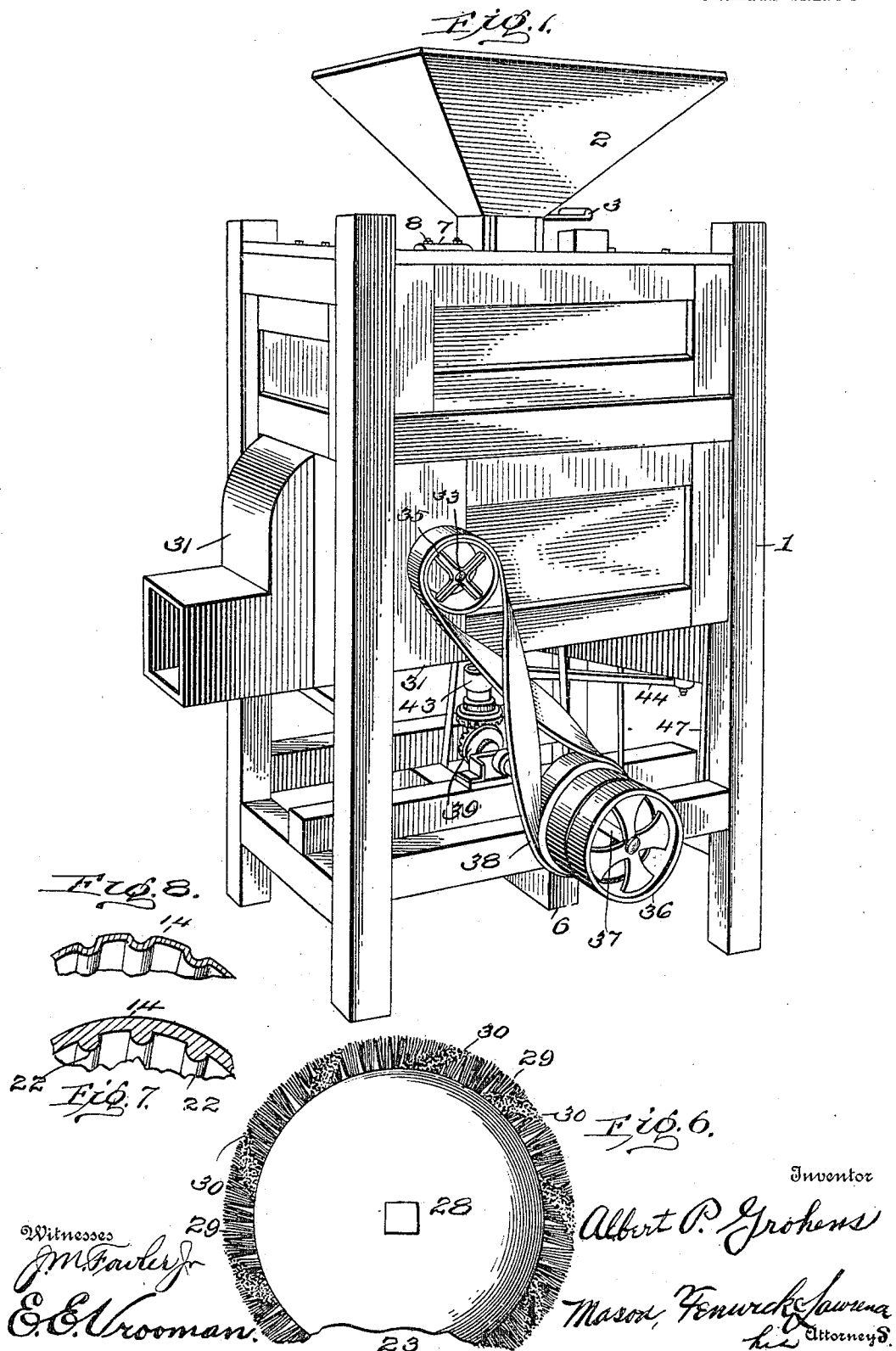


No. 831,663.

PATENTED SEPT. 25, 1906.

A. P. GROHENS.
HULLING MECHANISM.
APPLICATION FILED DEC. 6, 1905.

3 SHEETS—SHEET 1.

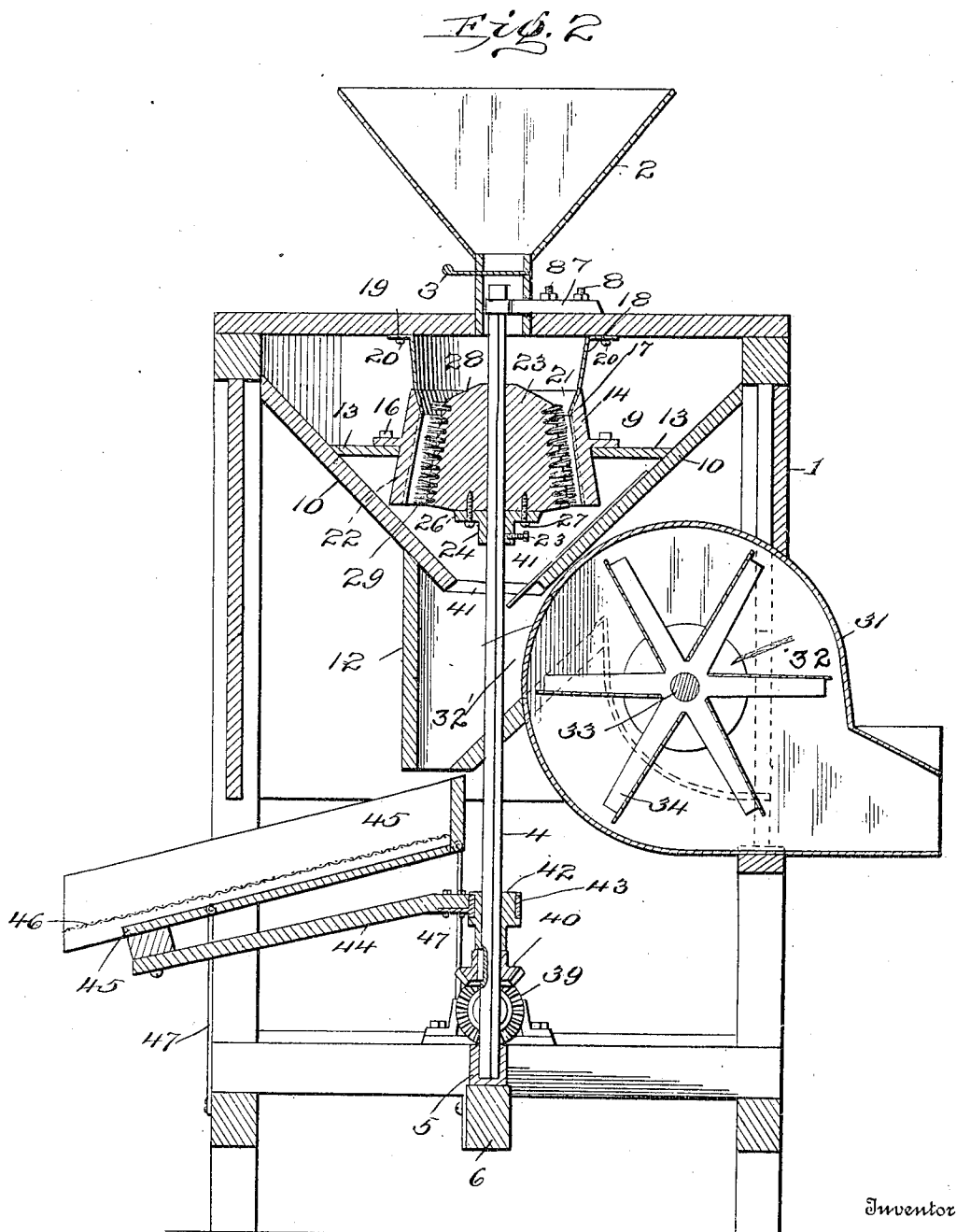


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Inventor

Witnesses
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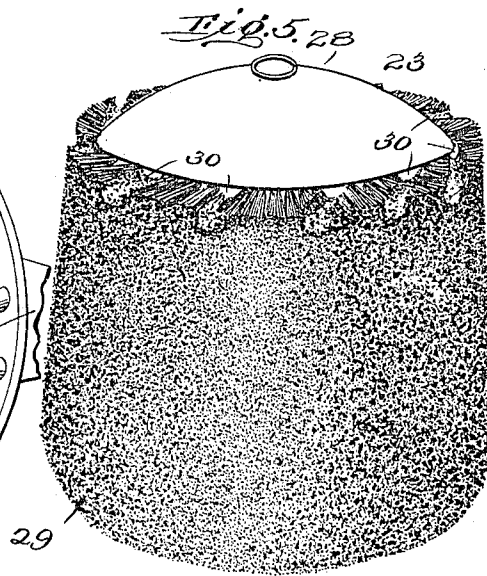
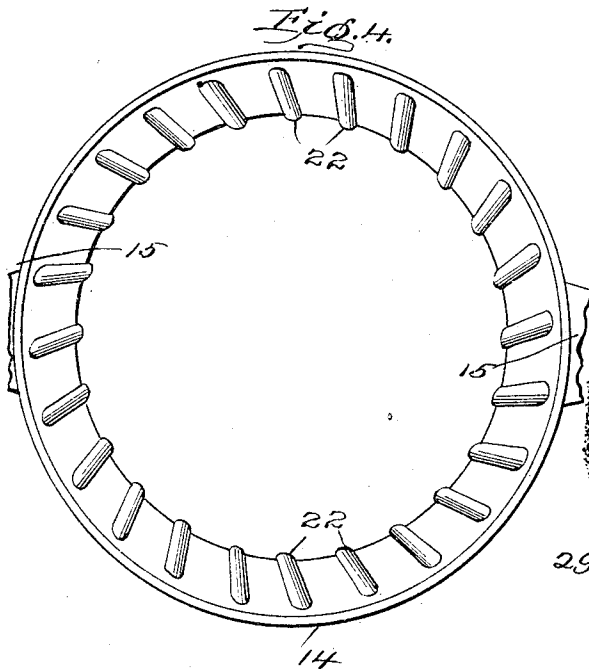
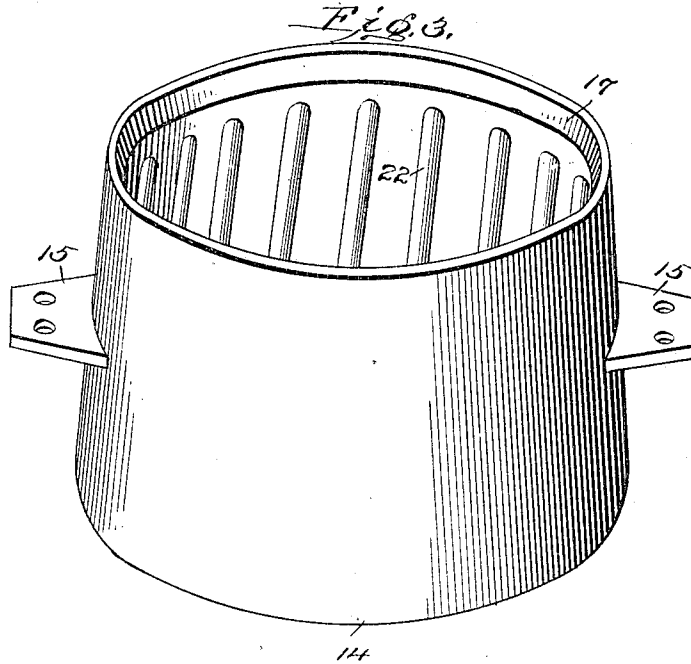
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ALBERT P. GROHENS, OF MARSHALL, MICHIGAN.

HULLING MECHANISM.

No. 831,663.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed December 6, 1905. Serial No. 290,638.

To all whom it may concern:

Be it known that I, ALBERT P. GROHENS, a citizen of the United States, residing at Marshall, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Hulling Mechanisms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in hulling mechanisms, and particularly to a peanut huller or blancher.

The object of the invention is the provision of means for facilitating the removal of the skin from the nut-kernels.

With this and other objects in view the invention consists of certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a mechanism constructed in accordance with the present invention. Fig. 2 is a longitudinal vertical central sectional view of the mechanism depicted in Fig. 1. Fig. 3 is a perspective view of a conical hulling cylinder or shell. Fig. 4 is an inverted plan view of the cylinder depicted in Fig. 3. Fig. 5 is a perspective view of the rotatable conical brush. Fig. 6 is a fragmentary top plan view of the brush depicted in Fig. 5. Fig. 7 is a fragmentary horizontal sectional view of the hulling-cylinder. Fig. 8 is a fragmentary horizontal sectional view of another embodiment of the hulling-cylinder.

This invention is particularly adapted for removing the ordinary red skin from the kernels of peanuts; but the same is also susceptible of being used for cleaning other nuts—as, for instance, filberts. My improved mechanism will not crush or mash the nut-kernels, but will effectually clean the kernels from all impurities.

Referring to the drawings by reference-numerals, 1 designates a casing or frame of any preferred type. Secured to the upper portion and preferably at the top of the casing is a hopper 2. The hopper 2 is provided with a slide-valve 3, by means of which the discharge of the kernels into the casing is

controlled. A vertical, revoluble, polygonal, or squared shaft 4 is journaled at its lower end in a box 5, supported upon the transverse beam 6, and its upper end is positioned within the apertured portion of the horizontal plate 7, which is removably secured to the frame 1 by means of bolts and nuts 8. A compartment 9 is formed in the casing 1. The lower portion of compartment 9 is closed by means of an inclined floor 10, which is substantially funnel-shaped. This floor is provided with a central opening, as at 11, which is partially surrounded by a chute 12. Horizontal brackets or supports 13 are secured to the floor 10. Upon these horizontal brackets 13 a conical hulling-cylinder 14 is supported. The conical hulling-cylinder 14 is provided with laterally-extending apertured lugs 15, which when the cylinder is positioned within the casing 1 normally engage the brackets or supports 13. The cylinder 14 is secured to the brackets 13 by any suitable fastening means—as, for instance, screws 16. The cylinder 14 is provided with a beveled portion 17 upon its inner wall. It will be apparent that this beveled portion is formed upon the cylinder at its upper edge.

An inverted conical guard-casing 18 is provided with a flange 19, which normally engages the under surface or lower face of the top of casing 1. The flanged portion of the guard-casing 18 is fixed to the top of the casing 1 by any suitable fastening means—as, for instance, screws 20. The lower portion of the guard-casing 18 is provided with an annular rim 21, which is turned inwardly at an angle to the side of the guard-casing. This inwardly-extending rim 21 is positioned within the conical hulling-cylinder 14 and engages the beveled portion 17 of said cylinder 14. It will be obvious that the removal of the rim 21 of the guard-casing 18, thereby causing said guard-casing 18 to only engage the upper edge of the cylinder 14, falls within the scope of this invention. Although the positioning of the rim 21 of casing 18 within the cylinder 14 forms a more rigid and permanent connection between the guard-casing 18 and the cylinder 14, the cylinder 14 is provided with straight longitudinally-extending ribs 22 upon its inner wall. These ribs are semi-spherical in cross-section. The ribs are po-

sitioned closer together near the beveled portion 17 of the cylinder 14 than at the lower portion of said casing 14, as the diameter of the cylinder 14 increases toward its bottom, thereby causing each two of the ribs to be spaced apart at varying distances through their length. It is also to be noted that while the ribs 22 extend longitudinally of the cylinder 14 still they are formed in an inclined position, which will be clearly seen upon referring to Figs. 3 and 4.

A conical brush 23 is removably secured to the squared drive-shaft 4 within the hulling-cylinder 14. The means by which the conical brush 23 is secured to said drive-shaft comprises a removable sleeve 24 and a thumb-screw 25. The sleeve 24 is provided with an apertured flange 26. Within the apertures of the flange 26 any suitable fastening means may be positioned, as screws 27. The body of the brush is formed of any suitable material—as, for instance, wood—and the upper end or top of the body of the brush 28 is of a convexed structure, being rounded or curved from the central portion downward to the bristles 29, which are secured to the sides of the body of the brush. The bristles are preferably of the same length all over the body. It will be obvious that bristles or any analogous yieldable substance may be used upon the body of the brush. It is to be noted that the cylinder 14 may be constructed of sheet metal, and the semicylindrical ribs in cross-section may be formed in the body, constituting a corrugated structure, as shown in Fig. 8. The convexed portion of the brush 23 and the beveled portion 17 of the cylinder 14, together with the rim 21 of the guard-casing 18, facilitates the directing of the kernels between the roughened or corrugated inner face of the cylinder 14 and the bristles of the brush 23. For further facilitating the directing of the kernels between the bristles and the inner corrugated wall of the cylinder 14 I cut away the bristles at a plurality of places at the upper edge of the brush. These cut-away portions 30 are substantially V-shaped, constituting grooves in the bristles. These grooves in the bristles are preferably curved or turned to one side, as will be more clearly seen upon referring to Fig. 6, and only extend a short distance down from the upper edge of the brush. The kernels are discharged from the hopper 2 into the guard-casing 18 between the rim 21 and the inclined top 28 of the brush 23 and thence by means of the grooves 30, formed in the bristles, are readily directed between the bristles and the longitudinally-ribbed inner wall of the cylinder 14. The lower edge of the beveled portion 17 extends below the upper edge of the brush, Fig. 2, thereby facilitating the directing of the kernels into the substantially V-shaped grooves 30, formed in the bristles of the brush.

A fan-casing 31 is supported upon the rear wall of the casing 1. This casing 31 is provided with an opening 32, which is in communication with the similar opening 32', formed in chute 12. A shaft 33 is journaled in casing 31. Fixedly secured to the shaft 33 within the casing 31 is a fan 34. Fixedly secured to the shaft 33 exteriorly of the casing 31 is a belt-wheel 35. The belt-pulley 35 is connected to a set of pulleys 36, which are carried by the horizontal shaft 37, by means of a cross-belt 38. A beveled gear 39 is fixedly secured to the inner end of shaft 37. The beveled gear 39 meshes with the beveled gear 40, which is preferably keyed to the vertical shaft 4.

Extending through the opening 11 of the floor 10 is a guard-plate 41, which overhangs the opening 32 of the fan-casing 31. The purpose of this guard-plate 41 is to direct the kernels through the discharge end of the spout 12 and not permit the same to be sucked through the casing 31 by means of the fan 34, while permitting the loose hulls and other impurities to be drawn into the casing 31 by means of said fan and discharged out of said casing.

An eccentric 42 is fixedly secured to the drive-shaft 4 and is connected, by means of a band 43, to an eccentric-rod 44. The rod 44 is pivotally connected to a frame 45, carrying a screen 46, and the frame 45 is supported upon members 47. The nut-kernels are discharged through chute 12 upon the screen 46 and the germs are sifted through the screen and are subsequently discharged from the frame 45 separate from the kernels.

When rotary movement is imparted to shaft 37, similar movement will be imparted to drive-shaft 4 through the medium of the beveled gears 39 and 40. Upon the actuation of shaft 4 the frame 45 will be rocked through the medium of eccentric 42 and 43 and rod 44. Synchronous the actuation of the frame 45 and brush 23 the fan 34 will be rotated. The nut-kernels are passed from the hopper to the guard-casing 18 and thence between the ribbed or corrugated inner surface of the hulling-cylinder 14 and the bristles of the brush 23. They are discharged from within the cylinder 14 through the opening 41 of the floor 10 into the chute 12 and from the chute 12 into the frame 45 upon the screen 46, and subsequently discharged into a suitable receiving-receptacle placed on the outside of the casing 1. During the passage of the kernels through the machine the skin, hulls, and other impurities are removed from the kernels and are discharged from the casing 1 through the fan-casing 31 by means of the rotary fan 34, which sucks said impurities into the casing 31 through the opening 32. The germs are sifted through the screen 46, and by reason of the fact that the screen extends to the outer edge of the frame 45

while the bottom of the frame terminates short of the outer edge the kernels and the germs are discharged separately

What I claim is—

- 5 1. In a mechanism of the class described, the combination with a casing, of a conical cylinder carried by said casing, said cylinder provided with slanting, longitudinally-extending ribs, said ribs terminating short of
10 the upper edge of said cylinder, and a beveled portion formed upon the upper portion of said cylinder between the upper edge of the same and the upper end of said ribs, and a brush positioned within said cylinder.
- 15 2. In a mechanism of the class described, the combination with a casing, of a guard-casing provided with a horizontal flanged portion formed upon its upper edge and with an annular, inwardly-extending rim formed
20 upon its lower portion, fastening means engaging said flanged portion and securing said guard-casing to said first-mentioned casing, a conical cylinder beveled upon its inner face near its upper end, positioned within said casing, the beveled portion of the cylinder engaging the outer face of the rim of said guard-casing, and a brush positioned within said cylinder.
3. In a mechanism of the class described,
30 the combination with a casing, of a hopper-like bottom, provided with a central opening, positioned within said casing, brackets secured to and extending horizontally from said bottom, a cylinder provided with integral, horizontally-extending lugs, the lugs of said cylinder engaging the brackets, fastening means for securing said lugs and brackets together, and a brush positioned within said cylinder.
- 40 4. In a mechanism of the class described, the combination with a casing, of a hopper-like bottom provided with a central opening, formed within said casing, a valved hopper carried by said casing, a guard-casing positioned within said casing below said hopper,
45 brackets secured to said hopper-like bottom,

a cylinder provided with laterally-extending lugs or extensions, engaging said guard-casing, the lugs engaging said brackets, and a rotatable brush positioned within said cylinder. 50

5. In a mechanism of the class described, the combination with a casing, of a hopper-like bottom provided with a central opening, formed within said casing, a vertical chute 55 provided with an opening, supported entirely by said bottom and surrounding the central opening thereof, a cylinder positioned above said floor, a rotatable brush positioned within said cylinder, a fan-casing 60 provided with an opening, supported upon said casing, the opening of said fan-casing registering with the side opening of said chute, a fan positioned within said casing, and a movable frame provided with a screen, 65 positioned under said chute and extending beyond one side of said casing.

6. In a mechanism of the class described, the combination of a primary casing provided with a hopper-like bottom, said bottom provided with a central discharge-opening, a vertical chute positioned entirely within said primary casing and surrounding the discharge-opening of said bottom, a movable screen carried by said primary casing and positioned contiguous to the discharge end of said chute, said chute provided with an opening, a fan-casing provided with an opening, supported by said primary casing, the opening of said fan-casing registering with the 80 opening of said chute, a fan positioned within said fan-casing, a cylinder positioned within said primary casing above said hopper-like floor, a rotatable brush positioned within said cylinder, and means for actuating 85 said brush, fan and screen.

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

ALBERT P. GROHENS.

Witnesses:

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E. T. FENWICK.