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M. G. RUSH
PEA SHELLING DEVICE

2,829,653

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2 Sheets-Sheet 2

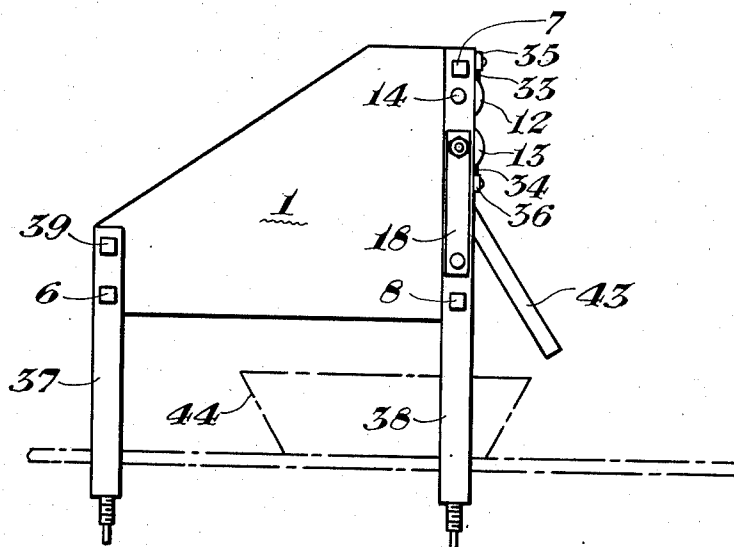


Fig. 3.

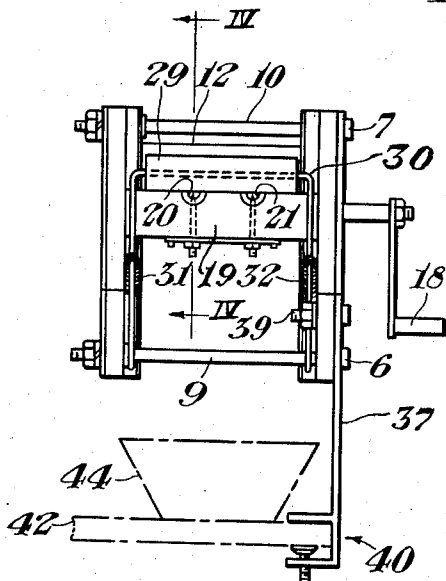


Fig. 4.

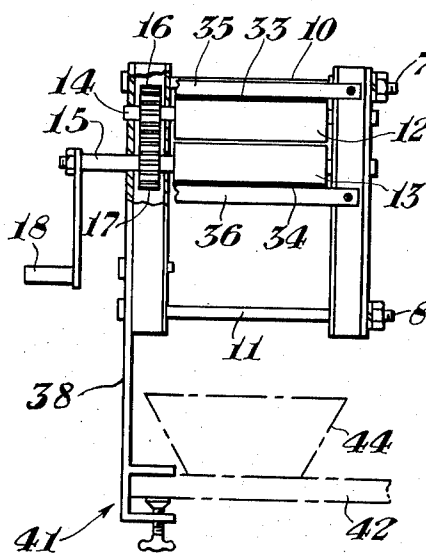


Fig. 5.

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PEA SHELLING DEVICE

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2 Claims. (Cl. 130—30)

My invention relates to a pea shelling device, more particularly to a device for removing the peas from their shell without damage to the peas.

In some previous pea shellers it has been found that satisfactory pea shelling can only be accomplished when the peas are semi-dry to dry. In some other types of pea shellers it has been found that the peas may be damaged in extracting them from the shell.

It is therefore an object of my invention to provide a pea shelling device capable of extracting peas from their shells without requiring the peas to be dry or semi-dry.

Another object of my invention is to provide a pea shelling device capable of extracting peas from their shells without damaging the peas being extracted.

Another object of my invention is to provide a pea shelling device capable of simultaneous extraction of peas from their shells.

Another object of my invention is to provide a pea shelling device that is inexpensive to manufacture.

Other objects, purposes and characteristics or features will become obvious and pointed out by the accompanying drawings and specification.

In practicing my invention I provide a device comprising a plurality of knife blades positioned to slit the shells of peas inserted into the device. Arranged to cooperate with the knife blades are a plurality of rollers capable of engaging the slit pea hull and causing the peas to drop freely through the slit.

In the accompanying drawings, corresponding parts are generally identified by corresponding reference numerals in which:

Figure 1 is an isometric view of my novel pea sheller showing the relative arrangement of parts.

Figure 2 is an enlarged partial view taken along the line IV—IV of Figure 4 showing the details of the pea splitting structure.

Figure 3 is a side view of my novel pea shelling device secured in place for operation.

Figure 4 is a front view of my novel pea shelling device showing the pea receiving openings used for shelling.

Figure 5 is a rear view of my novel pea shelling device with certain parts broken away for showing the shell pulling or gripping rollers and their operating mechanism.

My novel pea shelling device comprises a pair of spaced apart rectangular side members 1 and 2 provided with their upper forward corners removed as at 3 and 4 respectively for greater access to the sheller mechanism to be explained hereinafter. The side members 1 and 2 are held in spaced apart relationship by the bolts 6, 7 and 8 surrounded by the sleeves 9, 10 and 11 respectively.

Located between the side members 1 and 2 and adjacent to the rear edge of the side members is a pair of adjacent rollers 12 and 13 constructed of any suitable material such as rubber. The two rollers 12 and 13 are supported for rotation about the shafts 14 and 15,

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respectively. Secured to the shaft 14 and located within the side member 1 is a gear 16. Meshed with the gear 16 within the side member 1 and secured to the shaft 15 is a gear 17 (see Figure 5). Each of the shafts 14 and 15 are extended through suitable bearings, formed by the side members 1 and 2 and in addition the shaft 15 is provided with a handle 18 for rotating the shaft. The shaft 14 is also rotated by the handle 18 through the meshed gears 16 and 17. It should be clear that the shafts 14 and 15 and their attached rollers 12 and 13 rotate in opposite directions for pulling pea shells or hulls therebetween as will be explained hereinafter.

Positioned forward of and spaced from the roller 15 is a knife support bar 19. The knife support bar 19 is provided with two transverse grooves 20 and 21 each forming a substantially semi-circular groove in the upper surface of the knife support bar. As shown in Figure 2 the groove 20 is provided with an intersecting opening 22 for receiving a blade 23 which is movable vertically within the opening 22. The blade 23 is keyed against rotation by the guide slot 24 and adjustable vertically for the depth of cut by the adjustment stud 25 passing through an opening in the anchoring plate 26 and secured by the adjusting nut 27. Located between the blade 23 and the anchoring plate 26 is a coil spring 28 for urging the adjusting nut 27 upwardly against the anchoring plate 26.

The blade structure for the groove 21 is identical with the blade structure associated with the groove 20 and therefore is not described in detail.

Located above the knife support bar 19 is a pressure roller 29, constructed of any suitable material such as rubber. The roller 29 is supported for rotation on a U-shaped support rod 30. The U-shaped support rod 30 is secured at its ends for pivoted movement about the sleeve 9 and is urged downwardly by the springs 31 and 32, placing the roller 29 in firm engagement with the knife support bar 19.

Secured to the rear edges of side members 1 and 2 in position for engagement with the rollers 12 and 13 is a pair of wipers 33 and 34. The wipers 33 and 34 are constructed of any suitable material, such as sponge rubber, and are secured in place by the U-shaped clamps 35 and 36, respectively. The purpose of these wipers will be explained in connection with the description of the operation of my invention.

Secured to the side member 1 is a pair of vertically disposed support members 37 and 38. The support member 37 is secured to the side member 1 by the bolts 6 and 39 and is provided with a wing nut clamp 40 at its lower end. The support member 38 is secured to the side member 1 by the bolts 7 and 8 and is provided with a wing nut clamp 41 at its lower end. The clamps 40 and 41 are used to support the pea sheller on a support surface such as the surface 42.

In order to assure separation of the peas from their shells or pods a chute 43 is provided to guide the shells out of a typical pea collecting container 44.

Operation of my novel pea sheller will now be explained. The operator of my novel pea shelling device will insert a pea shell into one or more of the semi-circular grooves 20 or 21. The roller 29 then applies a pressure on the pea shell forcing it into engagement with the knife blade projecting into the groove. With the knife blade of each groove adjusted to cut a depth equal to the shell thickness, it can be seen that the shell is slit longitudinally. When the forward tip of the shell engages the rollers 12 and 13 the handle is rotated causing the shell to be pulled therebetween. Since the shell is slit the rollers flatten the shell opening it at the slit and allowing the peas to fall clear of the shell or pod,

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It is also pointed out that since the peas to be shelled by my device may not be dried or semi-dried the rollers would normally become wet with the peas' shell pulp. To remove this pulp I provide the sponge rubber wipers 33 and 34. With this arrangement successive shells can be handled without encountering slippage.

It should be noted that the pea sheller of my invention has the advantage of handling green peas still in their soft state as well as dried peas and that the knife blades used to slit the shells can be adjusted to the thickness of the pea shells to be slit.

Although I have here-in shown and described only one form of my invention it is to be understood that any modification may be made within the scope of the appended claims.

Having described my invention, what I claim is:

1. A pea shelling device comprising a pair of opposing roller means for engaging a pea to be shelled, means for rotating said roller means, a one piece substantially rectangular knife support bar provided with a plurality of transverse grooves in one face thereof, said support bar having openings extending from said grooves there-through perpendicular to said face and to an opposite face, knife blade means positioned within said support bar openings and extending into said transverse grooves, longitudinal grooves in said support bar openings, a third spring biased roller means positioned parallel with and for movement toward and away from said support bar and over said transverse grooves, said knife blade means being guided in said support bar openings by said longitudinal grooves, said knife blade means having projections extending through said support bar openings beyond said opposite face, plate means having openings aligned with said support bar openings, said plate means being secured to said opposite face for receiving said projections through said plate means openings, coil spring bias means positioned between said plate and said knife blade means, adjusting nut means on said knife blade means projections for selectively moving said knife blade means into and out of said transverse grooves.

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2. A pea shelling device comprising a pair of opposing roller means for engaging a pea to be shelled, means for rotating said roller means, a one piece substantially rectangular knife support bar provided with a plurality of transverse grooves in one face thereof, said support bar having openings extending from said grooves there-through perpendicular to said face and to an opposite face, knife blade means positioned within said support bar openings and extending into said transverse grooves, longitudinal grooves in said support bar openings, a third spring biased roller means positioned parallel with and for movement toward and away from said support bar and over said transverse grooves, said knife blade means being guided in said support bar openings by said longitudinal grooves, said knife blade means having projections extending through said support bar openings beyond said opposite face, plate means having openings aligned with said support bar openings, said plate means being secured to said opposite face for receiving said projections through said plate means openings, coil spring bias means positioned between said plate and said knife blade means, adjusting nut means on said knife blade means projections for selectively moving said knife blade means into and out of said transverse grooves, and sponge rubber wiper means positioned in contact with said pair of roller means for continuously wiping said roller means.

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