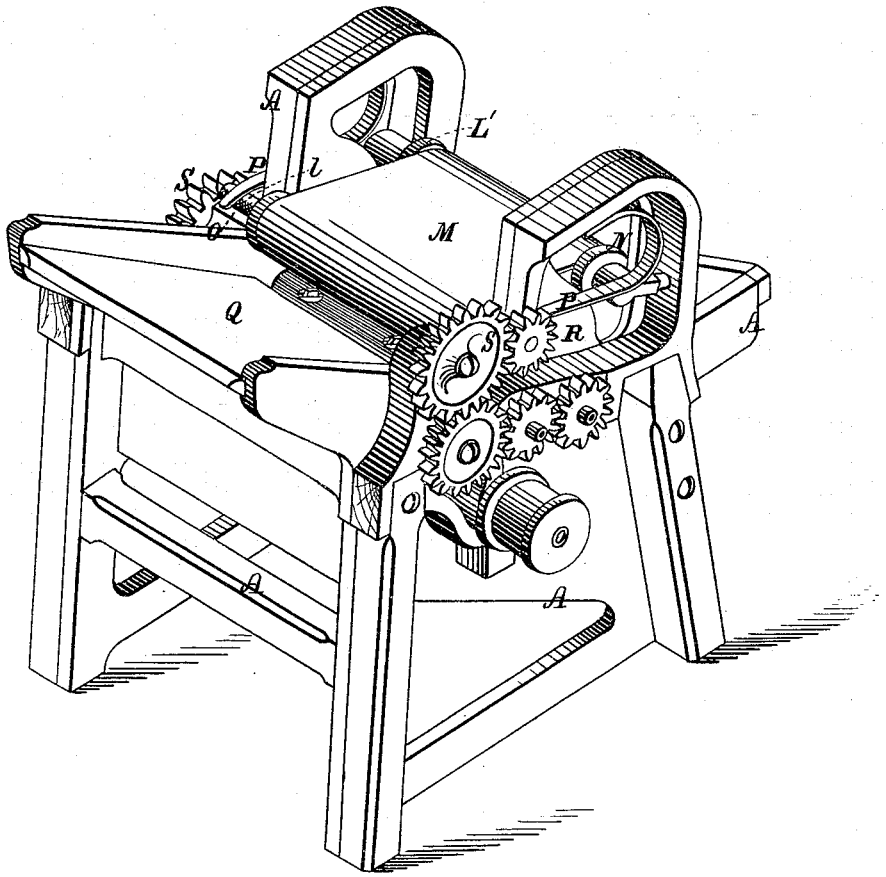
2 Sheets—Sheet 1.

F. M. WIDERMAN.

CORN-HUSKING MACHINE.

No. 185,379. Patented Dec. 12, 1876.

Fig. 1.



WITNESSES:

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Alexander Scott

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2 Sheets—Sheet 2.

F. M. WIDERMAN.

CORN-HUSKING MACHINE.

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Fig. 2.

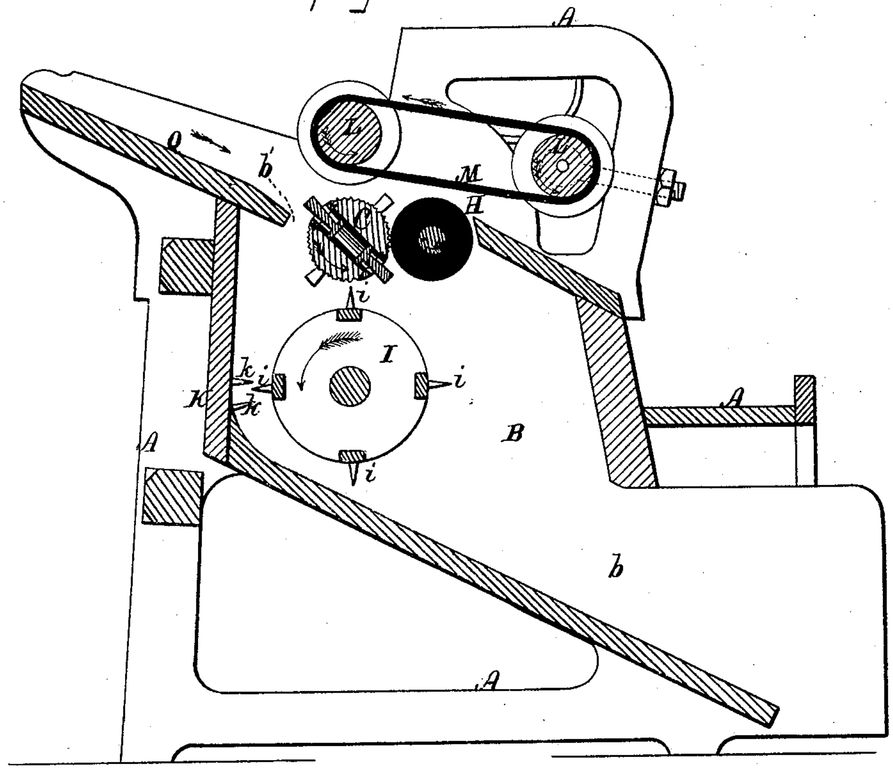


Fig. 3.

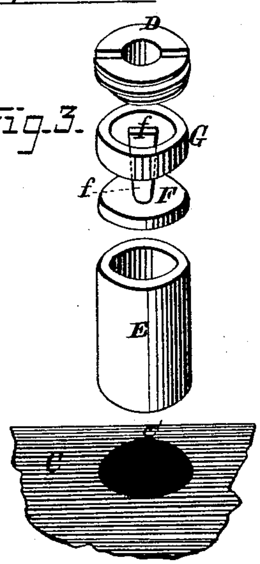
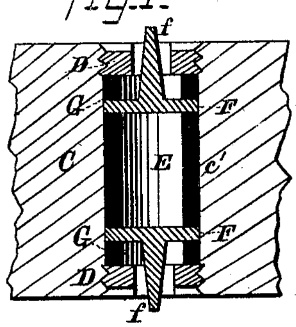


Fig. 4.



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THE GRAPHIC CO. N.Y.

UNITED STATES PATENT OFFICE.

FRANCIS M. WIDERMAN, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF AND CHARLES RIDGELY GOODWIN, OF SAME PLACE.

IMPROVEMENT IN CORN-HUSKING MACHINES.

Specification forming part of Letters Patent No. **185,379**, dated December 12, 1876; application filed October 7, 1876.

To all whom it may concern:

Be it known that I, FRANCIS M. WIDERMAN, of Baltimore, in the county of Baltimore, and in the State of Maryland, have invented certain new and useful Improvements in Combined Corn-Husker and Husk-Hackling Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved machine as arranged for use. Fig. 2 is a vertical section of the same upon a line passing centrally from front to rear. Fig. 3 is a perspective view of a picking-tooth, with its holder and springs, separated from each other and from the stripping-roller; and Fig. 4 is a longitudinal section of said roller, showing two teeth in position for use.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to render practicable the removal of husks from corn by machinery without injury to the grain; and also to cause said husks to be finely divided by the operation named, so as to render them fit for use as filling for mattresses, cushions, &c. To which end it consists, principally, in a picking-roller, provided upon or within its periphery with radial teeth, which are capable of yielding in the direction of their length, substantially as and for the purpose set forth. It consists, further, in the construction of the picking-teeth, and in the means employed for securing the same within the stripping-roller, substantially as and for the purpose hereinafter specified. It consists, further, in the means employed for operating the feed-belt roller, whereby the latter increases the speed of its rotation when rising to permit an ear of corn to pass into the machine, substantially as and for the purpose hereinafter shown and described.

In the annexed drawings, A represents the frame or casing of my machine, constructed in the manner shown, so as to form interiorly a space, B, which has rearward and downward inclining upper and lower sides, is provided at its rear lower side with a discharge-opening, *b*, and at its upper side, slightly in advance of its longitudinal center, with a second opening, *b'*, each of which extends between the sides of said frame. Journaled within the forward portion of the upper opening *b'* is a metal roller, C, which nearly fills one-half said space from front to rear, and upon its periphery is provided with longitudinal grooves or flutes *c*. Passing radially through the roller C at suitable points are round openings *c'*, each of which is provided with an internal screw-thread at and for a short distance from each end, into which threaded portion is fitted a screw-washer, D, that is provided with a round aperture at its center. Within each opening *c'* is placed a correspondingly-shaped cylinder or tube of rubber, E, which loosely fills the same, and has about one-half its length. Upon each end of said rubber tube is placed a disk of metal, F, that loosely fits the opening, and is provided with a central spur or tooth, *f*, which projects radially outward, and is flattened in the form of a chisel, its edge being in a line, circumferentially, with the roller C.

Upon the outer side of the disk F is placed a rubber ring, G, after which the washer D is screwed to place, as shown in Fig. 4. The opening in said washer being considerably larger than the tooth *f*, the latter is permitted to yield laterally whenever too much strain is thrown upon it, such yielding motion being accomplished by the compression of the end of the rubber tube E upon the side to which the outer end of said tooth is moved.

Longitudinally, an equal freedom of inward motion is permitted to the tooth *f* by the compressible nature of its support E, so that by lessening or increasing the density of the latter any required degree of lateral and longitudinal rigidity can be secured for said tooth, for the purpose of enabling the same to bear with just the necessary amount of pressure upon the corn-husks to remove the latter without injury to the corn or breakage of said teeth.

Immediately in rear of the roller C is journaled a second roller, H, which corresponds

therewith in size, is composed of rubber, and has its periphery in contact with the periphery of the former. Directly below the roller C is journaled a skeleton or open cylinder, I, which has about twice the diameter of the former, and at suitable points upon its periphery is provided with spurs *i*, which project radially outward therefrom. At the rear lower side of said hackling-cylinder is provided a concave, K, which has radially-inward projecting teeth *k*, that at their outer ends approach nearly to, but do not reach, the circle described by the ends of said teeth *i*.

At a short distance above the sripping-roller C is journaled a belt-roller, L, and at a point in rear of and somewhat lower down than the latter is journaled a second similar roller, L′, around which latter and said roller L is passed an endless belt or apron, M, that is constructed of rubber.

The bearings N of the rear belt-roller L′ are made adjustable toward or from the front roller L, for the purpose of giving the necessary trusion to the belt M, while the front roller L has bearings O, which are open upon their upper sides so as to permit said roller to rise, for the purpose hereinafter explained. From the rear side of said bearings O the frame A is extended upward and rearward, as shown in Figs. 1 and 2, and forms continuations of said bearings to receive the journals *l* of said roller L, when the latter rises upward.

A spring, P, secured to the frame A and resting upon the upper side of each journal *l*, bears the latter downward with a yielding pressure.

The feed-table, Q, at the upper front side of the frame A, has such a general rearward and downward inclination as to cause corn resting thereon to be easily moved into contact with the stripping-roller, but not sufficient to cause said corn to move by its own weight, or in consequence of the jarring of the machine, while at its inner edge said table inclines downward more sharply, for the purpose of causing said corn, after reaching such point, to pass quickly against said stripping-roller.

The cylinder and roller being geared together so as to be driven in the directions indicated by the arrows, the machine is complete, and operates as follows: Ears of corn are placed upon the feed-table Q, and moved forward until they will fall into contact with the stripping-roller C, which roller engages with the husks and carries each ear rearward between its upper side and the lower side of the belt M. Upon reaching the rubber roller H the ear of corn is revolved by the combined action of the same, the belt M, and the stripping-roller C, and its husks are caught between and removed by said rollers, the teeth *f* and the flutes *e* engaging with and pulling said husks from the ear.

Having been stripped of its husks, the ear of corn passes rearward and falls from the rear upper side of the machine, while said husks are carried downward upon the hackling-cylinder I, which, revolving at its periphery in a reverse direction from that of the lower side of the stripping-roller, carries said husks forward, and at the same time partially hackles the latter between its teeth *i* and the teeth *f* of said stripping-roller.

The husks are now carried between the teeth *i* of the hackling-cylinder I, and the teeth *k* of the concave K, which complete the subdivision of said husks, which latter are then moved rearward and pass from the machine through the opening *b*.

In consequence of the relative arrangement of the teeth *i* and *k*, the husks are finally subdivided without the breakage and injury which would occur if said teeth passed between each other. At the instant when an ear of corn passes beneath the forward end of the belt or apron M, the roller L rises until sufficient space is left between said belt and the picking-roller, and in thus rising the portion of the periphery of its pinion R which is in engagement with the driving-gear S is carried upward, while the engaging portion of the periphery of said gear S is moving downward, the result being that, at the time named, the speed of said roller L and the belt M is increased, and the ear of corn is caused to pass more quickly into the machine.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. A picking-roller for corn-husking machines, provided with radial teeth which are arranged within its periphery, and are capable of yielding to external pressure inwardly in the direction of their length, substantially as and for the purpose specified.

2. In combination with the roller C, provided with the opening *c′*, the tooth *f*, secured to and projecting outward from the disk F, the rubber tube E, the rubber ring G′, and the washer D, substantially as and for the purpose shown.

3. In combination with the gear-wheel S, pivoted upon a fixed bearing, the roller L, arranged to rise and fall within its bearings, and provided with a pinion, R, which meshes with and receives motion from said gear-wheel, said parts being relatively arranged, as shown, with said gear-wheel and the body of said belt upon the same side of said pinion, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of September, 1876.

FRANCIS M. WIDERMAN.

Witnesses:
GEO. S. PRINDLE,
WILLIAM FITCH.