

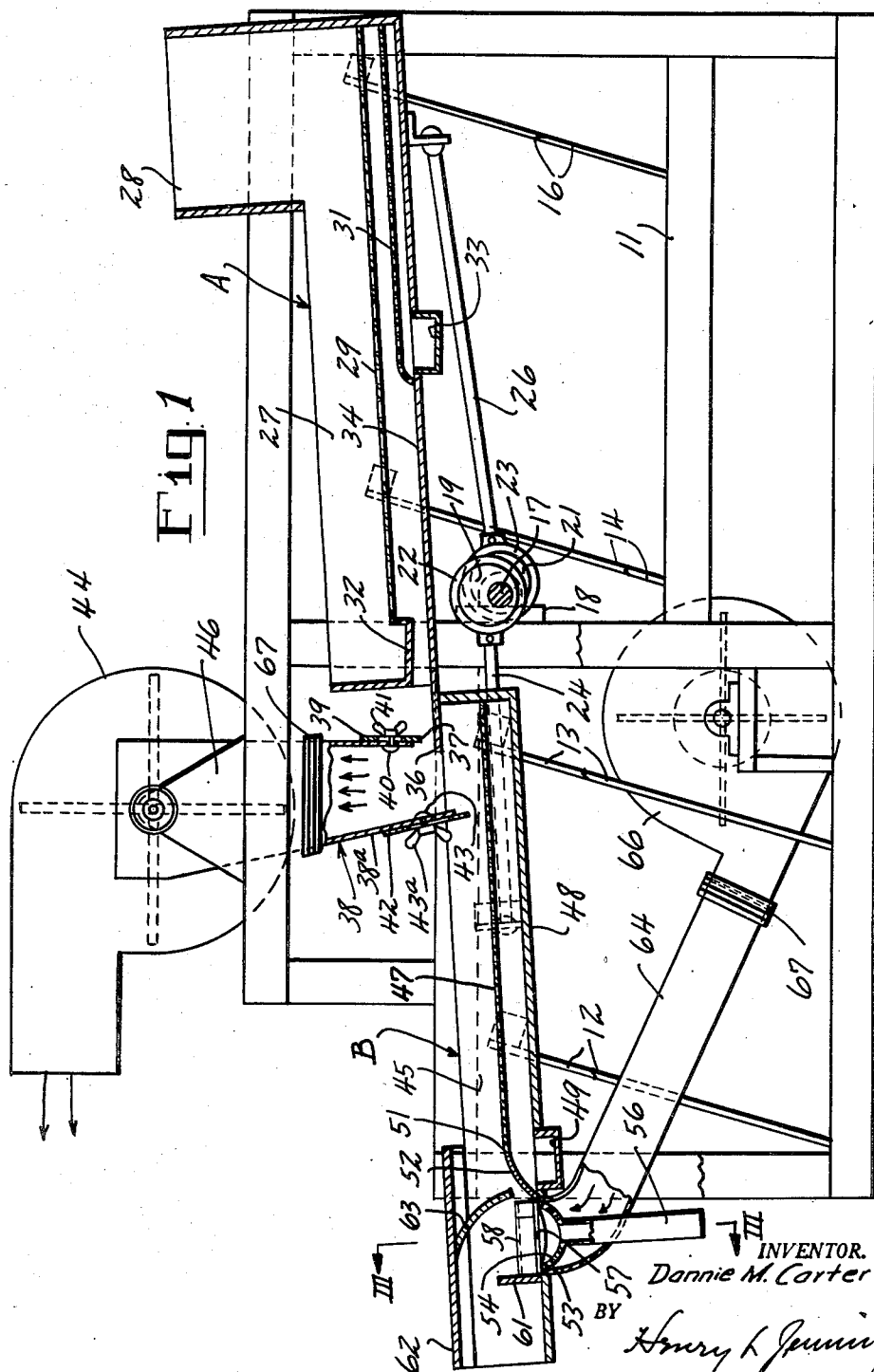
April 10, 1951

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PEANUT CLEANER

2,548,142

Filed Jan. 16, 1947

2 Sheets-Sheet 1



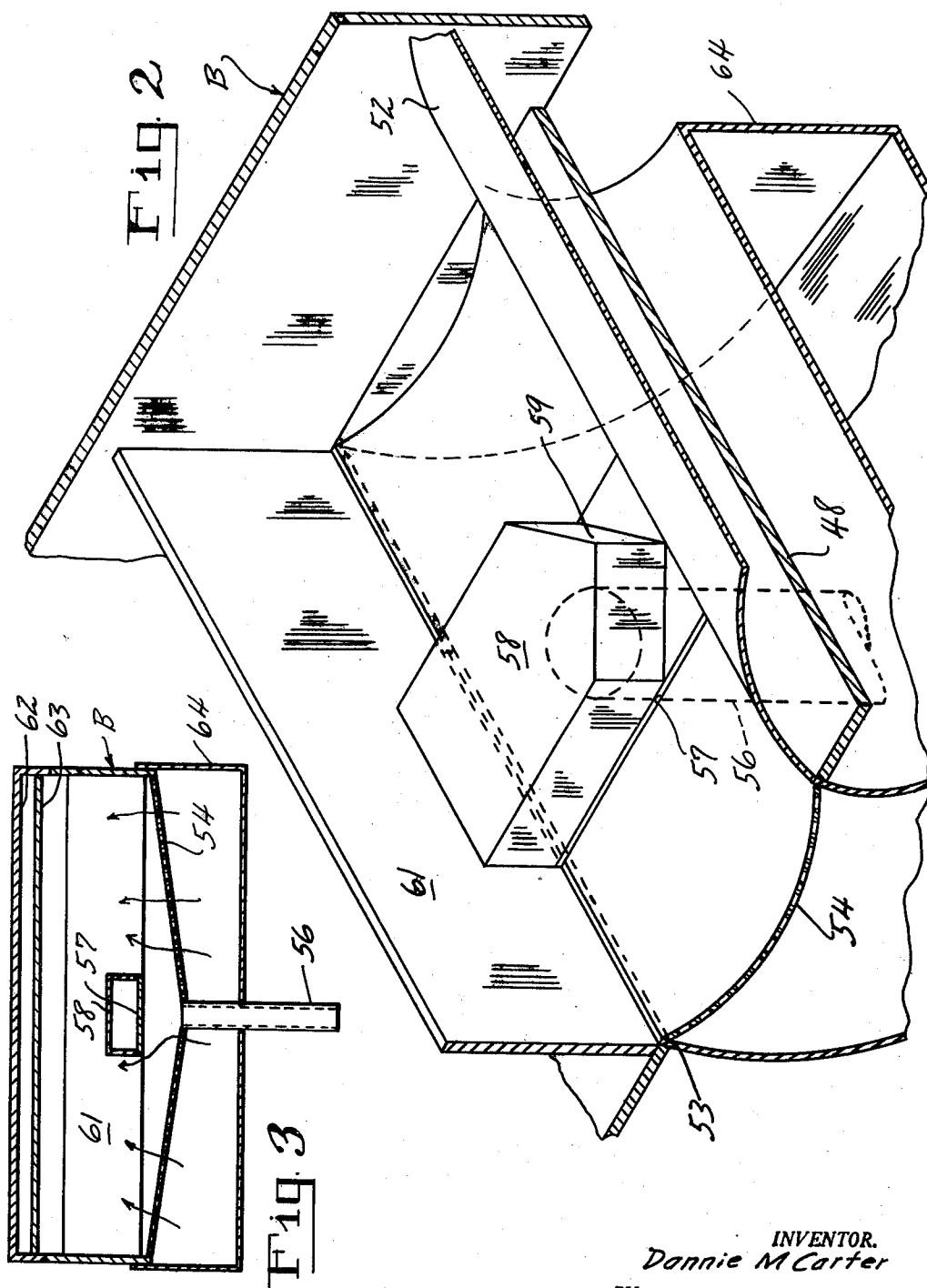
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2,548,142

PEANUT CLEANER

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Application January 16, 1947, Serial No. 722,313

2 Claims. (Cl. 209-44)

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My present invention relates to apparatus for cleaning peanuts and the like as they are delivered from the field, and which contain a considerable proportion of foreign matter such as sticks, vines, stones, light trash and the like, and has for an object the provision of apparatus of the character designated which will be simple of design and construction, and which shall be effective for reducing to a minimum the foreign matter present in the peanuts.

A more specific object of my invention is to provide a cleaner embodying a series of shaking screens for effecting mechanical separation of some of the foreign matter, a pneumatic blower for lifting a portion of the lighter trash out of the peanuts, and a second pneumatic blower for effecting a final separation of the peanuts from the remaining heavier particles of foreign matter such as stones, when the mixed peanuts and stones reach the discharge end of the shaking screen assembly.

A further object of my invention is to provide a cleaner of the type described in which sticks, sand, large stones, and light trash are removed by screening and pneumatic means, and the remaining stones are removed by blowing the peanuts upwardly through a reticulated bed and over a baffle located adjacent the discharge end of the machine.

A still further object of my invention is to provide a cleaner of the character designated in which the peanuts are separated from stones left entrained therewith after screening by means of an upwardly directed air current which passes through a perforated trough inclined toward its center transversely of the machine, a spout being provided at the low point in the trough through which stones are discharged.

Apparatus embodying features of my invention is illustrated in the accompanying drawings forming a part of this application, in which:

Fig. 1 is a side elevational view partly broken away and partly in section;

Fig. 2 is a fragmentary perspective view of the inclined perforated trough and cooperating baffle located adjacent the discharge end of the machine; and

Fig. 3 is a detail sectional view taken along line III-III of Fig. 1.

Referring now to the drawings for a better understanding of my invention, my improved cleaner comprises a framework 11 which may be made of any suitable structural material such as angles and channels. Mounted within the framework on pairs of flexible supports 12, 13, 14, and

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16 is an inclined shaking screen assembly comprising the forward feed section A and the rear discharge section B. A cross shaft 17 is mounted in suitable bearings 18 on the framework 11, and is provided with eccentrics 19 and 21. The eccentrics are surrounded by collars 22 and 23 operatively connected to the sections A and B by means of rods 24 and 26. Rotation of the shaft 17 causes the sections A and B to be shaken, thereby causing movement of material over the sections in the manner well understood in the art.

The section A comprises a trough 27 having a feed chute 28 at the forward end thereof into which peanuts are fed as they come from the field, and within the trough 27 is an upper perforated bed 29, the openings of which are sufficiently large to pass peanuts, but sufficiently small not to pass large stones, sticks, vines, and the like. Beneath the perforated bed 29 is a second perforated bed 31, the openings of which are large enough to pass only small stones and sand. At the rear of the bed 29 I provide a discharge chute 32, and at the rear end of the bed 31 and beneath the same I provide a sand discharge chute 33.

The bottom 34 of the trough 27 projects forwardly as indicated at 36 and enters into a side opening 37 provided in the lower end of an air duct 38. The opening 37 is provided with a slotted baffle 39, adjustably held in place by a bolt 40 and a nut 41 whereby the effective size of the opening 37 may be varied, thus to control the flow of the materials into the air duct 38. The side 38^a of the air duct 38 opposite the side having the opening 37 therein is provided with a slotted baffle 42 vertically adjustable by a bolt 43 and nut 43^a. A blower 44 is mounted on the upper portion of the framework 11 in suitable bearings 46 and is adapted to draw a current of air upwardly through the duct 38 as indicated by the arrows, thereby to remove from the peanuts light trash entrained therewith.

Section B of the shaking screen assembly is positioned beneath the open end of the duct 38 and comprises a trough 45 having a perforated bed 47, the openings of which are sufficiently large to pass only shriveled peanuts and nubbins. The shriveled nuts and nubbins fall into the bottom 48 of the trough 45 and are delivered from the machine by means of a discharge chute 49.

The perforated bed 47 terminates as indicated at 51, and joined to the end thereof is a downwardly curved plate 52. Immediately in rear of the plate 52, the bottom 48 is provided with a

transverse opening 53 substantially coextensive in length with the width of the trough 45. The opening is spanned by a perforated plate 54, which, as best seen in Fig. 3 of the drawing, slopes transversely of the trough 45 on either side to form a low point near the center thereof. At the low point in the sloping plate 54, I provide a spout 56 through which stones are discharged in a manner later to be described.

Spaced immediately above the upper open end of the spout 56 is a relatively narrow plate 57, and mounted on the plate 57 is a baffle member 58 the forward end of which is triangular as indicated at 58. At the rear of the baffle 59 adjacent the rear edge of the opening 53 and extending the length thereof is a vertical baffle 61, and depending from a spaced cover 62 is a curved baffle 63. Air under pressure is supplied to the bottom of the opening 53 beneath the trough through an air duct 64 by a blower 66, it being understood that flexible connections 67 are provided between the duct 64 and the housing of the blower 66, and the duct 38 and the housing of blower 44.

From the foregoing, the operation of my improved peanut cleaner will be readily understood. Peanuts coming from the field and containing the usual sticks, stones, sand, and light trash, are fed into the hopper 28, where they fall upon the upper perforated bed 29 of the section A. The sections A and B are both being shaken responsive to rotation of shaft 17 and this action causes the peanuts and sand, along with the heavier smaller trash to pass through the bed 27 and fall onto the bed 31. Large stones, vines, sticks, and the like are retained on and progress to the rear end of bed 29 where they are discharged by chute 32. The bed 31 passes only sand and small particles of trash, the same falling onto the bottom 34 of the section A and being discharged through the trough 33. The peanuts and smaller stones along with a certain amount of light trash pass into the side of the duct 38 where the light trash is drawn upwardly and discharged by blower 44. The peanuts and small stones fall onto the screen 47 which passes the shriveled nuts and nubbins, along with some stones, the same falling onto the bottom 48 for discharge through chute 49. The whole nuts along with the stones remaining in the peanuts progress to the end of the screen 47 and slide down the plate 52. The moving current of material is evenly divided longitudinally of the trough 45 by means of the dividing baffle 58 and the plate 57 prevents peanuts and stones from falling directly into the open upper end of the spout 56. As stones and peanuts pass over the perforated plate 54, the peanuts are picked up and blown over the baffle 61 by the air current in the duct 64. The stones fall by gravity onto the plate 54 and roll to the low point adjacent the center thereof and thence are discharged from the machine through the spout 56.

I have found that the baffle 63 is an important part of the cleaning mechanism just described and with which it is shown associated. This baffle prevents air from the duct 64 passing forwardly down the section B and directs the air borne peanuts rearwardly down the section B and assures that they are lifted over the baffle 61. The peanuts fall with considerable force onto the bed 47 at the end 36 of section A and this agita-

tion, along with the action of the upwardly directed air current, tends to loosen considerable amounts of sand normally adhering to the nuts. Any sand thus dislodged from the peanuts passes out of chute 49 along with the shrivels and nubbins. In actual operation I have found that my machine is entirely satisfactory for its intended purposes, is economical of operation, and simple of construction.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claims.

What I claim is:

1. In a cleaner for peanuts and the like embodying a shaking screen assembly and pneumatic means for removing light foreign matter from the peanuts, the combination of means for removing heavy foreign matter comprising a trough at the discharge end of the screen assembly substantially co-extensive in length with the width of the screen assembly, a perforated bottom for the trough sloping transversely of the shaking screen forming a low point adjacent the longitudinal mid-point thereof, a divider baffle positioned above the low point of the trough to direct the mixed peanuts and heavy foreign matter toward the ends of the trough, a vertically disposed baffle extending substantially the length of the trough and positioned at the side thereof opposite the screen, an air duct beneath the trough substantially coextensive in length therewith, a blower associated with the air duct to direct a current of air upwardly through the perforated bottom with a velocity sufficient to lift only the peanuts, an air baffle over the trough disposed to direct the air borne peanuts over said vertical baffle, a discharge spout for heavy foreign matter having its upper end located at the low point in the perforated bottom and its lower end passing through said air duct, and a plate spaced above the upper end of the spout and disposed to deflect the peanuts and foreign matter against direct entry into the spout as they are delivered into the trough.

2. A cleaner for peanuts as defined in claim 1 in which the divider baffle has a vertically extending, triangular shaped side adjacent the shaker screen.

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