No. 750,426. PATENTED JAN. 26, 1904.

C. G. BILLINGS.

CORN HUSKER.

APPLICATION FILED DEC. 15, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

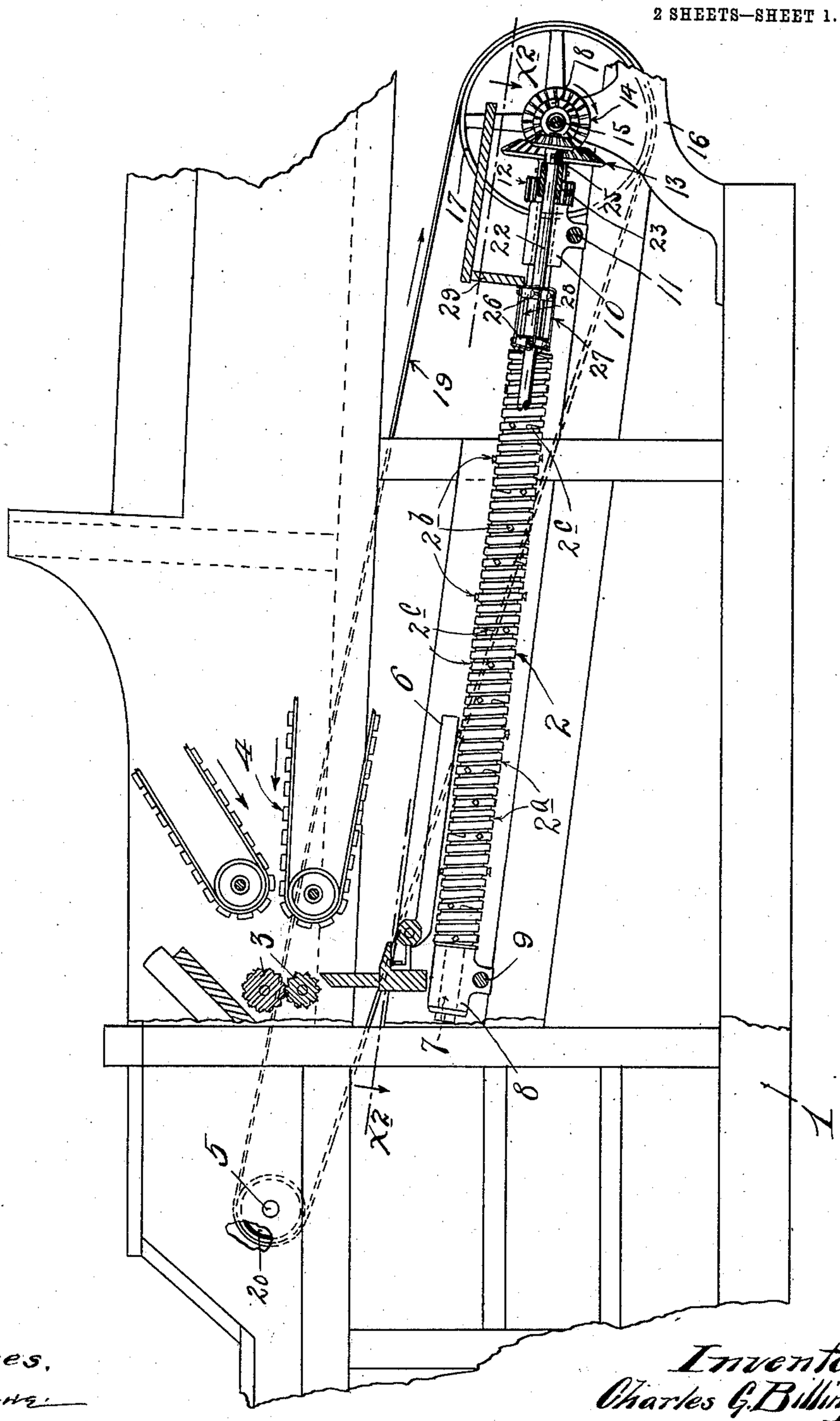

Fig. 1.

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NO MODEL. 2 SHEETS—SHEET 2.

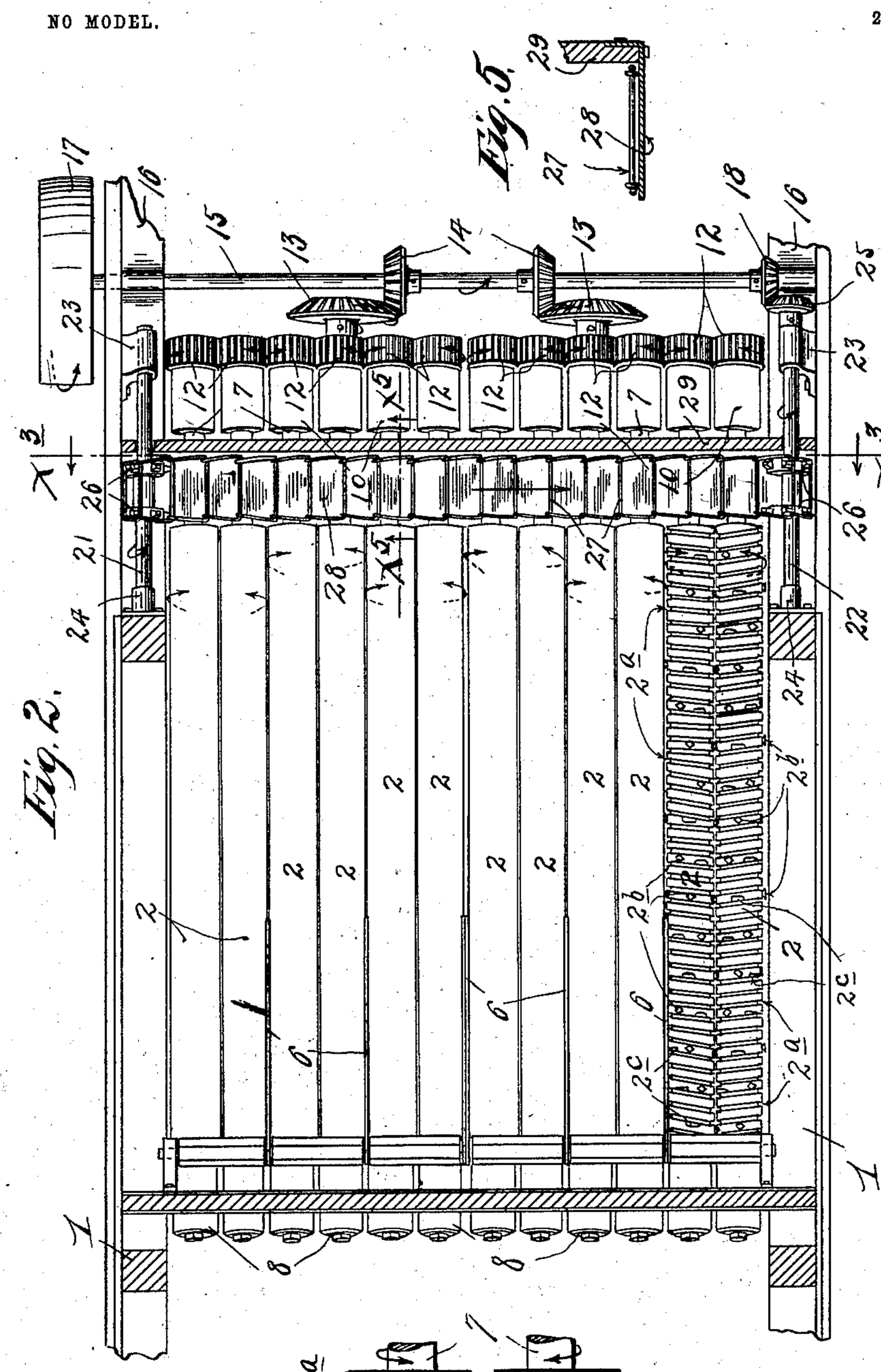

Fig. 2.

Fig. 3.

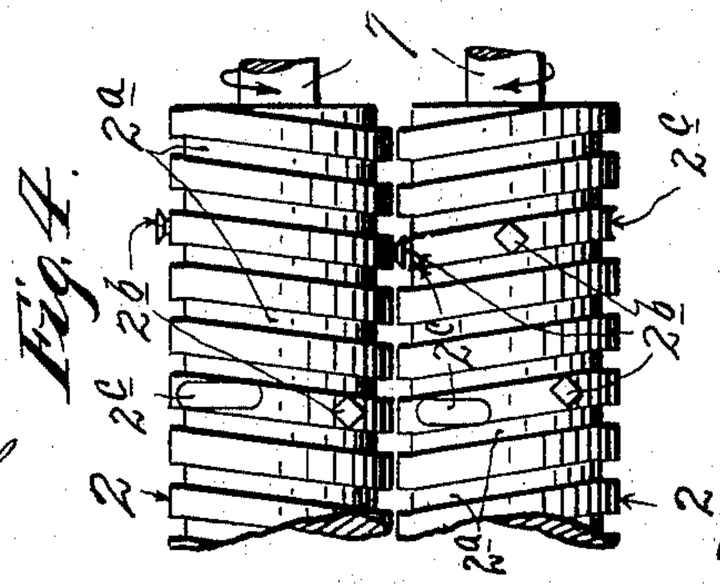

Fig. 4.

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No. 750,426. Patented January 26, 1904.

UNITED STATES PATENT OFFICE.

CHARLES G. BILLINGS, OF EAU GALLE, WISCONSIN.

CORN-HUSKER.

SPECIFICATION forming part of Letters Patent No. 750,426, dated January 26, 1904.

Application filed December 15, 1902. Serial No. 135,211. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. BILLINGS, a citizen of the United States, residing at Eau Galle, in the county of Dunn and State of Wisconsin, have invented certain new and useful Improvements in Corn-Huskers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its especial object to improve the construction of corn-huskers; and to this end it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In corn-huskers as heretofore designed a great deal of trouble has been caused by the frequent clogging of the husking-rollers. This clogging of the husking-rollers has usually been caused by ears of corn or portions thereof being caught endwise and wedged between the rollers in such manner that the husking-pegs could not act thereon, and as a consequence the said husking-rollers were forced apart and rendered inoperative, so that the heads of corn passed over the same without being husked. A head of corn or a cob or any other article caught between the husking-rollers as above noted would remain there indefinitely unless removed by force, and it has been frequently found a difficult matter to remove such articles from between the husking-rollers both because they are hard to get at and because they are wedged between the rollers with great pressure.

As one of the principal and very important features of my present invention I provide one or more, preferably both, of each pair of coöperating husking-rollers with a spiral peripheral groove, which when an ear of corn, a cob, or other article is caught between the rollers will positively carry the same toward the delivery end of the rollers. The coöperating rollers, as is well known, rotate in opposite directions and their upper surfaces move toward each other. Hence one of the rollers should be provided with a right and the other with a left traversing spiral groove or thread, so that the grooves of both rollers will coöperate to work the article wedged between them in the same direction—to wit, toward the delivery ends of said roller. These peripheral threads or spiral grooves also have a feeding action on the ears which are properly delivered to the husking-rollers to be located more nearly in a horizontal plane. In some cases they might even be horizontally disposed in view of the even and positive feeding actions of the spiral grooves on the heads of corn. Furthermore, the spiral grooves render the rollers self-cleaning in their action by continually feeding to the delivery ends thereof all dirt, leaves, or other materials which come in contact therewith.

The above features of construction may also be applied to the snapping-rollers or to other class of rollers; but in my present application it has a special reference to the husking-rollers.

The invention also involves other features of construction, which will hereinafter appear in the following detail description and in the claim.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a view in side elevation with some parts broken away and some parts shown in section, showing a corn-husker involving the several features of my invention. Fig. 2 is a substantially horizontal section taken approximately on the line x^2 x^2 of Fig. 1. Fig. 3 is a transverse vertical section on the line x^3 x^3 of Fig. 2. Fig. 4 is a plan view showing the delivery ends of a pair of husking-rollers provided in accordance with my invention with coöperating spiral peripheral grooves, and Fig. 5 is a detail in vertical section on the line x^5 x^5 of Fig. 2.

The numeral 1 indicates as an entirety the frame or case of the machine.

The numeral 2 indicates the husking-rollers, the numeral 3 the snapping-rollers, the numeral 4 the endless feed-table, the numeral 5 the shredder-shaft, and the numeral 6 the dividers of a combined husker and shredder, which parts, except as hereinafter noted, are of the ordinary construction.

The shafts 7 of the husking-rollers are mounted at their upper ends in bearings 8, supported by and mounted to slide on a trans-

verse rod 9, suitably supported from the frame of the machine in the ordinary way. Likewise said shafts 7 at their lower ends are journaled in bearings 10, supported by and mounted to slide on a transverse rod 11, supported at its ends from the frame of the machine.

The construction so far specifically described is such as is found in the standard corn huskers and shredders, but may of course be varied so far as the present invention is concerned.

As already stated in the introductory part of this description, the husking-rollers are formed with spiral peripheral grooves. These grooves 2^a are shown in several of the views, but are best illustrated in Fig. 4, by reference to which it will be seen that the grooves on one of the rollers is a right-hand thread, while that of the coöperating roller is a left-hand thread. I find the best results are obtained by making the said threads or grooves rectangular in cross-section, as shown in the said drawings. The husking-rollers are further provided with husking-pegs 2^b, preferably having squared heads, as best shown in Fig. 4. To afford clearance for the pegs 2^b, the rollers are provided with peripheral depressions 2^c, as also best shown in Fig. 4.

The husking-rollers on one side of the transfer center of the machine are geared together and those on the other side are geared together, this being preferably accomplished in the usual way by intermission spur-pinions 12, secured to the extreme lower ends of the roller-shafts 7. One of the shafts 7 of each series carries a doubled gear 13 at its extreme lower end. The two beveled gears 13 mesh with beveled pinions 14, carried by a transverse counter-shaft 15, mounted in bearing-brackets 16, secured on the sides of the machine-form 1. At one end the shaft 15 carries a pulley 17, and near its other end it is provided with a beveled pinion 18. A transmission-belt 19 runs over the pulley 17 and over a pulley 20, carried by the shredder-shaft 5. The shredder-shaft 5 being driven in the customary way, motion is transmitted to the husking-rollers through the driving connections 11 and 12.

The numerals 21 and 22 indicate a pair of counter-shafts, which are mounted on suitable bearings 23 and 24 on the sides of the machine-frame and extend substantially parallel to the husking-rollers and substantially in the same plane therewith. The counter-shaft 22 is provided with a beveled pinion 25, which meshes with the pinion 18 of the counter-shaft 15. The counter-shafts 21 and 22 are provided with laterally-spaced pairs of sprockets 26, over which runs a wide sprocket-chain of the type usually termed a "ladder" chain. The upper portion of this chain or endless belt 27 runs in a plane slightly lower than the upper surfaces of the husking-roller and just outward of the delivery ends thereof, so as to receive the husked ears from said rollers. The upper portion of the said conveying belt or chain 27 runs over a transversely-extended shelf or deck 28, shown as supported by the depending portion of a box-like housing or gear-cover 29. The said depending portion of the housing 29 serves as a stop to hold the husked ears upon the shelf 28 while subject to the conveying belt or chain 27. The said conveying belt or chain, of course, delivers the husked ears at one side of the machine.

Hitherto imperforate belts or conveyers have been used to perform the function of the open conveying belt or chain 27; but great annoyance and trouble has been caused by the accumulation of dirt, snow, husks, chaff, and other material on the lower or returning portion of such conveyers. Such accumulations heave hitherto frequently caused the clogging up of the machine, so as to interrupt its operation. In fact, such devices have usually been found to be inoperative when snow has been deposited thereon. With my open belt or ladder-like conveying-chain such deposits cannot accumulate on the lower or returning portion thereof, and for such reasons the device has been found operative under all conditions of the weather and under all conditions of the corn.

Returning now to the action of the husking-rollers, it is evident that should an unhusked ear of corn be caught endwise and wedged between a coöperating pair of rollers the spiral grooves acting thereon will cause the same to begin immediately to travel toward the delivery ends of such rollers, and as the ear thus caught is caused to travel onward its husks will be ripped off by the husking-pegs, so that by the time it is discharged it will be husked. In fact, I have found that in practice it usually happens that an ear thus caught and acted upon will be arighted or turned down approximately parallel with the rollers before it reaches the delivery ends of the rollers. If, however, the ear is not thus arighted, it will in a predetermined time be discharged at the delivery ends of the rollers.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

In a corn-husker, a pair of reversely-driven husking-rollers provided one with a right and the other with a left thread spiral groove and both thereof having projecting husking-pegs, and coöperating peg-seats, which seats are located between said grooves and are independent thereof, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES G. BILLINGS.

Witnesses:

A. J. TIBBETTS,

Mrs. A. J. TIBBETTS.