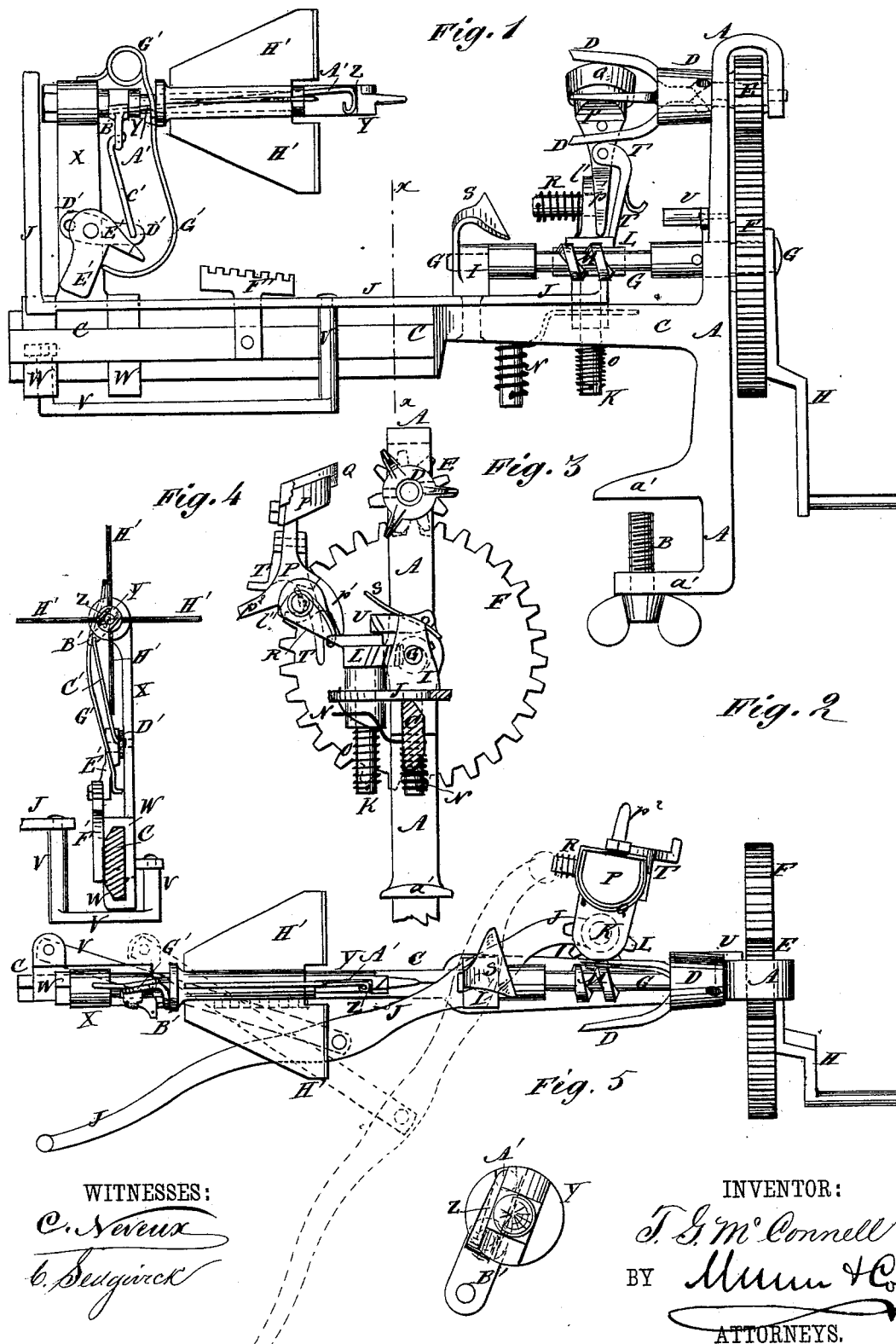


T. G. McCONNELL.
Machine for Paring, Coring, and Quartering Apples.

No. 218,549.

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UNITED STATES PATENT OFFICE.

THOMAS G. McCONNELL, OF COLLINSVILLE, ILLINOIS.

IMPROVEMENT IN MACHINES FOR PARING, CORING, AND QUARTERING APPLES.

Specification forming part of Letters Patent No. **218,549**, dated August 12, 1879; application filed May 16, 1879.

To all whom it may concern:

Be it known that I, THOMAS GREGORY McCONNELL, of Collinsville, in the county of Madison and State of Illinois, have invented a new and useful Improvement in Machines for Paring, Coring, and Quartering Apples, of which the following is a specification.

Figure 1 is a side view of my improved machine. Fig. 2 is a top view of the same. Fig. 3 is a vertical cross-section of the same, taken through the line *xx*, Fig. 1, and looking to the right. Fig. 4 is the same section as Fig. 3, but looking to the left. Fig. 5 is a detail end view of the coring and quartering spindle.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved machine which shall be so constructed as to pare, core, and quarter the apples without its being necessary to remove the apples from the fork, which shall be simple in construction, convenient in use, and rapid in operation, and which will do its work well and without wasting the substance of the apples.

The invention consists in the combination of the endless screw, the worm-wheel, the pivoted arm provided with the curved knife, the two rigid stops, the hinged branched stop, the inclined pivoted catch, the inclined trip-plate, the lever, and the three springs with each other and with the fork, the gear-wheels, the standard, and the horizontal bar; in the combination of the connecting-bar, the slide, the standard, the spindle, and the radial knives with the lever and the horizontal bar, for quartering the apples while upon the fork; and in the combination of the curved knife, the rod, the crank-arm, the connecting-bar, the pivoted bar, the weighted angular pawl, and the toothed bar with each other and with the spindle, the quartering-knives, the standard, and the horizontal bar, for coring the apples as they are being quartered, as hereinafter fully described.

A represents a standard, the lower end of which has two jaws, *a'*, formed upon it to receive the edge of a table or other support, where it is secured in place by a hand-screw, B, passing up through the lower jaw *a'*.

To the standard A, a little above the upper

jaw *a'*, is rigidly attached, or upon it is formed, a horizontal bar, C.

To the upper part of the standard A is pivoted the fork D, upon which the apples are placed to be pared, cored, and quartered, and to the journal of which is attached a small gear-wheel, E. Into the teeth of the gear-wheel E mesh the teeth of the larger gear-wheel F, attached to the outer end of the shaft G.

To the gear-wheel F or to the shaft G is attached a crank, H, by means of which motion is given to the fork D and the said shaft G. The inner end of the shaft G is pivoted to the head of a bolt or rivet, I, attached to the horizontal bar C, and which serves as a pivot for the lever J.

In bearings in the end of the lever J is pivoted a short vertical shaft, K, upon the upper end of which is formed, or to it is attached, a worm-wheel, L, the teeth of which mesh into the threads of an endless screw, M, formed upon or attached to the shaft G.

With this construction the worm L will be turned forward by the revolution of the shaft G, and may be thrown out of gear with the endless screw M by operating the lever J.

The worm L is held in gear with the endless screw M by a spring, N, attached to the bar C, and bearing against the bearings for the shaft K, formed upon the lever J. The worm L is turned back to its former position, when released from the endless screw M, by a spring, O, attached to the shaft K and to its bearings.

To a lug, *l'*, formed upon or attached to the upper end of the worm L, is pivoted an arm, P, having a semicircular head formed upon its upper end.

Q is the paring-knife, which is made in semicircular form, and its ends are bent inward and are attached to the flat side of the head of the arm P.

The curve of the knife Q is made enough larger than the curve of the head of the arm P to allow the parings to pass up between the said knife and head.

The knife Q is held forward against the apple by a spring, R, attached to the pivot of the arm P and to the lug *l'*, to which the said

arm is pivoted. The forward movement of the knife Q is limited by a stop, p^1 , attached to it, and which comes in contact with the upper end of the worm L.

To the arm P is attached a stop, p^2 , which, when the paring of each apple is completed, comes in contact with the inclined edge of the plate S, attached to the upper end of the bolt or rivet I, and pushes the knife Q back from the apple, where it is held by the forward arm of the branched stop T, which is hinged to the arm P in such a position that the said forward arm, when the said knife is pushed back, may swing over and rest upon the upper end of the worm L.

When the knife Q is in working position the forward arm of the branched stop T hangs at the side of the worm L.

The rear arm of the branched stop T projects into such a position that when the knife Q has been moved into position for beginning its work it will strike, raise, and pass the inclined catch U, pivoted to the standard A. When the knife Q begins its forward movement the inclined catch U swings the stop T outward, withdrawing its forward arm from the worm L, and allowing the said knife Q to rest against the apple.

To the lever J is pivoted the end of a connecting-bar, V, the other end of which is pivoted to a slide, W, that slides in and out upon the outer part of the horizontal bar C, and to which is rigidly attached, or upon which is formed, a standard, X. To the upper end of the standard X is rigidly attached a spindle, Y, in such a position as to be in line with the axis of the fork D. The forward end of the spindle Y is made small and pointed to pierce the apple and enter a perforation in the hub of the fork D.

Upon the forward end of the spindle Y, at the base of its point, are formed two beveled shoulders, to assist the spindle in boring its way into the apple.

The forward part of the spindle Y, in the rear of its point and cutters, is flattened, to form a space for the curved knife Z, formed upon the forward end of the rod A', which is placed in a groove in the side of the spindle Y.

The knife Z is made of such a size that when turned down it will enter the hole made by the beveled shoulders of the spindle Y without making a cut, but when turned out it will enlarge the said hole, so as to cut out the core of the apple.

To the rear end of the rod A' is rigidly attached, or upon it is formed, a crank-arm, B', to the outer end of which is pivoted the upper end of a connecting-rod, C', the lower end of which is pivoted to the outer end of a short bar, D'. The other end of the bar D', is pivoted to the standard X, and to the middle part of the said bar is pivoted the angle of the pawl E', the forward or engaging arm of which projects into such a position that it

may engage, when swung downward, with the toothed bar F', attached to the side of the horizontal bar C. The other arm of the pawl E' is made sufficiently heavy to hold, when left free, the engaging arm of the said pawl away from the bar F'. The whole pawl E' is made so heavy that its weight may hold the knife Z turned down against the flattened side of the spindle Y.

G' is a spring attached to the rear part of the spindle Y or to the upper end of the standard X. The spring G' is made of such a shape that its lower end may rest against the forward edge of the heavy arm of the pawl E'.

H' are the knives for quartering the apples. The knives H' are radial, and are attached to a sleeve which turns loosely upon the spindle Y and has a slight longitudinal movement upon it. The rear end of the sleeve of the knives H' rests against the spring G', as shown in Fig. 1.

In using the machine, an apple is placed upon the fork D and the crank H is turned. The first movement causes the inclined catch U to swing back the forked stop T and allow the spring R to press the knife Q against the apple, along which it is carried by the action of the endless screw M upon the worm L. When the paring is completed, the lever J is operated, which throws the knife Q back from the apple, and at the same time draws the slide W forward, causing the spindle Y to perforate the apple and the knives H' to quarter it. As the knives H' come in contact with the apple they are pushed back a little, pushing the spring G' against the heavy arm of the pawl E', and bringing its engaging arm in contact with the bar F'. This raises the pawl E' and bar D', and turns the knife Z outward to cut out the core of the apple.

The bar F' is inclined, so that the knife Z may be projected more or less, according to the size of the apple, as a small apple allows the knives H' to move farther forward before they come in contact with it, and are pushed back to project the coring-knife Z, allowing the pawl E' to come over a lower part of the bar F' before it is brought in contact with the said bar, so that it will not be raised so high, and will thus project the knife Z to a less distance.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the endless screw M, the worm-wheel L, the pivoted arm P, provided with the knife Q, the rigid stops p^1 p^2 , the hinged branched stop T, the inclined pivoted catch U, the inclined trip-plate S, the lever J, and the three springs N O R, with each other and with the fork D, the gear-wheels E F, the standard A, and the bar C, substantially as herein shown and described.

2. The combination of the connecting-bar V, the slide W, the standard X, the spindle Y, and the radial knives H' with the lever

J and the bar C, for quartering the apples while upon the fork D, substantially as herein shown and described.

3. The combination of the curved knife Z, the rod A', the crank-arm B', the connecting-bar C', the pivoted bar D', the weighted angular pawl E', and the toothed bar F' with each other and with the spindle Y, the quarter-

ing-knives H', the standard X, and the bar C, for coring the apples as they are being quartered, substantially as herein shown and described.

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Witnesses:

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S. BREWERTON.