

(No Model.)

W. F. ROCKTESCHEL.  
STARCH SEPARATOR.

No. 538,794.

Patented May 7, 1895.

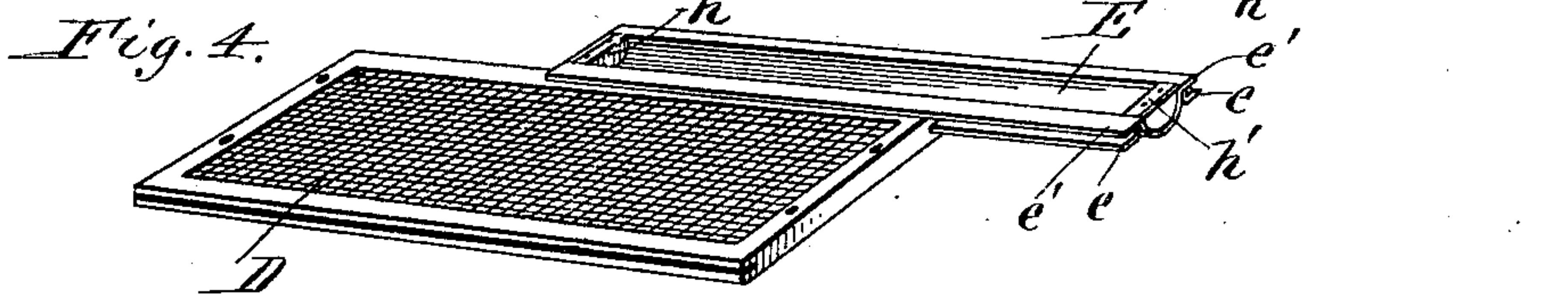
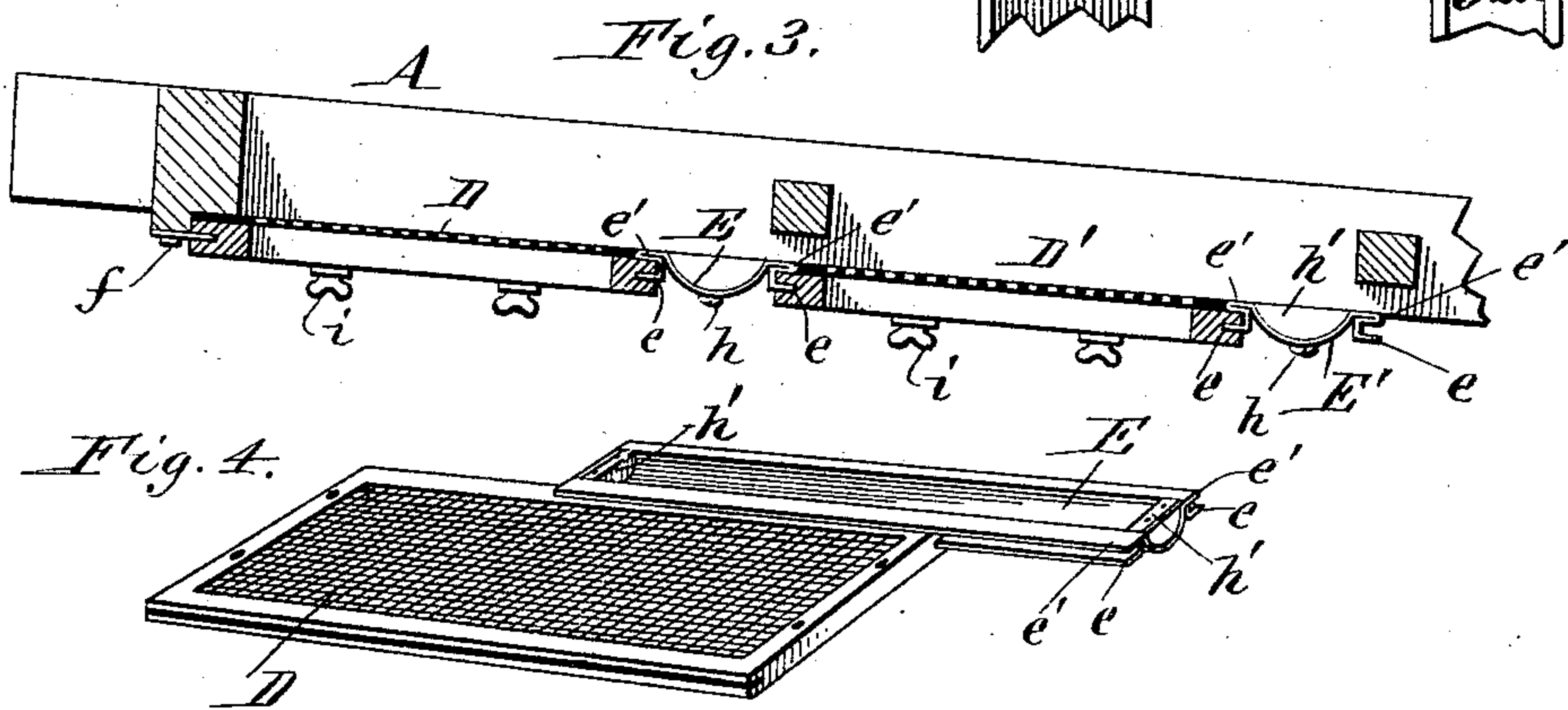
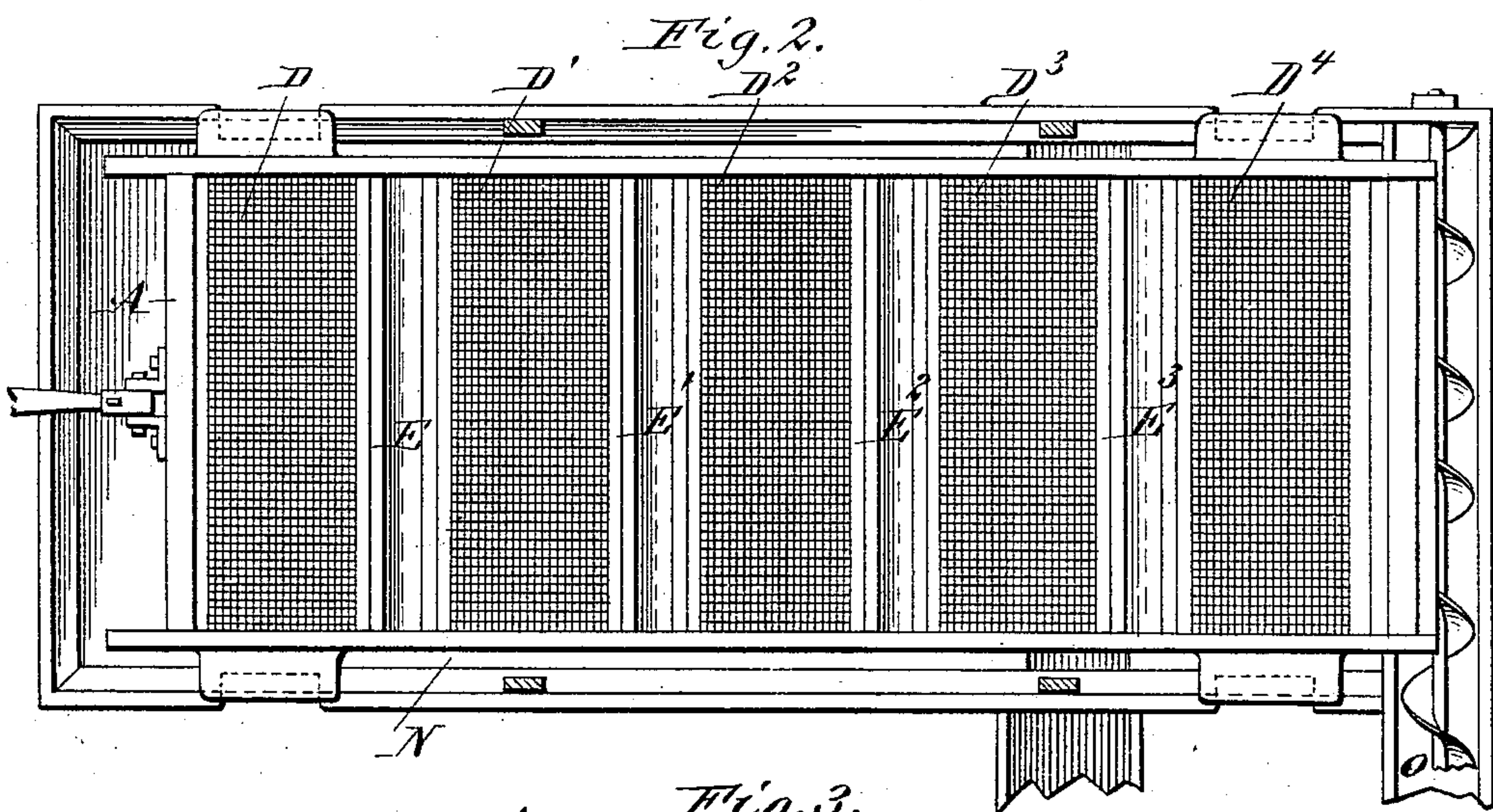
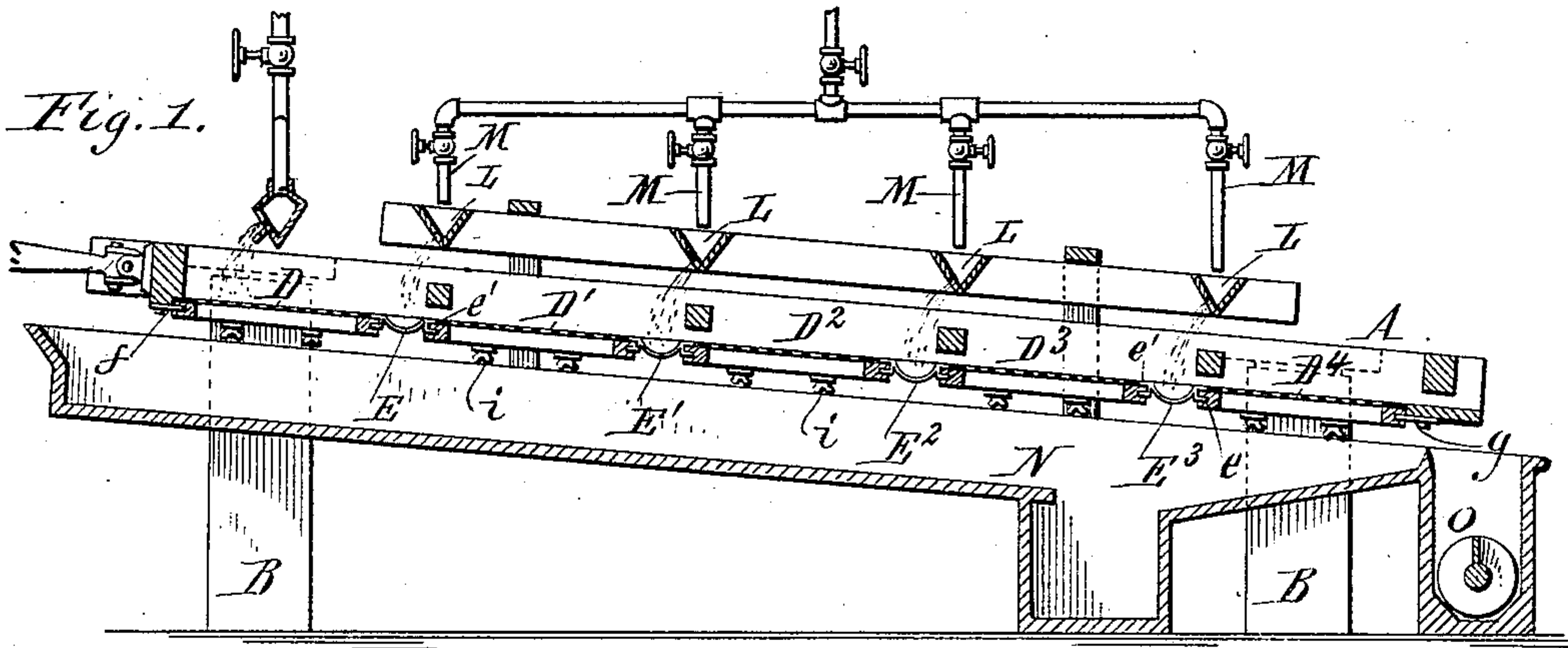


Fig. 5.

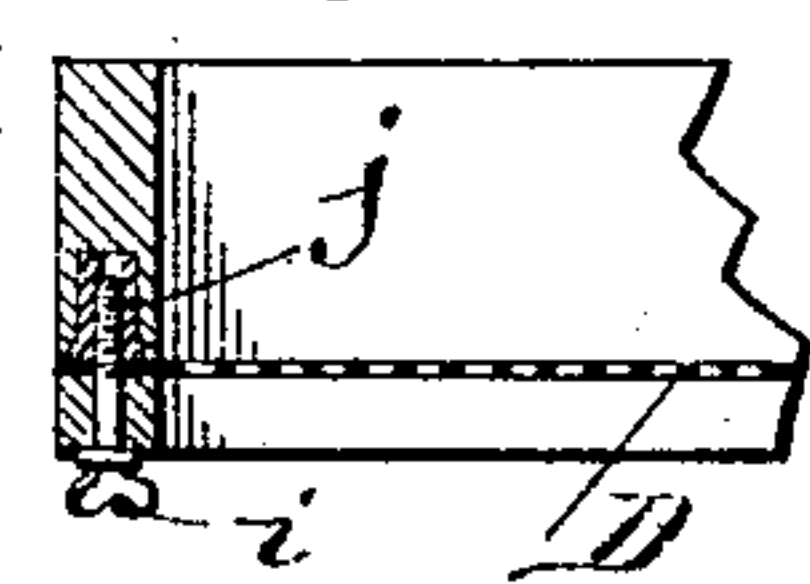
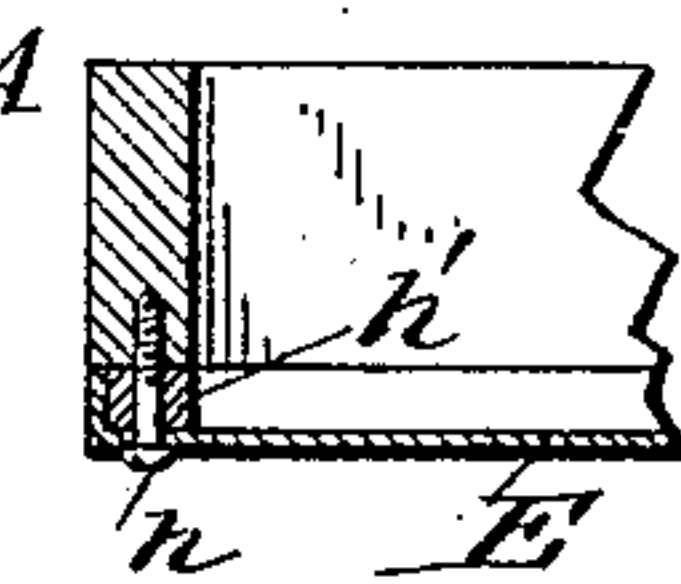


Fig. 6.



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# UNITED STATES PATENT OFFICE.

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GILBERT S. GRAVES, OF SAME PLACE.

## STARCH-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 538,794, dated May 7, 1895.

Application filed November 10, 1894. Serial No. 528,412. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. ROCKTESCHEL, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Starch-Separators, of which the following is a specification.

This invention relates more especially to that class of starch separators in which the bolting surface is divided into a number of sections which are separated by intermediate transverse troughs or gutters which successively receive the tailings of the sections, and in which the tailings of each section are sprayed with water for loosening or washing out the remaining starch particles before passing upon the next succeeding section.

One of the objects of my invention is to render each sieve section readily removable from the shaking frame, so that the bolting cloth can be renewed when worn out or the sections be replaced with new ones, or interchanged.

A further object of my invention is to improve the construction of the intermediate troughs, so as to more thoroughly agitate the successive tailings and thereby wash out a greater percentage of starch.

In the accompanying drawings, Figure 1 is a longitudinal section of a starch-separator containing my improvements. Fig. 2 is a top plan view thereof, partly in section. Fig. 3 is a fragmentary longitudinal section of the head portion of the sieve, on an enlarged scale. Fig. 4 is a perspective view of one of the sieve-sections and one of the troughs. Fig. 5 is a fragmentary transverse section of the sieve-frame, showing the means of securing the sieve-sections to the same. Fig. 6 is a similar section showing the means of securing the troughs to the sieve-frame.

Like letters of reference refer to like parts in the several figures.

A represents the vibratory rectangular sieve-frame which slides at both ends upon uprights B and which is actuated by any ordinary means.

D, D', D<sup>2</sup>, D<sup>3</sup>, D<sup>4</sup> represent the removable sieve sections of the separator, and E, E', E<sup>2</sup>, E<sup>3</sup>, the intermediate troughs or gutters. Each

of these sections consists of a rectangular frame arranged to slide transversely of the sieve frame and covered with bolting cloth. The bolting section D at the extreme head of the separator is supported at its front side on a transverse ledge *f* secured to the under side of the head-board of the sieve frame and entering a longitudinal groove formed in the adjacent front bar of the section, and at its rear side on a ledge or flange *e* arranged on the adjacent trough E below the top surface thereof, and entering a longitudinal groove formed in the rear bar of the section. The sieve-section D<sup>4</sup> at the extreme tail end of the sieve frame is likewise supported by its grooved rear and front bars on ledges *g* and *e* arranged respectively on the under side of the tail-board of the sieve frame and the adjacent trough E<sup>3</sup>. Each of the intermediate sieve sections D', D<sup>2</sup> and D<sup>3</sup> is supported by its grooved front and rear bars on similar ledges or flanges *e* arranged on the adjacent troughs, as shown in Figs. 1 and 3. The troughs are preferably constructed of sheet metal and their ledges or flanges are formed integrally therewith. Each of these troughs is secured at its ends to the lower edges of the side pieces of the sieve frame by screws *h* which pass through the troughs and through filling blocks *h'* arranged in the end portions of the troughs and into the under side of the sieve frame, as most clearly shown in Figs. 4 and 6.

The sieve sections are held against endwise displacement on their supporting ledges by thumb screws *i* passing through holes formed in the end bars of each sieve section and entering screw threaded sockets *j* arranged in the lower edges of the side pieces of the sieve frame, as clearly shown in Fig. 5.

When it is desired to remove any of the sieve sections, the thumb screws *i* thereof are loosened sufficiently to release the section and the same is then withdrawn from its supporting ledges. The bolting cloth of the section can then be readily renewed or the section be replaced by a new one, without requiring the renewal of the entire bolting surface. The wear of the bolting cloth is greater at the head of the sieve where the material is fed upon the cloth, than at the tail, and if desired, the



sections at the tail of the sieve may be interchanged with those at the head when partly worn, thereby equalizing the wear.

By utilizing the troughs as supports for the bolting sections, separate ledges or supports for this purpose are dispensed with, thus simplifying the construction of the separator.

In order to form a water tight joint between the troughs and the sieve sections and to stiffen the troughs, the latter are provided above their ledges *e* with projecting marginal flanges *e'* which overlap the adjacent bars of the sieve sections and the latter are preferably provided on their upper surfaces with packing strips.

The troughs are preferably constructed of concave cross section, as shown. Heretofore, these troughs have been made angular or V-shaped in cross section, but this construction is undesirable, because when the pitch of their sides is comparatively small, the diluted tailings escape from the troughs before receiving sufficient agitation to wash out the starch, and when the pitch is steep enough to agitate the material sufficiently, the angular bottom of each trough forms a pocket in which the particles lodge. By constructing the troughs of concave form, the material is thoroughly agitated and a larger percentage of starch is washed out by the water than by the use of the V-shaped trough, and owing to the curvature of their bottoms the water flushes the troughs and prevents any starch particles from lodging in the same.

L represents the usual perforated water dis-

tributing troughs arranged above the gutters of the sieve, and M are the water pipes which deliver water into said distributing troughs.

N is the starch receptacle arranged below the separator and O the conveyer which receives the final tailings of the sieve.

I claim as my invention—

1. The combination with the sieve frame provided near its ends with transverse ways, of troughs secured at intervals to said frame and having marginal ways, and intermediate sliding sieve sections supported on the ways of the sieve frame and said troughs, substantially as set forth.

2. The combination with the sieve frame having its end boards provided with transverse ledges, of transverse troughs secured to the sieve frame and provided with similar ledges, and removable sieve sections supported upon said ledges, substantially as set forth.

3. The combination with the sieve frame and removable sieve sections, of a trough secured to the sieve frame and having ledges on which the sieve sections slide and marginal flanges which are arranged above said ledges and overlap the sieve sections, substantially as set forth.

Witness my hand this 7th day of November, 1894.

WILLIAM F. ROCKTESCHEL.

Witnesses:

THEO. L. POPP,  
JNO. J. BONNER.