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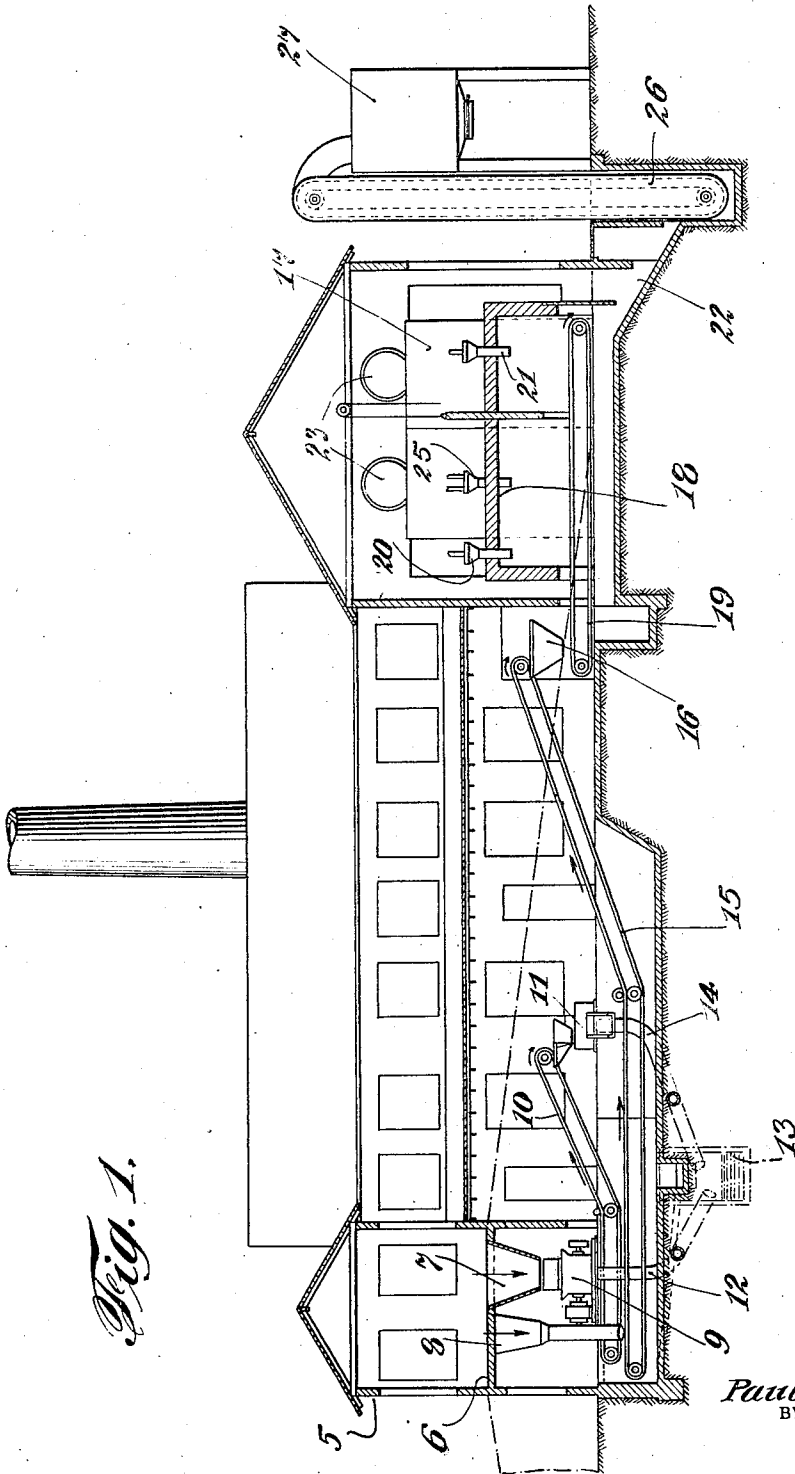
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METHOD AND APPARATUS FOR DISPOSING OF REFUSE

Filed March 14, 1927

2 Sheets-Sheet 1



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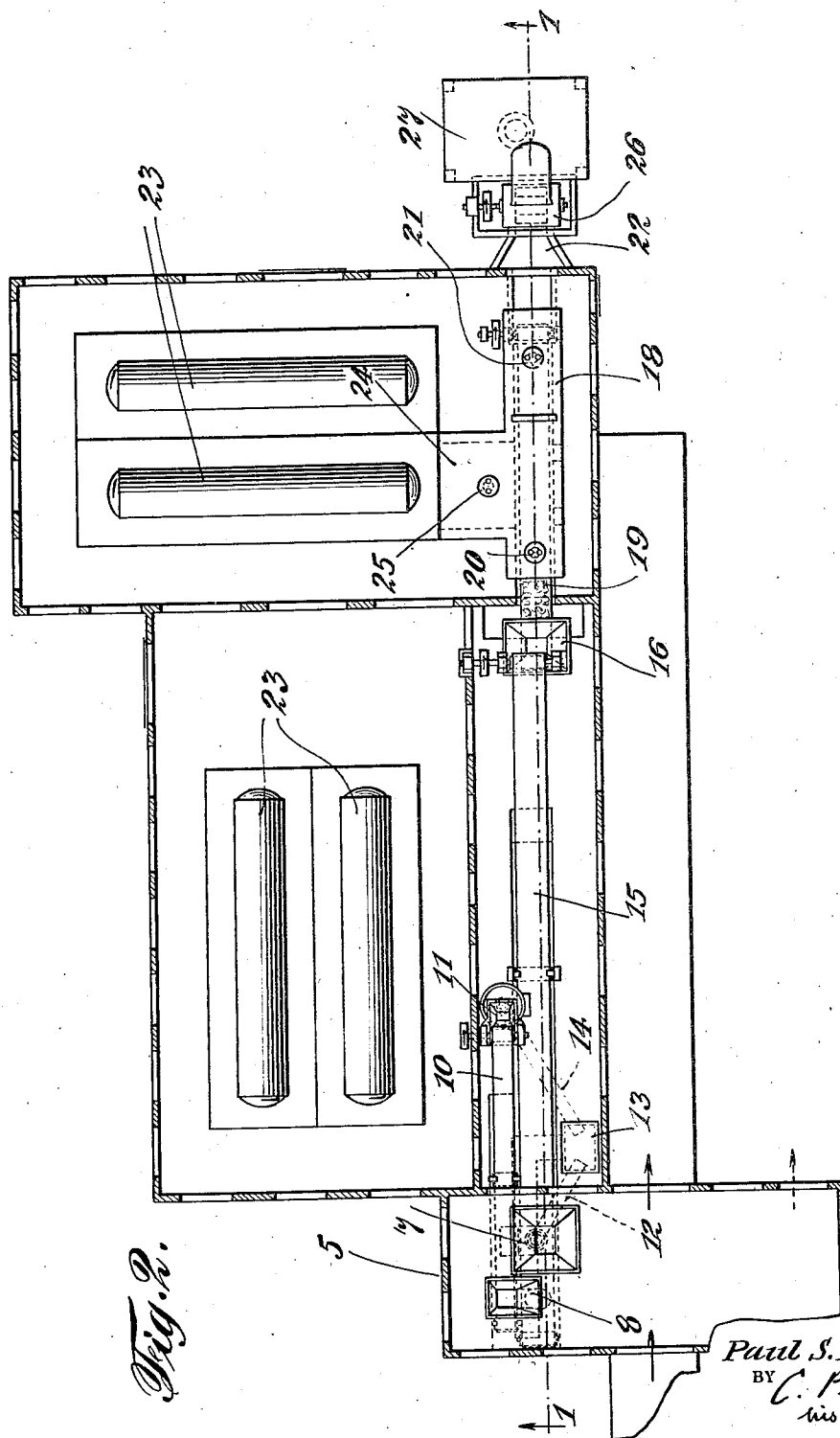
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METHOD AND APPARATUS FOR DISPOSING OF REFUSE

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2 Sheets-Sheet 2



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METHOD AND APPARATUS FOR DISPOSING OF REFUSE

Application filed March 14, 1927. Serial No. 175,069.

This invention relates to a method and apparatus for disposing of refuse, and has for its primary object and purpose to provide means whereby city refuse such as garbage, street sweepings and trash may be economically disposed of without the generation of obnoxious odors.

It is another important object of the invention to provide means for producing a proper admixture of the dry rubbish or trash and of the moist garbage and delivering such mixture to an incinerating furnace to effect the complete and odorless oxidation of the material.

It is also a feature of my present invention to provide such an organization of the apparatus so that the liquid contents of the garbage may be largely recovered for subsequent treatment to extract the valuable chemical elements therefrom.

With the above and other objects in view, the invention consists in the novel method and apparatus for the disposal of refuse, as will be hereinafter more fully described, illustrated in the accompanying drawings, and subsequently incorporated in the subjoined claims.

In the drawings, wherein I have disclosed one simple and practical embodiment of the apparatus employed, and in which similar reference characters designate corresponding parts throughout the several views,—

Figure 1 is a longitudinal sectional view illustrating a typical installation of the apparatus constituting a refuse disposal plant operating in accordance with my new method, and

Fig. 2 is a plan view thereof.

The material such as garbage, street sweepings and trash is delivered by the city collectors into the structure 5 at one end of a group of structures or buildings housing the various parts of the apparatus. The material may be deposited either upon the floor 6, or directly into the hoppers 7 and 8 respectively. The hopper 7 receives garbage or other material of comparatively high liquid content while the hopper 8 receives the dry rubbish or trash. The garbage is fed by the hopper 7 to a pulverizer 9 where it is

disintegrated, and is then discharged upon an endless conveyer 10. This conveyer delivers the material to a dewatering or liquid extracting device 11. Drippings from the pulverizer 9 are conveyed by the pipe 12 to a sump 13 while the liquid from the device 11 is delivered to said sump through the pipe 14. Hard material such as particles of wood and metal are discharged from one side of the pulverizer 9 upon a second conveyer 15. This conveyer is relatively long and extends beneath the other hopper 8 to receive the dry material therefrom. The dewatered material is delivered by the device 11 upon the conveyer 15 at a point intermediate of the length of the conveyer, so that it will be apparent that this moist material is more or less uniformly distributed upon the dry rubbish or trash which has been deposited on said conveyer from the hopper 8. The mixture is finally discharged by the conveyer 15 into a storage hopper 16.

An incinerating furnace generally indicated at 17 is provided at its front with a dutch oven 18 and the mixed material is delivered from the storage hopper 16 upon a travelling grate 19 upon which it is conveyed through said oven and is subjected adjacent its point of entrance thereto to the flame of a suitable burner 20. Pulverized coal, gas or oil may be utilized as a fuel. The flame of the burner 20 rapidly heats, dries and ignites the material on the travelling grate so that in its transport through the furnace oven the material is largely consumed. A second burner 21 may be arranged adjacent the discharge end of the grate 19 by which all remaining combustible carbon contents on the grate will be ignited so that when the residue is finally discharged by the grate 19 into the hopper 22, the material has been completely oxidized and is substantially in the condition of boiler furnace ashes.

23 designates a suitable arrangement of boilers to which the heat and gases developed in the oven 18 are conducted through a combustion chamber 24. In order to consume all odors and gases, a third burner 25 is arranged in this chamber.

The ashes discharged into the hopper 22

are removed therefrom by a suitable elevating conveyer indicated at 26 and discharged into a storage bin 27 from which they may be delivered into transporting vehicles and utilized in the manufacture of cinder blocks or as filling materials.

Since the emission of odoriferous fumes into the atmosphere is avoided, it will be appreciated that the refuse disposal plant as above described may be advantageously located within the city limits in convenient relation to the area of collection. Also by means of my improved method of disposal, an income may be derived by the city from the utilization of the ashes, and the plant thus operated very economically.

It is of course, to be understood that in so far as my new method is concerned, various modifications of the illustrated apparatus might be resorted to, and I therefore, reserve the privilege of resorting to all such legitimate changes therein as may be fairly embodied within the spirit and scope of the invention as claimed.

I claim:

1. In a method of refuse disposal, delivering dry refuse material upon a furnace feeding conveyor, disintegrating liquid laden refuse, and then dewatering the disintegrated refuse and discharging the same at a point intermediate the ends of the conveyer upon the dry refuse material to obtain a substantially uniform mixture of the dry and moist materials prior to delivery into the furnace.

2. A method of refuse disposal which consists in delivering dry refuse material upon a furnace feeding conveyor, disintegrating liquid laden refuse material and removing and collecting the liquid therefrom for recovery of its chemical values, and discharging the dewatered disintegrated refuse material substantially uniformly upon the dry material on said conveyer prior to delivery into the furnace.

3. A refuse treating apparatus including a feed conveyer for delivering material to a furnace, means for discharging dry refuse material upon said conveyer, a second conveyer, means for disintegrating liquid laden refuse material and discharging the same upon said second conveyer, and means receiving the disintegrated material from said latter conveyer and delivering the same substantially uniformly upon the dry refuse material carried by said feed conveyer at a point intermediate the ends of the latter.

4. A refuse treating apparatus including a feed conveyer for delivering material to a furnace, means for discharging dry refuse material upon said conveyer, a second conveyer, means for disintegrating liquid laden refuse material and discharging the same upon said second conveyer, and a dewatering device receiving the disintegrated material from said latter conveyer and discharging

the same substantially uniformly upon the dry material on the feed conveyer at a point intermediate of its ends.

5. A refuse treating apparatus including a feed conveyer for delivering material to a furnace, means for discharging dry refuse material upon said conveyer, a second conveyer, means for disintegrating liquid laden refuse material and discharging the same upon said second conveyer, a dewatering device receiving the disintegrated material from said latter conveyer and discharging the same substantially uniformly upon the dry material on the feed conveyer at a point intermediate of its ends, and means for collecting the liquid from said disintegrating means and the dewatering device for recovery of its chemical values.

6. In a method of refuse disposal, first separating the dry lighter refuse material from the heavier moist material, and delivering said dry material upon a furnace feeding conveyor, disintegrating the liquid laden refuse material and delivering the same upon a separate conveyor, then dewatering the disintegrated refuse discharged from the latter conveyor and discharging the disintegrated dewatered refuse material in a superimposed layer upon the layer of dry refuse material carried by said first conveyor, and finally conveying the separate layers of dry and moist refuse material together and discharging the same into an incinerating furnace.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

PAUL S. KNITTEL.