(No Model.)

G. W. GOODALE.

POTATO GRATER.

No. 352,536. Patented Nov. 16, 1886.

Fig. 1.

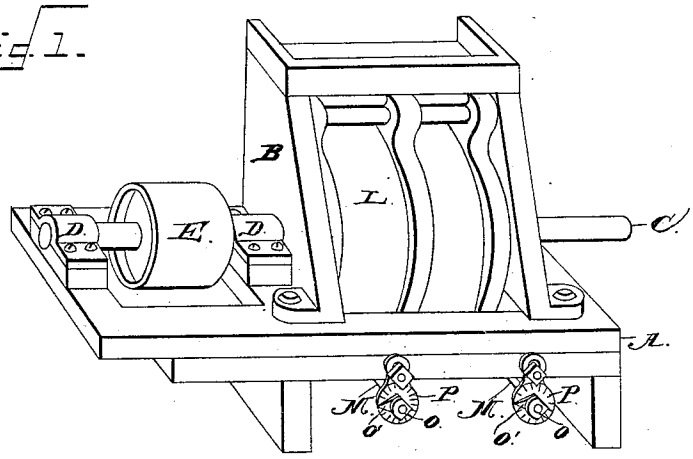


Fig. 2.

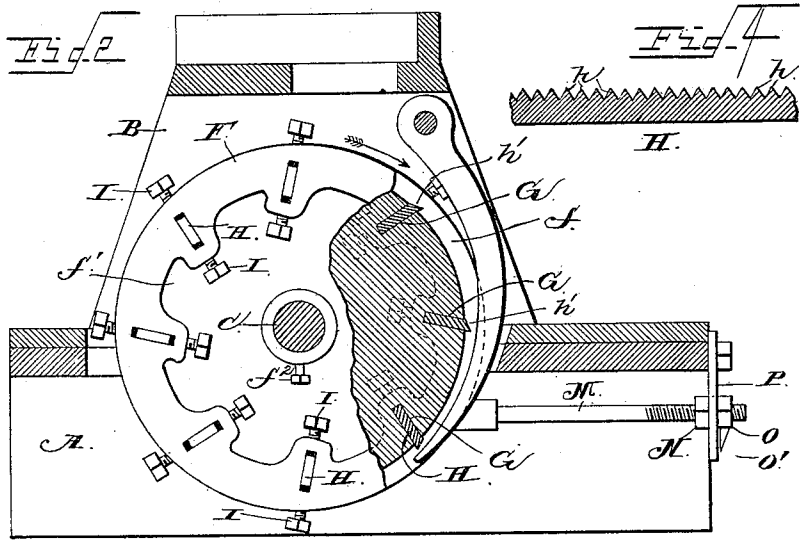
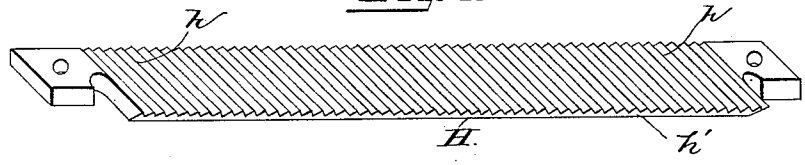


Fig. 4.

Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON GOODALE, OF CONCORD, MASSACHUSETTS.

POTATO-GRATER.

SPECIFICATION forming part of Letters Patent No. 352,536, dated November 16, 1886.

Application filed March 6, 1886. Serial No. 194,307. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON GOODALE, a citizen of the United States, residing at Concord, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Potato-Graters, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in potato-graters, designed particularly for extracting the starch from the potatoes; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a detail perspective view of one of the knives. Fig. 4 is a detail longitudinal sectional view of a portion of the same.

A represents a rectangular frame, on which is secured a case or box, B, of suitable size and construction, the said case or box being open on its front and rear sides, and provided on its upper side with a hopper or opening, through which the potatoes may be fed to the machine.

C represents a longitudinal shaft, which is journaled in bearings D, that are secured on the frame, and the said shaft has near one end a pulley, E, and that portion of the shaft in the frame or box B is provided with a roller, F. This roller is preferably made of wood, but may be made of any other suitable material, and is provided on its ends with flanges *f*. Rabbets *f'* are made in the ends of the said roller, and the latter is secured to the shaft and caused to rotate therewith by means of set-screws f^2.

In the periphery of the roller F, and extending through the end flanges thereof, are made longitudinal parallel tangential grooves G, in which are inserted grating-knives H. These knives consist of a suitably-shaped bar or body provided with reduced ends that fit in the openings in the flanges of the roller, and the said flanges are provided with bearing-screws I, which bear upon opposite sides of the reduced ends of the knives H, so that the latter may be adjusted in the roller or cylinder in order to cause their outer or cutting-edges to project beyond the face of the roller for a suitable distance and to take up the wear on the knives. These knives are provided throughout their length with transverse V-shaped parallel teeth *h*. The said teeth are provided on the bottom side of the knife-body at an angle to the outer edge thereof.

L represents a concave, the length of which corresponds to the distance between the flanges of the roller, and the said concave is pivoted at its upper end in the sides of the box B, and is arranged tangentially with relation to the face of the roller, the lower end of the said concave being caused to nearly come in contact with the face of the roller by adjusting-bolts M, which extend out through one side of the frame A. The outer ends of these bolts are screw-threaded, and are provided on the inner side of the frame A with nuts N, and on the outer side of the said frame A with nuts O, which are provided with indicating-points O', which sweep around graduated scales P, that are secured on the outer side of the frame A. By turning the nuts N and O the bolts M are moved lengthwise, and thereby caused to adjust the concave with relation to the face of the roller, and by means of the points O' on the nuts O and the graduated indicating-scales P the adjustment of the concave with relation to the roller may be readily ascertained at a glance.

The potatoes to be grated are fed through the opening or hopper between the concave and the roller, and the latter is located in the direction indicated by the arrow in Fig. 2, which cause the teeth of the grating-knives to thoroughly disintegrate the potatoes and extract all the juice and starch therefrom. The peculiar shape of the teeth of the knives hereinbefore described I have found by practice is peculiarly adapted for breaking the granules of the potatoes and extracting all the starch therefrom and reducing the potatoes to a fine pulp.

I am aware that it is not new to provide a reciprocating tobacco-cutter which comprises a straight flat blade having a series of projecting ribs on one of its faces, the said ribs being made square in cross-section and projecting beyond the beveled edge of the blade.

I am also aware of Patents Nos. 111,913 and 94,540, which show that it is old to employ an adjustable concave and a rotating cylinder provided in its periphery with a series of grooves, in which are fitted the cutting-blades, one edge of each of these blades being beveled on opposite sides, so that a sharpened edge is formed at the middle of the blade.

I am also aware of Patent No. 26,711, for vegetable-cutters, which employs a rotating cylinder, in which is secured a series of cutting-blades, which are arranged tangentially to the axis of the cylinder and have inclined or beveled cutting-edges.

My improvement differs from machines of this class heretofore constructed, in that I provide the grating-knives with a beveled edge, *h'*, and the V-shaped parallel teeth arranged transversely of one of the faces thereof, and each of these grater-blades is fitted in a tangential groove formed in the periphery of a cylinder, so that its beveled edge *h'* will project beyond the periphery of the cylinder, and is inclined in the reverse direction to the plane of rotation of the cylinder, whereby the ends of the V-shaped teeth on the said blades will act very efficiently upon the substance to be grated. I have found by experiment that the peculiar form of the blade, with a beveled edge, *h'*, and the transverse parallel V-shaped teeth on one side, and arranging the blade tangentially to the cylinder, with its beveled edge inclining in reverse direction to the plane of rotation of said cylinder, is exceedingly efficacious in grating potatoes, and results in extracting all the starchy matters therefrom.

I wish it understood that no claim is laid by me to what is shown in German Patent No. 8,401. The machine shown in this patent is designed for an entirely distinct purpose from my invention, and employs a cutting-knife (not a grating-knife in any sense) having teeth provided along the outer side edge. The teeth do not project from one side of the knife, and extend transversely across the same at right angles to the outer edges of the knife, so as to grate the material fed to the machine.

Having thus described my invention, I claim—

1. As a new article of manufacture, the herein-described grating-knife having the beveled outer edge, *h'*, and the transverse V-shaped grating-teeth on that side of the knife below the bevel-edge, as set forth.

2. In a machine for grating potatoes, the combination of the rotating roller or cylinder having the grooves or recesses with the knives H, located in the said grooves or recesses, and having their outer edges projecting beyond the face of the roller or cylinder, and V-shaped grating-teeth extending transversely across one side of the knife, a portion of the teeth along the entire length of the knives being exposed beyond the roller or cylinder, as set forth.

3. In a machine for grating potatoes, the combination, with the roller or cylinder, of the knives H, fitted thereto and having their outer edges projecting beyond the face of the roller or cylinder, and transverse grating-teeth *h*, extending across the under side of the knives at an angle to the outer edges thereof, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE WASHINGTON GOODALE.

Witnesses:
GEORGE W. BULL,
D. H. PARSONS.