives a brake wheel **39** which rotates in a vertical plane as seen best in FIG. **4**.

The sound emitting device **25** also includes switch means **40** which comprises an arm **41** pivotally mounted by suitable means in the housing **27**. One wall of the housing is provided with an opening **42** through which the arm extends exteriorly of the housing as seen best in FIG. **4**. The interior end **43** of of arm **41** is disposed for engagement with the brake wheel **39**. The other end **44** of arm **41** is disposed in the path of the handle **19** as seen best in FIG. **2**. It will be apparent that upon manual pivotal movement of handle **19**, the handle will engage the outer end **44** of the arm **41** moving the arm from the position shown in solid lines in FIG. **4** wherein the inner end **43** of the arm engages one end of the brake wheel **39** preventing the wheel and thus the drum from rotating and emitting music to the position shown in phantom lines where the brake wheel is free to rotate and thus the drum may rotate to produce music. It will be appreciated that in the particular configuration of a water box disclosed in FIG. **2**, the free end of handle **19** extends beyond the side wall of the water box and by proper positioning of the trip arm **41** pivotal movement of the handle **19** may be made to engage the trip arm. Not all water box configurations will have the handle extending beyond the side walls and in such event it may be necessary to mount an arm between the handle and the front wall of the water box which extends a greater distance than the handle so that it may engage the trip arm. Such modification would be obvious to one having ordinary skill in the art.

The switch means **40** of the present invention also includes time delay means **48** such as a dashpot or damping device **49** connected to arm **41** by a vertically disposed member **50**. The dashpot **49** may be entirely conventional permitting the piston in the dashpot to be moved freely downwardly but restricted in its upper movement by the provision of a suitably sized orifice in the top wall of the dashpot housing so that the piston may rise at a slow rate. The time delay means permits the sound emitting device **25** to operate notwithstanding that the handle **19** when manually released will immediately return to its normal position. While the handle **19** will immediately move upwardly, the arm **41** will return to the solid line position as shown in FIG. **4** slowly depending upon the preselected time period for which it is desired that the sound emitting device operates. Such period may be selected to correspond with the time normally involved in completing a flushing operation including the discharge of the stored water into the bowl and refilling of the water box.

While a particular embodiment of the sound emitting device of the present invention has been disclosed, it will be appreciated that such sound emitting device may take various forms which are mechanical or electrical (battery operated) and in which the switch means may provide simply an on-off contact between electrical elements to operate the device. Other modifications and variations of the present invention will be apparent to those having ordinary skill in the art including, by way of example, the positioning of the sound emitting device within the water box and above the water line and permitting the rod **21** to selectively engage the trip arm **41** when the handle is manually pivotally operated.

I claim:

1. In combination with a water closet comprising a bowl, water box, and flushing means including an exterior, manually operated handle carried by a rotatably mounted shaft for pivotal movement to operate the flushing means and an interiorly mounted rod fixedly carried by said shaft and connected to a plunger for opening and closing a water inlet from said water box to said bowl, a sound emitting device comprising a housing attached to a wall of the water box, music producing means including a power source, and switch means including a pivotally mounted trip arm extending from said device in selective operable engagement with said flushing means whereby manual operation of said handle activates said music producing means to provide music during the period of flushing.

2. In combination with claim **1** wherein the sound emitting device is positioned exteriorly of the water box and the trip arm is disposed in the path of movement of the manually operated handle.

3. The combination of claim **1** wherein the sound emitting device is positioned interiorly of the water and the trip arm is positioned in the path of the rod for selective engagement therewith.

4. The sound emitting device of claim **1** wherein said switch means include time delay means for maintaining the trip arm in the position corresponding to activation of the music producing means after engagement with said flushing means permitting the music producing means to operate for a pre-selected period of time.

5. The combination of claim **1** wherein said power source includes a key and spring motor.

6. The combination of claim **1** wherein said power source includes a battery and motor.

7. The combination of claim **1** wherein said sound emitting device includes means for firmly detachably engaging said sound emitting device housing to a wall of the water box whereby the water box will amplify the sound emitted from said sound emitting device.

* * * * *