

No. 798,304.

PATENTED AUG. 29, 1905.

H. T. SHRIVER.
FILTER PRESS.

APPLICATION FILED JUNE 13, 1905.

Fig. 1,

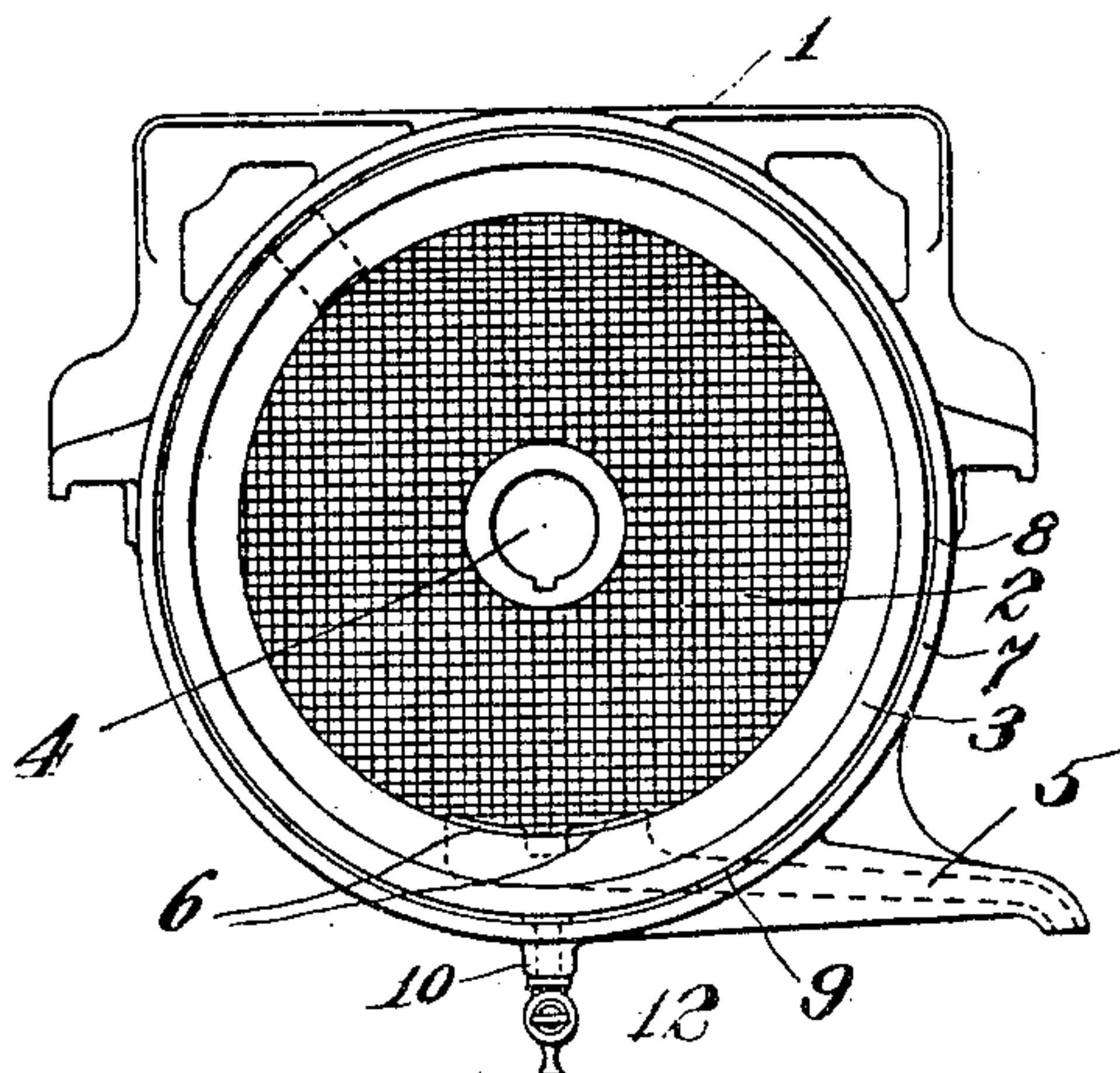


Fig. 4,

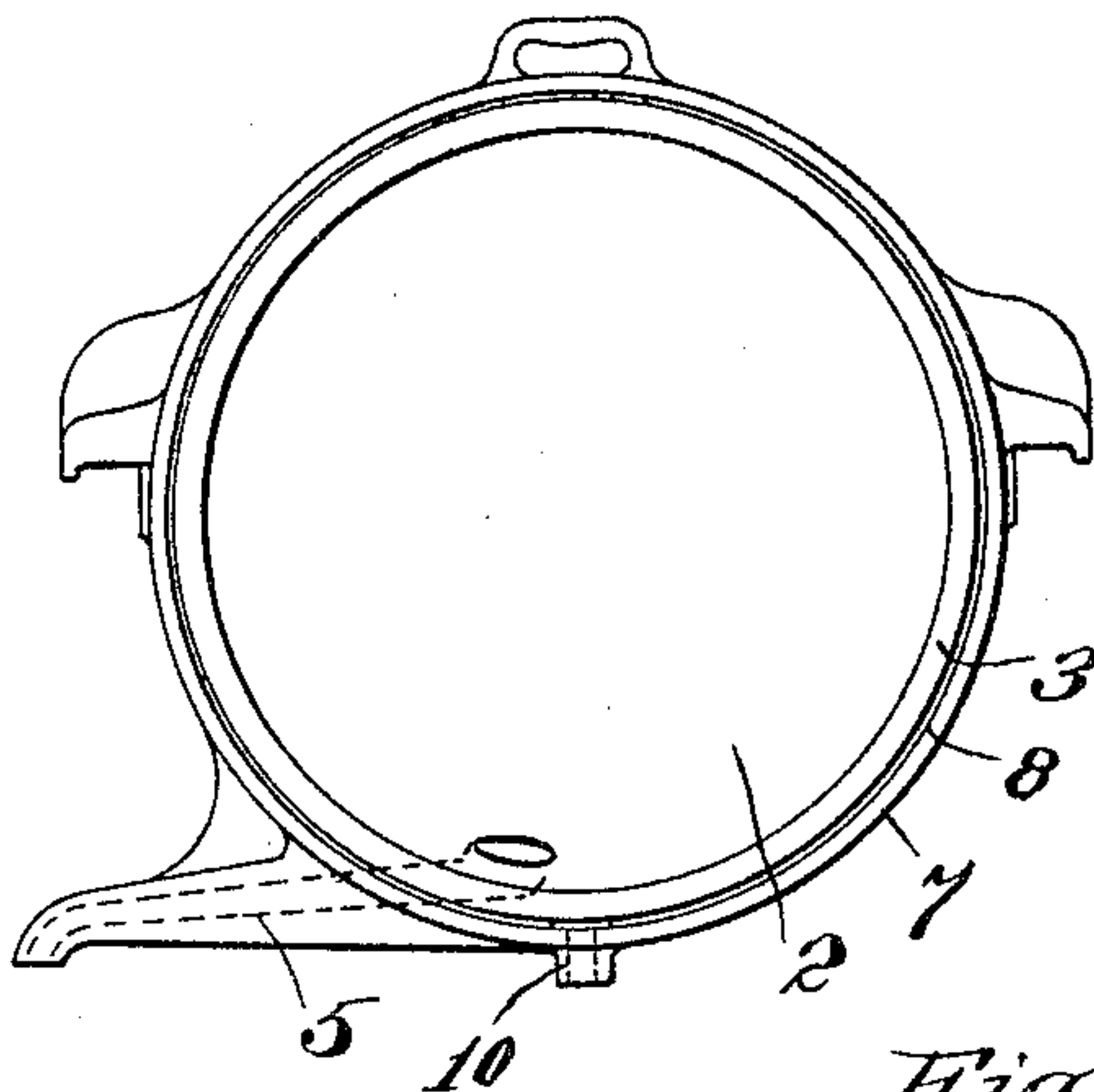


Fig. 2,

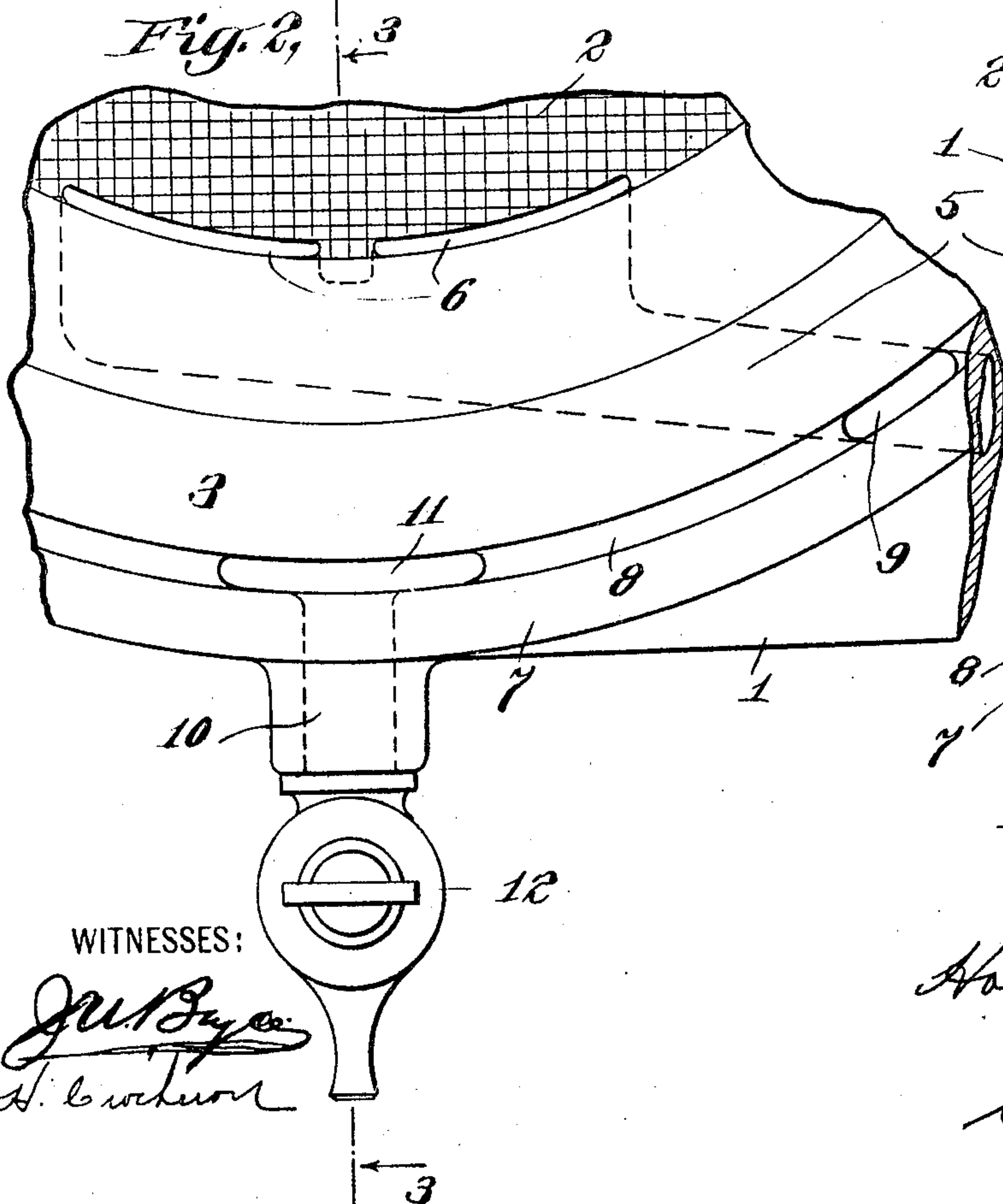
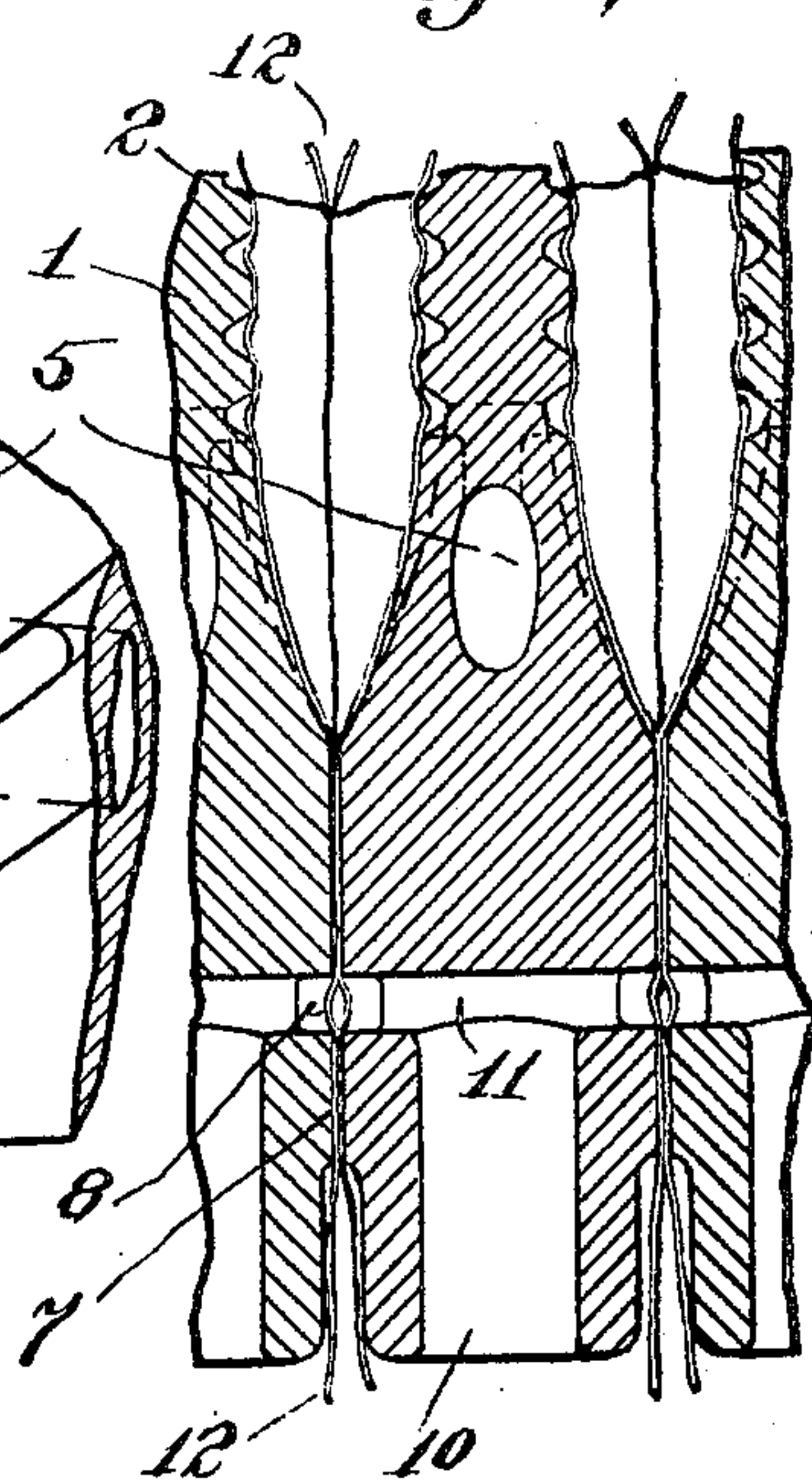


Fig. 3,



WITNESSES:

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HARRY T. SHRIVER, OF NEW YORK, N. Y.

FILTER-PRESS.

No. 798,304.

Specification of Letters Patent.

Patented Aug. 29, 1905.

Application filed June 13, 1905. Serial No. 265,110.

To all whom it may concern:

Be it known that I, HARRY T. SHRIVER, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Filter-Presses, of which the following is a specification.

My invention relates to filter-presses in which as usually constructed a series of plates having central recesses surrounded by joint-surfaces have clamped between them filter-cloths in a manner that is well understood.

The object of my invention is to provide means for collecting the filtrate which leaks through the joint-surfaces; and it consists in the novel construction of the plate, as hereinafter described.

Owing to the great pressures which are used in filter-presses of this class, it is practically impossible to prevent leakage at the joint between the plates, although these are constructed with great accuracy and manipulated with great care. Such leakage causes great inconvenience and frequently loss of valuable material. By means of my invention the said inconvenience and loss are obviated and the care necessary to successful operation of the filter-press is materially reduced.

In the drawings accompanying and forming part of my specification, Figure 1 is a side view of the filter-plates constructed in accordance with my invention. Fig. 2 is an enlarged view of a portion of the same. Fig. 3 is a partial section on line 3 3 of Fig. 2, and Fig. 4 is a modified form.

The reference characters are used in the same sense in the drawings and specification.

Numeral 1 represents a filter-plate provided with the usual filtering-surface 2, which is generally corrugated or roughened. The filtering-surface 2 is surrounded by a joint or joint-surface 3, and it is provided with a central opening 4 for the introduction of material in a manner that is well understood.

The filtrate is led off through the passage 5 from the filtering-chamber 2 through the openings 6, which connect said passage with the filtering-chamber. The joint-surface 3 is separated from an outer joint-surface 7 by means of a groove, duct, or passage 8, which surrounds the inner surface 3 and is itself surrounded by the outer joint-surface 7. The groove 8 may be connected with the passage 5 by an opening 9, or it may have an inde-

pendent outlet 10, connected with said groove by the opening 11. The filter-cloths extend by and cover both the inner and outer joint-surfaces.

On account of the great pressure in the filtering-chamber any slight imperfection in the joint-surfaces or any irregularities in that portion of the filter-cloth which is held between the inner joint-surfaces will cause the filtrate to leak through said joint-surfaces and pass into the groove or duct 8. This groove or duct is in communication with the atmosphere, and there is consequently the same pressure on both sides of the outer joint. There is therefore no tendency of the filtrate to leak through this joint, it being perfectly free to pass around in the groove 8 until it comes to an opening—either the opening 9, leading to the passage 5, or the independent opening 10.

In the modified form shown in Fig. 4 the groove 8 is provided only with the outlet 10, and it is out of communication with the passage 5, which leads to the filtering-chamber 2. By means of this modification the filtrate which is discharged through the passage 5 is not permitted to mingle with that which leaks through the joint-surface 3 into the groove 8. In most cases, however, it is advisable to connect the groove 8 with the outlet-passage 5, inasmuch as the liquid which leaks through the joint-surface into the groove 8 will generally be at least as well filtered as that portion which enters the outlet through the openings 6 from the filtering-chamber. When both the independent outlet 10 and the connection 9, leading from the groove 8 to the outlet-passage 5, are employed in the same plate, I provide the independent outlet with a stop-cock 12. When thus arranged, the stop-cock 12 will ordinarily be kept closed; but it may at any time be opened, and thus indicate in a general way the character and amount of the filtrate which leaks into the groove 8.

Having thus described my invention, what I claim is—

1. A filter-plate having a continuous joint-surface surrounding the filtering-chamber, a passage or duct surrounding said joint-surface and a second joint-surface surrounding said passage or duct.

2. A filter-plate having a groove or duct in its joint-surface surrounding the filtering-chamber and an outlet for said groove or duct.

3. A filter-plate having an outlet-passage
leading from the filtering-chamber, a groove
or duct in the joint-surface surrounding the
filtering-chamber and a connection between
5 said groove or duct and said outlet-passage.

4. A filter-plate having an outlet-passage
in communication with the filtering-chamber,
a groove or duct in its joint-surface out of
communication with the filtering-chamber

and an independent outlet for said groove or duct.

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

HARRY T. SHRIVER.

Witnesses:

H. L. GRIFFIN,

R. E. PERRY.