(No Model.) 2 Sheets—Sheet 1.

J. R. BERTHELET.

SEPARATOR FOR CRUSHED CEMENT, &c.

No. 479,617. Patented July 26, 1892.

Fig. 1.

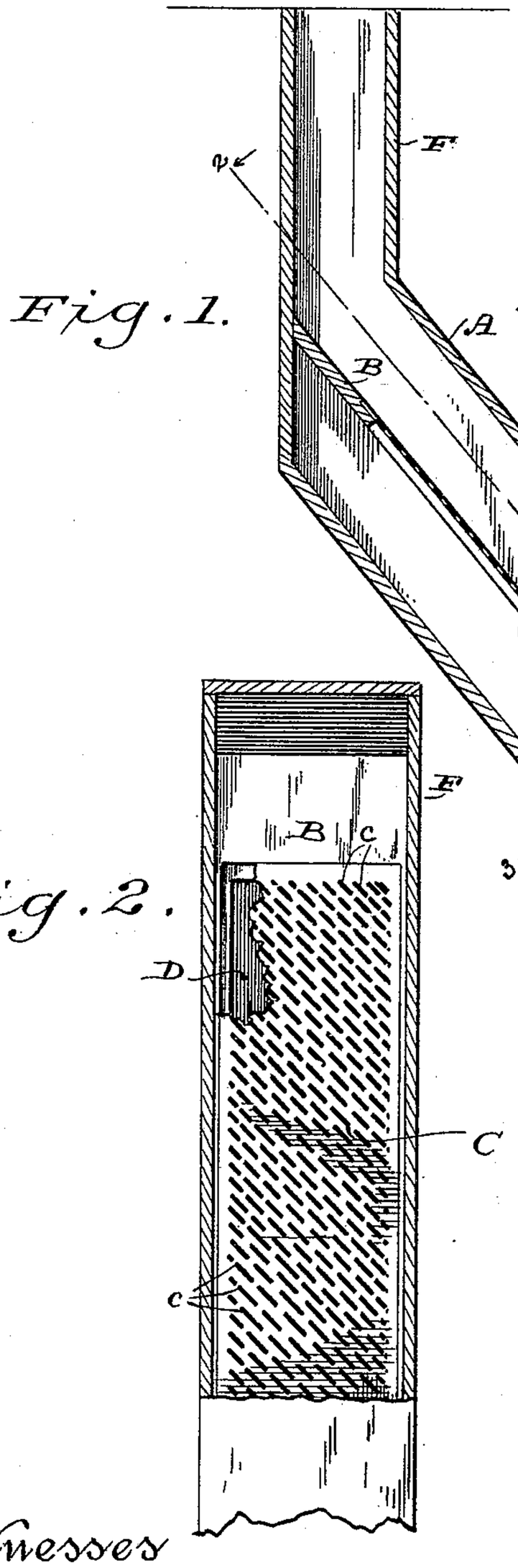
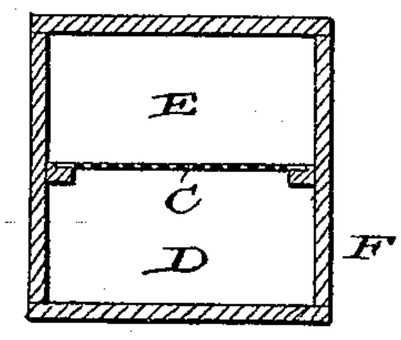
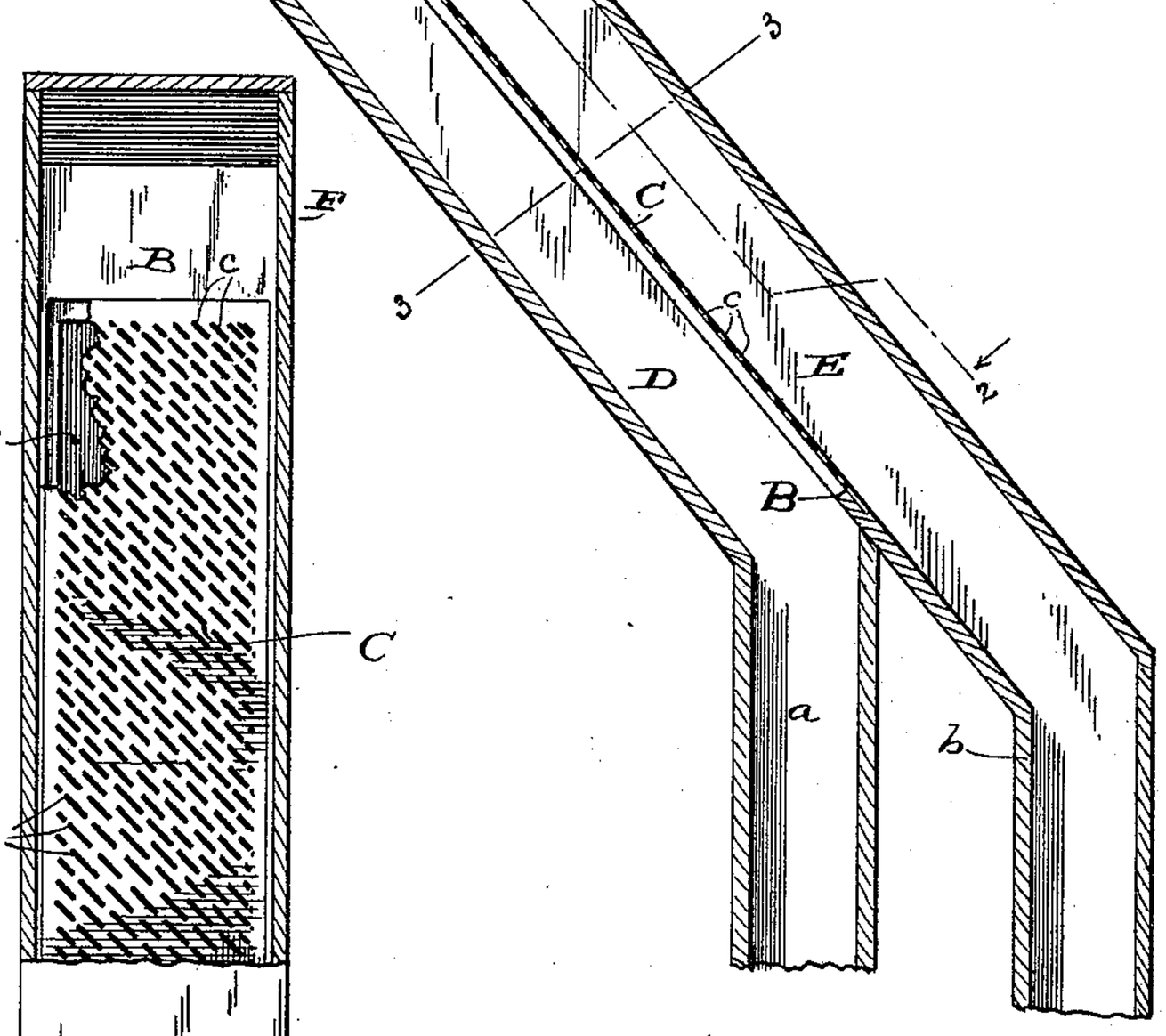


Fig. 2.

Fig. 3.





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(No Model.) 2 Sheets—Sheet 2.

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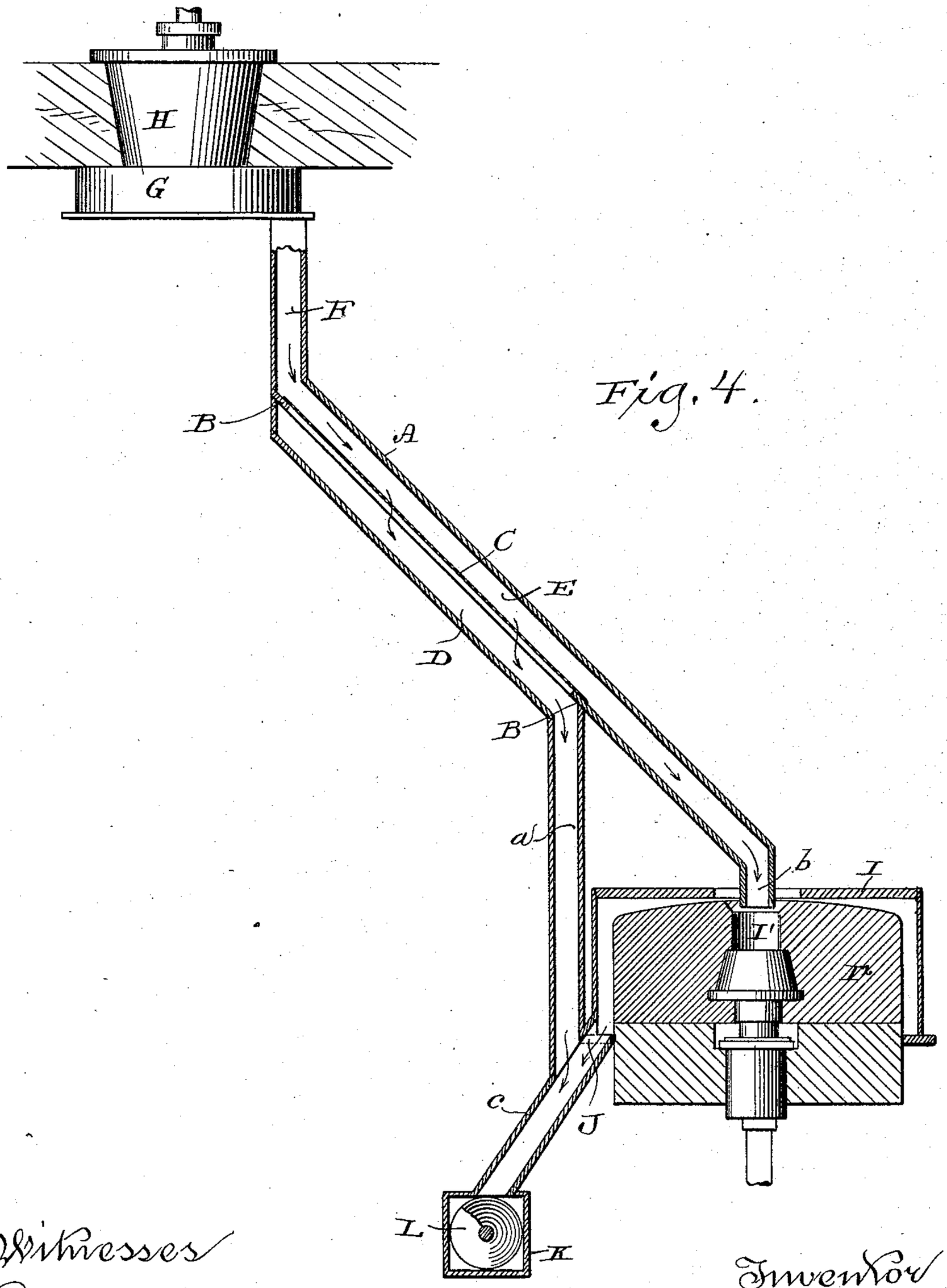

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOSEPH R. BERTHELET, OF MILWAUKEE, WISCONSIN.

SEPARATOR FOR CRUSHED CEMENT, &c.

SPECIFICATION forming part of Letters Patent No. 479,617, dated July 26, 1892.

Application filed November 30, 1888. Serial No. 292,176. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH R. BERTHELET, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Separators for Crushed Cement, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to separators for crushed cement, quartz, and other substances, and will be fully described hereinafter.

In the drawings, Figure 1 is a vertical longitudinal section through the center of my improved chute. Fig. 2 is a section on line 2 2, Fig. 1. Fig. 3 is a section on line 3 3, Fig. 1. Fig. 4 is a sectional elevation of my separating device.

A is the chute, which stands at an angle of about fifty degrees with the horizon. A partition, partly of wood B B and partly of perforated metal, forming a sieve C, is supported in the chute A and divides it into two channels D and E, having separate spouts *a* and *b*, respectively. A pipe F leads from a suitable hopper G to the top of the chute A, and this hopper G is fed from a crusher H, forming the base or lower part of the shell thereof.

My device is especially designed for separating ore or cement on its way from the crusher to the finisher, and its merit lies in the fact that as the crushed material falls onto the sieve C the finer particles are forced through the perforations into channel D by the heavier particles, which scour the surface of the sieve, and that this may be accomplished more effectually I prefer to make the perforations in the form of inclined slots *c*, so that the heavier portions of the material will have a shearing action on the mass of lighter stuff. After the material leaves the chute it is conveyed by the spouts *a b* into separate receptacles or to separate finishers.

In the preferred construction illustrated in the drawings the coarser particles in the channel E pass out through the spout *b* into the finisher I (passing directly into the eye I′ of the upper stone I^2 of said finisher) and are ground to the required degree of fineness, being then carried to the outlet J of the finisher, to which point the fine material from the channel D of my chute is also carried by the spout *a*, and from this point all the finely-ground material is carried by a spout *c* to a conveyer-trough K, and then by conveyer L within said trough to the point of storage or packing for transportation. The result obtained by placing my chute at an angle of practically fifty degrees is a better separation of the material than if the chute were placed at a less angle, obtaining with a twenty-mesh screen at this angle as fine a product as would result from the use of a fifty-mesh screen placed in a nearly horizontal position, and at the same time having the mesh so large there is no tendency to fill or clog the perforations and a more rapid separation and discharge takes place, thereby practically increasing the capacity of the chute. The passage of the material through a narrow spout at this sharp angle causes the coarse particles to jump along the top or lid of the chute, leaving the perforated part C freer for the fine material to slide over and pass through, while the action of the said coarser particles in bounding over and on the finer particles aids in driving the latter through the perforations, scouring, and keeping the meshes open.

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

1. The combination, in a separating apparatus, of a finisher, a chute having two outlets, one of which delivers to the eye of the stone in said finisher and the other to the outlet of the same, and a screen placed within the said chute and extending over the second-named outlet of said chute, substantially as set forth.

2. The combination, in a separating apparatus, of a crusher and a finisher, and a chute interposed between said crusher and finisher, said chute being arranged at an angle of practically fifty degrees and divided into an upper and a lower channel by a screen, with an independent spout leading from each channel, one of said spouts leading to said finisher and the other spout leading to the outlet of said finisher, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

JOSEPH R. BERTHELET.

Witnesses:
S. S. STOUT,
WILLIAM KLUG.