

J. W. JONES.

MACHINE FOR CUTTING GREEN CORN FROM THE COB.

No. 251,236.

Patented Dec. 20, 1881.

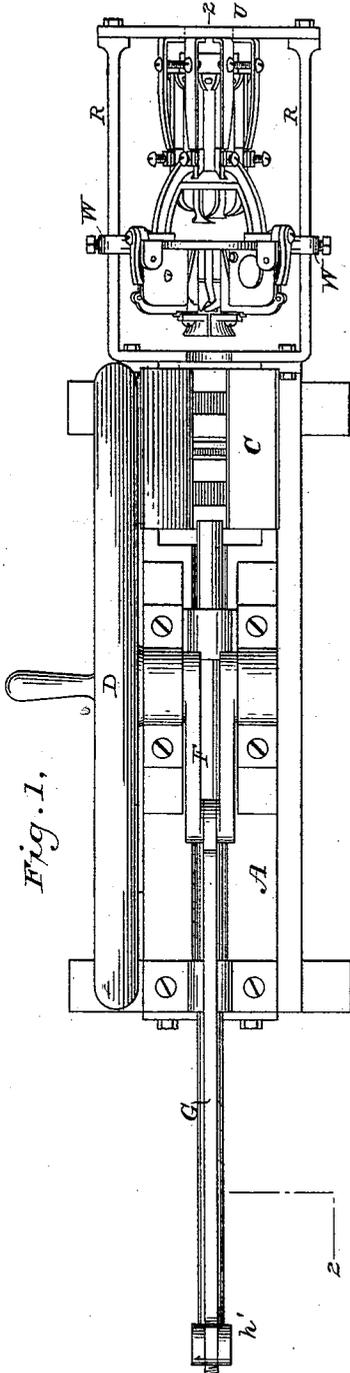


Fig. 1.

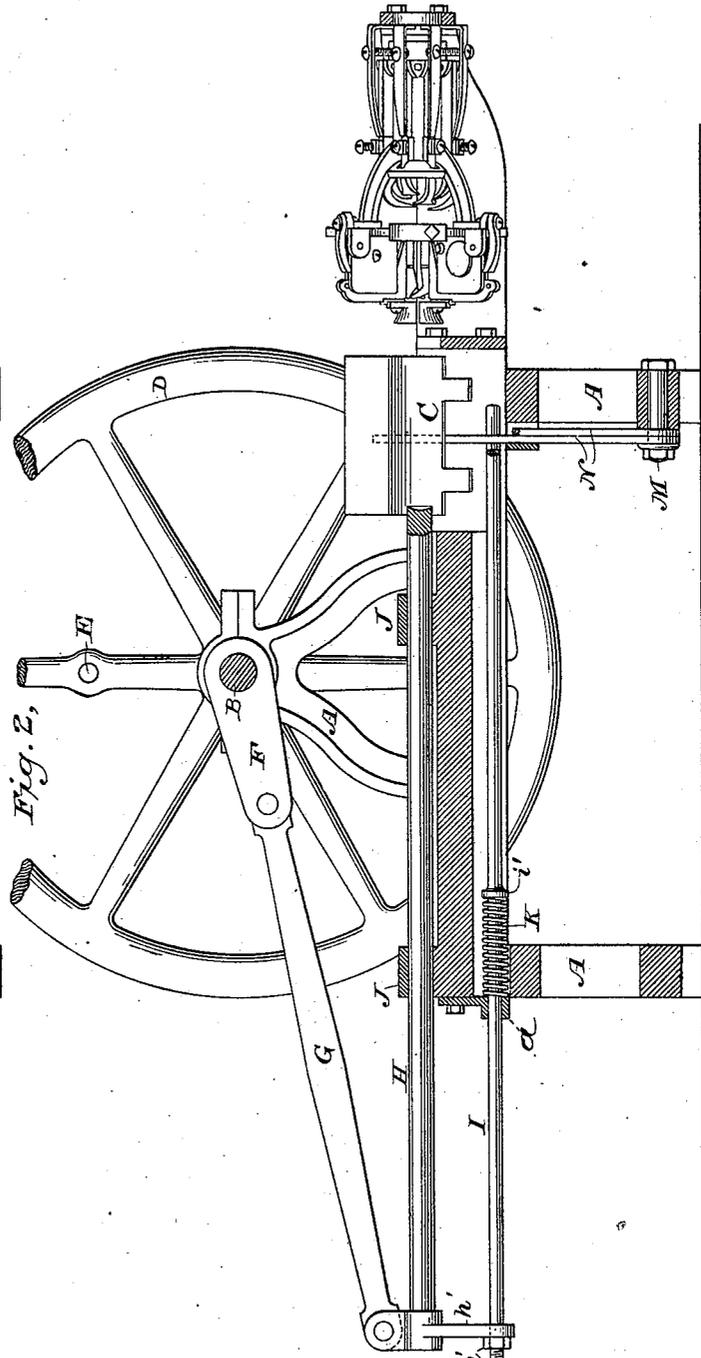


Fig. 2.

WITNESSES

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Fig. 3,

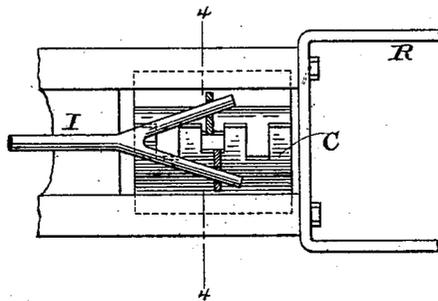


Fig. 4,

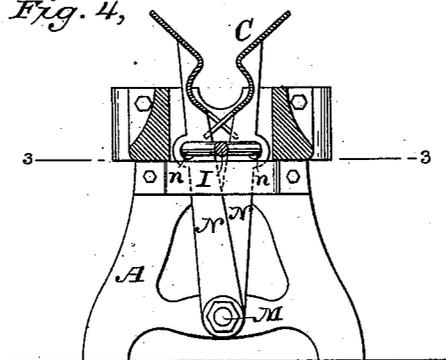


Fig. 5,

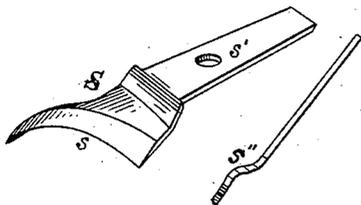
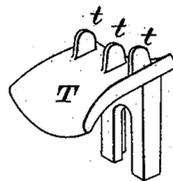


Fig. 6,



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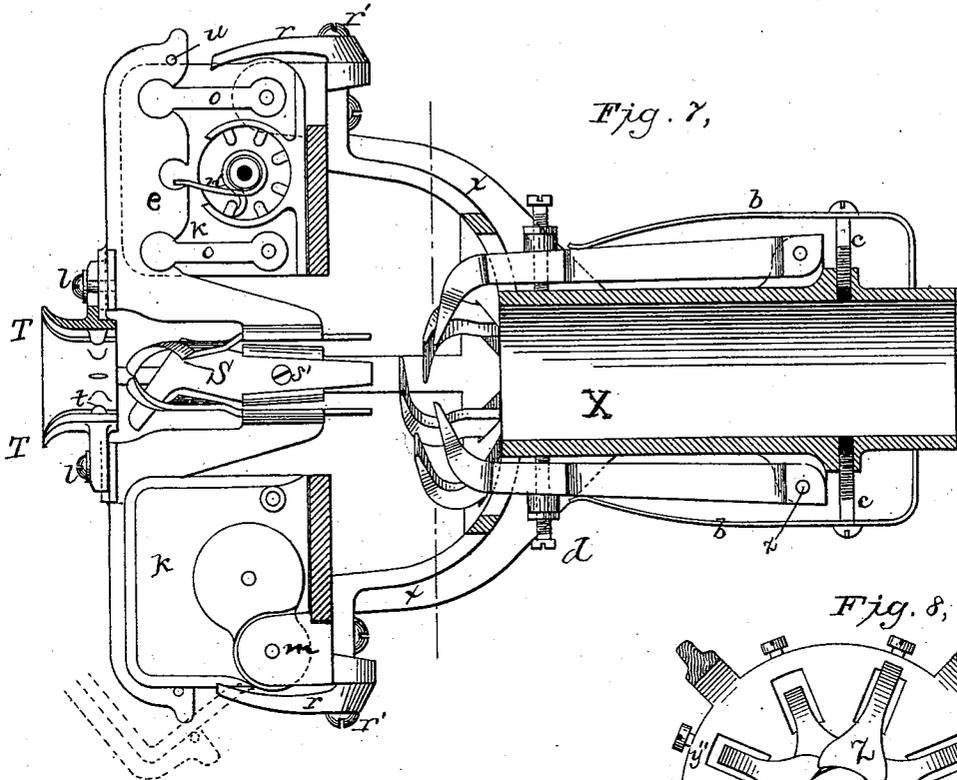


Fig. 7,

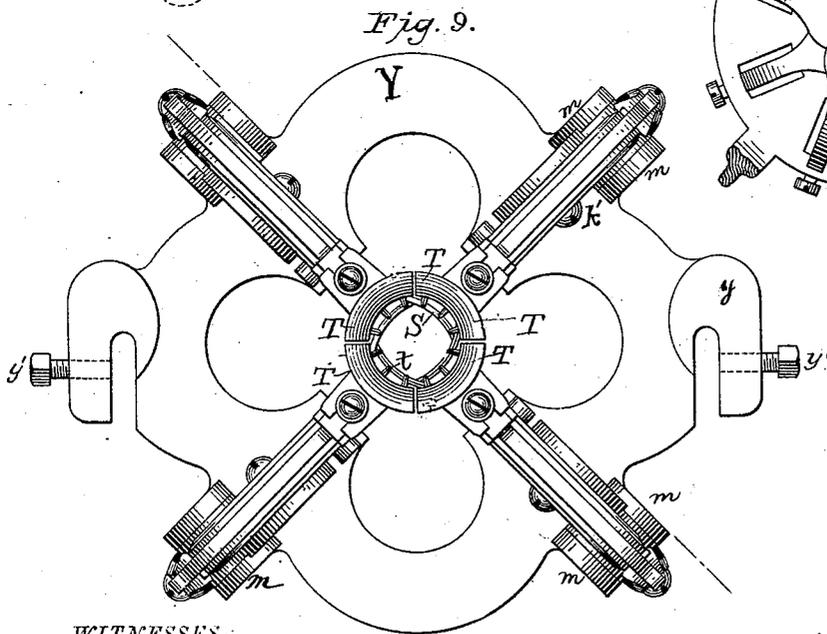


Fig. 9.

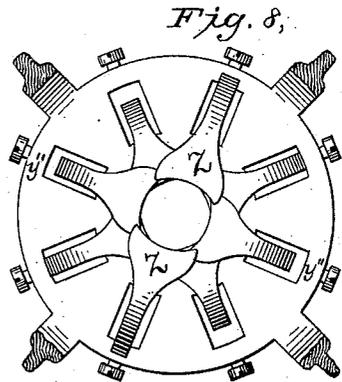


Fig. 8.

WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN WINSLOW JONES, OF PORTLAND, MAINE.

MACHINE FOR CUTTING GREEN CORN FROM THE COB.

SPECIFICATION forming part of Letters Patent No. 251,236, dated December 20, 1881.

Application filed May 27, 1881. (Model.)

To all whom it may concern:

Be it known that I, JOHN WINSLOW JONES, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Machines for Removing Green Corn from the Cob; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention consists of certain improvements in machines for removing green corn from the cob, which will be fully understood by the following description and claims.

In the accompanying drawings, Figure 1 is a top view of my machine. Fig. 2 is a longitudinal vertical section thereof on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section through part of the machine on the line 3 3 of Fig. 4. Fig. 4 is a vertical section through the machine on line 4 4 of Fig. 3. Fig. 5 represents detached views of the spiral-edged knife. Fig. 6 is a detached view of one of the sliding jaws of the cutter-head provided with radial knives. Fig. 7 is a vertical section of the cutter-head. Fig. 8 is a transverse vertical section of the cutter-head, showing a front view of the cob-scrapers. Fig. 9 is a front view of the cutter-head.

Upon a strong frame, A, is mounted a horizontal axis, B, carrying a balance-wheel, D, and being set in revolution by any suitable power, which may be applied by means of a crank-pin, E. This axis has a crank, F, to which is attached a connecting-rod, G, which is pivoted to the plunger H, thus giving a reciprocating motion to said plunger, which slides in bearings J. The purpose of this plunger is to push the ears of corn into the cutter-head, soon to be described, the butt-end of the ear resting in the concave end of the plunger.

A pair of vibrating jaws, C, serve as a bed or hopper to receive the ear of corn, and to guide the same into the mouth of the cutter-head, or between the jaws T. These jaws C are attached to the vibrating levers N, which are pivoted at M, and are opened and closed by means of the bifurcated cam-rod I, which works

in the slide-bearing *a* of the frame and in holes through the levers N, thus opening and closing the jaws. This cam-rod is attached to the arm *b'* of the plunger H, and has an adjusting-nut, *i*. It is also provided with a coiled extension-spring, K, one end of which rests against the frame at the slide-bearing *a*, while the other end rests against the shoulder *i'* on the cam-rod. By this arrangement when the plunger H is moved to the left it carries the cam-rod in that direction, thus opening the jaws C to receive an ear of corn, and when the plunger H returns to the right the action of the extension-spring K pushes the cam-rod to the right, thus gently closing the guiding-jaws C upon the ear of corn. Thus centered and guided by the jaws C the ear of corn is pushed to the right by the plunger H—pushed from between the jaws C into and through the cutter head, which will now be described.

The cutter-head is supported on the iron frame R, which is attached to the front of the wooden frame A, as shown in Fig. 1. The central tube, X, of the cutter head is intended to guide the cob in its passage from the knives and scrapers until it falls from the machine; and this tube also serves as a frame for the attachment of the knives, scrapers, and other devices, soon to be described. It is cast with radial arms *x* and a broad flange, Y, having lugs *y*, which hook upon the frame R, the cutter-head being secured in place by thumb-screws *y'*. The right-hand end of tube X rests in an opening in frame R.

A dish-shaped flange, *y''*, is cast with the central tube, and has eight slots therein, as seen in Fig. 3. These slots receive and guide the shanks of the scrapers Z, which are pivoted to brackets cast on the central tube, X. A series of eight springs, *b*, press the scrapers Z to their work of clearing the cob of the fragments of kernels left by the knives. These springs are fastened in place by means of screws *c*, which also serve to increase the tension of the springs at pleasure. A series of screws, *d*, in the shanks of the scrapers serve to adjust the scrapers to the size of the cob to be scraped, and to regulate the extent to which the springs may carry the scrapers.

Upon the broad flange Y are arranged a series of slides, *e*, which carry the jaws T and

knives S, as seen in Fig. 7. These jaws are adjustable on the slides, being held by set-screws *l*, and the knives have beveled or dove-tailed shanks, which fit corresponding recesses in the slides, to which the knives are also fastened by means of screws *s'*, Fig. 7.

The slides *e* work to and fro between two plates, *k*, which are held by lugs *m*, cast with the flange Y, said slides being pressed forward upon the ear of corn by means of coiled spring *n'* and guided by the pivoted arms or links *o*. By this action of the slides *e* the jaws T and knives S are gently pressed toward the ear of corn as the latter enters the cutter-head, and the centripetal motion of these slides is limited by the stops *u*, Fig. 7. By removing the screws *r'* and clamps *r* the plates *k*, with the slides *e*, may be turned back on their pivots, as indicated in dotted lines, Fig. 7, and by removing the screw *k'* the parts may be opened for cleaning or repair.

In the jaws T are a series of radial knives, *t*, for splitting the kernels of corn before they are removed from the cob, after which the spiral-edged knives S cut the largest part of the kernel from the cob, leaving only the tips of the kernels to be scraped off by the series of scrapers Z, Fig. 8. These scrapers are arranged in two sets of four each; one set being a little in advance of the other, as seen in Fig. 7; also, these scrapers are set in pairs, each scraper being opposed by its fellow, and the eight scrapers correspond to the eight rows of kernels in the ears of corn which I prefer to use for canning. A less number of scrapers would not work so well in clearing the cob.

The spiral knives S have long been in use; but in Fig. 5 is shown a strong curve, *s''*, which I find to be an important improvement in the knife.

The tube having the flange thereon provided with radial slots, and the series of pairs of yielding scrapers, having their shanks extending along the side of said tube, and their adjusting devices, are not claimed in this case, as they form the subject-matter of another application.

I claim—

1. In a machine for removing green corn from the cob, the combination of independently movable and yielding slides arranged radially and at right angles to the axis or path of the corn-ear, and provided with guiding-jaws, and means, substantially as described, for holding said slides and permitting of their being turned over backward, substantially as and for the purpose specified.

2. In a machine for removing green corn from the cob, the combination of independently movable and yielding slides arranged radially and at right angles to the path of the corn-ear, and provided with cutters, and means, substantially as described, for holding said slides and permitting of their being turned over backward, substantially as and for the purpose specified.

3. In a machine for removing green corn from the cob, the combination of independently movable and yielding slides arranged radially and at right angles to the axis or path of the corn-ear, and provided with guiding-jaws and cutters, and means, substantially as described, for holding said slides and permitting of their being turned over backward, substantially as and for the purpose specified.

4. In a machine for removing green corn from the cob, the combination of the series of pivoted plates *k*, having intermediate movable and yielding slides, provided with guiding-jaws and cutters, substantially as and for the purpose herein shown and described.

5. In a machine for removing green corn from the cob, the combination of the series of pivoted plates *k*, having intermediate movable and yielding slides provided with adjustable guiding-jaws and cutters, substantially as set forth.

6. In a machine for removing green corn from the cob, the combination of the series of pivoted plates *k*, having intermediate movable and yielding slides provided with guiding-jaws and cutters, and means, substantially as described, for holding said plates in a fixed position during the operation of the machine, substantially as and for the purpose herein shown and described.

7. The combination, with the pivoted plates *k* and radially movable and yielding slides *e*, of the pivoted links *o*, substantially as and for the purpose herein shown and described.

8. The combination, with the plates *k* and radially movable slides *e*, of the pivoted links *o* and *o*, and a spring arranged intermediate of said links, substantially as and for the purpose herein shown and described.

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

JOHN WINSLOW JONES.

Witnesses:

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L. C. YOUNG.