May 14, 1929. M. MICHEL 1,713,478

REMOVABLE FILTERING AND WASHER PLATE FOR PRESSES

Filed Nov. 22, 1927

Fig. 1.

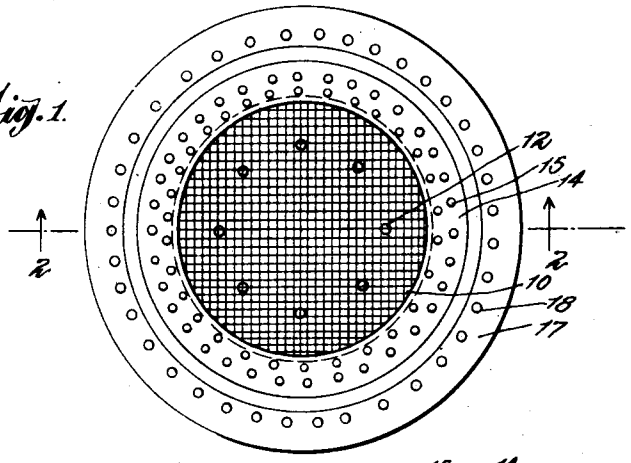


Fig. 2.

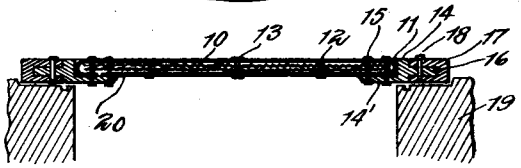


Fig. 3.

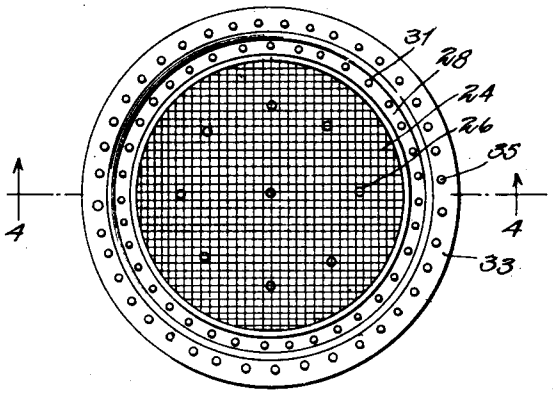
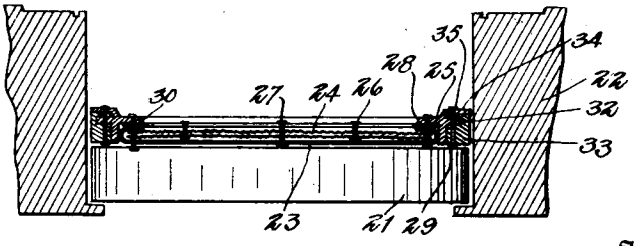


Fig. 4.



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UNITED STATES PATENT OFFICE.

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REMOVABLE FILTERING AND WASHER PLATE FOR PRESSES.

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This invention relates to improvements in filtering-plates, particularly to readily exchangeable washer- and filtering-plates, for hydraulic presses, and more particularly for the pressure pots of presses used in the manufacture of cacao powder in which the cacao butter is pressed out of the mass.

It is the principal object of my invention to provide circular filtering-plates made of metal screening which are extremely light and convenient to handle, so as to allow a ready exchange.

Another object of my invention is the provision of filtering-plates consisting of a plurality of superposed metal screens of different mesh held together at the margin so as to form a whole, in which the inner screens are of finer, and the outer screens of coarser mesh.

A further object of my invention is the provision of filtering-plates having each a marginal clamp or ring holding the metal screens forming the filtering-plates together and equipped with a washer or ring of breaklining, hair or fibrous material.

A still further object of my invention is the provision of filtering screens, particularly for cacao presses of a form adapted for use with presses of varying construction.

The filtering-plates in use at the present time are very heavy and form an integral part of the press, and are therefore hard to clean and cannot be readily exchanged, and if exchangeable they are made from hair or fibre which materials are naturally not as strong and do not stand the wear and tear to which they are subjected in heavy and powerful presses as well as the metal screens of the present invention.

These and other objects and advantages of my invention will become more fully known as the description thereof proceeds, and will then be more specifically defined in the appended claims.

In the accompanying drawing forming a material part of this disclosure:

Figure 1 is a top plan view of a filtering-plate constructed according to my invention.

Figure 2 is a section on line 2—2 of Figure 1, showing the plate resting upon a press pot.

Figure 3 is a top plan veiw of a modified form of lower plate.

Figure 4 is a section through the same on line 4—4 of Figure 3.

My improved filtering plate illustrated in Figures 1 and 2 consists of a plurality of superposed metal screens 10, the screens of wider or coarser mesh on the outside and the screens of finer mesh on the inside in contact with the press-goods.

The upper screen of coarser mesh is partly bent at the outer margin around the edges of the inner screens of finer mesh, as indicated at 11, and the several screens are held together by means of the rivets 12 and a central larger bolt or rivet 13. The outer rim or edge of the screening is resting in a comparatively heavy metal rim 14 and held to the lower, inner flange 14′ of the same by means of the headed bolts 15. The metal rim 14 has an outer flange 16 embedded in an outer rim 17 made of breaklining, hair or fibrous material and held in place by means of bolts 18 or the like adapted to engage and rest upon the press-pot 19, or pan of cacao or other press. A supporting ring 20 separates and cushions the screen on the inner flange 14′ of the heavy metal rim 14.

The operation of my device will be entirely clear from the above description: The filtering plate is placed upon or into the press-pot or pan or a cacao press, and a plurality of screens can be operated at one time by suitably connecting their holder-plates as indicated.

After each pressing opertion the filtering-plate is readily removed from the press and can be thoroughly cleaned, while the removal of the residues of the pressing operation is greatly facilitated. It will be clear that I may use two or more superposed screens of desired and suitable width of mesh according to the nature of the work required, or to the kind of press in which the filtering-plates are to be used.

In the modified form of my filtering plate illustrated in Figures 3 and 4, the same is adapted to rest upon a press-plate 21 in a press-pot 22, and in this instance the filtering plate consists of an outer lower screen 23 of coarser mesh, and a plurality of screens 24 of finer mesh resting thereon. The coarser mesh screen is also bent around the rims of the finer screens as indicated at 25 and the screens are held together by rivets or bolts 26, and a central headed bolt 27 or the like.

The rim 25 engages the inner flange 28 of a comparatively heavy metal rim 29, and is cushioned therefrom by a ring 30, and connected thereto by means of bolts 31 or the like. The rim 29 has also an outer flange 32 resting in an outer flange or rim 33 made of breaklining, hair or fibrous material covered

by a rim 34 and the parts in this construction are held together by means of bolts 35 or the like.

It will be understood that I may make such changes as come within the scope of the appended claims in the general arrangement, and in the construction of the minor details of my invention and the principle involved, without departure from the spirit of my invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A filtering-plate for the press pots of cacao presses comprising a peripheral rim, a plurality of superposed metal filtering screens held together at their peripheries by said clamp ring to form a solid body, each pair of screens held apart, and a washer ring made of felt, hair and fibrous material for providing a tight closure at the point of engagement between filter plate and press pot.

2. A filtering plate of the class described comprising a plurality of superposed screens, of varying mesh, means for holding said screens together at their outer margins, a flanged metal plate, means for securing said screens to said plate, an outer fibrous margin, and a means for securing said margin to said plate.

3. A circular, removable, filtering plate of the class described comprising a plurality of superposed screens of coarser and finer mesh, a washer plate holding the plate combined at their rims, rivets for holding the screens assembled, means for combining washer plate and screens, said washer plate having inner and outer flanges the inner of said flanges constituting a support for said screens, an outer marginal body surrounding the outer flange of said metal plate and means for combining the same.

Signed at New York in the county of New York and State of New York this 25th day of October A. D. 1927.

MAX MICHEL.