Title of the Invention: Waste collection unit
Abstract Title: A waste collection unit

A waste collection unit 1 comprises an opening 2 for receiving waste and a sealing mechanism 5 positioned, in use, below the opening. The sealing mechanism comprises a first sealing portion 7 which includes first and second sealing members 8a, 8b, and a second sealing portion which includes third and fourth sealing members 10a, 10b. The second sealing portion is positioned, in use, below the first sealing portion. The first and second sealing portions are configured to be moveable between a closed position, a waste receiving position and a waste collection bag replacing position. In the closed position the first and second sealing members abut and the third and fourth sealing members are spaced apart (Fig 2), in the waste receiving position the first and second sealing members are spaced apart and the third and fourth sealing members abut (Fig 3), and in the waste collection bag replacing position the first and second sealing members are spaced apart and the third and fourth sealing members are spaced apart (Fig 4). A toilet including the waste collection unit is also defined.
Waste Collection Unit

The present invention relates to a waste collection unit, in particular a waste collection unit which can be sealed before, during and after use to prevent unpleasant smells from waste deposited in the waste collection unit escaping from the waste collection unit. In some examples the waste collection unit may include a toilet, for example, a toilet that does not require a water flushing system.

Background

Some existing designs of waste collection units have been found to allow unpleasant smells from waste deposited within the waste collection unit to escape when the waste collection unit is closed and/or during use of the waste collection unit, for example when the waste collection unit is in a position in which waste can be received.

The present inventors have found that the problems found with previous designs of waste collection units can be addressed or ameliorated by providing a waste collection unit as described herein.

Summary of the Invention

In an aspect, the present invention provides a waste collection unit comprising an opening for receiving waste, a sealing mechanism, and a waste accumulation section, the sealing mechanism positioned between the opening and the waste accumulation section, the sealing mechanism comprising a first sealing portion and a second sealing portion, the first sealing portion positioned between the opening and the second sealing portion, the first sealing portion configured to be moveable to form a first seal between the opening and the waste accumulation section, the second sealing portion configured to be moveable to form a second seal between the opening and the waste accumulation section.

In an aspect, the present invention provides a waste collection unit comprising an opening for receiving waste and a sealing mechanism positioned, in use, below the opening, the sealing mechanism comprising:

a first sealing portion comprising first and second sealing members; and

a second sealing portion comprising third and fourth sealing members, the second sealing portion positioned, in use, below the first sealing portion,
wherein the first and second sealing portions are configured to be moveable between a closed position, a waste receiving position and a waste collection bag replacing position, such that in the closed position the first and second sealing members abut and the third and fourth sealing members are spaced apart, in the waste receiving position the first and second sealing members are spaced apart and the third and fourth sealing members abut, and in the waste collection bag replacing position the first and second sealing members are spaced apart and the third and fourth sealing members are spaced apart.

In some examples, the first and second sealing members are both moveable relative to the waste collection unit.

In some examples, the third and fourth sealing members are both moveable relative to the waste collection unit.

In some examples, the first sealing portion is in mechanical communication with the second sealing portion.

In some examples, the first sealing portion and the second sealing portion are configured such that when the first sealing portion or the second sealing portion is moved from the closed position to the waste receiving position the other of the first and second sealing portions is also moved from the closed position to the waste receiving position and when the first sealing portion or the second sealing portion is moved from the waste receiving position to the closed position the other of the first sealing portion and the second sealing portion is also moved from the waste receiving position to the closed position.

In some examples, the first sealing member of the first sealing portion is coupled to the third sealing member of the second sealing portion and the second sealing member of the first sealing portion is coupled to the fourth sealing member of the second sealing portion.

In some examples, the first and third sealing members form a first paddle and the second and fourth sealing members form a second paddle, the first and second paddles being rotatable between the closed position, the waste receiving position and the waste collection bag replacing position.

In some examples, the waste collection bag replacing position is an intermediate position between the closed position and the waste receiving position.
In some examples, the first and second sealing portions are moveable to a locked position, wherein in the locked position the first and the second sealing members abut and the third and fourth sealing members abut.

In some examples, the sealing mechanism is configured such that the first and second sealing portions are moveable between the closed position and the waste receiving position via the locked position. In some examples, the sealing mechanism is configured such that on movement of the first and second sealing portions from the closed position to the waste receiving position the first and second sealing members remain abutted until the third and fourth sealing members abut. In some examples, the sealing mechanism is configured such that on movement of the first and second sealing portions from the waste receiving position to the closed position the third and fourth sealing members remain abutted until the first and second sealing members abut.

In some examples, a clear pathway may be formed between the first and second sealing members and the third and fourth sealing members when the first and second sealing portions are in the waste collection bag replacing position to allow a waste collection bag to be inserted or removed from the waste collection unit by inserting or removing the waste collection bag between the first, second, third and fourth sealing members.

In some examples, the waste collection unit comprises a waste accumulation section, the first and second sealing portions being located between the opening and the waste accumulation section, the first sealing portion being located between the opening and the second sealing portion.

In some examples, a clear pathway between the opening and the waste accumulation section is formed when the first and second sealing portions are in the waste collection bag replacing position.

Suitably, the waste collection unit is configured to receive a waste collection bag for receiving waste deposited in the waste collection unit and for storing waste deposited in the waste collection unit.

Suitably, when a waste collection bag is contained within the waste collection, the first and second sealing members abutting, for example in the closed position, causes a first seal to be formed across the waste collection bag held in the waste collection unit.
Suitably, when a waste collection bag is contained within the waste collection, the third and fourth sealing members abutting, for example in the waste receiving position, causes a second seal to be formed across a waste collection bag held in the waste collection unit.

In some examples, the first seal is formed between the opening of the waste collection unit and a waste accumulation section which may be present and positioned, in use, below the first and second sealing portions.

In some examples, the second seal is formed between the opening of the waste collection unit and a waste accumulation section which may be present and positioned, in use, below the first and second sealing portions.

In some examples, the sealing mechanism comprises a biasing member for urging the first sealing portion and/or the second sealing portion to move towards either the closed position or the waste receiving position.

In some examples, the biasing member is or comprises an over-centre mechanism.

In some examples, the sealing mechanism comprises a sealing actuator for causing movement of the first and second sealing portions between the closed and waste receiving positions.

In some examples, the sealing actuator is moveable between a first sealing position and a second sealing position, such that when the sealing actuator is in the first sealing position the first and second sealing portions are in the closed position and when the sealing actuator is in the second sealing position the first and second sealing portions are in the waste receiving position.

In some examples, the waste collection further comprising a pathway opening mechanism engageable with the sealing mechanism, the pathway opening mechanism actutable to cause movement of the first and second sealing portions to the waste collection bag replacing position.

In some examples, the pathway opening mechanism comprises a pathway opening actuator.
In some examples, the pathway opening mechanism is configured to cause movement of the first and second sealing portions to the waste collection bag replacing position and then retain the first and second sealing portions in the waste collection bag replacing position.

In some examples, the pathway opening actuator is moveable between a disengaged position in which the pathway opening mechanism does not engage with the sealing mechanism and an engaged position in which the pathway opening actuator actuates the pathway opening mechanism to cause the first and second sealing portions to move to the waste collection bag replacing position.

In some examples, the pathway opening actuator is configured such that when the pathway opening actuator is in the disengaged position, the positions of the first and second sealing portions are controlled by the position of a sealing actuator of the sealing mechanism, and when the pathway opening actuator is in the engaged position, the pathway opening actuator actuates the pathway opening mechanism to cause movement of the first and second sealing portions to the waste collection bag replacing position.

In some examples, the pathway opening mechanism is configured such that actuation of the pathway opening mechanism causes movement of the first and second sealing portions to the waste collection bag replacing position and retention of the first and second sealing portions in the waste collection bag replacing position until the pathway opening mechanism is disengaged.

In some examples, the waste collection unit comprises a lid for covering the opening, the lid being moveable between a covering position and an open position. In some examples, the lid is detachable from the waste collection unit. In some examples, the lid is pivotally connected to the waste collection unit to be moveable between a covering position and an open position.

In some examples, the lid is mechanically coupled to a sealing actuator which is coupled to the sealing mechanism such that moving the lid between the covering position and the open position causes movement of the first and second sealing portions between the closed position, the waste receiving position and the waste collection bag replacing position.

In some examples, moving the lid from the open position towards the covering position causes movement of the first and second sealing portions towards the closed position from the waste receiving position and moving the lid from the covering position towards the open position
causes movement of the first and second sealing portions towards the waste-receiving position from the closed position.

In some examples, the opening is a rimmed opening and the waste collection unit comprises an annular member seatable on the rim of the opening, the annular member moveable between a seated position in which the annular member is seated on the rim of the opening and a lifted position. In some examples, the annular member is detachable from the waste collection unit. In some examples, the annular member is pivotally connected to the waste collection unit to be moveable between a seated position and a lifted position.

In some examples, the annular member is configured to partially cover the opening around the rim of the opening in the seated position.

In some examples, the opening is unobstructed by the annular member in the lifted position.

In some examples, the annular member is mechanically coupled to a pathway opening actuator for actuating a pathway opening mechanism to cause movement of the first and second sealing portions to the waste collection bag replacing position, the pathway opening actuator being moveable between a disengaged position in which the pathway opening mechanism does not interact with the sealing mechanism and an engaged position in which the pathway opening actuator actuates the pathway opening mechanism to cause movement of the first and second sealing portions to the waste collection bag replacing position.

In some examples, moving the annular member to the lifted position causes the pathway opening actuator to be moved to the engaged position.

In some examples, moving the annular member to the seated position causes the pathway opening actuator to be moved to the disengaged position.

In some examples, the waste collection unit comprises: a lid for covering the opening, the lid being moveable between a covering position and an open position, the lid being mechanically coupled to a sealing actuator of the sealing mechanism; and an annular member moveable from a seated position to a lifted position, the annular member being mechanically coupled to a pathway opening mechanism and configured to cause movement of the first and second sealing portions to the waste collection bag replacing position,

wherein moving the lid to the covering position actuates movement of the first and second sealing portions to the closed position; and
moving the lid to the open position actuates movement of the first and second sealing portions to the waste receiving position; and moving the annular member to the lifted position actuates movement of the first and second sealing portions to the waste collection bag replacing position and retains the first and second sealing portions in the waste collection bag replacing position.

In some examples, in use, in the waste receiving position, the first and second sealing members of the first sealing portion are located beneath the annular member, such that waste deposited through the opening of the annular member and the opening of the waste collection unit does not fall on the first and second sealing members.

In some examples, the opening is a rimmed opening, and in use in the waste receiving position, the first and second sealing members of the first sealing portion are located beneath the rim of the opening such that waste deposited through the opening does not fall on the first and second sealing members.

In some examples, the waste collection unit comprises an attachment means for attaching a waste collection bag to the waste collection unit.

In some examples, the opening is a rimmed opening and the attachment means comprises a rim attachment portion comprising the rim of the opening. In some examples, the rim attachment portion further comprises a bag layer which is engageable with the rim of the opening to attach a waste collection bag to the rim of the opening.

In some examples, the attachment means comprises a resiliently biasing member.

In some examples, the attachment means comprises a sealing mechanism attachment portion configured to attach a waste collection bag within the waste collection unit such that the waste collection bag is moveable with the first and second sealing members of the first sealing portion.

In some examples, the sealing mechanism attachment portion comprises a resiliently biasing member.

In some examples, the resiliently biasing member comprises a resilient material and an orifice for receiving a section of a waste collection bag, the resilient material configured to retain the section of the waste collection bag within the orifice.
In some examples, the resiliently biasing member comprises a resilient material having an orifice for receiving a section of a waste collection bag.

In some examples, the sealing mechanism attachment portion has a surface to which, in use, a waste collection bag is attached, the surface having a plane orientated at an angle of at least 45° to a positive z-axis, the z-axis, in use, being aligned with and having an opposite direction to the direction of the weight of waste contained in the waste collection bag.

In some examples, each of the first and second sealing members of the first sealing portion comprise a sealing mechanism attachment portion for attaching a waste collection bag thereto.

In some examples, each of the first and second sealing members of the first sealing portion comprise two sealing mechanism attachment portions for attaching a waste collection bag thereto.

In some examples, each sealing member comprises a sealing face for abutting with the sealing face of another sealing member, the sealing face linking a first sealing face end and a second sealing face end of the sealing member.

In some examples, the first and second sealing members each comprise a lip portion located between the first and second sealing face ends and orientated such that the sealing faces of the first and second sealing members are located between the lip portions of the first and second sealing members, wherein a sealing mechanism attachment portion is located on the lip portion of each of the first and second sealing members.

In some examples, the first and second sealing members each comprise a sealing mechanism attachment portion located in the vicinity of the sealing face ends.

In some examples, the waste collection unit comprises first and second openings for receiving waste. In some examples, the first opening is for receiving solid waste and the second opening is for receiving liquid waste. In some examples, the first and second sealing portions of the sealing mechanism are located, in use, substantially below the first opening.

In some examples, the waste collection unit is portable.
In an aspect, the present invention provides a toilet comprising a waste collection unit as described herein.

Any feature or aspect described herein may be combined with any other feature or aspect described herein unless stated otherwise.

**Brief Description of the Figures**

The present invention will now be described with reference to the accompanying drawings in which:

Figure 1 is a schematic illustration of a perspective view of a waste collection unit;

Figure 2 is a schematic illustration of a front view of the waste collection unit shown in fig.1 and a waste receiving receptacle accommodated by the waste collection unit;

Figure 3 is a schematic illustration of a front view of the waste collection unit shown fig.1 and a waste receiving receptacle accommodated by the waste collection unit;

Figure 4 is a schematic illustration of a front view of the waste collection unit shown in fig.1 and a waste receiving receptacle accommodated by the waste collection unit;

Figure 5 is a schematic illustration of a rear view of the waste collection unit shown in fig.1;

Figure 6 is a schematic illustration of a perspective view of a toilet comprising the waste collection unit shown in fig. 1; and

Figure 7 is a schematic illustration of a partial cross-sectional side view of the toilet shown in fig.6.

**Detailed Description of the Invention**

Figure 1 illustrates a waste collection unit 1 having an opening 2 for receiving waste and a sealing mechanism 5. The sealing mechanism 5 comprising a first sealing portion 7 and a second sealing portion 9. The first sealing portion 7 comprising a first sealing member 8a and a second sealing member 8b. The second sealing portion 9 comprising a third sealing member 10a and a fourth sealing member 10b. The first and second sealing portions 7, 9 are
configured to be moveable between a closed position (shown in figs. 1 and 2), a waste receiving position (shown in fig. 3) and a waste collection bag replacing position (shown in fig. 4), such that in the closed position the first and second sealing members 8a, 8b abut and the third and fourth sealing members 10a, 10b are spaced apart (as shown in figs. 1 and 2), in the waste receiving position the first and second sealing members 8a, 8b are spaced apart and the third and fourth sealing members 10a, 10b abut (as shown in fig. 3), and in the waste collection bag replacing position the first and second sealing members 8a, 8b are spaced apart and the third and fourth sealing members 10a, 10b are spaced apart (as shown in fig. 4).

Suitably, the waste collection unit 1 is configured to receive a waste collection bag 20 for receiving waste deposited in the waste collection unit 1 and for storing waste deposited in the waste collection unit 1.

In some examples, the waste collection bag 20 may be a disposable bag. In some examples, the waste collection bag 20 may be made of an impermeable material, e.g. a material which is impermeable to water. In some examples, the waste collection bag may be made of any flexible material. In some examples, the waste collection bag 20 may be a plastic bag.

The waste collection unit 1 may comprise an attachment means for attaching a waste collection bag 20 to the waste collection unit. The attachment means of the waste collection unit 1 may comprise a number of different attachment portions. For example, the attachment means may comprise a rim attachment portion 103 and/or a sealing mechanism attachment portion 60.

In some examples, the attachment means comprises a rim attachment portion 103, such as the rim 3 of the opening 2. In some examples, the rim 3 of the opening 2 comprises one or more protrusions or ridges over which a waste collection bag 20 may be stretched to be held over the rim 3. In some examples, the rim 3 attachment portion 103 comprises a bag layer which is engageable with the rim 3 to hold a waste collection bag 20 in place over the rim 3 of the waste collection unit 1. In some examples the bag layer is seatable on the rim 3 of the opening 2. In some examples, the bag layer is or comprises a biasing means, e.g. an elasticated chord, to hold a waste collection bag 20 over the rim 3 of the waste collection unit 1. In some examples, the bag layer is or comprises an attachment strap to hold a waste collection bag 20 over the rim 3 of the waste collection unit 1.
Suitably the attachment means is configured to attach a waste collection bag 20 within the waste collection unit 1 such that the waste collection bag 20 is moveable with the first and second sealing members 8a, 8b of the first sealing portion 7.

In some examples the attachment means comprises a sealing mechanism attachment portion 60. In some examples, each of the first and second sealing members 8a, 8b of the first sealing portion 7 comprise a sealing mechanism attachment portion 60 for attaching a waste collection bag 20 thereto. In some examples, each of the first and second sealing members 8a, 8b of the first sealing portion 7 comprise two sealing mechanism attachment portions 60 for attaching a waste collection bag 20 thereto. In some examples, each of the first and second sealing members 8a, 8b comprise two sealing mechanism attachment portions 60 located on the lip portion 24 of the first and second sealing members 8a, 8b and each sealing mechanism attachment portion 60 is located in the vicinity of the one of the first and second sealing face ends 22, 23 of the first and second sealing members 8a, 8b to allow the waste collection bag 20 to be moveable with the first and second sealing members 7, 9. Movement of the waste collection bag 20 with the first and second sealing members 8a, 8b of the first sealing portion ensures that the waste collection bag 20 is held in a position to receive waste when the first sealing portion is in the waste receiving position and ensures that any sections of the waste collection bag 20 that may be soiled when the sealing mechanism is in the waste receiving position are held below the first sealing portion in the closed position such that smells from soiled portions of the waste collection bag 20 are prevented from escaping from the waste collection unit 1 in the closed position. In some examples, a waste collection bag 20 may be attached to the waste collection unit 1 by the attachment portions 60 located on the first and second sealing members 8a, 8b such that the opening of the bag may be held in an open position when the first and second sealing members 8a, 8b are spaced apart and the opening of the bag may be held shut, e.g. in a sealed position, when the first and second sealing members 8a, 8b abut.

The attachment means, or a portion of the attachment means such as a rim attachment portion 103 or a sealing mechanism attachment portion 60, may comprise a resiliently biasing member. The resiliently biasing member may comprise a resilient material, such as rubber, for example natural or synthetic rubber. In some examples, the resiliently biasing member comprises a resilient material and an orifice for receiving a section of a waste collection bag 20, the resilient material configured to retain the section of the waste collection bag 20 within the orifice. In some examples, the resiliently biasing member comprises a resilient material having an orifice for receiving a second of a waste collection bag 20 such that when a section of a waste collection bag 20 is inserted through the orifice of the resiliently biasing member,
the section of the waste collection bag 20 is trapped within the orifice of the resiliently biasing member. In some examples, the orifice may be a slit having an elongated shape.

In some examples, the attachment means may have a surface to which, in use, a waste collection bag 20 is attached, for example by adhering to the surface or feeding the bag through an orifice in the surface, the surface may be a surface to which, in use a waste collection bag 20 is fed to be attached. The surface may have a plane orientated at an angle of at least 45° to a positive z-axis, the z-axis (indicated in fig. 2), in use, being aligned with and having an opposite direction to the direction of the weight of waste contained in the waste collection bag. In some examples, the surface has a plane orientated at an angle of at least 70° to a positive z-axis, in some examples at least 80°, in some examples at least 90°.

In some examples, the sealing mechanism attachment portion 60, may comprise a resiliently biasing member. The resiliently biasing member may comprise a resilient material, such as rubber, for example natural or synthetic rubber. In some examples, the resiliently biasing member comprises a resilient material and an orifice for receiving a section of a waste collection bag 20, the resilient material configured to retain the section of the waste collection bag 20 within the orifice. In some examples, the resiliently biasing member comprises a resilient material having an orifice for receiving a second of a waste collection bag 20 such that when a section of a waste collection bag 20 is inserted through the orifice of the resiliently biasing member, the section of the waste collection bag 20 is trapped within the orifice of the resiliently biasing member.

In some examples, the sealing mechanism attachment portion 60 may have a surface to which, in use, a waste collection bag 20 is attached, for example by adhering to the surface or feeding the bag through an orifice in the surface, the surface may be a surface to which, in use a waste collection bag 20 is fed to be attached. The surface may have a plane orientated at an angle of at least 45° to a positive z-axis, the z-axis (indicated in fig. 2), in use, being aligned with and having an opposite direction to the direction of the weight of waste contained in the waste collection bag. In some examples, the surface has a plane orientated at an angle of at least 70° to a positive z-axis, in some examples at least 80°, in some examples at least 90°.

The waste collection unit 1 may comprise a rim attachment portion 103 for attaching a waste collection bag 20 to the waste collection unit, for example the waste collection bag 20 may be attached to the rim attachment portion 103 such that the opening of the waste collection bag
20 is placed over the rim 3 of the opening 2 and held in place by the rim attachment portion 103 in order to hold the opening of the waste collection bag 20 open whatever the position of the first and second sealing portions 7, 9 of the sealing mechanism 5 of the waste collection unit 1.

The waste collection unit 1 may comprise a sealing mechanism attachment portion 60 for attaching a waste collection bag 20 to the waste collection unit 1. In examples in which the waste collection unit 1 comprises a rim attachment portion 103 in addition to a sealing mechanism attachment portion 60, an opening of a waste collection bag 20 may be placed over the rim 3 of the waste collection unit 1 and held in place by the rim attachment portion 103, and a section of the waste collection bag 20 away from the opening of the waste collection bag 20 may be attached to the sealing mechanism, e.g. the first and second sealing members 8a, 8b, such that the bag is attached to the waste collection unit 1 and held open by the rim attachment portion 103 and also attached to the waste collection unit 1 and moveable with the sealing mechanism, e.g. moveable with the first and second sealing members 8a, 8b of the sealing mechanism.

In the closed position illustrated in figs 1 and 2, the first and second sealing members 8a, 8b abut which may cause a first seal to be formed across a waste collection bag 20 held in the waste collection unit 1 between the opening 2 of the waste collection unit 1 and a waste accumulation section 4 which may be present and positioned, in use, below the first and second sealing portions 7, 9, for example the waste accumulation section 4 may be a section of the waste collection bag 20 disposed, in use, below the sealing mechanism 5, e.g. below the first and second sealing portions 7, 9, of the waste collection unit 1.

In the waste receiving position illustrated in fig. 3, the third and fourth sealing members 10a, 10b abut which may cause a second seal to be formed across a waste collection bag 20 held in the waste collection unit 1 between the opening 2 of the waste collection unit 1 and a waste accumulation section 4 which may be present and positioned, in use, below the first and second sealing portions 7, 9, for example the waste accumulation section 4 may be a section of the waste collection bag 20 disposed, in use, below the sealing mechanism 5, e.g. below the first and second sealing portions 7, 9, of the waste collection unit 1.

The waste accumulation section 4 may be a section of the waste collection unit 1 in which waste deposited in the waste collection unit 1 may accumulate. The waste accumulation section 4 may be a section of the unit 1 which in use is located below the sealing mechanism 5. The waste accumulation section 4 is not necessarily a receptacle for receiving waste. In
some examples, the waste accumulation section 4 may be adapted to contain or accommodate a waste receiving receptacle such as a waste collection bag 20.

In the waste collection bag replacing position (illustrated in fig.4), a clear pathway may be formed between the first and second sealing members 8a, 8b and the third and fourth sealing members 10a, 10b when the first and second sealing portions are in the waste collection bag replacing position to allow a waste collection bag 20 to be inserted or removed from the waste collection unit 1 by inserting or removing the waste collection bag 20 between the first, second, third and fourth sealing members.

In the waste collection bag replacing position (illustrated in fig.4), a clear pathway may be formed between the opening 2 and a waste accumulation section 4 to allow a waste collection bag 20 to be inserted or removed from the waste collection unit 1.

The first and second sealing members 8a, 8b and the third and fourth sealing members 10a, 10b may all be moveable relative to the waste collection unit as is the case for the first, second, third and fourth sealing members 8a, 8b, 10a, 10b of the waste collection unit 1 shown in fig. 1.

The first sealing portion 7 and the second sealing portion 9 may be in mechanical communication such that when the first sealing portion 7 is moved from the closed position (as shown in figs. 1 and 2) to the waste receiving position (shown in fig. 3) the second sealing portion 9 is also moved from the closed position to the waste receiving position and vice versa. For example, the first sealing member 8a of the first sealing portion 7 may be coupled to the third sealing member 10a of the second sealing portion 9 and the second sealing member 8b of the first sealing portion 7 may be coupled to the fourth sealing member 10b of the second sealing portion 9. In some examples, the first and third sealing members 8a, 10a form a first paddle 14a and the second and fourth sealing members 8b, 10b form a second paddle 14b, the first and second paddles 14a, 14b being rotatable between the closed position (shown in figs. 1 and 2), the waste receiving position (shown in fig. 3) and the waste collection bag replacing position (shown in fig. 4).

The waste collection bag replacing position (shown in fig. 4) may be an intermediate position between the closed position (shown in figs. 1 and 2) and the waste receiving position (shown in fig. 3). The sealing mechanism 5 may be configured to move between the closed position and the waste receiving position via the waste collection bag replacing position.
In some examples, the first and second sealing portions 7, 9 are moveable to a locked position, wherein in the locked position the first and the second sealing members 8a, 8b abut and the third and fourth sealing members abut. In some examples, the sealing mechanism is configured such that the first and second sealing portions 7, 9 are moveable between the closed position and the waste receiving position via the locked position. In such examples, the sealing mechanism 5 may be configured to be moveable from the waste receiving position to the closed position only via the locked position, i.e. the third and fourth sealing members 10a, 10b remain abutted until the first and second sealing members 8a, 8b abut, only once the first and second sealing members 8a, 8b abut can the third and fourth sealing members become spaced apart so that the first and second sealing members are in the closed position; and/or configured to be moveable from the closed position to the waste receiving position only via the locked position, i.e. the first and second sealing members 8a, 8b remain abutted until the third and fourth sealing members 10a, 10b abut, only once the third and fourth sealing members 10a, 10b abut can the first and second sealing members 8a, 8b become spaced apart so that the first and second sealing members are in the waste receiving position.

Each sealing member 8a, 8b, 10a, 10b may comprise a sealing face 21 for abutting with a sealing face 21 of another sealing member 8a, 8b, 10a, 10b, the sealing face 21 linking a first sealing face end 22 and a second sealing face end 23. The sealing face 21 of each sealing member 8a, 8b, 10a, 10b may extend laterally across the waste collection unit, for example, the sealing members 8a, 8b, 10a, 10b may be elongated and extend across the waste collection unit 1 horizontally, in use, with respect to the opening of the waste collection unit 1. The first and second sealing members 8a, 8b and/or the third and fourth sealing members 10a, 10b may also comprise a lip portion 24 located between the first and second sealing face ends 22, 23 and orientated such that the sealing faces 21 of the first and second sealing members 8a, 8b are located between the lip portions 24 of the first and second sealing members 8a, 8b.

In some examples, the sealing faces 21 comprise a resilient material, for example rubber, for gripping a waste collection bag 20 when abutted against a resilient material of another sealing face 21.

The waste collection unit 1 may comprise a body 30 to which the first and second sealing portions 7, 9 may be connected to the body 30 so as to be moveable between the closed and waste receiving positions. In some examples, the first and third sealing members 8a, 10a of the first and second sealing portions 7, 9 are coupled and the second and fourth sealing members 8b, 10b are coupled, for example to form a first paddle 14a and a second paddle
14b respectively, such that the first and third sealing members 8a, 10a and the second and fourth sealing members 8b, 10b move together between the closed position and the waste receiving position.

In some examples, each of the first and second paddles 14a, 14b comprise or consist of a sheet of a material, for example plastic, such as a rigid plastic, having a planar surface with a lip portion 24 extending away from the planar surface at two opposing edges of the planar surface. In some examples, a sealing face 21 is formed at each junction of the planar surface with a lip portion 24 to form the sealing faces 21 of the first, second, third and fourth sealing members 8a, 8b, 10a, 10b.

In some examples, the first and second paddles 14a, 14b formed from the first and third sealing members 8a, 10a and second and fourth sealing members 8b, 10b respectively may be pivotally connected to the body 30 such that the first and second paddles 14a, 14b are rotatable between the closed position (shown in figs. 1 and 2) and the waste receiving position (shown in fig. 3).

Fig. 5 shows a rear view of the waste collection unit 1 of fig. 1 (viewed in the direction R indicated on fig. 1). The first and second sealing portions 7, 9 may be pivotally connected to the body 30 about first and second body pivot points 35a, 35b.

In some examples, the body 30 of the waste collection unit 1 comprises body sidewalls 31. The first and second paddles 14a, 14b may each be pivotally connected to the body sidewalls 31 about first and second body pivot points 35a, 35b, each of the first and second body pivot points 35a, 35b having an axis extending laterally from a body sidewall 31, for example extending perpendicularly to the body sidewall, across the waste collection unit 1. In some examples, the axes of each of the first and second body pivot points 35a, 35b extends, in use, horizontally across the waste collection unit 1, for example the axes may be aligned with the plane of the opening 2 of the waste collection unit 1.

In some examples, the body 30 of the waste collection unit 1 is formed of a rigid plastic.

The sealing mechanism 5 may also comprise a sealing actuator 37, as shown in fig.5, for actuating movement of the first and second portions 7, 9 of the sealing mechanism between the closed and waste receiving positions via the waste collection bag position.
The sealing actuator 37 may be moveable between a first sealing position and a second sealing position, such that when the sealing actuator 37 is in the first sealing position the first and second sealing portions 7, 9 are in the closed position and when the sealing actuator 37 is in the second sealing position the first and second sealing portions 7, 9 are in the waste receiving position.

The first, second, third and fourth sealing members 8a, 8b, 10a, 10b may moveable between a first sealing position and a second sealing position, such that when the sealing actuator 37 is in the first sealing position (as shown in fig.5) the first and second sealing portions 7, 9 are in the closed position and when the sealing actuator 37 is in the second sealing position the first and second sealing portions 7, 9 are in the waste receiving position. In the example shown in fig.5, downward movement of the sealing actuator 37 in the direction shown by arrow A moves the sealing actuator 37 from the first sealing position to the second sealing position.

In the waste collection unit 1 shown in figs. 1-5, the first and third sealing members 8a, 10a of the first and second sealing portions 7, 9 are coupled to form a first paddle 14a and the second and fourth sealing members 8b, 10b are coupled to form a second paddle 14b, such that the first and third sealing members 8a, 10a and the second and fourth sealing members 8b, 10b move together between the closed position and the waste receiving position. The first and second paddles 14a, 14b may be mechanically coupled to the sealing actuator 37 at first and second actuator pivot points 39a, 39b such that movement of the sealing actuator 37 causes rotation of the paddles 14a, 14b, about the first and second body pivot points 35a, 35b, between the closed and waste receiving positions.

The sealing mechanism 5 of the waste collection unit 1 may comprise a biasing member 40 for urging the first sealing portion 7 and/or the second sealing portion 9 to move towards either the closed position or the waste receiving position. In some examples, the biasing member may comprise or be an over-centre mechanism.

The sealing mechanism 5 of the waste collection unit 1 shown in figs. 1-5 comprises an over-centre mechanism as the biasing member 40 made up of curved slots through which the first and second paddles 14a, 14b may be pivotally connected to the sealing actuator 37 about the first and second actuator pivot points 39a, 39b. The slots of the biasing member 40 allow the first and second actuator pivot points 39a, 39b to be displaced as the sealing actuator 37 moves to cause rotation of the first and second paddles 14a, 14b. The slots through which the sealing actuator 37 is connected to the first and second paddles 14a, 14b about first and second actuator pivot points 39a, 39b allow linear movement of the sealing actuator 37, e.g.
vertical movement in use, as shown by arrow A in fig.5, to be translated into rotational movement of the paddles 14a, 14b about first and second body pivot points 35a, 35b. The curved shape of the slots of the biasing member 40 provide an over-centre mechanism which urges the first sealing portion 7 and the second sealing portion 9 to move towards either the closed position or the waste receiving position.

The waste collection unit 1 may further comprise a pathway opening mechanism engageable with the sealing mechanism, the pathway opening mechanism being actuatetable to cause movement of the first and second sealing portions 7, 9 to the waste collection bag receiving position (shown in fig. 4).

The pathway opening mechanism may comprise a pathway opening actuator.

The pathway opening mechanism may be configured to cause movement of the first and second sealing portions 7, 9 to the waste collection bag receiving position and then retain the first and second sealing portions 7, 9 in the waste collection bag receiving position.

The pathway opening actuator may be moveable between a disengaged position in which the pathway opening mechanism does not engage with the sealing mechanism 5 and an engaged position in which the pathway opening actuator actuates the pathway opening mechanism to cause the first and second sealing portions 7, 9 to move to the waste collection bag replacing position. The pathway opening actuator may be configured such that when the pathway opening actuator is in the disengaged position, the position of the first and second sealing portions 7, 9 is controlled by the position of the sealing actuator 37 of the sealing mechanism 5, and when the pathway opening actuator is in the engaged position, the pathway opening actuator actuates the pathway opening mechanism to cause movement of the first and second sealing portions 7, 9 to the waste collection bag replacing position. The pathway opening actuator may be configured such that actuation of the pathway opening mechanism causes movement of the first and second sealing portions 7, 9 to the waste collection bag replacing position and retention of the first and second sealing portions 7, 9 in the waste collection bag replacing position until the pathway opening mechanism is disengaged.

Fig. 6 shows a toilet 100 as an example of a waste collection unit. The toilet 100 shown in fig. 6 comprises all of the features of the waste collection unit 1 shown in figs. 1 to 5.

The waste collection unit may comprise a lid, for example the waste collection unit may be a toilet 100 comprising a toilet lid 102 (as shown in fig. 6) for covering the opening 2 of the waste
collection unit. The lid 102 may be moveable between a covering position in which the opening 2 of the waste collection unit is covered by the lid 102 and an open position as shown in fig. 6. The lid 102 may be pivotally connected to the waste collection unit. The lid 102 may be mechanically coupled to the sealing actuator 37 of the waste collection unit, for example by cables 104, such that moving the lid 102 between the covering position and the open position causes movement of the first and second sealing portions 7, 9. For example, moving the lid 102 from the open position towards the covering position may cause movement of the first and second sealing portions 7, 9 towards the closed position, and moving the lid from the covering position towards the open position may movement of the first and second sealing portions 7, 9 towards the waste-receiving position. In this way, when a user lifts the toilet lid 102 to the open position shown in fig. 6, the first and second sealing portions 7, 9 of the sealing mechanism 5 of the toilet 100 move from the closed position to the waste receiving position in which a waste receiving section 50 may be formed (as shown in fig. 3) for a user to deposit waste into. In the waste receiving position a seal may be provided between the user and the waste accumulation section 4, such that smells from waste which may have been deposited into the waste receiving unit are prevented from escaping to be smelled by the user, by the third and fourth sealing members 8a, 8b of the sealing mechanism abutting. When the user lowers the toilet lid 102 after use, the first and second sealing portions 7, 9 of the sealing mechanism 5 move from the waste receiving position back to the closed position so that waste deposited in the waste receiving section 50 may be dropped into the waste accumulation section 4 and smells from the waste accumulation section 4 and any waste remaining in the waste receiving section 50 may be prevented from escaping from the waste collection unit 100 by a seal formed by first and second sealing members abutting.

The opening 2 of the waste collection unit 1 may be a rimmed opening. The rim 3 of the opening 2 may take any shape, for example the rim 3 may have a circular or ovular shape, or may have an angular shape such as a rectangular shape. The rim 3 may be a continuous rim, or the rim may be discontinuous, for example making up 3 sides of a rectangular shape as shown in fig. 1. In some examples, in use in the waste receiving position, the first and second sealing members 8a, 8b of the first sealing portion 7 are located beneath the rim 3 of the opening such that waste deposited through the opening does not fall on the first and second sealing members 8a, 8b.

The waste collection unit 1 may comprise an annular member seatable on the rim of the opening, the annular member moveable between a seated position in which the annular member is seated on the rim of the opening and a lifted position. The annular member may be shaped to be seatable on the rim, for example the annular member may have a circular or
ovular shape, or may have an angular shape such as a rectangular shape. The annular member may make up a continuous ring, or take the form of a ring a section or sections missing, such as a horse-shoe shape.

The opening 2 of the waste collection unit 1 may be unobstructed by the annular member when the annular member is in the lifted position.

In some examples, the waste collection unit may be a toilet 100 comprising an annular member 106 as the toilet seat (as shown in fig. 6).

The annular member 106 may be detachable from the waste collection unit 1 and/or the annular member 106 may be pivotally connected to the waste collection unit to be moveable between a seated position and a lifted position.

The annular member 106 may be configured to partially cover the opening 2 around the rim of the opening 2 in the seated position. In some examples, this may allow the first and second sealing members 8a, 8b of the sealing mechanism to be located beneath the annular member 106 when the first and second sealing portions 7, 9 are in the waste receiving position and the annular member 106 is in the seated position such that waste deposited through the opening of the annular member 106 and the opening 2 of the waste collection unit 1 does not fall on the first and second sealing members 8a, 8b of the sealing mechanism 5. This may prevent waste from being deposited outside of the waste receiving section 50 of the waste collection unit 1, for example, to prevent waste from being deposited on any sections of a waste collection bag 20 located between the opening 2 and the first sealing portion 7 of the waste collection unit 1.

The annular member 106 may be mechanically coupled to a pathway opening actuator for actuating a pathway opening mechanism to cause movement of the first and second sealing portions 7, 9 to the waste collection bag replacing position, the pathway opening actuator being moveable between a disengaged position in which the pathway opening mechanism does not interact with the sealing mechanism and an engaged position in which the pathway opening actuator actuates the pathway opening mechanism to cause movement of the first and second sealing portions 7, 9 to the waste collection bag replacing position (shown in fig. 4). The annular member 106 may be mechanically coupled to a pathway opening actuator such that moving the annular member to the lifted position causes the pathway opening actuator to be moved to the engaged position and/or moving the annular member to the seated position causes the pathway opening actuator to be moved to the disengaged position.
The waste collection unit 100 may comprise: a lid 102 for covering the opening 2, the lid 102 being moveable between a covering position and an open position, the lid 102 being mechanically coupled to a sealing actuator 37 of the sealing mechanism 5, such that:

moving the lid 102 to the covering position actuates movement of the first and second sealing portions 7, 9 to the closed position to prevent smells from waste deposited in the waste collection unit from escaping from the waste collection unit; and

moving the lid 102 to the open position actuates movement of the first and second sealing portions 7, 9 to the waste receiving position to provide a waste receiving section 50 in which a user may deposit waste and also prevent smells from waste which may be in the waste collection unit below the waste receiving section 50 from escaping from the waste collection unit.

The waste collection unit 100 may comprise: a lid 102 for covering the opening 2, the lid 102 being moveable between a covering position and an open position, the lid 102 being mechanically coupled to a sealing actuator 37 of the sealing mechanism 5; and an annular member 106, for example a toilet seat, moveable from a seated position to a lifted position, the annular member 106 being mechanically coupled to a pathway opening mechanism and configured to cause movement of the first and second sealing portions 7, 9 to the waste collection bag replacing position, such that:

moving the lid 102 to the covering position actuates movement of the first and second sealing portions 7, 9 to the closed position to prevent smells from waste deposited in the waste collection unit from escaping from the waste collection unit; and

moving the lid 102 to the open position actuates movement of the first and second sealing portions 7, 9 to the waste receiving position to provide a waste receiving section 50 in which a user may deposit waste and also prevent smells from waste which may be in the waste collection unit below the waste receiving section 50 from escaping from the waste collection unit; and

moving the annular member 106 to the lifted position actuates movement of the first and second sealing portions 7, 9 to the waste collection bag replacing position and retains the first and second sealing portions in the waste collection bag replacing position so that a waste collection bag 20 may be removed from the waste collection unit 1 and allow for a new waste collection bag 20 to be inserted into the waste collection unit 1.

As shown in fig. 7, the waste collection unit 100 may comprise first and second openings 201, 202 for receiving waste. In some examples, the first opening 201 is for receiving solid waste and the second opening 202 is for receiving liquid waste. In some examples, the sealing
mechanism 5 comprising the first and second sealing portions 7, 9 may be located, in use, beneath the first opening.

In some examples, the waste collection unit 1 comprises a housing 110 for containing the sealing mechanism 5. The housing 110 may contain housing sidewalls and a housing base. In some examples, the housing 110 of the waste collection unit is made from a rigid plastic.

In some examples, the waste collection unit 1, 100 is a portable waste collection unit. In some examples, the waste collection unit 1 may comprise a handle 120 as is shown in fig. 7.

While the waste collection unit and related aspects have been described with reference to certain examples, various modifications, changes, omissions, and substitutions can be made without departing from the spirit of the present disclosure.

The word “comprising” does not exclude the presence of elements other than those listed in a claim, “a” or “an” does not exclude a plurality, and a single processor or other unit may fulfil the functions of several units recited in the claims.

The features of any dependent claim may be combined with the features of any of the independent claims or other dependent claims.
Claims:

1. A waste collection unit comprising an opening for receiving waste and a sealing mechanism positioned, in use, below the opening, the sealing mechanism comprising:
   a first sealing portion comprising first and second sealing members; and
   a second sealing portion comprising third and fourth sealing members, the second sealing portion positioned, in use, below the first sealing portion,
   wherein the first and second sealing portions are configured to be moveable between a closed position, a waste receiving position and a waste collection bag replacing position, such that in the closed position the first and second sealing members abut and the third and fourth sealing members are spaced apart, in the waste receiving position the first and second sealing members are spaced apart and the third and fourth sealing members abut, and in the waste collection bag replacing position the first and second sealing members are spaced apart and the third and fourth sealing members are spaced apart.

2. A waste collection unit according to claim 1, wherein the first and second sealing members are both moveable relative to the waste collection unit.

3. A waste collection unit according to claim 1 or claim 2, wherein the third and fourth sealing members are both moveable relative to the waste collection unit.

4. A waste collection unit according to any of the preceding claims, wherein the first sealing portion is in mechanical communication with the second sealing portion.

5. A waste collection unit according to claim 4, wherein the first sealing portion and the second sealing portion are configured such that when the first sealing portion or the second sealing portion is moved from the closed position to the waste receiving position the other of the first and second sealing portions is also moved from the closed position to the waste receiving position and when the first sealing portion or the second sealing portion is moved from the waste receiving position to the closed position the other of the first sealing portion and the second sealing portion is also moved from the waste receiving position to the closed position.

6. A waste collection unit according to claim 4 or claim 5, wherein the first sealing member of the first sealing portion is coupled to the third sealing member of the second sealing portion and the second sealing member of the first sealing portion is coupled to the fourth sealing member of the second sealing portion.
7. A waste collection unit according to claim 6, wherein the first and third sealing members form a first paddle and the second and fourth sealing members form a second paddle, the first and second paddles being rotatable between the closed position, the waste receiving position and the waste collection bag replacing position.

8. A waste collection unit according to any of the preceding claims, wherein the waste collection bag replacing position is an intermediate position between the closed position and the waste receiving position.

9. A waste collection unit according to any of claims 1 to 4, wherein the first and second sealing portions are moveable to locked position, wherein in the locked position the first and the second sealing members abut and the third and fourth sealing members abut.

10. A waste collection unit according to any of the preceding claims, comprising a waste accumulation section, wherein the first and second sealing portions are located between the opening and the waste accumulation section, the first sealing portion being located between the opening and the second sealing portion.

11. A waste collection unit according to claim 10, wherein a clear pathway between the opening and the waste accumulation section is formed when the first and second sealing portions are in the waste collection bag replacing position.

12. A waste collection unit according to any of the preceding claims, wherein the sealing mechanism comprises a biasing member for urging the first sealing portion and/or the second sealing portion to move towards either the closed position or the waste receiving position.

13. A waste collection unit according to claim 12, wherein the biasing member is or comprises an over-centre mechanism.

14. A waste collection unit according to any of the preceding claims, wherein the sealing mechanism comprises a sealing actuator for causing movement of the first and second sealing portions between the closed and waste receiving positions.

15. A waste collection unit according to claim 14, wherein the sealing actuator is moveable between a first sealing position and a second sealing position, such that when the sealing actuator is in the first sealing position the first and second sealing portions are in the closed
position and when the sealing actuator is in the second sealing position the first and second sealing portions are in the waste receiving position.

16. A waste collection unit according to any of the preceding claims further comprising a pathway opening mechanism engageable with the sealing mechanism, the pathway opening mechanism actuable to cause movement of the first and second sealing portions to the waste collection bag replacing position.

17. A waste collection unit according to claim 16, wherein the pathway opening mechanism comprises a pathway opening actuator.

18. A waste collection unit according to claim 16 or claim 17, wherein the pathway opening mechanism is configured to cause movement of the first and second sealing portions to the waste collection bag replacing position and then retain the first and second sealing portions in the waste collection bag replacing position.

19. A waste collection unit according to claim 17 or claim 18, wherein the pathway opening actuator is moveable between a disengaged position in which the pathway opening mechanism does not engage with the sealing mechanism and an engaged position in which the pathway opening actuator actuates the pathway opening mechanism to cause the first and second sealing portions to move to the waste collection bag replacing position.

20. A waste collection unit according to claim 19, wherein the pathway opening actuator is configured such that when the pathway opening actuator is in the disengaged position, the positions of the first and second sealing portions are controlled by the position of a sealing actuator of the sealing mechanism, and when the pathway opening actuator is in the engaged position, the pathway opening actuator actuates the pathway opening mechanism to cause movement of the first and second sealing portions to the waste collection bag replacing position.

21. A waste collection unit according to claim 20, wherein the pathway opening mechanism is configured such that actuation of the pathway opening mechanism causes movement of the first and second sealing portions to the waste collection bag replacing position and retention of the first and second sealing portions in the waste collection bag replacing position until the pathway opening mechanism is disengaged.
22. A waste collection unit according to any of the preceding claims comprising a lid for covering the opening, the lid being moveable between a covering position and an open position.

23. A waste collection unit according to claim 22, wherein the lid is detachable from the waste collection unit.

24. A waste collection unit according to claim 22 or claim 23, wherein the lid is pivotally connected to the waste collection unit to be moveable between a covering position and an open position.

25. A waste collection unit according to any of claims 22 to 24, the lid being mechanically coupled to a sealing actuator which is coupled to the sealing mechanism such that moving the lid between the covering position and the open position causes movement of the first and second sealing portions between the closed position, the waste receiving position and the waste collection bag replacing position.

26. A waste collection unit according to claim 25, wherein moving the lid from the open position towards the covering position causes movement of the first and second sealing portions towards the closed position from the waste receiving position and moving the lid from the covering position towards the open position causes movement of the first and second sealing portions towards the waste-receiving position from the closed position.

27. A waste collection unit according to any one of the preceding claims, wherein the opening is a rimmed opening and the waste collection unit comprises an annular member seatable on the rim of the opening, the annular member moveable between a seated position in which the annular member is seated on the rim of the opening and a lifted position.

28. A waste collection unit according to claim 27, wherein the annular member is detachable from the waste collection unit.

29. A waste collection unit according to claim 27 or claim 28, wherein the annular member is pivotally connected to the waste collection unit to be moveable between a seated position and a lifted position.
30. A waste collection unit according to any of claims 27 to 29, wherein the annular member is configured to partially cover the opening around the rim of the opening in the seated position.

31. A waste collection unit according to any of claims 27 to 30, wherein the opening is unobstructed by the annular member in the lifted position.

32. A waste collection unit according to any of claims 27 to 31, wherein the annular member is mechanically coupled to a pathway opening actuator for actuating a pathway opening mechanism to cause movement of the first and second sealing portions to the waste collection bag replacing position, the pathway opening actuator being moveable between a disengaged position in which the pathway opening mechanism does not interact with the sealing mechanism and an engaged position in which the pathway opening actuator actuates the pathway opening mechanism to cause movement of the first and second sealing portions to the waste collection bag replacing position.

33. A waste collection unit according to claim 32, wherein moving the annular member to the lifted position causes the pathway opening actuator to be moved to the engaged position.

34. A waste collection unit according to claim 32 or claim 33, wherein moving the annular member to the seated position causes the pathway opening actuator to be moved to the disengaged position.

35. A waste collection unit according to any of the preceding claims comprising: a lid for covering the opening, the lid being moveable between a covering position and an open position, the lid being mechanically coupled to a sealing actuator of the sealing mechanism; and an annular member moveable from a seated position to a lifted position, the annular member being mechanically coupled to a pathway opening mechanism and configured to cause movement of the first and second sealing portions to the waste collection bag replacing position,

wherein moving the lid to the covering position actuates movement of the first and second sealing portions to the closed position; and

moving the lid to the open position actuates movement of the first and second sealing portions to the waste receiving position; and

moving the annular member to the lifted position actuates movement of the first and second sealing portions to the waste collection bag replacing position and retains the first and second sealing portions in the waste collection bag replacing position.
36. A waste collection unit according to any of claims 27 to 35, wherein, in use, in the waste receiving position, the first and second sealing members of the first sealing portion are located beneath the annular member, such that waste deposited through the opening of the annular member and the opening of the waste collection unit does not fall on the first and second sealing members.

37. A waste collection unit according to any of the preceding claims, wherein the opening is a rimmed opening, and in use in the waste receiving position, the first and second sealing members of the first sealing portion are located beneath the rim of the opening such that waste deposited through the opening does not fall on the first and second sealing members.

38. A waste collection unit according to any of the preceding claims, wherein the waste collection unit comprises an attachment means for attaching a waste collection bag to the waste collection unit.

39. A waste collection unit according to claim 38, wherein the opening is a rimmed opening and the attachment means comprises a rim attachment portion comprising the rim of the opening.

40. A waste collection unit according to claim 39, wherein the rim attachment portion further comprises a bag layer which is engageable with the rim of the opening to attach a waste collection bag to the rim of the opening.

41. A waste collection unit according to any of claims 38 to 40, wherein the attachment means comprises a resiliently biasing member.

42. A waste collection unit according to any of claims 38 to 40, wherein the attachment means comprises a sealing mechanism attachment portion configured to attach a waste collection bag within the waste collection unit such that the waste collection bag is moveable with the first and second sealing members of the first sealing portion.

43. A waste collection unit according to claim 42, wherein the sealing mechanism attachment portion comprises a resiliently biasing member.

44. A waste collection unit according to claim 43, wherein the resiliently biasing member comprises a resilient material and an orifice for receiving a section of a waste collection bag,
the resilient material configured to retain the section of the waste collection bag within the orifice.

45. A waste collection unit according to claim 44, wherein the resiliently biasing member comprises a resilient material having an orifice for receiving a section of a waste collection bag.

46. A waste collection unit according to any of claims 42 to 45, wherein the sealing mechanism attachment portion has a surface to which, in use, a waste collection bag is attached, the surface having a plane orientated at an angle of at least 45° to a positive z-axis, the z-axis, in use, being aligned with and having an opposite direction to the direction of the weight of waste contained in the waste collection bag.

47. A waste collection unit according to any of claims 42 to 46, wherein each of the first and second sealing members of the first sealing portion comprise a sealing mechanism attachment portion for attaching a waste collection bag thereto.

48. A waste collection unit according to claim 47, wherein each of the first and second sealing members of the first sealing portion comprise two sealing mechanism attachment portions for attaching a waste collection bag thereto.

49. A waste collection unit according to any of the preceding claims, wherein each sealing member comprises a sealing face for abutting with the sealing face of another sealing member, the sealing face linking a first sealing face end and a second sealing face end of the sealing member.

50. A waste collection unit according to claim 49 and claim 47 or 48, wherein the first and second sealing members each comprise a lip portion located between the first and second sealing face ends and orientated such that the sealing faces of the first and second sealing members are located between the lip portions of the first and second sealing members, wherein a sealing mechanism attachment portion is located on the lip portion of each of the first and second sealing members.

51. A waste collection unit according to claims 48, 49 and 50, wherein the first and second sealing members each comprises a sealing mechanism attachment portion located in the vicinity of the sealing face ends.
52. A waste collection unit according to any of the preceding claims comprising first and second openings for receiving waste.

53. A waste collection unit according to claim 52, wherein the first opening is for receiving solid waste and the second opening is for receiving liquid waste.

54. A waste collection unit according to claim 53, wherein the first and second sealing portions of the sealing mechanism are located, in use, beneath the first opening.

55. A waste collection unit according to any of the preceding claims, wherein the waste collection unit is portable.

56. A waste collection unit as substantially described herein with reference to the accompanying figures.

57. A toilet comprising a waste collection unit according to any of the preceding claims.
Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

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<td>X</td>
<td>1-5, 8-11, 14-19, 27-28, 30-31, 36-40, 49, 51, 55, 57</td>
<td>CH701336 A1 (JERRY YURICH) See WPI Abstract Accession Number 2011-A22819 Figures 2 and 3 showing first sealing portion 50 and second sealing portion 60 in closed position (Fig 3), Waste receiving position (Fig 2), locked position (Fig 2)</td>
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<td>A</td>
<td>-</td>
<td>GB2480499 A (LOOWATT LTD) Non-flush toilet with dispensing means and sealing means</td>
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<tr>
<td>A</td>
<td>-</td>
<td>US4519104 A (KLINTLAND) Device for collecting solid or fluid waste using waste receiving tube with pair of rollers bearing sealing means, the rollers arranged to allow one roller to be moved away from the other roller (Fig 4c).</td>
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<td>A</td>
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<td>US3665522 A (PACTOSAN) See Fig 9 showing an apparatus for collecting solid or liquid wastes, for example a closet or latrine, in which sealing members 29 are mounted upon jaws 27, 28</td>
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<td>GB753370 A (POTTS) See Fig 1 showing dry sanitary closet using tubular film and sealing means 49</td>
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Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC:

Worldwide search of patent documents classified in the following areas of the IPC:

A47K; B65B; B65F

The following online and other databases have been used in the preparation of this search report:

Online: EPODOC, WPI
**International Classification:**

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