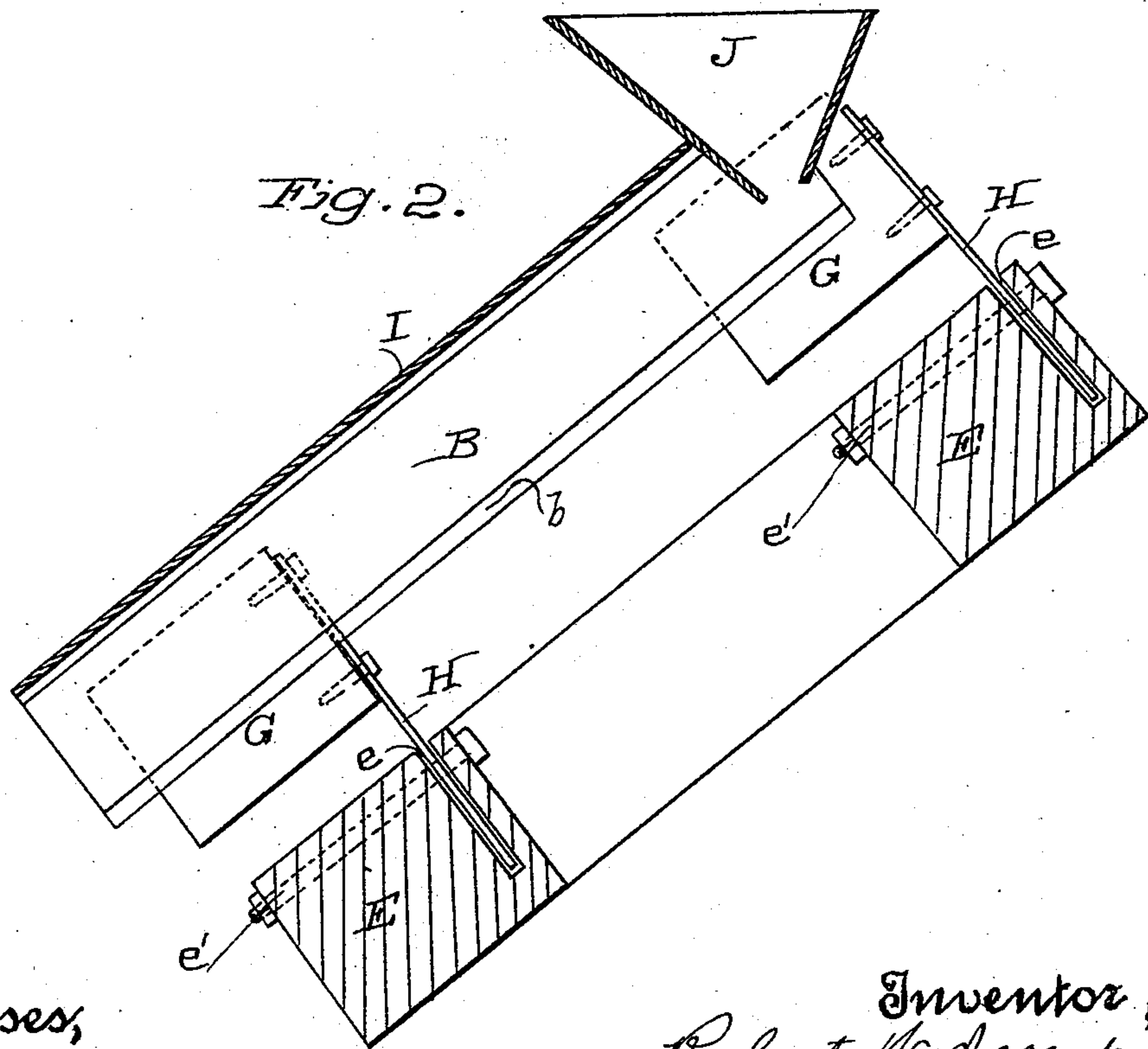
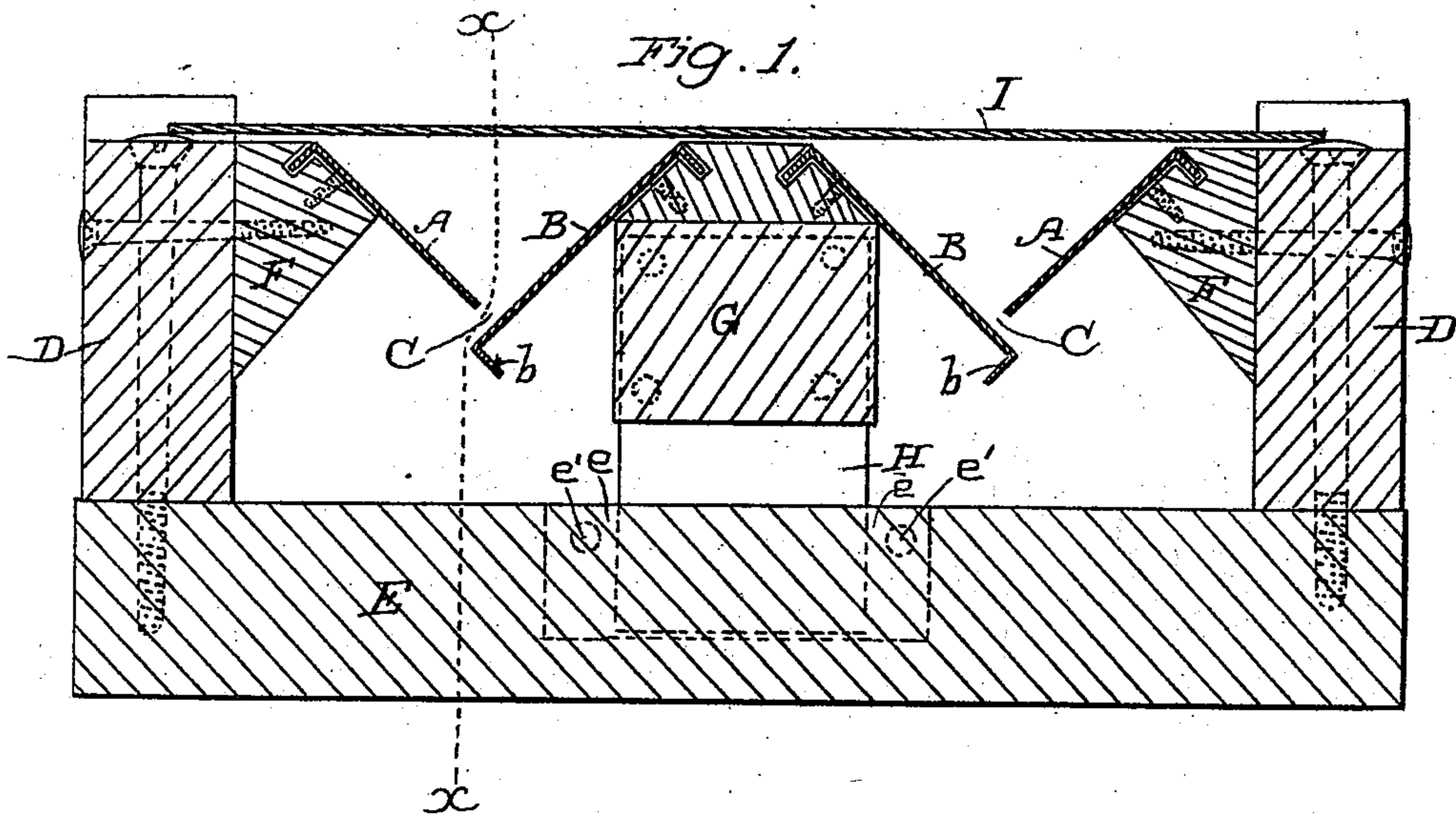


(No Model.)

R. W. JESSUP.
SEPARATOR.

No. 528,434.

Patented Oct. 30, 1894.



Witnesses,
J. A. Boyless

Inventor,
Robert W. Jessup
By D. W. Dwyer & Co.
Attys.

UNITED STATES PATENT OFFICE.

ROBERT W. JESSUP, OF LOS ANGELES, ASSIGNOR OF ONE-HALF TO FAIRFAX
H. WHEELAN, OF SANTA BARBARA, CALIFORNIA.

SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 528,434, dated October 30, 1894.

Application filed January 15, 1894. Serial No. 496,959. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. JESSUP, a citizen of the United States, residing at Los Angeles, Los Angeles county, State of California, have invented an Improvement in Separators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device for separating particles of different sizes, in which a stream of material is caused to flow through a channel having a continuous discharge opening through which the smaller particles fall.

My invention consists in certain improved details of construction of the channel, to wit: the relative arrangement of the opposing walls whereby the lower edge of one wall passes beyond the plane of the other; the construction of the lower edge of one wall to provide for a sharp and clean discharge; the flexibility of one of the walls; the means for varying the width and capacity of the discharge opening, and other features of construction, arrangement and combination, all of which I shall hereinafter fully describe and specifically claim.

The object of my invention is to provide a simple, economical and effective separator, which, though adapted for many uses, is specially useful in the separation of cheat and oats from wheat or barley, and also in raising the grade of barley by separating the small shoe-peg barley from the larger grains.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical cross section of my separator. Fig. 2 is a section on line $x-x$ of Fig. 1.

The channel into which the material is directed is composed of the opposing downwardly converging walls A and B, separated below so as to leave between them the discharge opening C, continuous throughout the length of the walls. These walls are mounted at an inclination in the direction of their length, as shown, so that if a stream of material from a suitable hopper as J, be fed into the channel at its upper end, it will flow by gravity to the lower end. If the stream be a properly attenuated one, the

smaller particles will all drop through the discharge opening C, while those particles, too large to pass through said opening will continue on down to the lower end of the channel. Thus the separation is effected. Cheat and oats being of smaller diameter than barley or wheat will be separated from the latter by dropping through the discharge opening, and thus a simple and effective means of separation is provided, requiring no power to operate it, as the parts are all non-moving, and only needing the feeding of the material to the upper end of the channel.

The capacity of the device may be increased in two ways, one by increasing the length of the channel and the other by providing a plurality of channels, to illustrate which latter, I have herein shown two channels side by side and embraced in the same organized apparatus, the details of which I shall presently describe.

Though the essential principle of separation would be embodied in a construction in which the walls A and B were so arranged relatively that their downwardly converging planes would, if prolonged, meet in an apex, I have found in practice that the device is greatly improved by such an arrangement as that here shown in which one of said walls, say the wall B is made wider than the other, and its lower edge passes the plane of and projects beyond the edge of said other wall, thus leaving the discharge opening in the plane where the narrower wall A would, if prolonged, intersect the wider wall B. The advantage of this arrangement lies in the fact that there is less tendency of the grains or other particles to clog the discharge opening. This tendency to clog cannot be wholly avoided for the larger grains or particles will wedge in the opening, but as I have said, I find less clogging by this construction of the opening than in any other. To further lessen this tendency to clog by the wedging of the larger grains in the opening, I have found it advantageous to make one or both walls, preferably only the wider wall B, of some yielding or flexible material, such as celluloid or thin metal. It will be seen that if the opening clogs at any point by reason of the wedging in it of the larger grains, there will

be a tendency to clear it by the striking of the lodged grains by the falling or flowing material, the flexible wall yielding sufficiently to allow the wedged grains to be driven through the opening.

The lower edges of the walls B are made with angular flanges *b* for the purpose of getting a true edge on the thin iron of which the walls are preferably made, and to cause the fall of the material therefrom to be sharp and clean.

In the practical machines or devices, I have found it advantageous to provide for a variation in the width of the discharge opening C. This is necessary to accommodate them for the different purposes to which they are applied. It must vary in width according to the diameter of the grains to be passed through it. The means for varying the width of this opening may be of any suitable character providing for the movement of either or both walls. In the organized apparatus shown I have provided for it by the movement of the wider wall B. In this apparatus D are the side pieces of the frame secured immovably to bed pieces E. To the inner surfaces of the upper ends of the side pieces are secured the supporting strips F which carry the walls A. Between these is the supporting strip G, to each side of which are secured the walls B. This strip G is vertically adjustable by having secured to its ends the standards H, which are preferably metallic sheets, their lower ends fitting in a saw cut or kerf *e* made in the bed pieces E. Clamping bolts *e'* pass through these pieces, traversing the saw kerf on each side of the standards H, whereby upon loosening said bolts, the kerf is relieved sufficiently to permit the standards H to be raised or lowered, and upon tightening the bolts again the standards are again clamped in the kerf. The strips F and G are mounted at an inclination in the direction of their length.

A cover I over the channels prevents the grain from flying out over them.

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

1. A separator consisting of a channel composed of downwardly-converging non-moving opposing walls having a continuous discharge opening of uniform width from end to end between their lower portions, and mounted at an inclination in the direction of their length, one of said walls extending beyond the lower edge of the opposing wall and having its lower edge turned backwardly at an angle.

2. A separator consisting of a channel composed of downwardly-converging opposing walls separated below to form a continuous

bottom discharge, one of said walls projecting beyond the lower edge of the opposing wall, and means for adjusting said projecting wall toward and from the opposing wall to vary the width of the discharge opening.

3. A separator having a channel composed of opposing walls separated between adjoining edges, one of said walls being immovable and the other flexible or yielding.

4. A separator consisting of a channel composed of non-moving downwardly converging opposing walls mounted at an inclination in the direction of their length and separable below to form a continuous bottom discharge opening, one of said walls being of a yielding or flexible nature.

5. A separator consisting of a channel composed of non-moving downwardly converging opposing walls mounted at an inclination in the direction of their length and separable below to form a continuous bottom discharge opening, one of said walls being of a yielding or flexible nature, and extending beyond the lower edge of the other wall.

6. In a separator, the combination of non-moving downwardly converging opposing walls mounted at an inclination in the direction of their length and forming a continuous discharge opening between their lower portions, and means for vertically adjusting one of said walls to vary the width of said discharge opening.

7. In a separator, the combination of the bed pieces, the fixed side piece, the inclined supporting strip secured to said side piece, the opposing inclined supporting strip, the end standards supporting it and fitted in a saw cut or kerf in the bed pieces whereby they may be vertically adjusted, the bolts for clamping said standards in the saw kerfs, and the downwardly converging walls secured to the inclined supporting strips and forming a continuous discharge opening between their lower portions, substantially as described.

8. In a separator and in combination with the non-adjustable wall inclined in the direction of its length and width, the opposing inclined wall between which and the first wall a channel with a continuous bottom discharge opening is formed, the strip for supporting the second wall, the standards secured to the ends of the strip and the slitted bed piece with its clamping bolts whereby the standards may be vertically adjusted, substantially as described.

In witness whereof I have hereunto set my hand.

ROBERT W. JESSUP.

Witnesses:

ALBERT G. SLOCUM,
HENRY E. STORRS.