

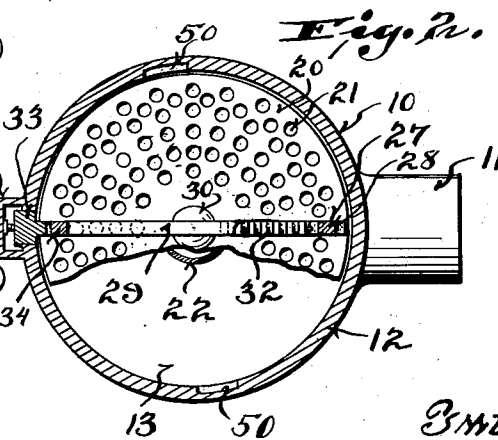
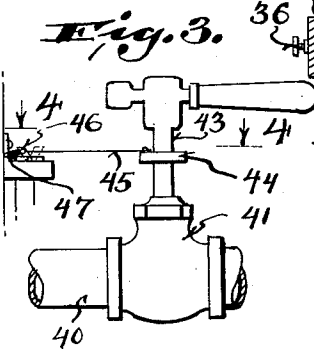
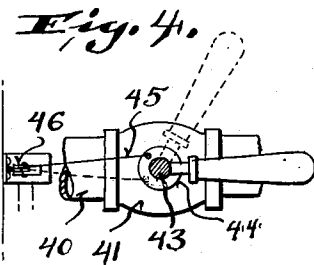
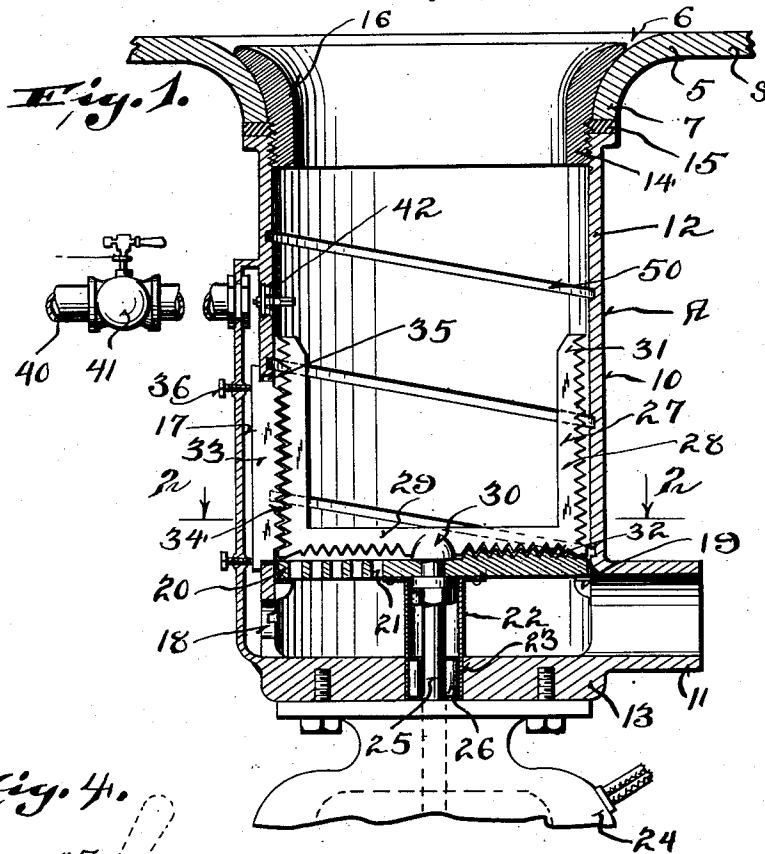
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GARBAGE DISPOSAL DEVICE

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GARBAGE DISPOSAL DEVICE

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This invention appertains to garbage disposal devices and more particularly to a novel attachment for kitchen sinks whereby the garbage can be delivered directly to the drain and sewer pipe, as the same is taken from the table, etc., thereby eliminating the necessity of keeping the garbage in cans for collection with the contingent inconveniences.

Another salient object of my invention is the provision of a garbage disposal device which is adapted to be incorporated between the sink and the drain pipe and having novel means incorporated therein for insuring the proper disintegration of the garbage, so that the same will readily pass down the drain and sewer pipe without any danger of clogging the same.

Another important object of my invention is the provision of a garbage disposal attachment for kitchen sinks including a casing connected directly with the drain outlet of the sink at its upper end and with the drain pipe at its lower end, novel means being provided for grinding or reducing the garbage as the same goes into the casing, so that the garbage will be reduced to small particles for ready passage through the drain pipe with the drain water.

A further important object of my invention is the provision of novel means for arranging the grinding device within the casing and novel means for operating the grinding device from an electric motor, whereby all manual operation incident to the disposal of garbage is eliminated.

A further object of my invention is the provision of novel means for insuring the proper flushing of the garbage disposal device as the garbage is being reduced in size, so that the garbage will be effectively carried down the drain and sewer pipe.

A further object of my invention is the provision of novel means for automatically setting the electric motor in operation when the control valve for the flushing water is open, whereby all inconvenience of operating the device on the part of the operator is reduced to a minimum.

A further object of my invention is the provision of novel means for directing the flow of the drain water through the device, so as to insure the effective carrying of the reduced garbage into the drain pipe, a certain part of the water being adapted to flow directly into the casing and a certain other part of the water adapted to flow under the grinding means arranged in the casing and directly into the drain pipe.

A further object of my invention is the provision of a novel cutter head secured to the arma-

ture shaft of the motor, said head being of a substantially U-shape in side elevation and having novel cutting teeth on the outer edges of the horizontal and vertical portions thereof for cooperation with novel cutter members immovably carried by the casing.

A still further object of my invention is to provide a novel garbage disposal attachment for sinks of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawing, in which:

Figure 1 is a central longitudinal section through my improved garbage disposal device showing one method of incorporating the same with the drain outlet of a sink.

Figure 2 is a horizontal section taken through the same taken on the line 2—2 of Figure 1 looking in the direction of the arrows.

Figure 3 is a side elevation illustrating diagrammatically the means for controlling the switch of the motor from the water valve.

Figure 4 is a fragmentary top plan view showing diagrammatically the means for operating the control switch for the valve.

Referring to the drawing in detail, wherein similar reference characters designate the corresponding parts throughout the several views, the letter A generally indicates my improved garbage disposal attachment, which is adapted to be incorporated with a sink S.

The sink S can be substantially of the ordinary or any preferred character and only a sufficient portion thereof has been shown to illustrate one method of connecting my device with said sink. As shown, the sink S embodies a bottom wall 5 having a drain opening 6 surrounded by a depending flange or skirt 7.

My improved garbage disposal attachment A preferably includes a cylindrical casing 10 formed from any desired material, preferably of a non-corrodible nature, such as aluminum. The lower end of the casing at one side is provided with a drain outlet 11 which is adapted to be connected directly with the drain and sewer pipe (not shown). As stated, the casing 10 can be of a cylindrical shape and as shown, the casing includes the cylindrical side wall 12 and a relatively heavy bottom wall 13. The inner

face of the side wall 12 at its upper end is provided with internal screw threads 14 and the top of the casing is disposed adjacent to the lower edge of the skirt 7. A compressible gasket 15 is interposed between the top of the casing and the lower edge of the skirt or flange 7. A coupling collar 16 is arranged within the outlet or drain opening 6 of the sink S and is threaded into engagement with the threads of the casing. The upper end of the coupling collar 16 conforms to the shape of the wall of the drain opening, and this provides an efficient and simple means for connecting the casing in its desired position.

The casing at one side is provided with a supplemental longitudinally extending flush passageway 17, which is arranged externally of the side wall 12 of the casing. The lower end of this passageway, however, communicates as at 18 with the lower end of the casing and at a point substantially diametrically opposite the drain outlet 11.

Disposed above the bottom wall 13 of the casing and slightly above the drain outlet 11 and the flush opening 18 is a plurality of inwardly extending radially disposed lugs 19 on which is adapted to detachably fit a drain plate 20 having a plurality of small drain openings 21 therein. This drain plate can have connected therewith a tubular sleeve 22 which fits into an opening 23 formed in the bottom wall 13.

Bolted or otherwise secured to the bottom wall 13 is the casing of an electric drive motor 24. This motor 24 is of the desired fractional horsepower and the armature shaft 25 thereof extends through the bottom wall 13, the tubular sleeve 22 and the drain plate 20, for a purpose which will be hereinafter more fully set forth. Roller bearings 26 can be carried by the sleeve 22 for facilitating the proper rotation of the armature shaft.

I have provided novel means for reducing the garbage to a small size for passage through the drain opening 11, as the garbage is introduced into the casing. This means embodies a substantially U-shaped grinder and cutter head 27. This cutter and grinder head 27 embodies the spaced vertical arms 28 and the connecting horizontal or bight portion 29. The central part of the connecting bight portion 29 is provided with a coupling head 30, which is secured in any desired manner to the upper end of the armature shaft 25. The outer edges of the arms 28 and the connecting bight portion 29 are provided with V-shaped cutting and grinding teeth 31.

Formed directly on the upper face of the drain plate 20 is a radially extending row of stationary V-shaped cutting teeth 32, which are adapted to cooperate with the cutting teeth on the lower edge of the cutter head as the cutter head rotates.

I also provide an adjustable non-rotatable cutter bar 33. The inner edge of this cutter bar 33 is also provided with substantially V-shaped cutting teeth 34 for cooperation with the teeth on the arms 28, as the same sweep past the cutter bar. This cutter bar 33 extends through a vertical slot 35 formed in the side wall 12 of the casing and can be held in place and accurately adjusted for wear by means of screws 36. If desired, the teeth on the arms 28 and on the cutter bar 33 can be of a relatively coarse nature for initially acting on the garbage to reduce the same to small particles, and the teeth on the lower edge and the row of teeth 32 can

be of a finer nature so as to reduce the garbage to a more minute condition.

Communicating with the passageway 17 at its upper end is a water conducting flush pipe 40 and this pipe 40 has disposed within its length a control water valve 41, which is preferably disposed above the sink and adjacent to one of the water faucets, so that ease of operation thereof will be assured. Arranged directly within the side wall 12 in front of the flush pipe 40 is a valve controlled water opening 42 and this valve is of an adjustable nature, so that the water flowing through the passage can be controlled.

As heretofore stated, it is one of the primary objects of my invention to provide a novel means for automatically setting the motor into operation as the control valve 41 is opened. Thus, means is provided for operating the switch for the motor as the valve is manipulated. Any preferred type of switch controlled means can be utilized and I do not wish to limit myself to any particular type of switch and switch operating means. For the purpose of illustration, I have shown the valve stem 43 of the valve 41 provided with a collar 44 to which is attached a pull cord 45. This pull cord is in turn secured to a switch lever 46 which switch lever is normally held in a circuit open position by means of a contractile coil spring 47. The arrangement is preferably such that upon initial opening of the valve, flush water will be supplied to the device and as the stem is further turned to permit a larger supply of water, the switch is moved to its circuit closing position. Thus, by referring to Figures 3 and 4 of the drawing, it will be noted that when the stem is moved to the position shown in Figure 4, no movement of the switch lever will take place due to the fact that the cord will slacken. However, upon further movement of the valve, a pull will be exerted on the cord moving the switch lever to its closed position against the tension of the spring 47. As soon as the valve is turned to its closed position, the spring 47 will return the switch to its open position.

In operation of my improved device, the garbage is thrown into the casing 10 and the water valve 41 is opened. This will allow a continuous flow of water through the passageway 17 and through the bottom of the casing under the drain plate 20 and out the outlet 11. Upon the opening of the valve, the motor switch 46 will be moved to its closed position and consequently, the motor will start operating. This brings about the rotation of the head and the cutter head cooperating with the stationary cutting teeth 32 will effectively grind up and reduce the garbage to minute particles. The sweep of the cutter head past drain plate 20 tends to force the garbage through the drain openings 21. If preferred, the arms can be slightly canted in opposite directions similar to a propeller so as to effectively agitate the garbage and the water. As the particles of garbage are dropped in the drain openings 21, the same are carried down the drain pipe with the flow of the flush water. Obviously, some of the water will enter through the valve control port 42 and this also helps to wash the minute particles of garbage through the drain openings 21. If preferred, one of the ordinary faucets of the sink can be opened so as to facilitate the flushing of the garbage through the device.

A spiral groove 50 can be formed in the inner face of the wall 12 of the casing 10, if so desired,

and this groove also facilitates the directing of the garbage downwardly to the plate 20.

The rotation of the cutter head 27 sets up a centrifugal action on the water and garbage flowing through the casing, and thus throws the garbage toward the side wall 12 of the casing, and against the groove 50. Thus the spiral groove feeds or winds the garbage downwardly against the drain plate 20. This is important and insures the proper and quick grinding up of said garbage.

From the foregoing description, it can be seen that I have provided an exceptionally simple and durable attachment for sinks for facilitating the effective disposal of garbage.

Changes in details may be made without departing from the spirit or the scope of this invention, but what I claim as new is:—

1. In a garbage disposal attachment for kitchen sinks, a casing having drain outlet at its lower end for communication with a drain and sewer pipe, a perforated drain plate disposed above the lower wall of the casing and above the bore of the drain outlet, a radial row of cutter teeth on the upper face of the drain plate, a motor secured to the bottom wall of the casing having an armature shaft extending through the axial center of the drain plate, a U-shaped cutter head secured to the armature shaft above the drain plate having cutting teeth on its outer edges, an adjustable cutter plate carried by one side of the casing for cooperation with the cutter teeth on the arms of the cutter head, and means for supplying flush water above and below the drain plate.

2. In a garbage disposal attachment for kitchen sinks, a casing having a drain outlet at its lower end for communication with a drain and sewer pipe, a perforated drain plate disposed above the lower wall of the casing and above the bore of the drain outlet, a radial row of cutter teeth on the upper face of the drain plate, a motor secured to the bottom wall of the casing having an armature shaft extending through the axial center of the drain plate, a U-shaped cutter head secured to the armature shaft above the drain plate having cutting teeth on its outer edges, an adjustable cutter plate carried by one side of the casing for cooperation with the cutter teeth on the arms of the cutter head, and means for supplying flush water above and below the drain plate, and the inner wall of said casing having a spiral groove extending from the top of the casing to the drain plate, as and for the purpose specified.

3. In a garbage disposal attachment for kitchen sinks, a casing having a drain outlet at its lower end for communication with a drain and sewer pipe, a perforated drain pipe disposed above the lower wall of the casing and above the bore of the drain outlet, a radial row of cutter teeth disposed above the top face of the drain plate, an axially disposed drive shaft, means for rotating said drive shaft, a U-shaped cutter head secured to the drive shaft above the drain plate having cutting teeth on its outer edges, and a cutter plate carried by one side of the casing for cooperation with the cutter teeth on the arms of the cutter head.

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