

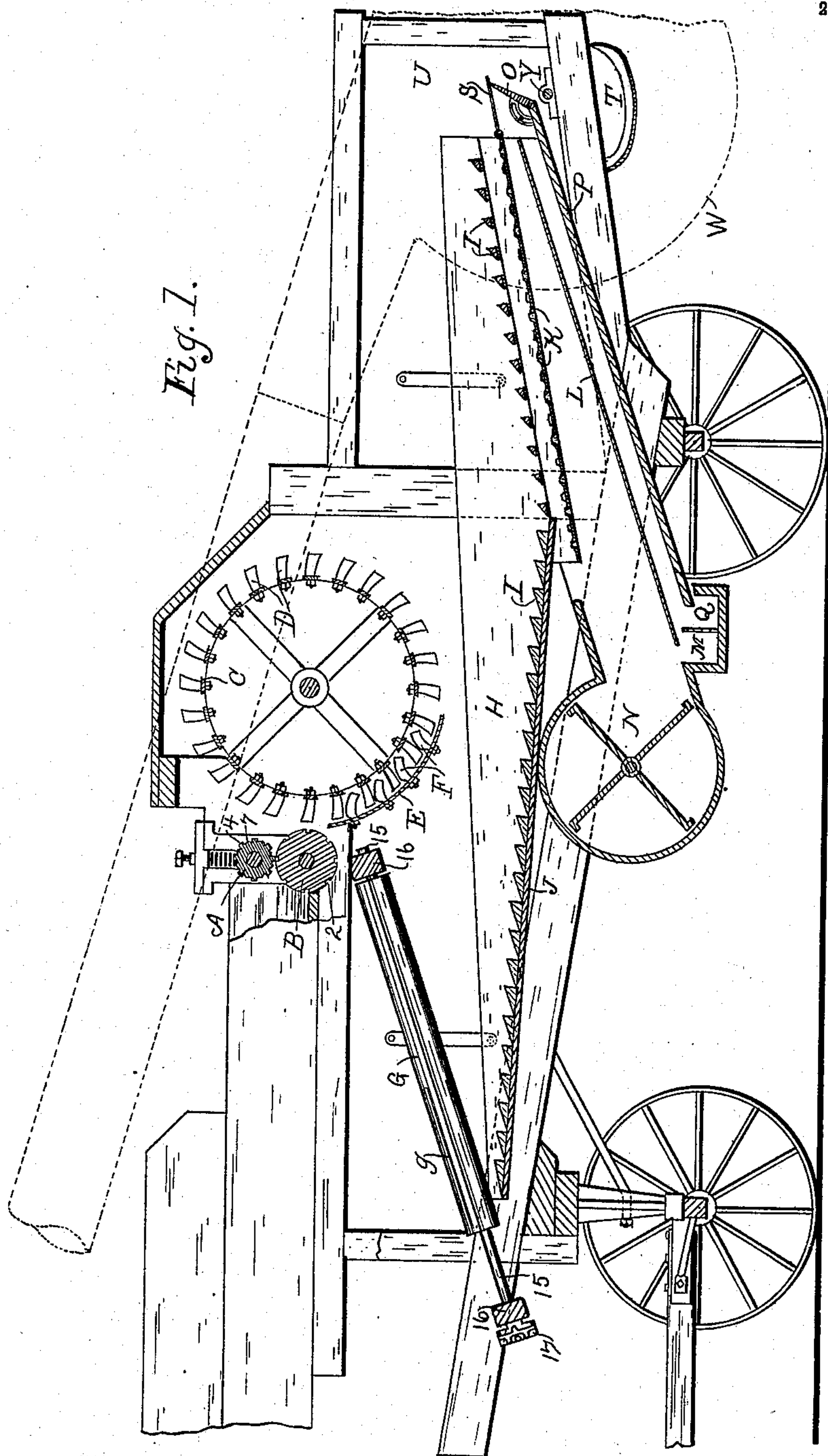
J. J. POWER.
CORN HUSKER AND SHREDDER.

APPLICATION FILED AUG. 13, 1903. RENEWED MAR. 2, 1907.

900,882.

Patented Oct. 13, 1908.

2 SHEETS—SHEET 1.



WITNESSES:

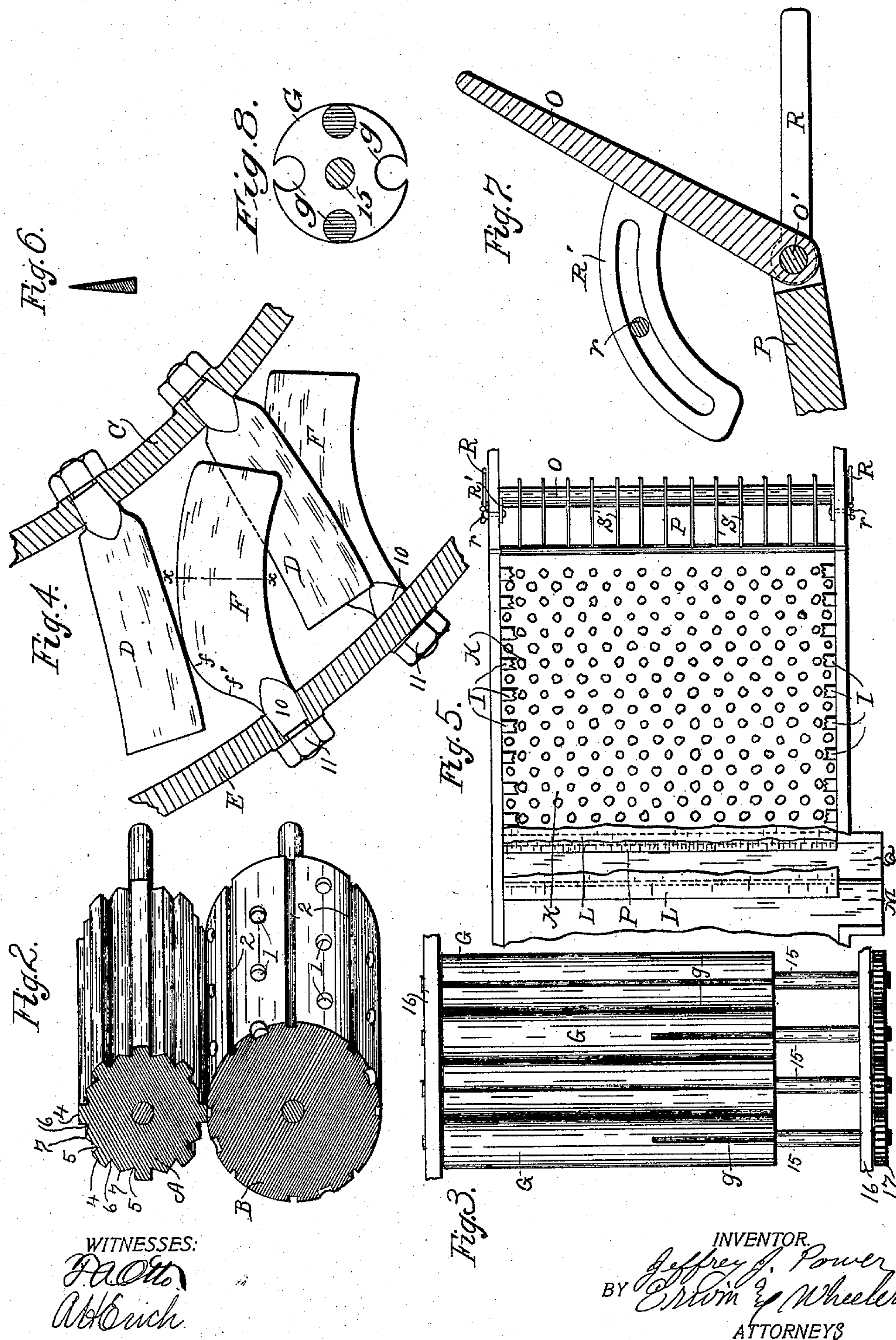
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Patented Oct. 13, 1908.
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UNITED STATES PATENT OFFICE.

JEFFREY J. POWER, OF MADISON, WISCONSIN, ASSIGNOR TO J. I. CASE THRESHING MACHINE COMPANY, OF RACINE, WISCONSIN, A CORPORATION.

CORN HUSKER AND SHREDDER.

No. 900,882.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed August 13, 1903, Serial No. 169,308. Renewed March 2, 1907. Serial No. 360,226.

To all whom it may concern:

Be it known that I, JEFFREY J. POWER, a citizen of the United States, residing at Madison, county of Dane and State of Wisconsin, have invented new and useful Improvements in Corn Huskers and Shredders, of which the following is a specification.

My invention relates to improvements in corn huskers and shredders.

The object of my invention is to provide a more efficient mechanism for separating the ears of corn from the husks, stalks, silk and leaves, and also to provide more efficient mechanism for shredding the stalks.

The accomplishment of the above objects involves improvements in construction and in arrangements of parts, as will be hereinafter specifically described and claimed.

In the following description reference is had to the accompanying drawings, in which

Figure 1 is a longitudinal sectional view of my improved machine. Fig. 2 is a detail view of a portion of the snapping rollers. Fig. 3 is a detail plan view of a number of husking rollers. Fig. 4 is a detail view of a portion of the shredding cylinder and concave. Fig. 5 is a plan view of the rear portion of the shoe, partly broken away to show the arrangement of the double floor. Fig. 6 is a sectional view of one of the concave knives, drawn on line $x-x$ of Fig. 4. Fig. 7 is a detail view of the mechanism for adjusting the tail-fingers. Fig. 8 is an enlarged view of the lower end of one of the husking rollers, showing the shaft in cross section.

Like parts are identified by the same reference characters throughout the several views.

Referring to Fig. 1 for the general arrangement and organization of the machine, A and B are the snapping rollers. C is the shredding cylinder provided with teeth D in operative relation to a concave E, provided with teeth F. G are the husking rollers, and H is a vibrating shoe arranged to receive the material from the cylinder and concave and also from between the husking rollers. N is a fan arranged to deliver a blast of air through the rear end of the shoe for the separation of the shredded material. These parts, so far as their general arrangement is concerned, form no part of the present invention.

Referring now more particularly to the improvements which I have incorporated, it will be observed, (Fig. 2) that the lower snapping roller is of a larger diameter than

the upper one, and is provided with rows of sockets 1, alternating with longitudinal channels 2.

The upper snapping roller A is formed with longitudinal ribs 4 having curved outer surfaces substantially in the arc of the outer circle of rotation, and intervening channels of greatest depth at 5 and 6 next to the ribs 4, and a central projection 7 triangular in cross section,—the sides of this projection forming an obtuse angle having its apex at a shorter radius than the outer surfaces of the ribs 4. This form of construction has been found very effective for snapping the ears from the stalks.

Instead of providing the concave with ordinary teeth, it will be observed that I have provided knives which are arranged to produce a shear cut through the stalks carried by the cylinder teeth; that these knives are secured to the concave by means of bolt shanks 10 and nuts 11, in the usual manner. The knives are, however, curved rearwardly from the point of attachment, and provided with cutting front edges curved in both directions from a crown f . Owing to the fact that the material carried by the cylinder, rubs forcibly against the sides of the concave knives, I have found that the knives employed for this purpose will wear sharp; the principal wear occurring near the shank end of the knife, to wit: from the crown f to the shank. I have therefore provided an abrupt curve f' for this portion of the knife. The material is forced outwardly toward the concave by the cylinder teeth D, and the bulk of it passes the portion f' of the concave knives. The peculiar construction of this portion of the knife produces a shear cut in the material which is very effective for shredding corn stalks.

Referring to the husking rollers, it will be observed (Fig. 3) that these rollers are mounted upon shafts 15 which are journaled in suitable supporting frame bars 16,—the shafts being driven by gear wheels 17 in the ordinary manner. Each of the rollers is preferably provided with longitudinal channels g in their lower ends, the sides of which are undercut cylindrically as shown, whereby the edges of the channels are made to wear sharp, and the lower ends of the rollers are sufficiently separated from the lower frame bars 16 to permit the husked ears of corn to drop between the roller shafts 15,

thus avoiding the necessity of passing the ears over the driving connections, or providing a lateral conveyer for the ears. Considerable difficulty has been experienced in machines heretofore constructed in providing housings for the gear wheels 17 which would not obstruct the passage of the ears over such wheels. But by providing for the discharge of the ears between the rollers and the frame bar 16 this difficulty is avoided.

The construction of the vibrating shoe H is best shown in Fig. 1. I are slats, triangular in cross section and arranged to perform the double function of a screen for the material and a conveyer whereby the material is discharged from the rear end of the machine. At the front of the shoe, these slats are arranged in a downwardly and rearwardly inclined plane with a floor J which prevents the passage of material between the slats. At the rear end however, the slats are arranged in a plane having an upward pitch toward the rear end of the shoe, and sufficient space is left between the slats for the smaller portions of material to drop upon a screen K. The heavier material which passes through the screen K drops upon an inclined floor L, whereby it is delivered to a trough M. The lighter portions of the material passing through the screen K are driven by an air blast from the fan N rearwardly between L and K and discharged over the rear end of the floor L, where a further separation is effected by a tail-shield O pivotally secured to a sub-floor P and projecting upwardly and rearwardly in the path of the material carried by the blast, whereby the heavier and larger portions of such material are obstructed and caused to fall upon the floor P,—the latter extending parallel with, and underneath the floor L and discharging into a trough Q at one side of the trough M. The tail-shield O is made adjustable by means of a lever R connected with a pivot rod O' carrying a segmental bracket R', whereby it is held in any desired position of adjustment by a set bolt r. S are tail-fingers pivotally connected with the rear end of the screen K. The material passing over the tail-fingers S, or over the tail-shield O is permitted to drop into a trough T which delivers it to a stacker of ordinary construction. (Not shown). For threshing the so-called Kafir corn, the use of two floors L and P in connection with the tail-fingers, is very important as the reduction in the force of the blast at the rear end of the floor L resulting from the expanded space and the obstruction produced by the tail-fingers and material caught thereby, permits the headings to drop upon the floor P. These headings would otherwise be carried into the fodder.

The troughs M and Q are arranged to discharge at the side of the machine and the material may be re-conveyed from the point

of discharge to the threshing cylinder by an ordinary elevator (not shown) or otherwise disposed of as desired.

At the rear of the tail-fingers, the machine frame is formed with a housing U at the bottom of which the trough T is located. The trough T is inclined laterally and discharges through an eye V into a casing W, from which it is thrown through a suitable stacker tube.

It is obvious that the details set forth may be varied without departure from the essentials of the invention.

Having thus described my invention what I claim as new, and desire to secure by Letters Patent is,—

1. In a machine of the described class, a snapping roller provided with a series of longitudinally extending ribs having substantially parallel sides and a series of intermediate ribs having sloping sides.

2. In a machine of the described class, a snapping roller provided with a series of longitudinal ribs having substantially parallel sides and a series of intermediate ribs having sloping sides meeting at an apex with the circle of rotation of the parallel sided ribs.

3. In a machine of the described class, the combination with snapping rollers; of a cylinder and concave arranged for interaction upon the stalks which pass between the snapping rollers; teeth mounted upon the cylinder, and knives mounted upon the concave and arranged for a shear cut through the material carried by the cylinder teeth,—the edges of said knives being curved backwardly in two directions and in different arcs from a point of original contact with the stalks and those portions of the knives adjacent to the outer ends of the cylinder teeth having more abrupt backward curves than the other portions.

4. In a machine of the described class, the combination with snapping rollers; of a cylinder and concave arranged for interaction upon the stalks which pass between the snapping rollers; teeth mounted upon the cylinder, and knives mounted upon the concave and arranged for a shear cut through the material carried by the cylinder teeth,—the edges of said knives being curved backwardly in two directions and in different arcs from a point of original contact with the stalks.

5. In a machine of the described class, a husking roller having channels in its lower ends formed with concave sides converging at the periphery of the roller.

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

JEFFREY J. POWER.

Witnesses:

W. W. COLLINS,

JOHN A. AYLWARD.