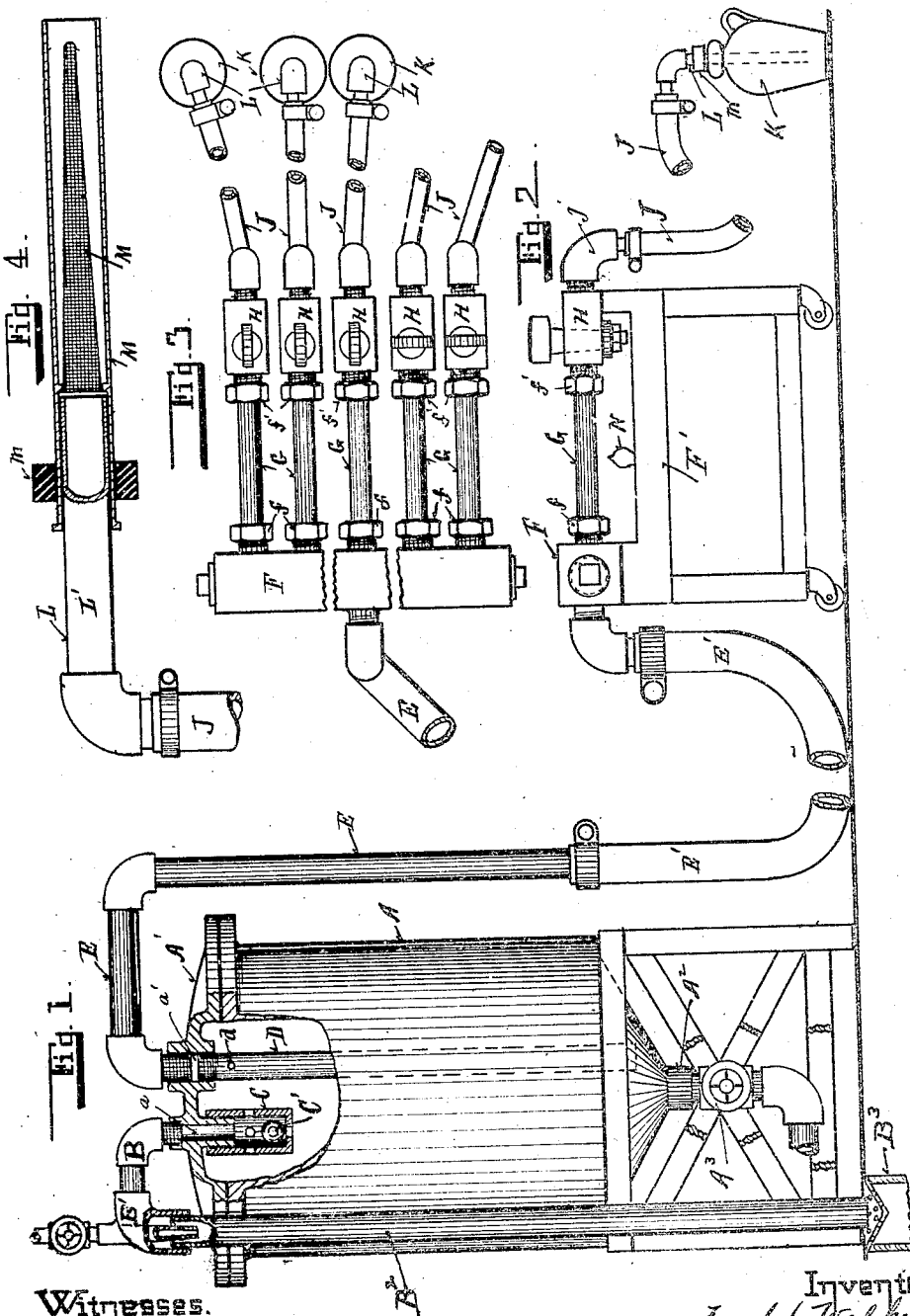


F. J. WALKER, JR.
 APPARATUS FOR HANDLING GRAPE JUICE AND OTHER FLUIDS.
 APPLICATION FILED MAR. 9, 1912.

1,049,180.

Patented Dec. 31, 1912.



Witnesses.

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UNITED STATES PATENT OFFICE.

FRANK J. WALKER, JR., OF ERIE, PENNSYLVANIA.

APPARATUS FOR HANDLING GRAPE-JUICE AND OTHER FLUIDS.

1,049,180.

Specification of Letters Patent.

Patented Dec. 31, 1912.

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To all whom it may concern:

Be it known that I, FRANK J. WALKER, Jr., a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Handling Grape-Juice and other Fluids; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to apparatus for use in the manufacture of unfermented grape-juice, but may be used in the handling of other liquids in which such an apparatus may prove useful.

In the manufacture of unfermented grape-juice it is customary after the juice has been pressed out of the fruit, to heat the same to substantially the boiling point and then to put it into glass car-boys or earthen ware jugs and sealed up while hot, and these jugs thus filled with grape-juice are stacked up in layers with boards between the courses, and thus stored for two or three months, and in some instances longer, during which period the solids in the juice settle to the bottom of the vessels forming on the bottoms thereof a thick layer composed of a large percentage of cream-tarter crystals. In removing the liquid from these car-boys or jugs, it is desirable that they be not disturbed until after the liquid is drawn from them, and the object of my invention is to construct an apparatus by means of which the liquid may be drawn out of the jugs, layer after layer, without moving the jug from its position until after the same has been emptied of the clear liquid.

In carrying out my invention I provide a receiving tank with suitable air exhausting apparatus connected therewith and a tube leading therefrom through intermediate gage and shut-off mechanism and straining devices adapted to be inserted into the mouth of a jug.

The features of my invention are herein-after more fully set forth and described and illustrated in the accompanying drawings in which:

Figure 1, is a side view in elevation of the receiving-tank and suction apparatus

with portions thereof broken away. Fig. 2, is a side view in elevation of the gage and shut-off mechanism, and suction nozzle inserted into a jug. Fig. 3, is a plan view of the same, with portions thereof broken away. Fig. 4, is a view in elevation, and partly in section of the suction nozzle, preferably used with my apparatus.

In these drawings A, indicates a receiving-tank provided with an air-tight cover A', and from the bottom of this tank a discharge-pipe A², provided with a shut-off valve A³, leads to any point desired, that may be most convenient in the further treatment of grape-juice. Connected with an opening a, in the cover A', is a tube B, leading to a suction apparatus B', preferably of the water-jet type as shown in Fig. 1, and from this suction apparatus a tube B², leads to a point adjacent to a drain B³, in the cellar floor for the conducting away of the water from the suction apparatus B'.

Within the tank A, embracing the inner-end of the opening a, in the cover A', thereof, I provide a shut-off valve C, composed of a cylindrical cage containing a float-ball C', adapted to float on the liquid as it nears the top of the tank, until the said float closes the mouth of the opening a, thereby shutting off the air from the suction apparatus B', for the purpose of stopping the operation of the apparatus when the tank A, becomes filled with liquid. Connected with another opening a', is a tube D, leading therefrom downward nearly to the bottom of the tank A, which tube D, is provided with one or more small openings d, near the upper end thereof to permit of the drawing from the tube D, therethrough, any air which may enter the tube D, during the operation of the apparatus, for the purpose of eliminating foam from the upper surface of liquid in the tank A. From the upper end of the opening a', in the cover A', a tube E, leads to a section of hose E', This hose E', is connected to a header F, which may be of any length desired and is preferably mounted and supported upon a portable table F', adapted to be moved over the cellar floor to such points as may be desired during the operation of the apparatus. Connected with this header F, by means of suitable packing devices f, are glass tubes G, of such number as may be desired, and to the opposite ends of the tubes G, I connect shut-off valves H, by means of suitable

packed joints f' . From each of the shut-off valves H, small sections of hose J, lead to jugs or car-boys K. The sections of hose J, are connected to the valves H, by means of suitable connections j .

Each section of hose J, is provided with a suction nozzle L, (see Fig. 4) which I preferably make of a section of tube M, mounted upon the end of a short tube L' , by means of a telescopic or slip-joint so that the tube M, may be readily removed from the tube L' , when desired, and upon the tube M, a slidable ring m , is placed to serve as a gage to prevent the tube M, from entering entirely to the bottom of the jug. Within the tube M, I secure a conical screen M' , for the purpose of preventing the sediment in the bottom of the jug from being drawn into the hose J. In practice, I have preferably a supply of several extra tubes M, convenient, and when the screen M' , becomes foul, the tube M, is removed from the tube L' , for the purpose of cleaning the screen M' , and another tube M, having a clean screen therein can be immediately placed on the tube L' , without loss of time.

Upon the table F' , underneath the glass tubes G, I fix an electric light N, by means of which the passage of liquid through the glass tubes G, can be observed, so that when the liquid in any one of the car-boys or jugs K, reaches the lower end of the suction nozzle L, and air enters therefrom through the hose J, into a glass tube G, the operator can see the air-bubbles in the glass tube G, and can thereupon turn the corresponding shut-off valve H, to prevent air passing into the receiving tank A, until the suction nozzle L, is transferred to a full jug K.

It is obvious from the drawings and the foregoing description that by means of the flexible hose E' , the table F' , may be moved over the cellar floor to such points as may be most convenient to the jugs that are desired to be emptied, and that by means of the individual sections of hose j , each individual jug may be emptied without moving

the same from its position, and thereby disturbing the sediment in the bottom of the same.

Prior to my invention, it was common practice in grape-juice cellars, to place the full car-boy or jug containing juice to be removed, upon an elevated support, and then insert therein a piece of rubber hose, and by drawing thereon by means of the breath of the operative, starting the siphon into operation, and it is common knowledge among those in the grape-juice business, that cellar-men engaged therein become very careless. With the use of my apparatus, this practice of cellar-men is entirely eliminated.

Having thus fully described my invention and the operation thereof, so as to enable others to construct and utilize the same, what I desire to secure by Letters-Patent is:

1. In an apparatus of the character described; a fluid receiving tank, means to exhaust air therefrom, a fluid supply pipe leading into said tank having its terminus near the bottom thereof, a flexible tube secured to the outer end thereof and leading to a tubular cross-head, transparent tubes secured to said cross-head, shut off valves secured on the outer ends of said transparent tubes, a portable table adapted to support said cross-head and transparent tubes, and flexible tubes connected to said valves, substantially as and for the purpose set forth.

2. In an apparatus of the character described, a fluid receiving tank, means to exhaust air therefrom, an automatic valve therein adapted to be operated by the fluid level in said tank to stop the flow of air from said tank, a fluid supply pipe leading into said tank, and a valve in said supply-pipe, substantially as set forth.

In testimony whereof I affix my signature, in presence of two witnesses.

FRANK J. WALKER, JR.

Witnesses:

H. M. STURGEON,
E. E. MYERS.