C. A. Foster.

Imp'ts in Apple Parers and Slicers.

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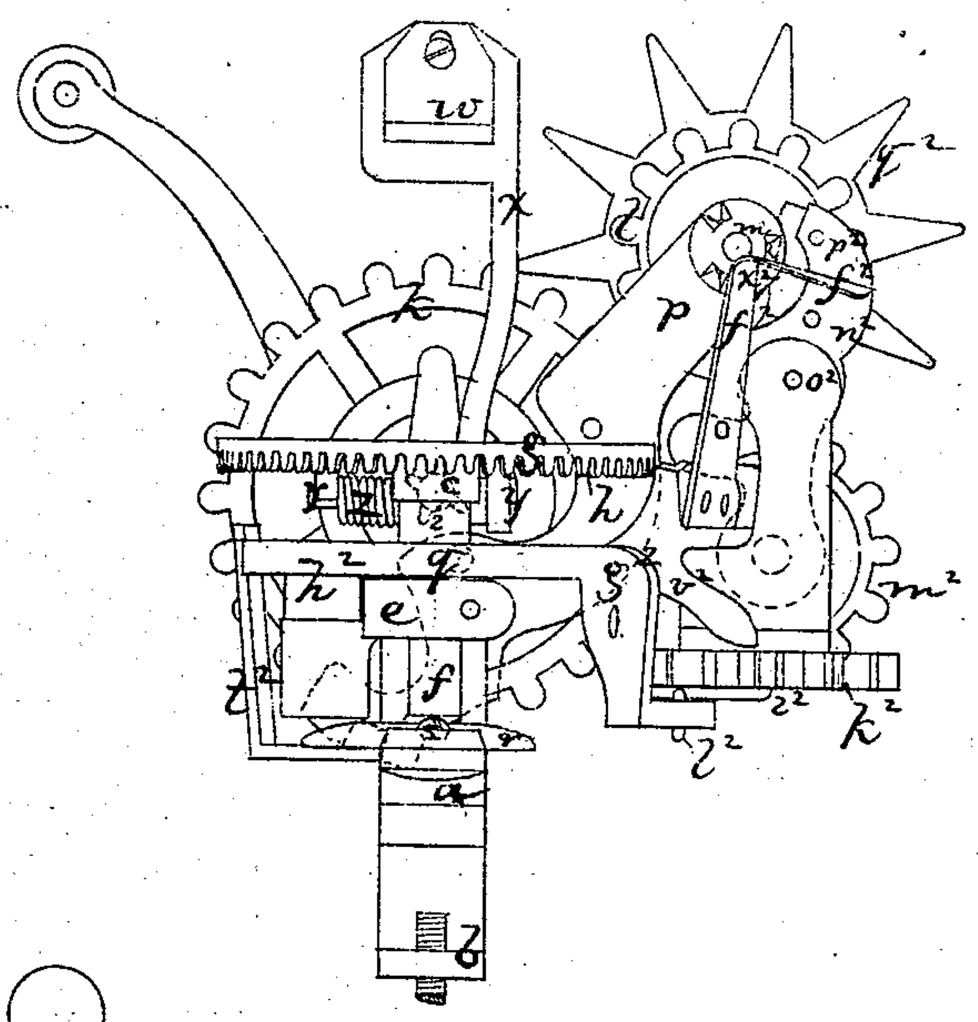
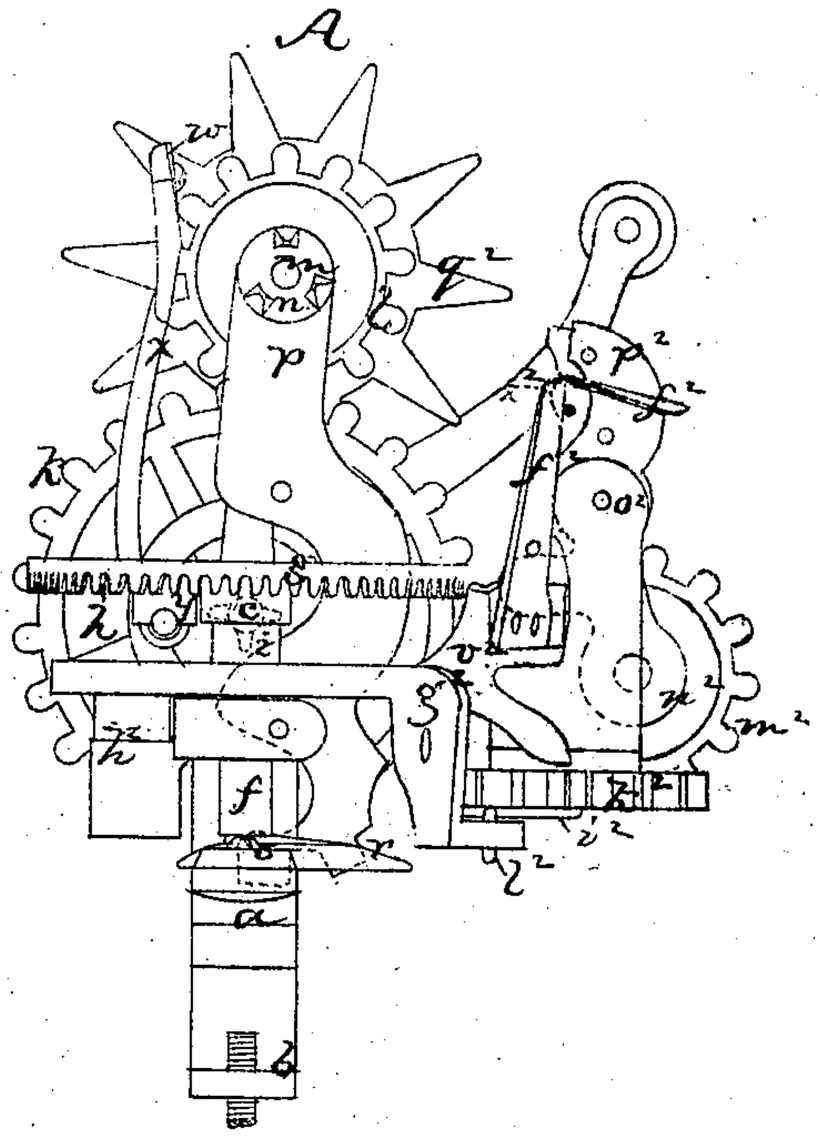
PATENTED JUL 11 1871

B



A



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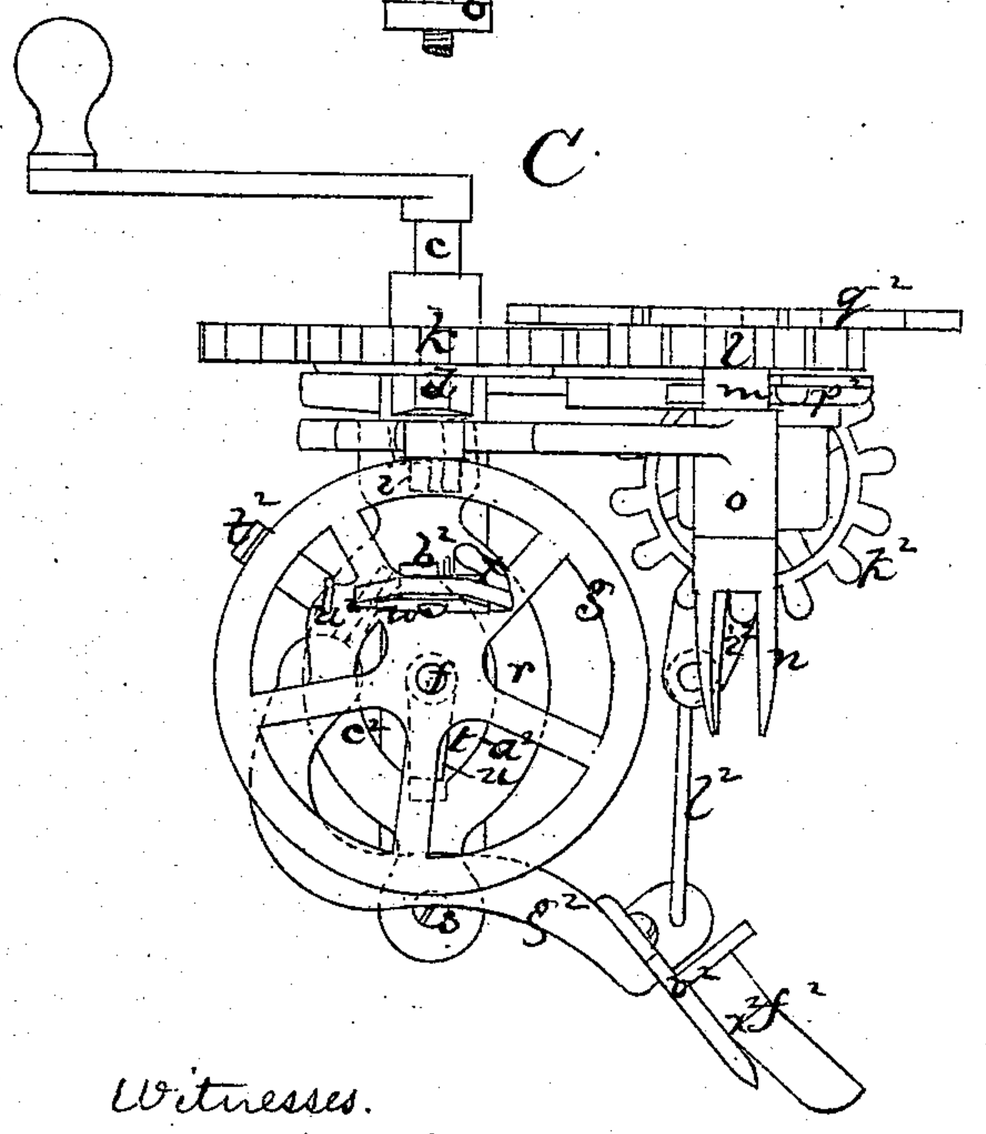

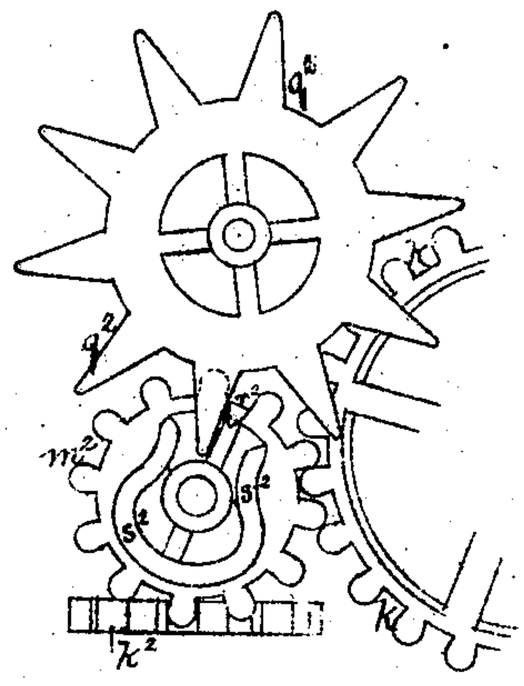

Witnesses.

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By his Attys.

Crosby & Gould

UNITED STATES PATENT OFFICE.

CALVIN A. FOSTER, OF FITCHBURG, MASSACHUSETTS, ASSIGNOR TO SEWALL K. LOVEWELL, DAVID HUNTOON, AND CYRUS A. FOSTER, OF SAME PLACE.

IMPROVEMENT IN APPLE-PARERS AND SLICERS.

Specification forming part of Letters Patent No. 116,943, dated July 11, 1871.

To all whom it may concern:

Be it known that I, CALVIN A. FOSTER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented an Improved Apple-Parer and Slicer; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention, sufficient to enable those skilled in the art to practice it.

My invention relates particularly to the construction of that class of apple-parers which slices as well as pares the apples, and effect such slicing and paring at one continuous operation. In my construction I employ a horizontal rotary cutter-wheel fixed on the top of a vertical spindle rotating in stationary bearings; a horizontal fork, the shaft of which rotates in one arm of a swinging lever; and a cutter fixed to a yielding arm, which rotates with the wheel, the fork-arm being stationary when the apple upon it is being pared by movement of the knife semi-circumferentially around the apple, and said arm being swung back and permitting the cutter to pass it and complete its rotary movement with the cutter-wheel after the apple is pared, the fork-arm being swung back into position to receive another applied to be pared after the cutter has regained or when it is regaining its position. Such construction constitutes one feature of my invention. When the fork is swung back from the path of movement of the cutter-arm it is swung into position for the action of a bent reciprocating cutter, that slices the apple as the fork intermittently rotates, (the continuous rotative movement of the fork ceasing when the fork-arm is swung over,) and such construction or organization constitutes another main feature of my invention.

The drawing represents an apple-parer and slicer embodying my improvements. A is a front view of my machine, the fork being in position for the paring operation. B is a similar view, the fork being in position for the slicing operation. C is a plan, the fork being in the position last named.

a denotes a base-plate; *b*, the clamp-arm. From the plate *a* rises an upright, *d*, in which is journaled the driving-shaft *c*. The base-plate *a* and an arm, *e*, also form or furnish the bearings for the vertical shaft or spindle *f*, on top of which is the cutter-wheel *g*. On the under surface of this wheel are gear-teeth, *h*, into which mesh the teeth of a pinion, *i*, on the driving-shaft *c*. The shaft *c* also carries a gear, *k*, that meshes into and drives the gear *l* of the shaft *m* of the fork *n*, the shaft *m* rotating in a bearing, *o*, at the top of an arm, *p*, of a vertical lever pivoted at *q*, the lower arm of this lever being jointed to or connecting with a swing-plate, *r*, turning on a pivot, *s*. In this plate is an oblong slot, *t*, in which rotates an arm, *u*, projecting from the rotary spindle *f*. *w* denotes the cutter fixed to a cutter-head at the top of an arm, *x*, said arm extending through the cutter-wheel and being pivoted to ears *y* under said wheel, the stress of a suitable spring, *z*, keeping the cutter against the apple during the paring operation. The cutter being in position, as seen at A, and an apple being placed upon the fork, the driving-shaft is rotated by the crank-handle, and the movement of the cutter-wheel carries the cutter from one end of the apple, where it commences to pare, to the opposite end thereof, the fork and apple rotating, so that when the cutter has reached the outer end of the apple the paring is accomplished. During this movement the end of the spindle-arm rotates against the side a^2 of the slot *t*, which side is concentric to the path of movement of the end of the arm. But as the arm at the end of the paring reaches the end of the slot it enters a notch, b^2, and swings the plate on its pivot, thereby moving the lower arm of the fork-lever and carrying its upper arm back from the cutter-wheel, throwing the fork away from the path of movement of the cutter. The rotary movement of the wheel and arm then continues, (the end of the spindle-arm moving against the opposite side c^2 of the slot *t*, which is then concentric with it,) and the cutter passes by the fork without movement of the cutter relatively to its wheel, and regains its normal position, having done which the arm, having reached the opposite end of the slot, enters a notch, d^2, thereat and throws the plate *r* and fork-arm *p* back to their normal position. While the fork-arm is in position for the paring operation, it is locked in such position by the spindle-arm and side a^2 of the slot, and when out of such position it is locked out by the spindle-arm and the opposite side c^2 of the slot. This construction of the parer is very simple and enables the cutter to make a complete

rotation without disturbance of its position relatively to its actuating mechanism. The position of the fork away from the path of rotation of the cutter, (for the cutter to pass it,) I avail myself of to combine with the parer the slicing mechanism. f^2 denotes the slicer-blade, the shank of which is fastened to one end of a long reciprocating arm, g^2, pivoted at h^2. To an arm, i^2, projecting from a gear, k, the slicer-arm g^2 is connected by a link, l^2, and the rotary movement of the gear imparts a reciprocating movement to the slicer-arm. The slicer is thus actuated only when the fork brings the pared apple over toward the slicer, and for this purpose the teeth of the gear k^2 mesh into and are driven by the teeth of a gear, m^2, turning on a pin projecting from a swing-plate, n^2, pivoted at o^2, and having an arm, p^2, that extends up into the path of back movement of the fork-arm. When the fork-arm falls back toward the slicer mechanism it strikes the arm p^2 and throws the lower end of the plate n^2 toward the gear k of the driving-shaft, bringing the teeth of the gear n^2 into engagement therewith. The gear k will then be rotated and the slicer reciprocated. The apple is only to be rotated intermittently during the slicing operation, the fork and its apple being stationary while the slicer is operating and moving after each slice is cut. To effect this the fork-shaft has on its end a star-wheel, q^2, and as the gear m^2 rotates a pin, r^2, projecting from the side of said wheel, strikes one of the points of the star-wheel and turns the wheel and the fork. After the pin passes the point the next point strikes a flange, s^2, on the side of the gear m^2, and this flange and the point keep the star-wheel from turning, and thereby hold the fork and apple stationary until the pin r^2 in its next rotation strikes the next point of the star-wheel and again moves the apple-fork. While the fork is stationary the slicer is drawn in and cuts off the slice, and in a complete rotation of the apple-fork the apple is wholly cut up into slices, leaving the core upon the fork. When the slicing is thus effected the movement of the plate r carries the fork-arm p back to position with respect to the paring mechanism, the gear k throwing the gear m^2 out of engagement with it as soon as the pressure of the fork-arm is withdrawn. The slicer is kept from inward movement during the paring operation by a projection, t^2, from the plate r, and a pin or arm, u^2, extending from the rear end of the slicer-arm, the projection preventing the pin from moving out, and thus keeping the slicer from moving in. The slicer may be directly attached to a stock, v^2, adjustably fastened to the arm g^2, so that it can be set more or less in toward the apple-fork to take a greater or smaller slice.

When the machine is paring an apple the fork continuously rotates in one direction by the action of the gear k on the pinion l; but, for the action of the slicer, the pinion l is thrown out of connection with the gear k and the rotation of the star-wheel intermittently turns the fork in opposite direction.

Heretofore in reciprocating slicers straight knives have been used and slices cut from the surface of the apple, or the first slices have been spherical segments; while in my machine I employ a bent knife, or a knife with an angle, x^2, in its cutting-edge, so that the knife will cut quartering slices or lunar segmental slices, which are of much better form and enable the apple to be cut up to much better advantage.

I claim—

1. An apple-parer, having a rotating cutter and a fork which is moved from position to permit the cutter to complete its rotation after the apple is pared.

2. The combination and arrangement of the gears and cutter-wheel g, cutter-arm x, fork-arm p, and swing-plate r, substantially as shown and described.

3. In combination with a slicing mechanism, the bent knife f^2, operating to cut the apple, substantially as described.

4. In combination with a paring-knife and a slicing-knife, a swinging fork, that is continuously rotated in one direction for the paring operation and is intermittently rotated in the opposite direction for the action of the slicer.

CALVIN A. FOSTER.

Witnesses:

FRANCIS GOULD,

SEWALL K. LOVEWELL.