

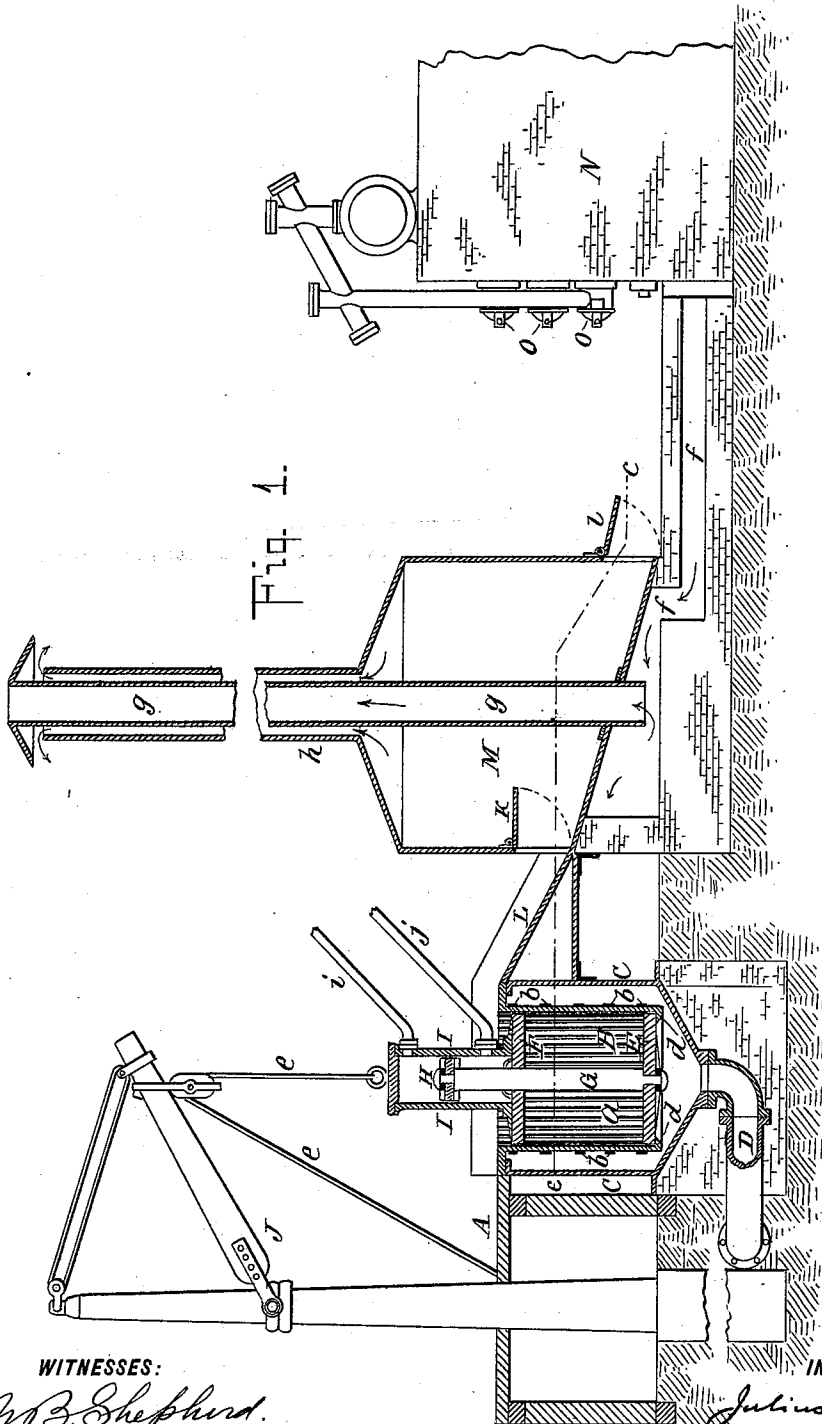
(No Model.)

2 Sheets—Sheet 1.

J. WODISKA.
PROCESS OF TREATING GARBAGE.

No. 548,342.

Patented Oct. 22, 1895.



WITNESSES:

M. B. Shepherd.
Geo. C. Morse.

INVENTOR

Julius Wodiska

BY

Briesen & Knauth

ATTORNEYS

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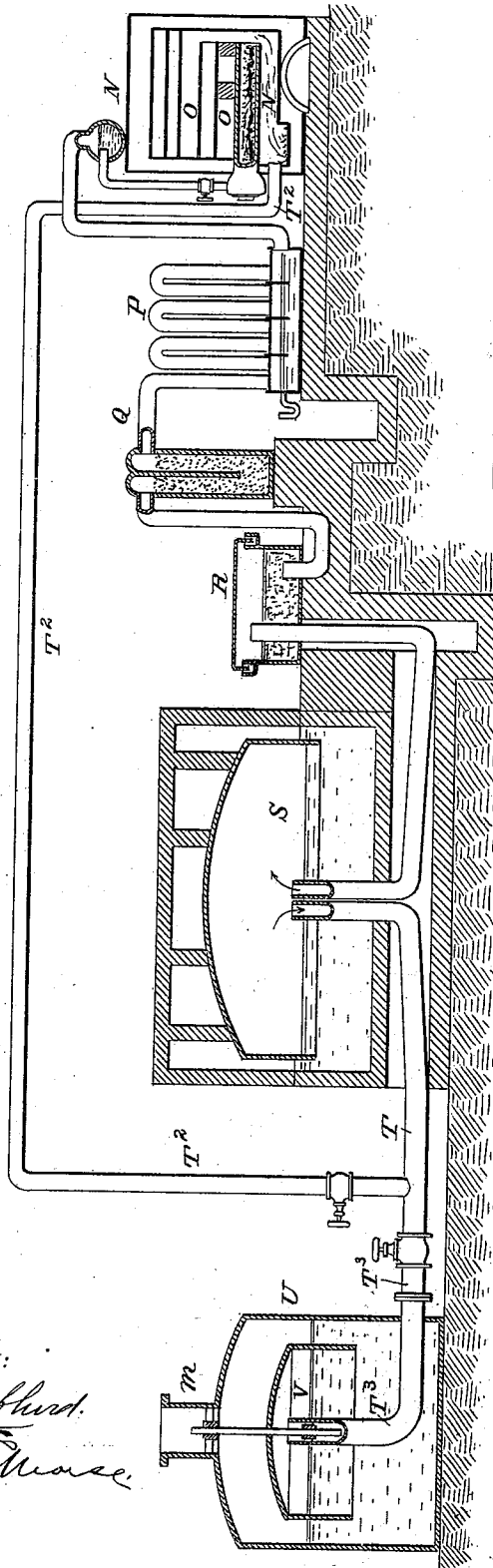


Fig. 2.

Fig. 3.

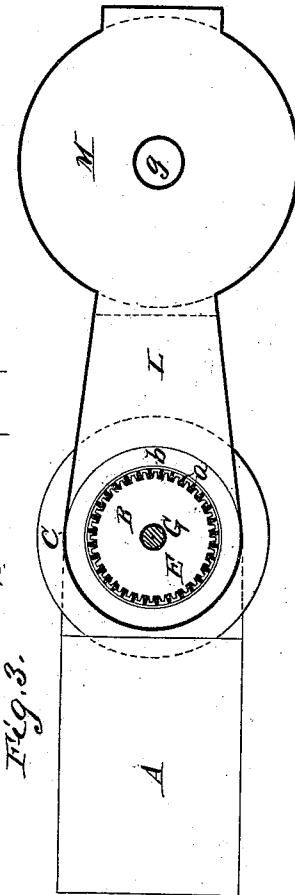
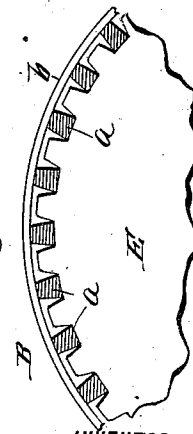


Fig. 4.



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UNITED STATES PATENT OFFICE.

JULIUS WODISKA, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO H. Z. & H. OPPENHEIMER, OF SAME PLACE.

PROCESS OF TREATING GARBAGE.

SPECIFICATION forming part of Letters Patent No. 548,342, dated October 22, 1895.

Application filed August 20, 1894. Serial No. 520,757. (No model.)

To all whom it may concern:

Be it known that I, JULIUS WODISKA, a resident of New York, in the county and State of New York, have invented an Improved Process of Treating Garbage, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings.

The object of this invention is to utilize the material collected from kitchens, and known as "garbage," which accumulates in large quantity in every town and city, and is with difficulty disposed of. To accomplish this I propose to take from the garbage, after it has been collected, the ashes and cinders which it may contain, and subject the residue to pressure for discharging the largest proportion of water, the remainder of the water being evaporated in a special drying apparatus. The dry garbage thus produced is now charged into retorts of gas apparatus, for manufacturing illuminating or heating gas therefrom, or it may be used for many other purposes. In this specification, however, I will confine myself to a description of the mode of making gas from garbage.

I am aware that in order to render garbage fit for use in the retort, it should be so handled as not to emit disagreeable odors during the process of pressing. I have therefore provided a press of peculiar construction, which, while squeezing the material, collects the liquids that are extracted and conveys them through sealed passages to distant tanks, rivers, or other safe places of deposit. The next step in the treatment of the garbage is the drying process, which is carried on in a kiln, where it is heated, principally, through the waste heat from the gas-works, and which raises the temperature of the garbage to about the boiling-point of water, the vapors escaping through a chimney into the atmosphere.

In the accompanying drawings, Figure 1 represents a side elevation, partly in section, of my improved apparatus, showing the press, the drier or kiln, and the furnace containing the retorts. Fig. 2 is a sectional elevation of the gas apparatus, by itself, showing the carburetor, the gas-holder, the purifier, the scrubber, the condenser, and the retorts all united. Fig. 3 is a horizontal section on the

plane of the line *c c*, Fig. 1. Fig. 4 is an enlarged horizontal section of part of the press.

A represents a platform, upon which the garbage, after the ashes and cinders have been removed therefrom, is deposited. From this platform the garbage is put into the press-cylinder B. This press-cylinder is composed, as appears from Figs. 3 and 4, of a series of upright bars or ribs *a a*, which are at their upper ends suspended from the platform A or other rigid support, and which are ranged in a circle and held in place by outer hoops *b*. The lower end of the ribs *a* have inwardly-projecting hooks *d*. This press-cylinder B is contained within a housing C, which has an outlet D, leading to the bottom of a river, to the ocean, to a suitable tank, or other proper place of deposit for the liquid which is expressed from the garbage.

The press-cylinder B contains two plungers E and F. The lower plunger is rigidly attached to the plunger-rod G, which passes loosely through the upper plunger F, and carries above the upper plunger a piston H within a hydraulic cylinder I, which cylinder is carried by and rigidly attached to the upper press-plunger F. The cylinder I may, if desired, be suspended by a rope or chain *e* from the derrick J, as shown in Fig. 1. From the press the garbage passes through a suitable spout or conduit L into the kiln M, which by a suitable flue *f* is connected with the fireplace of the gas apparatus N, so as to get the surplus heat therefrom, and which contains a chimney *g* for the discharge of products of combustion and another chimney *h* for the discharge of vapors that arise from the garbage.

From the kiln M the garbage, properly dried, is, or may be, fed into the retorts O O of the gas apparatus.

I will, before going further with the description of my invention, first describe the manner of using the press.

In order to get the garbage into the press-cylinder B, the plunger F must be lifted out of said cylinder. To effect this water is forced under pressure through a suitable pipe *i* into the cylinder I above the piston H. The pressure thus created within the cylinder I serves first to force the lower plunger E down upon

the hooks *d* at the lower part of the shell B. At the same time the upper plunger F is, by the upward pressure of the water within the cylinder I, raised out of the cylinder-shell B, thus permitting the garbage to be shoveled into said cylinder B. The pressure is now taken off the upper portion of the cylinder I and water led, under pressure, through the pipe *j* into the lower part of the cylinder I—that is to say, underneath the piston H. This will cause the upper plunger F to be forced downward and the piston H to be lifted, thereby causing the lower plunger to be also lifted, and, as a result, the contents of the cylinder B will be squeezed together between the two plungers, the water which they contained escaping between the ribs *a a* of the shell B into the housing C, and thence through the pipe D. When the pressure has been sufficient on the garbage, the cylinder I, with the top plunger F, can be lifted out of the press by means of the derrick, and by the same means when the top plunger F reaches the piston H the lower plunger E can be also lifted, so as to raise the compressed cake of garbage up to the level of the platform A, to enable the attendants to conveniently push it through the chute L into the kiln M. Within this kiln, when the supply-door K and the discharge-door *l* thereof are closed, the compressed garbage is exposed to sufficient heat to evaporate whatever water may have remained within it, at least to an extent sufficient to enable it to be used within the re-

torts. The retorts O in the furnace N are arranged substantially as ordinary retorts are, and discharge the gas which is generated within them, first, into the condenser P, then into the scrubber Q, then into the purifier R, and, finally, into the holder S, (see Fig. 2,) in manner substantially analogous to that pursued in the ordinary manufacture of gas. From the holder S the gas to be utilized for heating purposes can be discharged *ad libitum*. A branch of the discharge-pipe T may lead back into the furnace N to heat the retorts, if desired. This branch is shown at T² in Fig. 2. Any gas which is to be used for illuminating purposes is conducted by the branch T³ of the discharge-pipe T into a carburetor. This carburetor may be of any suitable construction, but is shown in the present instance to consist of an outer vessel U, having a discharge-pipe *m* in the upper portion and the supply-pipe T³ in the lower portion, and containing, also, the cap V.

I claim—

The process herein described of treating garbage, which consists in pressing the garbage and expelling the liquid therefrom by pressure, in then heating the garbage to further expel moisture therefrom, and in then subjecting the garbage to destructive distillation in a retort, substantially as described.

JULIUS WODISKA.

Witnesses:

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