W. H. SELLS.

CORN HUSKER.

APPLICATION FILED JAN. 6, 1913.

1,147,756.

Patented July 27, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

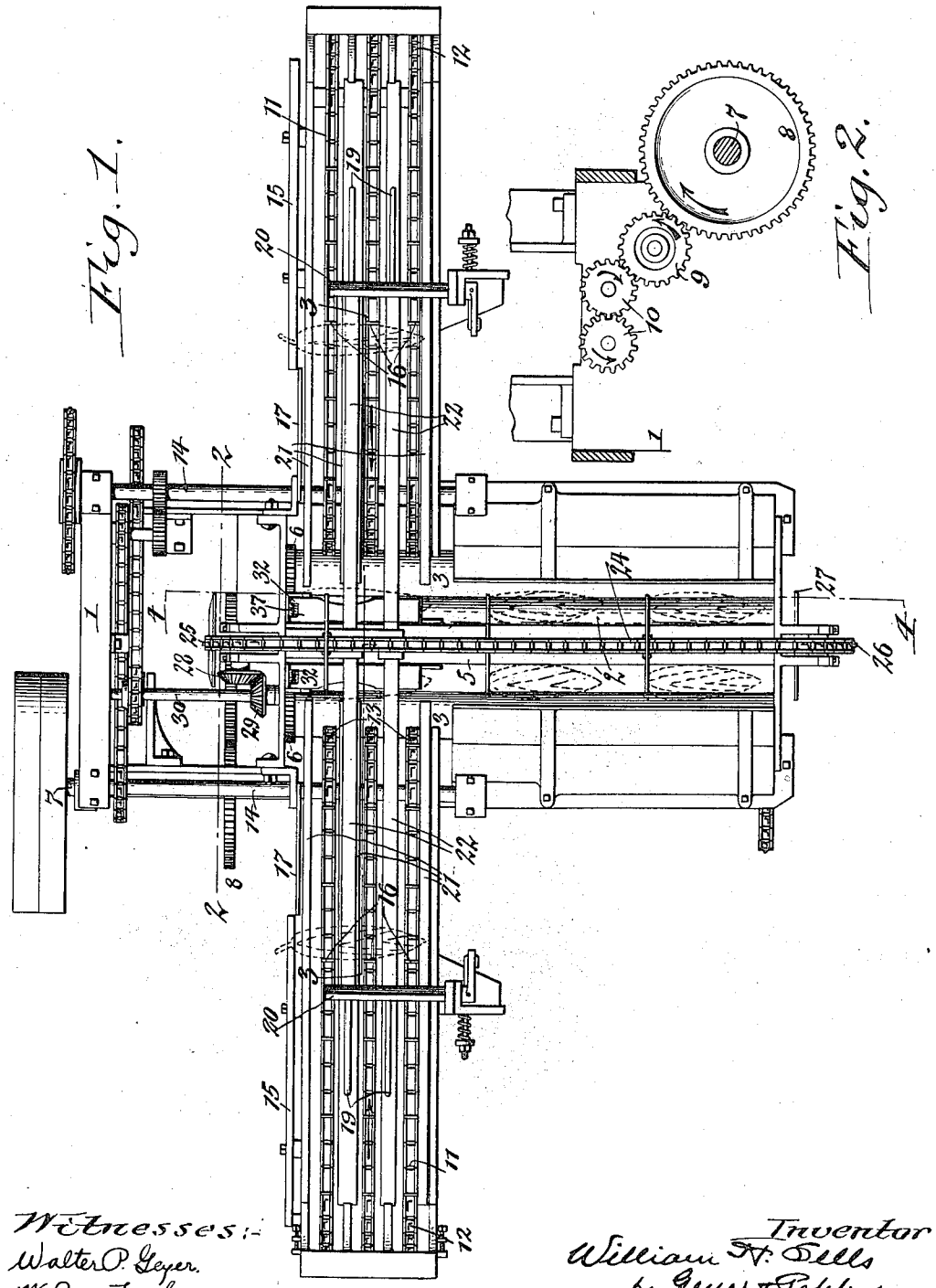


Fig. 2.

Witnesses:-
Walter P. Geyer.
M. Ray Taylor

Inventor
William H. Sells
by Pepper & Pepper
Attorneys.

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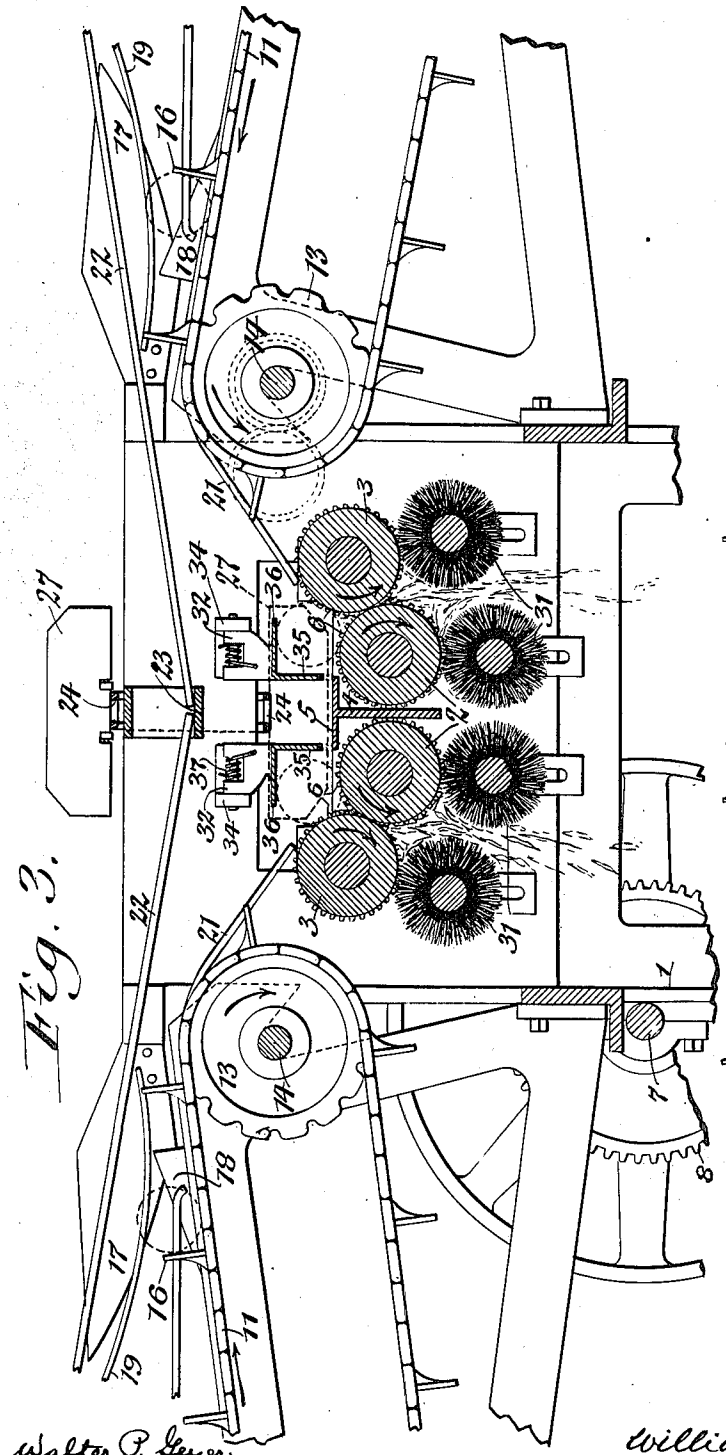


Fig. 3.

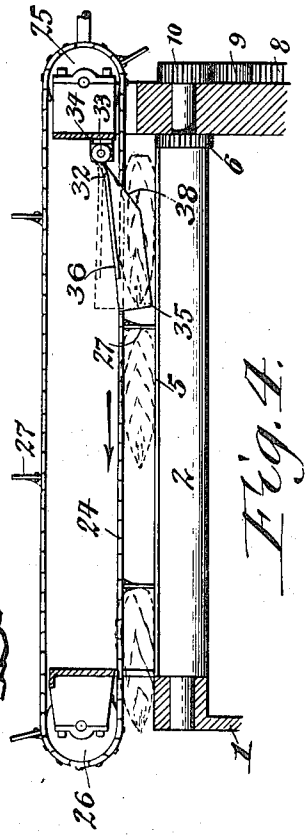


Fig. 4.

Witnesses.

Walter P. Geyer.

W. Ray Taylor

Inventor

William H. Sells

by Geyer & Polk

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM H. SELLS, OF BUFFALO, NEW YORK.

CORN-HUSKER.

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To all whom it may concern:

Be it known that I, WILLIAM H. SELLS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Corn-Huskers, of which the following is a specification.

This invention relates to a machine for removing the husks from green corn preparatory to cutting the kernels from the cob, such machines being commonly known as corn huskers and employed in canning factories where corn is packed on a large scale for the trade.

One of the objects of this invention is to provide a machine for this purpose which is very compact and has a larger capacity compared with machines heretofore in use for this purpose and occupying a given amount of space.

Another object of this invention is to provide simple, efficient and reliable means whereby the ears of corn are confined on the respective pair of husking rollers to which the same have been fed and the ears are prevented from turning upon one end which otherwise would cause the corn to become injured and also result in choking the machine.

In the accompanying drawings consisting of 2 sheets: Figure 1 is a top plan view of a corn husker embodying my improvements. Fig. 2 is a fragmentary vertical transverse section taken in line 2—2, Fig. 1, and showing part of the driving mechanism for operating the husking rollers. Fig. 3 is a fragmentary vertical transverse section, on an enlarged scale taken in line 3—3, Fig. 2. Fig. 4 is a fragmentary vertical longitudinal section taken in line 4—4, Fig. 1.

Similar characters of reference indicate corresponding parts throughout the several views.

1 represents the main frame of the machine which supports the various movable parts and which may be of any suitable construction. Arranged lengthwise in the central part of this machine are two pairs of husking rollers, each pair of rollers preferably comprising an inner roller 2 and an outer roller 3, the rollers of each pair being arranged parallel and having their opposing peripheral portions engaging with each other and the outer roller of each pair being arranged somewhat higher than the inner roller.

The inner rollers of both pairs are arranged comparatively close together but are separated by a longitudinal division bar having an upright longitudinal web or plate 4 arranged between the opposing peripheral portions of these rollers and a horizontal plate 5 arranged at the upper edge of the web and projecting at its opposite longitudinal edges over the adjacent parts of the inner husking rollers, as shown in Fig. 3. This bar is stationary and may be supported at its opposite ends in any suitable manner on the adjacent part of the main frame. The husking rollers of each pair are caused to turn together so that their opposing sides move downwardly, this being preferably effected by means of coöperating gear wheels 6 secured to the front ends of the shafts of the husking rollers of each pair. Motion is transmitted to the two pairs of husking rollers from the main driving shaft 7 of the machine by means of a main gear wheel 8 secured to the driving shaft, an intermediate gear wheel 9 engaging with the driving gear wheel 8 and two intermeshing gear wheels 10, which are secured respectively to the front ends of the shafts of the inner husking rollers and one of which meshes with the intermediate gear wheel 9, as shown in Figs. 1, 2 and 4.

The ears of corn to be husked may be fed upon the front end of the two pairs of husking rollers by feeding devices which may be constructed in any suitable manner but which are preferably constructed as follows: The feeding device shown in the drawings comprise two endless conveyers which are arranged on opposite sides of the machine at the front ends of the pairs of husking rollers, each conveyer being adapted to feed the ears of corn laterally from one side of the machine to the front end of one pair of husking rollers. Each of these endless conveyers preferably embodies a plurality of endless chain belts 11 which are arranged side by side and pass at their receiving ends around a plurality of receiving sprocket wheels 12 mounted on the main frame while their delivery portions pass around delivery sprocket wheels 13 mounted on a shaft 14 journaled in the adjacent part of the main frame. This last mentioned shaft may be

turned in the direction of the arrow by any suitable means for causing the upper operative stretch of the endless conveyer to move inwardly or forwardly toward the companion pair of husking rollers. The operator places the ears upon the conveyer so that the butt ends thereof project forwardly into engagement with a longitudinal gage 15 mounted on the adjacent part of the main frame and as the upper stretch of the conveyer moves forwardly it carries the ears along with it by means of wings or flights 16 mounted on the conveyer belts and engaging with the ears.

Before the ears reach the inner or delivery turn of the conveyer belts the butt ends thereof are trimmed off so as to facilitate the subsequent removal of the husks from the ears. This trimming device consists preferably of a pair of cutters or blades 17, 18 mounted one above the other on the main frame and having their shearing edges arranged to form a V-shaped mouth. As the ears of corn are moved forwardly by the conveyer the butt ends thereof engage with the inwardly converging cutting edges of the blades whereby the butts of the ears are severed from the body and the husks on the adjacent parts of the ears are loosened. While the ears are thus engaged by the trimming device the same are held down upon the conveyer and prevented from becoming displaced by means of holding springs 19 which are mounted at their outer ends on a supporting bar 20 mounted on the frame above the path of the ears of corn. The upper portions of the delivery sprocket wheels are arranged somewhat higher than the front ends of the companion pair of husking rollers and as the conveyer moves downwardly around the inner or delivery sprocket wheels the ears of corn are discharged from the conveyer and guided into the bight between the adjacent pair of husking rollers at the front ends thereof by a guiding device which is preferably composed of a plurality of inclined guide bars 21 extending from the delivery portion of the conveyer downwardly and inwardly to the upper part of the adjacent outer husking roller at the front end thereof. As the ears of corn are moving inwardly over the guide bars 21 to the companion husking rollers the same are prevented from rising unduly and becoming displaced by a plurality of pairs of presser bars 22 arranged lengthwise over the delivery portion of the conveyer and transversely over the receiving portion of the respective husking rollers and mounted at their outer ends on the adjacent supporting bar 20 carried by the frame while their inner ends rest upon a longitudinal shelf 23 arranged adjacent to the front end of the husking rollers. Two operators are able in this manner to feed the machine from opposite sides thereof, the ears of corn fed by one operator being delivered to one of the pairs of husking rollers and the ears of corn fed by the other operator being delivered to the other pair of husking rollers.

As each ear of corn is presented to the upper sides of a pair of husking rollers the opposing surfaces of these rollers during their downward movement grip the husks and pull them from the ears and discharge the husks downwardly on the underside of these rollers. In order to clear the receiving or front ends of the pairs of husking rollers so as to make room for the subsequent ears fed to the same and also to insure complete removal of all of the husks from the ears the latter are moved from the front ends of the husking rollers lengthwise of the latter and then discharged in a completely husked condition from the rear ends of these rollers. During its passage lengthwise over the husking rollers each of the ears is turned more or less and all parts of its periphery are exposed to the stripping action of the husking rollers so as to effectually remove all the husks and silks from the ear before it escapes from these rollers.

The longitudinal movement of the ears over the husking rollers is preferably effected by a clearing conveyer mechanism which is so constructed that it serves the purpose of moving the ears of corn lengthwise over both pairs of husking rollers. In its preferred form this clearing conveyer comprises an endless belt 24 arranged lengthwise over the space between the two inner husking rollers and passing at its front and rear turns around front and rear sprocket wheels 25, 26 mounted on the main frame of the machine, and propelling wings or flights 27 secured transversely to the clearing conveyer belt so that upon turning the sprocket wheels in a direction for causing the lower stretch of the belt 24 to move from the front ends of the husking rollers to the rear ends thereof its propelling wings will move through the channels formed on the upper sides of the two pairs of husking rollers and push the ears of corn resting thereon from the front ends to the rear ends thereof. As the ears drop from the rear ends of the husking rollers they may be received by a suitable receptacle provided for this purpose or disposed of otherwise. Any suitable means may be employed for operating the clearing conveyer in the manner described, that shown in the drawings comprising a pair of cooperating beveled gear wheels 28, 29 secured respectively to the shaft of the front sprocket wheel 25 and an intermediate shaft 30 forming part of the mechanism which is operatively connected with the driving shaft 7.

In order to remove any husks or silks from the underside of the husking rollers and maintain them in the best condition for

facilitating the husking operation, a cleaning device is provided which preferably comprises a plurality of rotatable cleaning brushes 31 one of which engages the underside of each husking roller, as shown in Fig. 3.

In order to prevent ears of corn which are fed upon the front end of one pair of husking rollers from accidentally getting over on the front end of the other pair of husking rollers and also to prevent the ears of corn from being drawn endwise between the rollers at the front part of the latter retaining means are provided which are preferably constructed as follows: Above the front end of each inner husking roller is arranged a retaining arm 32 which is pivoted at its front end by means of a horizontal transverse pin 33 on a bracket 34 supported on the adjacent part of the main frame so that its rear part is capable of swinging vertically toward and from the adjacent upper side of the respective husking rollers. The rear part of this arm is of angular form in cross section and comprises an inner upright stop wall 35 and an upper horizontal cover or plate 36 which projects outwardly from the upper edge of the stop wall so as to overhang the respective inner husking roller but stop short of the companion outer roller so as to form a gap or passageway between this cover plate and the outer husking roller through which the ears of corn may pass laterally from the feeding conveyer to the front pair of the husking rollers and underneath the top plate of the retaining arm. This retaining arm is yieldingly held in its lowermost position preferably by means of a spring 37 surrounding the pivot 33 and bearing at one end against the retaining arm and at its other end against the bracket 34. The downward movement of this arm is limited by engagement of the lower edge of the vertical wall 35 with the adjacent upper side of the division bar 4, 5, as shown in Fig. 3. The cover plate is arranged sufficiently close to the upper side of the husking rollers so that an ear of corn which is fed upon the front ends of these rollers and under the retaining arm will be forced into the gripping portion of the husking members by the arm and also will be held by this arm in a horizontal position lengthwise of the husking rollers and prevented from turning vertically so as to stand on one of its ends, thereby insuring a firm grip of the husking rollers on the husks along the entire length of the ear for quickly and thoroughly removing the husks therefrom and also preventing the husking rollers from becoming choked or clogged as well as preventing injury to the kernels on the ear of corn. The front end of the vertical wall of the retaining arm is beveled or inclined, as shown at 38 in Fig. 4, so that when a flight or wing of the clearing belt passes forwardly over the husking rollers for carrying the ears lengthwise thereof this wing engages with the inclined face of the retaining arm and lifts the same from its lowered normal position, indicated by full lines in Fig. 4, to the elevated position, shown by dotted lines in the same figure, and retains this arm in this position until the wing has cleared the rear end of this arm, after which the latter again drops by gravity aided by the spring 37 into its normal lowered position preparatory to receiving the next following ear from the feeding mechanism.

Normally the retaining arm is depressed—and holds an ear of corn against the husking rollers at the bight or pass between the same. As the next following wing of the clearing belt passes forwardly underneath the retaining arm this wing lifts the retaining arm and carries the respective ear forwardly from underneath the retaining arm. Just before the clearing wing passes forwardly beyond the retaining arm and while the latter is still held in an elevated position by the respective wing the next following wing of the feeding belt delivers an ear of corn under the retaining arm and then the latter is released by the previous clearing wing and permitted to descend and press the next following ear of corn into close contact with the gripping surfaces of the husking rollers.

While the retaining arm is depressed no ear can be fed laterally from the feed belt upon the husking rollers and under the retaining arm inasmuch as the latter at this time is too close to the rollers. To avoid feeding an ear of corn to the rollers when the retaining arm is depressed the movement of the ear feeding and clearing belts is so timed that an ear of corn is fed by the feeding belt to the rollers immediately after a clearing wing has carried an ear forwardly out of the path of the incoming ear and before the retaining arm has dropped to its normal depressed position.

My improved corn husking machine not only permits of removing the husks and silks expeditiously from the ears without injuring the kernels or clogging the machine, but the same is also very simple and compact in construction, not liable to get out of order and all parts are readily accessible for inspection, adjustment and repairs.

I claim as my invention:

1. A corn husker comprising a pair of husking rollers, an ear feeding device adapted to feed ears to said rollers from one side thereof, and an ear retaining device comprising a vertically movable arm having a vertical wall arranged adjacent to the top of one of said rollers and a horizontal top projecting from the upper part of said ver-

tical wall laterally toward the other roller but separated therefrom by an intervening passageway through which the ears of corn are fed to the rollers.

2. A corn husker comprising a pair of husking rollers, an ear feeding device adapted to feed ears to said rollers from one side thereof, an ear retaining device comprising a vertically movable arm having a vertical wall arranged adjacent to the top of one of said rollers and a horizontal top projecting from the upper part of said vertical wall laterally toward the other roller but separated therefrom by an intervening passageway through which the ears of corn are fed to the rollers, and a stationary bracket on which said arm is pivoted at its front end.

3. A corn husker comprising a pair of husking rollers, a conveyer for moving the ears of corn lengthwise over said rollers and having an endless belt and a plurality of wings adapted to engage said ears, and an ear retaining device for holding the ears lengthwise on the rollers comprising a vertically movable arm arranged over the rollers and provided with an inclined face adapted to be engaged by said wings for lifting said arm out of the path of the wings.

4. A corn husker comprising a pair of husking rollers, a conveyer for moving the ears of corn lengthwise over said rollers and having an endless belt and a plurality of wings adapted to engage said ears, and an ear retaining device for holding the ears lengthwise on the rollers comprising a vertically movable arm arranged over the rollers and having a vertical wall arranged over one of the rollers and provided at its front edge with an inclined face adapted to be engaged by said wings and a horizontal top projecting from the vertical wall toward the other roller.

5. A corn husker comprising a pair of husking rollers, a conveyer for moving the ears of corn lengthwise over said rollers and having an endless belt and a plurality of wings adapted to engage said ears, an ear retaining device for holding the ears lengthwise on the rollers comprising a vertically movable arm arranged over the rollers and a stationary bracket to which said arm is pivoted, a spring for depressing said arm, and a stop for limiting the descent of said arm.

Witness my hand this 2nd day of January, 1913.

WILLIAM H. SELLS.

Witnesses:
THEO. L. POPP,
ANNA HEIGIS.