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GARBAGE DISPOSAL MACHINES

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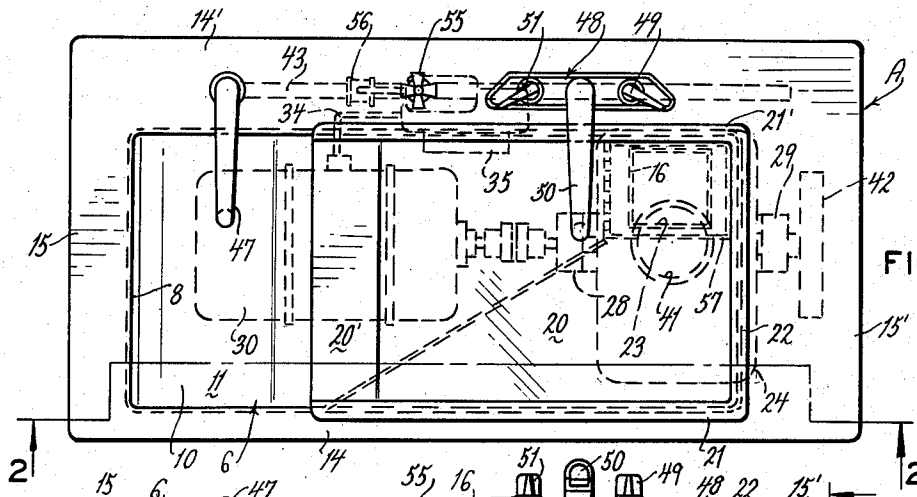


FIG. 1.

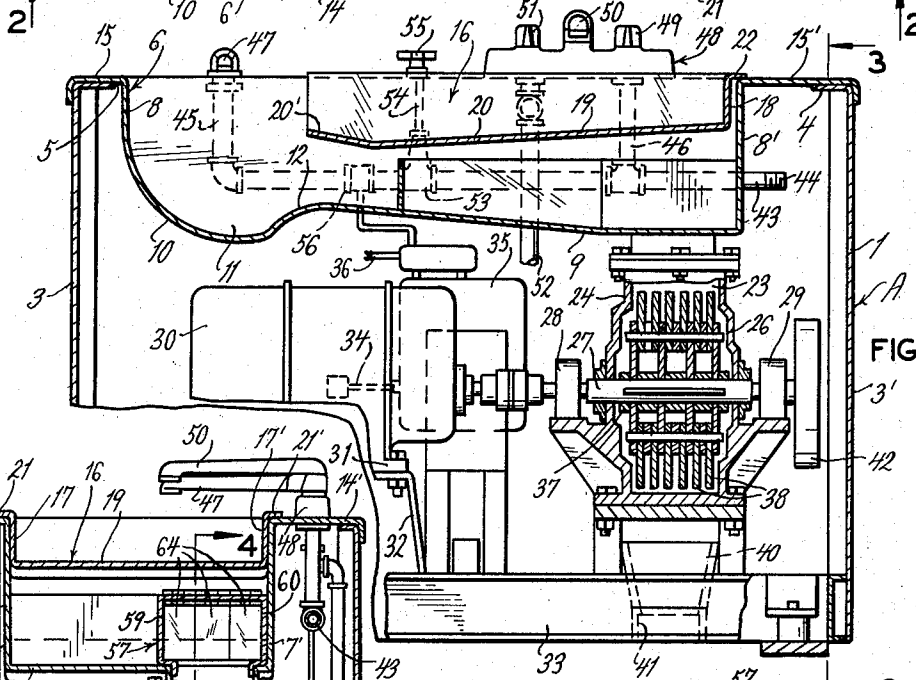


FIG. 2.

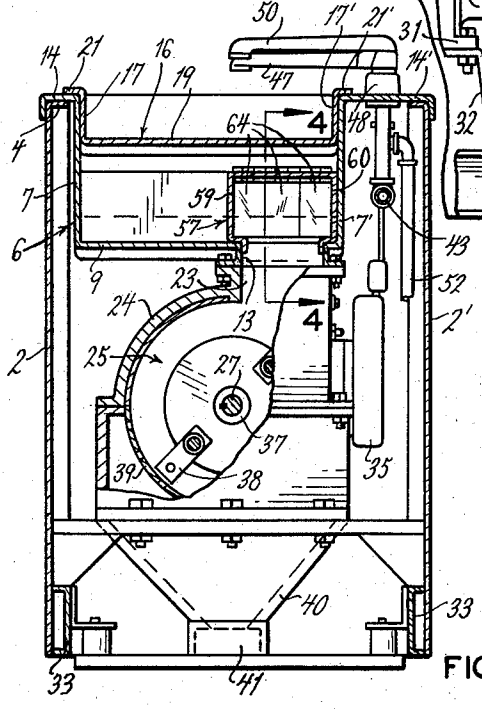


FIG. 3.

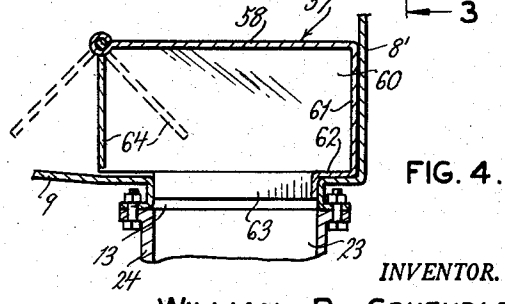


FIG. 4.

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GARBAGE DISPOSAL MACHINES

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5 Claims. (Cl. 241—46)

This invention relates in general to garbage disposal machines and, more particularly, to certain new and useful improvements in machines for sluicing off table scraps, garbage, and the like from dishes and reducing same to a finely divided state for suspension in a flowing stream of water.

It is the primary object of the present invention to provide a garbage disposal machine capable of handling a large volume of work for use in large restaurants, mess halls, and the like where large numbers of people are fed.

It is also an object of the present invention to provide a garbage disposal machine which is readily adaptable to disposal of so-called "yard" garbage in restaurants, that is to say, garbage resulting from preparation of food in restaurants, such as peelings, vegetable tops, and the like.

It is another object of the present invention to provide a garbage disposal machine which incorporates water-flow means for sluicing table scraps from used tableware through a rotary hammermill for disintegration and, at the same time, pre-rinsing the tableware with the flushing water so as to make the tableware more easily and completely cleansible in a dish washing machine.

It is a further object of the present invention to provide a garbage disposal machine which incorporates means for preventing the entrance into the machine of silverware and other utensils associated with the plates to be scrapped.

It is an additional object of the present invention to provide a garbage disposal machine which reduces food scraps and garbage to a very fluid sludge or suspension for discharge into a sewer with a minimum wastage of water.

It is a further object of the present invention to provide a garbage disposal machine which is economical in construction, reliable in operation, and includes an interlocking control between the motor and the water valve to insure safe operation.

With the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a top plan view of a garbage disposal machine constructed in accordance with and embodying the present invention;

Figure 2 is a transverse sectional view taken along line 2—2 of Figure 1;

Figure 3 is a transverse sectional view taken along line 3—3 of Figure 2; and

Figure 4 is a fragmentary sectional view taken along line 4—4 of Figure 3.

Referring now in more detail and by reference characters to the drawings, which illustrate a preferred embodiment of the present invention, A designates a garbage disposal machine comprising a rectangular box-like housing or cabinet 1, fabricated preferably of sheet metal and having vertical front and back walls 2, 2', end walls 3, 3', and a top wall 4, a substantial portion of which is cut away in the provision of a rectangular aperture 5 opening into the interior of the container 1. Disposed within the aperture 5 is a rectangular tray or pan member 6 having upstanding side walls 7, 7', joined at their opposite ends to transverse or end walls 8, 8'. Formed integrally with and extending across the lower margins of the side walls 7, 7', and end walls 8, 8', is a bottom wall 9 having an initial arcuate portion 10 curving downwardly from the end wall 8 to form a shallow well 11 and curving thence upwardly to form a shoulder or ridge-like portion 12. Beyond the shoulder 12, the bottom wall 9 slopes gently downwardly to the other end wall 8' and adjacent thereto is provided with a rectangular aperture 13. The side walls 7, 7', and the end walls 8, 8', are integrally provided on their upper margins with outwardly extending flanges 14, 14', 15, 15' respectively, which rest upon the adjacent upper surfaces of the top wall 4 of the housing 1 to maintain the tray member 6 in position.

Provided for slidable disposition within the open top portion of the tray 6 is an auxiliary tray 16 having two longitudinal side walls 17, 17', and a single transverse end wall 18 being open at its other transverse end. Formed integrally with and extending across the lower margins of the side walls 17, 17', and end wall 18 is a bottom wall 19 having a downwardly inclined portion 20 and upwardly inclined portion 20'. The side walls 17, 17', and end wall 18 are further integrally provided around their upper margins with flanges 21, 21', and 22, respectively, for sliding and supportive engagement with the tray 6, as best seen in Figures 1 and 2.

Secured, as by welding, to the under face of the bottom wall 9, in marginal alignment with the rectangular aperture 13, is a downwardly extending chute 23 which is connected with and opens into the housing 24 of a rotary hammermill 25.

The hammermill 25 comprises a cylindrical cage 26 through which extends a shaft 27 projecting at its ends through suitable apertures in the walls of the housing 24. The projecting portions of the shaft 27 are mounted in journal bearings 28, 29, and connected to a conventional electric motor 30 suitably supported upon angle sections 31 which are, in turn, mounted upon plates 32 held in elevated relation to the floor or other support surface by upstanding angle sections 33 (see Figure 3). Leading from the motor 30 is a cable 34 connected to a control box 35 mounted on a convenient external portion of the motor 30 and is connected by a cable 36 to a source of electricity (not shown).

Keyed upon the shaft 27 within the housing 24 is a sleeve 37 having mounted thereon a plurality of oppositely extending hammers 38. Disposed within the cage 26 of the hammermill 25 and about the lower portion thereof is a semi-cylindrical grinder screen 39, positioned in its bottom section across a discharge aperture 40 provided in the hammermill 25 which opens into a discharge pipe 41, which is conventionally connected to a sewer line (not shown). Mounted on one external end of the shaft 27 is a fly-wheel 42 for moderating any fluctuations in speed of rotation of the shaft 27.

Extending along the interior face of the back wall 2' is a cold-water pipe 43 suitably threaded at its inlet end 44 for conventional connection by any suitable pipe-fitting to a source of cold water (not shown). Similarly connected to the pipe 43 by vertical risers 45, 46, are a dish-sluicing, horizontally swingable faucet-spout 47, and a dual mixer-type sink faucet 48 having a cold-water valve 49, a horizontally swingable faucet-spout 50, and a

hot-water valve 51, the latter being connected through a supply pipe 52 to any suitable source of hot water (not shown). Between the risers 45, 46, the pipe 43 is provided with a valve 53 operably connected by an elongated valve stem 54 to a handle 55 located accessibly on the rear flange 14' of the pan member 6. Similarly, between the valve 53 and riser 45, the pipe 43 is provided with a conventional flow-responsive switch 56 electrically connected to the control box 35 to provide a safety interlock between the pipe 43 and motor 30 so that the latter will be turned on only when water is flowing to the riser 45 and thence outwardly through the faucet-spout 47. In other words, the handle 55 constitutes a single control for turning on and turning off both flow of electric current to the electric motor 30 and the flow of water to the faucet-spout 47.

Provided for removable co-operation with the tray or pan member 6 is an enclosed rectangular safety feed-box 57 formed of sheet metal and integrally including a horizontal top wall 58, vertical front and rear walls 59, 60, a vertical end wall 61, and a three-sided bottom-flange 62 extending horizontally inwardly from and around the lower margins of the front, rear and end walls 59, 60, 61. The bottom flange 62 is bent downwardly along its inner margins in the provision of a three-sided vertical lip 63 sized for snug-fitting telescopic disposition within the upwardly presented open end of the chute 23. Hingedly connected to and depending from the inwardly presented transverse margin of the top wall 58 are three swinging doors 64 which are arranged in marginally abutting lateral alignment when stationary and being of such length as to reach down to but clear the upper face of the bottom wall 9 of the tray or pan member 6, as best seen in Figure 4.

In operation, with water being discharged through the faucet-spout 47 into the well 11 of the tray 6 and the motor 30 running, dishes and tableware may be held under the stream of water and any scraps remaining thereon will be sluiced off. The food scraps will thus be carried by the continuous flow of water over the shoulder 12 through the swinging doors 64 and thence through the chute 23 into the cage or grinding chamber 26 of the hammermill 25. Therein, the food particles and scraps will be pulverized until of sufficient fineness to pass through the mesh or screen 39 and into the discharge pipe 41.

In the event that silverware associated with the plates being washed should inadvertently fall into the well 11, there is no danger of such being carried through the machine for possible damage thereto, since the shoulder 12 will effectively block any further movement of the silverware. Dishes and tableware can further be pre-rinsed under the faucet-spout 50 as necessary or desired, in which case the auxiliary tray 16 will operate as an additional silver-catching means. For purposes of cleaning, the auxiliary tray 16 and feed-box 57 may be completely removed whenever desired.

The machine A is thus designed to serve simultaneously in a dual capacity. It functions both as a dish scraper and as a garbage grinder, it being evident that the time saving effected thereby appreciably reduces the number of employees ordinarily required in a restaurant, cafeteria, and the like.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the garbage disposal machine may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A garbage disposal machine comprising a housing having an oblong rectangular tray-like top member provided with an elongated rectangular top opening and having a bottom wall separated into two portions by a transverse upstanding shoulder, one of said portions being downwardly curved to provide a dished well extending transversely across one end of said top member, the other portion being inclined downwardly away from the shoulder in a gentle slope, an auxiliary tray having a bottom wall disposed substantially below the plane of the rectangular top opening, said tray being shiftably disposed upon said top member for movement lengthwise of said top member, said tray furthermore being open across one transverse end so as to discharge the garbage-laden stream of water downwardly into a tray-like top member, a grinder of the hammermill type disposed in said housing and communicating with said top member through an aperture in the top member adjacent one end thereof, means for directing a flow of water into the other end of the top member with respect to the grinder for washing food scraps into and along said top member and thence into the grinder for disintegration, and a substantially vertical baffle extending angularly from one longitudinal side wall of the tray-like top member angularly inwardly toward the aperture.

2. A garbage disposal machine comprising a housing having an oblong rectangular tray-like top member provided with an elongated rectangular top opening and having a bottom wall separated into two portions by a transverse upstanding shoulder, one of said portions being downwardly curved to provide a dished well extending transversely across one end of said top member, the other portion being inclined downwardly away from the shoulder in a gentle slope, an auxiliary tray having a bottom wall disposed substantially below the plane of the rectangular top opening, said tray being shiftably disposed upon said top member for movement lengthwise of said top member, said auxiliary tray being closed along one transverse end and being open at its other transverse end, said tray further being provided with a downwardly inclined bottom wall which is turned upwardly adjacent the open end in the provision of a lip, a grinder disposed in said housing and communicating with said top member through an aperture in the top member adjacent one end thereof, and means for directing a flow of water into the other end of the top member with respect to the grinder for washing food scraps into and along said top member and thence into the grinder for disintegration.

3. A garbage disposal machine comprising a housing having an oblong rectangular tray-like top member provided with an elongated rectangular top opening and having a bottom wall separated into two portions by a transverse upstanding shoulder, one of said portions being downwardly curved to provide a dished well extending transversely across one end of said top member, the other portion being inclined downwardly away from the shoulder in a gentle slope, an auxiliary tray having a bottom wall disposed substantially below the plane of the rectangular top opening, said tray being disposed upon said top member for movement lengthwise of said top member, said auxiliary tray being of such length as to extend in overlying relationship above the inclined portion of the tray-like top member from the upstanding shoulder to the lowermost point thereof, a grinder of the hammermill type disposed in said housing and communicating with said top member through an aperture in the top member adjacent one end thereof, means for directing a flow of water into the other end of the top member with respect to the grinder for washing food scraps into and along said top member and thence into the grinder for disintegration, and a substantially vertical baffle extending angularly from one longitudinal side wall of the tray-like top member angularly inwardly toward the aperture.

4. A garbage disposal machine comprising a housing having an oblong rectangular tray-like top member provided with an elongated rectangular top opening and having a bottom wall separated into two portions by a transverse upstanding shoulder, one of said portions being downwardly curved to provide a dished well extending

transversely across one end of said top member, the other portion being inclined downwardly away from the shoulder in a gentle slope, an auxiliary tray having a bottom wall disposed substantially below the plane of the rectangular top opening and having a downwardly inclined bottom wall extending over the inclined portion of the tray-like top member, said tray being disposed upon said top member for movement lengthwise of said top member, said auxiliary tray being of such length as to extend in overlying relationship above the inclined portion of the tray-like top member from the upstanding shoulder to the lowermost point thereof, a grinder of the hammermill type disposed in said housing and communicating with said top member through an aperture in the top member adjacent one end thereof, means for directing a flow of water into the other end of the top member with respect to the grinder for washing food scraps into and along said top member and thence into the grinder for disintegration, and a substantially vertical baffle extending angularly from one longitudinal side wall of the tray-like top member angularly inwardly toward the aperture.

5. A garbage disposal machine comprising a housing, an oblong rectangular tray disposed closurewise across the top of the housing and being provided with an elongated rectangular top opening and having a curved bottom wall formed into a downwardly curved well and a gently inclined surface separated by a transversely extending shoulder, said inclined surface having an aperture at its lower end, an auxiliary tray mounted across the top opening and having a bottom wall spaced downwardly from the top opening, said bottom wall being inclined in the

opposite direction with respect to the inclination of the inclined surface, said auxiliary tray being open across its inner transverse margin in the position of a discharge lip which is located approximately above the shoulder, a grinder of the hammermill type disposed in said housing and communicating with said aperture, said grinder having its shaft substantially parallel to the direction of flow of garbage-laden water over the auxiliary tray, means for directing a stream of water into the well at the other end of the tray with respect to the aperture for washing food scraps over the shoulder and into the grinder for disintegration, any silverware inadvertently falling into the well being restrained by the shoulder from being carried by the water into the grinder and a substantially vertical baffle extending from one longitudinal side wall of the tray angularly inwardly toward the aperture for constricting the flow of garbage-laden water across the inclined surface and causing an increase in depth of such garbage-laden stream of water as it approaches the aperture.

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