

April 3, 1928.

1,665,114

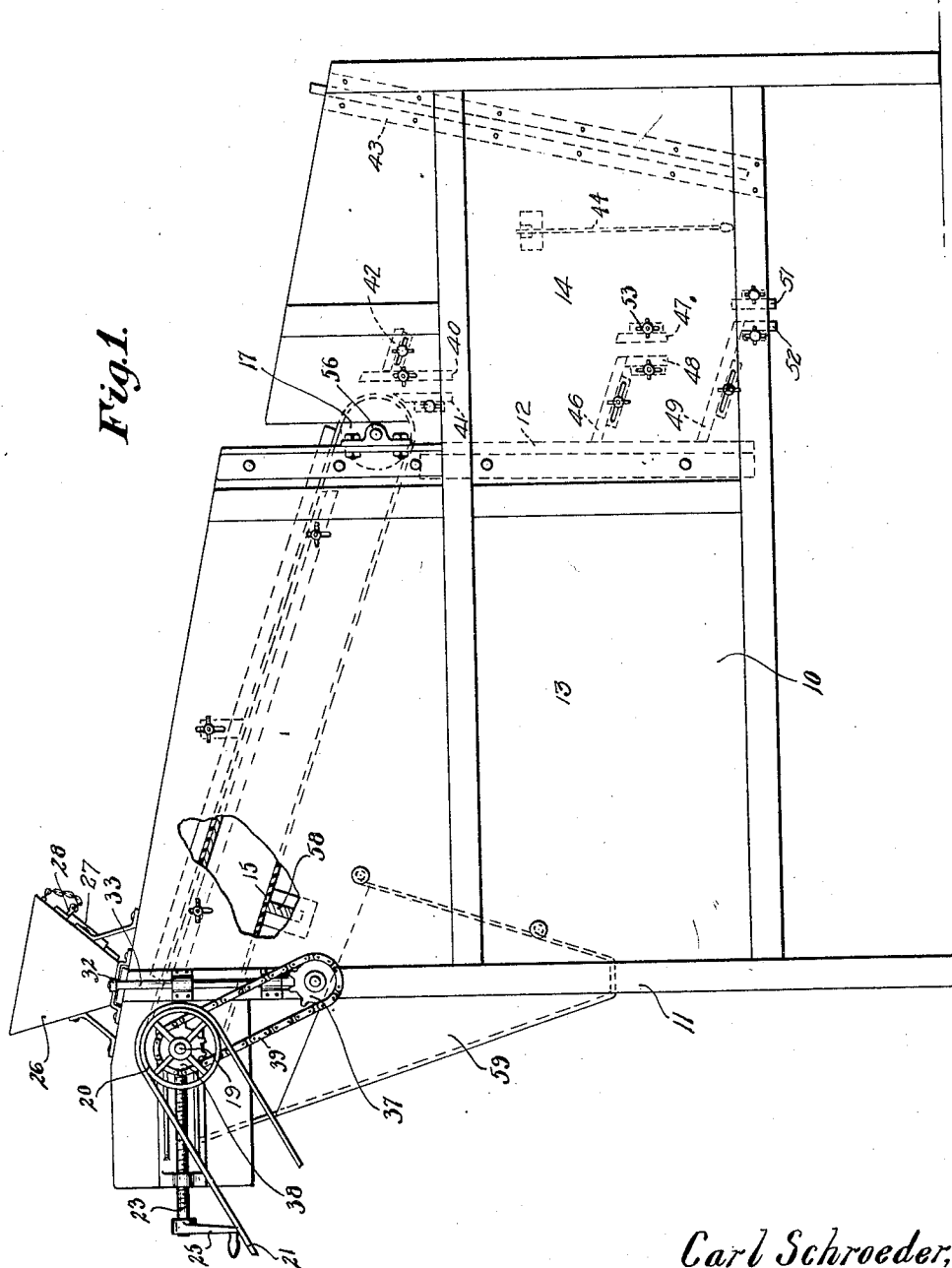
C. SCHROEDER

PEA GRADER AND CLEANER

Filed Nov. 21, 1924

4 Sheets-Sheet 1

Fig. 1.



J. M. Hanna

WITNESS:

Carl Schroeder,

INVENTOR

BY *Victor J. Evans,*

ATTORNEY

April 3, 1928.

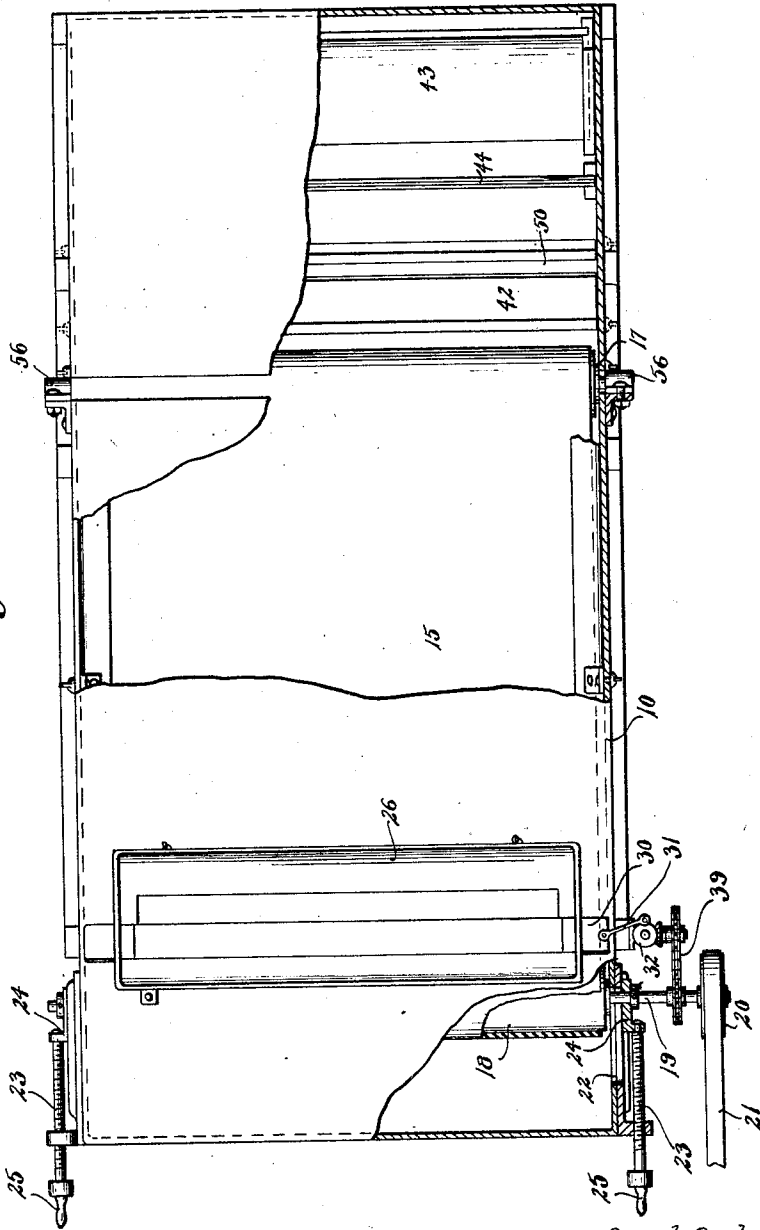
1,665,114

C. SCHROEDER
PEA GRADER AND CLEANER

Filed Nov. 21, 1924

4 Sheets-Sheet 2

Fig. 2.



J. H. Kenna

WITNESS:

Carl Schroeder,

INVENTOR

BY *Victor J. Evans,*

ATTORNEY

April 3, 1928.

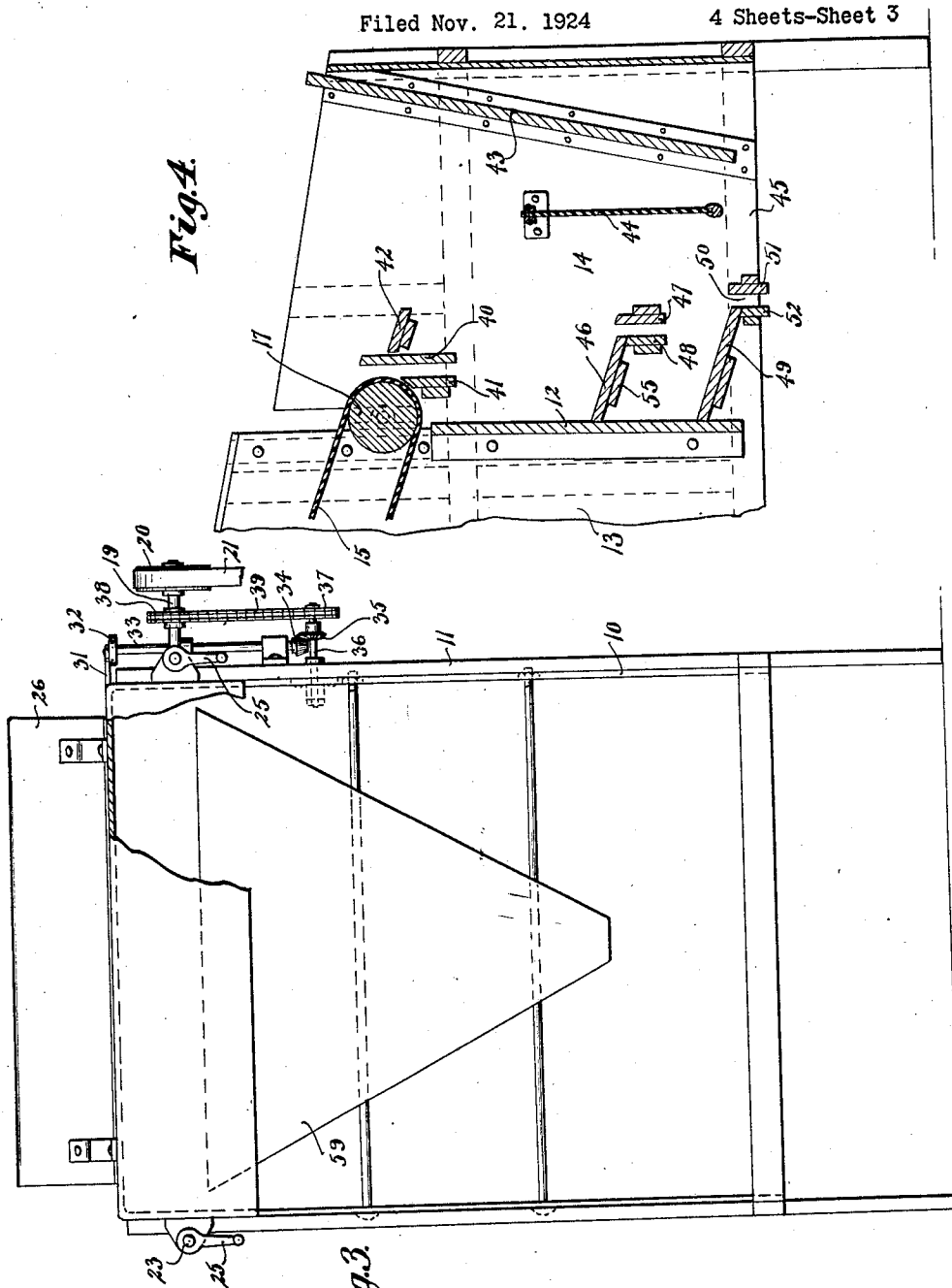
1,665,114

C. SCHROEDER

PEA GRADER AND CLEANER

Filed Nov. 21, 1924

4 Sheets-Sheet 3



J. M. Kuma

WITNESS:

Fig. 3.

Fig. 4.

Carl Schroeder,

INVENTOR

BY *Victor J. Evans,*

ATTORNEY

April 3, 1928.

1,665,114

C. SCHROEDER
PEA GRADER AND CLEANER

Filed Nov. 21, 1924

4 Sheets-Sheet 4

Fig. 6.

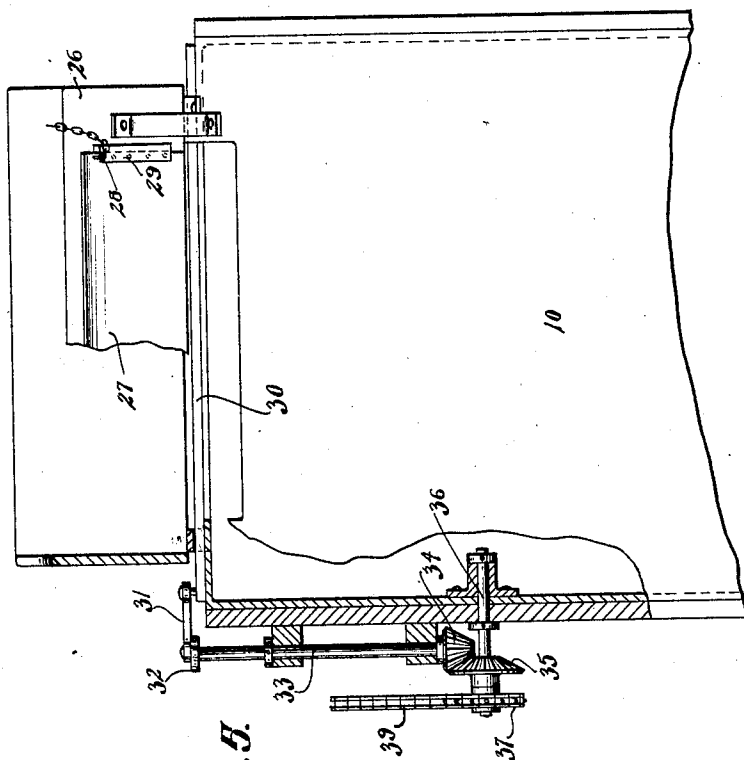
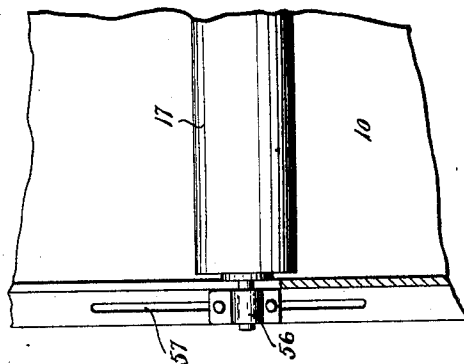


Fig. 5.

H. M. Hanna

WITNESS:

Carl Schroeder,

INVENTOR

BY *Victor J. Evans,*

ATTORNEY

UNITED STATES PATENT OFFICE.

CARL SCHROEDER, OF MAYVILLE, WISCONSIN.

PEA GRADER AND CLEANER.

Application filed November 21, 1924. Serial No. 751,330.

This invention contemplates the provision of a pea grading machine, wherein the peas are delivered onto an endless conveyor and carried thereby into a bin compartment and wherein the whole peas are separated from the mashed or broken peas, and received by different receptacles arranged to communicate with said compartment.

The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views, and wherein:

Figure 1 is a side elevation of the machine constructed in accordance with the present invention.

Figure 2 is a top plan view partly in section.

Figure 3 is an end view partly in section.

Figure 4 is a fragmentary vertical sectional view through the bin, showing the arrangement of parts utilized for separating the peas.

Figure 5 is a fragmentary front end elevation of the machine.

Figure 6 is a detail sectional view showing how one of the rollers is mounted for adjustment.

The machine forming the subject matter of this invention comprises a bin indicated at 10 and adapted to be mounted on a suitable frame-like supporting structure indicated generally at 11. The bin 10 is divided by a short vertically disposed partition 12 into the compartments 13 and 14 which of course communicate above the partition 12 as clearly illustrated in Figure 4. Arranged to operate within the bin is an endless belt 15, the belt being trained over spaced rollers 17 and 18 respectively, the roller 17 being journaled within the bin directly above and slightly in advance of the partition 12 to bring that end of the conveyor 15 into the compartment 14 for a purpose to be presently described. The shaft 19 of the roller 18 projects an appreciable distance beyond one side of the machine, and has associated therewith a belt pulley 20 over which is trained a power belt 21, the machine being operated by any suitable motive power as

will be readily understood. It will be further noted that the shaft 19 of this roller is susceptible of adjustment through the slots 22 when it is desired to tighten or take up the slack in the belt 14, and for this purpose use is made of a pair of adjusting screws 23 mounted at the opposite sides of the machine and associated with the brackets 24, whereby the roller can be easily and conveniently adjusted within said slots. The adjusting screws are equipped with handles 25.

Mounted upon the supporting structure immediately above the roller 18 is a hopper 26 which is adapted to receive the peas, and feed the same onto the endless conveyor 15. The hopper is provided with a sliding door 27 at the front thereof, which can be opened to any degree, to regulate or control the flow of peas from the hopper onto the endless belt. The door can be held in any given position by means of a pin 28 adapted to be received by any one of a plurality of openings 29 as clearly shown in Figures 1 and 5. Arranged to reciprocate across the bottom of said hopper is an agitating element 30, and this element is connected with one end of a link 31 which has its other end eccentrically connected with a disk 32 supported by the adjacent end of a vertically disposed shaft 33 which is mounted in suitable bearings at one side of the machine as clearly shown in Figure 5. The lower end of this shaft 33 carries a bevel gear 34 which meshes with a similar gear 35 carried by a stud shaft 36 which is mounted for rotation upon the supporting structure, and projecting laterally therefrom. This shaft 36 also supports a sprocket 37, and trained over this sprocket and a similar sprocket 38 fixed upon the shaft 19 of the roller 18 is a drive chain 39. Manifestly, the shaft 26 is rotated from the shaft 19, and rotary motion imparted to the shaft 33 from the shaft 36. As the shaft 33 is rotated, the agitating element 30 is reciprocated across the hopper bottom.

After the peas have been deposited on the conveyor 15, they are carried into the compartment 14, wherein the whole peas are separated from the mashed or broken peas in the manner clearly illustrated in Figure 4. For this purpose I employ a pair of spaced parallel members 40 and 41 respectively which are arranged vertically and extended transversely across the compartment 14. These members are arranged immedi-

ately adjacent the endless conveyor 15, with the member 40 extending upwardly to terminate substantially in a plane with the upper run of the conveyor as shown in Figure 4. Projecting forwardly from the member 40 is a horizontally disposed shelf 42 which is slightly inclined downwardly as shown in Figure 4, and of a sufficient size to serve the purpose intended. As the peas leave the endless conveyor 15, the whole peas pass over the member 40 onto the shelf 42, and bounce therefrom against the partition 43 which is arranged adjacent the forward end of the machine within the compartment 14, and in advance of a curtain 44. This partition 43 is used to stop the movement of the peas in a forward direction and to direct them downwardly toward the bottom of the compartment, which is provided with an outlet opening 45, beneath which a suitable receptacle is adapted to be arranged to receive said peas. Now, should any of the whole peas, upon leaving the endless conveyor 15 strike the member 40 and pass downwardly through the space between the members 40 and 41 respectively, which course is to be pursued by the mashed and broken peas, the whole peas upon striking the shelf 46 are again bounced therefrom over the member 47 striking the curtain 44 and then falling through the opening 45 to their proper destination. Arranged beneath the shelf 46 are spaced parallel members 47 and 48 respectively which are arranged to extend transversely across the compartment 14, the space between these members defining a passage through which the mashed or broken peas are adapted to pass, as they find their way to the bottom of the compartment. It will be noted that the member 47 terminates substantially in a plane to the upper surface of the shelf 46 to act as a stop for the peas as they roll off the shelf 46 and thus direct the said peas through the passage just referred to. In event that some of the whole peas should again pass between the members 47 and 48, they would fall upon another shelf 49, and bounce from this shelf in a direction of the outlet opening 45. The mashed or broken peas continue to roll off each shelf as they are brought in contact therewith, and fall through a restricted passage until they reach the final outlet passage 50 defined by a pair of spaced parallel members 41 and 42 respectively which are arranged transversely of the compartment 14. A suitable receptacle not shown is adapted to be arranged beneath these members 51 and 52 to receive the mashed and broken peas as they ultimately pass from the compartment 14. It will be noted upon inspection of Figure 4 that the different pairs of spaced parallel members are arranged in staggered relation, thereby causing the mashed and broken peas to pursue an ir-

regular course in finding their way out of the bin, and at the same time causing the whole peas to strike against one of the shelves in event that they follow the mashed or broken peas, so that the whole peas will be ultimately separated from the broken peas before any of the peas leave the bin. The curtain 44 is arranged to prevent the whole peas from bouncing back on the shelf 46 after striking the partition 34, as these peas will strike the curtain 44 and be directed downwardly through the outlet opening 45. It will be noted upon inspection of Figure 1 that the members of each pair of spaced parallel members are susceptible of vertical adjustment by slot and pin connections 53, and that each shelf above referred to is susceptible of horizontal adjustment by a slot and pin connection 54 with their respective supports 55. Furthermore, the roller 17 has a shaft journaled in bearings 56 which are also susceptible of adjustment vertically through slots 57, thus making it possible to change the degree of angularity of inclination of the endless conveyor.

Arranged transversely within the compartment 13 of the bin is a transverse strip 58 of any suitable material which is arranged to contact the lower run of the endless conveyor as shown in Figure 1, and this strip not only serves to support the lower run of said conveyor, but is also utilized to scrape the conveyor, to remove dirt and other foreign matter therefrom, and thus maintain the conveyor in a clean condition. Mounted on the supporting structure 11 directly beneath the transverse element 58 is a receptacle 56 which is adapted to receive this dirt and foreign matter as it is separated from the conveyor.

While it is believed that from the foregoing description, the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

Having thus described the invention, I claim:

1. A machine of the character described comprising a supporting structure, a bin mounted thereon, a partition dividing the bin into two compartments, an endless conveyor disposed at an inclination above one of said compartments with one end arranged above the partition and extending into the other of said compartments, a hopper mounted above the opposite end of said conveyor, pea grading means arranged in the last mentioned compartment, a receptacle mounted for disposal in the other compartment, and scraping means arranged in the path of the conveyor and above the receptacle.

2. In a pea grading machine, a bin includ-

ing a compartment, a vertically disposed partition in said bin and forming one wall of said compartment, means for conveying peas and having its discharge end disposed
5 above the partition and into said compartment, an inclined partition disposed at right angles to the said end of the pea conveying

means, pea separating means between the partitions, and a suspended curtain depending between the inclined partition and pea
10 separating means below the said end of said pea conveying means.

In testimony whereof I affix my signature.
CARL SCHROEDER.