

F. G. WISELOGEL.
SYSTEM OF APPARATUS FOR TREATING GARBAGE.
APPLICATION FILED AUG. 31, 1908.

994,047.

Patented May 30, 1911.
2 SHEETS—SHEET 1.

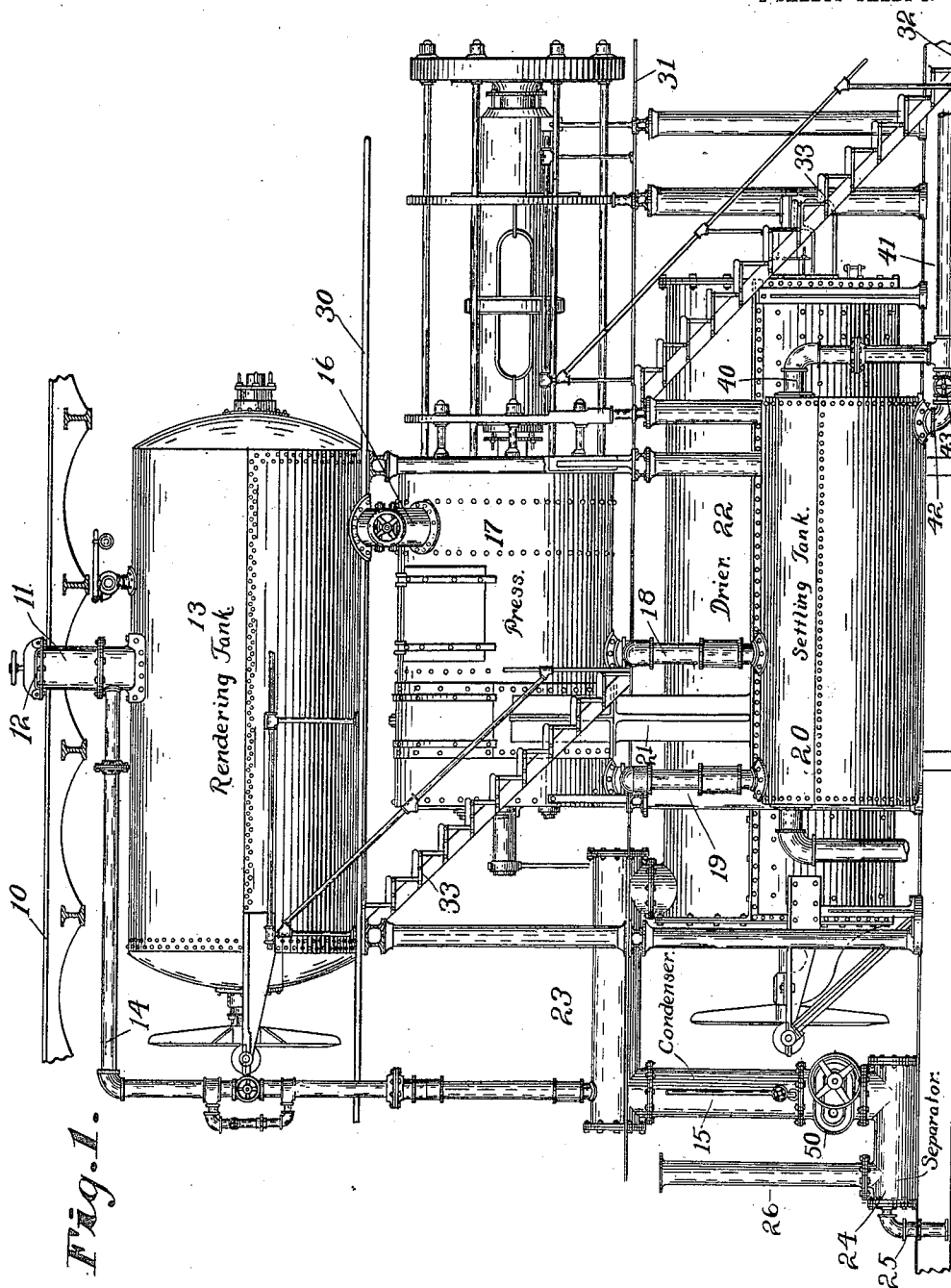


Fig. 1.

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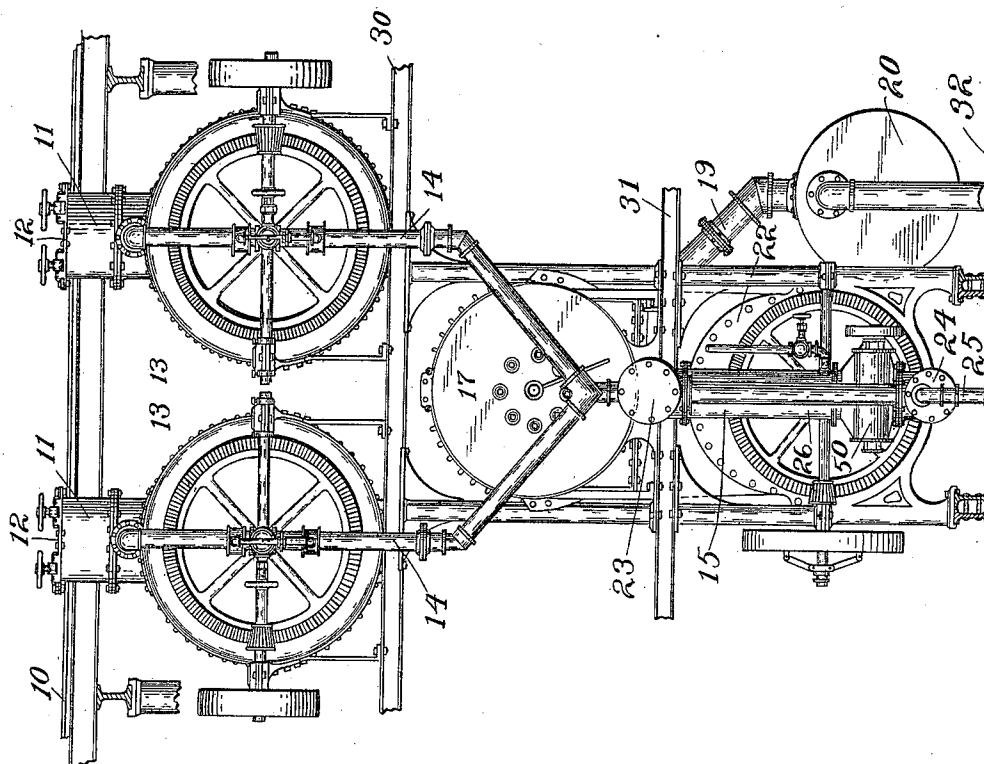


Fig. 2.

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UNITED STATES PATENT OFFICE.

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SYSTEM OF APPARATUS FOR TREATING GARBAGE.

994,047.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed August 31, 1908. Serial No. 451,106.

To all whom it may concern:

Be it known that I, FREDERICK G. WISELOGEL, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Systems of Apparatus for Treating Garbage, of which the following is a specification.

The object of my invention is to so arrange the various receiving members or treating devices necessary for the treatment of city waste, such for instance as liquid or semi-liquid garbage or sewage, that the material may be passed by gravity through the system and divided and subdivided into its components without the necessity of any direct handling at intermediate portions of the system.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation, and Fig. 2 an end elevation.

In the drawings, 10 indicates a receiving floor to which the material to be treated may be readily brought by wagons or otherwise. Arranged in said floor 10 is the receiving end of a pipe 11 which may be closed by a suitable gas-tight cover 12. Pipe 11 leads to a rendering tank 13 in which the garbage or other material may be subjected to a proper heat and stirring, such tank being conveniently of the kind described and claimed in my Patent No. 846,539. Leading from pipe 11 above tank 13 is a vapor-outlet pipe 14, which leads downward into a condenser 15. Leading downward from the inner drum of the rendering tank 13 is a valved discharge pipe 16 which discharges into a press 17 by means of which the semi-solid mass discharged from the rendering tank may be subjected to a sufficient pressure to express from it the greater portion of the liquids contained therein. This press may conveniently be of the construction described and claimed in my Patent 942,301 issued December 7, 1909, the construction being such that the expressed liquids may flow freely from press 17 through pipes 18 and 19 into a settling tank 20, which is arranged beneath but to one side of press 17. Press 17 is provided with a downwardly extending leg 21 through which the substantially solid pulp may be discharged by gravity into a drier 22, which is located immediately

beneath the press 17. This drier may be of any desired type and of such character as to thoroughly dry the material. Leading from the upper side of the drier 22 is a pipe or drum 23, into which all of the gases or vapors from the drier pass and these gases or vapors pass from thence into the condenser 15 and from thence into a separator 24 having a liquid outlet 25 and a gas outlet 26, the gas outlet being connected, if desired, with the furnace of the boilers which supply the necessary steam for heating the rendering tank and drier.

In order to facilitate the separation of vapors and gases from the mass being treated, I provide a pump 50 by means of which a vacuum may be maintained in the rendering tank 13, drier 22, and condenser 15.

For convenience in handling the mechanism described a suitable platform 30 may be arranged immediately beneath the rendering tank, a similar platform 31 arranged immediately beneath the press and over the drier, and the drier and settling tank are mounted on a floor 32, the several platforms being accessible by suitable stair flights 33.

In view of the fact that the bulk of the material when it first reaches the plant is very considerable and a greater capacity is required in the rendering tanks than in the press and drier, I deem it advisable to duplicate the rendering tanks as clearly shown in Fig. 2, both tanks being connected by discharge pipes 16 to the press 17 and each tank having a pipe 14 as shown.

In operation, the garbage or other material is first deposited in the rendering tanks 13, preferably at different times so that one may be emptying and refilling while the other is being heated. After sufficient cooking the hot and largely disintegrated mass passes by gravity through pipe 16 into the press 17. The press is thereupon operated and the liquids, including considerable quantities of grease, flow downward through pipes 18 and 19 into the settling tank 20. This settling tank is provided with a pipe 40 which leads from a point near its top into an outflow pipe 41, said outflow pipe being connected at 42 with the bottom of the settling tank and a valve 43 being placed in said pipe 42 between the lower outlet and the point at which pipe 40 enters pipe 41, the arrangement being such that, under

ordinary conditions and during the general operation of the plant, the accumulated grease within the settling tank will rest upon the accumulated water within the tank and be decanted through pipe 40. When there has been too great an accumulation of water in tank 20, it may be drained off by opening valve 43. The pulp from press 17 is discharged by gravity through leg 21 and passes into drier 22, where the rest of its free moisture is extracted and passed through the drum 23 into the condenser 15.

It will be seen that by this arrangement of devices an exceedingly compact plant is produced wherein very considerable quantities of refuse may be treated with the greatest advantage and with the greatest saving of possible by-products, with a minimum amount of labor.

I claim as my invention:

In a refuse reduction plant, the combination of a receiving floor, a pair of rendering tanks arranged beneath said floor and having receiving portions in said floor, a press arranged beneath the rendering tanks, independent connections between each rendering

tank and press, a drier arranged beneath the press, a connection between the pulp discharge of said press and the drier, a settling tank also arranged beneath the press, a connection between the liquid discharge of the press and the settling tank, a valved draining discharge leading from said settling tank at its lowest point, an overflow passage leading from an upper portion of the settling tank, a condenser, a connection between said condenser and the rendering tanks and drier, a vacuum pump connected with said condenser so as to maintain a vacuum within the drier and rendering tanks, and a separator connected with the discharge side of said pump, and having a liquid discharge pipe and a gas discharge pipe, all combined and arranged as set forth.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this nineteenth day of August, A. D. one thousand nine hundred and eight.

FREDERICK G. WISELOGEL. [L. s.]

Witnesses:

CHESTER BRADFORD,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."