March 9, 1971 R. W. GANTZERT 3,568,222

SEALING MEMBER

Filed Dec. 16, 1968

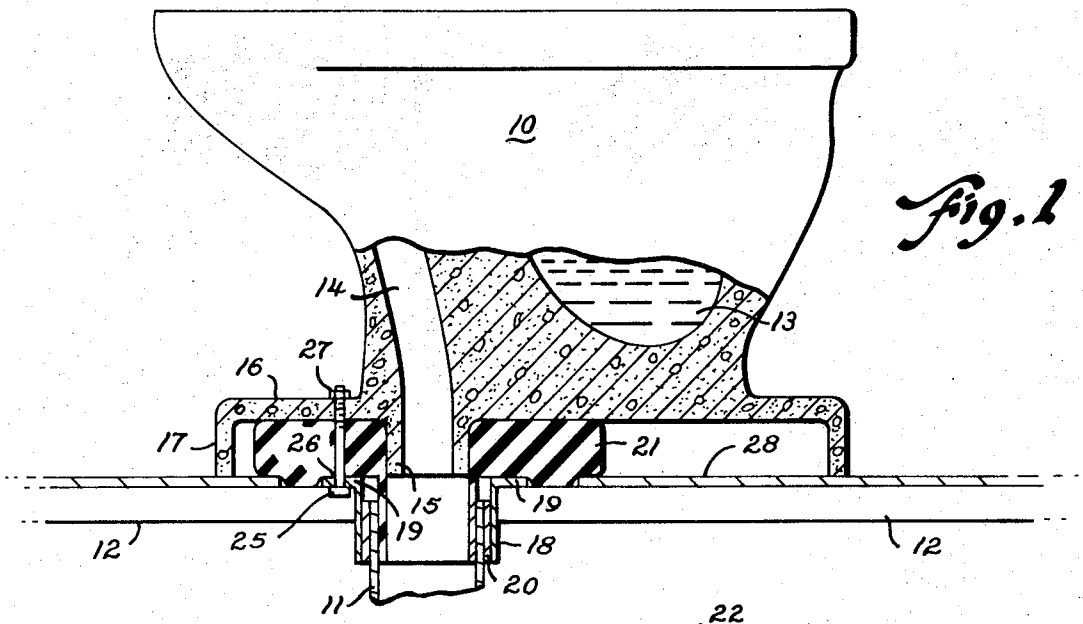


Fig. 1

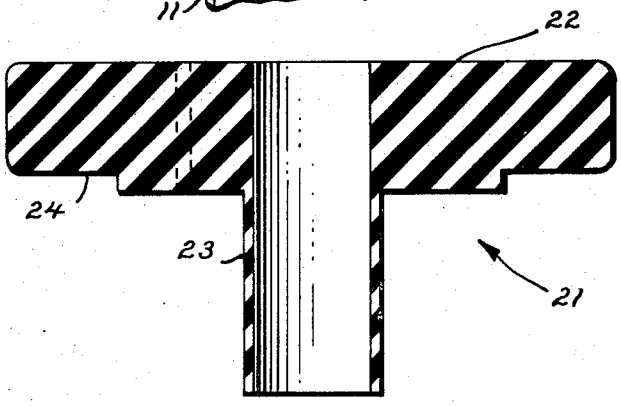


Fig. 3

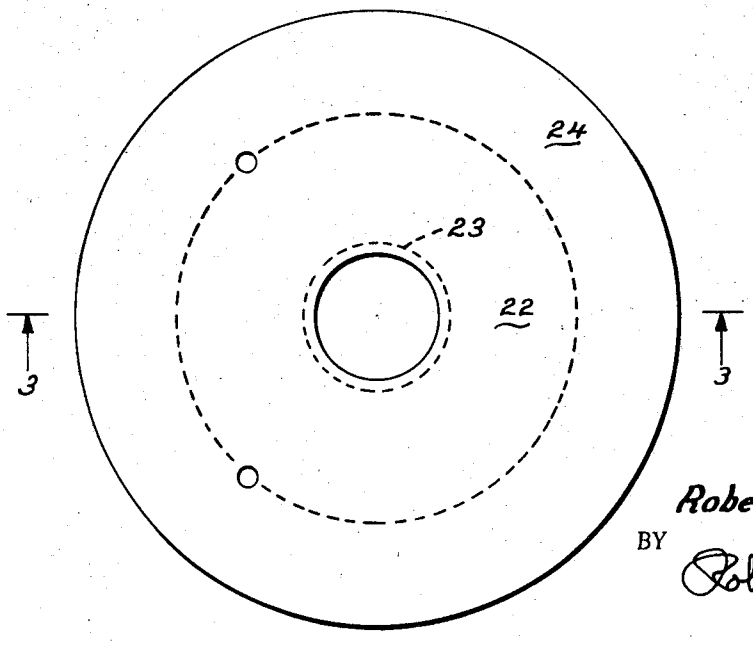


Fig. 2

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ABSTRACT OF THE DISCLOSURE

A sealing member for a toilet bowl and its connected waste pipe extending through an opening in a floor comprising a unitary body of resilient material defined by an annular main portion to provide a seal between the outlet of the toilet bowl and the waste pipe, an inner portion projecting from the main portion into the waste pipe to form an inner sleeve therefor, and an outer portion surrounding the main portion to provide another seal around said floor opening, said outer portion being of a relative thickness with respect to the main portion to allow it to be further easily compressed in order to withstand relative movements due to shocks or the like.

The present invention relates to a sealing member, and more particularly relates to a sealing member for a toilet bowl and its connected waste pipe.

In a conventional plumbing system for a toilet bowl, a waste pipe extends through an opening in a floor. A collar of the conventional type is connected by solidified poured lead to the upper end of the waste pipe to form a fluid tight connection therebetween. The collar has a flange which rests on the floor and which has slots along the periphery of the collar to receive bolts to fasten the toilet bowl in position. Sealing members of the conventional type include gaskets having a compressible ring of wax which are difficult to install since they do not provide sufficient resilience to maintain good sealing when relative movements occur. When resilient sealing gaskets made of rubber or the like are provided, then they are difficult to install because they have to be carefully positioned to insure proper positioning when installation is completed. At times, more than one gasket is used, and proper relative resiliency between the gaskets is needed to provide for relative movements due to shocks or the like.

The present invention provides a resilient unitary sealing member which can be properly and easily positioned for installation, and enables a tight seal connection to be provided between the outlet of the toilet bowl and the waste pipe, and also provides an additional seal around the opening in the floor, and at the same time allows normal relative movement between the toilet bowl and the waste pipe while maintaining both seal connections.

It is therefore an object of this invention to provide a unitary sealing member for enabling a tight water seal between the outlet of a toliet bowl and its connected waste pipe.

Another object of this invention is to provide a unitary resilient sealing member for sealing the outlet of a toilet bowl with its connected waste pipe, and at the same time sealing the floor opening around the waste pipe.

A further object of this invention is to provide a unitary resilient sealing member for providing a seal between the outlet of a toilet bowl with its connected waste pipe, and also sealing the floor opening around the waste pipe, and further allowing normal relative movement between the waste pipe and the toilet bowl while maintaining both seal connections.

A still further object of this invention is to provide a unitary sealing member that is resilient and can be permanently installed to allow relative movement, and yet maintain a tight seal for the outlet of the toilet bowl with its associated waste pipe, and also maintain an adequate seal around the floor opening of the waste pipe.

Another object of this invention is to provide a unitary sealing member for a toilet bowl and its connected waste pipe that can be quickly and easily installed.

The novel features which are believed to be characteristic of the invention, both as to its organization and method of operation, together with further objects and advantages thereof, will be better understood from the following description considered in connection with the accompanying drawings in which an embodiment of the invention is illustrated by way of example. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only and are not intended as a definition of the limits of the invention.

FIG. 1 is a side view of a mounted toilet bowl connected to waste pipe extending through an opening in a floor, and including an installed sealing member of this invention.

FIG. 2 is an enlarged top view of the sealing member of this invention shown in FIG. 1.

FIG. 3 is a section view along lines 3—3 of FIG. 2 showing the cross section of the sealing member of this invention.

Referring now to the figures, FIG. 1 illustrates a typical toilet bowl **10** partially in cross-section connected to a waste pipe **11** extending through an opening in floor **12**. Toilet bowl **10** is seen to hold some trapped water in passageway **13** which connects with a circular interior outlet **14** formed of the material of the toilet bowl terminated by an extension generally referred to as a horn **15**. Toilet bowl **10** has a base **16** with a downwardly projecting base flange **17**. Waste pipe **11** connects to a sewer line, and is seen to extend through an opening in floor **12**. A collar **18** having a circular flange **19** which covers the opening in floor **12**, and is fastened thereto by conventional means such as by screws or bolts. Collar **18** is permanently attached to the upper end of waste pipe **11** by a solidified molten lead **20** connecting collar **18** and waste pipe **11**. A sealing member of this invention generally designated as **21** is seen mounted between toilet bowl **10**, floor **12**, and collar **18**.

FIGS. 2 and 3 show enlarged views of sealing member **21** of this invention. Sealing member **21** is seen to comprise a unitary body of resilient material such as rubber or the like, and includes a main portion **22**, an inner portion **23**, and an outer portion **24**. Main portion **22** is a circular body from which an inner portion **23** projects downward from its inner diameter forming a sleeve to be snugly fitted within waste pipe **11**. Outer portion **24** surrounds main portion **22**, and has a smaller thickness than main portion **22**.

As seen in FIG. 1, sealing member **21** is shown to be mounted in the toilet bowl installation. Main portion **22** extends from the outer edge of flange **19** of collar **18** up to horn **15** of outlet **14**. Connecting members such as a bolt **25** extend upwardly through a slot **26** in flange **19**, through a hole in main portion **22**, and through a hole in base **16**. A nut **27** threaded on the upper end of bolt **25** secures the toilet bowl to floor **12**. As the top surface of flange **19** of collar **18** has irregularities, the connecting members such as bolt **25** are tightened to adequately compress the resilient material of main portion **22** in order to provide a tight permanent water seal. Outer portion **24** continues outwardly from outer edge of flange **19** beyond the edge of floor covering **28**, such as tile, linoleum, or the like. Outer portion **24** will also be compressed to engage both floor **12** and floor covering **28** to provide a water-tight seal therefor.

For installation purposes, the sleeve of the inner portion **23** can be inserted in waste pipe **11** thereby quickly and easily fixing the location of sealing member **21**. Instead of using wax or putty, which aren't resilient, this sealing member **21** utilizes two portions **22** and **24** of different thicknesses of resilient material. It will be realized that a tight seal is required for water flow under pressure that will occur periodically from outlet **14** into waste pipe **11**, so that little relative movement can be tolerated. However, a very tight seal is not necessary to stop water seepage (not being under such pressure) from flowing along floor **12** or its floor covering **28**. When normal and expected movements result from the settling of the building, or from vibrations or shocks due to vehicle traffic, or even earth tremors, both of the seal engagements provided by the sealing member of this invention will not be upset. By utilizing resilient material of different thicknesses in portions **22** and **24** of sealing member **21**, the water tight connection of main portion **22** will not be broken; however, the sealing engagement of outer portion **24** will be maintained, and yet provide additional resilience to allow such relative movements without disrupting the toilet bowl connection.

It is to be noted that outer portion **24** extends beyond circular flange **19** of collar **18** to enable it to cover floor covering **28** on floor **12**. As collar **18** is generally positioned at or close to the level of floor **12**, outer portion **24** has been described as being of a smaller thickness than main portion **22**. In case collar **18** is positioned further above floor **12** than indicated, it will be realized that outer portion **24** may then be of a greater thickness than that shown; it may even be thicker than main portion **22**. However, outer portion **24** should provide clearance above the floor surface when the sealing member is positioned for installation, but not as yet compressed. In that event, when said sealing member is mounted or connected, then said outer portion can provide a seal, and can also easily be further compressed to allow a greater movement of the toilet bowl relative to the waste pipe.

Having herein described the invention, what is claimed as new is:

1. A sealing member for sealing the outlet of a toilet bowl to a flanged collar surrounding the upper end of a waste pipe extending through an opening in a floor, and

for sealing the edges of the floor surrouding said opening, said sealing member comprising a unitary body of resilient material defined by

a main portion to be positioned between the outlet of the toilet bowl and the top surface of the flanged collar of the waste pipe,

an inner portion extending from the main portion to project downward into the waste pipe to locate the sealing member and to provide an inner sleeve for the waste pipe,

and an outer portion surrounding the main portion and having a thickness with respect to that of the main portion to provide clearance above the floor surface when the sealing member is not compressed,

whereby when said sealing member is mounted between the outlet of the toilet bowl and the flanged collar of the waste pipe with its outer portion projecting into the waste pipe, said main portion can be forced to be compressed into tight sealing engagement with the outlet of the toilet bowl and the flanged collar, said outer portion being pressed toward the floor surface to also seal the opening thereof, and said outer portion being capable of being further easily compressed to allow a greater movement of the toilet bowl relative to the waste pipe.

2. The sealing member defined in claim **1** wherein said main portion is annular in cross-section and conforms to the shape of the flanged collar, and said main portion is of a greater thickness than said outer portion extending therefrom, said outer portion providing another sealing engagement with said floor with additional resilience to allow a greater movement of the toilet bowl relative to the waste pipe.

3. The sealing member defined in claim **2** wherein said inner portion extends downward from the inner diameter of the main portion forming a sleeve to be snugly fitted within said waste pipe.

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