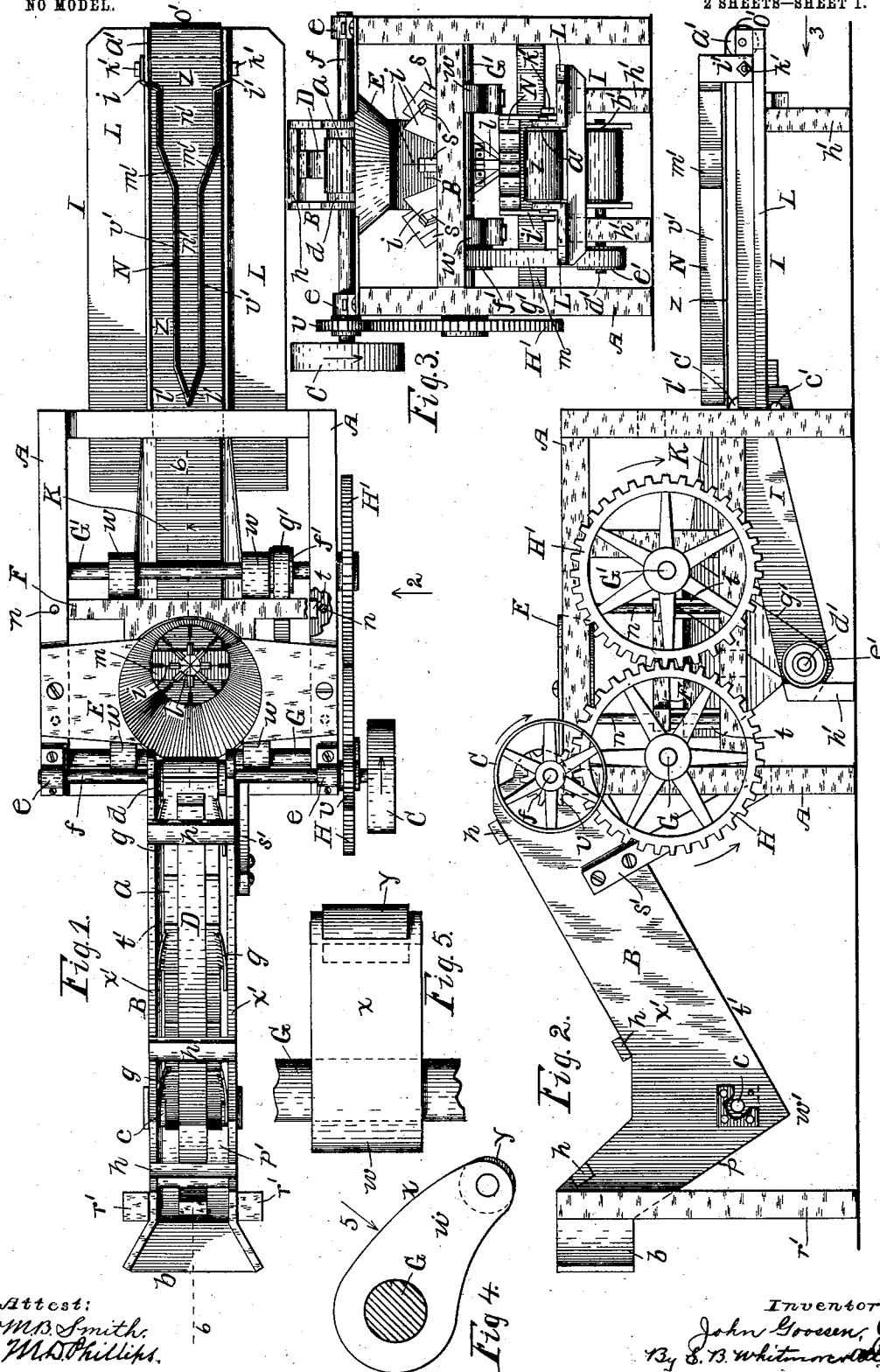


J. GOOSSEN, JR.
MACHINE FOR DIVIDING PUMPKINS.

APPLICATION FILED MAR. 7, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Attest:
M.B. Smith,
M.D. Phillips.

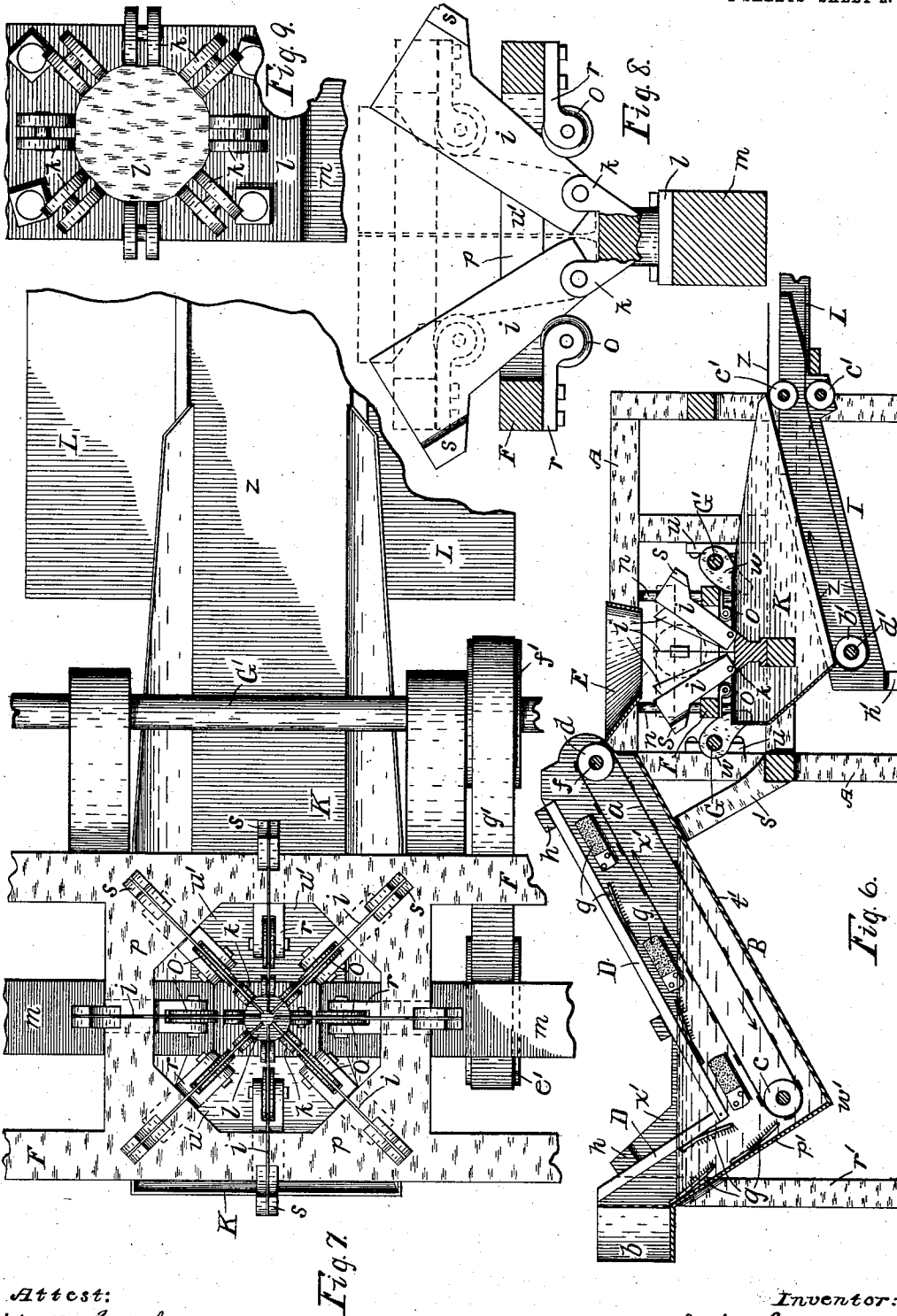
Inventor:
John Goossen, Jr.
By E.B. Whitmore, atty.

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Attest:
MR. Smith
MR. Phillips.

Inventor:
John Goossen, Jr.
By E. B. Whitmore, Atty.

UNITED STATES PATENT OFFICE.

JOHN GOOSSEN, JR., OF MARION, NEW YORK.

MACHINE FOR DIVIDING PUMPKINS.

SPECIFICATION forming part of Letters Patent No. 740,119, dated September 29, 1903.

Application filed March 7, 1903. Serial No. 146,674. (No model.)

To all whom it may concern:

Be it known that I, JOHN GOOSSEN, Jr., of Marion, in the county of Wayne and State of New York, have invented a new and useful Improvement in Machines for Dividing Pumpkins, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention is a device for rapidly and conveniently washing and cutting in pieces some of the coarser vegetables, as pumpkins, squash, &c., and aiding in separating the valuable parts or meat of the cut vegetables from the seeds and other associated refuse parts.

The invention is hereinafter fully described, and more particularly pointed out in the claims, reference being had to the accompanying drawings, forming a part of this specification.

Figure 1 is a plan of the machine. Fig. 2 is a side elevation seen as indicated by arrow 2 in Fig. 1, parts being omitted. Fig. 3 is an end view seen as indicated by arrow 3 in Fig. 2 with parts omitted. Fig. 4 is a side elevation of a lifting-arm for the minor frame. Fig. 5 is a plan of a lifting-arm seen as indicated by arrow 5 in Fig. 4. Fig. 6 is a central vertical section of parts of the machine, taken on the dotted line 6 6 in Fig. 1. Fig. 7 is a plan of some of the central parts of the machine, better showing the arrangement of the knives and associated parts. Fig. 8 further shows the devices for operating the knives, parts being shown in various positions by full and by dotted lines, with parts broken away and omitted. Fig. 9 is a plan of the central hub holding the knives and some associated parts with parts broken away. Figs. 4, 5, 7, 8, and 9 are drawn to various scales larger than that of the remaining figures.

Referring to the parts shown, A is the main frame, holding the more essential parts of the machine.

B, Figs. 1, 2, and 6, is an inclined wash-box at the front end of the frame, holding water for primarily washing the globes which are fed into the box at the flaring mouth *b*. This wash-box is formed with two vertical side walls *x' x'* and two inclined bottom boards or parts *p' t'*, Figs. 1, 2, and 6, joined at a down-

wardly-projecting angle *w'* and together constituting the inclined bottom or floor of the wash-box. The pumpkins fed into the box 55 descend along the inclined part *p'* of the floor into the water within the box and lodge, primarily, on an inclined endless carrying belt or chain *a*. The wash-box is supported at its front end by legs *r'* and near the rear end 60 by inclined legs or braces *s'*, resting upon a horizontal timber of the frame A. The belt or chain *a* is held at its lower end upon an idle roller *c* within the wash-box B and at its upper end upon a driving-roller *d* on a 65 horizontal driving-shaft *f*, mounted in bearings *e e* upon the frame A. The shaft *f*, which is the driving-shaft for the whole machine, pierces the sides *x' x'* at the upper end of the box B, and it may be revolved by any 70 convenient means—as, for instance, an ordinary belt C upon a driving-pulley held by the shaft.

A series of abraders, as coarse sponges or brushes *g*, are arranged within the wash-box 75 to act upon and clean the pumpkins as they descend onto the carrying-belt *a* and are moved thereby upward out of the box. These abraders, shown in the form of brushes, are secured conveniently to the walls *x' x'* of the wash-box and to a longitudinal inclined rail D, held rigidly in place within the box by cross-ties or stays *h*, spanning the open upper side of the box, said rail being over and parallel with the carrying-belt *a*. The 85 brushes project or incline forward toward the passing pumpkins at their operative ends, as shown in Fig. 6, so as to act upon and clean the surfaces of small pumpkins that may be fed into the machine, and the stems of the 90 brushes are made elastic or of the nature of springs, so the brushes may yield or spring backward when pumpkins of larger dimensions are passed through between them.

A series of radial inclined knives or cutters 95 *i*, Figs. 1, 3, 6, 7, and 8, eight, more or less, in number, arranged in a circle, is provided within the frame A to receive within them and divide the pumpkins as they are successively delivered to the knives from the upper end of the carrying-belt *a* of the wash-box B. A funnel E, held by the frame over the knives, serves to carry the pumpkins 100 into the circle of knives, the latter normally

standing in inclined positions in conical form, as shown. These coacting knives are held independently on pivotal bearings in hangers k , Figs. 6 to 9, equally spaced around and
 5 radiating from a common vertical hub l , supported upon a horizontal cross-timber m of the frame, Figs. 1, 3, 6 to 9, the knives being adapted to assume either inclined or vertical positions upon their bearings. The knives i
 10 are actuated by a minor horizontal frame or gate F , adapted to move in vertical directions upon guide-rods n , held rigidly in upper and lower horizontal timbers of the frame A . This minor frame F is formed at
 15 the middle with a part p surrounding the knives, the latter being in an octagonal opening u' in the part p of the frame F , each knife crossing at the middle one of the sides of the octagon, as clearly shown in Fig. 7.
 20 A series of grooved rollers o , held by hangers r , secured to the frame F , are in positions to bear against the rear edges of the respective knives, each knife resting in the groove of its coacting roller, as shown. Now by observing Figs. 6 and 8 it will be seen that
 25 when the frame F is at its lowest or normal position the knives will from gravity drop or incline backward, as shown by full lines, leaving or forming a conical opening within their cutting edges in which to receive the
 30 pumpkins as they descend from the feeder B ; but if the frame F be raised to the position indicated by dotted lines all the knives will be raised by the rollers to vertical positions. (Indicated by dotted lines in Fig. 8.)
 35 Thus raised the cutting edges of the knives will substantially meet at the vertical axial line of the hub l , the inclosed pumpkin being divided into as many spherical wedges or lobes as there are knives in the series. Each knife
 40 is provided with a thickened part s at the upper part of its rear edge, constituting an overbalancing-weight to cause the knife to drop back to its open or normal inclined position,
 45 (shown in Figs. 3, 6, 7, and 8,) when the frame F moves down to its lowest position. (Shown in Fig. 2.) Simple stops or rests t , Figs. 1, and 2, in the main frame A , beneath the frame F ,
 50 serve to arrest the downward motion of the latter at each descent and accurately hold it in position to keep the knives at their proper backward inclinations after each cut. The stops t are short vertical posts, resting at their
 55 lower ends on the lower longitudinal side timbers of the frame A , each post being rigid with the frame and adjacent to a guide-rod n of the minor frame F .

To lift the knife-controlling frame F , periodically equal horizontal shafts $G G'$, Figs. 1
 60 to 7, are provided, one on either side of said frame, resting in bearings u , Fig. 6, on the main frame A . These shafts are provided, respectively, with equal overhanging intermeshing gears $H H'$, the former being engaged by a pinion v on the driving-shaft f ,
 65 by means of which the shafts $G G'$ are rotated in opposite directions. These shafts

$G G'$ are each provided with two arms w in positions to strike under and lift the frame F (see Fig. 6) as the shafts are revolved, 70 the frame being lifted once and again descending by gravity to its place upon the stops t at each revolution of the shafts $G G'$. The working faces x , Figs. 4 and 5, of the arms w are preferably convex in form, which 75 form, however, may be changed or varied at pleasure should occasion require, the actions of the arms against the frame F being like those of cams, the particular curvature or form of the faces x serving to control the 80 upward motions of said frame along the rods n . I also prefer to provide the arms w with antifriction-rollers y at their extreme ends, as shown.

With this machine and as an essential part 85 thereof I provide a horizontal carrying device or conveyer, Figs. 1, 2, and 3, for the fragments and parts of the pumpkins falling from the knives i . This conveyer comprises an endless carrying belt or band z , Figs. 1, 90 2, 3, 6, and 7, held at its ends respectively upon rollers a' and b' , the latter being the driving-roller for the belt. This belt is not horizontal throughout its entire length, but bent downward at its forward end under the frame 95 A over deflecting idling rollers $c' c'$, Figs. 2 and 6. The bearings of the rollers a' and $c' c'$ and of the shaft d' of the driving-roller b' are in the frame or sides of the conveyer I , the shaft d' being provided with an over- 100 hanging belt-pulley e' , Figs. 2, 3, and 7. The shaft G' is provided with a belt-pulley f' , corresponding with the pulley e' on the shaft d' , and a belt g' on said pulleys causes the carrying-belt z to be operated from the shaft 105 G' . A hopper K , Figs. 1, 2, 6, and 7, held by the conveyer I beneath the cutters i , serves to conduct the parts of the pumpkins falling therefrom onto the carrying-belt z .

The table I , which is supported upon legs 110 h' , comprises a divided platform or table L , Figs. 1, 2, 3, and 7, for receiving upon it the parts of the pumpkins as they come from the knives, a part of the table being each side of the belt z . The mass of cuttings brought 115 back from the knives by the belt z is thrown or discharged therefrom each way onto the divided table by a two-part or oppositely-acting discharger N . This discharger is usually made of thin sheet metal and formed with two 120 separated opposing parts or sides, both alike as to form, standing edgewise over the carrying-belt z . These sides of the discharger face in opposite directions, each having a downwardly-extended foot i' , secured to the body 125 of the table by fasteners k' . The body of the discharger extends forward, overhanging the feet i' , with its lower edge parallel with and close to the belt z . The two sides of the discharger are each formed with two short oper- 130 ating face-sections or faces $l' m'$, one forward of the other, in vertical planes inclined to the adjacent side of the belt z , said short face-sections of each side piece being separated

by an intermediate face v' parallel with the side of the belt. The two forward face-sections l' are opposite each other and joined in an acute dihedral angle over the middle line of the belt z to act against the mass of divided pumpkins upon the belt. The two rear inclined faces m' of the sides of the discharger are also opposite each other and act simultaneously to clear the belt of all the parts not removed by the faces l' .

The forward angular end of the discharger serves to push off laterally to the right and to the left onto the table L the larger pieces brought by the belt from the knives, while the smaller masses, as the seeds and other light useless parts, are mainly carried onward to be discharged from the belt by the rear inclined faces m' . This form of the discharger causes it to act in a measure to divide the valuable parts of the pumpkins from the refuse or worthless parts, materially aiding the attendants at the sides of the table in their work of selecting or gathering the meat or body of the pumpkins, the worthless parts being thrown back onto the carrying-belt z in the space n' between the separated sides of the discharger to be finally delivered from the belt at the end o' .

It is evident that the number of knives may be varied without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A device for dividing and separating the parts of pumpkins or similar vegetables, consisting of a series of movable coacting knives pivotally mounted at one end with their pivots arranged in a circle, said knives being free to vibrate in axial planes, a conveyer beneath the knives, a feeder for the latter, and means for operating the knives.

2. A device for dividing pumpkins or other vegetables, consisting of a series of coacting knives equally spaced around a circle and having their edges inclined and each pivotally mounted for movement independent of the others, a conveyer beneath the knives, a feeder for the latter, and means for operating the knives.

3. A device for dividing and separating the parts of pumpkins or other vegetables, consisting of a series of pivotal knives arranged around a circle, on independent pivots and free to vibrate in axial planes and adapted to assume jointly a conical form, a conveyer beneath the knives, a feeder, and means for turning the knives on their bearings.

4. A machine for dividing pumpkins, consisting of a main frame, a series of pivotal knives carried by said frame, said knives being pivotally mounted at one end, the pivots being arranged about a circle, and said knives free to vibrate in axial planes, each knife being adapted to assume successively an inclined and a vertical position, a minor frame

adapted to move within the main frame to change the positions of the knives, and means for controlling said minor frame.

5. A machine for dividing pumpkins, consisting of a main frame, a series of pivotal knives carried by said frame, said knives being mounted on independent pivots and free to vibrate in axial planes, said pivots being arranged about a circle, each knife being adapted to assume successively an inclined and a vertical position, a minor frame within the main frame encompassing the knives, and means for moving the minor frame against the knives.

6. A machine for dividing pumpkins, consisting of a main frame, a series of pivotal knives carried by said frame, said knives being mounted on independent pivots and free to vibrate in axial planes, said pivots being arranged about a circle, each knife being adapted to assume successively an inclined and a vertical position, a minor frame encompassing the knives, and means for moving the minor frame against the knives, the latter being counterweighted.

7. A machine for dividing pumpkins, consisting of a main frame, a series of pivotal knives carried by said frame, said knives being mounted on independent pivots and free to vibrate in axial planes, said pivots being arranged about a circle, each knife being adapted to assume successively an inclined and a vertical position, a minor frame encompassing the knives, and means for moving the minor frame, and rollers carried by the minor frame to bear against the knives.

8. A device of the kind described, having a main frame, and a series of knives held by said frame and mounted on independent pivots arranged in a circle, said knives being free to vibrate in axial planes, a minor frame having an opening for receiving the knives, said opening being polygonal in form and having as many sides as there are knives, and means for moving the minor frame against the knives.

9. A device of the kind described, having a main frame, and a series of knives held by the frame and arranged in a circle, the knives being adapted to move from inclined to vertical position, a minor frame for controlling the knives held by the main frame and formed with an opening for receiving the knives, and means for lifting the minor frame to raise the knives from inclined to vertical positions.

10. A device of the kind described, having a main frame, and a series of independently-pivoted inclined knives held by said frame and arranged in a circle, a minor frame within the main frame and having an opening for receiving the knives, said opening being polygonal in form and having as many sides as there are knives, a knife being opposite the middle of each side of the opening, and means for moving the minor frame to operate the knives.

11. A device of the kind described, having a main frame, and a series of independently-pivoted inclined knives held by said frame, a minor frame within the main frame and having an opening for receiving the knives, two shafts held by the main frame one at either side of and parallel with the minor frame, and arms on said shafts for lifting the minor frame, and means for turning the shafts in opposite directions.

12. A device for dividing pumpkins, having a series of knives, a vertically-movable frame carrying said knives, a hopper beneath said frame, a feeder for the knives consisting of a wash-box, an inclined carrier-belt in the box, and means for moving said belt, said knives being pivoted at one end, the pivots being arranged in a circle and said knives being free to vibrate in axial planes.

13. A device for dividing pumpkins, having a series of knives, said knives being pivoted at one end with the pivots arranged in a circle and the knives free to vibrate independently of each other in axial planes, a feeder for the knives consisting of a wash-box having oppositely-inclined portions, a partially-submerged carrier-belt in the longer portions of the box with means to drive it, and a series of abraders in the box adjacent to the carrier-belt, to act against the pumpkins.

14. A device for dividing pumpkins, having a series of knives, a feeder for the knives consisting of a wash-box having two inclined bottom boards joined in an angle to form the bottom of the box, a carrier-belt in the box parallel with one inclined bottom board of the box, a beam over the belt having two inclined parts or sections joined in an angle, and a series of brushes carried by the beam and the sides of the box adjacent to the belt

and disposed at right angles to each other, and means for driving the belt.

15. A machine for dividing pumpkins, having a series of knives, a feeder for the knives, and a conveyer for the divided parts of the pumpkin comprising a carrying-belt, a table parallel with the belt and having a part on either side of the belt, a discharger for the belt over the latter and having two equal and oppositely-acting sides each having two faces or parts in vertical planes inclined toward the adjacent edge of the belt, and means for driving the belt.

16. A machine for dividing pumpkins, having a series of knives, a feeder for the knives, and a conveyer for the divided pumpkins, comprising a carrying-belt, a table, and a discharger for the belt having two opposite sides each having parts parallel with the sides of the belt and parts inclined thereto, the latter being opposite and acting in opposite directions.

17. A machine for dividing pumpkins, having a series of knives, a feeder for the knives, and a conveyer for the divided pumpkins comprising a carrying-belt, a table, and a discharger for the belt having two opposite sides each having parts parallel with the sides of the belt and alternated parts inclined thereto, one inclined part of each side of the discharger being forward of the other, and the two forward ones together forming a dihedral angle.

In witness whereof I have hereunto set my hand, this 25th day of February, 1903, in the presence of two subscribing witnesses.

JOHN GOOSSEN, JR.

Witnesses:

ENOS B. WHITMORE,
MINNIE SMITH.