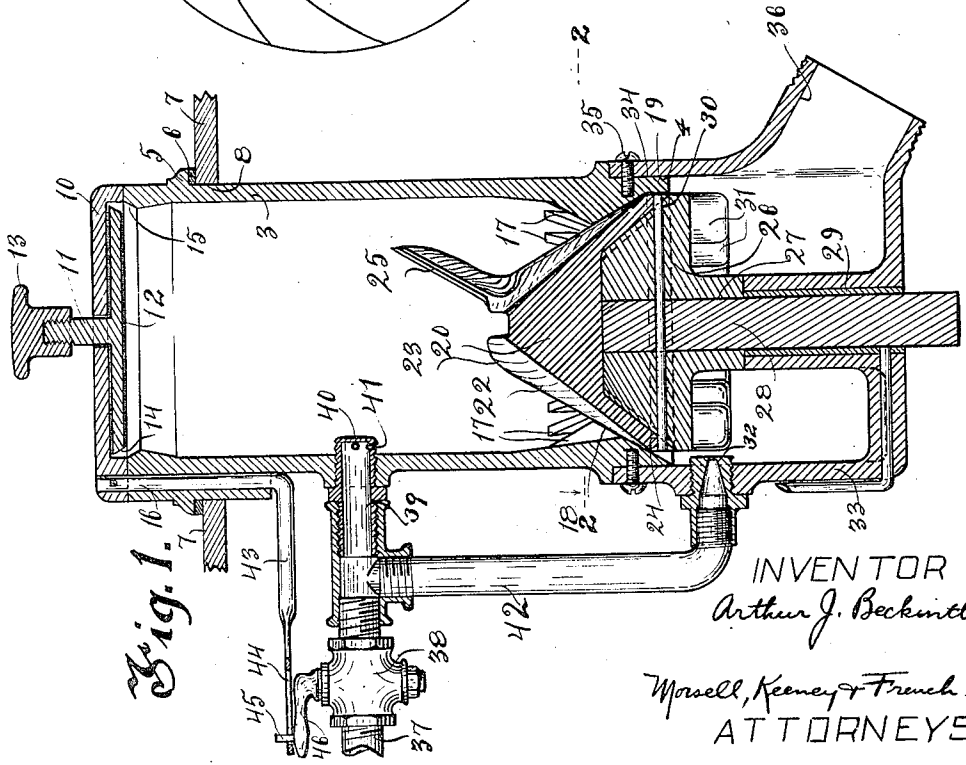
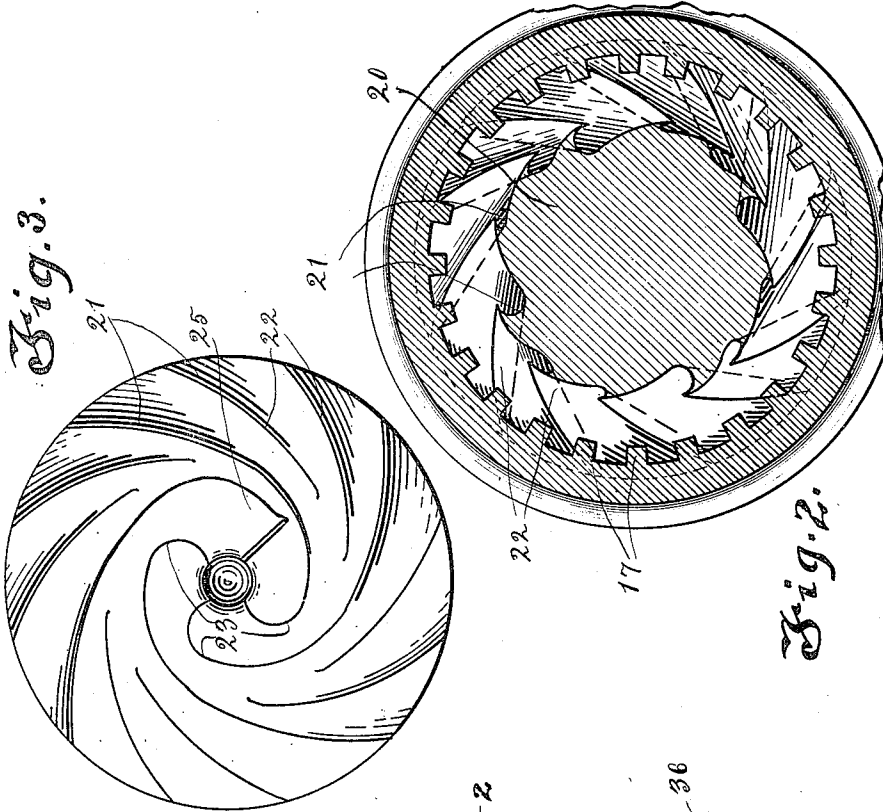


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A. J. BECKWITH.
GARBAGE CONSUMER.
APPLICATION FILED JUNE 28, 1915.

Patented Mar. 7, 1916.
2 SHEETS—SHEET 1.



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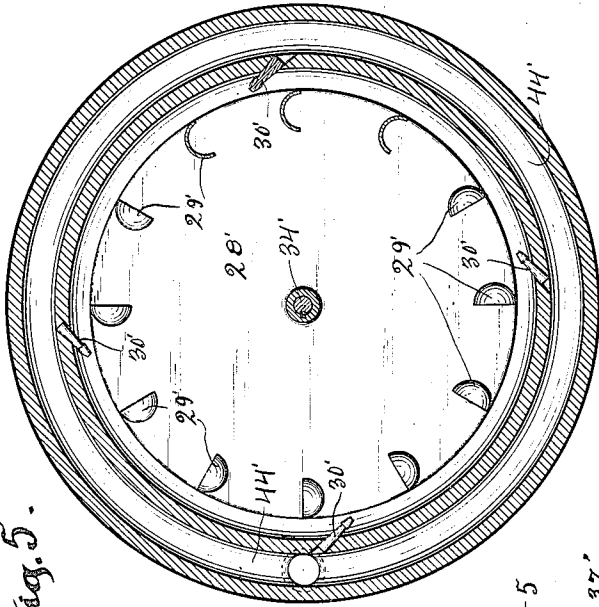


Fig. 5.

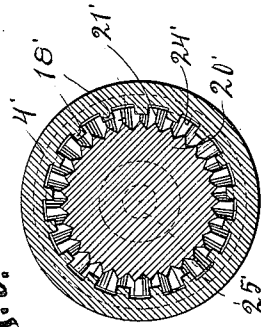


Fig. 6.

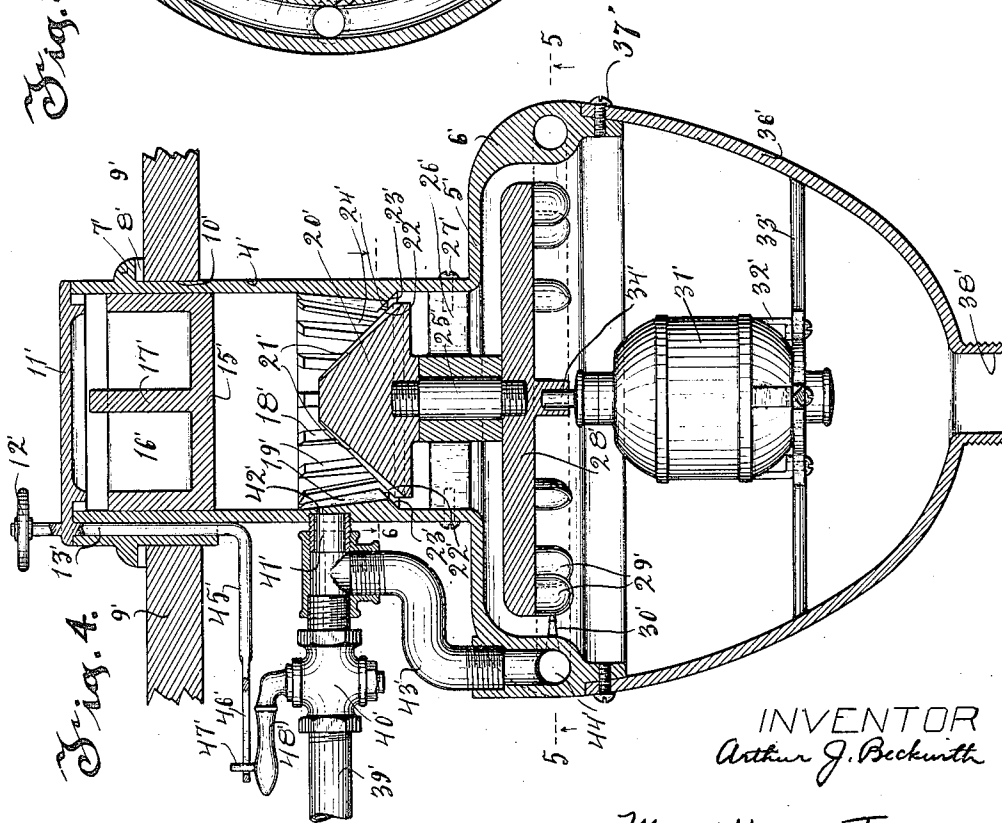


Fig. 4.

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ARTHUR J. BECKWITH, OF MILWAUKEE, WISCONSIN.

GARBAGE-CONSUMER.

1,174,656.

Specification of Letters Patent.

Patented Mar. 7, 1916.

Application filed June 28, 1915. Serial No. 36,860.

To all whom it may concern:

Be it known that I, ARTHUR J. BECKWITH, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Garbage-Consumers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The invention relates to garbage consumers.

Heretofore garbage consumers or dispensers have been made of the incinerator type for burning the garbage, but the odors arising therefrom are disagreeable and obnoxious and in some instances make their use prohibitive.

To obviate this difficulty it is the object of my invention to crush and grind the garbage into a fine comminuted condition, subjecting it, during the grinding action, to a constant flushing and discharging the ground garbage mixed with an excess of flushing water into the usual soil pipe drain.

The invention further designs to provide a garbage dispenser consisting of a garbage grinder or crusher comprising a rotary crusher head which is driven by a water-wheel, the discharge from the wheel also serving as a means for flushing the bowl receiving the ground garbage.

The invention further designs to provide a new and improved form of garbage consumer.

The invention consists in the several features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings, Figure 1 is a vertical sectional view of the device embodying the invention; Fig. 2 is a section taken on line 2-2 of Fig. 1; Fig. 3 is a detail plan view of the cutter; Fig. 4 is a vertical sectional view of a modified form of device embodying the invention; Fig. 5 is a section taken on line 5-5 of Fig. 4; Fig. 6 is a section taken on line 6-6 of Fig. 4.

The device comprises a garbage-receiving chamber or inlet passage, a crusher disposed within said chamber, means for operating the crusher, a discharge chamber or flushing bowl, and means for flushing both receiving and discharge chambers.

The garbage-receiving chamber or inlet passage is formed by a cylindrical section 3 which is provided with a conical outlet

4 and with an annular lug 5 and a rubber ring washer 6 is interposed between said lug and a support 7 within the aperture 8 in which the device is supported. The support 7 may be a part of the usual kitchen sink so that the device may be within easy reach or it may be any support within ready reach of the user. A flanged cover 10 fits upon the top of the section 3 and is provided with a central aperture 11. A supplemental cover 12 having a handle carrying lug 13 slidably mounted in the aperture 11 has a beveled edge 14 which registers with the annular beveled portion 15 adjacent the top of the section 3. The cover 10 is provided with a vertically extending rod 16 pivotally mounted in the wall 4. The supplemental cover 12 effectually seals the receiving chamber and the cover 10 is removed by raising the cover 12 upwardly against it and then swinging both covers outwardly through the pivotal connection of the rod 16 with the chamber.

The crusher or grinder consists of a fixed crushing portion and a movable crusher head. The fixed crushing portion consists of a plurality of ribs 17 integral with the wall 3 on the interior thereof, the outer surfaces of said ribs being angularly inclined or tapered downwardly, as shown at 18 in Fig. 1, and a plurality of ribs 19 integral with said wall 3 and projecting outwardly from the outlet 4.

The crusher head consists of a cone-shaped cutter 20 having helically extending grooves 21 forming tapered blades 22 some of which gradually taper and form a curved knife top portion 23 down to a meeting edge with the base 24 of the cutter and one of the blades is provided with an upwardly extending inclined blade 25 integral with said blade and serving as a cutter and agitator. The cone-shaped cutter 20 and ribs 17 form an annular pocket for receiving the garbage which is ground between the blades 22 of the cutter and the ribs 17 and is further ground between the base 24 and the ribs 19 in the outlet of the chamber. The cutter is mounted on a base member 26 provided with a central aperture 27 for receiving a shaft 28 which is journaled in a bushing 29 in a bearing portion in the flushing bowl, hereinafter described. A headed pin 30 passes through apertures in the cutter 20, base member 26 and shaft 28 and secures these parts together.

The means for operating the crusher comprises means for revolving the cutter 20 which may be a water wheel alone, a water wheel and an electric motor, or simply the electric motor. In Fig. 1, I have shown a water wheel formed by buckets 31 mounted below the base member 26 against which a jet of water from an angularly disposed nozzle 32 impinges to drive said member, shaft and cutter. In case I use an electric motor it may be connected up in any suitable manner with that portion of the shaft 28 which extends outside of the flushing bowl.

The discharge chamber or flushing bowl consists of a cylindrical-shaped receptacle 33 which is connected to the lower recessed edge 34 of the section 3 by screws 35 and which is provided with a downwardly extending inclined threaded outlet 36 which may be connected up to the usual soil or drain pipe.

The means for flushing the receiving chamber consists of water introduced through a service pipe 37, valve 38, closed section 39, openings 40 and a slot 41 in said section 39.

The means for flushing the discharge chamber consists of the water which is used to drive the wheel, which water is conducted from the pipe 37, valve 38, branch 42 into the nozzle 32. The valve 38 controls the flow of water to both chambers and this valve is automatically operated by turning the covers 10 and 12 as the rod 16 is provided with a transverse portion 43 having a longitudinal slot 44 therein in which a pin 45 on the operating handle 46 of the valve 38 is mounted.

The operation of the device is as follows:—
The operator lifts up the cover 12 until it clears the top of the receiving chamber and then swings both covers 10 and 12 to one side exposing said chamber. This swinging of the covers also rotates the rod 16 which through the portion 43, slot 44, pin 45 and handle 46 opens the valve 38, thus causing the water to flow from the pipe to both chambers, as previously pointed out. The garbage is then deposited in the receiver. Under the action of the water from the nozzle 32, the cutter 20 is revolved. The garbage feeds down by its own weight and also by the action of the inclined knife 25 which serves to automatically stir and feed the garbage to the cutter. The garbage is then cut and ground in the crusher between the cutter blades 22 and the ribs 17 and between the base 24 and the ribs 19 and flushed by the water from the pipe 39 passing down into the bowl 33 where it is further mixed with the flushing water from the nozzle 32 and carried out through the outlet 36 into the soil pipe. The chamber, formed by the wall 3 and in which the crusher is located, constitutes an inlet chamber or passage for the flushing bowl.

In the modified form the garbage receiving chamber or inlet is formed by a cylindrical wall 4' which is enlarged at its base 5' to form a cone-shaped portion 6'. The wall 4' of the chamber is provided with an annular lug 7' and a rubber ring washer 8' is interposed between said lug and a support 9' within the aperture 10' on which the device is supported. The support 9' may be part of the usual kitchen sink so that the device may be within easy reach or it may be any support within ready reach of the user. A flanged cover 11' fits over the top of the chamber and is provided with a handle 12' and a vertically extending rod 13' pivotally mounted in one of the sides of the wall 4'. A cylindrical plunger 15' having a recessed head 16' and a flanged handle 17' is slidably mounted within the cylindrical wall 4'.

The crusher consists of a fixed crushing portion and a movable crusher head. The fixed crushing portion consists of a plurality of ribs 18' integral with the wall 4' on the interior thereof, the outer surface of said ribs being angularly inclined or tapered downwardly, as shown at 19' in Fig. 4.

The crusher head consists of a rotary cone-shaped bevel cutter 20' whose inclined cutting edges 21' at their lower portion 22' are closely disposed adjacent the lower beveled ends 23' of the ribs 18'. The cone-shaped cutter 20' and the ribs 18' form an annular pocket for receiving the garbage which is ground between the blades 21' of the revolving cutter and the ribs 18' and wall 4' and passes down through the annular channel 24' between said cutter and the wall 4'. The cutter 20' is mounted on a stud shaft 25' which is journaled in a spider 26' secured by screws 27' to the wall 4'.

The means for operating the crusher comprises means for revolving the cutter 20' which may be a water-wheel alone, a water-wheel and an electric motor, or simply the electric motor. In Fig. 4 I have shown both a water wheel 28' mounted on the shaft 25' and having buckets 29' on its bottom side against which the jets of water from a plurality of nozzles 30' impinges to drive said wheel and also an inclosed electric motor 31' mounted on a bracket 32' on a spider 33' within the discharge chamber, the shaft 34' of the motor being keyed to the wheel 28'.

The discharge chamber or flushing bowl consists of cone-shaped portion 6' to the lower recessed edge 35' of which a bowl 36' is connected by screws 37' which bowl is provided with a threaded outlet section 38' which may be connected up to the usual soil or drain pipe.

The means for flushing the receiving chamber consists of water introduced through a service pipe 39', valve 40', section 41', opening 42' in the wall 4'. The means for flushing the discharge chamber consists

of the water which is used to drive the water wheel, which water is conducted from the pipe 39', valve 40', branch 43' into an annular section 44' from which it passes through the nozzles 30'. The valve 40' controls the flow of water to both chambers and this valve is automatically operated by the raising and turning of the cover 11' as the rod 13' is provided with a transverse portion 45' having a longitudinal slot 46' therein in which a pin 47' on the operating handle 48' of the valve 40' is mounted.

The operation of the modified form of device is as follows:—The operator lifts up the cover 11' until its flange clears the upper edge of the wall 4' then swings it to one side. This swinging of the cover also rotates the rod 13' which through the portion 45', slot 46', pin 47' and handle 48' opens the valve 40', thus causing the water to flow from the pipe 39' to both chambers, as previously pointed out. Then the plunger 15' is removed and the garbage deposited in the receiving chamber and the plunger again replaced. Under the action of the water from the nozzles 30' turning the water wheel 28', the cutter 20' is revolved, or the motor and wheel may be used to turn the cutter. The plunger, acting under gravity presses the contents of the receptacle downwardly and serves as an automatic feed and the garbage, under the action of the crusher, previously set forth, and the spray from the pipe 41' passes down through the receiving chamber and into the discharge chamber where it is also further mixed with flushing water from the nozzles 30' and passes through the outlet 38' into the soil pipe. The chamber, in which the crusher is located, formed by the wall 4' constitutes an inlet or receiving chamber or passage for the flushing bowl.

The invention thus exemplifies a garbage consumer in which the garbage is disposed of by grinding and flushing it down the usual soil pipe.

What I claim as my invention is:—

1. In a garbage consumer, the combination, with a soil pipe, of a flushing bowl, a receiving chamber for the bowl, a crusher disposed within said chamber, an agitator connected to said crusher, and means for flushing said bowl.

2. In a garbage consumer, the combination, with a soil pipe, of a flushing bowl communicating therewith, a receiving chamber for the bowl, and a crusher disposed in said chamber, said crusher including an annular ribbed portion in the chamber, and a rotary conical crusher member closely fitting within said chamber adjacent said ribbed portion to deliver the garbage to the soil pipe in finely crushed condition.

3. In a garbage consumer, the combination of a receiving receptacle, a crusher disposed within said receptacle, a discharge recepta-

cle communicating with said receiving receptacle, means for operating said crusher, and means for simultaneously flushing the receiving and discharge receptacle.

4. In a garbage consumer, the combination of a receiving receptacle, a rotary crusher disposed within said receptacle, means for automatically feeding the garbage to the crusher, a discharge receptacle communicating with said receiving receptacle, means for operating said crusher, and means for flushing the ground garbage from the discharge receptacle.

5. In a garbage consumer, the combination of a receiving receptacle, a crusher, means for automatically feeding the garbage to the crusher, a discharge receptacle communicating with said receiving receptacle, means for conducting flushing water to both receptacles, a cover on the receiving receptacle, and means operatively connected to the cover to control the operation of said water conducting means.

6. In a garbage consumer, the combination of a receiving receptacle, a crusher including a rotary cutter disposed within said receptacle, a discharge receptacle communicating with said receiving receptacle, means including a water wheel for operating said rotary cutter, means for directing the water against said wheel, the water from the wheel also serving to flush the ground garbage from the discharge receptacle.

7. In a garbage consumer, the combination of a receiving receptacle, a crusher, including a rotary cutter disposed within said receptacle, means for automatically feeding the garbage to the crusher, a discharge receptacle communicating with said receiving receptacle, means for conducting flushing water to both receptacles, a water-wheel for driving said cutter operated by the flush water for the discharge receptacle, a cover on the receiving receptacle, and means operatively connected to the cover to control the operation of said water conducting means.

8. In a garbage consumer, the combination with a soil pipe, of a flushing bowl, a receiving chamber for the bowl, a removable cover for sealing said chamber, a crusher within said chamber comprising fixed and movable members, a water wheel for driving said crusher, and a nozzle disposed in the side of the flushing bowl for delivering water against the wheel and for flushing the bowl.

9. In a garbage consumer, the combination, of a flushing bowl, a receiving chamber for the bowl, a crusher disposed within said chamber including a conical crusher member, an agitator connected to said crusher member, and means for flushing said bowl.

10. In a garbage consumer, the combination, with a flushing bowl and a receiving chamber, of a crusher disposed within said

- chamber above the bowl comprising a plurality of ribs forming a portion of said chamber, and a rotary conical crusher provided with helically curved blades closely fitting within said ribs, one of said blades extending upwardly into the chamber to form an agitator and cutter, and means for simultaneously flushing both said bowl and chamber.
- 10 11. In a garbage consumer, the combination, with a flushing bowl and an inlet passage to said bowl, of a series of inwardly projecting ribs in said passage having tapered crushing surfaces, a conical crusher member provided with blades closely disposed adjacent said ribs, a series of ribs in said passage having straight crushing surfaces the base of said crusher closely disposed adjacent said second series of ribs, 15 means for operating the crusher member, and means for flushing both the inlet passage and the bowl.
12. In a garbage consumer, the combination, with a flushing bowl and a receiving chamber, of a crusher disposed within said chamber above the bowl comprising a crushing surface on the chamber and a rotary crusher provided with blades, one of said blades extending upwardly into the chamber to form an agitator and cutter, and means 25 for flushing the bowl.
13. In a garbage consumer, the combination, with a flushing bowl and a receiving chamber, of a crusher disposed within said chamber above the bowl comprising a crushing surface on the chamber, and a rotary conical crusher provided with helically curved blades, one of said blades extending upwardly into the chamber to form an agitator and cutter, and means for flushing the 35 bowl.
- In testimony whereof, I affix my signature.
- ARTHUR J. BECKWITH.