No. 712,982. Patented Nov. 4, 1902.

A. VAN NESS.

CORN HUSKING AND SHREDDING MACHINE.

(Application filed Aug. 26, 1901.)

(No Model.) 3 Sheets—Sheet 1.

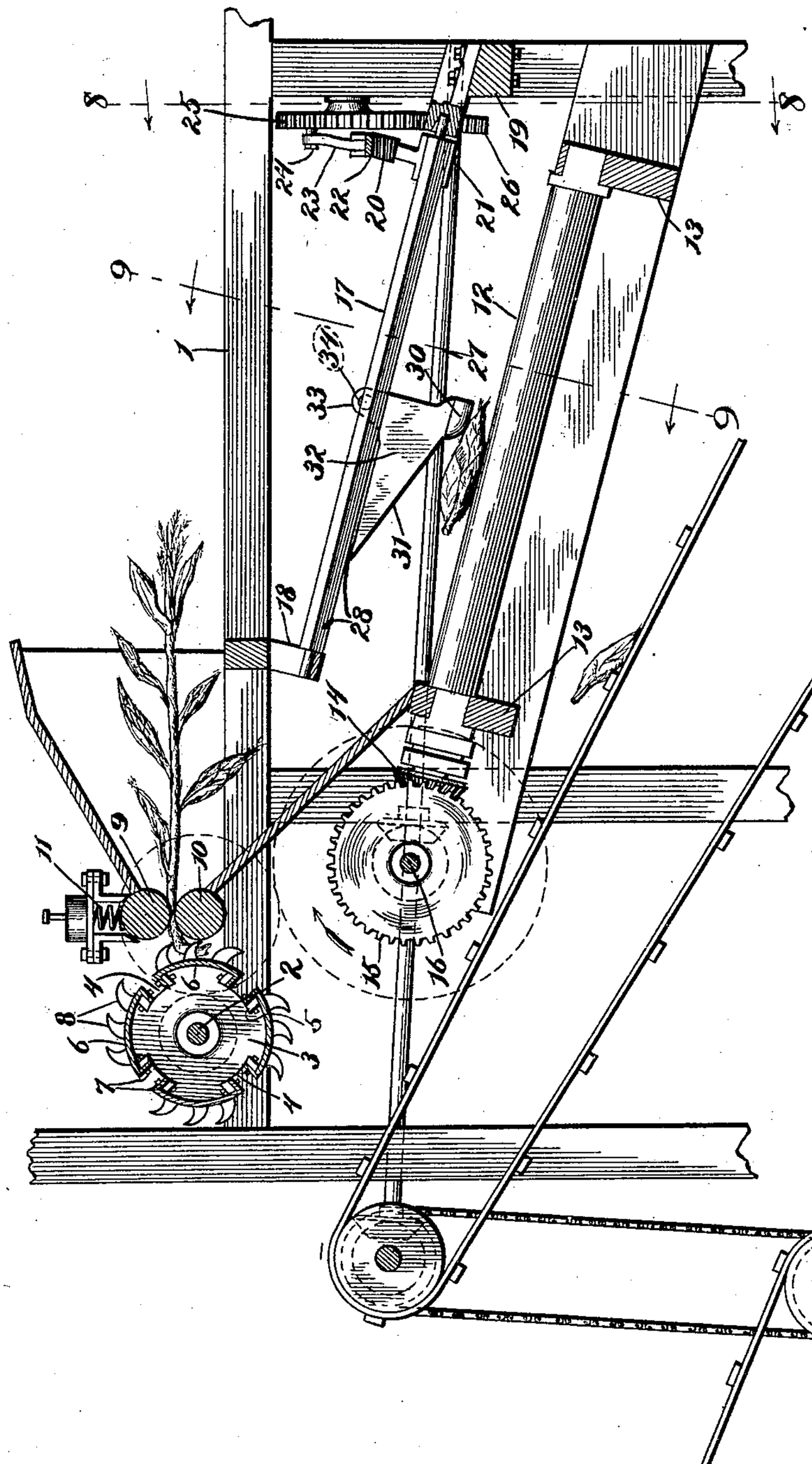

Fig. 1.

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Fig. 2.

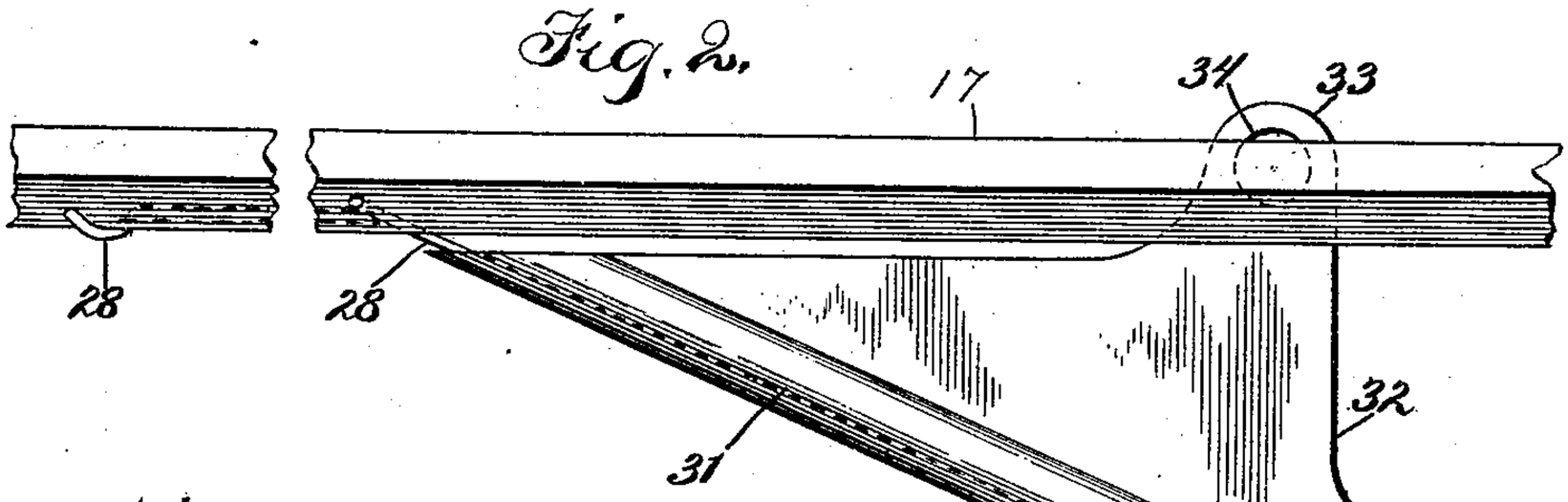


Fig. 3.

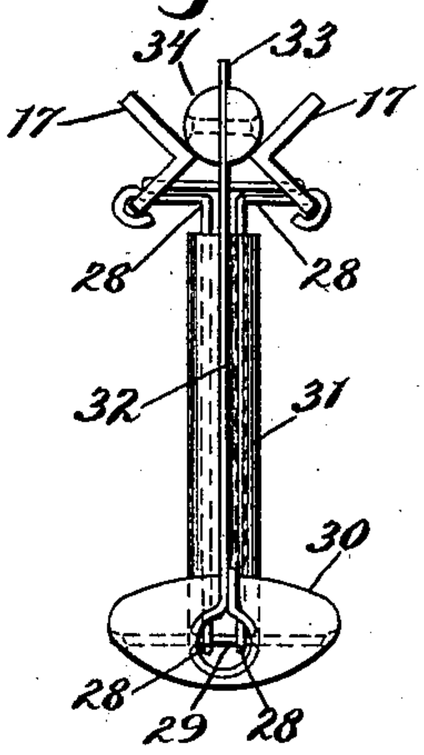


Fig. 4.

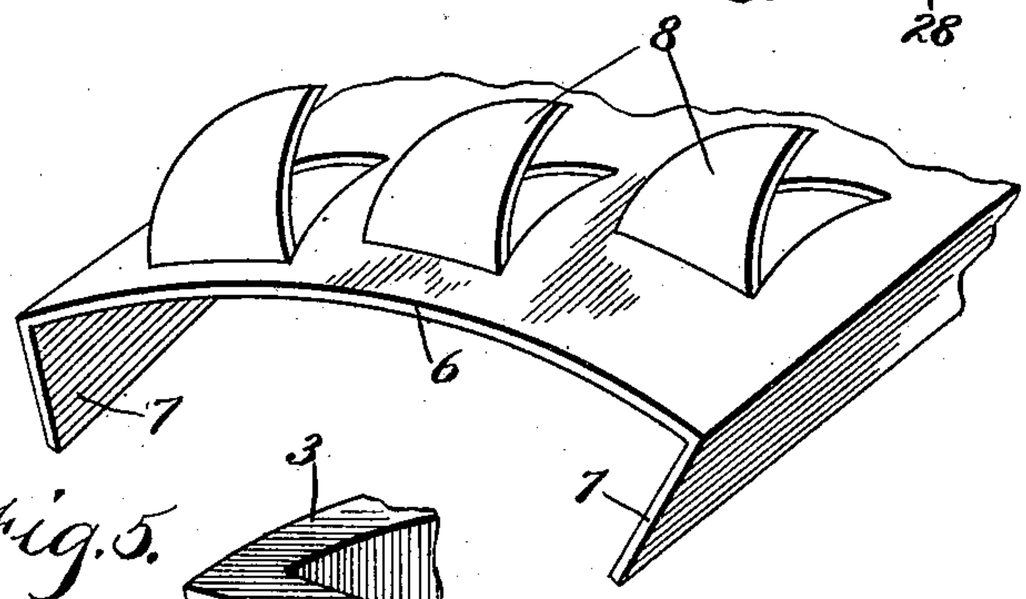


Fig. 5.

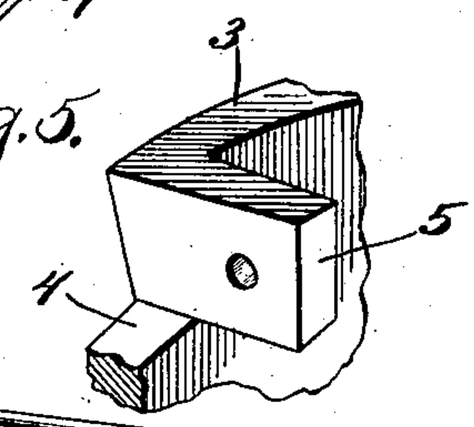


Fig. 6.

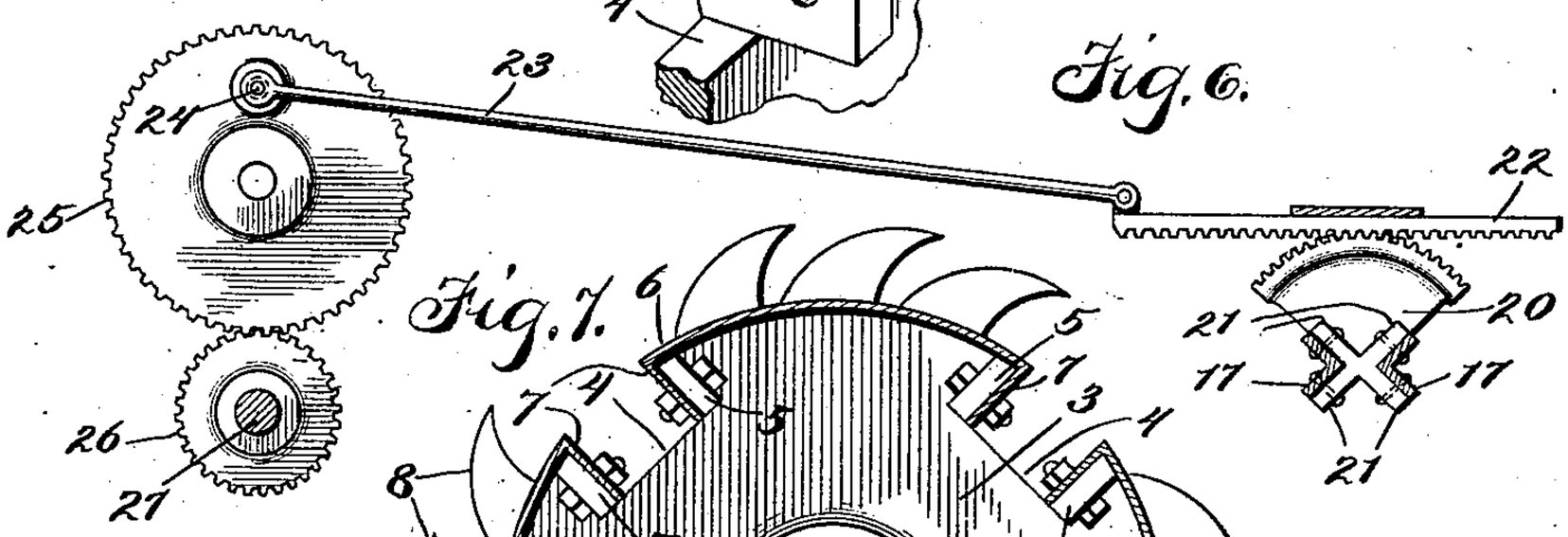
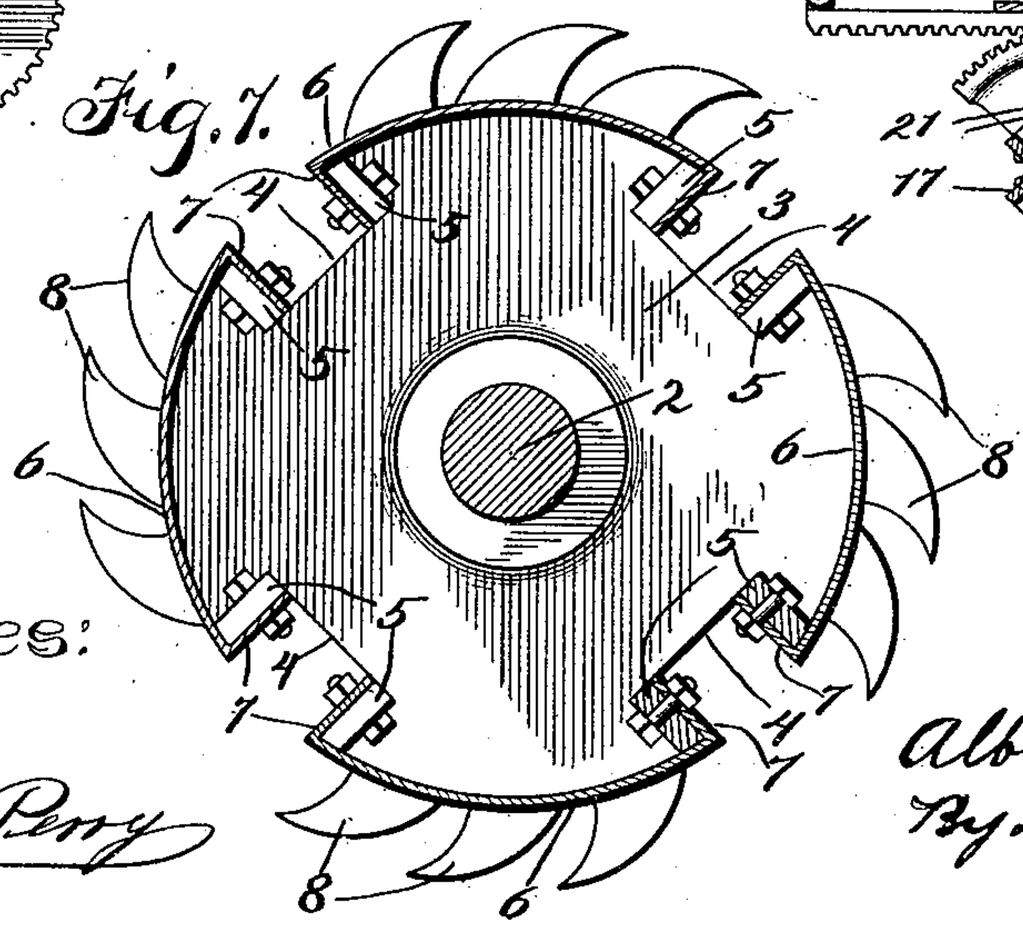


Fig. 7.



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(No Model.) 3 Sheets—Sheet 3.

Fig. 8.

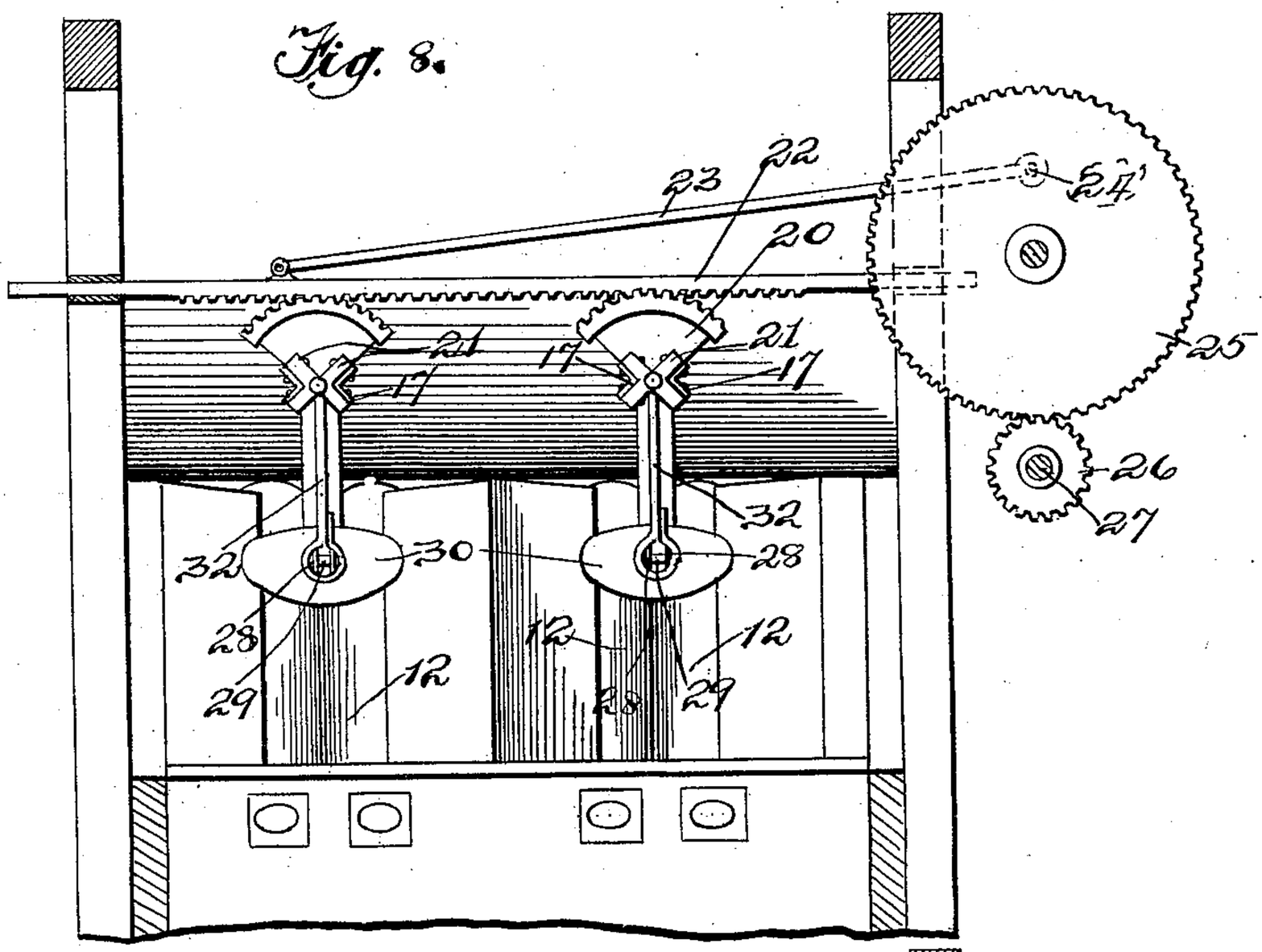
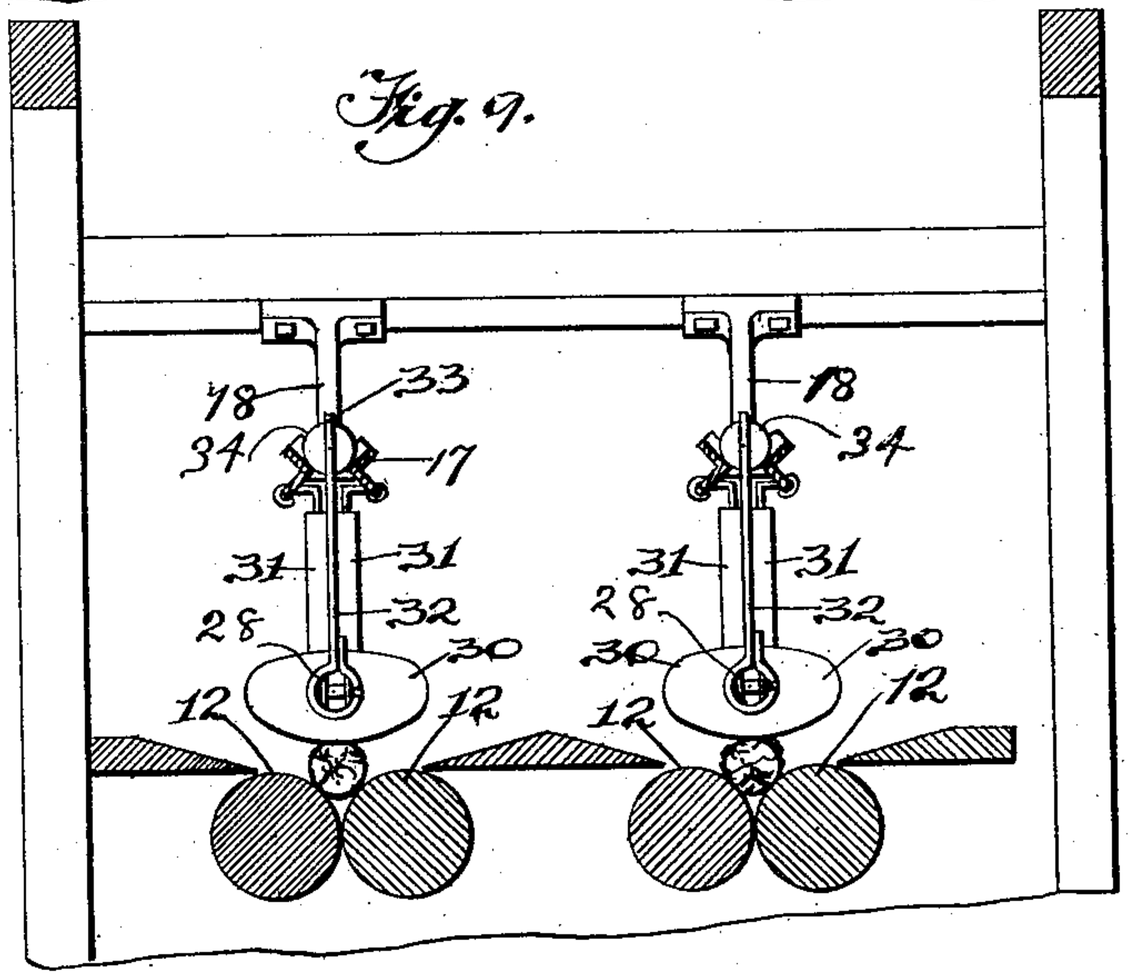


Fig. 9.



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UNITED STATES PATENT OFFICE.

ALBERT VAN NESS, OF CHICAGO, ILLINOIS, ASSIGNOR TO CORN KING HUSKER COMPANY, OF ROCHESTER, INDIANA, A CORPORATION OF INDIANA.

CORN HUSKING AND SHREDDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 712,982, dated November 4, 1902.

Application filed August 26, 1901. Serial No. 73,369. (No model.)

To all whom it may concern:

Be it known that I, ALBERT VAN NESS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Corn Husking and Shredding Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which similar letters of reference in the different figures indicate like parts.

My invention relates to corn husking and shredding machines; and my object is to so construct said device that the building cost thereof, and particularly that of the cylinder, may be greatly reduced, while the means employed for acting upon the ears of corn and causing them to be brought into positive contact with the husking-rolls may be simplified and rendered more effectual, at the same time eliminating the chances for clogging.

To these ends my invention consists in the combination of elements hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a longitudinal vertical sectional view of a portion of a corn husking and shredding machine embodying the features of my invention. Fig. 2 is an enlarged side view in detail of the presser-foot device for pressing the ears against the husking-rolls. Fig. 3 is an end view thereof. Fig. 4 is an enlarged perspective view in detail of a portion of one of my improved cylinder-sections. Fig. 5 is an enlarged perspective view in detail of a portion of one of the end plates or cylinder-heads for supporting the sheet-metal cylinder-sections. Fig. 6 is a detailed view of the gear and rack-and-pinion mechanism for oscillating the presser-foot. Fig. 7 is a transverse vertical sectional view of my improved cylinder. Fig. 8 is a rear end elevation, or rather a vertical sectional view, of the machine, taken upon the line 8 8, Fig. 1, viewed in the direction of the arrows there shown; and Fig. 9 is a sectional view taken upon the line 9 9, Fig. 1, viewed in the direction of the arrows there shown.

Referring to the drawings, 1 represents the frame of my improved machine supported in suitable bearings, in which is a cylinder-shaft 2, upon which is mounted a cylinder consisting of end plates or heads 3, keyed or otherwise rigidly attached to said shaft. Each of said end plates is provided with a series of notches 4, as shown in Figs. 1, 5, and 7, at the sides of which are formed inturned flanges or lugs 5. A series of sheet-metal cylinder-sections 6, representing arcs of circles corresponding to the spaces upon said disks between the notches, constitute the cylinder proper, each of said sections being provided with inturned flanges 7, which are bolted, as shown, to the lugs 5. The teeth 8 of the cylinder are made integral therewith, being formed or cut by means of a die from the body of the sheet-metal sections 6 and then turned outwardly in planes at right angles to the axis of the cylinder. This construction enables a cylinder to be produced of great lightness, strength, and simplicity, while reducing the cost to a minimum. Moreover, the sections, which are intended to be interchangeable, may be easily and cheaply replaced should injury result thereto.

In front of the cylinder and parallel therewith and supported in suitable bearings are the usual snapping-rolls 9 and 10, which are held in normal contact with each other by means of springs 11 in the customary way.

Inclined husking-rolls 12 of the usual construction are supported in bearings formed in cross-bars 13 13 of the framework. Said husking-rolls are provided with the usual beveled pinions 14, which are driven by means of beveled gears 15 upon the shaft 16.

Parallel bars 17 17, Figs. 1, 3, 6, 8, and 9, preferably made from angle-iron, are provided with suitable journals, the ends of which are supported in cross-bars 18 19, Fig. 1, and are arranged above and parallel to the husking-rolls 12. A gear-toothed segment 20 is bolted by means of flanges 21, Figs. 1, 6, and 8, to the angle-bars 17, said flanges being made integral with said segmental gear. A horizontally-arranged rack 22, adapted to slide in suitable guides, is in engagement with the teeth of said segmental gear and is connected by means of a pitman 23 to a wrist-pin 24 upon a gear-wheel 25, driven by means

of a pinion 26 upon a shaft 27, which is in turn geared, as indicated in dotted lines, to the shaft 16. This construction causes the bars 17, the axis of which is in a vertical plane between the husking-rolls, to oscillate in the manner and for the purpose hereinafter described.

Parallel downwardly-inclined spring-wires 28 28, Figs. 1, 2, 3, 8, and 9, have their upper ends rigidly attached to the bars 17, while their lower ends are bent around a cross bar or pin 29, which is passed horizontally through a shoe 30, preferably formed from or covered with sheet metal. Said wires 28 are inclosed within a hollow sheet-metal casing 31, having a projecting triangular-shaped flange or web 32, a portion 33 of which extends upwardly between the bars 17. A ball or block 34 of a width or diameter greater than the space between the bars 17 is riveted or otherwise permanently attached to said portion 33 and is located above said bars 17, thereby forming a stop to limit the downward movement of the shoe 30, while permitting the latter to rise freely against the pressure of the springs 28.

The shoe 30 is extended laterally in opposite directions from the casing 31 and is curved upwardly toward the upper ends of the husking-rolls, as clearly shown in the drawings. The bars 17 form, in effect, a rock-shaft, which, being actuated by the rack 22 and segmented gear 20, causes the shoe 30 to oscillate above the husking-rolls, and as the ears of corn pass downwardly upon the latter they are brought into contact with said shoe, which, being controlled by the springs 28, forms a yielding presser-foot, which not only serves to press the ear against the rolls, but to rotate it as well, thereby causing the husks to be grasped by the rolls and insuring the desired action thereon. Moreover, it is obvious that this device serves to prevent the loose ears from sliding over each other, and thereby escaping without being husked, since it would be impossible for the ears to pass downwardly without moving beneath the presser-foot.

By means of my improved presser-foot I am not only enabled to secure all the advantage of the yielding action of the springs 28 in conjunction with an oscillating movement, but to prevent clogging as well, inasmuch as the shield 31 protects said springs, so that nothing can become entangled therewith.

It is obvious that a single flat spring might be employed in lieu of the two round springs shown; but I have shown the latter as a somewhat cheaper and preferable construction. It is obvious also that various other well-known means might be employed for oscillating the bars 17, which in effect forms, as stated, and might be termed a "rock-shaft," inasmuch as a single bar or shaft might be employed, having a longitudinal slot formed therein for the reception of the flange extension 33.

Having thus described my invention, I claim—

1. In a machine of the class described, the combination with suitable feed-rolls, of independent interchangeable cylinder-sections each formed from a single piece of sheet metal, said sections having integral shredding-teeth cut therefrom, which teeth are formed up in planes at right angles to the axis of the cylinder, integral strengthening-flanges turned inwardly from the periphery of the cylinder, and a suitable framework for mounting said sections upon the cylinder-shaft, substantially as described.

2. In a machine of the class described, the combination with suitable feed or snapping rolls, of a shredding-cylinder consisting of circular heads or end plates, curved sheet-metal cylinder-sections having inturned flanges upon their respective edges, cylinder-teeth formed from and integral with said cylinder-sections, and means for removably securing said sections to said cylinder-heads, substantially as described.

3. In a machine of the class described, the combination of inclined husking-rolls arranged parallel to each other, a rock-shaft above said rolls and parallel therewith in a plane midway between the two, a presser-foot depending therefrom in operative proximity to said rolls, a downwardly and rearwardly inclined spring connecting said shaft and presser-foot, and means for oscillating the same transversely to said rolls; whereby the ears of corn may be pressed into operative contact with said rolls during the downward progress of said ears, substantially as described.

4. The combination of parallel downwardly-inclined husking-rolls of a corn husking and shredding machine, of a rock-shaft arranged above said rolls and lengthwise thereof, a depending spring-actuated oscillatory presser-foot arranged to oscillate with said rock-shaft, and means for actuating said rock-shaft to move said presser-foot back and forth across the vertical plane between the meeting faces of said rolls, substantially as described.

5. In a machine of the class described, the combination of inclined husking-rolls arranged parallel to each other, a rock-shaft above said rolls arranged in a vertical plane substantially parallel to that of the axes of said rolls, a downwardly-depending shield having a presser-foot upon its lower portion, and a spring inclosed within said shield for holding said presser-foot down with a yielding pressure, substantially as described.

6. In a machine of the class described, the combination of inclined husking-rolls arranged parallel to each other, a rock-shaft above said rolls arranged in a vertical plane substantially parallel to that of the axes of said rolls, a depending spring having its upper end attached to said rock-shaft, a trans-

versely-arranged presser-foot secured to the lower end of said spring and a shield for inclosing said spring, said shield having a web extending upwardly to said rock-shaft, substantially as set forth.

7. In a machine of the class described, the combination with inclined husking-rolls, of an inclined rock-shaft arranged above said rolls, a yielding laterally-extended presser-foot beneath said rock-shaft and supported thereby, a downwardly-inclined spring for actuating said presser-foot, a shield for protecting said spring, means for limiting the downward movement of said presser-foot and means for actuating said rock-shaft, substantially as described.

In testimony whereof I have signed this specification, in the presence of two subscribing witnesses, this 23d day of August, 1901.

ALBERT VAN NESS.

Witnesses:
D. H. FLETCHER,
ROBERT CATHERWOOD.