

(No Model.)

J. CARREY.
STALK CUTTER.

No. 569,856.

Patented Oct. 20, 1896.

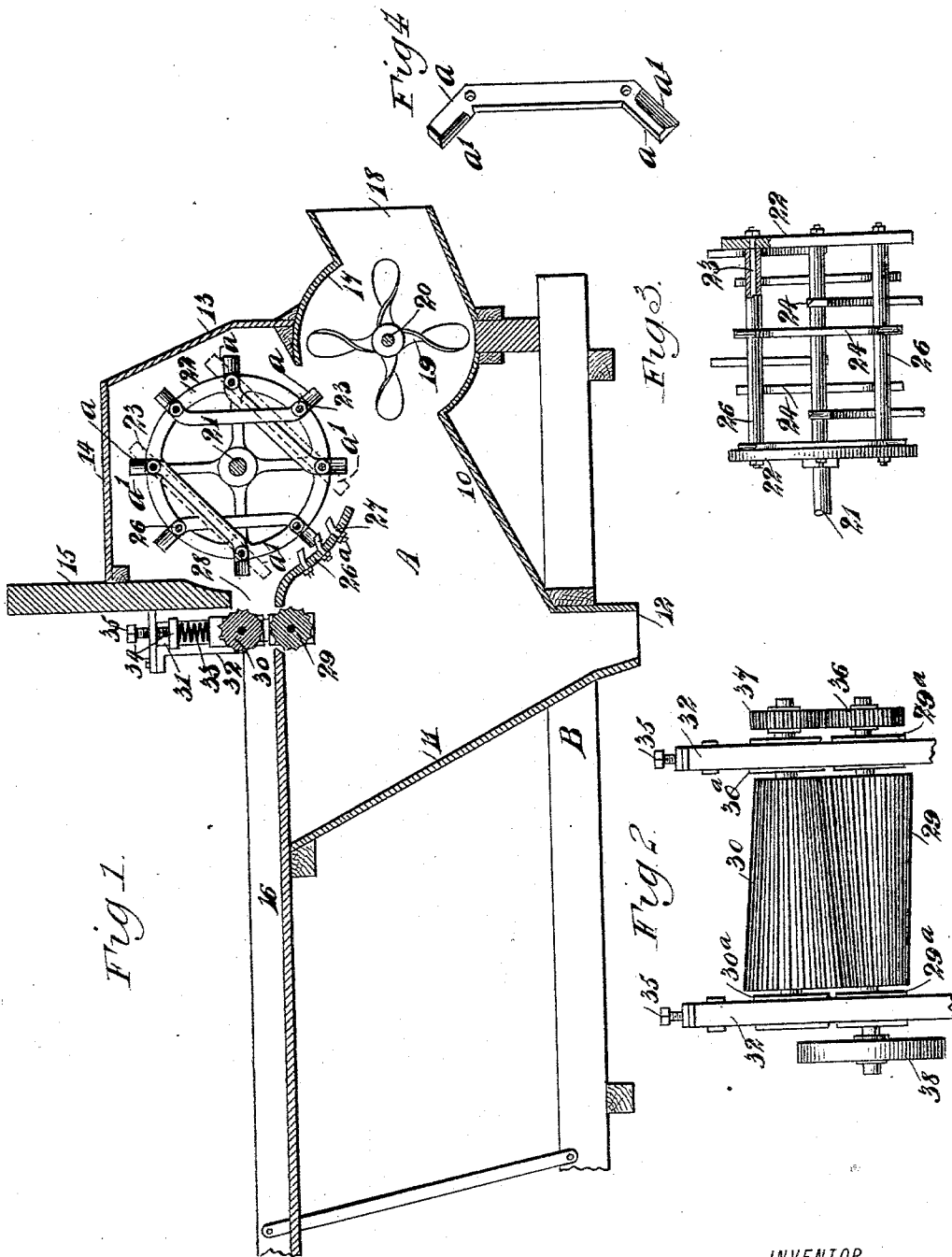


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

WITNESSES:

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...

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JOHN CARREY, OF DE SOTO, MISSOURI.

STALK-CUTTER.

SPECIFICATION forming part of Letters Patent No. 569,856, dated October 20, 1896.

Application filed January 11, 1896. Serial No. 575,150. (No model.)

To all whom it may concern:

Be it known that I, JOHN CARREY, of De Soto, in the county of Jefferson and State of Missouri, have invented a new and useful Improvement in Stalk-Cutters, of which the following is a full, clear, and exact description.

My invention relates to an improvement in cutters especially adapted for cornstalks; and the object of the invention is to so construct and combine the knives that the aforesaid knives will shred the stalks, and thereby render them in better condition for food and permitting the dust to be more readily removed therefrom.

A further object of the invention is to construct such a machine in a simple, durable, and economic manner and to provide for an even feed of the stalks to the knives.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal vertical section through the improved stalk-cutter. Fig. 2 is a front elevation, on an enlarged scale, of the feed-rollers. Fig. 3 is a side elevation of the knife-cylinder, illustrating the arrangement of the knives thereon; and Fig. 4 is a detail perspective view of one of the shredding-knives detached from its support.

In carrying out the invention the body A of the machine is preferably provided with a bottom 10, inclined in direction of the front end 11, which end is inclined downwardly and inwardly in direction of the bottom, and where the bottom 10 would meet the front end 11 a chute 12 is located to deliver the shredded material. The back end 13 may be of any desired construction, and the rear top board 14 is preferably made to meet a front partition 15, which extends downward in substantially close proximity to a table 16, and the said table constitutes the front upper portion of the body. The sides of the body may be given any desired formation, being preferably flat, and where the rear end would connect with the bottom 10 of the

body a fan-casing 17 is constructed, communicating directly with the interior of the body and having a rear outlet 18. The fan 19 employed is preferably provided with twisted blades, as shown in Fig. 1, and is mounted upon a suitable shaft 20, driven in any suitable or approved manner from the cylinder-shaft 21, which is journaled in the upper portion of the body at the rear of the table 16 and the front partition 15. This cylinder consists, preferably, of two heads 22, placed a suitable distance apart, being firmly attached to a shaft 21, as illustrated in Fig. 3. These heads may be provided with a spider center or they may be solid, as desired, and the heads are connected at or near their peripheries by rods 23, any desired number of rods being employed, and the rods are placed, preferably, equidistant apart.

A number of knives 24 is arranged in sets, each set being supported by two rods, and the knives of one set are made to cross the knives of an adjacent set. The ends of the knives project beyond the periphery of the heads of the cylinder. These knives may be curved, but ordinarily they are constructed as shown in the drawings, in which their body portions are straight and their ends are at an angle to the body portions; but if desired the knives may be made straight throughout their length, as shown in dotted lines in Fig. 1. The cutting edges of the knives are at the extremities of the same, and are at opposite sides of the aforesaid extremities, the cutting edge at one end of a knife being designated as *a* and the cutting edge at the opposite end of the knife being designated as *a'*, as shown in Fig. 4. The knives are suitably spaced, and are held in position upon their supporting-rods by collars or washers 26 of necessary length, the said collars or washers being secured to the said rods, one or more at each side of a knife, in any suitable or approved manner.

The lower forward portion of the cylinder is adapted to revolve over a concave 26^a, and the concave is provided with teeth 27, preferably arranged in transverse rows, as shown in Fig. 1, and the rows of teeth are so disposed that the cutting edges of the knives in the rotation of the cylinder will pass between the teeth of the concave, and the teeth of the

concave are preferably given a downward and rearward inclination in direction of the cylinder, their upper longitudinal edges being cutting edges.

5 An opening 28 is made in the body between the concave and the lower end of the vertical front partition 15; and between this opening 28 and the rear end of the table 16 two
10 feed-rollers 29 and 30 are journaled in suitable bearings 29^a and 30^a, preferably introduced into vertical slots 31, made in uprights 32, located at the sides of the machine. The bearings 30^a of the upper roller are normally
15 pressed downward by springs 33, as shown in Fig. 1, the said springs having bearing at their upper ends upon blocks 34, and set-screws 35, located in the tops of the uprights, have a bearing upon the said blocks. Thus
20 a greater or a less degree of tension may be applied to the feed-rolls.

The feed-rolls are made conical and are reversely placed, as shown in Fig. 2, the smaller end of one roll being over the larger end of the other roll, and the peripheral surfaces of
25 these rolls are preferably ribbed or corrugated, as is also shown in Fig. 2.

The shaft of the lower roll 29 is provided at one end with a gear 36, which meshes with a gear 37 on the corresponding end of the
30 shaft of the upper roll, the driving-pulley 38 being preferably placed on the shaft of the lower roll, and may be belted in any suitable manner to the cylinder-shaft 21, or the rolls may be otherwise driven. In the use of the
35 conical rolls the stalks are not only very evenly distributed throughout the length of the rolls but the said rolls serve to partially crush the stalks, enabling the knives as they revolve to more quickly, cleanly, and effectively
40 shred the stalks, as the knives engage with the stalks with a slicing action.

During the operation of the machine the fan 19, which is a suction-fan, will draw all dirt from the shredded material as it passes
45 from the concave to the exit-chute 12 at the bottom of the machine.

The body of the machine is supported upon a suitable base-frame B.

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

1. In a machine for cutting cornstalks and like material, a rotatable cylinder, knives arranged in series on said cylinder and consisting of bars extending from one point on the peripheral face of the cylinder to another
55 and having at their opposite ends, portions projecting beyond the cylinder and having at the sides of such projecting portions cutting edges, substantially as and for the purpose specified.

2. In a machine for shredding cornstalks and like material, a shredding-cylinder the same consisting of two heads rods connect-
65 ing the said heads and knives arranged in series each knife being supported by two

rods and consisting of bars extending at their opposite ends beyond the periphery of the cylinder proper, the outer edges of the knives being cutting edges and means substantially
70 as described for spacing the knives on their supporting-rods as and for the purpose specified.

3. A cylinder comprising heads and rods connecting the same, knives arranged in series, each knife having the support of two
75 rods, the ends of the knives being carried beyond the periphery of the cylinder, each knife being provided with a cutting edge at opposite sides of its extended portions, as
80 and for the purpose specified.

4. A cylinder, the same comprising heads and rods connecting the same, knives arranged in series on the said cylinder, each knife being supported by two of the said
85 rods, the knives of one set being made to cross the knives of an adjoining set, and each knife being made to extend beyond the peripheral surface of the cylinder, the cutting edges of the said knives being formed at opposite
90 sides of their extremities, as and for the purpose specified.

5. In a machine for shredding cornstalks or like material, the combination, with a concave provided with teeth, of a cylinder
95 mounted to revolve over the said concave and comprising heads, a shaft to which the heads are secured, supporting-rods extending from head to head and located near their peripheries, and knives arranged in series,
100 each knife being supported by two rods, and each knife having its ends extending through the peripheral portions of the heads, the outer edges of the knives being cutting edges, the said knives being furthermore arranged
105 to pass between the rows of teeth on the concave, and spacing devices for the said knives, substantially as described.

6. In a machine for shredding cornstalks and like material, the combination, with a casing having a receiving-opening, a feed device located at the said receiving-opening, comprising conical rolls held to revolve close to each other, the rolls being oppositely disposed and their outer surfaces roughened,
115 and a suction-fan located at the rear lower portion of the casing, communicating with an exit-opening at that point, of a concave located at the rear of the said feed-rolls, and a cylinder mounted to revolve above the said
120 concave and provided with slicing-knives, the said knives being arranged in series and each knife extending beyond substantially opposite sides of the cylinder, the extending portion of the knives being sharpened, where-
125 by said knives have a slicing cut, as and for the purpose specified.

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Witnesses:

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