

No. 730,776.

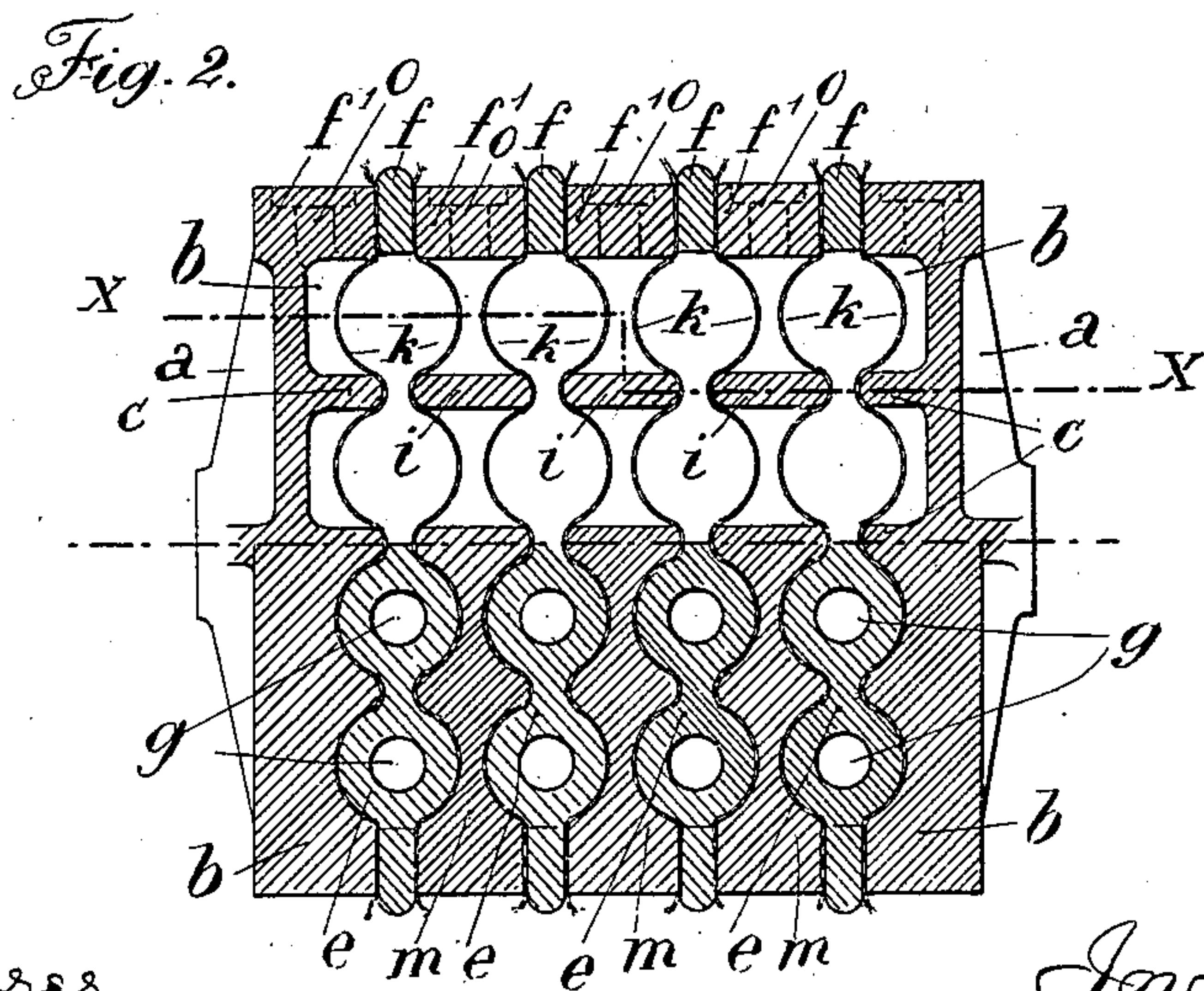
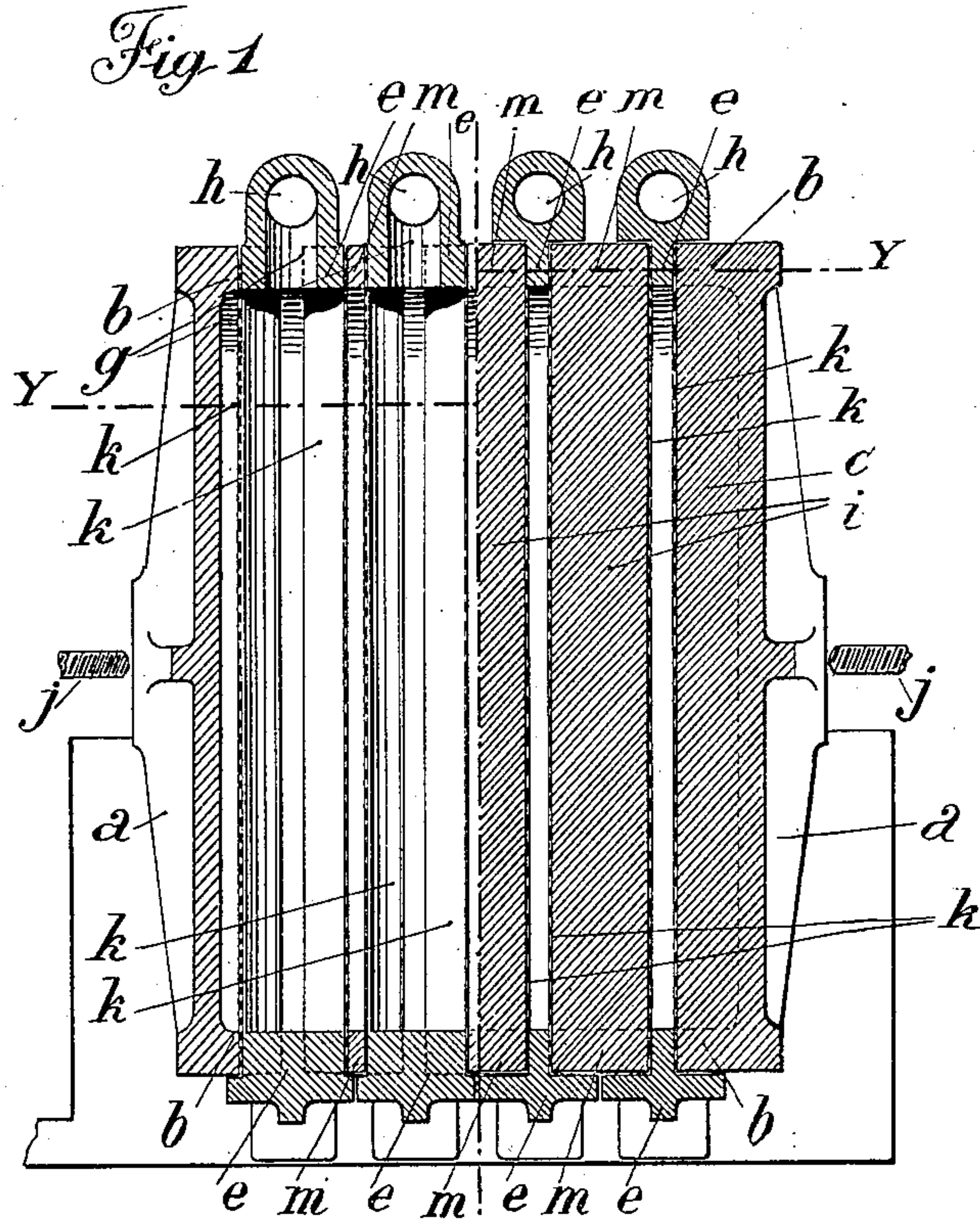
PATENTED JUNE 9, 1903.

C. KOLB.
FILTER PRESS.

APPLICATION FILED NOV. 3, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

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3 SHEETS—SHEET 2.

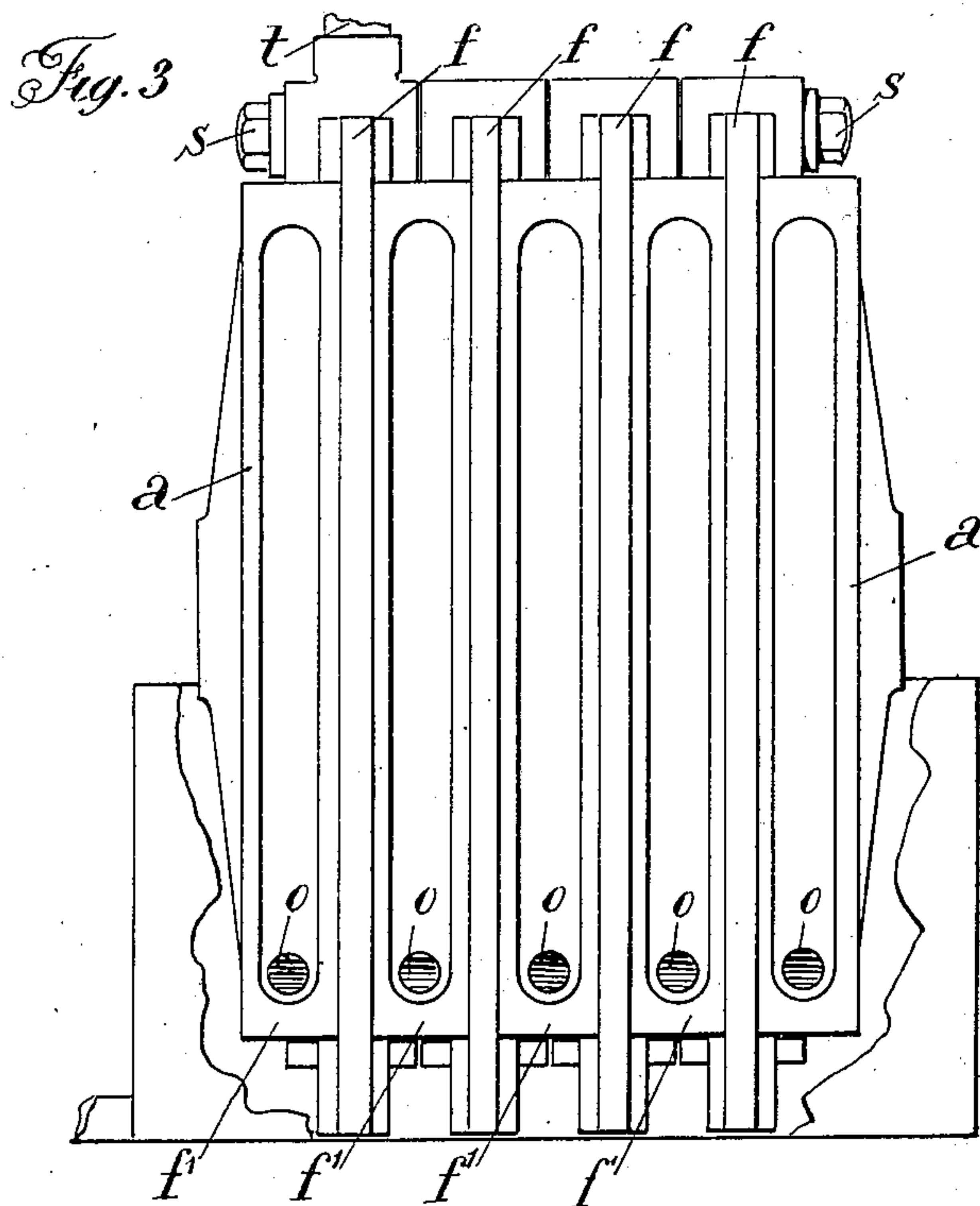
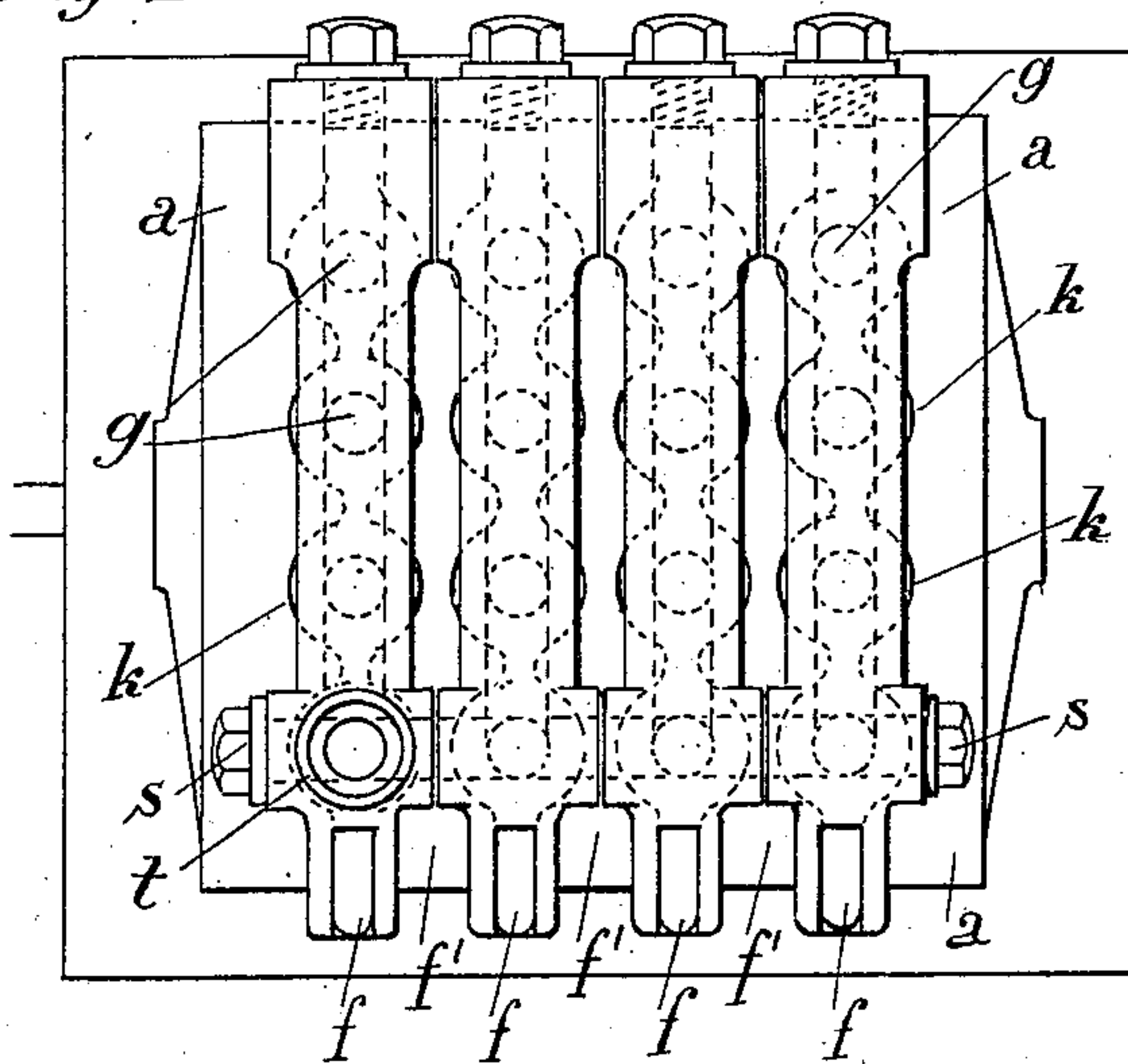


Fig. 4



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Fig. 5.

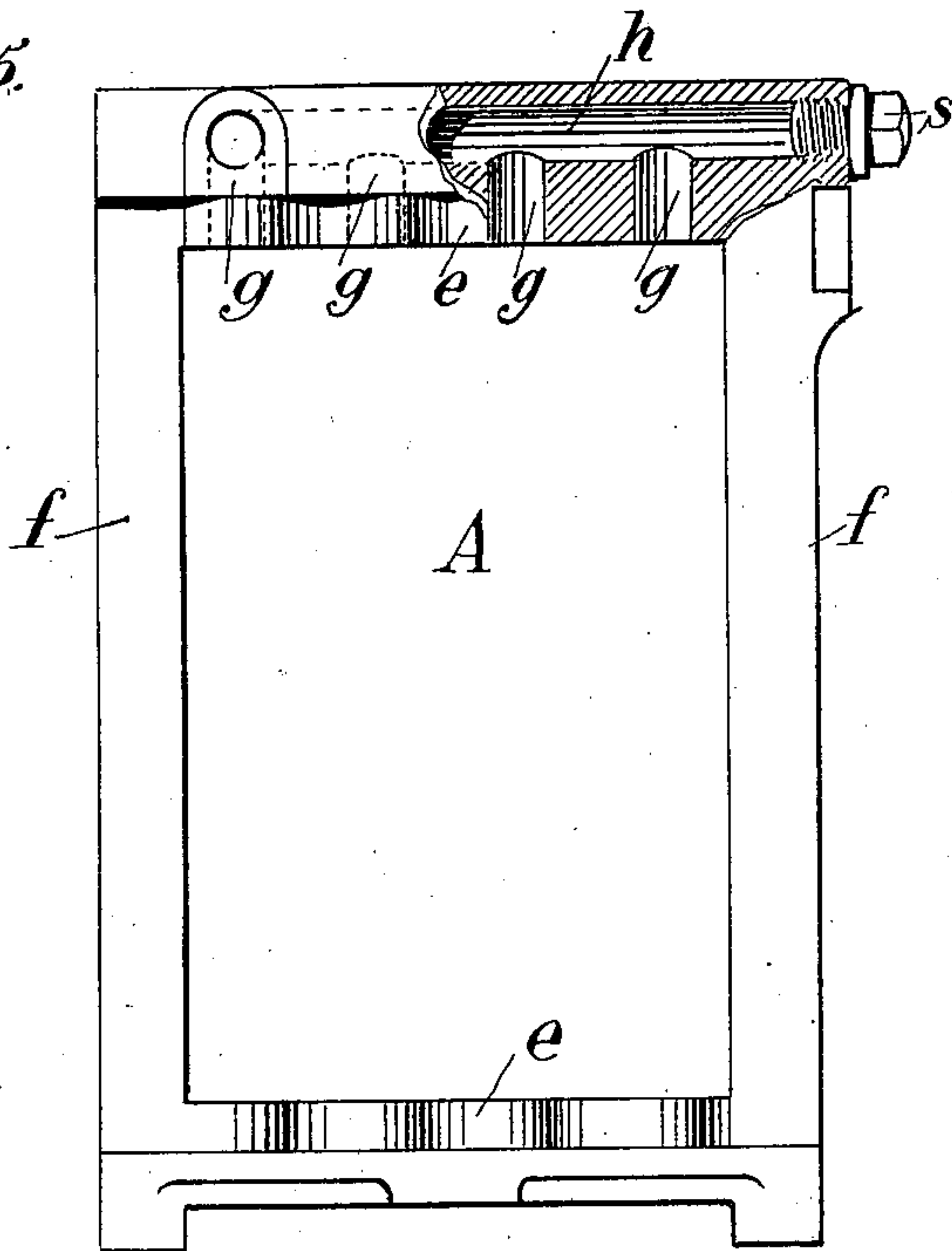
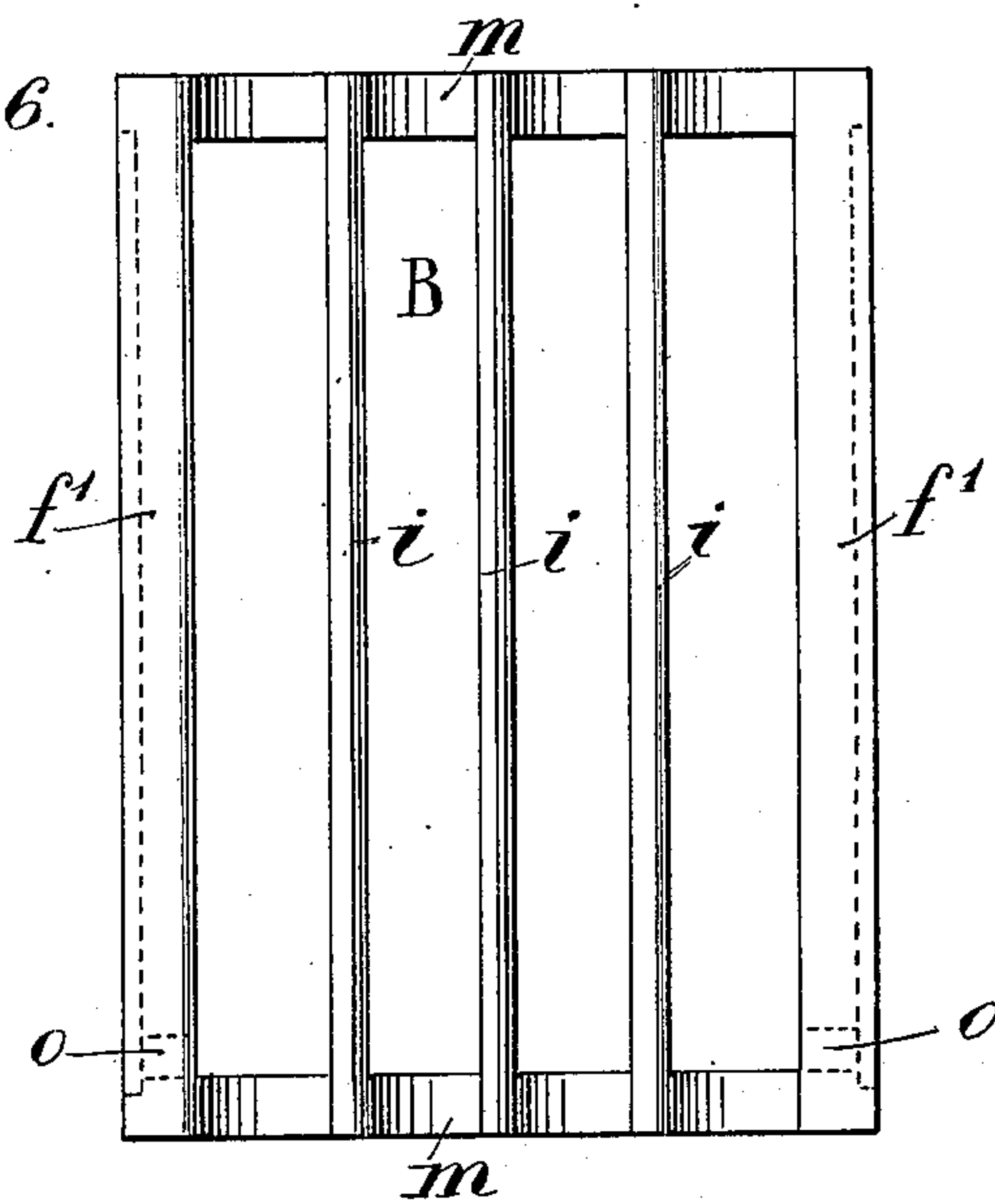


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES KOLB, OF MAXÉVILLE, FRANCE.

FILTER-PRESS.

SPECIFICATION forming part of Letters Patent No. 730,776, dated June 9, 1903.

Application filed November 3, 1902. Serial No. 129,956. (No model.)

To all whom it may concern:

Be it known that I, CHARLES KOLB, a citizen of the Republic of France, residing at Maxéville, France, have invented certain new and useful Improvements in Filter-Presses, of which the following is a specification.

This invention relates to filter-presses, and particularly to filter-presses of large capacity, and has for its object to provide an improved device of this character in which the liquid being filtered will pass through a very large proportion of the surface of the filtering-cloths and in which the cloths will be securely held and supported to permit of successful operation without liability to accident and with great increase of capacity.

With this object in view the invention consists in the improved construction of parts of a filter-press, as hereinafter described and afterward specifically claimed.

In the accompanying drawings, which illustrate an apparatus embodying my invention, Figure 1 represents a vertical sectional view on the line *xx* of Fig. 2. Fig. 2 represents a partial transverse section on the line *Y Y* of Fig. 1. Fig. 3 represents a view in elevation. Fig. 4 represents a plan view. Figs. 5 and 6 represent the inner skeleton frames in elevation.

Like letters of reference indicate the same parts in all of the figures of the drawings.

The apparatus comprises two solid plates *a a*, forming the sides and pressed inward to secure the whole system by pressure-screws *j j*. At top and bottom of these plates are inwardly-projecting flanges *b b*, in which are formed semicircular recesses, as clearly shown in Fig. 1 and the lower half of Fig. 2, the intermediate portions of the plates *a a* between said flanges being formed with vertical ribs *c c* and intervening vertical recesses, the ribs *c c* being at their inner rounded edges continuations of the ribs between the semicircular recesses in the flanges *b b* and the spaces between the ribs being rectangular instead of semicircular.

A, Fig. 5, indicates one of the skeleton frames, each comprising vertical bars *f f* and horizontal bars *e e*, the latter in form resembling a series of rings joined together, the rings corresponding in size with the semicircular recesses of the flanges *b b*, into which

recesses the rings of the outer ones of these bars *e e* fit to hold in position the outer of a series of filtering-cloths *k k*.

B, Fig. 6, indicates one of the skeleton frames, each comprising horizontal bars *m m*, vertical outer bars *f' f'*, and inner vertical ribs *i i*. The horizontal bars *m m* are provided with semicircular recesses on opposite sides corresponding in size with those of the flanges *b b*, and the inner filtering-cloths *k k* are clamped in these recesses by the circles of bars *e e* of frame A. The vertical ribs *i i* are in vertical alinement with the ribs *c c* of plates *a a*, and when the parts are assembled the filtering-cloths are held in tubular form at top and bottom by the horizontal bars *e e m m* and the flanges *b b*, while the cloths are supported at intervals only by vertical ribs *c c* and *i i*, being allowed to expand under the pressure of the liquid within them into tubular form between said ribs, as shown in Fig. 2.

The liquid enters through pipe *t* into channel *h* and passes through the bores *g* into the tubes formed by the filtering-cloths, passing through nearly the whole extent of the cloths and permitting of the filtering of a large quantity of liquid, which passes from the spaces or compartments outside of the tubular-formed cloths and finally flows out through holes *o o*.

The press may be readily taken apart for repairing, replacing parts, or cleaning by simply loosening the pressure-screws *j j*.

Any suitable receptacle may be used to receive the filtered liquid, if desired.

The tubes formed by the cloths held in undulatory form by the bars and plates are not complete, being connected by vertical spaces, as shown in Fig. 2, and forming between each two adjacent cloths a continuous space across the apparatus.

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

1. A filter-press comprising a pair of pressure-plates having top and bottom inwardly-extended flanges provided with semicircular recesses, the ribs between said recess being extended between the flanges and forming rectangular recesses, filtering-cloths on the inside of said plates and flanges, and horizontal bars separating said cloths at intervals

in substantially the form of a series of tubes communicating at the sides, substantially as described.

2. A filter-press comprising a pair of pressure-plates having top and bottom inwardly-projecting flanges provided with semicircular recesses in their inner edges, frames between the plates comprising top and bottom horizontal bars formed of a plurality of rings fitting in said recesses, and filtering-cloths held in undulating form in said recesses by said rings, substantially as described.

3. A filter-press comprising a pair of pressure-plates, top and bottom flanges thereon having recesses in their inner edges, vertical ribs between said recesses extending from the

top flange to the bottom flange, frames between the plates having top and bottom horizontal bars recessed in their opposite edges, and vertical end bars connecting them, intermediate frames having horizontal bars formed of a plurality of connected rings, connecting vertical side bars and intermediate ribs, and filtering-cloths clamped between the rings and recessed bars and flanges and supported at intervals by the vertical ribs, substantially as described.

In testimony whereof I affix my signature.
CHARLES KOLB.

In presence of—
EMILE GRIMONT,
THÉODORE REDIG.