

No. 778,746.

PATENTED DEC. 27, 1904.

G. W. GERLACH.
FILTER PLATE.

APPLICATION FILED OCT. 17, 1904.

Fig. I.

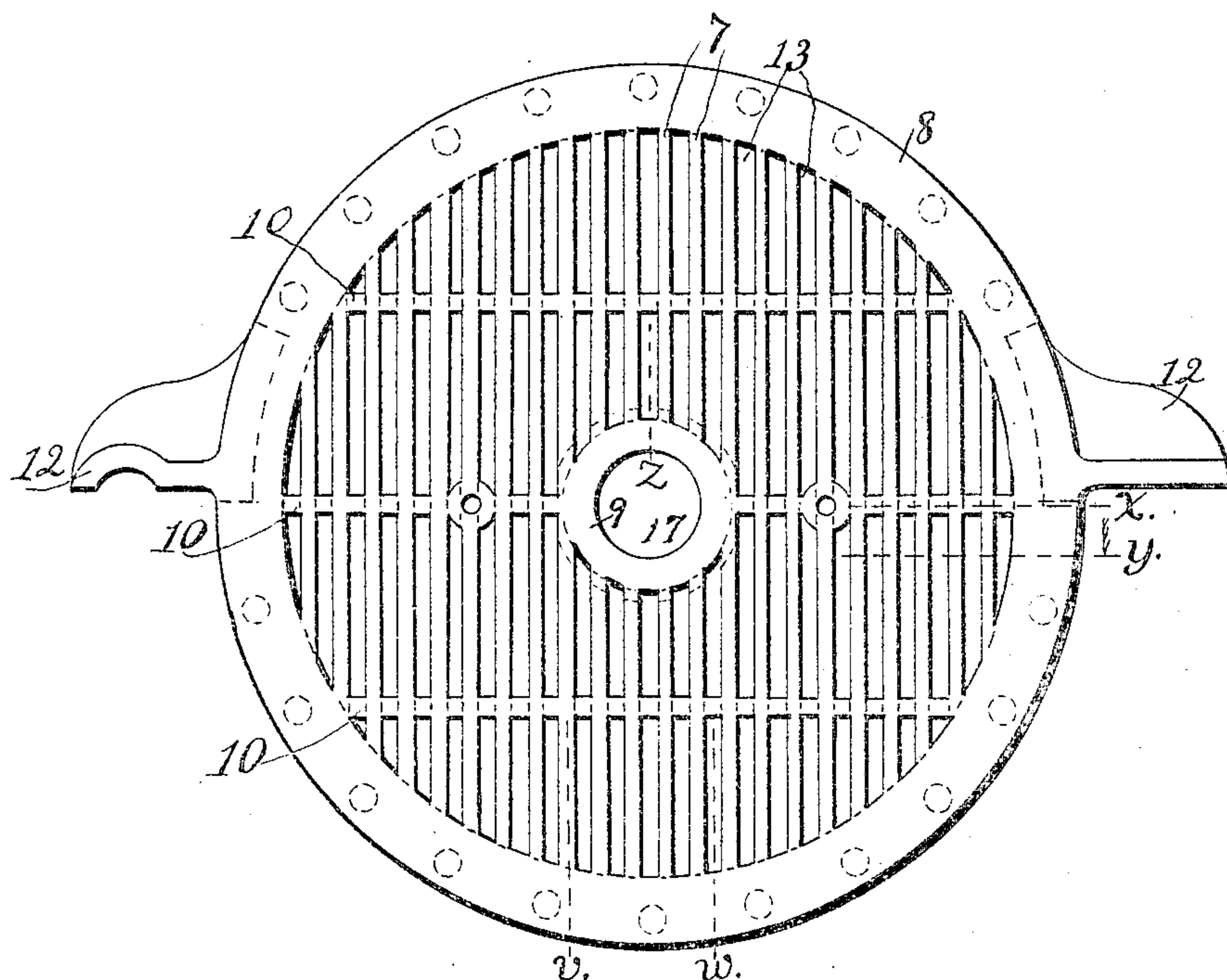


Fig. II.

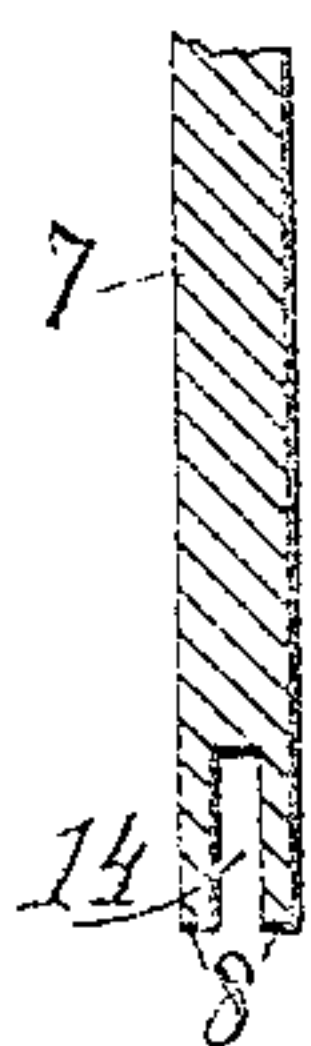


Fig. III.

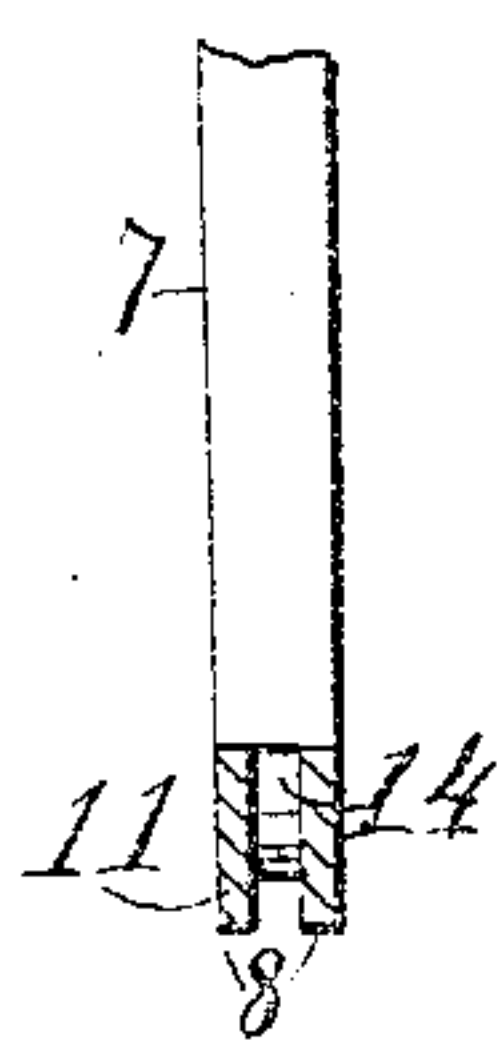


Fig. IV.

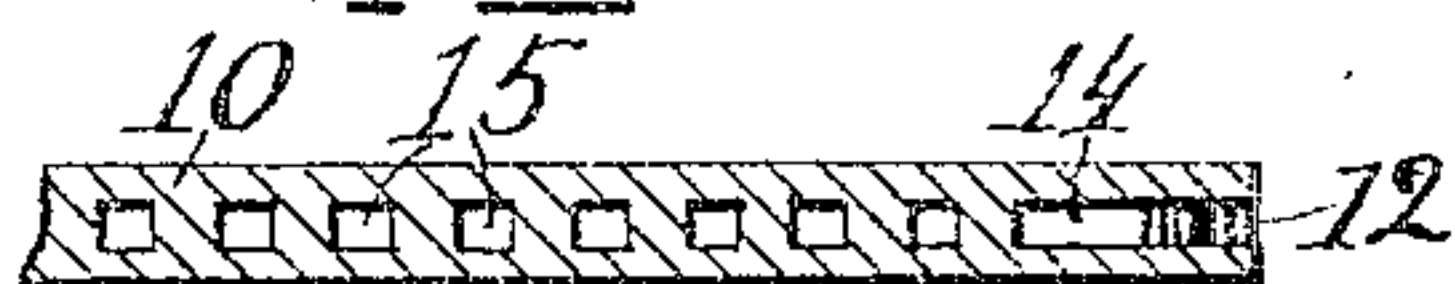


Fig. VI.

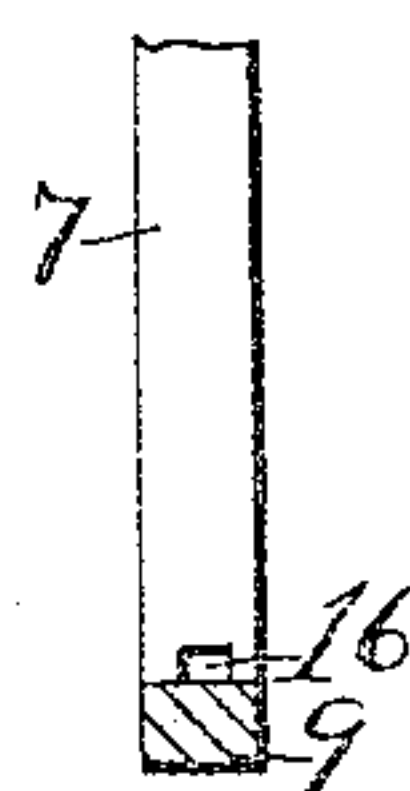
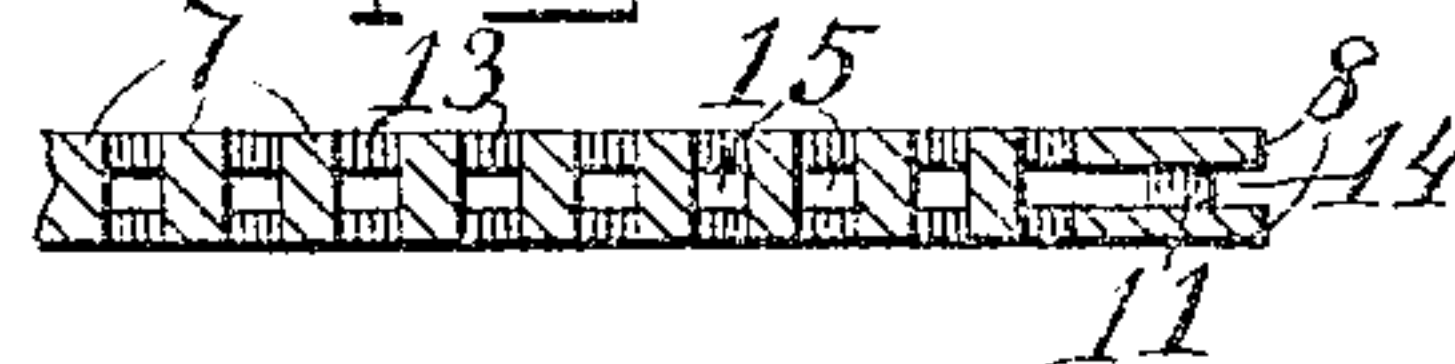


Fig. V.



Witnesses

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UNITED STATES PATENT OFFICE.

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FILTER-PLATE.

SPECIFICATION forming part of Letters Patent No. 778,746, dated December 27, 1904.

Application filed October 17, 1904. Serial No. 228,761.

To all whom it may concern:

Be it known that I, GEORGE W. GERLACH, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Filter-Plates, of which the following is a specification.

This invention relates to that class of filters which are used to forcibly express fluids from solids—such as distillery-slop, brewer's grains, starch, glucose, cassava-root, clays, &c; and its object is to provide a filtering-plate of cast-iron which will support filtering-screens of suitable material and freely deliver the fluid which is pressed through the same, at the same time permitting the backs of the screens to be cleaned without removal, and yet be strong and durable and of simple construction which may be economically manufactured.

To this end my invention consists in a filtering-plate comprising a number of portions all joined as a unit, as hereinafter more fully described, and particularly defined in the claims, reference being had to the accompanying drawings, in which—

Figure I is a face view of a filtering-plate according to my invention, showing either the front or rear view thereof, as both faces are alike. Fig. II represents a section or a portion of a plate at the vertical line *v* of Fig. I. Fig. III represents a section at line *w*. Fig. IV represents a horizontal section at line *x*. Fig. V represents a section at line *y*, and Fig. VI represents a vertical section at line *z*.

This plate comprises a series of ribs, (represented by numeral 7,) a pair of circumferential rings 8, surrounding the ribs, a hollow hub 9, rib-stiffening cross-bars 10, ring-supporting studs 11, and the plate-hanging brackets 12. By means of the brackets 12 the plates are hung when in service upon parallel side bars. (Not shown.) Each one of the ribs extends entirely through the plate from front to rear and is parted from its neighbor by an open slot 13. Each slot 13 also opens at each end into the annular space 14 between the rings 8.

15 represents passages through the cross-bars 10, connecting the two portions of each slot, which would otherwise be cut off by the

cross-bar. Such of the ribs 7 as attach to the hub 9 are transversely perforated near the hub, as shown at 16, Fig. VI, to form a passage around the hub as an outlet for the slots between those ribs.

The studs 11 may be located between the rims 8 at as short intervals as may be required to safely support the rims when they are under facial pressure in service. With the free central passages 15 16 and the outlet 14 between the rims for every slot this plate is rendered double-faced and is adapted to receive and support on each face any kind of filtering-screens, such as cloth, wire-gauze, &c. The free opening between the rims also permits the introduction of a hose-nozzle into the upper end of each slot, whereby a stream of water may be directed forcibly against the back of the screen to clean the same while in service, and such washings will pass from each slot straight out at its lower end between the rims in the same manner that the expressed fluids do in service.

The series of ribs 7, the pair of rims 8, the hub 9, the cross-bars 10, and the series of studs 11 are all cast integral and form the filtering-plate as a unit. At the center of each plate is an opening 17, through which the material to be filtered may be introduced into the spaces between the plates when they are assembled in the usual manner.

When in service, the plate receives an equal and like pressure on both its faces, so that it may be safely made much lighter than two plates placed back to back for the same purpose, and less room being taken up by the plates the space within the filter-press is economized and the weight of the whole machine may be materially reduced. By the usual method of coring the annular opening 14 and the various passages 15 16 may be left open in the casting, thus producing this double-faced filtering-plate with great economy.

Having thus fully described my invention, what I believe to be new, and desire to secure by Letters Patent, is the following:

1. A filtering-plate comprising a series of ribs separated by open slots passing through the thickness of the plate; a pair of rims sur-

rounding the ribs and separated by an annular opening with which each of the said slots is in communication, and an inlet-passage through the center of the plate.

5 2. A filtering-plate comprising a series of ribs separated by slots which are open through the thickness of the plate; a pair of rims surrounding the ribs and separated by an annular opening with which each of the said slots
10 is in communication; a series of studs located between the ribs, and a central inlet through the plate.

15 3. A filtering-plate comprising a series of ribs separated by slots which are open through the thickness of the plate; rims surrounding the ribs and separated by an annular space which communicates directly with the spaces between the ribs; and cross-bars as supports

for the ribs, each cross-bar having passages through it communicating with the said slots. 20

4. A filtering-plate comprising a series of ribs separated by slots which are open through the thickness of the plate; a hub having an opening through it and located in the plane of the ribs; openings through the ribs adjacent to the hub to form a passage around it, and outlets for the said slots at their ends, substantially as shown and described. 25

In testimony whereof I have signed my name to this specification in the presence of two witnesses. 30

GEORGE W. GERLACH.

Witnesses:

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