No. 676,549. Patented June 18, 1901.

A. E. VROOMAN.

VEGETABLE TOPPING MACHINE.

(Application filed Dec. 10, 1900.)

(No Model.) 2 Sheets—Sheet 1.

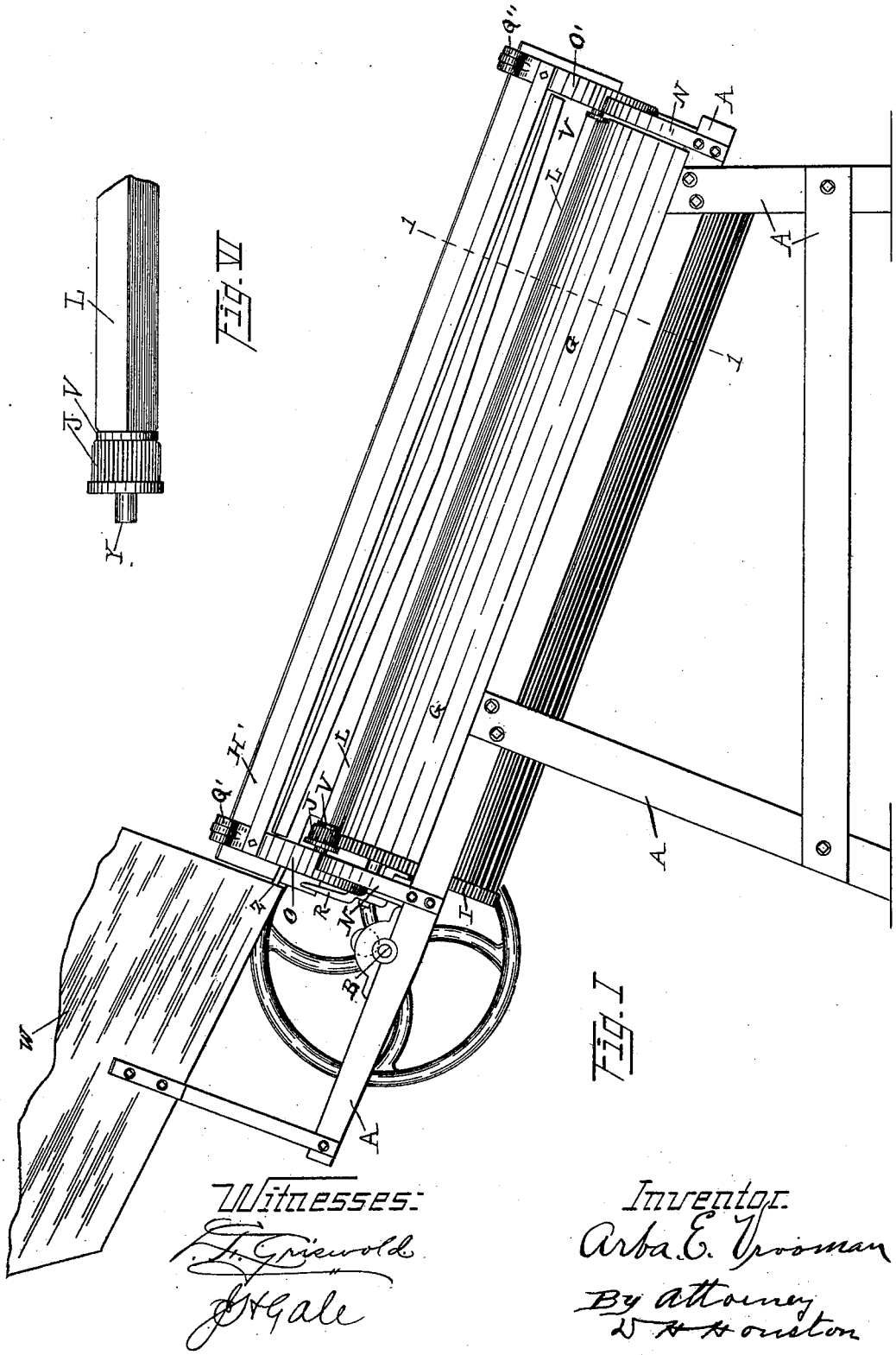

Fig. I

Fig. II

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J. H. Gale

Inventor:
Arba E. Vrooman
By attorney
D. H. Houston

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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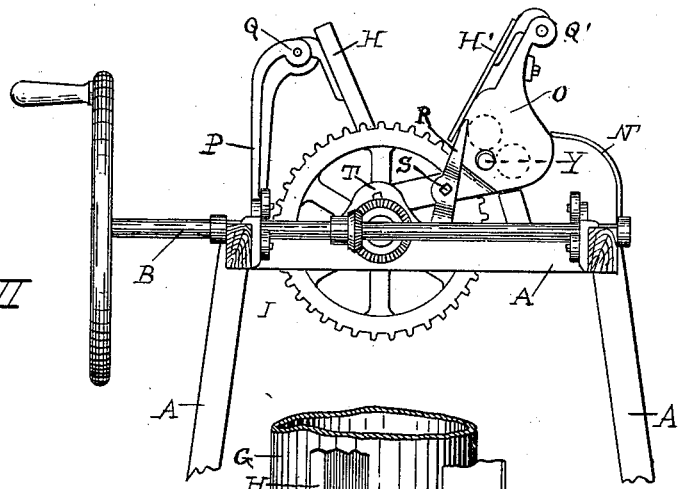

FIG. II

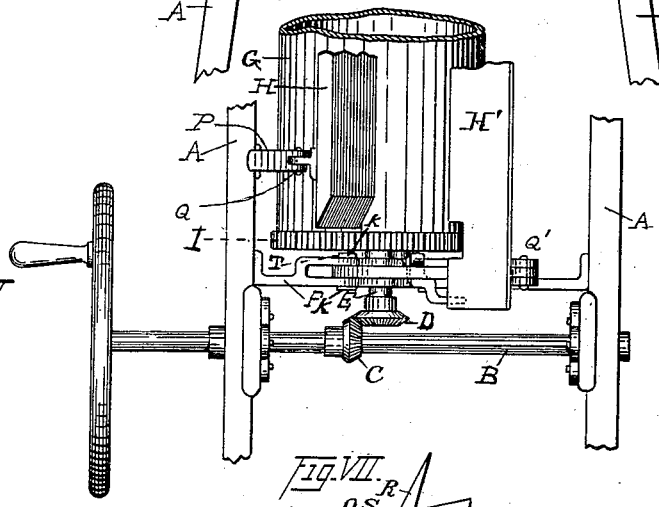

FIG. III

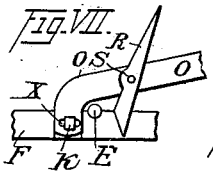

FIG. VII.

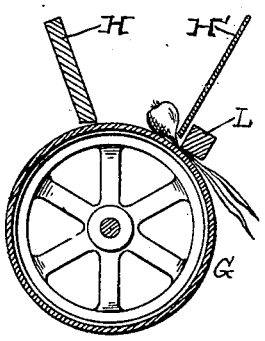

FIG. IV

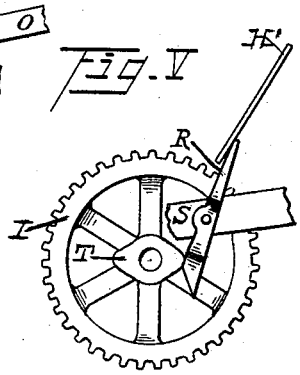

FIG. V

Witnesses:
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UNITED STATES PATENT OFFICE.

ARBA E. VROOMAN, OF HUNTER, NORTH DAKOTA.

VEGETABLE-TOPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 676,549, dated June 18, 1901.

Application filed December 10, 1900. Serial No. 39,406. (No model.)

To all whom it may concern:

Be it known that I, ARBA E. VROOMAN, a citizen of the United States, residing at Hunter, in the county of Cass and State of North Dakota, have invented certain new and useful Improvements in Vegetable-Topping Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to a machine especially adapted for removing the tops from onions or other vegetables.

One object of the invention is to provide a machine which will expeditiously and cleanly remove the tops from the vegetables without bruising or otherwise injuring them and which will top the large and small vegetables, the machine being adapted to be run either by hand or power.

Another object of the invention is to construct a machine for the purpose described which will be exceedingly perfect, simple, durable, and economic and in which the various parts of the machine requisite for the work may be expeditiously and conveniently adjusted to meet all requirements.

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 of the figures.

Figure 1 is a side elevation having a part of the top of the vegetable-hopper cut away. Fig. 2 is an end elevation having the vegetable-hopper so as to expose to view the arrangement of the drive-gearing and other important parts of the machine. Fig. 3 is a plan view of a part of the upper portion of the machine and having the vegetable-hopper cut away so as to expose to view the drive-gearing and other important parts. Fig. 4 is a sectional view taken on the line 1 1 of Fig. 1 through the adjustable revoluble cutter, the movably-hung agitating side board, the stationary side board, and the large cylinder and showing the center shaft and the spoked center, which supports the lower end of the large cylinder, and also showing the operation of topping the onions or other vegetables. Fig. 5 illustrates the manner in which the movable side board is agitated by a lever and cam. Fig. 6 is an enlarged side view of the upper end of the revoluble cutter, showing the pinion, collar, and journal thereon. Fig. 7 is a view of the lower end of the support-frames and showing the slot X in the end of the support-frames and the bolt K in the slot, which bolt connects with the cross part F of the main frame, and the agitating-lever R is shown pivoted at S to the support-frame O.

In carrying out the invention a suitable frame A may be employed, having its top set on an incline, and on the frame is journaled the main drive-shaft B, having a miter-gear C meshing into a miter-gear D, which miter-gear is placed upon a shaft E, having its upper end carried on a frame F, which frame F is connected to the main frame A. The lower end of the shaft E is suitably journaled in the lower end of the cross part of the main frame, and upon the main shaft E is carried the revoluble feeding-cylinder G, and which cylinder forms a continuous revoluble bottom to the trough formed by the sides H and H'. At the upper end of the feeding-cylinder G is carried a spur-wheel I, which spur-wheel meshes into a pinion J, which pinion J is placed upon the upper end of the revoluble cutter L, and which revoluble cutter has upon each of its ends a round collar V, which is adapted to transform the ends of the square cutter to nearly a round form, the diameter of which round form is slightly less than the diameter of the square form when measured from corner to corner diagonally, and a suitable difference would be to have the round collars on each end of the square cutter about one-quarter of an inch less in diameter than the diameter of the square cutter across from one corner to the opposite corner.

Connected to each end of the cross part of the main frame are the supports O and O', and against which support-frames bear the springs N, said support-frames being attached

to the machine by bolts K, said bolts passing through slots X in the lower ends of the support-frames, said slots adapted to allow a limited movement of the support-frames upon the bolts K, whereby the cutter-bar journaled in the support-frames has a limited movement against the springs N.

Erected upon each end of the main frame A are supports P, to which is attached by hinged joints Q the stationary side board H, which side board is beveled at its top end to better allow an entry of the vegetables when they come upon the revolving feeding-cylinder G. The upper end of the movable side board H′ is hung by a hinge Q′ upon the support-frame O, and upon said support-frame O is carried an agitating-lever R, having its oscillating center upon the pivot S, and which lever is agitated by a cam T, placed upon the cylinder-shaft E. The lower end of the movable side board H′ is hung by a hinge Q″ to the support-frame O′.

The revoluble cutter-bar is journaled at its upper end in the support-frame O, upon which support-frame bears a spring N, and the lower end of the revoluble cutter-bar is journaled in the support-frame O′, and upon which support-frame bears a spring N.

Upon the upper end of the main frame is carried a feeding-hopper W, which feeding-hopper has attached to its lower end a sheet of rawhide Z, adapted to bridge over the space between the hopper and the top end of the feeding-cylinder, and over which rawhide bridge the vegetables are enabled to pass from the feeding-hopper to the upper end of the feeding-cylinder, and over the entire length of the said feeding-cylinder the onions or other vegetables pass, assisted in their downward course by gravity and the revolution of the feeding-cylinder and the agitation of the vibrating side board H′, and as the vegetables are passing downward the feeding-cylinder carries the vegetables against the vibrating side of the trough, and the tops of the vegetables are drawn under the side of the trough and then chopped off when drawn under the revolving cutter-bar L, and the vegetables then free from their tops pass on downward and off from the feeding-cylinder and into a receptacle, and the operation of topping the vegetables is completed.

I claim—

1. The combination in a machine for topping vegetables, of a revoluble feeding-cylinder, a revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, and means whereby the cylinder and cutter are caused to revolve toward each other.

2. The combination in a machine for topping vegetables, of a revoluble feeding-cylinder, a revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, a spur-wheel at the end of the feeding-cylinder, a pinion mounted on the shaft of the revoluble cutter and meshing with said spur-wheel, and driving mechanism for imparting motion to the parts.

3. The combination in a machine for topping vegetables, of a revoluble feeding-cylinder, a revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, said bar being provided with collars having a diameter nearly equal to the greatest diameter of said bar, and means whereby the cylinder and cutter are caused to revolve toward each other.

4. The combination in a machine for topping vegetables, of an inclined revoluble feeding-cylinder, a similarly-inclined revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, a vegetable-trough immediately above the cylinder, said trough having one of its side walls movable to and from the revoluble bar and to and from the revoluble cylinder whereby to regulate the opening wherethrough the vegetable-tops are carried by the cylinder and to regulate the topping of the vegetables, and means whereby the cylinder and cutter are caused to revolve toward each other.

5. The combination in a machine for topping vegetables, of an inclined revoluble feeding-cylinder, a similarly-inclined revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, frames furnishing bearings for the cutter-bar, bolts and slots whereby said frames are movably held on the main frame, springs whereby the cutter is elastically held to its work, a vegetable-trough immediately above the cylinder, said trough having one of its side walls hung movable to and from the revoluble bar and to and from the revoluble cylinder whereby to regulate the opening wherethrough the vegetable-tops are carried by the cylinder and to regulate the topping of the vegetables, and means whereby the cylinder and cutter are caused to revolve toward each other.

6. The combination in a machine for topping vegetables, of an inclined revoluble feeding-cylinder, a similarly-inclined revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, a side board supported above and free from the cylinder and forming conjointly therewith a trough, and means whereby the cylinder and cutter are caused to revolve toward each other.

7. The combination in a machine for topping vegetables, of an inclined revoluble feeding-cylinder, a similarly-inclined revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, side boards supported above and parallel with the cylinder and forming a trough, a feed-hopper

at the upper end of said trough, and means whereby the cylinder and cutter are caused to revolve toward each other.

8. The combination in a machine for topping vegetables, of a revoluble feeding-cylinder, a revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, a spur-wheel at the end of the feeding-cylinder, a pinion mounted on the shaft of the revoluble cutter and meshing with said spur-wheel, and a driving-shaft mounted transversely on the main frame and connected with the shaft of the feeding-cylinder through miter-gearing.

9. The combination in a machine for topping vegetables, of an inclined revoluble feeding-cylinder, a similarly-inclined revoluble bar presenting cutting edges parallel to and in close proximity to the perimeter of the cylinder, but of much smaller diameter, a vegetable-trough above the cylinder and a support-bar having a side board movably supported on said support-bar, a lever arranged to contact with said side board, a cam on the cylinder-shaft actuating said lever, and means whereby the cylinder and cutter are caused to revolve toward each other.

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

ARBA E. VROOMAN.

Witnesses:
J. H. GALE,
AXEL JACOBSON.