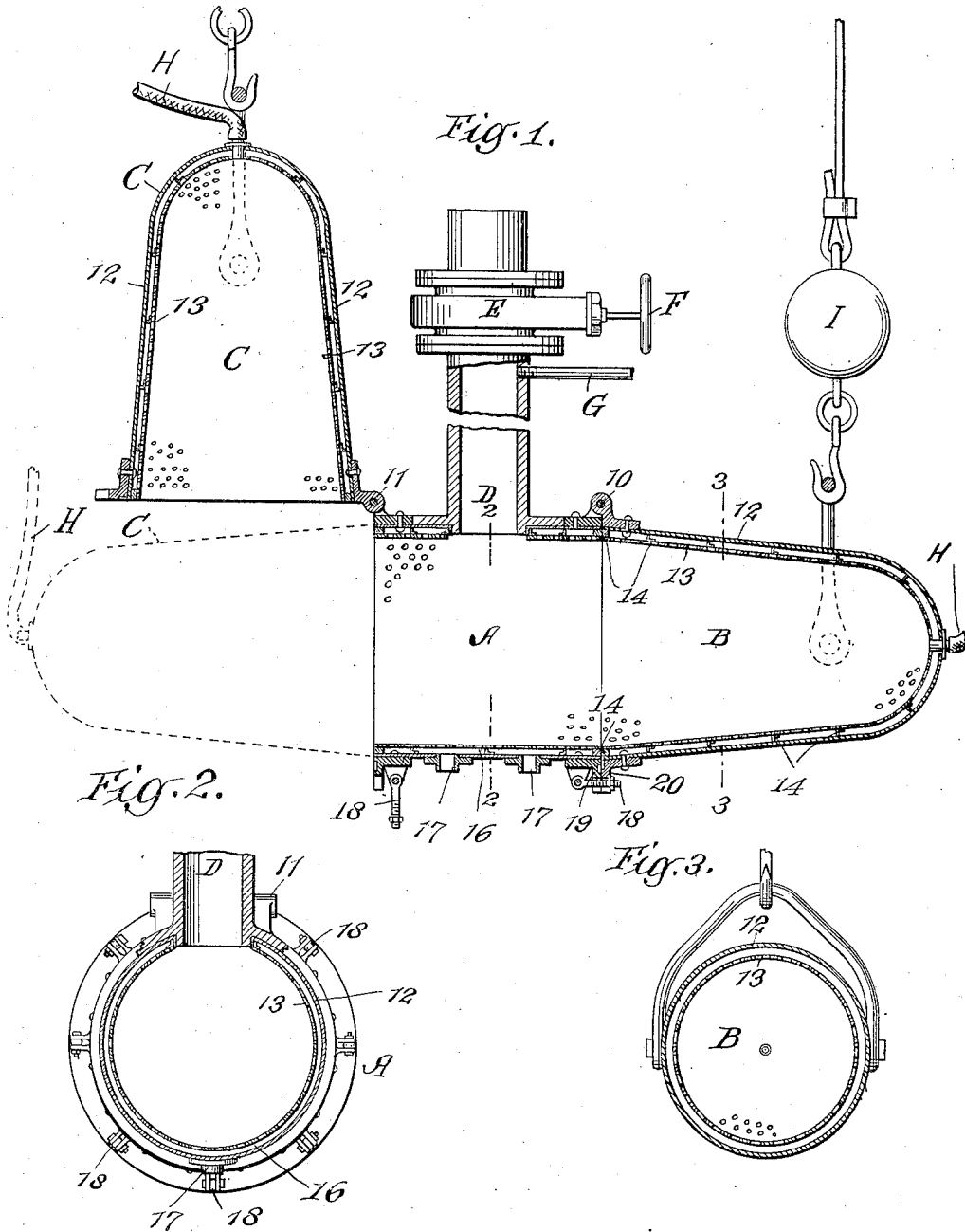


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1,016,241.

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WITNESSES
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1,016,241.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, IRVING BLOUNT, a citizen of the United States, and a resident of the borough of Brooklyn, city and State of New York, have invented certain new and useful Improvements in Separators, of which the following is a specification.

This invention relates broadly to apparatus for separating from each other the liquid and solid constituents of a material containing both such constituents, and more particularly to apparatus for extracting oil, grease, water, etc., from garbage or other matter.

One of the important purposes of the present invention is to provide an apparatus of the kind stated, the container of which will be composed of a plurality of relatively movable sections mounted in an endwise relation and so correlated that the movable section or sections may be turned into a position wherein it presents a downwardly open bottom for the free discharge of the solid matter therefrom.

Another of the important purposes of the invention is to provide an apparatus of the kind stated whose container is composed of three sections, to wit, an intermediate section and two sections arranged at opposite ends of the intermediate section and pivotally secured thereto whereby they may be turned into an approximately vertical position and when thus turned will present open bottoms through which the solid material may be freely discharged.

These purposes, and others which will hereinafter appear, are fully obtained from the construction illustrated in the accompanying drawing to exemplify what is now regarded to be the best detail embodiment of the invention. It is to be understood, however, that the invention is not restricted to the detail embodiment herein illustrated as many changes may be made in the details of construction without departing from the spirit of the invention or the scope of the subjoined claims.

In the drawing, wherein like characters of reference denote corresponding parts in the figures: Figure 1 is a longitudinal section, showing one of the end sections raised to its discharging position and the other end section in the position it occupies when the extracting operation is being carried out. The position of the other raised section when the extracting operation is being

performed is shown in dotted outline in this figure. Fig. 2 is a transverse section through the apparatus on a line intersecting the inlet for the material. Fig. 3 is a transverse section on line 3 of Fig. 1.

The separator or digester herein illustrated has its body composed of three sections marked A, B and C respectively. The section A is fixed and the sections B and C are hingedly secured at 10 and 11 respectively to opposite ends of said section A. Each of these sections is formed of an outer wall 12 and an inner wall 13 which are spaced from each other by stiffening and spacing members 14. The central section A is preferably of cylindrical form and each end section B and C is preferably of the form of a frustum of a hollow cone.

The central section A is provided with a hopper, drum, or other suitable means indicated at D, through which the container is supplied with material to be treated. This means D has a valve indicated at E for controlling the passage of the material therethrough and said valve has a suitable means as a manually operable wheel F for operating it. Steam or other suitable means for extracting purposes is introduced through the pipe G.

In the operation of the apparatus the sections A and B are relatively arranged to form a chamber into which the material to be treated is supplied through the inlet means D. When this chamber has received the required amount of material the valve E is closed and steam or other suitable fluid is introduced through the pipe G. This fluid may be under pressure adequate to compact the solid residue of the material. The extracted liquid and the fluid employed to extract the steam flows through the perforated inner wall 13 of the sections, into the space between said wall and the wall 12 and ultimately reaches the chamber 16 between the inner and outer walls of the section A and at the bottom of the latter, the bracing members 14 being interrupted wherever necessary to permit the fluid to flow to the chamber 16. This chamber 16 is provided with one or more outlets 17 for the discharge of the extracted liquors therefrom. During the extracting process the sections B and C are rigidly clamped to the ends of the section A by suitable means, such, for example, as the pivoted bolts 18 carried by the section A and extending through aper-

tures in flanges 19 and 20 on the ends of the sections A and B and A and C. When the liquid matter has been extracted the sections B and C are raised. In this raised position they are downwardly open and hence the solid matter contained therein may be readily and freely discharged therefrom. This discharge may be effected by gravity, but it is preferred to assist gravity by means of pressure. An example of a pressure supply means adapted to the purpose is illustrated. In the illustrated embodiment air, steam or other suitable fluid under pressure is employed. This fluid may be introduced into the closed ends of the sections B and C through pipes H which are connected with a suitable source of supply of such fluid. The sections B and C are provided with hoists of suitable kind, indicated at I, whereby they may be readily raised to their discharging position and lowered to their operative position.

In the use of the apparatus, it is preferred to supply a charge of material sufficient in quantity to reach up into the drum to a place immediately below the pipe G and to cut-off the supply of fluid and renew the charge when the previously-introduced charge has been compacted to a place at or immediately below the upper rows of perforations in the inner walls. This avoids waste of treating fluid. Preferably, the inner walls of the container are free from perforations at the top in order that the material may be compacted to a place below the top of the latter, before renewing the charge. The solid matter may be forked out or otherwise suitably removed from the section A. It is preferred to use perforated sheet metal for the inner wall 13, but wire-mesh of a suitable degree of fineness or any material which will retain the solid matter and permit fluid to pass therethrough to the space between the inner and outer walls, may be employed, if desired.

Having now described the invention, what I believe to be new and desire to secure by Letters Patent, is:

1. In an apparatus of the class described, a container having inner and outer walls with a space between, the inner wall being adapted to retain solid matter and to permit liquid to pass to said space, said container having a hingedly secured end portion adapted to be turned into downwardly open position for the discharge of solid matter therefrom.

2. In an apparatus of the class described, a container comprising a fixed section and a section hingedly secured at the end of the fixed section and adapted to be turned into downwardly open position for the discharge of solid matter therefrom, each of said sections having inner and outer walls with a space between, the inner walls being adapt-

ed to permit liquid to pass to said space and to retain solid matter, and means through which the container is supplied with material to be treated and with a fluid for treating said material.

3. In an apparatus of the class described, a container comprising a fixed section and a section hingedly secured at each end of the fixed section and adapted to be turned into downwardly open position for the discharge of solid matter therefrom, each of said sections having inner and outer walls with a space between, the inner walls being adapted to permit liquid to pass to said space and to retain solid matter, and means through which the container is supplied with material to be treated and with a fluid for treating said material.

4. In an apparatus of the class described, a container comprising three complementary sections, one of which is fixed and two of which are hingedly secured at opposite ends of the fixed section and are adapted to be turned into downwardly-open position, said container having inner and outer walls with a space between, and said inner wall being adapted to retain solid matter and to permit liquid to pass to said space, the container also having means through which it is supplied with material to be treated and with a fluid for treating said material.

5. In an apparatus of the class described, a container having a treating chamber adapted to retain solid matter and to permit the flow of liquid therefrom, said container comprising a fixed section, two hollow end sections hingedly secured at their upper ends to opposite sides of the upper portion of the fixed section, means for securing the hinged sections in operative position at the ends of the fixed sections, said means being adapted to release the hinged sections for turning movement and said hinged sections when raised presenting downwardly-open lower ends, means for supplying the container with material to be treated, and means for supplying the container with a fluid for treating said material.

6. An apparatus of the class described whose treating chamber has two hingedly mounted end sections adapted to be moved into downwardly open position for the discharge of solid matter therefrom, and a fixed section between said end sections.

7. An apparatus of the class described whose treating chamber has two hingedly mounted end sections adapted to be moved into downwardly open position for the discharge of solid matter therefrom, and a fixed section between said end sections combined with means for raising said end sections.

8. An apparatus of the class described whose treating chamber has two hingedly mounted end sections adapted to be moved into downwardly open position for the dis-

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charge of solid matter therefrom, and a fixed section between said end sections, said fixed section having a charging drum having a valve and provided with a valved fluid-supply pipe which enters it at a place below its valve.

9. An apparatus of the class described whose treating chamber has two hingedly mounted end sections adapted to be moved into downwardly open position for the discharge of solid matter therefrom, and a fixed section between said end sections, said fixed section having a charging drum having a valve and provided with a valved fluid-supply pipe which enters it at a place below its valve, said sections each provided with inner and outer walls, with a space between them, the inner wall being adapted to retain solid matter and permit liquid to pass to said space.

10. An apparatus of the class described whose treating chamber has two hingedly mounted end sections adapted to be moved into downwardly open position for the discharge of solid matter therefrom, and a fixed section between said end sections, said sections each provided with inner and outer walls with a space between them, the inner wall being adapted to retain solid matter and to permit liquid to pass to said space, the spaces between the walls of the end sections being in communication with the space between the walls of the fixed section and conducting the liquid to the latter, and the last mentioned space having means for the discharge of the liquid therefrom.

11. An apparatus of the class described whose treating chamber has two hingedly mounted end sections adapted to be moved into downwardly open position for the discharge of solid matter therefrom, and a fixed section between said end sections, said sections each provided with inner and outer walls with a space between them, the inner wall being adapted to retain solid matter and to permit liquid to pass to said space, the spaces between the walls of the end sections being in communication with the space between the walls of the fixed section and conducting the liquid to the latter, and the last mentioned space having means for the discharge of the liquid therefrom, said fixed section having a charging-drum having a valve and provided with a valved fluid-supply pipe which enters it at a place below its valve.

12. An apparatus of the class described whose treating chamber has two hingedly mounted end sections adapted to be moved into downwardly open position for the discharge of solid matter therefrom, and a fixed section between said end sections, the outer ends of the hinged sections being closed and provided with means for supplying a discharging fluid thereto.

In witness whereof I have hereunto set my hand at the city, county and State of New York, this 24th day of May, 1911.

IRVING BLOUNT.

In presence of—

ISABEL R. RICHARDS,
JOHN J. RANAGAN.