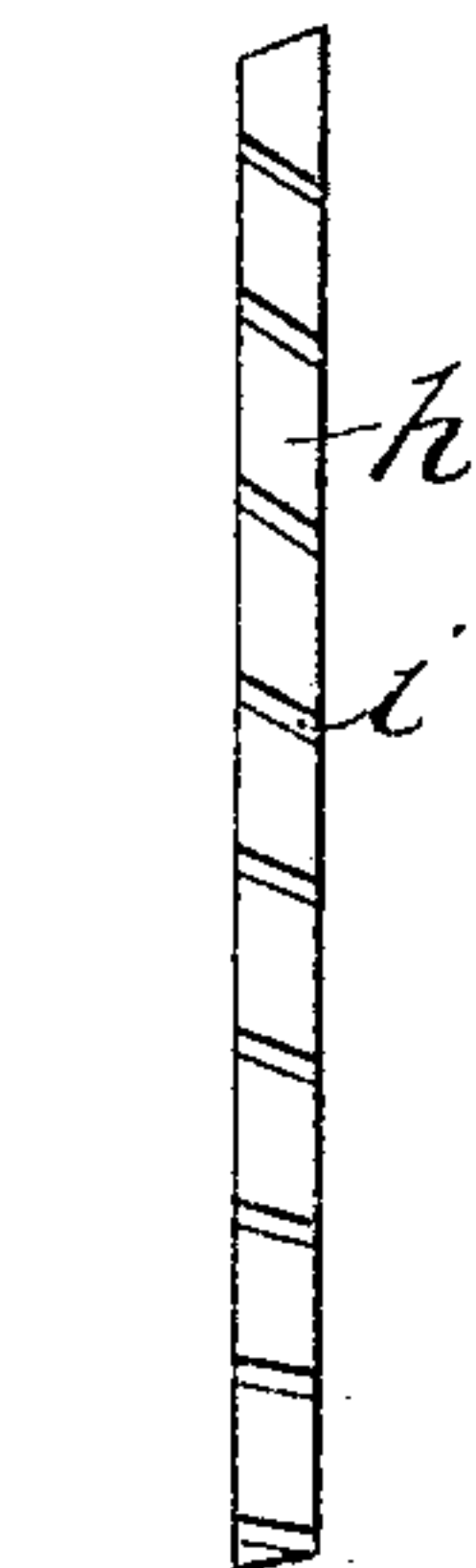
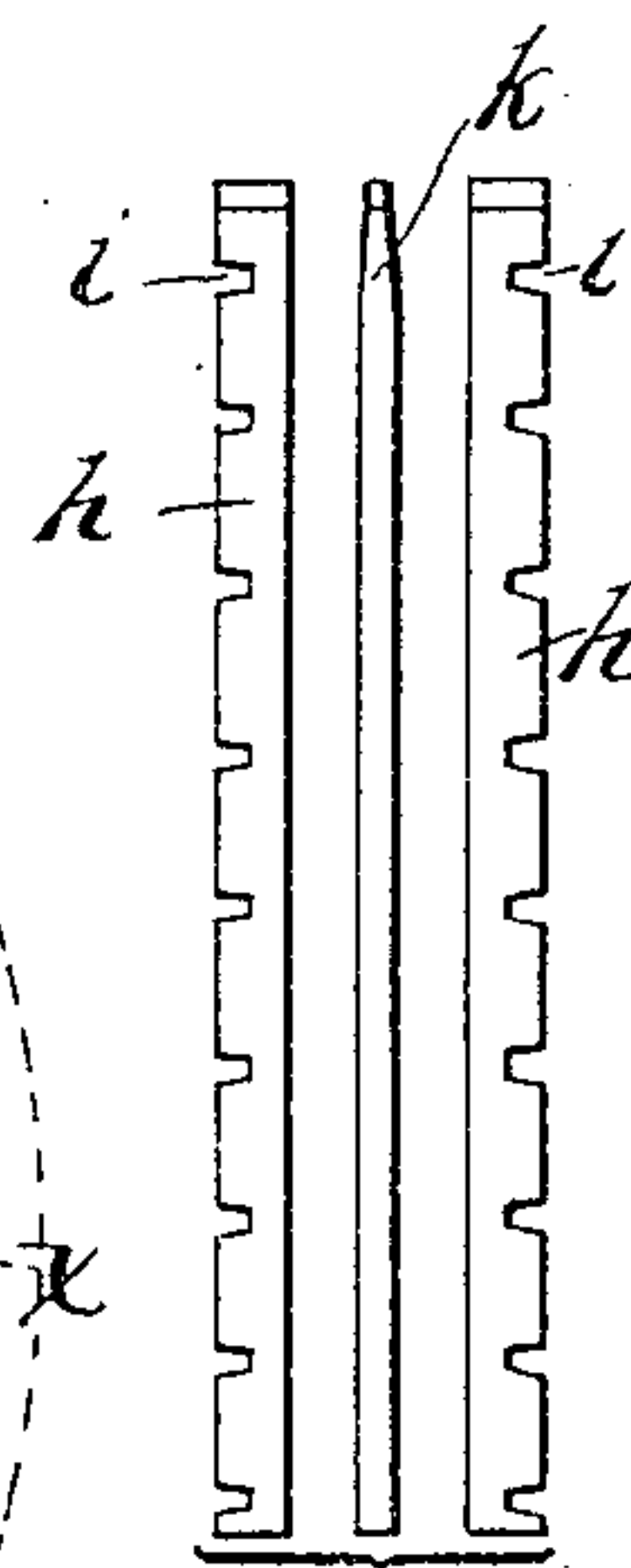
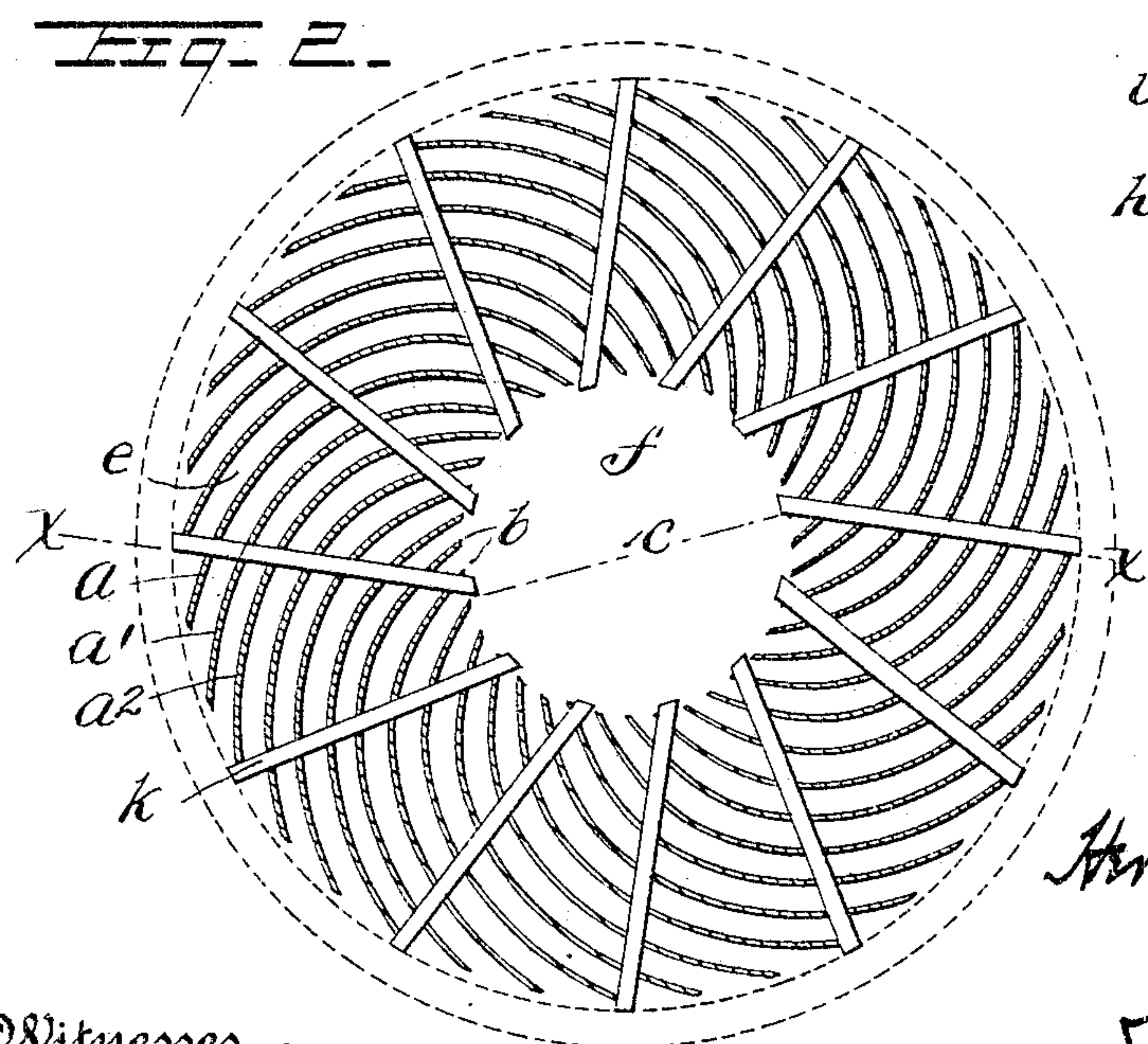
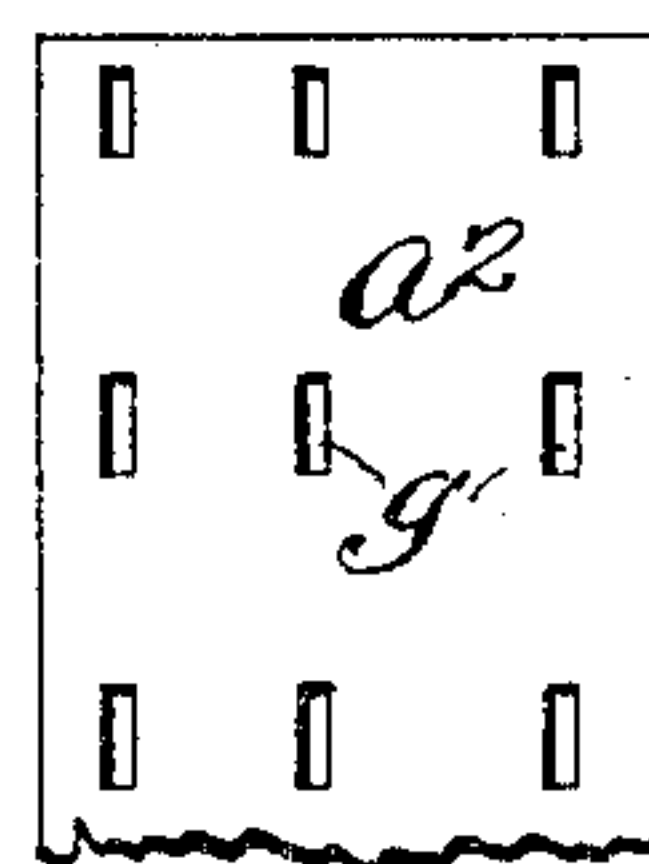
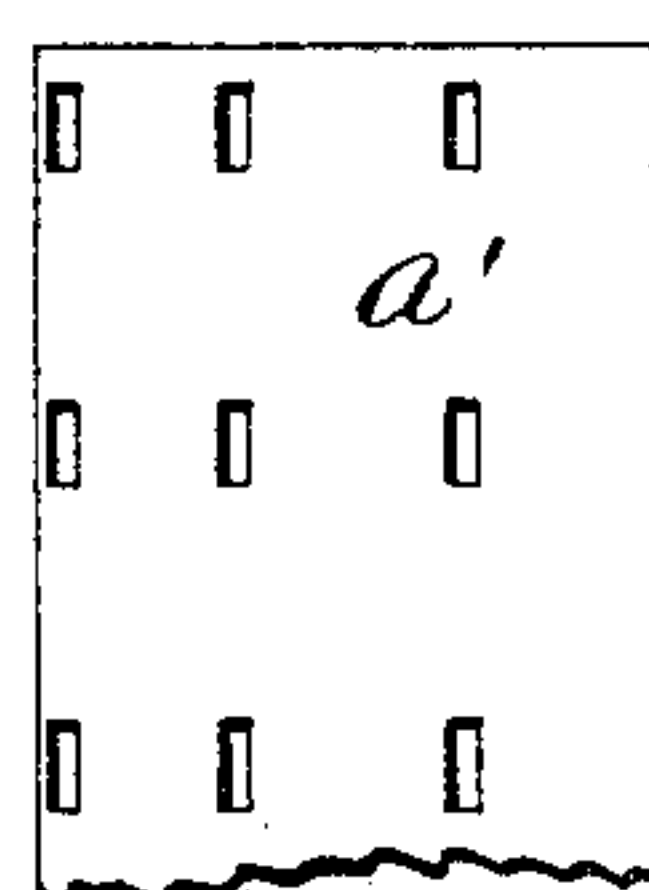
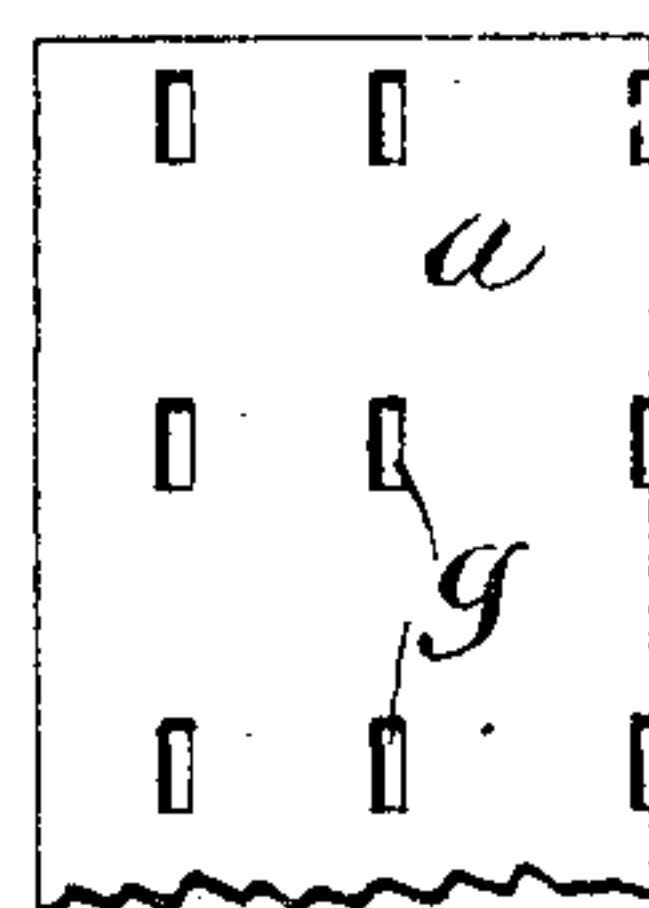
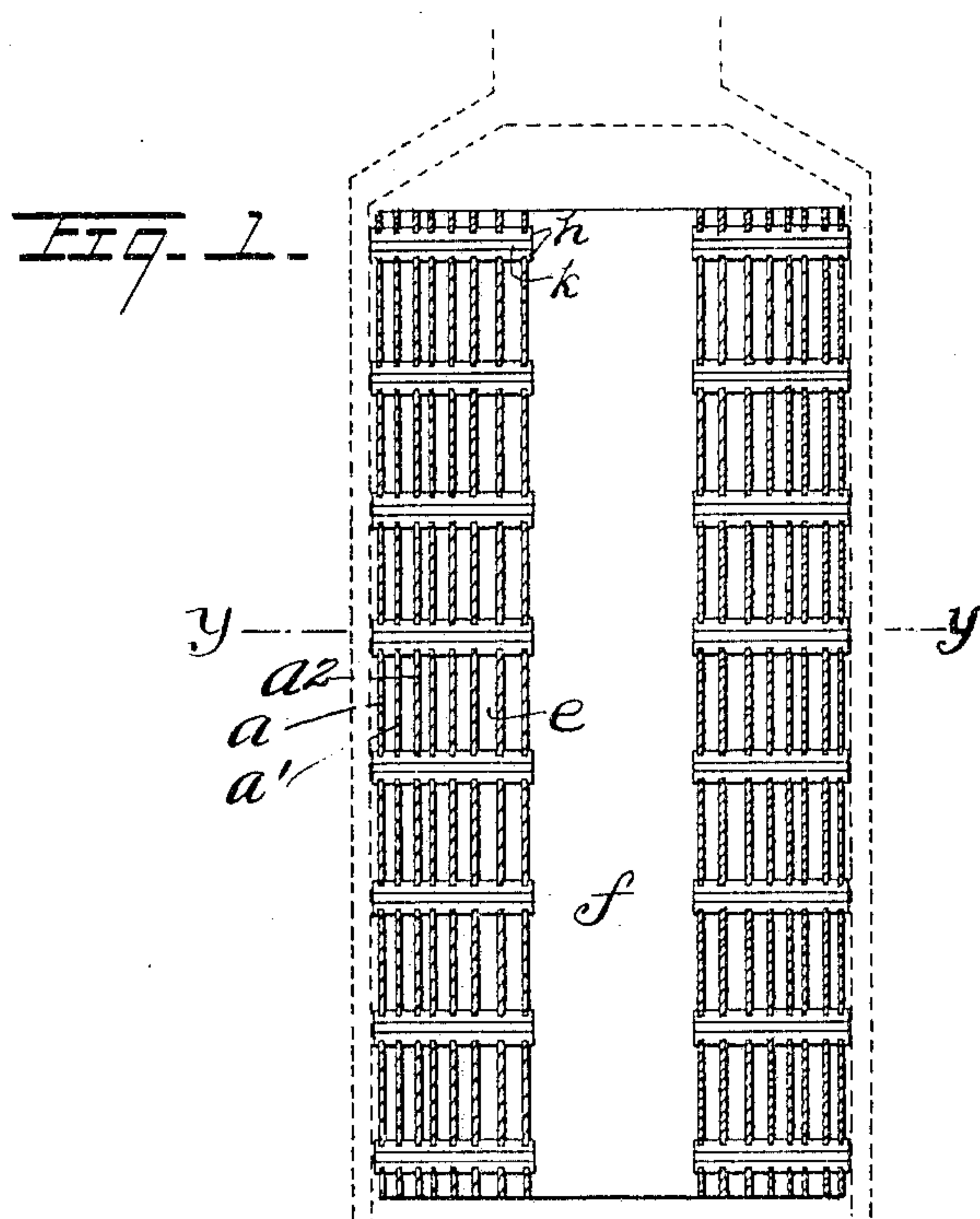


No. 787,935.

PATENTED APR. 25, 1905.

H. McCORNACK.  
CENTRIFUGAL LIQUID SEPARATOR.

APPLICATION FILED AUG. 27, 1904.



Witnesses  
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Attorney



# UNITED STATES PATENT OFFICE.

HERBERT McCORNACK, OF WESTCHESTER, PENNSYLVANIA.

## CENTRIFUGAL LIQUID-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 787,935, dated April 25, 1905.

Application filed August 27, 1904. Serial No. 222,372.

*To all whom it may concern:*

Be it known that I, HERBERT McCORNACK, a citizen of the United States, residing in Westchester, county of Chester, State of Pennsylvania, have invented certain new and useful Improvements in Division Devices for Centrifugal Liquid-Separators, of which the following is a specification.

My invention relates to division devices for centrifugal liquid-separators, and more particularly to improved means of rigidly uniting in a single structure a grouped series of overlying division-plates uniformly spaced apart to form parallel separating passage-ways extending across the radial lines of the bowl.

Heretofore a rigid division-plate structure of this kind has been made by employing approximately radially-arranged screw-threaded spacing and connecting bars engaging properly-alined openings in different series of overlying plates, as particularly described in the pending application of D. T. Sharples, Serial No. 136,598, filed December 26, 1902.

The main object of my invention is to provide improved connecting means for the grouped plates which will permit the use of thin division-plates, while at the same time insuring the required uniform spacing and rigid uniting of the same in a single structure with great facility and a minimum weight of material and obstruction of the narrow passage-ways between the plates.

My improvements are fully described in connection with the accompanying drawings, and the novel features are pointed out in the claims.

Figure 1 is a sectional elevation taken on the line  $x-x$  of Fig. 2 of a division device embodying my improvements, the wall of the separator vessel to which the same is adapted being indicated in dotted lines. Fig. 2 is an enlarged sectional plan view taken on the line  $y-y$  of Fig. 1. Figs. 3, 4, and 5 are partial views indicating the different location of the perforations or bar-engaging openings in several adjacent plates to bring the same into proper alinement for the engaging pins or bars when the plates have been bent and grouped together as required. Figs. 6 and

7 show in detail the notched engaging pin or bar and the key for securing the same.

As in the previous construction referred to, the cylindrically-grouped overlying division-plates  $a a' a''$  are arranged with their inner longitudinal edges  $b$  equidistant from the axis  $c$  of the structure and with the width of the plates extending outward with involute curvature across the radial lines of the structure and of the centrifugal vessel or bowl in which it is placed for service and terminating adjacent to the wall of the latter, which is indicated by dotted lines in Fig. 2, the plates being spaced apart uniformly to form between them narrow passage-ways  $e$ , communicating at their inner ends with the axial chamber  $f$ .

In my improved construction the spacing and uniting of the plates in a rigid structure is effected as follows: As shown, the device is made up of thirty-six plates, all of the same size and form and all provided with similar perforations or openings  $g$  for the passage and engagement of the spacing and uniting bars  $h h$  and key-piece  $k$ . (Indicated in Figs. 6 and 7.) In order that these openings  $g$  in the several plates may come into proper alinement for the passage of the approximately radially arranged connecting-bars  $h$  when the plates are cylindrically grouped in overlying position, as shown, the plates are divided into three series of twelve each, differing only in the location of these openings, as indicated in Figs. 3, 4, and 5, respectively. The openings are preferably square-cornered and oblong in form to receive the connecting-bars  $h$  and the keys  $k$  and are formed by punching the plates with proper dies before curving them. The bars and keys are made of square wire, as indicated, and each bar is provided with a series of side notches  $i i$ , properly spaced and varyingly inclined to correspond with the portion of the plate edge of each opening which is to engage it when assembled, the notches being accurately impressed in each bar by means of suitable dies. A single bar may be employed for each series of approximately radially alined openings; but I preferably use the bars in pairs, with their notched sides arranged oppositely, the



key *h* being inserted between them as the plates are engaged in the notches and serving to firmly engage the parts.

In building up the device the plates may be  
5 loosely assembled in cylindrical form and so held by rings while the bars *h* are readily inserted in the oblong openings *g* and the plates set into the proper notches and locked by the key. It will be readily understood that as  
10 the notched bars are wedged up the plates will be positively drawn into proper position and rigidly held, no matter how light and springy they may be, and when completed the structure will be uniform throughout and  
15 so stiff and substantial as to practically insure it against distortion, especially after it has been passed through the tin-bath and the bars thus soldered together.

What I claim is—

20 1. A division device for centrifugal liquid-separators comprising a series of division-plates extending across the radial lines of the device, intersecting connecting-bars provided with suitably spaced and inclined plate-en-  
25 gaging notches.

2. A division device for centrifugal liquid-separators comprising a series of division-plates extending across the radial lines of the

device, intersecting connecting-bars provided with suitably spaced and inclined plate-en- 30 gaging notches, and key-bars to rigidly secure the engaged parts.

3. A division device for centrifugal liquid-separators comprising a series of division-plates extending across the radial lines of the 35 device, twin intersecting connecting-bars provided with suitably spaced and inclined plate-engaging notches oppositely arranged, and key-bars to rigidly secure the engaged parts.

4. A division device for centrifugal liquid- 40 separators comprising a series of division-plates extending across the radial lines of the device, and each provided with a series of oblong openings arranged in alinement with corresponding openings in adjacent plates, 45 and intersecting connecting-bars and keys for the same in the alined openings, said bars being provided with suitably spaced and inclined plate-engaging notches.

In testimony whereof I affix my signature in 50 the presence of two witnesses.

HERBERT McCORNACK.

Witnesses:

THOMAS S. GOORLEY,  
JOHN M. ROSENBAUM.