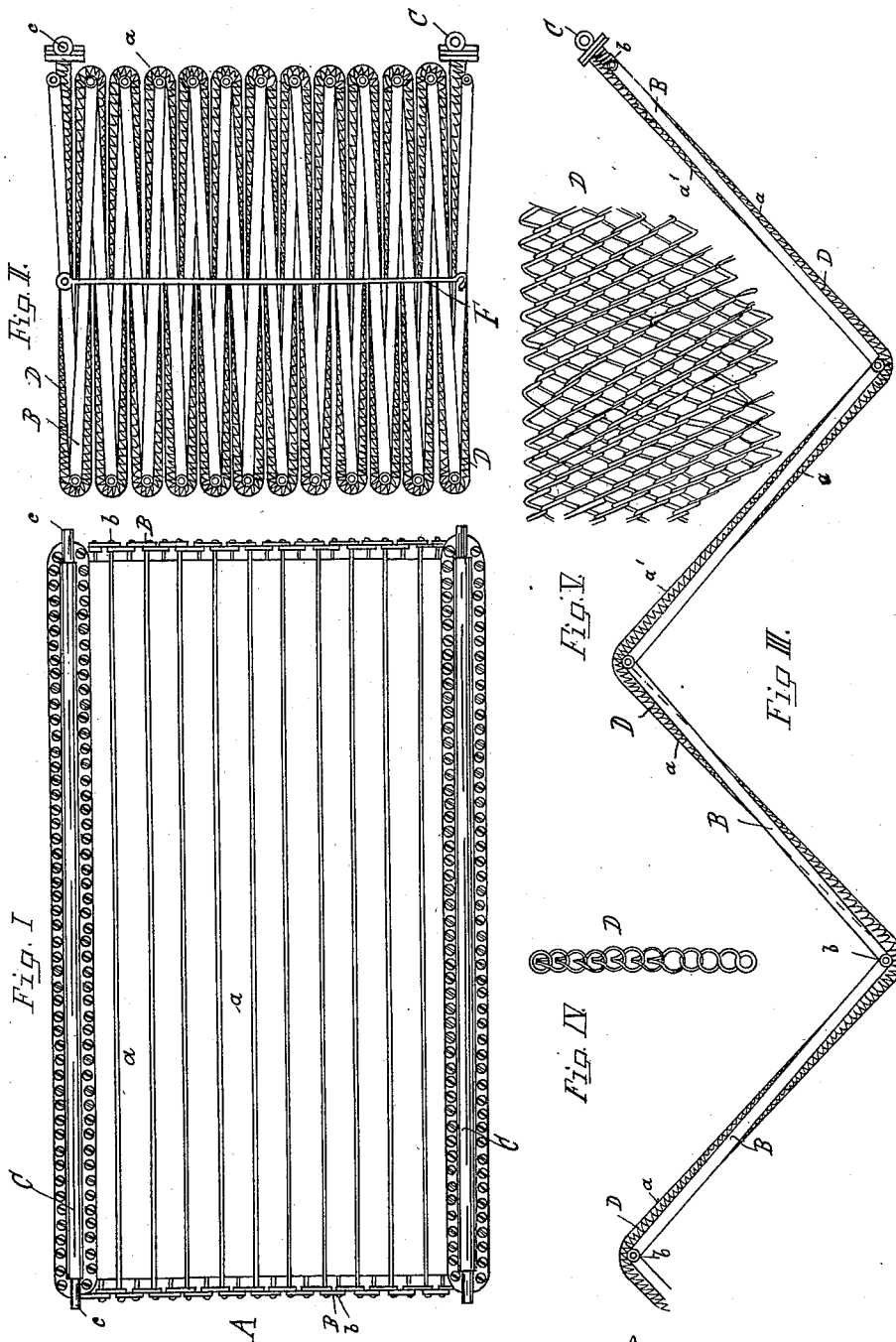


(No Model.)

F. PICH.
FOLDING SURFACE FILTER.

No. 579,769.

Patented Mar. 30, 1897.



Witnesses.
J. Chebret.
O. Block.

Inventor.
Friedrich Pich.
By H. de Vos.
Attorney.

UNITED STATES PATENT OFFICE.

FRIEDRICH PICH, OF BERLIN, GERMANY.

FOLDING SURFACE FILTER.

SPECIFICATION forming part of Letters Patent No. 579,769, dated March 30, 1897.

Application filed July 2, 1896. Serial No. 597,870. (No model.) Patented in Germany March 20, 1895, No. 84,705; in Belgium July 3, 1895, No. 116,386; in France July 3, 1895, No. 248,639; in Austria July 4, 1895, No. 46/3,857, and in Hungary July 11, 1895, No. 4,499.

To all whom it may concern:

Be it known that I, FRIEDRICH PICH, a subject of the German Emperor, residing at Berlin, Prussia, German Empire, have invented certain new and useful Improvements in Folding Surface Filters, (for which I have obtained patents in Belgium, No. 116,386, dated July 3, 1895; in France, No. 248,639, dated July 3, 1895; in Germany, No. 84,705, dated March 20, 1895; in Austria, No. 46/3,857, dated July 4, 1895, and in Hungary, No. 4,499, dated July 11, 1895,) of which the following is a specification.

The folding surface filters which consist of a spirally-folding filter-bag present very important disadvantages, greatly impairing their practical use. One of these disadvantages is that when the filter is rolled together one side of the filter-bag becomes longer than the other and folds are formed when it is sewed together in the usual well-known manner and then laid around the intermediate layer. As this diminishes the filtering capacity of the filter to a great extent, it is necessary to make the filtering-bag out of two pieces, sewed together when the filter is rolled up, in order to prevent the formation of the troublesome folds; but it is not only the troublesome manner of making that renders the folding filter practically valueless, but there is still another very important disadvantage—*i. e.*, the fact that it is very difficult to cleanse such filters, because if the same are unrolled for this purpose one side of the filtering-bag will be longer than the other, and the consequence is that the longer side bags and is very hard to cleanse. The several disadvantages are done away with by constructing the filter in the manner hereinafter described. I construct my filter in a zigzag form, so that it consists of several strictly separate layers, which can be laid one over the other.

I have illustrated this filter in the annexed drawings, forming a part of this specification, wherein—

Figure I shows a side view of the improved filter. Fig. II shows a front view of the same. Fig. III shows the filter in the position for cleaning the same; and Fig. IV is an end, and Fig. V a side, elevation, partly broken, of the wire mesh forming the intermediate layer for the filtering-bag.

The filter A consists of a suitable number of connecting rectangular parts separated by rods *b*, forming the pivot-points for the lateral rods B. The filtering-bag *a*, wherein the wire mesh D is arranged, is laid around the rods *b* in zigzag fashion in the manner shown in Figs. III. When the filter is folded together, as shown in Figs. I and II, the folds of the bag *a* become superposed, and inasmuch as the two sides of the said bag *a* are alternately shortened by the folding this shortening will be equalized and both sides will remain smooth and taut. The filtering-surfaces will be taut in both the folded position, Fig. II, and in the open position, Fig. III, and consequently they can be readily cleaned when open. A further consequence of this construction is that the filtering-bag can be finished before inserting the intermediate layer, which layer, as shown in Figs. IV and V, consists of a wire mesh D, as used, for instance, for wire mattresses. The said filtering-bag *a* may be made in one piece and can be woven at once hose-shaped, thus obviating the seams that are apt to cause leaks. The ends of the said filtering-bag *a* are clamped between the flanges of the tubular end pieces C *c*, forming the inflow and outflow for the liquid to be purified. A further very essential advantage of my new filter is that it will better adapt itself to the vessel in which it is to be placed, without any loss of space, than the similar devices hitherto known, and it is to be noted that the lateral rods B give a material rigidity to the folded filter and enable me to lock the filter together in a simple way by means of a hooked rod F, as shown in Fig. II.

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

1. The combination in a surface filter, of a
5 folding frame having cross-rods and a filter-bag folded zigzag around said rods, substantially as described.
2. The combination in a surface filter of a folding frame having cross-rods, a filter-bag

folded zigzag around said rods, and a mesh 10 in the interior of said bag, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FRIEDRICH PICHL.

Witnesses:

R. BACHMANN,
W. HAUPT.