

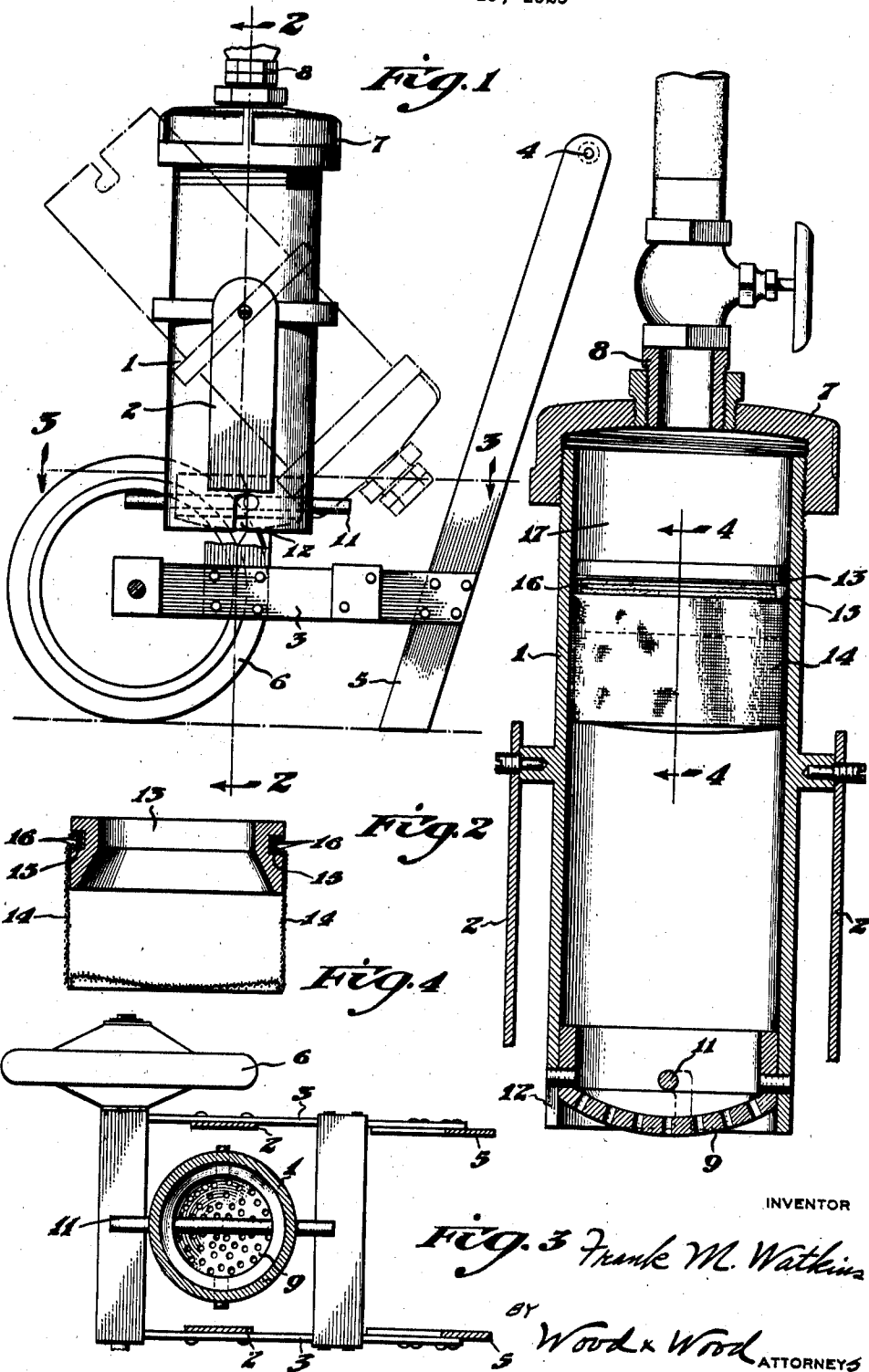
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EXTRACTOR

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## UNITED STATES PATENT OFFICE

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## EXTRACTOR

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2 Claims. (Cl. 100—50)

This invention relates to improvements in compression extractor or press particularly applicable for quickly and efficiently expressing water from wet clothing, as wet wash in laundries. A portable extractor constitutes the cylindrical container in which the goods is compressed against a foraminous head of the container by a piston moving under air pressure, the piston of a character to allow a certain percentage of the air to permeate therethrough and pass through the compressed goods for expressing and carrying off a portion of the water in addition to the amount that can be expressed or squeezed out by compression alone.

An object of the invention is to provide an extractor in which water or liquid is expressed from the goods placed in the extractor by compressing the goods while under compression, and subsequently utilizing the compressive force to discharge the contents from the extractor.

Another object of the invention is to provide a device particularly for laundry service to expeditiously and efficiently express water from wet wash goods by compression.

Another object of the invention is to provide a portable extractor adapted for laundry service wherein the wet wash goods can be compressed by means of a piston for expressing the water from the goods and subsequently discharging or expelling the goods from the extractor set to any angular position for quickly unloading the contents at an elevation or otherwise under the force of the moving piston.

Another object of the invention is to provide a method of expressing water from wet wash or other product, consisting in subjecting the material to compression within a container having a strainer for draining the water, utilizing air under pressure for compression, with a restricted supply of the air permitted to penetrate and pass through the material while under compression.

Various other objects and features of the invention will be more fully set forth in the description of the accompanying drawing, in which:

Figure 1 is a side elevation of the extractor in position for compressing the wet wash goods, with the cylinder, shown in dotted line, in upturned position for discharging the contents thereof.

Figure 2 is an enlarged section on line 2—2, Figure 1.

Figure 3 is a sectional view taken on line 3—3, Figure 1.

Figure 4 is a sectional view of the piston.

The use of the extractor is primarily intended

for laundry service to compress wet wash goods, it, however, being apparent that its utility may extend into other fields, for compressing any commodity to extract the liquid or juice therefrom by compression and with the aid of air forcibly passing through the compressed contents.

Referring to the drawing, 1 indicates an open ended cylinder pivotally mounted upon a carriage or perambulator to render the device portable, adapting the same to be wheeled from place to place in its laundry service. The cylinder is pivotally mounted between a pair of supports 2—2 adapting the cylinder to be swung to any angular or upturned position. The supports 2—2 are fixed at their lower end to a carriage frame structure 3 which is provided with a handle bar 4, a leg support 5, and a pair of wheels 6.

One end of the cylinder is provided with a closure head 7 to which the air line connections 8 are made, and the opposite end of the cylinder is provided with a foraminous or perforated cap or plug 9 removably secured within the cylinder and serves as a head against which the wet wash goods is compressed by a piston moving under air pressure. The foraminous head or strainer cap 9 has a cross rod 11 engaged therethrough and arranged to engage with a pair of L-slots 12 in the lower end of the cylinder providing a bayonet lock connection for removably securing the cap within the cylinder.

The piston comprises a ring or annulus 13 slidable within the cylinder and has a bag or sack 14 engaged over one end thereof. The bag or sack is preferably of a tightly woven fabric and formed to provide a cylindrical body portion of a diameter approximately equal to the bore of the cylinder, with the rim edge thereof engaged over the piston ring and into an annular groove 15 in the ring and bound thereto by a cord or band 16. The bag thus serves as a packing for the ring, making a sealing joint between the piston ring and wall of the cylinder to prevent air escaping through the joint.

The bag texture is such as will permit a small amount of air to pass therethrough not sufficient to materially hinder or reduce the compression force of the piston. The bag when expanded under the pressure of the air provides a cushioning head for the piston to yield and accommodate for any irregularities in its contacting surface upon the goods so as not to cause any injury to the goods, the piston practically serving as a cover for the goods to retard or restrict the passage of air therethrough, and to provide a movable wall

for the air chamber within the cylinder so that the wet wash or goods is compressed under the pressure of the air rather than under the moving pressure of a piston.

- 5 A small percentage of the air escapes through the sack and is forced through the compressed goods, materially assisting in the amount of water expressed from the goods, so that a greater percentage of water can be expressed, than would be possible to accomplish by compression alone.

- 10 It has been experienced that when subjecting the goods for a given diameter of cylinder under one hundred pounds air pressure the goods will be compressed to a degree to express approximately thirty percent of the water or liquid contained in the goods, and permitting a small percent of the air to be forced through or penetrate the compressed goods, finally escaping through the strainer head of the cylinder, approximately twenty percent more of water is expressed for a very short period of treatment, taking fifty percent of water from a charge of wet wash, which is regarded sufficient for the laundries.

- 25 Higher air pressures and more extended length of treatment would increase the percentage of water expressed. Thus, a minute's treatment under the present method serves equal to a fifteen minutes' treatment under the prevailing method in the use of a centrifugal extractor. The cylinder or container can be loaded from either end, that is, by removing the closure head 7 and piston and filling the cylinder to a short distance from the top, with the air inlet end of the cylinder being in the upper position, and in such position the water can drain from the goods while loading, although in some instances this might not be desirable particularly if the filling is at a place at which drainage facilities are not at hand. The cylinder, therefore, can be upended and the perforated cap 8 removed and the cylinder filled from such end.

- 40 After the cylinder has been filled, air pressure is admitted into the pressure chamber 17, expanding the bag of the piston, forcing the same against the wet wash for pressing the goods. The

device is easily transportable and serves as a truck for conveying the goods from one place to another, so that the container or cylinder can be filled as the goods are taken from the washing machine, and after the water has been expressed can be conveyed to a second place for the next step in the operation of laundry treatment, as to a sorting table, or discharged in tumblers.

By removing the cap 8 and admitting air at low pressure into the cylinder the entire contents of the cylinder can be discharged therefrom and onto a table. For discharging the contents of the cylinder, it is only necessary to provide for a small air connection with low pressure, as one pound of air pressure would be sufficient for this purpose. This saves several handlings of the goods over the prevailing methods and thus materially reduces the operating cost as well as facilitating the manner of handling the goods.

Having described my invention, I claim:

1. A device of the character disclosed, a cylindrical container for holding goods for treatment to express the water therefrom having an air pressure inlet and a removable strainer, and a piston movable within said container under the pressure of air admitted into the container, at one side of the charge of material, for compressing the material, said piston comprising a textural bag for yieldingly engaging the material and permitting the escape of a restricted supply of the compressed air therethrough for passage through the material compressed.

2. A container for holding material from which water is to be expressed, having a foraminous head against which the contents of the container are compressed, and a piston movable within the container comprising a ring carrying a textural bag, said piston moving under the pressure of air admitted into the container compressing the bag against the contents of the container, the bag of a texture permitting a limited portion of the air to permeate therethrough and pass through the compressed contents and escape through the foraminous head.

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