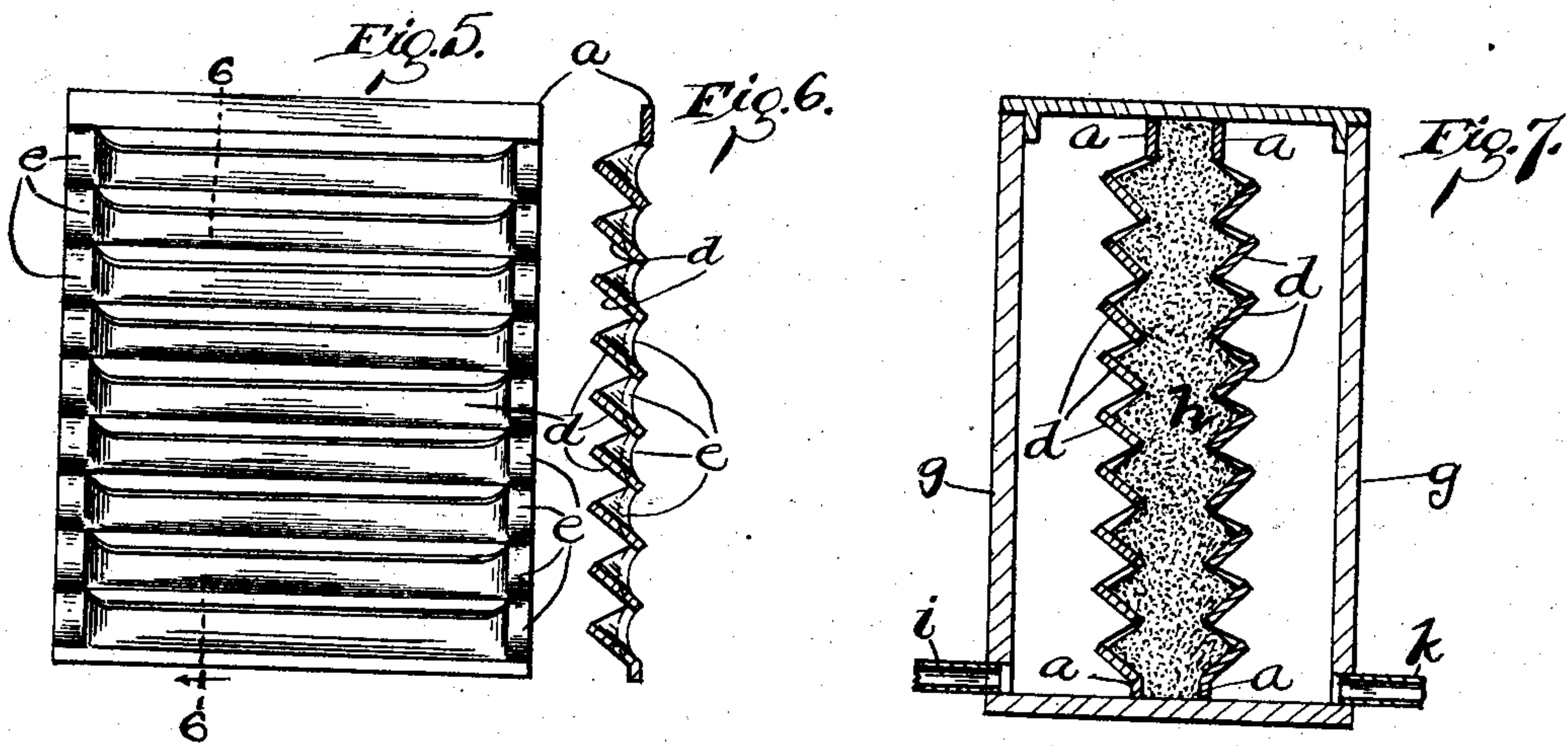
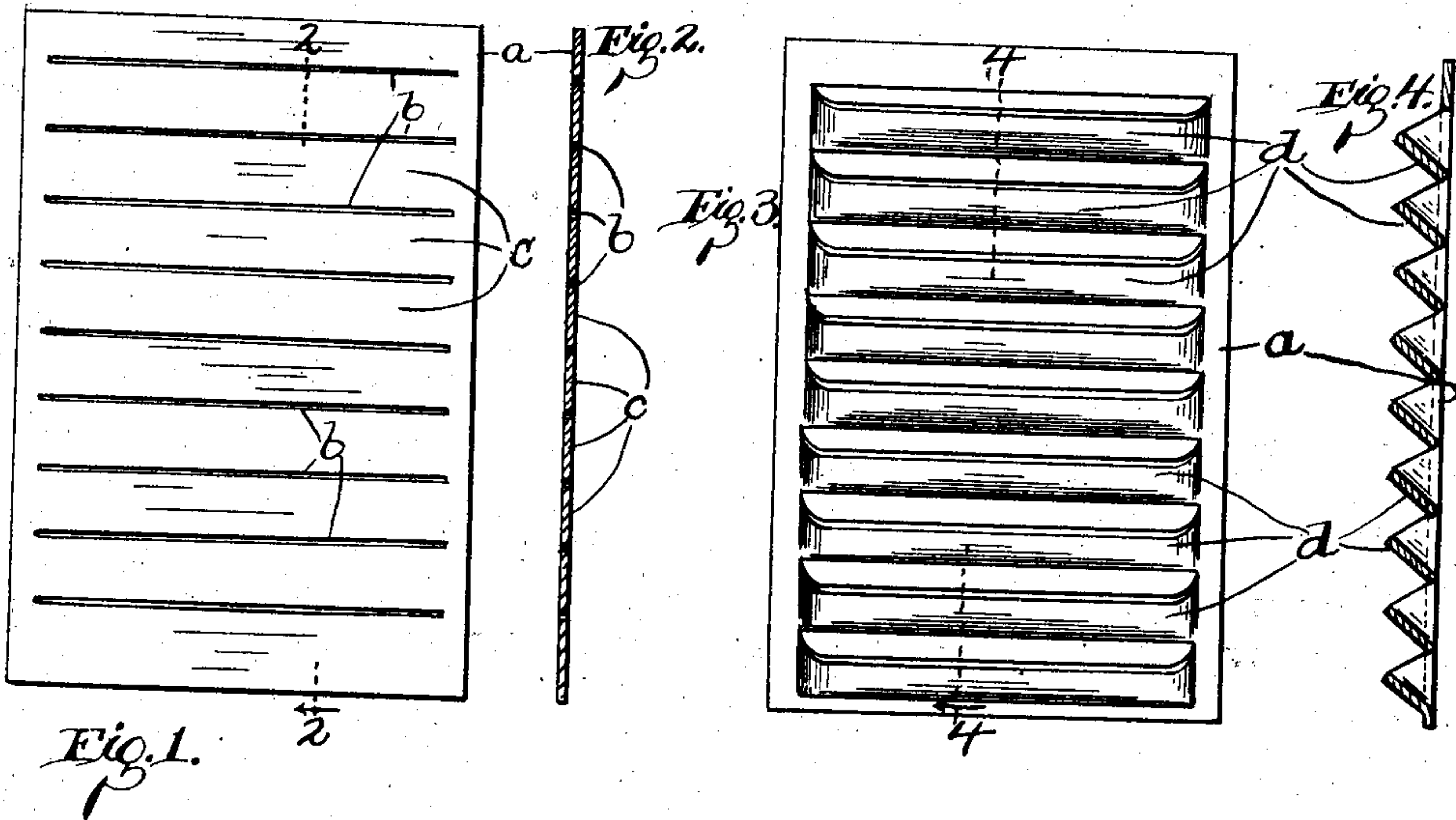


No. 834,939.

PATENTED NOV. 6, 1906.

C. P. SCHWARZ.  
MAKING SUPPORTING PLATES FOR GRANULAR SUBSTANCES.

APPLICATION FILED MAY 29, 1905.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

CONSTANTINE P. SCHWARZ, OF ELYRIA, OHIO.

## MAKING SUPPORTING-PLATES FOR GRANULAR SUBSTANCES.

No. 834,939.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed May 29, 1905. Serial No. 262,892.

*To all whom it may concern:*

Be it known that I, CONSTANTINE P. SCHWARZ, a citizen of the United States of America, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Making Supporting-Plates for Granular Substances; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to new and useful improvements in the process for making a supporting-plate for granular substances.

The object of this invention is to form a side plate for a filter from a single sheet of metal or similar material, which will have sills beneath the openings in said plate of greater width than the height of said openings.

My invention therefore consists in the process of making side plates for filters as described in the specification, pointed out in the claim, and illustrated in the drawings.

In the usual construction of filters using sand or similar material as a percolating medium the sand is inclosed between side plates, in which are formed openings, and the material which is cut away to form each opening is bent out beneath the opening to form a sill. The sill therefore is somewhat less in width than the height of the opening. The sills sustain the percolating medium which flows through the openings, and, as is known in the art, the medium escaping through these openings will assume a particular angle, which is known as the "natural slope" of the medium used. The natural slope of sand is approximately thirty degrees, and it will be seen that if the openings in the side plates of a filter have greater height than the width of the sills then in order to effectually prevent the flowing of the sand from the sills the said sills must be tipped up or inclined at a considerable angle from the horizontal, which in practical effect is equivalent to reducing the size of the openings in the plates and which is detrimental to the operation of the filter. Therefore in order to produce an efficient filter the sills must be made wider than the height of the openings through which the sand escapes.

In the accompanying drawings, Figure 1 shows a plate after it has been slotted in the first step of my process. Fig. 2 is a section on line 2 2, Fig. 1. Fig. 3 shows a plate with the material thereof between the slots pressed out so as to form the sills. Fig. 4 is a section on line 4 4, Fig. 3. Fig. 5 shows a plate after it has been corrugated in the last step of my process. Fig. 6 is a section on line 6 6, Fig. 5. Fig. 7 is a sectional view of a filter, showing the plates in position.

In carrying out my process I proceed as follows: I take a sheet of metal or similar material *a* and form therein a series of slots *b*, which extend across the plate to within a short distance of each side edge thereof. These slots *b* are spaced according to the width which it is desired the sills shall have when formed. The material of the plate between the slots, which is indicated in the drawings by the letter *c*, is then forced or pressed out, so that it stands at an angle to the body of the plate, so as to form the sills, which are indicated in their completed form by the letter *d*. The width of the sills thus formed will of course be less than the height of the openings made in the body of the plate through the forcing out of the material to form the sills. The side edges of the plate are then corrugated by means of any suitable corrugating-machine which is arranged to operate only on the side edges of the plate, and the corrugations are so arranged that there will be as many ridges (indicated by the letter *e* in the drawings) formed along the side edges of the plate as there are sills on the plate. The corrugating of the plate will bring the sills closer together and will reduce the height of the openings in the body of the plate.

In Fig. 7 I have shown two of the completed plates arranged within a receptacle *g* and spaced apart so as to support a quantity of a filtering medium *h* between them. The plates extend from side to side of the receptacle, and the liquid which is to be filtered enters through the pipe *i* and then passes through the sand and out through the pipe *k*.

It will readily be seen that my plate can be used in the manufacture of any kind of filter, percolator, or purifier.

What I claim is—

The herein-described process for making a

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filter-plate consisting in forming in a plate of  
suitable material a series of slots, then forc-  
ing out the material of said plate between  
the slots forming sills and then reducing the  
5 distance between the said sills by corrugat-  
ing the side edges of the plate, substantially  
as described and for the purpose set forth.

In testimony whereof I sign the foregoing  
specification in the presence of two witnesses.

CONSTANTINE P. SCHWARZ.

Witnesses:

EDWARD J. LEWIS,  
CHARLES E. COFFMAN.