No. 702,051. Patented June 10, 1902.

K. ENZINGER.

FILTERING PRESS.

(Application filed July 3, 1901.)

(No Model.)

Fig. 1.

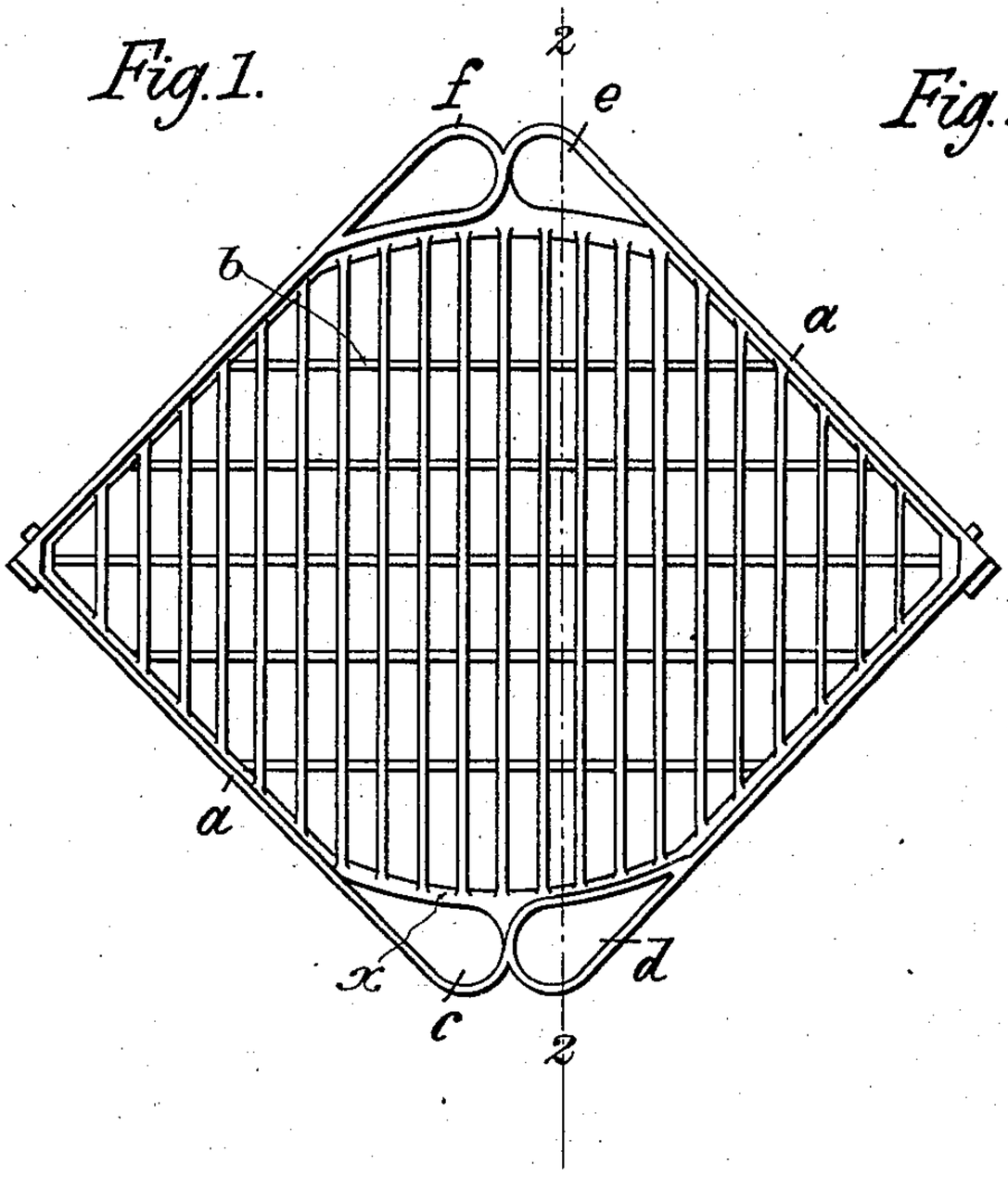

Fig. 2.

Fig. 3.

Witnesses
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FILTERING-PRESS.

SPECIFICATION forming part of Letters Patent No. 702,051, dated June 10, 1902.

Application filed July 3, 1901. Serial No. 66,935. (No model.)

To all whom it may concern:

Be it known that I, KARL ENZINGER, mechanical engineer, a subject of the German Emperor, residing at 6 Carmeliterstrasse, Worms, Germany, have invented certain new and useful Improvements in Filtering-Presses, of which the following is a clear, full, and exact specification.

The subject of the present invention is an improvement in filtering-presses, by means of which are overcome the inconveniences arising through the usual arrangement of the passages between the interior of the grid and the press inlet and outlet conduits formed when the filter-press is assembled. These defects consist partly in the passages being difficult to inspect and clean, a matter of extreme importance in the filtration of liquids, such as beer, in view of the high demands now made by hygiene. Attempts have been made to meet this difficulty by providing slanting passages, but without complete success. A second defect of the prior arrangement of the passages is that the latter do not present a sufficiently large cross-sectional area to the liquid in order to prevent too rapid flow, the formation of eddies, and consequent turbidity. All these drawbacks are overcome in a most simple manner by means of the present invention.

The essential feature of the improvement is that instead of leading into the grids the passages are formed between the grids and the adjacent filtering-frames.

One form of the new invention is shown on the accompanying drawings.

Figure 1 is a side elevation, and Fig. 2 a vertical cross-section, of a grid on the line 2 2 of Fig. 1. Fig. 3 is a vertical cross-section taken through one of the frames for containing the filtering material.

The filter-press is composed of grids alternating with frames holding filtering material face to face in the usual way. Apertures in the grids and frames register to form inlet and outlet conduits when the press is assembled for admitting the turbid liquid and discharging the clarified liquid. Each grid consists of an outer frame *a* and an interior or central grating *b*, with the four conduit-forming apertures *c d* and *e f* in the outer frame. The diagonally opposite apertures *c* and *e* are in communication with the interior grating *b* to afford access from the conduits to the interior in the well-known manner. This connection, according to prior systems, has been effected by means of small passages near the center of the grid penetrating the wall. In contradistinction to this method according to the present invention the lateral projecting rim surrounding the apertures and against which the rubber rim of the frame of the filtering medium lies is removed at the points *x*, adjacent to the apertures *c e*. Thus when the press is assembled there will be a gap or aperture at the points *x* between the grid and the adjacent filtering-frame, affording a passage from the interior of the grid to the respective conduits. The grids are reversible and interchangeable, and the respective grids on either side of a filtering-frame are inserted so as to face in opposite directions when assembling the press, so that if the aperture *e* of the first grid lies in the right-hand upper conduit the opening *e* in the next grid will lie in the upper left-hand conduit. Supposing the conduit at the upper right-hand side to be serving as an inlet, that at the upper left-hand side will be an outlet, and the inlet-conduit will communicate with the interior of the filter at each of the grids having their aperture *e* in the right-hand conduit and the outlet-conduit will communicate with the interior of the filter at each of the grids having their aperture *e* in the upper left-hand conduit. In like manner the lower left-hand conduit will be an inlet and the lower right-hand conduit will be an outlet, and the lower inlet and outlet conduits will communicate with the interior of the filter at the same grids as the upper inlet and outlet conduits, respectively, since at each grid there is communication above and below from one or the other sets of conduits to the interior of the filter by means of the spaces *x* at the diagonally opposite apertures *c e*. When the filter is taken to pieces, this part can be most readily inspected and cleaned. Furthermore, ample sectional area is presented, whereby the liquid is prevented from flowing too fast. The cross-sectional area in the form of con-

struction shown is most favorably influenced by the apertures *c d e f* not being of symmetrical form, but running to a point at the slanting sides, thus making the apertures inclined and approximately pear-shaped. By this means not only is the length of the side where the rim is removed to form the connecting-passage nearly doubled, but the cross-section of the inlet and outlet conduits is greatly increased and a saving in weight effected.

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

1. Grid for filtering-press, comprising a central grating and an outer frame having apertures, which when the press is assembled constitute the liquid inlet and outlet conduits, said frame being formed with a lateral rim surrounding the apertures, which rim at two diagonally opposite apertures is removed in order to form a passage to connect the interior of the grating with the inlet and outlet conduits, substantially as described.

2. Grid for filtering-press, comprising a central grating and an outer frame having inclined approximately pear-shaped apertures, which when the press is assembled constitute the liquid inlet and outlet conduits, said frame being formed with a lateral rim surrounding the apertures, which rim at two diagonally opposite apertures is removed in order to form a passage to connect the interior of the grating with the inlet and outlet conduits, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

KARL ENZINGER.

Witnesses:
JEAN GRUND,
CARL GRUND.