



US 20110204080A1

(19) **United States**

(12) **Patent Application Publication**
Henricksen et al.

(10) **Pub. No.: US 2011/0204080 A1**

(43) **Pub. Date: Aug. 25, 2011**

(54) **SINGLE STACK WAFER DISPENSER**

Publication Classification

(75) Inventors: **Douglas Henricksen**, New Richmond, WI (US); **Jerry Klingner**, West St. Paul, MN (US); **Wanda Klingner**, legal representative, West St. Paul, MN (US); **Dan Ewert**, Shakopee, MN (US)

(51) **Int. Cl.**
B65D 83/08 (2006.01)
B65H 3/24 (2006.01)

(52) **U.S. Cl. 221/274**

(73) Assignee: **NU-LIFE PRODUCTS, INC.**, Isanti, MN (US)

(57) **ABSTRACT**

(21) Appl. No.: **12/744,995**

(22) PCT Filed: **Dec. 1, 2008**

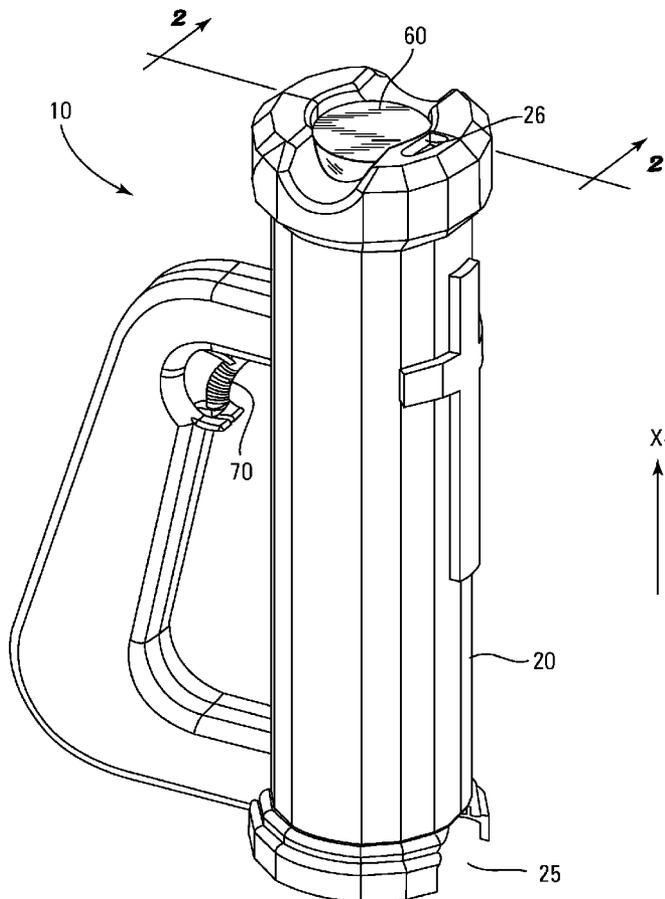
(86) PCT No.: **PCT/US08/85125**

§ 371 (c)(1),
(2), (4) Date: **Mar. 11, 2011**

A dispenser (10) having a housing (20), a peripheral annular shoulder (30), a wafer package (60), and a lever (70). The housing (20) defines a longitudinal axis and a retention chamber (23) with a dispensing orifice (25) proximate the periphery of the base (21). The peripheral annular shoulder (30) is proximate the base (21) and spaced above the base (21) in the first longitudinal direction X1 to define a gap (40) between the base (21) and the shoulder (30). The wafer package (60) is configured and arranged to fit completely within the retention chamber (23) of the housing (20). The lever (70) is pivotally attached to the housing (20) and has an arm (71) and a push rod (72). The push rod (72) is attached to the distal end (71a) of the arm (71) wherein the distal end (72a) of the push rod (72) radially extends into the gap (40).

Related U.S. Application Data

(60) Provisional application No. 60/990,953, filed on Nov. 29, 2007.



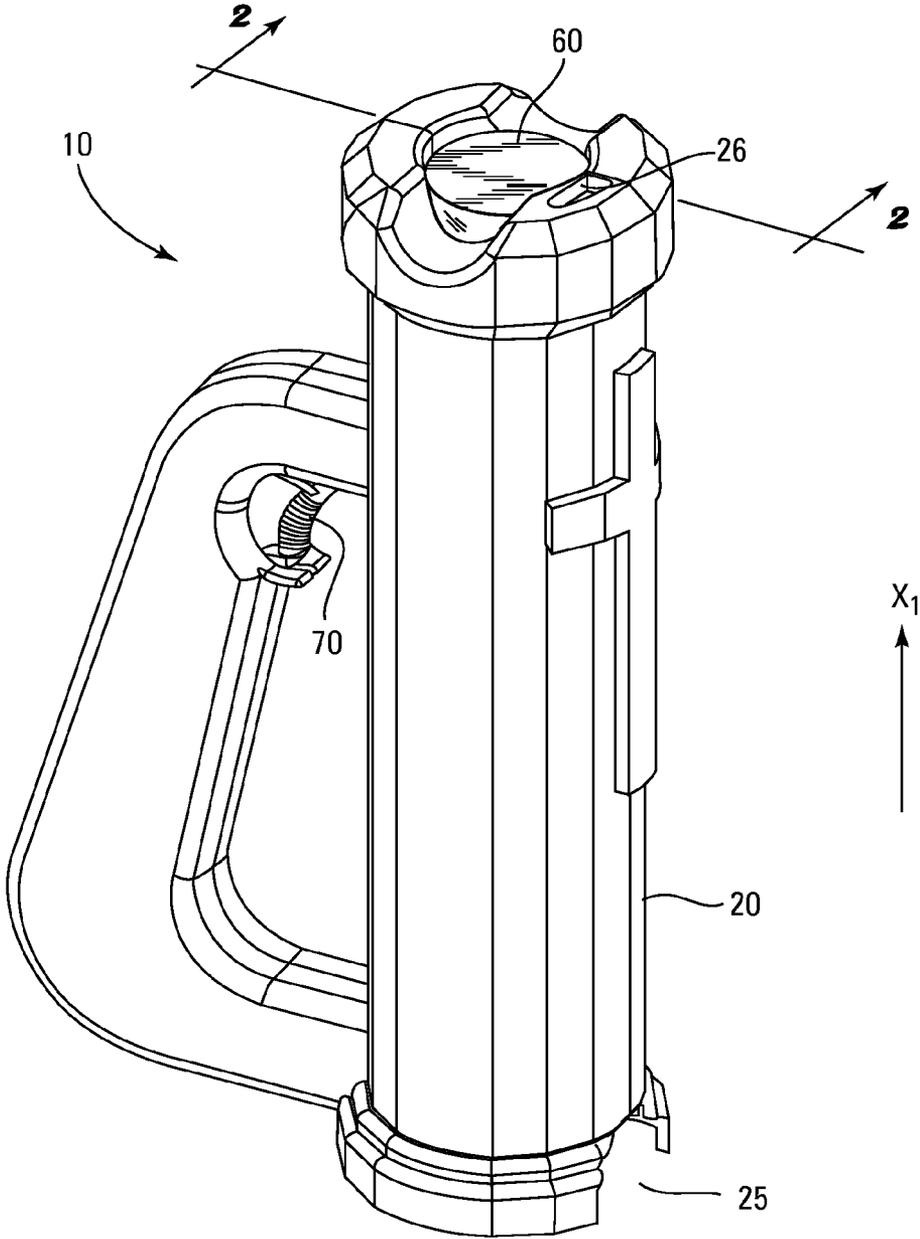


Fig. 1

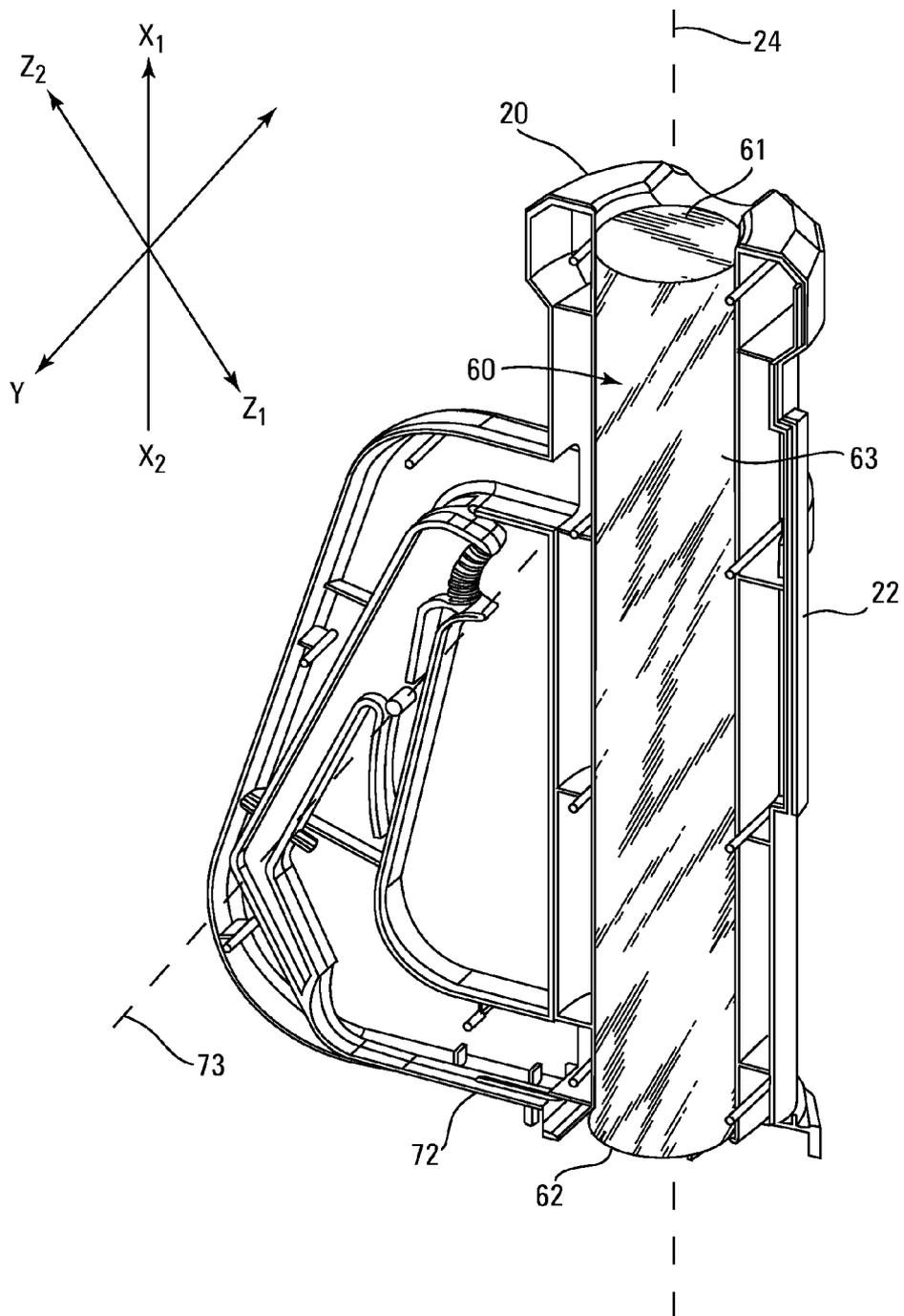
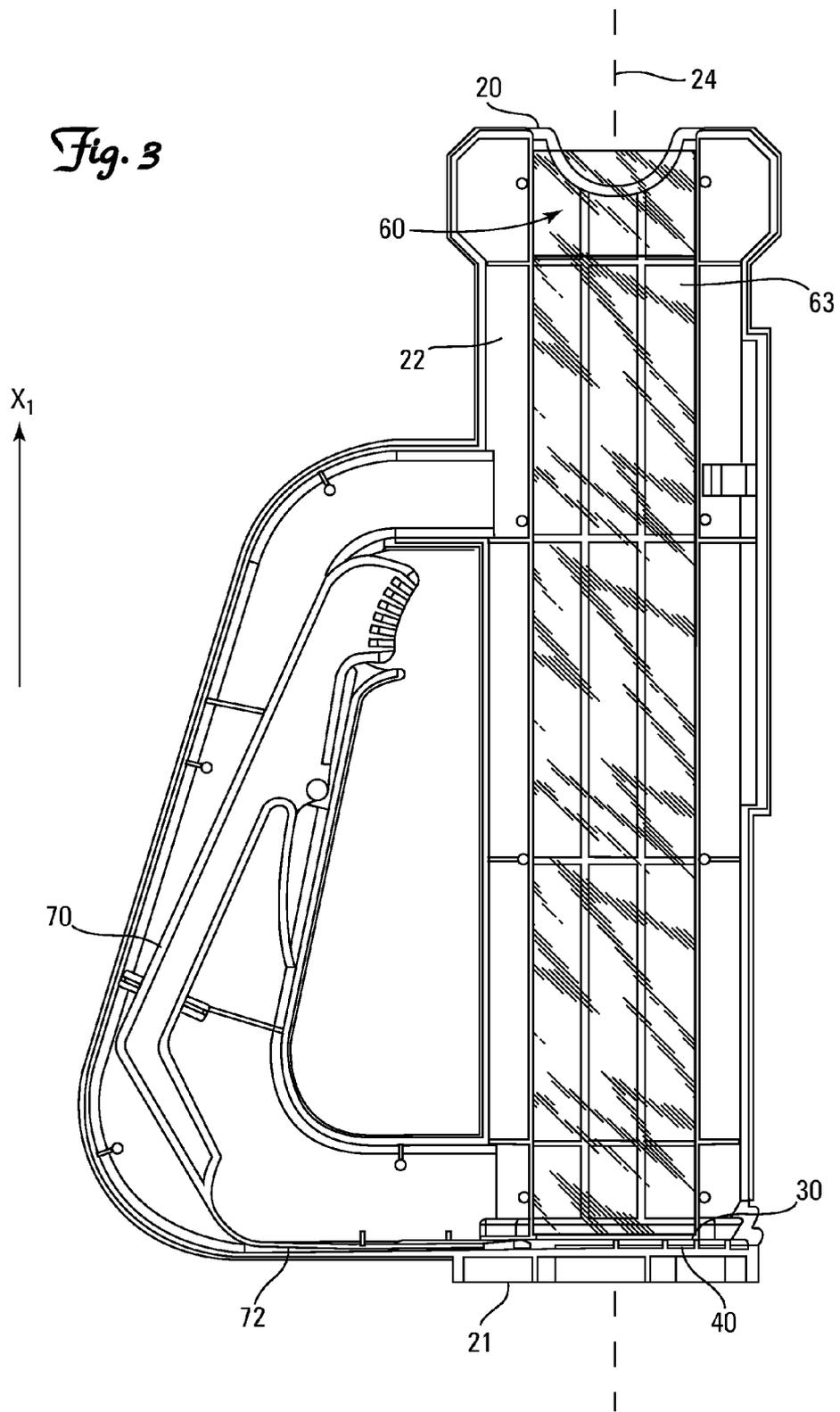


Fig. 2

Fig. 3



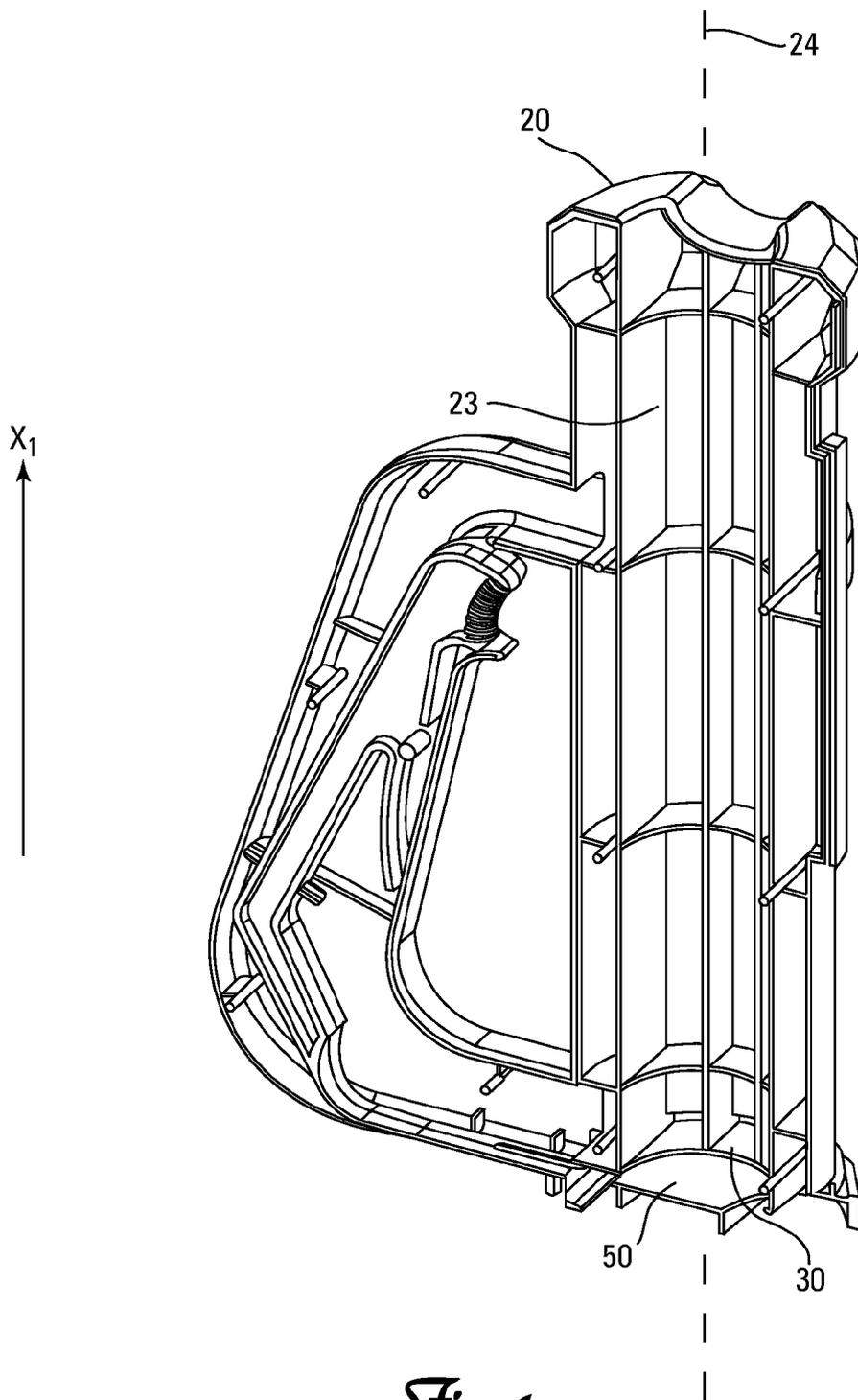


Fig. 4

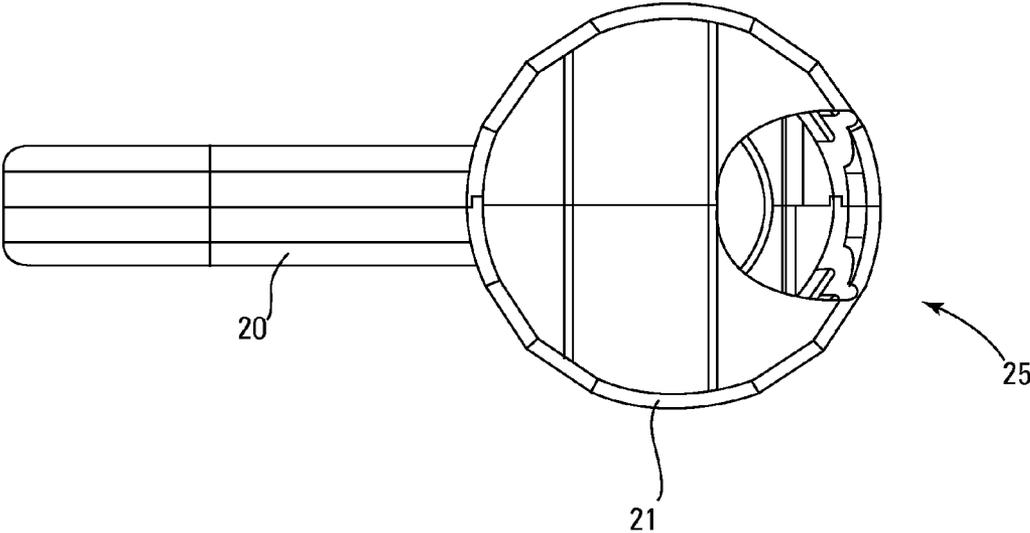


Fig. 5

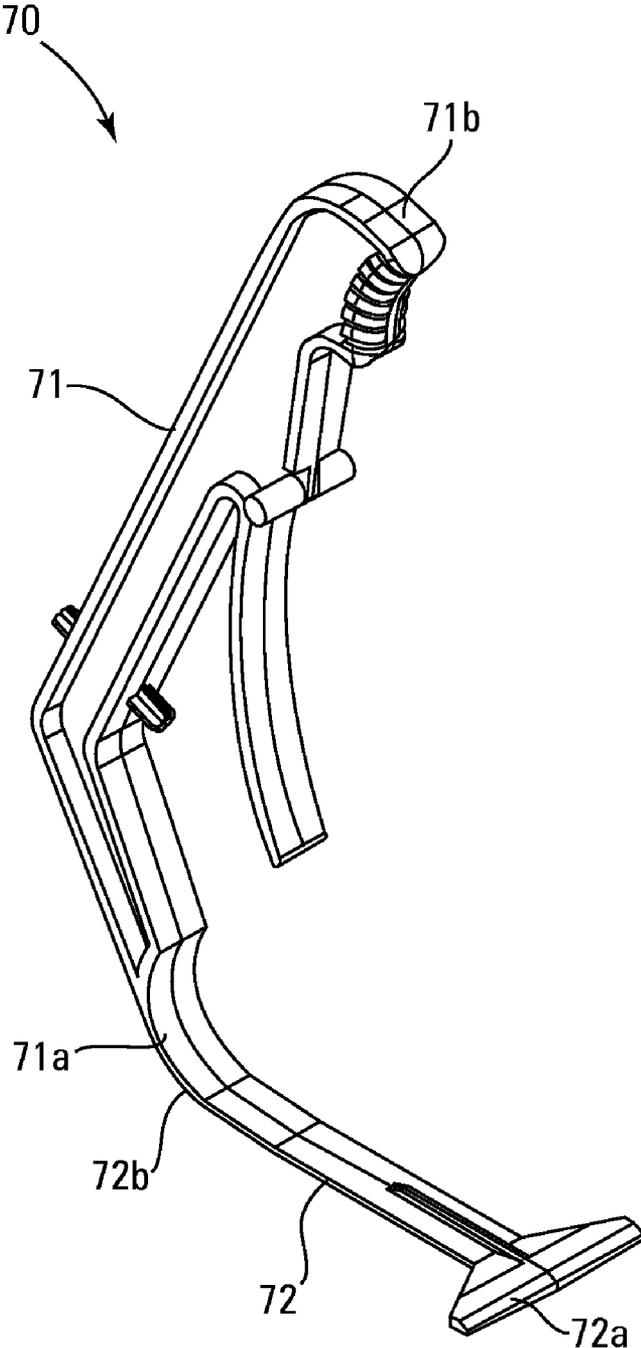


Fig. 6

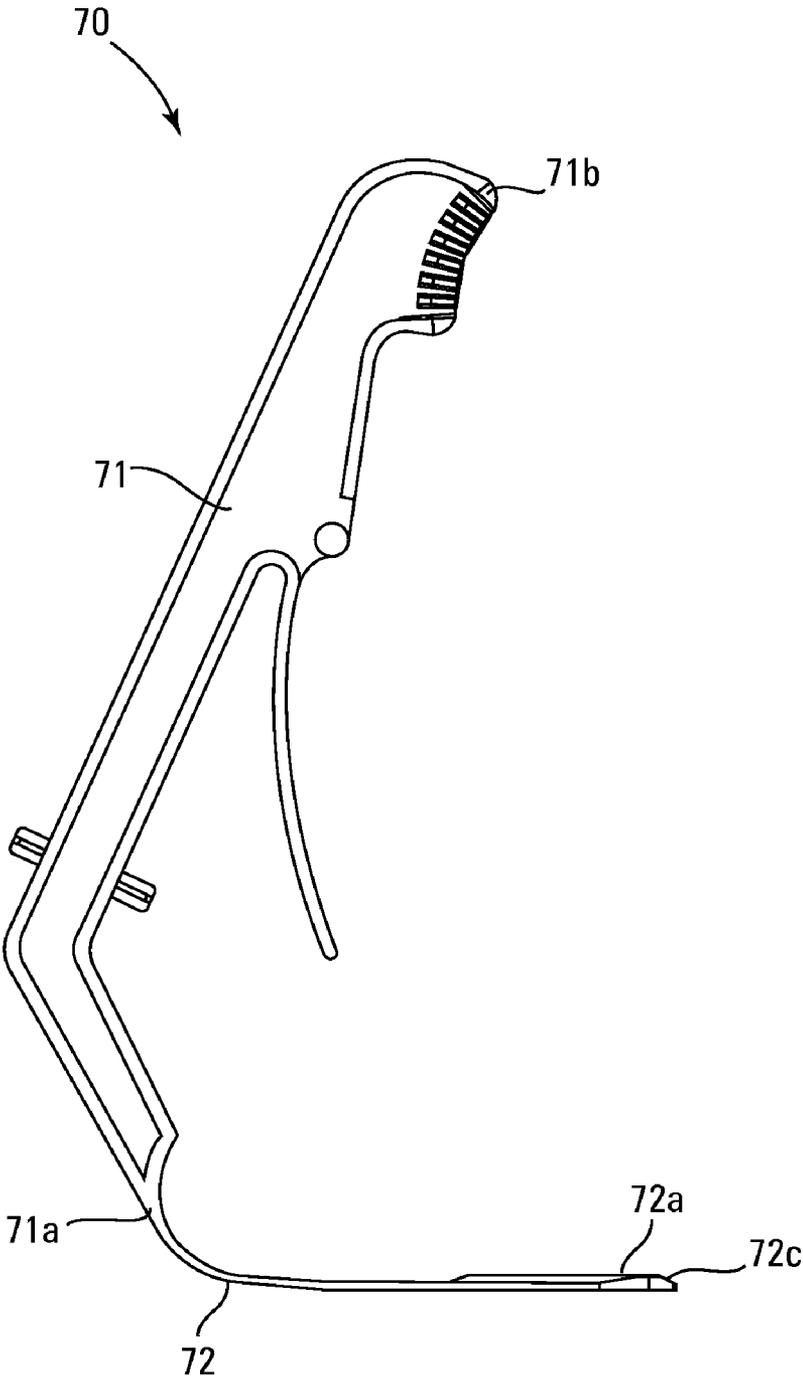


Fig. 7

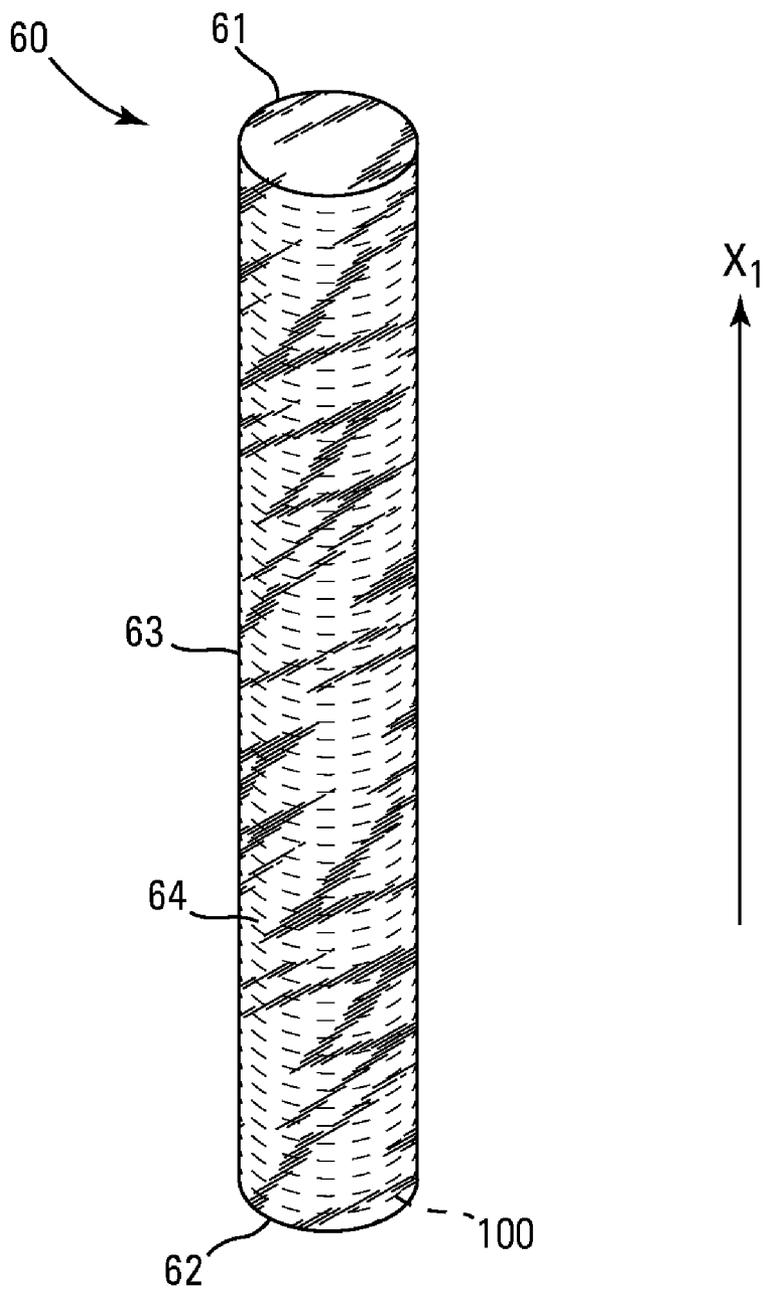


Fig. 8

SINGLE STACK WAFER DISPENSER

[0001] This application claims the benefit of U.S. Provisional Application No. 60/990,953, filed Nov. 29, 2007.

BACKGROUND

[0002] Taking communion is a common practice in many churches. Part of communion involves receiving a communion wafer or host. The common practice is for a church official to pick up the wafers from a plate and hand them to members of the congregation. As communion often occurs in the middle of a service there is not an opportunity for the church official to wash his or her hands prior to the handing out of the wafers. The wafers are also exposed to the air before, during and after the offering of communion. This exposes the wafers to any contaminants that may be in the air. This can be of particular concern to members of the congregation during the cold and flu season.

[0003] The Host dispenser disclosed in U.S. Pat. No. 6,253,669 ('669 Patent) attempts to solve the problem of wafer contamination during communion. The '669 Patent discloses a wafer dispenser that stores a plurality of communion wafers in a chamber. The plurality of wafers must be stacked and inserted into the dispenser prior to use. The dispenser has a dispensing mechanism which partially ejects one wafer at a time from the dispenser

[0004] Requiring the wafers to be manually stacked and inserted into the dispenser still exposes the wafers to contamination. There is the potential for contamination by the individual handling the wafers to insert them into the dispenser. Another drawback of the '669 Patent dispenser is that since the wafers are directly put into the dispenser, if one is incorrectly inserted in to the dispenser it can become stuck within the dispenser causing a disruption in the service to allow the dispenser to be fixed, to again freely dispense the wafers. If more than the expected number of people come to communion the service can also be disrupted to allow for the refilling of the dispenser, which takes considerable time due to the need to insert the wafers individually into a stack in the dispenser.

[0005] Therefore, a need exists for a wafer dispenser that eliminates the need to handle the wafers individually at any time to decrease the chance of contamination of the wafers and is easily filed and used during communion to decrease disruption of the service.

SUMMARY OF THE INVENTION

[0006] A dispenser having a housing, a peripheral annular shoulder, a wafer package, and a lever. The housing has a base and sidewalls extending longitudinally upward from the base to define a longitudinal axis and a retention chamber with a dispensing orifice proximate the periphery of the base. The peripheral annular shoulder is proximate the base and spaced above the base in the first longitudinal direction to define a gap between the base and the shoulder wherein the shoulder is discontinued at the dispensing orifice so as to create a wafer drop zone within the gap. The wafer package has a closed end, an open end, and sidewalls extending longitudinally downward from the closed end. The package is configured and arranged to fit completely within the retention chamber of the housing and the open end to be supported by the shoulder to define a storage chamber. The storage chamber is configured

and arranged to hold a plurality of wafers in a longitudinally stacked fashion therein. The lever is pivotally attached to the housing. The lever has an arm and a push rod. The arm has a distal end. The push rod is attached to the distal end of the arm wherein the distal end of the push rod radially extends into the gap.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a side perspective view of the dispenser with a wafer package inserted.

[0008] FIG. 2 is a side perspective view of a cross section of the dispenser in FIG. 1 along line 2-2 with the entire wafer package and lever displayed.

[0009] FIG. 3 is a side view of the dispenser in FIG. 2.

[0010] FIG. 4 is a side perspective view of the dispenser in FIG. 2 with the wafer package removed.

[0011] FIG. 5 is a bottom view of the dispenser in FIG. 1.

[0012] FIG. 6 is side perspective view of the lever in FIG. 2.

[0013] FIG. 7 is a side view of the lever in FIG. 6.

[0014] FIG. 8 is a top perspective view of the wafer package in FIG. 1 with wafers in the storage chamber.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Nomenclature

- [0015] 10 Dispenser
- [0016] 20 Housing
- [0017] 21 Housing base
- [0018] 22 Sidewalls
- [0019] 23 Retention chamber
- [0020] 24 Longitudinal axis
- [0021] 25 Dispensing orifice
- [0022] 26 Locking finger
- [0023] 30 Shoulder
- [0024] 40 Gap
- [0025] 50 Wafer drop zone
- [0026] 60 Wafer package
- [0027] 61 Closed end
- [0028] 62 Open end
- [0029] 63 Sidewalls
- [0030] 64 Storage chamber
- [0031] 70 Lever
- [0032] 71 Arm
- [0033] 71a Distal end
- [0034] 71b Proximal end
- [0035] 72 Push rod
- [0036] 72a Distal end
- [0037] 72b Proximal end
- [0038] 72c Upper corner
- [0039] 73 Lateral pivot axis
- [0040] 74 Biasing Means
- [0041] 100 Wafer
- [0042] X₁ First longitudinal direction
- [0043] X₂ Second longitudinal direction
- [0044] Y Lateral direction
- [0045] Z₁ First transverse direction
- [0046] Z₂ Second transverse direction

Construction

[0047] As shown in FIGS. 1 and 4, one embodiment of the dispenser 10 comprises a housing, 20 a peripheral annular shoulder 30, a wafer package 60, and a lever 70. The housing

20 may have a base **21** and sidewalls **22**. The sidewalls **22** extend in the first longitudinal direction X_1 from the base **21** to define a longitudinal axis **24** and a retention chamber **23**. Preferably the housing **20** is open at the top (not numbered) to allow access into the retention chamber **23**.

[0048] The housing **20** may have a removable lid (not shown) to cover the top of the housing **20** and enclose the retention chamber **23** between the base **21** and the lid. Preferably no lid is used with the dispenser **10**. In the preferred embodiment the sidewalls **22** have an inwardly biased locking finger **26** proximate the top of the housing **20** and protruding into the retention chamber **23**.

[0049] The housing **20** also has a dispensing orifice **25** proximate the periphery (not numbered) of the base **21**. The dispensing orifice **25** may be sized and shaped to allow a wafer **100** to exit the housing **20**. The housing **20** may be made from any suitable material such as plastic, metal, wood, or glass. The most preferred material is plastic.

[0050] As shown in FIG. 4, the dispenser **10** has a peripheral annular shoulder **30** proximate the base **21**. The shoulder **30** is spaced above the base **21** in the first longitudinal direction X_1 to define a gap **40** between the shoulder **30** and the base **21**. See FIG. 3. The shoulder **30** is discontinued at the dispensing orifice **25** so as to create a wafer drop zone **50** within the gap **40**.

[0051] As shown in FIGS. 1-3, the dispenser **10** has a wafer package **60**. The wafer package **60** has an open end **62**, a closed end **61**, and sidewalls **63**. The sidewalls **63** extend in the second longitudinal direction X_2 from the closed end **61**. The wafer package **60** is configured and arranged to fit completely within the retention chamber **23** of the housing **20**. The open end **62** of the wafer package **60** is configured and arranged to be supported by the shoulder **30** when the wafer package **60** is completely inserted into the retention chamber **23**. The wafer package **60** is also configured and arranged to define a storage chamber **64**. As shown in FIG. 8, the storage chamber **64** is configured and arranged to hold a plurality of wafers **100** in a longitudinally stacked fashion. The wafer package **60** may also have a cap (not numbered) configured and arranged to seal the open end **62** of the wafer package **60** to prevent the wafers **100** from exiting the storage chamber **64** when the wafer package **60** is not inserted into the retention chamber **23**.

[0052] The wafer package **60** may be made from any suitable material such as metal, glass, or plastic. The preferred material is transparent plastic. Most preferably the wafer package **60** is made from a clear transparent plastic. Utilizing clear, transparent plastic may allow the user to see if the wafers **100** are properly aligned in the wafer package **60** prior to insertion into the dispenser **10**.

[0053] As seen in FIGS. 2-4 and 6, the dispenser **10** has a lever **70** having at least an arm **71** and a push rod **72**. The arm **71** is attached to the housing **20** about a lateral pivot axis **73** for pivoting the lever **70** between a rest position and an ejection position. The arm **71** has at least a distal end **71a** and a proximal end **71b**. Preferably the arm **71** also has a biasing means **74** for biasing the lever **70** toward the rest position. The biasing means **74** may be a compression spring, tension spring, coil spring, cantilever spring, rubber diagram, rubber band, or any other means known in the art for biasing. The most preferred biasing means **74** is a cantilever spring.

[0054] The push rod **72** has at least a proximal end **72a** and a distal end **72b**. The distal end **71b** of the arm **71** is attached to the proximal end **72a** of the push rod **72**. As shown in FIG.

6, the distal end **72b** of the push rod **72** preferably has an upper corner **72c** extending in the first longitudinal direction X_1 . Most preferably the upper corner **72c** is beveled. The beveled upper corner **72c** may allow the lever **70** to accommodate the ejection of wafers **100** having varying thickness.

[0055] The distal end **72a** of the push rod **72** radially extends into the gap **40** when the lever **70** is in the rest position. When the lever **70** is pivoted into the ejection position the distal end **72b** of the push rod **72** moves further into the gap **40** in the first transverse direction Z_1 to push a wafer **100** in the wafer drop zone **50** in the gap **40** out through the dispensing orifice **25**.

[0056] The lever **70** may be made from any suitable material such as metal, wood, or plastic. The preferred material is plastic. The lever **70** may also be integrally formed to reduce the risk of malfunction and minimize the motion and force needed to dispense a wafer **100**.

Use

[0057] The dispenser **10** may be used to dispense any type of wafer shaped food such as cookies, crackers, or communion hosts. To use the dispenser **10** a wafer package **60** containing the particular type of food wafer **100** to be dispensed is obtained. If the wafer package **60** has a cap covering the open end **62** of the wafer package **60** it may be removed. Preferably the dispenser **10** is then inverted so that the base **21** is above the opening in the top of the housing **20** to allow access to the retention chamber **23**. The open end **62** of the wafer package **60** is then inserted into the retention chamber **23** until the open end **62** of the wafer package **60** rests on the shoulder **30** of the housing **20** and the closed end **61** is engaged by the locking finger **26** to prevent the wafer package **60** from exiting the retention chamber **23**.

[0058] The dispenser **10** may then be turned upright again. Upon turning the dispenser **10** to the upright position a wafer **100** from the wafer package **60** will drop out of the wafer package **60** into the wafer drop zone **50** in the gap **40**. The dispenser **10** is then ready for use.

[0059] When a wafer **100** is needed to be dispensed a force in the second transverse direction Z_2 is applied to the proximal end **71b** of the arm **71** of the lever **70**. Moving the proximal end **71b** of the arm **71** in the second transverse direction Z_2 causes the lever **70** to pivot about the lateral pivot axis **73** and in turn move the distal end **72a** of the push rod **72** in the first transverse direction Z_1 within the gap **40** into the wafer drop zone **50**. Upon entering the wafer drop zone **50** the distal end **72a** of the push rod **72** can come in contact with the wafer **100** in the wafer drop zone **50** and push the wafer **100** in the first transverse direction Z_1 out the dispensing orifice **25**. The lever **70** then ends in the ejection position.

[0060] Upon removal of force to the proximal end **71b** of the arm **71** of the lever **70** the biasing means **74** pivots the lever **70** from the ejection position back into the rest position. When the lever **70** arrives back in the rest position, the distal end **72a** of the push rod **72** moves out of the wafer drop zone **50** allowing the next wafer **100** from the wafer package **60** to exit the storage chamber **64** and enter the wafer drop zone **50**. Wafers **100** may continue to be dispensed until the storage chamber **64** of the wafer package **60** is empty.

[0061] Once the wafer package **60** is empty, the closed end **61** of the wafer package **60** may be gripped and pulled out of the retention chamber **23** of the housing **20**. The dispenser **10** may then be inverted once again and a new wafer package **60** inserted as before.

[0062] If the wafer package 60 is not empty upon removal, the dispenser 10 may be inverted once again before removing the wafer package 60 to keep the wafers 100 from exiting the open end 62 of the wafer package 60 during removal. Once the wafer package 60 is removed the cap may be reinserted to keep the wafers 100 fresh and contaminate free until the next use. This same procedure may be used to remove the wafer package 60 during communion if a wafer 100 becomes stuck in the dispenser 10. This allows the stuck wafer 100 to be removed without requiring contamination of the remaining wafers 100 in the wafer package 60. Once the stuck wafer 100 is removed from the dispenser 10, the wafer package 60 may be reinserted into the dispenser 10 and the communion continued.

I claim:

1. A dispenser, comprising:

- (a) a housing with a base and sidewalls extending longitudinally upward from the base to define a longitudinal axis and a retention chamber with a dispensing orifice proximate the periphery of the base;
- (b) a peripheral annular shoulder proximate the base and spaced above the base in the first longitudinal direction

- to define a gap between the base and the shoulder wherein the shoulder is discontinued at the dispensing orifice so as to create a wafer drop zone within the gap;
- (c) a wafer package with a closed end, an open end, and sidewalls extending longitudinally downward from the closed end and configured and arranged to fit completely within the retention chamber of the housing and the open end to be supported by the shoulder to define a storage chamber wherein the storage chamber is configured and arranged to hold a plurality of wafers in a longitudinally stacked fashion therein; and,
- (d) a lever pivotally attached to the housing having an arm and a push rod wherein (i) a distal end of the arm is attached to the push rod and (ii) a distal end of the push rod radially extends into the gap.

2. The dispenser of claim 1 wherein the wafer package is transparent.

3. The dispenser of claim 1 wherein (i) the distal end of the push rod has an upper corner extending in the first longitudinal direction and (ii) the upper corner is beveled.

* * * * *