

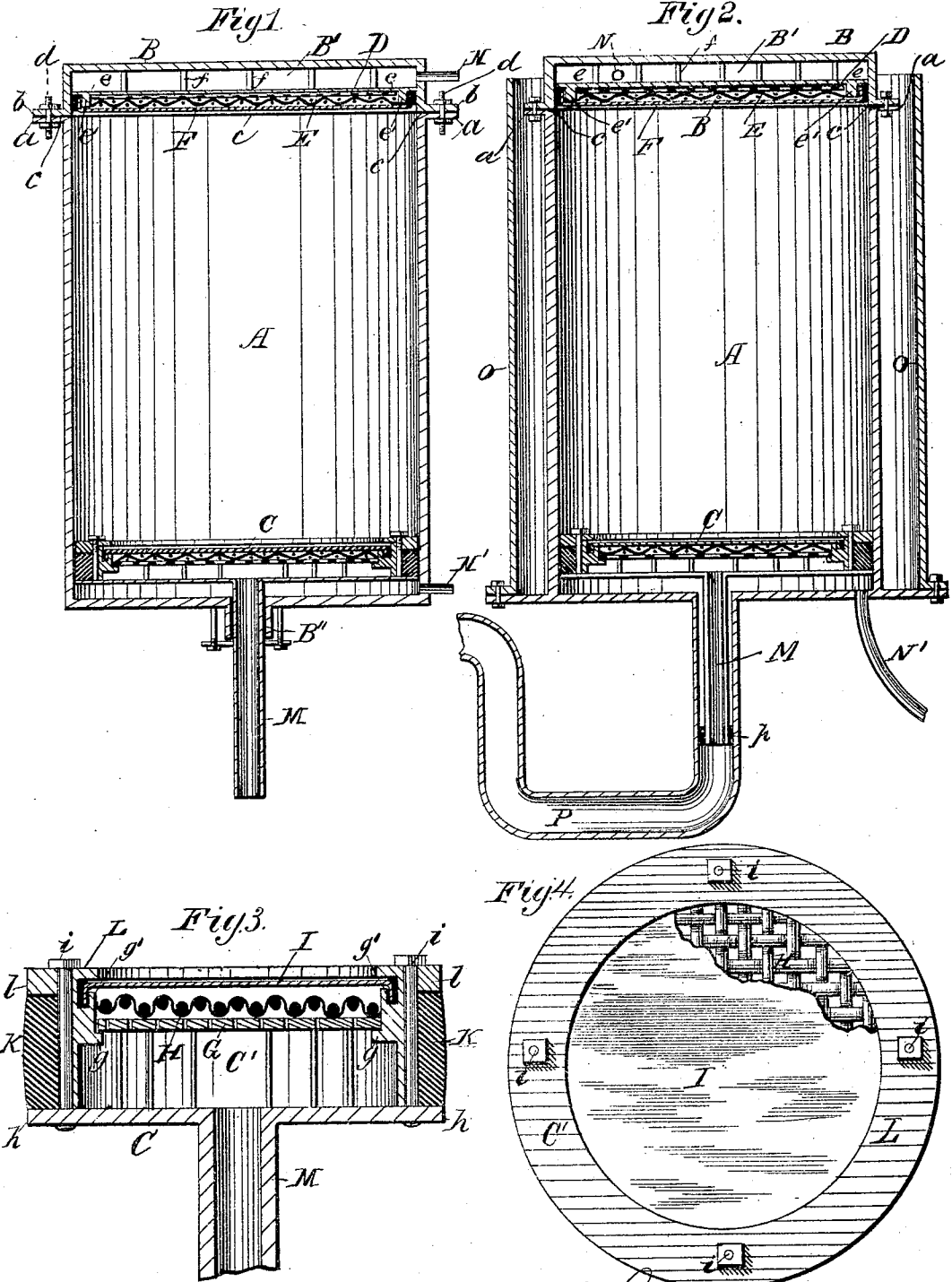
(No Model.)

H. NEAHOUS.

Press for Treating Paraffine Oils.

No. 242,554.

Patented June 7, 1881.



WITNESSES

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PRESS FOR TREATING PARAFFINE-OILS.

SPECIFICATION forming part of Letters Patent No. 242,554, dated June 7, 1881.

Application filed April 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, HERMAN NEAHOUS, of Pittsburg, in the County of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Presses for Treating Paraffine-Oils; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a longitudinal axial section of my improved apparatus or press. Fig. 2 is a similar view, showing a modified construction of the press. Fig. 3 is a vertical cross-section of the hollow plunger-head on an enlarged scale, to show the details in its construction; and Fig. 4 is a top or plan view of the same, with the filter or strainer cloth partially removed.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to the process of and apparatus for treating paraffine-oil or other oils of like nature and requiring similar treatment; and it consists in an improved construction of the apparatus for which Letters Patent of the United States No. 231,840 were granted to me on the 31st day of August, 1880, as hereinafter more fully set forth.

By my improved process the frozen oil which is to be treated for the purpose of separating the paraffine-wax (the admixture of which with the oil is injurious to the lubricating qualities of the latter) is placed in an air-tight receptacle or press-box of suitable size and shape, and subjected to the action of a hydraulic plunger or piston, the oil escaping through filters arranged in the head of the press-box and in the head of the plunger, while the wax is deposited upon the inside of said filters.

The object of my present improvement is to simplify the construction of the press, and also to facilitate the operation of separating the wax from the oil; and the nature of my said improvement will readily be understood by reference to the following description, taken in connection with the drawings.

A represents the oil-receptacle or press box, which may be cylindrical, oval, square, or of

any other desired shape in cross-section, and either vertical or horizontal. In the drawings I have represented it as a vertical cylinder having a flange or annular shoulder, *a*, encircling its upper end, to which is bolted the flanged cover or head B, a packing-ring, *c*, being placed between the two flanges *a* and *b*, through which the bolts *d* are inserted. The head B is closed at the top, forming a chamber, B', which has an outlet or exit pipe, N, and an inwardly-projecting annular flange, *e*, which supports (against upward pressure) a perforated plate, D.

F is the filter or strainer cloth, between which and the plate D is a grating, E, to keep the cloth from being pressed flat against the plate D, and thus choking up its perforations which lead into the chamber B'.

In cases where the pressed oil or other liquid requires refiltering, or a more thorough filtering than is obtainable by the use of the strainer-cloth, the hollow cylinder-head B is made higher, to make room on the top of the strainer and its appurtenances for charcoal or other suitable filtering material. In either case the filter-plate D is braced by short posts *f*, which extend down from the closed top B and bear with their lower ends against said plate, thus effectually preventing it from bulging in by the pressure underneath. The strainer-cloth is held in place upon its grating E by rope packing, which is wedged tightly down into an annular space formed by a downwardly-projecting flange, *e'*, at right angles to flange *e* in chamber B'.

The piston or plunger, which operates in conjunction with the oil-receptacle or casing A B, has a hollow head, C, of substantially the same construction as the hollow cylinder-head B, as will be seen more clearly by reference to Fig. 3 of the drawings. Like this it has two annular flanges, *g* *g'*, set at right angles to one another, one of which forms a support for the perforated filter-plate G, while the other, *g'*, forms, with the rim of the chamber C' in the piston-head, an annular space or groove for securing the rim of the filter or strainer cloth I, which is tamped firmly down into said groove by rope or other suitable packing. The cloth I is prevented from choking up the perforations in plate G by an intermediate grating,

H. The closed bottom of the plunger projects somewhat over its sides, so as to form a flange, *h*, for the packing K, which is held between said flange and an adjustable packing-ring, L, the flange *l* of which bears against the packing. Ring L is secured upon the rim of the plunger-head by nitted bolts *i*, by tightening down the nuts of which flange *l* is forced down against the packing, causing this to expand laterally and make a close fit in the cylinder.

M is a pipe or tubular piston-rod, which is inserted into the bottom of the hollow plunger C and projects out through a stuffing-box, B'', in the bottom of cylinder A; and N' is a pipe through which air or liquid is forced from a hydraulic pump into cylinder A underneath the plunger in operating the press. I prefer, also, to insert a small pipe into the upper end of the cylinder, just below the flange *a*, through which air or liquid may be forced for the purpose of lowering the plunger if its own gravity will not be found sufficient to carry it down to the bottom of the cylinder after the escape of the air or liquid underneath it. Under ordinary circumstances, however, recourse need not be had to this expedient, as the weight of the plunger will be found sufficient.

In view of the fact that the paraffine must be treated while in a frozen state it will sometimes, especially in warm weather, be found desirable to inclose the press within a jacket or casing, as shown at O in Fig. 2, which may be filled with ice, running water, or a current of cold air, for the purpose of keeping the contents of the press cool.

If it is desired to have the outlet of the oil through hollow piston-rod M on a level with the bottom of the press, this may be effected by connecting a pipe, P, to the stuffing-box B'', said pipe forming a jacket for the tubular piston-rod, as shown in Fig. 2, the piston-rod being packed at its lower end, as shown at *p*. Pipe P is bent into a U shape, with its outer arm reaching up to a level with the bottom of the press, and is then bent to one side and conducted to a vat, tank, or other receptacle for the oil.

To operate this press the plunger C is pushed nearly to the bottom of its cylinder or casing, which is then filled from the top with the frozen paraffine-oil or other substance to be treated, the head B having first been removed. When the press is full the head is replaced and fastened tightly down upon the packing *c* by the bolts *d*, and air or liquid is forced, under pressure, through the inlet N', which causes the plunger to rise and compress the contents of the press, so that the expressed oil will flow in two directions through the filters F and I into chambers B' and C' respectively, and out through the discharge-pipes N and M into suit-

ably-located tanks or receptacles. The wax is deposited gradually as the plunger advances upon the two filters, and acts as an additional or auxiliary filter for the oil, which has to pass through the sheets of wax formed upon the respective filters before it can escape from the press.

After the operation of pressing the wax is scraped off the filters by removing the head B; or, if desired, the chamber B' of this, which contains the filter F and the wax deposited thereon, may be hinged upon the rim or flange *b*, to permit of its being opened for the purpose of removing the wax without the necessity of removing bolts *d*.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A press for treating paraffine-oils, composed, essentially, of a casing or oil-receptacle, A, of suitable shape, having a chambered filtering-head, B, and stuffing-box B'', a chambered filtering-plunger, C, fitting tightly in the receptacle A, and provided with a tubular piston-rod, M, an inlet, N', and outlet N, all constructed and combined substantially as and for the purpose herein shown and set forth.

2. A press for treating paraffine-oils, composed, essentially, of an outer jacket or casing, O, an inner oil-receptacle, A, provided with a chambered filtering-head, B, stuffing-box B'', inlet N', outlet N, and U-shaped pipe P, and a chambered filtering-plunger, C, fitting tightly in the oil-receptacle, and having a tubular piston-rod, M, working in the stuffing-box B'', and pipe P, substantially as and for the purpose herein shown and described.

3. In a press for treating paraffine-oils, an oil-receptacle or press-box having suitable discharge-pipes, in combination with a stationary wax-filter attached to and forming part of one of the heads of the press, and a movable wax-filter attached to and forming part of the press-plunger, substantially as set forth.

4. The chambered plunger C, constructed with the packing-flange *h*, interior flanges, *g g'*, at right angles to one another, perforated disk G, grating H, strainer-cloth I, with its annular packing, adjustable packing-ring L, having flange *l*, bolts *i*, packing K, and tubular piston-rod M, all constructed and combined substantially as and for the purpose herein shown and specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

HERMAN NEAHOUS.

Witnesses:

JOHN W. VOGEL,
MICHAEL BANMANN.