June 24, 1930. J. VAN NORTWICK 1,766,348

CORN PICKING AND HUSKING MACHINE

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Fig. 1.

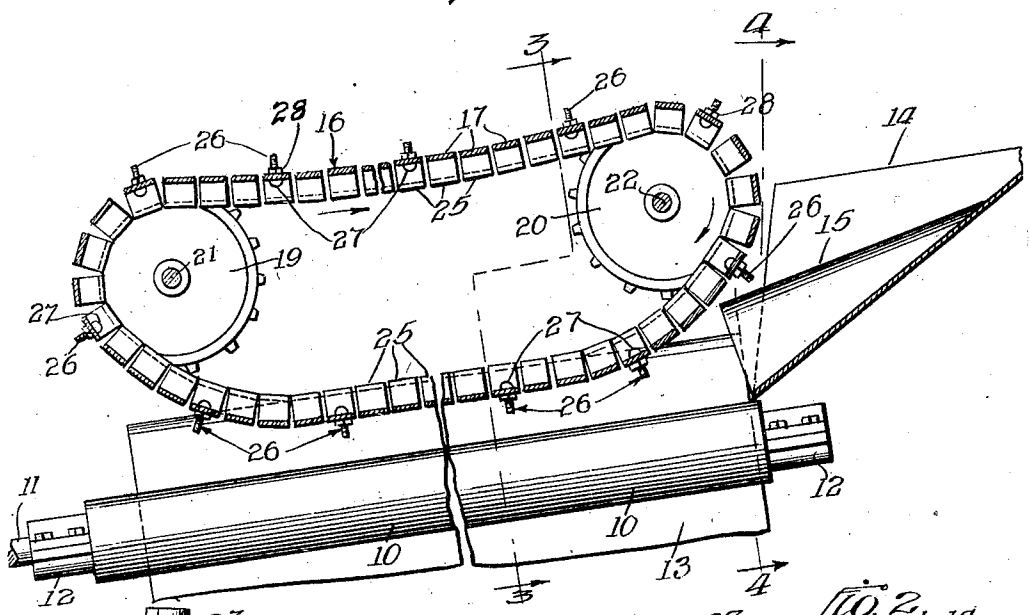
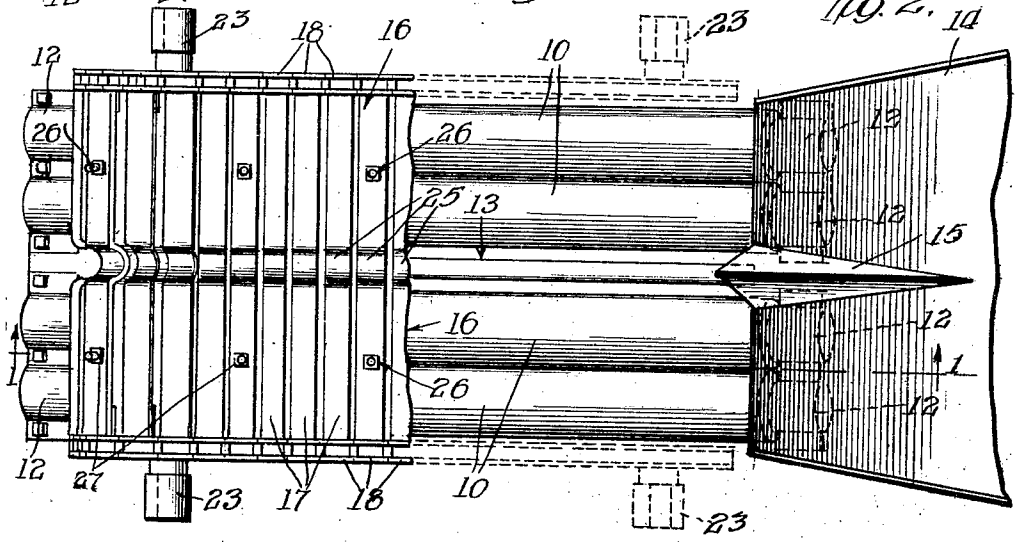


Fig. 2.



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Fig. 3.

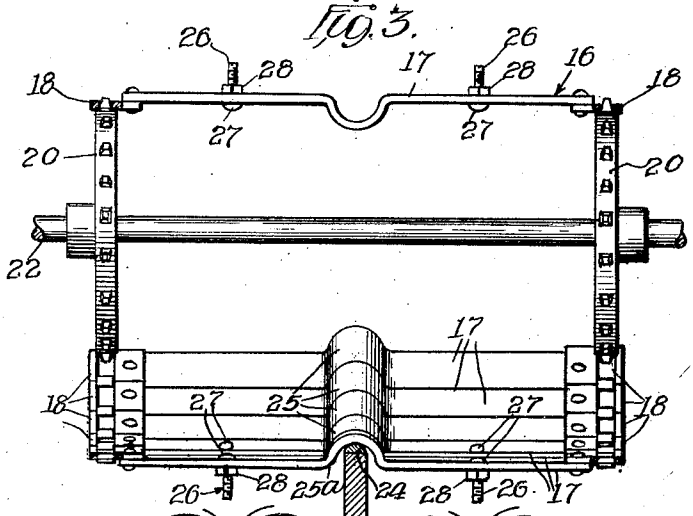


Fig. 4.

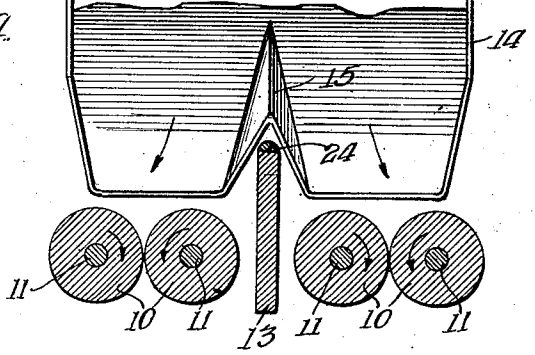


Fig. 5.

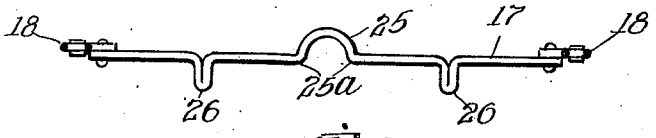
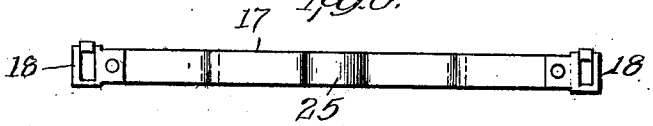


Fig. 6.



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UNITED STATES PATENT OFFICE

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CORN PICKING AND HUSKING MACHINE

Application filed December 21, 1928. Serial No. 327,629.

This invention relates to corn picking and husking machines and particularly to improved means for insuring the proper handling of the unhusked ears of corn while the ears are being subjected to the husking operation.

The present invention is an improvement on the improved husking mechanism described and claimed in Letters Patent No. 1,651,422, issued to me December 6, 1927.

One of the objects of the present invention is to provide means for maintaining the ears of unhusked corn in proper position with respect to the respective pairs of husking rolls to insure the effective operation of the rolls in the removal of the husks.

Another object of the invention is to provide means for suitably supporting ear depressing means in co-operative relationship with the husking rolls.

Another object of the invention is to provide means for guiding the ear depressing means in its movement longitudinally of the husking rolls.

A further object of the invention is to provide means, in combination with an ear depressor, for positively conveying the ears longitudinally of the husking rolls.

A still further object of the invention is to improve devices of this character in sundry details hereinafter described and particularly pointed out in the appended claims.

One embodiment of the invention is shown for illustrative purposes in the accompanying drawings, in which

Fig. 1 is a longitudinal sectional elevation of a husking mechanism having a portion thereof broken away, and illustrating an embodiment of my invention applied thereto, the section being taken substantially as indicated by the line 1—1 of Fig. 2.

Fig. 2 is a plan view of the parts illustrated in Fig. 1.

Fig. 3 is a transverse sectional elevation of the husking mechanism taken substantially as indicated by the line 3—3 of Fig. 1.

Fig. 4 is a transverse sectional elevation taken substantially as indicated by the line 4—4 of Fig. 1.

Fig. 5 is a side elevation or edge view of a modified form of presser strip embodying features of my invention.

Fig. 6 is a plan view of the modified form of strip shown in Fig. 5.

In the accompanying drawings, the illustrative embodiment of the invention is shown in conjunction with suitable husking mechanism comprising a plurality of pairs of co-operating husking rolls 10, shown more or less diagrammatically in the drawings, but which, as is well known, are intended to be provided with suitable projections adapted to engage the husks and strip them from the ears as the ears are moved longitudinally along the upper side of the rolls from the receiving end to the delivery end thereof.

The rolls 10 are carried by shafts 11 rotatably mounted in bearings 12, and the shafts 11 may be provided with suitable gearing (not shown) for rotating the respective pairs of husking rolls in the directions indicated by the arrows in Figs. 3 and 4 for removing the husks from the ears as they pass longitudinally of the rolls.

Suitably positioned between the respective pairs of husking rolls 10 is a divider board or partition member 13 for maintaining the ears of unhusked corn in proper position with respect to the respective pairs of husking rolls 10 to insure the effective operation of the rolls in the removal of the husks, it being understood that the divider board 13 will serve to prevent the ears of corn being operated upon by one set of rolls from becoming lodged between the respective pairs of rolls or from passing from one set of rolls to another.

For directing the unhusked ears of corn, as they come from the snapping rolls to the husking rolls, an inclined chute 14 is provided, and formed adjacent the central portion of the chute and in substantially longitudinal alignment with the divider board 13 is a divider rib 15 adapted to separate the mass of unhusked ears in the upper portion of the chute 14 and distribute the ears to the various pairs of co-operating husking rolls 10.

Positioned above the husking rolls 10 is an endless belt indicated as a whole by the reference character 16 and comprising a plurality of slats or strips 17 extending transversely of the husking rolls and provided at their opposite ends with chain links 18 flexibly connected together in a manner to form sprocket chains at each end of the strips. These sprocket chains are adapted to be trained over and around a plurality of sprockets 19 and 20 secured to shafts 21 and 22, respectively, the latter being rotatably mounted in bearings 23 and provided with suitable driving mechanism (not shown) for driving the chains and endless belt 16 in the direction indicated by the arrow in Fig. 1.

This flexible endless belt 16, as more fully described in my Patent No. 1,651,422 above referred to, serves to yieldingly press the ears of unhusked corn into close engagement with the co-operating pairs of husking rolls 10 for enabling the rolls to more effectually remove the husks. The divider board 13 is adapted to extend a substantial distance above the upper faces of the husking rolls 10, thereby eliminating the possibility of an ear of corn becoming engaged between the upper edge of the divider board and the strips 17 of the endless belt 16 and by riding along the edge of the divider board prevent the functioning of the belt to press that and other ears of corn into proper contact with the husking rolls.

Along the upper edge of the divider board 13 is provided a wear strip 24 adapted to support the lower run of the endless belt 16 by means of inwardly extending offset or U-shaped portions 25 preferably formed in the strips 17 intermediate their ends, the legs of the U-shaped portions extending downwardly at the sides of the divider board 13 in a manner to form preferably substantially right angles with the body portions of the strip at a point intermediate said board and the vertical planes of the rolls adjacent the board, and in a manner to permit the portions of the strips 17 overlying the co-operating husking rolls 10 to be positioned closely adjacent the upper faces of the husking rolls in a manner to insure proper contact between ears of minimum size and the operating faces of the husking rolls. The manner of positioning the U-shaped or offset portion 25 over the wear plate 24 and the upper edge of the divider board 13 also provides a suitable guide for the lower run of the endless belt 16 in its passage over and longitudinally of the husking rolls 10.

In the operation of husking devices of the character described, it is a well known fact that at times the inclined chute 14 will be substantially filled with unhusked ears, and at such times it occasionally happens that an ear of corn may approach the husking rolls in a cross-wise position on top of the divider rib 15. In such event the angular portions 25[a] formed at the juncture of the U-shaped portion 25 and the slat 17 will engage the ear in a manner to deflect it to one side or the other of the divider rib 15 so that the ear may be directed to one or the other of the pairs of husking rolls 10.

Ordinarily, the engagement of the strips 17 forming the lower run of the endless belt with the ears of corn being husked will serve to move the ears longitudinally of the husking rolls toward the delivery end thereof, but to insure the positive movement of the ears longitudinally of the husking rolls, I have provided certain of the strips 17 with fingers 26 adapted to be positioned intermediate of and in substantially the vertical plane of adjacent faces of the pairs of co-operating husking rolls in a manner to engage the ends of the ears on the husking rolls and positively move them longitudinally of the rolls.

The form of finger shown in Figs. 1 to 4 inclusive comprises bolts 27 adapted to extend through apertures formed in the strips 17 and provided on their outer side with nuts 28 for securing the bolts to the strip. If desired, however, the fingers 26 may be formed from the material of the strip by bending the material of the strip outwardly and back upon itself in the manner illustrated in Figs. 5 and 6.

In the illustrative device I have shown only two pairs of husking rolls, but obviously, as many pairs of rolls as desired may be employed, and additional divider boards 13 interposed between the respective pairs of rolls, and a corresponding number of U-shaped portions 25 and fingers 26 formed or mounted on the strips 17.

Obviously, the present invention is not limited to the precise construction and arrangement shown and described, as the same may be variously modified. Moreover, all the features of the invention need not be used conjointly, as the same may be used to advantage in variously different combinations and subcombinations.

What I claim as my invention and desire to secure by Letters Patent is:

1. The combination in a corn picking and husking machine, of a plurality of pairs of husking rolls, a divider board positioned between the respective pairs of rolls and extending a substantial distance above the upper faces thereof, flexibly connected conveyor strips positioned above said rolls for depressing unhusked ears of corn into close engagement with said rolls, and offset portions on said strips intermediate their ends adapted to overlie the upper edge of said board, the lugs of said portions being adapted to form substantial right angles

with the body portion of said strips at a point intermediate said board and the vertical planes of the rolls adjacent the board.

2. The combination in a corn picking and husking machine, of a plurality of pairs of husking rolls, a divider board positioned between the respective pairs of rolls and extending a substantial distance above the upper faces thereof, flexibly connected conveyor strips positioned above said rolls for depressing unhusked ears of corn into close engagement with said rolls, and U-shaped portions formed on said strips intermediate their ends and adapted to overlie the upper edge of said board, in a manner to cause the portions of the strips above said rolls to occupy a position closely adjacent the upper face thereof, the legs of said U-shaped portions being adapted to extend substantially vertically and parallel to the sides of said board and to form substantially right angles with the body portion of said strips at a point intermediate said board and the vertical planes of the rolls adjacent the board.

3. The combination in a corn picking and husking machine, of a plurality of co-operating pairs of husking rolls arranged in substantially parallel relationship, a plurality of flexibly connected elongated conveyor strips positioned above and extending over each pair of said rolls for depressing unhusked ears of corn into close engagement with said husking rolls and conveying the ears longitudinally thereof, and means positioned intermediate said pairs of co-operating husking rolls and extending a substantial distance above the upper faces thereof for separating the respective pairs of co-operating rolls from each other and for holding said conveyor strips out of contact with said rolls, said strips having means carried thereby and adapted to co-operate with said operating means in a manner to cause the portion of said strips above the rolls to occupy a position closely adjacent the upper faces of the rolls.

4. The combination in a corn picking and husking machine, of a plurality of co-operating pairs of husking rolls arranged in substantially parallel relationship, a plurality of flexibly connected elongated conveyor strips positioned above and extending over each pair of said rolls for depressing unhusked ears of corn into close engagement with said husking rolls and conveying the ears longitudinally thereof, and means positioned intermediate said pairs of co-operating husking rolls and extending a substantial distance above the upper faces thereof for separating the respective pairs of co-operating rolls from each other and for holding said conveyor strips out of contact with said rolls, said strips having U-shaped portions formed thereon and adapted to overlie said separating means in a manner to cause the strips to be guided by said separating means longitudinally of said rolls, and to cause the portion of said strips above the rolls to occupy a position closely adjacent the upper faces of the rolls.

5. The combination in a corn picking and husking machine, of a plurality of co-operating pairs of husking rolls arranged in substantially parallel relation, a plurality of flexibly connected conveyor strips positioned above and extending over each pair of said rolls for depressing unhusked ears of corn into close engagement with said husking rolls and conveying the ears longitudinally thereof, a divider board positioned intermediate said pairs of co-operating husking rolls and extending a substantial distance above the upper face thereof for separating the respective pairs of rolls from each other and for holding said conveyor strips out of contact with said rolls, said strips having means formed thereon intermediate their end portions and adapted to co-operate with said board in a manner to cause the strips to be guided by said board longitudinally of said rolls and to cause the portion of said strips above said rolls to occupy a position closely adjacent the upper face of the rolls, and means carried by certain of said strips and positioned adjacent said pairs of co-operating rolls for engaging the ears of corn and positively conveying them longitudinally of said rolls.

6. The combination in a corn picking and husking machine, of a plurality of pairs of co-operating husking rolls, a plurality of transverse members flexibly connected in a manner to form an endless belt yieldingly suspended above the upper face of said rolls a longitudinally extending divider board positioned intermediate said pairs of rolls and having its upper edge extending a substantial distance above the plane of the upper face of said rolls, said members having inwardly extending U-shaped portions formed thereon adapted to co-operate with said divider board in a manner to be guided thereby and to support the members forming the lower run of said belt yieldingly adjacent the upper face of said rolls and below the upper edge of said divider board, and a plurality of fingers carried by certain of said members and positioned adjacent said pairs of husking rolls for engaging the ears of corn on said rolls and conveying them longitudinally of the rolls.

7. The combination in a corn husking machine of a plurality of pairs of co-operating husking rolls, a plurality of transverse members flexibly connected together and extending transversely of each of said pairs of husking rolls to form an endless belt yieldingly suspended above the upper face of the

rolls, and a longitudinally extended divider board positioned intermediate each of said pairs of rolls and having its upper edge extending a substantial distance above the plane of the upper face of said rolls, there being formed in each of said transverse flexibly connected members registering offset portions adapted to co-operate with said divider board in a manner to cause the said endless belt to be guided thereby, the lower run of said endless belt being thus yieldingly guided adjacent the upper face of said rolls with the ear engaging portions of said transverse members extending below the upper edge of said divider board and adapted to traverse a path in close proximity to the upper faces of the said rolls.

8. The combination in a corn husking machine, of a plurality of pairs of co-operating husking rolls, a plurality of transverse members extending across each of said plurality of pairs of co-operating husking rolls and being flexibly connected together in a manner to form an endless belt with the lower run thereof yieldingly suspended above the upper face of said rolls, a longitudinally extending divider board positioned intermediate each adjacent pair of rolls and having its upper edge extending a substantial distance above the plane of the upper face of said rolls, said transverse flexibly connected members being each provided with registering inwardly extending U-shaped portions formed therein adapted to co-operate with said divider board in a manner to be guided thereby and to support the lower run of said belt of flexibly connected transverse members yieldingly adjacent the upper face of said rolls and below the upper edge of said divider board, and projections carried by certain of said transverse members of the endless belt, the said projections extending on the outer periphery of the belt in a direction opposite to the extension of the said U-shaped portions thereof for engaging ears of corn on the upper side of each pair of husking rolls and for conveying said ears longitudinally of the rolls.

9. The combination in a corn husking machine, of a plurality of co-operating pairs of husking rolls arranged in substantial parallel relation, a divider board positioned intermediate said pairs of co-operating husking rolls and extending longitudinally thereof and also a substantial distance above the upper faces of said rolls for separating the respective pairs of rolls from each other, an inclined delivery chute of a width substantially equal to the over-all width of said plurality of co-operating pairs of husking rolls for delivering unhusked ears of corn to said rolls at one end thereof, there being an upwardly formed offset portion in the bottom of said chute adjacent said upwardly extending divider board to co-operate therewith, and to enable the bottom of the delivery chute to be positioned below the upper edge of the divider board and adjacent the upper surface of the husking rolls, a flexible endless belt comprising a plurality of flexibly connected conveyor strips positioned above and extending over each pair of said rolls for depressing unhusked ears of corn into close engagement with said husking rolls and for conveying said ears longitudinally thereof, said conveyor strips each having registering inwardly formed U-shaped portions adapted to co-operate with the upper edge of said offset portion of the chute and the upper edge of said divider board, and outwardly extending projections on certain of said conveyor strips adapted to traverse a path substantially adjacent the husking plane of each of the respective pairs of husking rolls for forcibly moving ears along said rolls.

In testimony whereof I have signed my name to this specification, on this 17th day of Dec., A. D. 1928.

JOHN VAN NORTWICK.