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2,629,384

SNAPPING ROLL WITH RUBBER INSERTS

Original Filed Sept. 30, 1948

FIG. 1.

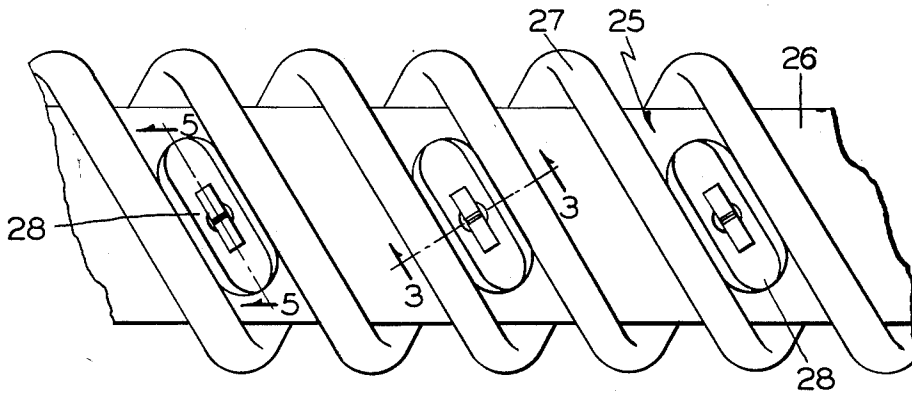


FIG. 2.

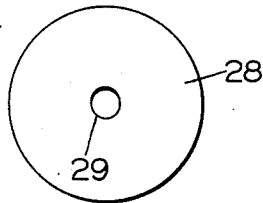


FIG. 4.

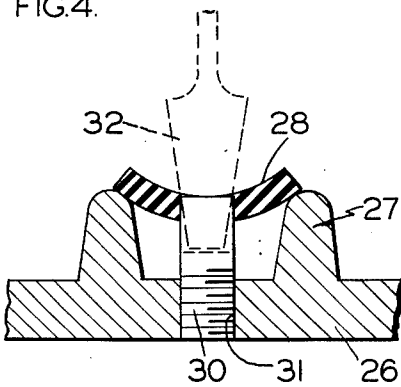


FIG. 3.

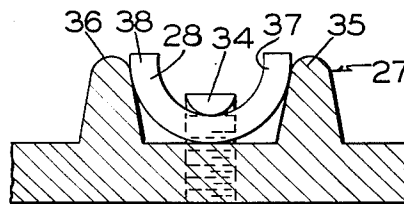
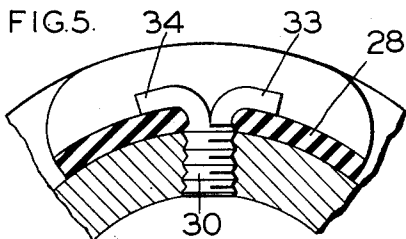


FIG. 5.



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SNAPPING ROLL WITH RUBBER INSERTS

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Original application September 30, 1948, Serial No. 52,112, now Patent No. 2,569,175, dated September 25, 1951. Divided and this application December 29, 1949, Serial No. 135,571

2 Claims. (Cl. 130—5)

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This invention relates to a new improved ribbed corn snapping roll with a plurality of rubber inserts thereon and is a division of my co-pending application Serial No. 52,112 now Patent No. 2,569,175.

Cooperative corn snapping rolls must perform the function of moving a corn stalk rearwardly therebetween and must simultaneously be equipped to pull the stalk downwardly. This last action must be aggressive in order to effectively pull the stalk down between the cooperative snapping rolls to the point where the ear is attached to the stalk. Many forms of aggressive means have been employed to cause this downward movement of the stalk, but there have been few if any rolls which are aggressive enough to engage and force the stalk downwardly without crushing the stalk and thus breaking it off or causing considerable shelling of corn when the ear is snapped. Certain of these prior corn snapping rolls employed a combination of materials such as wood and rubber or the like, but none of them operated too successfully for any length of time.

It is a principal object of this invention to provide a corn snapping roll which will snap ears of corn without breaking of the stalk or shelling of corn, and one which will have a long wearing life.

An important object of this invention is to provide a corn snapping roll having an integral spiral rib and a plurality of rubber inserts.

Another important object of this invention is the provision of means in a ribbed corn snapping roll for positioning a plurality of rubber pads between adjacent convolutions of the spiral rib.

Another and still further important object of this invention is to provide a spiral ribbed snapping roll with a plurality of yieldable pads locked in predetermined position between adjacent convolutions of the spiral rib and means substantially shielding the yieldable pads from abrasive action along the edges thereof.

A still further important object of this invention is the provision of a spiral ribbed snapping roll having a plurality of circularly shaped rubber pads depressed in a concave manner between adjacent convolutions of the spiral rib for the purpose of increasing aggressive action of the snapping rolls without harmful effects on the corn being snapped.

Other and further important objects of this invention will become apparent from the disclosures in the following specification and accompanying drawings in which:

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Fig. 1 is a top plan view of a portion of the snapping roll of this invention.

Fig. 2 is a top plan view of one of the flexible rubber disc pads employed in the snapping roll of Fig. 1.

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view similar to Fig. 3 in which the rubber disc pad of Fig. 2 is shown being applied to the snapping roll.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 1.

As shown in the drawings:

The reference numeral 25 indicates generally an elongated snapping roll. In operation, a snapping roll such as shown at 25 is arranged adjacent a similar snapping roll and the two rolls cooperate with each other to pull corn stalks downwardly therebetween with a resulting snapping of the ears of corn from the stalks as they reach the juncture of the cooperative snapping rolls. The roll 25 has a cylindrical core 26 and is provided with an integral spirally wound rib 27 extending the length thereof. The spiral rib is employed for the purpose of moving the corn stalks toward the rear of the rolls. The means for causing the stalks to move downwardly in the present case is in the form of rubber pad members 28 preferably disposed in longitudinal alignment and being alternately spaced between adjacent convolutions of the spiral rib 27. It should, of course, be understood that any positioning of the rubber pads is contemplated by this invention. In normal use, it is believed that the rubber pads will be sufficiently aggressive to move corn stalks downwardly if they are placed in the longitudinal alignment as shown in Fig. 1 and have two such rows of pads in diametrically opposed position on the roll 25. In the driving of corn snapping rolls inwardly toward each other, it will be desirable to so time the cooperative roll that its rubber pads contact an adjacent roll in spaced relationship with the rubber pads of that adjacent roll.

As best shown in Fig. 2 the rubber pad 28 employed on the roll 25 is circular in shape and has an aperture 29 in the center thereof. The pad is applied to the roll 25 in the manner shown in Fig. 4. A bolt member 30 threadably engages an aperture 31 in the roll core 26. The rubber disk 28 is placed down over the bolt 30 with the aperture 29 in the disk snugly engaging the outer periphery of the bolt. A screw driver or other tool 32 is provided for screwing the bolt 30 into roll engaging position. As the flexible disk 28 is

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buckled in the concave fashion shown in Fig. 3 the tool 32 is used to bend the split upper portions 33 and 34 of the bolt 30 down over portions of the disk 28 adjacent the hole 29, thus holding the disk to the snapping roll. In Fig. 3 adjacent convolutions 35 and 36 of the spiral rib 27 are shown as the confining means for the collapsed rubber pad 28. After forming the rubber pad into the concave position shown it has upwardly extending side walls 37 and 38 which lie substantially parallel to and against the rib convolutions 35 and 36 respectively.

It will thus be apparent that in operation there is provided an aggressive snapping roll which is not injurious to the ear of corn during snapping by reason of the flexible rubber pads and which will effectively cause the stalk to be pulled downwardly between two such rolls without fear of breaking the corn stalk. Further, the concave shape of the pad and the nestling of the pad between adjacent rib convolutions prevent interference with the rearward movement of the stalk by the spiral rib of the roll.

I am aware that various details of construction may be varied throughout a wide range without departing from the principles disclosed herein and I therefore do not propose limiting the patent granted hereon otherwise than as necessitated by the appended claims.

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What is claimed is:

1. In a corn snapping roll comprising a substantially cylindrical core, a spiral rib extending around and over substantially the entire length of the core and forming an integral part thereof, pads of yieldable material positioned on the roll equidistant between adjacent convolutions of the spiral rib, and means for holding the pads to the roll at their centers, said pads being circular and of greater diameter than the spacing between adjacent spiral rib convolutions.

2. A device as set forth in claim 1 in which the means for holding the pad to the roll comprises an elongated split head bolt engaging the roll core and having the wings of its split head bent outwardly over the surface of the circular pad to hold the pad to the core.

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REFERENCES CITED

The following references are of record in the file of this patent:

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