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H. LINDENBERGER

1,979,693

EXTRACTOR

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Fig. 1.

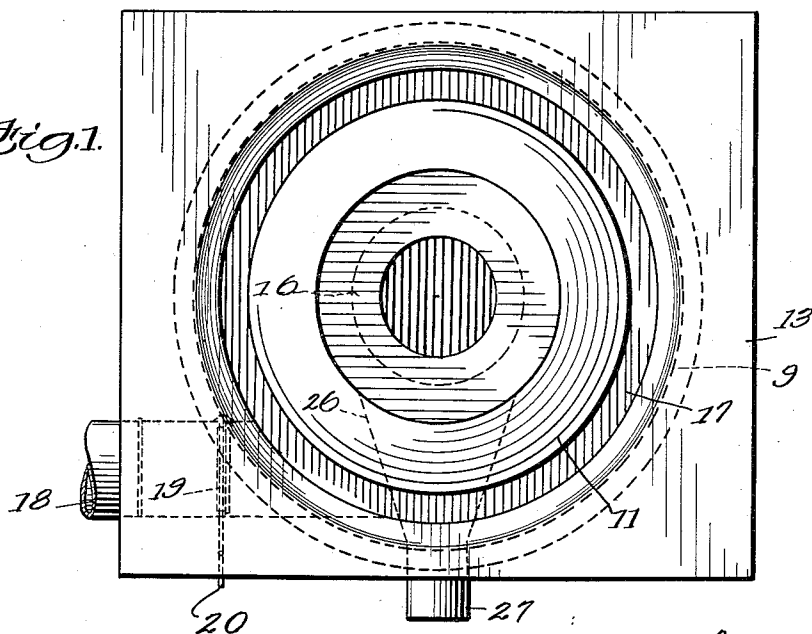


Fig. 2.

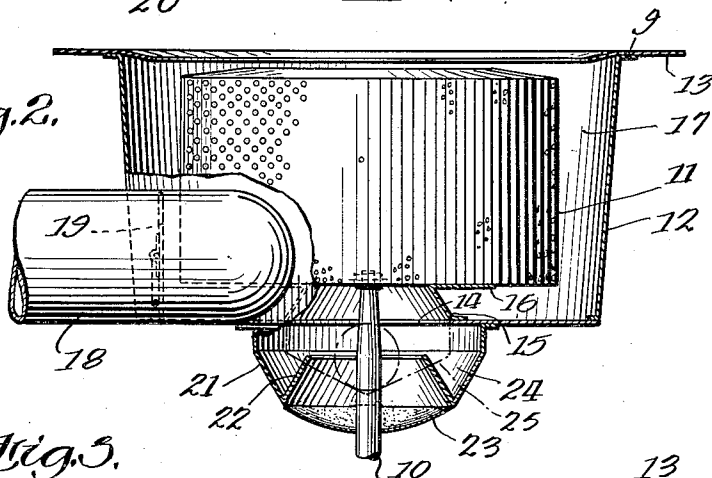
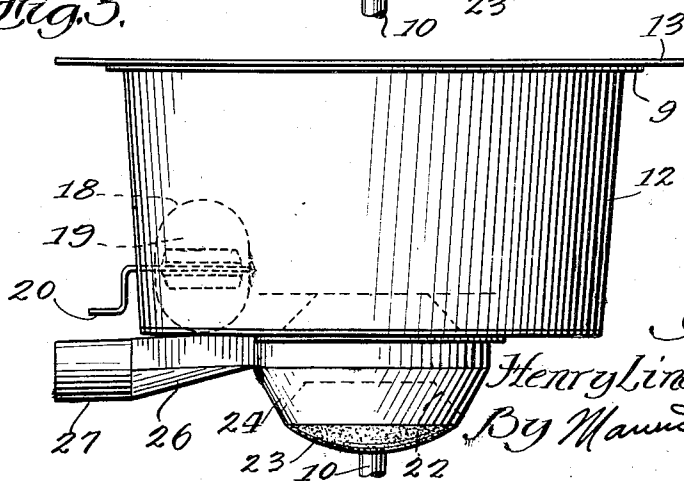


Fig. 3.



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UNITED STATES PATENT OFFICE

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EXTRACTOR

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2 Claims. (Cl. 210—66)

This invention relates to extractors such as are used for extracting the fluid or other moisture from clean fabrics, garments or the like.

The extractor within which my improvement is incorporated is of the centrifugal type and the general construction of which is illustrated in Patent #1,423,827, to D. H. Benjamin and A. R. Curtis, issued July 25, 1922.

The main object of this invention is to provide in an extractor of the character described novel and improved means for separating the fluid driven off by the extracting operation from the fumes created during said operation.

Another object of this invention is to provide an improved construction of extractor in which is provided novel means for preventing the escape of fumes created within the extractor and also for catching said fumes and directing them to a suitable condenser to be condensed and re-claimed for use.

Another object of the invention is to provide in an extractor of the character described a fluid escape means controlled by a suitable damper, whereby the fluid accumulated within said extractor will readily drain off into the washer with which the extractor may be in communication, said damper being closed when the washer is in operation and the extractor idle.

A still further object of this invention is to provide in an extractor of the character described a novel and improved means for preventing the ingress of air to the extractor, said means also being capable of preventing the escape of fumes or vapors created therein.

A still further object of this invention is to provide a novel and improved construction of extractor wherein all of the fluid driven off by the centrifugal action of the extractor will be readily returned to the washer and all of the fumes created within the extractor will be caused to accumulate at the lower portion thereof, from where it may be conducted to a suitable condenser for condensing the same.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention consists in certain novel features of construction, arrangement and combination of parts, hereinafter more fully described, illustrated in the accompanying drawing and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention I have illustrated in the accompanying drawing a preferred embodiment thereof, from an inspection of which when considered in connection with the following description, my invention, its mode of construction, assembly and many of its advantages should be readily understood and appreciated.

Referring to the drawing, in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures in the drawing:—

Figure 1 is a top plan view of an extractor embodying my invention;

Figure 2 is a section through the same, the basket thereof being shown in elevation; and

Figure 3 is an elevational view of the extractor.

Referring to the drawing more specifically by characters of reference, the numeral 10 designates the extractor spindle, which is a strong vertical shaft mounted for rotation in suitable bearings. Any suitable and well known means may be provided for driving the said spindle, one of said means being the driving means illustrated in Patent #1,423,827. As the spindle mounting and driving means may be of any standard and well known construction, and as the same forms no part of the present invention, it is not thought necessary to describe the same in more detail.

The spindle 10 carries at its upper end a basket 11, which may be of standard construction and provided with a large number of perforations or openings through which the moisture or fluid is discharged by centrifugal force as the basket is rotated with its associated spindle. Surrounding the basket 11, is a cylindrical shell or casing 12, which casing is suitably supported from the stationary frame member 13, to which it may be welded or otherwise rigidly and permanently secured, as shown at 9 in the drawing. The top frame member 13, is the upper wall of a container within which the extractor is mounted, said casing 12 being thus suspended within the said container. The shell 12 is adapted to collect and drain off the fluid ejected from the basket during the extracting operation.

The shell 12 has provided in the bottom wall thereof a central opening 14, through which the spindle 10 is adapted to pass, and said opening is surrounded by a cone shaped member 15, the lower portion of which member is provided with an annular flange, by means of which it is rigidly secured in any suitable and well known manner to the bottom wall of the shell 12. The upper

end of the member 15 is also provided with an annular flange 16, which is horizontally disposed, there being sufficient clearance between the bottom wall of the basket and the flange 16 to permit free rotation of the former so as not to interfere with the operation of the basket. Thus, any fluid discharged or ejected from the basket during its operation will be collected in the space 17 provided between the basket and shell, said fluid then being caused to flow or drain off through the conduit 18, which conduit is in communication with the space 17, through an opening provided in the side wall of the shell 12. The other end of the conduit 18 may be in communication with the washer (not shown) to which the fluid is to be returned for reuse. There is provided in the conduit 18 a suitable damper 19, which may be of any well known construction, said damper being pivotally mounted intermediate its ends within the conduit to permit it to assume either an open or closed position.

A handle 20 is provided on the damper and by means of this handle the said damper may be readily actuated to be moved to the desired position within the conduit. It is to be understood that the damper 19 will remain closed when the washer is being operated and will only be open during the operation of the extractor. Obviously, if desired the damper may be connected up with the operating machinery of the dry cleaning apparatus of which this extractor forms a part, so as to move automatically to its opened and closed positions.

Rigidly connected to the under side of the bottom wall of the shell 12, is a member 21, said member also being disposed so as to surround the opening 14 and having provided on its free bottom edge an inwardly upstanding annular cone shaped portion 22, of the shape illustrated in Figure 2 of the drawing. The open lower end of the member 21 is closed by a suitable bag 23, of cloth or other similar material, which bag is adapted for sealing the opening around the spindle 10 against the ingress of air or escape of fumes from the chamber 24, formed by the member 21. An opening 25 is provided in the side wall of the member 21, said opening being adapted for establishing communication between the chamber 24 and a throat shaped member 26, which is rigidly secured to the member 21 adjacent said opening. The member 26 terminates in an outlet 27, which outlet may be connected to a conduit or pipe for directing the fumes issuing therefrom to a suitable condenser (not shown) for condensing the fumes, thereby reclaiming the same for reuse.

The cleaning fluid to be used in my dry cleaning system is carbon tetrachloride or the like, the fumes of which will be heavier than the air present in the extractor, and because of that it will be readily apparent that said fumes will flow to the bottom of the member 21, from where they will flow into the outlet 27. In the extracting operation, the fluid and fumes will be readily separated from each other, with the result that the fluid will be drained off and passed into the washer and the fumes will be accumulated in the chamber 24 and permitted to pass off to the condenser. The provision of the bag 23 will not only

prevent the ingress of air to the chamber 24, but it will also prevent the escape of fumes from said chamber. Particular attention is directed to the simplicity of construction and to the efficiency of operation of an extractor constructed in accordance with the principles of my invention.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood and appreciated from the foregoing without further description, and should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are, nevertheless, capable of wide variation within the purview of my invention, as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:—

1. An extractor of the character described, adapted for use in a dry cleaning system, comprising a rotatable perforated basket, an outer shell surrounding said basket, said outer shell being adapted for catching the fluid discharged by the basket during the extracting operation, means for conducting said fluid away from said outer shell, said outer shell having a central opening provided in the bottom wall thereof, an upstanding member surrounding said opening and secured to the inner side of the bottom wall of said shell, a second member surrounding said opening and secured to the outer side of the bottom wall of said shell, said second member being adapted for receiving and accumulating therein the fumes created during the extracting operation, and means for conducting away said fumes from said member, the bottom edge of said last mentioned member being closed by a cloth closely contacting the basket spindle, whereby the escape of fumes, as well as the ingress of air will be prevented.

2. An extractor of the character described, adapted for use in a dry cleaning system, comprising a rotatable perforated basket, a spindle upon which said basket is mounted with which it is adapted to rotate, an outer shell surrounding said basket and spaced therefrom to provide a space for receiving the fluid discharged from the basket, the bottom wall of said outer shell being provided with a central opening through which the basket spindle is adapted to extend, an upstanding member surrounding said opening and secured to the inner side of the bottom wall of the shell for preventing the escape of fluid through said central opening, means for conducting away the fluid from said shell, a depending member secured to the under side of the bottom wall of the outer shell also surrounding said opening, said last mentioned member being adapted for receiving therein the fumes created during the extracting operation, means for conducting away said fumes from said depending member, and a cloth member surrounding said spindle and secured to the lower edge of the depending member adapted for preventing the ingress of air to said depending member, as well as the escape of fumes therefrom.

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