

L. P. R. DE MASSY.
 FILTERING PRESS.

No. 51,277.

Patented Nov. 28, 1865.

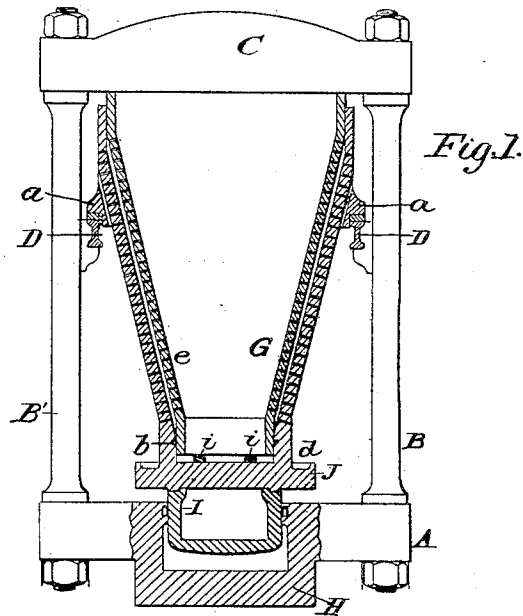


Fig. 1.

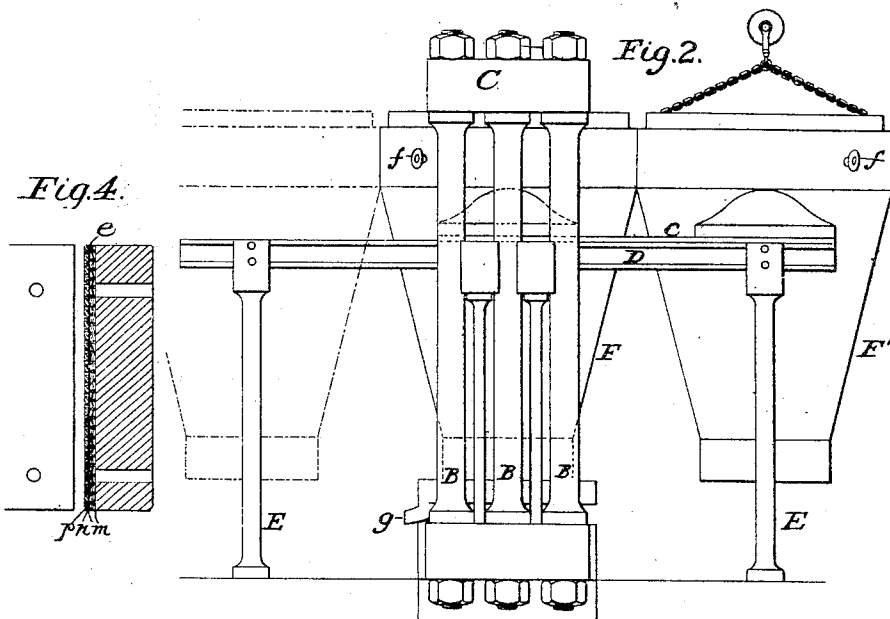


Fig. 2.

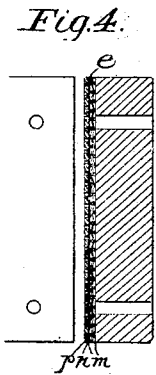


Fig. 4.

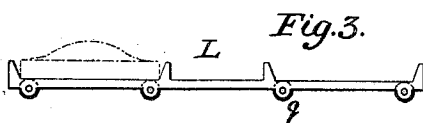


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

L. P. R. DE MASSY, OF PARIS, FRANCE.

IMPROVED FILTERING-PRESS.

Specification forming part of Letters Patent No. 51,277, dated November 28, 1865.

To all whom it may concern:

Be it known that I, L. P. R. DE MASSY, of Paris, in the Empire of France, have invented an Improved Filtering-Press; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of certain apparatus, fully described, for effectually and rapidly compressing and filtering substances, the apparatus being applicable to the extraction of coloring-matter from dyeing-woods, and especially useful in the manufacture of oils, sugar, paper, starch, and in many other useful arts.

In order to enable others to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is an elevation, partly in section, of my improved filtering-press; Fig. 2, a side view; Fig. 3 a modification of part of the apparatus, and Fig. 4 a detached sectional view of part of one of the conical casings drawn to an enlarged scale.

Similar letters refer to similar parts throughout the several views.

A is the foundation-plate of the apparatus, on one side of which are three columns, B B B, and on the opposite side three similar columns, B' B' B', all of which serve to connect the foundation-plate to the cross-piece C.

To the inside of each row of columns is secured a rail, D, each end of the latter which projects beyond the columns being supported by a pillar, E.

Between the two rails is suspended a conical casing, G, lugs *a* on which bear on plates or bars *c*, which rest on the beams. Within the casing F is a similar casing, G, both casings being of the conical form represented throughout the greater portion of their lengths, but being cylindrical at the top and bottom, so that the outer casing may be guided during the limited vertical movement which is imparted to it.

In the casing F, at the lower end of the same, are slots adapted for the reception of wedges *i*, and with the annular space between the two

casings communicates a tube, *f*, Fig. 2, for a purpose described hereinafter.

In the foundation-plate A, and forming a part of the same, is the cylinder H of a hydraulic press, and in the latter fits the usual plunger, I, on the top of which is a plate, J, a gutter or groove, *d*, near the outer edge of the plate communicating with an outlet-tube, *g*.

Both of the casings F and G are perforated as shown in the drawings, and in some instances I cover the inner perforated casing with wire-cloth *m*, on the outside of which there may be a covering, *n*, of textile fabric, and on the outside of the latter a perforated plate, *p*, as best observed on reference to the enlarged view, Fig. 4, the inside of the outer casing being lined in a similar manner.

In using the above-described apparatus the casing F is moved to a position directly above the plate J, and water is forced into the cylinder H until the plate is in contact with the lower end of the said casing F. The inner casing, G, is then raised by driving the wedges *i* into the slots above alluded to until the upper end of the casing is in contact with the cross-piece C. The conical portions of the two casings are thus separated, leaving an intervening annular space, into which the materials or substances to be operated on are introduced through the pipe *f*. When this annular space has been filled, water is forced into the cylinder H, as usual in hydraulic presses, the plunger I, and consequently the outer casing, F, are elevated, and the substance between the two casings subjected to so great a pressure that the fluid is extracted therefrom and forced through the lining of the casing F and through the perforations of the same, as well as through the covering of the casing G and its perforations, the fluid finding its way in a filtered condition into the gutter *d*, and thence through the pipe *g* into any suitable receptacle. When all the fluid has been extracted from the substance the plate J is lowered, and the two casings, being at liberty, are moved to the position shown in dotted lines, Fig. 2, when the inner casing is removed and the inside of the outer casing and exterior of the inner casing cleansed by the removal of the dry refuse material. In the meantime, and while this

cleansing operation is in progress, an additional outer casing and inner casing are moved to a position above the plate J, and the pressing and filtering conducted as before, so that there is but little interruption of the process.

The two sets of filtering-cones may be suspended in a frame, L, Fig. 3, which is provided with rollers *g*, adapted to the rails D, so as to facilitate the movement of the cones to and fro along the rails.

The character of the covering of the inner casing and lining of the outer casing will depend in a great measure upon the material or substances to be acted on. In some cases no covering or lining will be necessary, the simple perforations of the casings sufficing to effect the desired filtration. In other cases it may be advisable to use a covering of some textile fabrics, in other cases wire-cloth may be used, and in others both coverings may be employed.

It will be evident without further description that a variety of substances can be effect-

ually and rapidly compressed and filtered by the above-described apparatus.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of the inner and outer conical perforated casings, F and G, constructed and operating substantially as described, for the purpose specified.

2. The combination of the said inner and outer perforated casings with lining or covering of wire-cloth or textile fabric.

3. The combination of the said inner and outer perforated conical casings with the hydraulic press and rails D D, the whole being arranged and operating substantially as and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT DE MASSY.

Witnesses:

LOUIS ROBERT DE MASSY, Fils,
E. RICHARD.