F. DANKS.

PROCESS AND APPARATUS FOR DEGREASING GARBAGE.

APPLICATION FILED MAR. 23, 1918. RENEWED DEC. 8, 1920.

1,386,165. **Patented Aug. 2, 1921.**

Fig. 1.

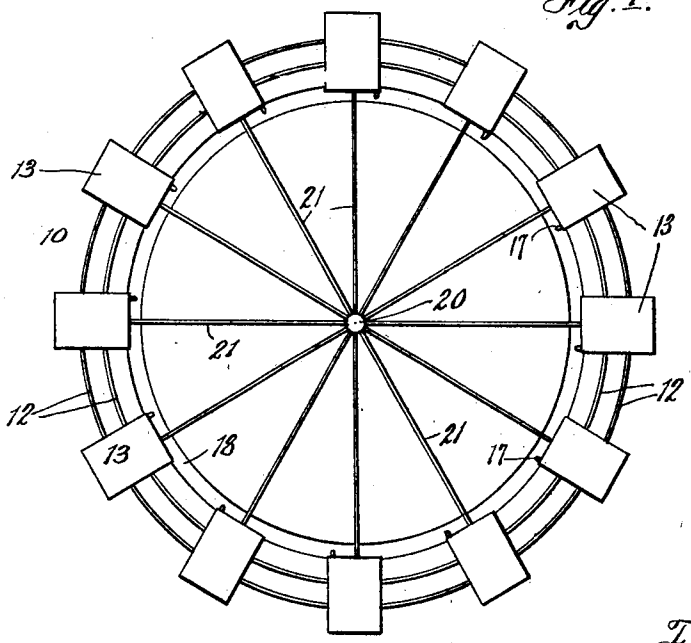


Fig. 2.

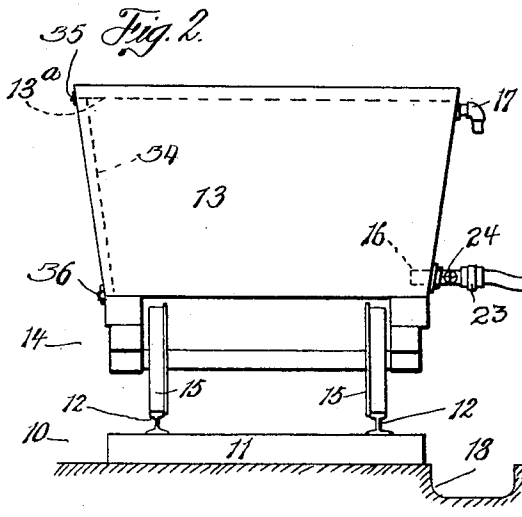
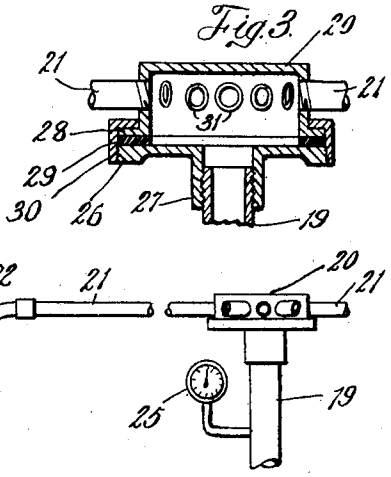


Fig. 3.



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PROCESS AND APPARATUS FOR DEGREASING GARBAGE.

1,386,165. Specification of Letters Patent. Patented Aug. 2, 1921.

Application filed March 23, 1918, Serial No. 224,363. Renewed December 8, 1920. Serial No. 429,262.

To all whom it may concern:

Be it known that I, FRANK DANKS, a citizen of the United States, residing at Detroit, county of Wayne and State of Michigan, have invented certain new and useful Improvements in Apparatus for Degreasing Garbage, of which the following is a specification.

This invention relates to an apparatus for degreasing garbage, and has for its object to insure a ready, regulated and effective accomplishment thereof.

A further object is to provide means whereby such degreasing may be done either fractionally or completely in a predetermined manner, both as to proportional extent and also the temperatures, and time required therefor.

A further object is to accomplish such degreasing in such a manner that the residue remaining thereafter may be preserved and utilized for other purposes.

These and other objects are set forth in the following specification, and illustrated in the accompanying drawings which form a material part of this disclosure, the particular features of novelty which constitute my invention being pointed out in the claims at the end hereof.

In the drawings, in which similar letters and figures of reference refer to corresponding parts wherever they occur:—

Figure 1 is a diagrammatic plan view of one of my degreasers;

Fig. 2 is a fragmental elevational view showing one of my degreasing containers, and its connection with a source of steam supply;

Fig. 3 is a central transverse sectional view of the end of the steam supply pipe and its revolving distributory head.

In the drawings 10 indicates a circular track comprising ties 11, and rails 12. Upon the rails 12 are a plurality of containers 13, which are preferably in the form of cars having journal bearings 14, receptive of the journals of wheels 15 adapted to ride upon said rails, this construction being similar to that of ordinary railroads, the containers being movable upon the track, and also movable with respect to each other, for filling, treating, and dumping purposes, the flexible connections and revoluble head, hereinafter described, allowing of such movements.

These cars are each provided with a removable top 13ª, and with the outer side 34 thereof hinged at its upper edge as at 35 to swing outwardly, a catch 36 of ordinary construction detachably securing the lower edge to the body of the container; steam inlet pipe 16 entering the inner side of the car at or near the bottom thereof. An open overflow grease outlet 17 is arranged at or near the top of said inner side, and is arranged to discharge into a gutter 18 by the inner side of the track.

A steam pipe 19, leading from a suitable source of steam supply, is disposed centrally of the track circle, and is provided with a revoluble head 20, from which radially project a plurality of supply pipes 21, one for each of the cars 13, which said supply pipes are adapted to be connected to the supply pipes 16 by means of the flexible joint 22 and the coupling 23, a steam valve 24, and gage 25, being connected therewith so that the admission of steam to the cars may be regulated to secure the desired temperatures therein during the treatment of the garbage.

In revoluble head 20 may be of any desired construction. As shown in the drawings, it comprises a base 26, having a central, interiorly screw-threaded hub 27, which is secured to the top of the central steam pipe 19. The top of said head is cup-shaped, and is provided with a circumferential flange 28, adapted to form a joint with the gasket 29 which is seated upon the top of the base 26, a circumferential screw-threaded flanged ring 30 engaging the top and base of the head to hold them together. The top of the head is provided with a plurality of screw-threaded openings 31, adapted to secure and hold the ends of the supply pipes 21.

In operation, the containers being upon the track 10, a mass of garbage may be placed in a container, the top 13ª being removed for this purpose, and afterward replaced. A steam supply pipe 21 is then connected with the inlet pipe 16 of the container by means of its flexible joint 22, and the coupling 23, which is provided with a check valve of usual construction, so that steam will not escape from the pipe 21 until the latter is connected with an inlet pipe.

Steam being admitted to the container at a point at or near the bottom thereof from a source of supply, the steam permeates the mass, and, as it condenses saturates the same with water. The treatment is then con-

tinued until the heat conveyed to the mass by the steam raises the temperature therein and melts the grease, which, rising to the top, overflows through the outlet pipe 17 into the gutter 18, where it is collected, and from whence it may be recovered or conducted to suitable storage vats.

For ordinary treatments, I prefer to admit the steam to the containers at a temperature of about 212°, but the temperature may be varied considerably for special purposes, or if desired. By means of the valve 24, and the gage 25, I can regulate the admission of steam so as to treat the garbage at fixed and predetermined temperatures.

By my apparatus I am enabled also to treat the garbage either for fractional or complete separation of the grease by regulating the temperature as above described, and by regulating the time of treatment. This is important, especially when the residue is to be preserved and utilized, as, for example, for an animal food. When one container has been filled, as above described, it may be moved along the track away from the receiving point, and another receiver be moved into place for filling. When the treatment is completed, the steam pipe may be disconnected and the residue dumped from the container through the pivoted outer side into suitable receivers, said container having been moved around upon the track to the place for dumping.

What I claim as new and desire to secure by Letters Patent is:

1. In the degreasing of garbage a plurality of containers movable with respect to each other, means for closing said containers, an open overflow outlet for each of said containers, and means for simultaneously supplying steam to said containers at a predetermined temperature comprising a central steam pipe and pipes leading therefrom to said containers.

2. In the degreasing of garbage a circular track, containers adapted for movement thereon and with respect to each other, open overflow outlets for said containers, and means for simultaneously supplying steam to said containers comprising a central steam pipe and pipes leading therefrom to said containers near the bottom thereof.

3. In the degreasing of garbage a circular track, containers adapted for movement thereon, and with respect to each other, overflow outlets for said containers, and means for supplying steam to any number of said containers in a regulated manner comprising a central steam pipe and pipes leading therefrom to said containers.

4. In the degreasing of garbage a circular track, containers adapted for movement thereon, overflow outlets for said containers, and means for suplying steam comprising a central steam pipe and supply pipes leading therefrom to each of said containers and entering the latter at or near the bottom thereof.

5. In the degreasing of garbage a circular track, containers adapted for movement thereon, overflow outlets for said containers, and means for supplying steam comprising a central steam pipe having a revoluble head, and supply pipes leading therefrom to each of said containers and entering the latter at or near the bottom thereof.

6. In the degreasing of garbage a circular track, containers adapted for movement thereon and with respect to each other, a circular gutter disposed beside said track, overflow outlets in the upper portions, said containers adapted to discharge into said gutter, and means for admitting steam to said containers comprising a central steam pipe and supply pipes leading therefrom to said containers.

7. In the degreasing of garbage a circular track, containers adapted for movement thereon and with respect to each other, a circular gutter disposed beside said track, overflow outlets near the tops of said containers adapted to discharge into said gutter, and means for supplying steam, comprising a central steam pipe and supply pipes leading therefrom to said containers.

8. In the degreasing of garbage a circular track, containers adapted for movement thereon, a circular gutter disposed beside said track, overflow outlets for said containers adapted to discharge into said gutter, and means for supplying steam, comprising a central steam pipe and supply pipes leading therefrom to each of said containers and entering the latter at or near the bottom thereof.

9. In the degreasing of garbage a circular track, containers adapted for movement thereon, a circular gutter disposed beside said track, overflow outlets for said containers adapted to discharge into said gutter, and means for supplying steam, comprising a central steam pipe having a revoluble head, and supply pipes leading therefrom to each of said containers and entering the latter at or near the bottom thereof.

10. In the degreasing of garbage a circular track, containers adapted for movement thereon and with respect to each other, a circular gutter disposed beside the inner side of said track, overflow outlets near the tops of said containers adapted to discharge into said gutter, and means for admitting steam to said containers near the bottoms thereof at a predetermined temperature comprising a central steam pipe and pipes leading therefrom to said containers.

11. In the degreasing of garbage a circular track, containers adapted for movement thereon, said containers having overflow outlets near their tops, and steam inlets near

the bottoms thereof, both said outlets and inlets being disposed toward the inner side of said track, a circular gutter arranged beside said track below said overflow outlets, and means for admitting steam to any desired number of said containers in a regulated manner comprising a central steam pipe and pipes leading therefrom to said containers.

12. In the degreasing of garbage a circular track, containers adapted for movement thereon, said containers having overflow outlets near their tops, and steam inlets near the bottoms thereof, both said outlets and inlets being disposed toward the inner side of said track, a circular gutter arranged beside said track below said overflow outlets, and means for admitting steam to any desired number of said containers in a regulated manner, said containers having one side thereof pivotally arranged for dumping purposes.

13. In the degreasing of garbage a circular track, containers adapted for movement thereon, a circular gutter disposed beside said track, overflow outlets for said containers adapted to discharge into said gutter, and means for supplying steam, comprising a central steam pipe and supply pipes, provided with flexible connections leading therefrom to said containers and entering the latter at or near the bottom thereof.

14. In the degreasing of garbage, a circular track, containers adapted for independent movement thereon separately, and means for supplying steam to all of said containers simultaneously.

15. In the degreasing of garbage, a circular track, containers adapted for movement thereon, and means for supplying steam continuously to said containers comprising a central steam pipe having a revoluble head, and supply pipes leading therefrom to said containers.

In testimony whereof I have signed my name to this specification this 6th day of February, 1918.

FRANK DANKS.