

(No Model.)

2 Sheets—Sheet 1.

J. KROOG.

MEANS FOR PACKING THE CONDUITS IN FILTER PRESSES.

No. 370,741.

Patented Sept. 27, 1887.

Fig. 1.

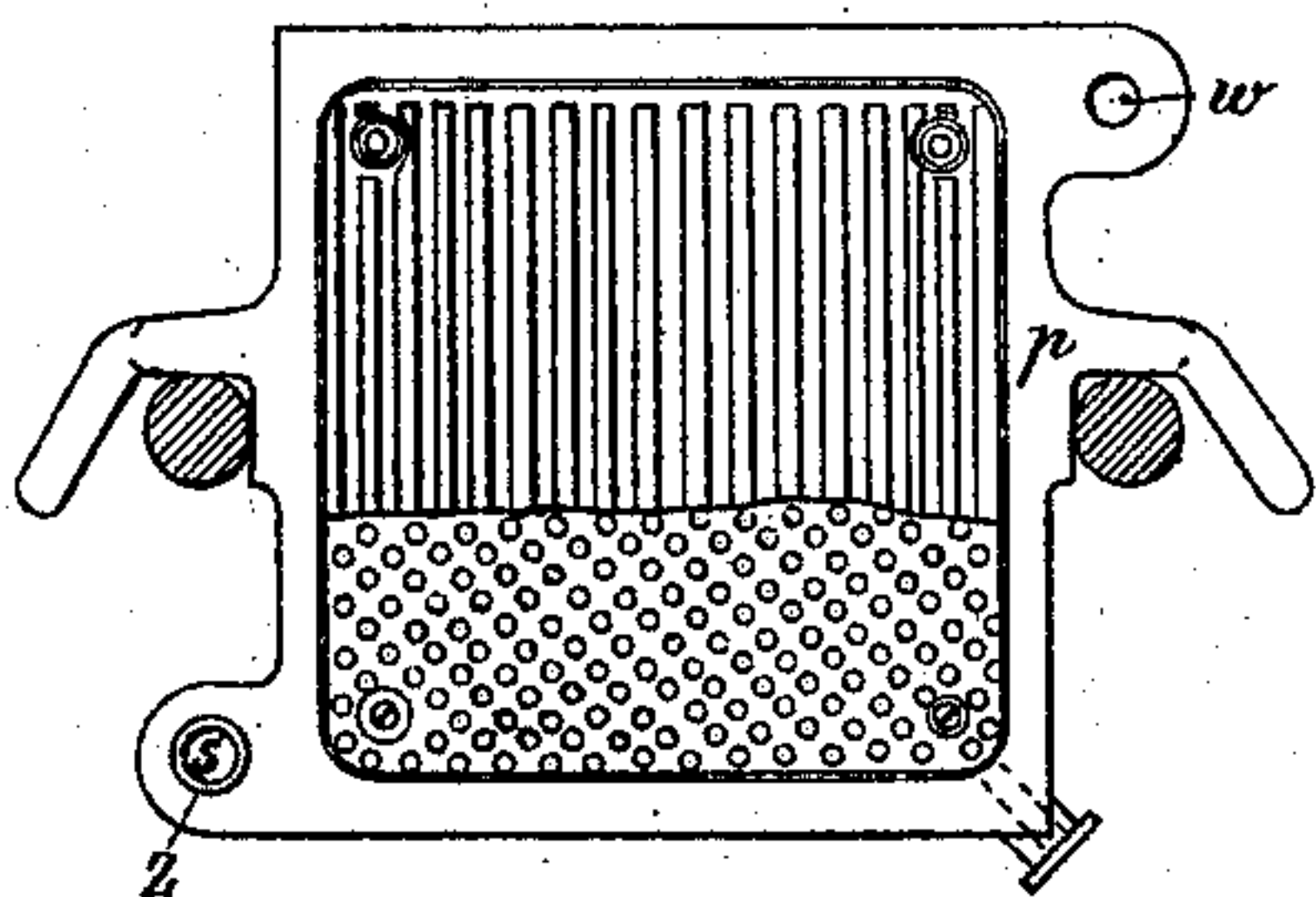


Fig. 4.

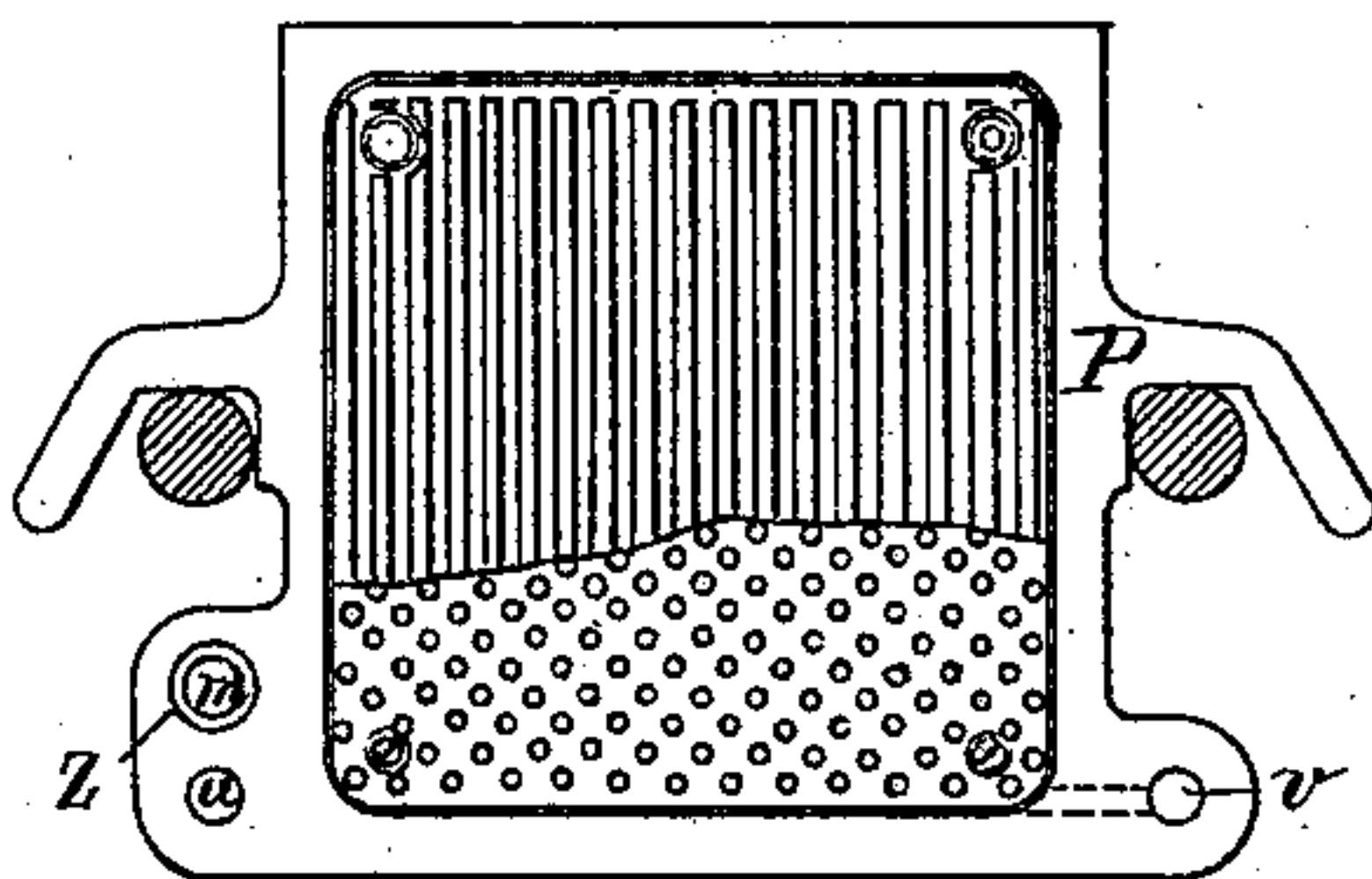


Fig. 2.

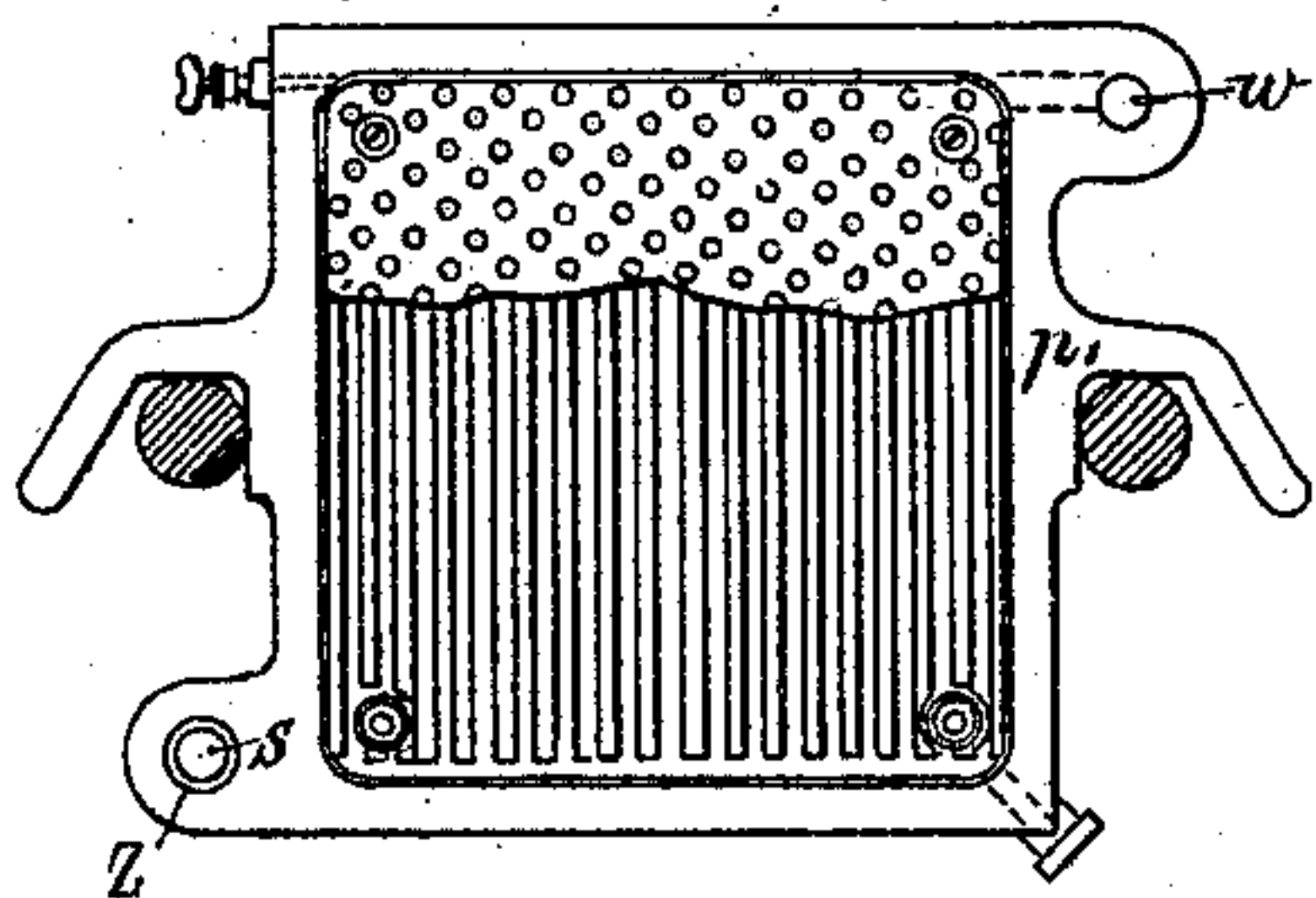


Fig. 5.

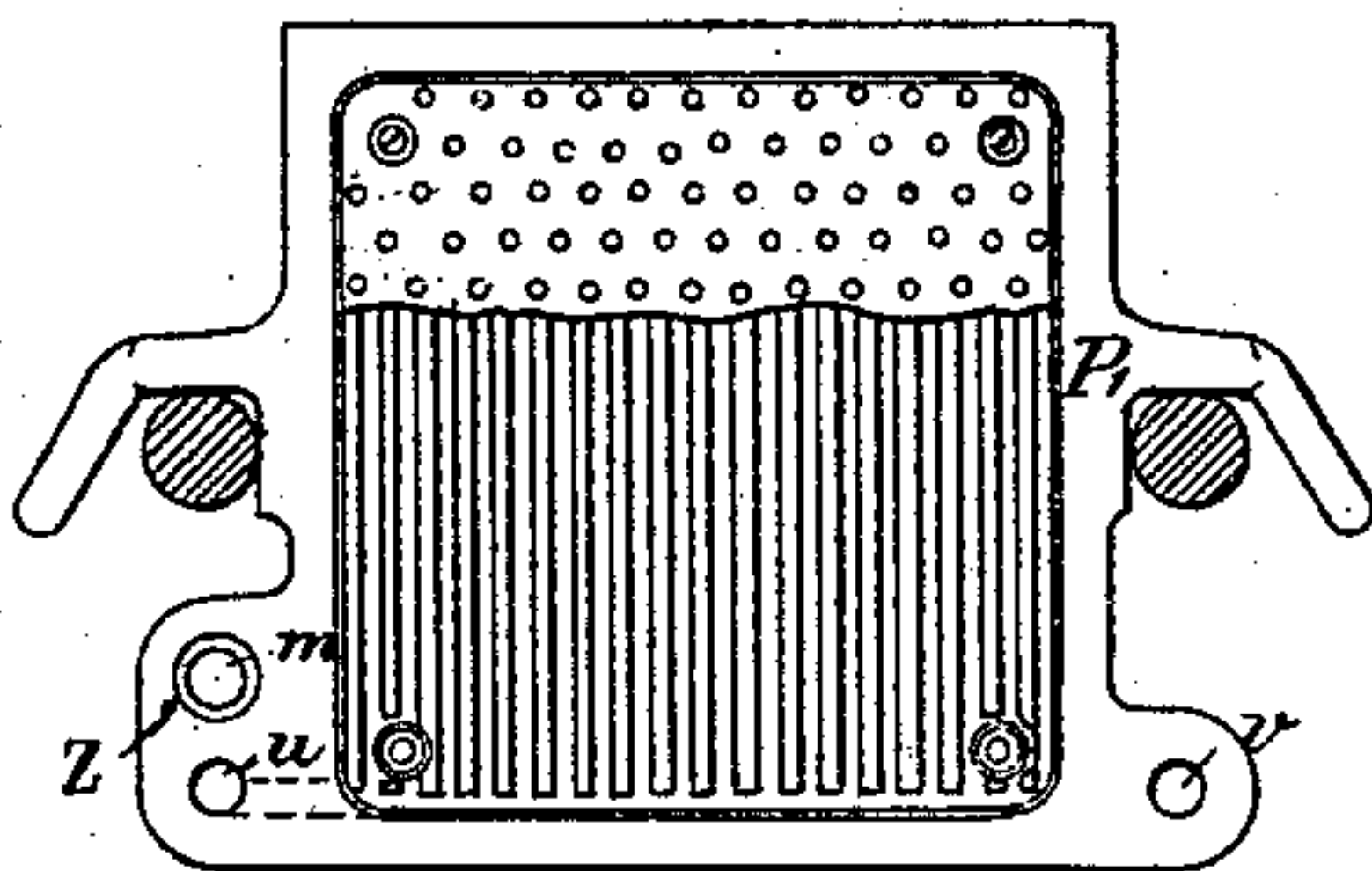


Fig. 3.

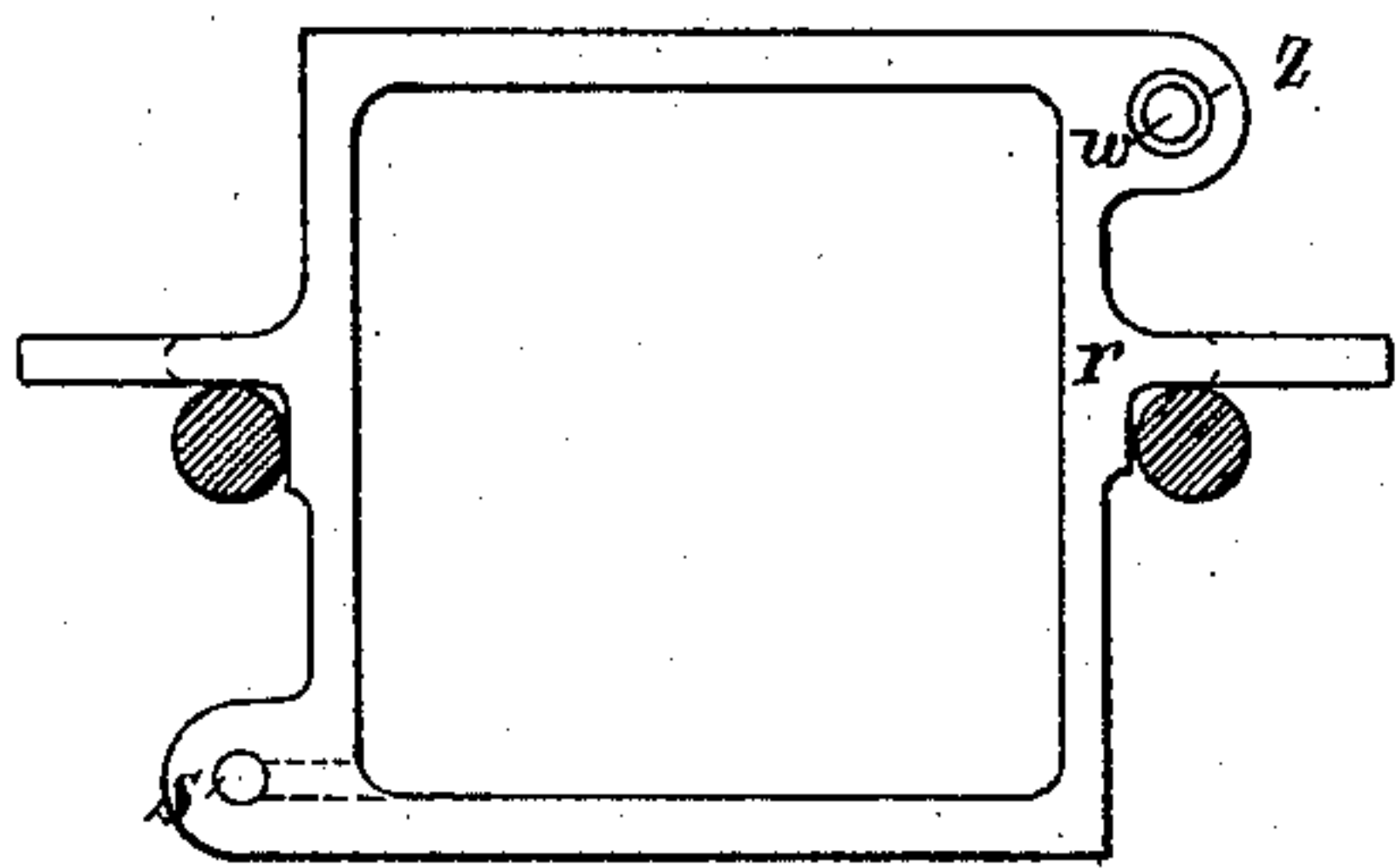
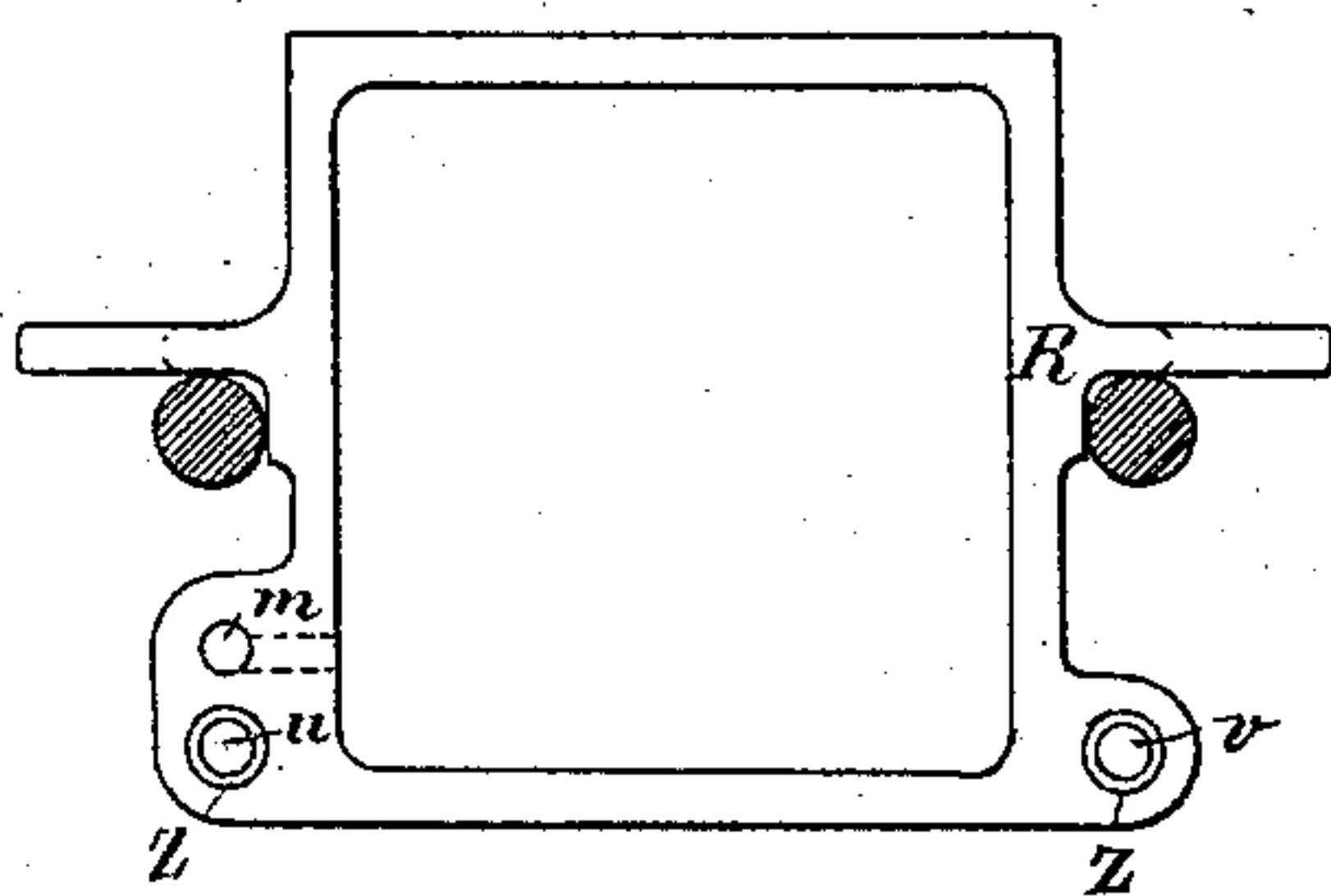


Fig. 6.



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Fig. 7.

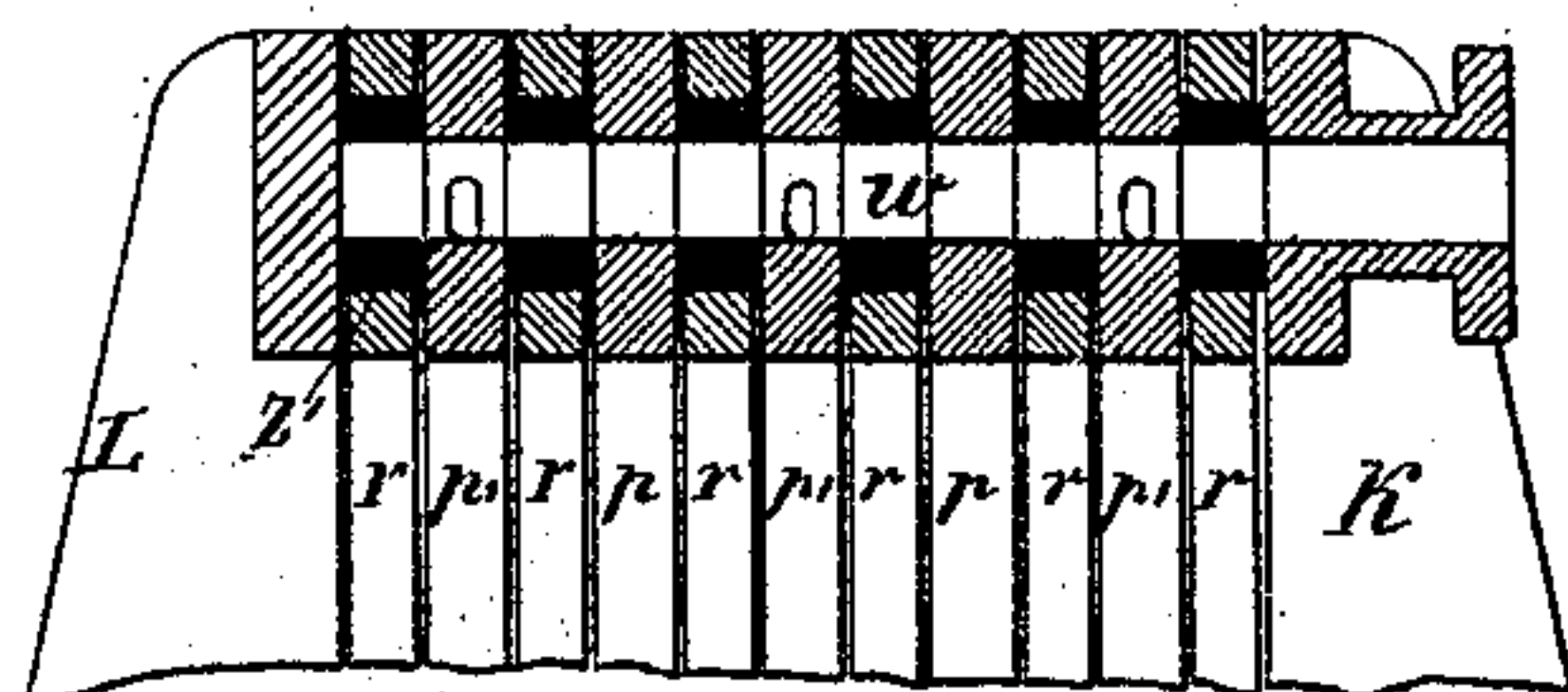


Fig. 8.

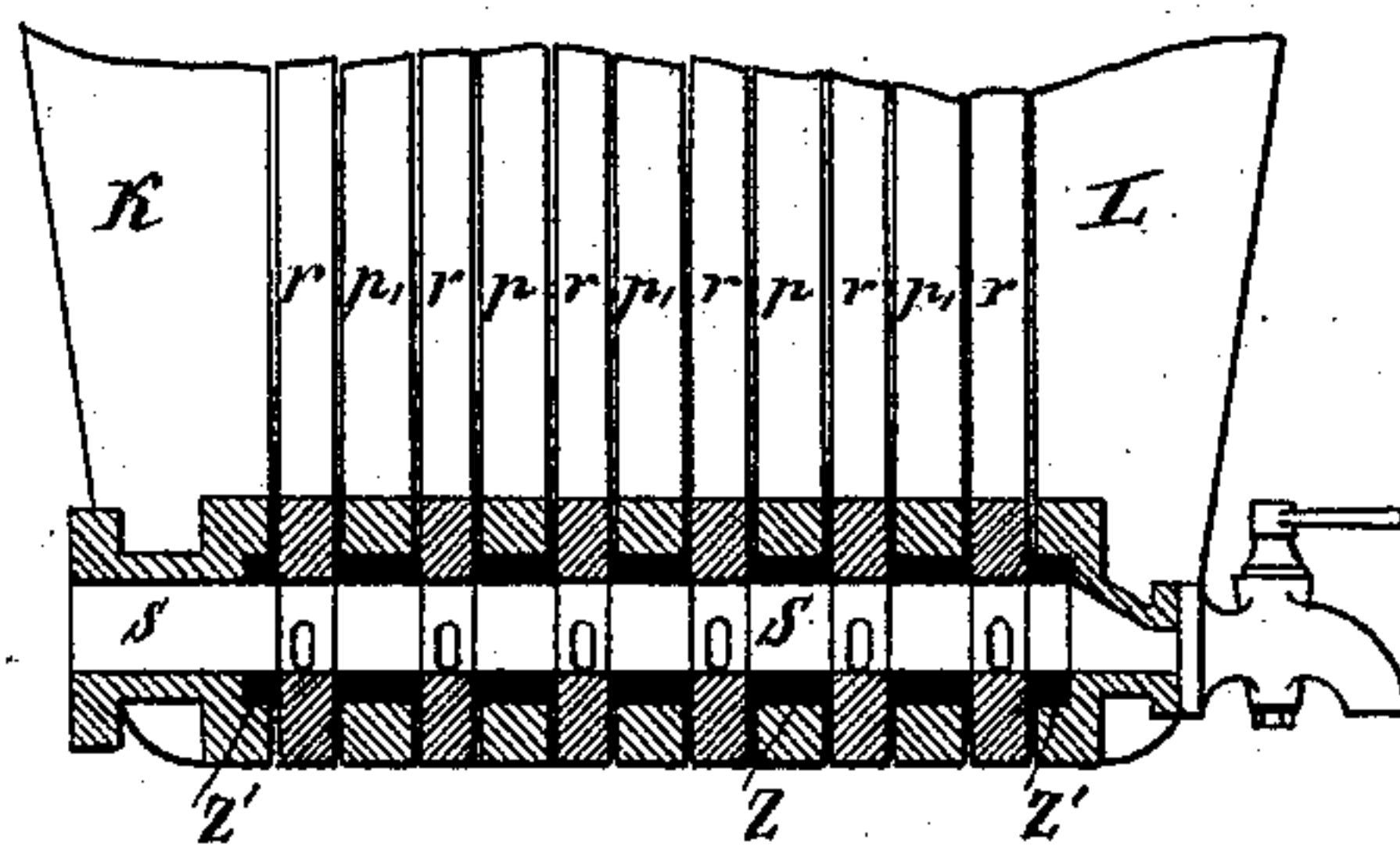


Fig. 9.

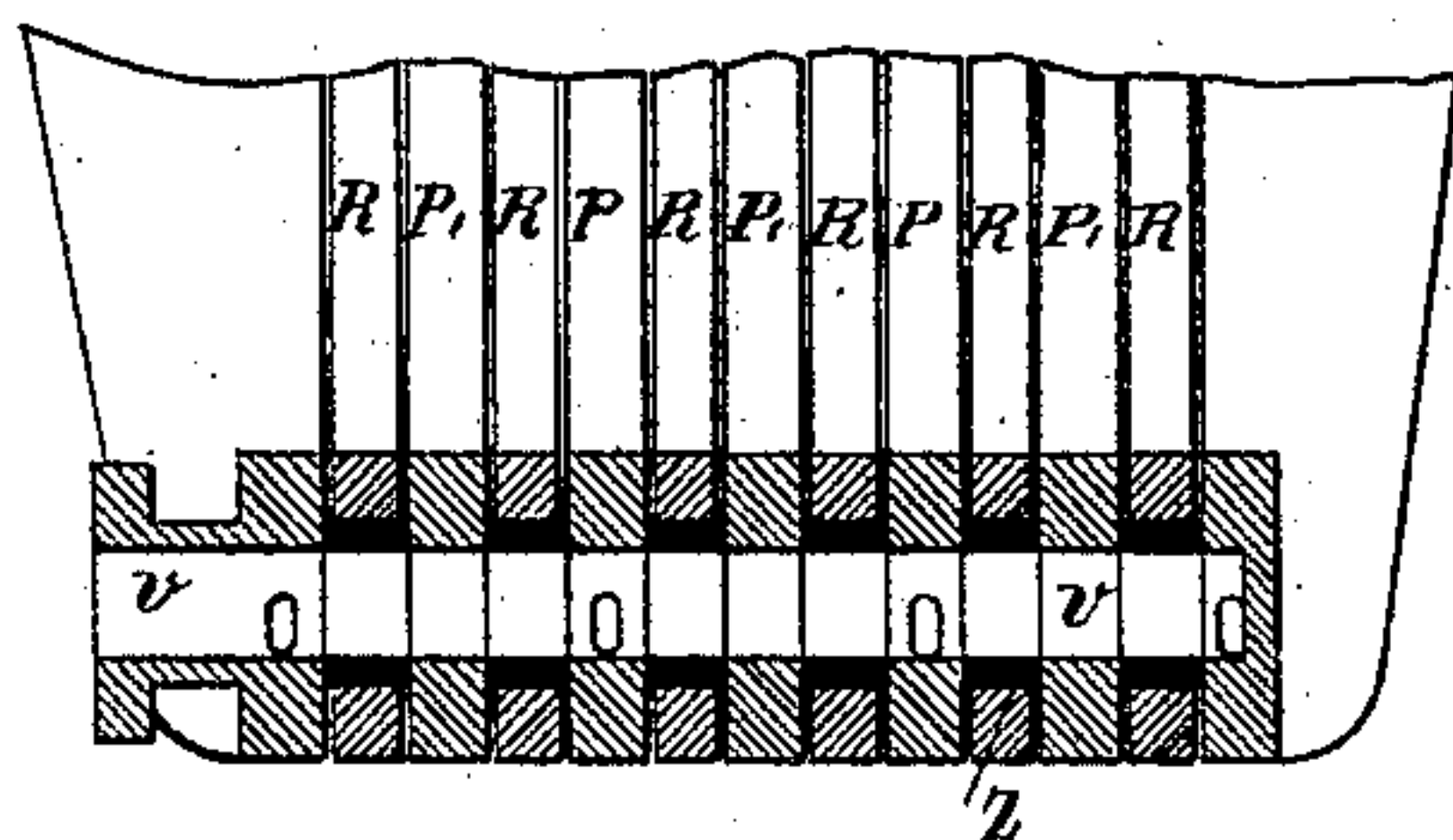
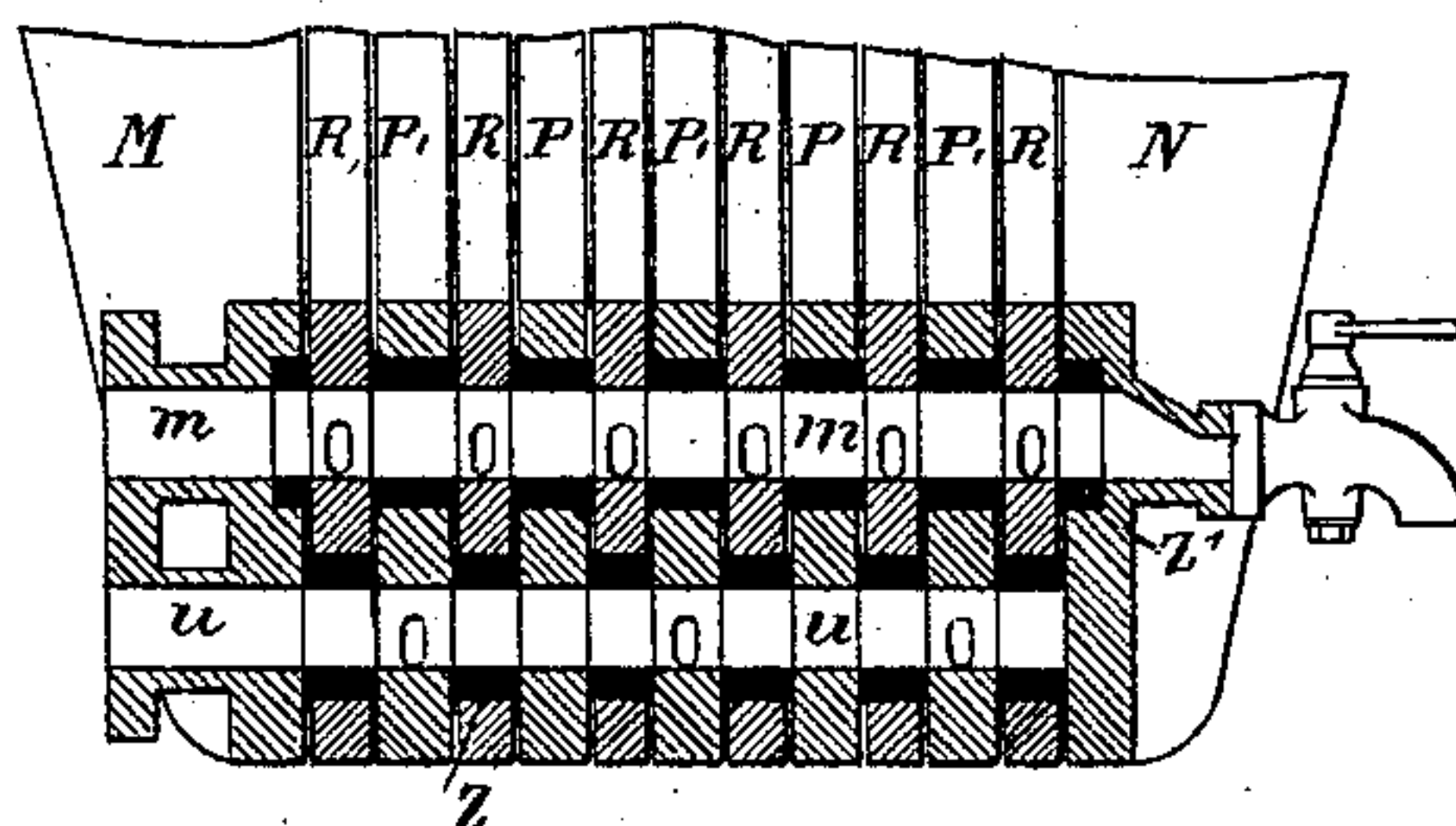


Fig. 10.



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UNITED STATES PATENT OFFICE.

JOHANN KROOG, OF HALLE-ON-THE SAALE, PRUSSIA, GERMANY.

MEANS FOR PACKING THE CONDUITS IN FILTER-PRESSES.

SPECIFICATION forming part of Letters Patent No. 370,741, dated September 27, 1887.

Application filed March 16, 1887. Serial No. 231,151. (No model.) Patented in Germany December 7, 1882, No. 22,796; in France December 19, 1882, No. 152,747; in Belgium April 3, 1884, No. 64,727, and in Austria-Hungary May 6, 1885, No. 3,294 and No. 23,660.

To all whom it may concern:

Be it known that I, JOHANN KROOG, of the city of Halle-on-the-Saale, in the Kingdom of Prussia and German Empire, have invented a certain new and useful Improvement in the Means for Packing the Conduits in Filter-Presses, (for which I have obtained patents in Germany, dated December 7, 1882, No. 22,796; in France, dated December 19, 1882, No. 152,747; in Belgium, dated April 3, 1884, No. 64,727, and in Austria-Hungary, dated May 6, 1885, No. 3,294 and No. 23,660,) of which the following is a specification, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to improvements in the means for packing the conduits in filtering-presses, its object being to secure the greatest possible degree of density in the series of corresponding apertures in the plates and frames of filtering-presses, which, by being fitted closely upon each other, form the conduits or canals.

My invention therefore consists in forming the corresponding apertures in the plates and frames of filtering-presses alternately large and small and providing the larger apertures with rubber packing-rings, the end surfaces of which project a little at both sides of the said apertures.

In the accompanying drawings, forming part of this specification, Figures 1, 2, and 3 are views of the plates and frames, respectively, of filtering-presses, showing one way of arranging the inlet and outlet conduits in filtering-presses. Figs. 4, 5, and 6 are views of the plates and frames, respectively, of filtering-presses, showing a modified arrangement of the inlet and outlet conduits. Figs. 7 and 8 are sectional detail views showing the arrangement of the conduits as described with reference to Figs. 1, 2 and 3; and Figs. 9 and 10 are sectional detail views showing the arrangement as described with reference to Figs. 4, 5, and 6. Figs. 7 to 10, inclusive, are drawn on an enlarged scale.

In the arrangement shown in Figs. 1, 2, and 3 the apertures *s* in the plates *p* and *p'* and frames *r* form the inlet-conduit for the mass to be filtered, the filtered liquid being let off

through small cocks arranged on all the plates *p* and *p'*. As this canal *s* must be in communication with the interior of the frames by means of small transverse canals or conduits *s'*, the rubber rings *z* are in this case to be arranged in the larger apertures of the plates *p* and *p'*. The edulcorating or lixiviating canal formed by the apertures *w* in the plates and frames in its turn communicates with the interior of the plates *p'*. The rubber packing-rings for this canal are therefore arranged in the correspondingly-larger apertures of the frame *r*.

The entire arrangement of plates and frames and of the rings in the conduits *w* and *s* will be better understood by reference to Figs. 7 and 8, respectively, it being also noticed that the head-pieces *K* and *L* are provided with smaller (half-size) rubber rings *z'*.

In the arrangement shown in Figs. 4, 5, and 6 the inlet-conduit for the mass to be filtered is formed by the apertures *m* in the plates *P* *P'* and the frames *R* of a filtering-press, the outlet-conduits for the filtered liquid, on the other hand, being formed by the apertures *u* and *v*. The rubber rings for the conduit *m* are therefore arranged in the apertures of the plates *P* *P'*, and also the smaller rings in the head-pieces *M* and *N*. The rubber rings for the conduits *u* and *v* are in turn arranged in the apertures of the frames *R*.

The sectional detail views, Figs. 9 and 10, will make the above-described arrangements sufficiently clear, the former as regards the conduit *v*, and the latter as regards the conduits *m* and *u*, arranged the one above the other.

The rubber rings should in all cases project sufficiently far to touch the adjoining frames or plates when the plates and frames are pressed tightly together in the press. The stronger the pressure is the tighter will the end surfaces of the rubber rings be pressed against the adjoining surfaces to be packed, because the inner surfaces of the rubber rings are subjected to the pressure prevailing within the conduits when the filtering-press is in use.

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

The combination of the filtering frames and plates arranged side by side and the latter provided alternately with large and small conduit-apertures, and the elastic packing-rings
5 arranged in the larger apertures of the plates and projecting at the opposite sides thereof to bear against the adjacent plates, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 10

JOHANN KROOG.

Witnesses:

A. D'HEUREUSE,
EMIL WOLF.