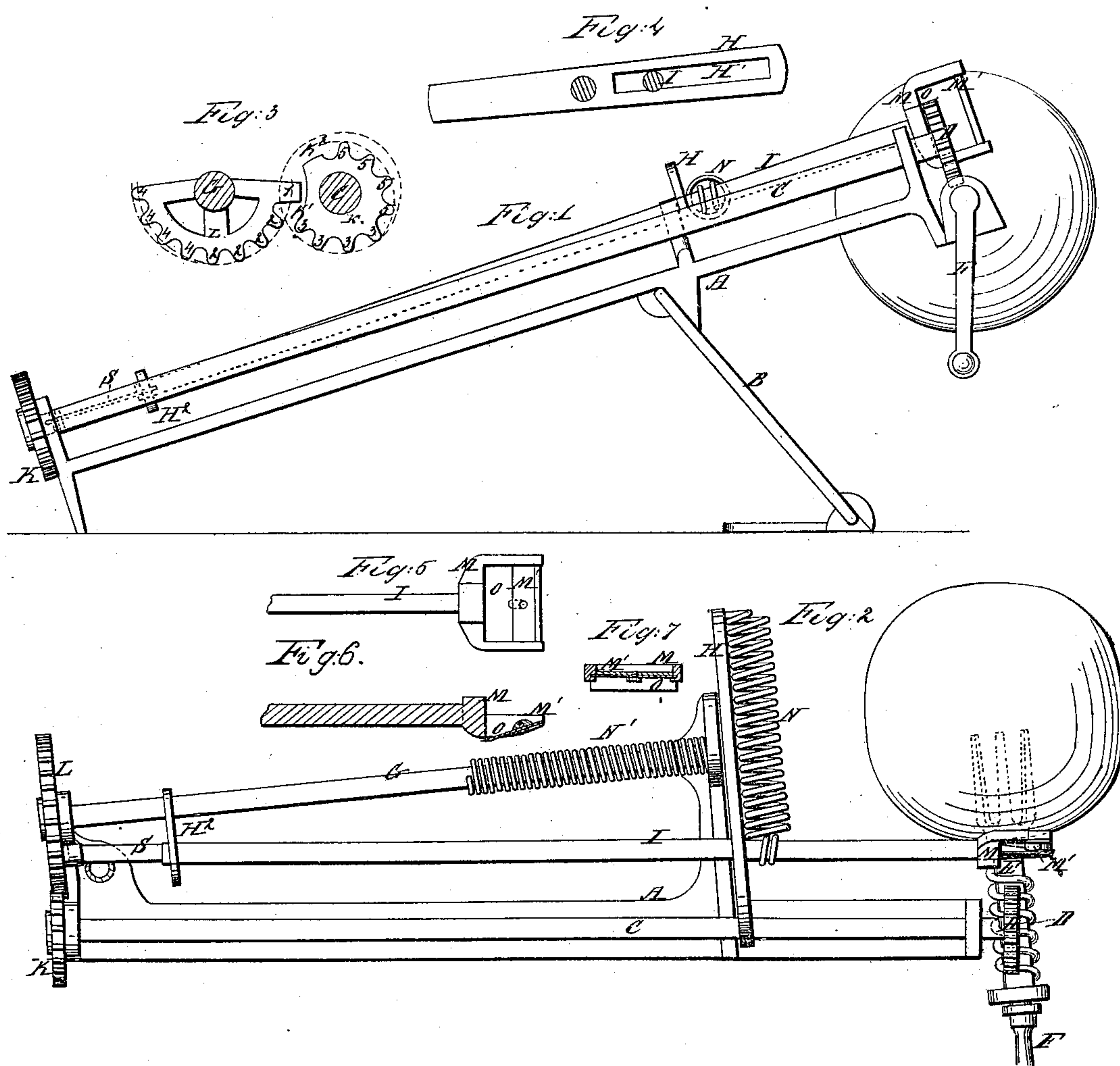


*E. I. Pratt,
Apple Parer.*

Nº 14,775.

Patented Apr. 29. 1856.



UNITED STATES PATENT OFFICE.

EPHRAIM L. PRATT, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR PARING APPLES.

Specification of Letters Patent No. 14,775, dated April 29, 1856.

To all whom it may concern:

Be it known that I, EPHRAIM L. PRATT, of the city and county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Apple-Parers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification.

Figure 1, is a side elevation of the improved machine. Fig. 2, is a top or bird's eye view of ditto. Fig. 3, is a view of the cogged gearing for moving the knife over the surface of the apple during the revolution of the same. Fig. 4, is a section of the slotted arm through which the knife is moved. Fig. 5, is a view of the knife and stock in which it is secured. Fig. 6, is a longitudinal section through the center of ditto. Fig. 7, is a cross section of ditto.

Similar letters in the several figures refer to corresponding parts.

The nature of this invention and improvement consists in securing the end of the vibrating shaft, to the opposite end of which the knife is attached, to a stud projecting from the cogged segment through which the said knife is moved over the surface of the apple, by a flat steel or other spring, so as to enable the edge of the knife to be accommodated to the inequalities of the surface of the apple, by the twisting or torsion of the spring.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

The frame A, may be made of malleable iron or other suitable material, and is arranged in an inclined position, being supported at its upper end by an inclined rod B, jointed to the frame at its upper end, and to a plate, secured to the table or other platform at its lower end, and capable of being folded under the frame for convenience of transportation. Above one edge of the frame, and parallel with the edge of the same is arranged an inclined shaft C, turning in suitable boxes, and having a cog wheel D, at its upper end, with which meshes in gear a screw thread secured or formed on a transverse shaft E, having prongs cast on or secured to one of its ends, on which the apple is forced and held, and a crank F, on its opposite end for giving motion to the same. On the same inclined plane with this shaft C, and diagonally thereto is arranged another shaft G, turning in suitable boxes in the frame, and having a slotted

arm H, attached to its upper end, through the slot H, in which the inclined knife shaft I, passes, the lower end of said knife shaft, also passing through a slot in a smaller arm H², secured to the shaft near its lower end. On the lower end of the shaft C, is secured a segment K, having eight (more or less) cogs on its periphery, one half of which are on a segment of a circle scribed from the center of the shaft C, and the other half on a segment of a circle scribed eccentric with said center, the said cogs extending more than half way around the shaft, and a portion of the remaining space between being scalloped out—from the first of the regular cogs to within a short distance of the last of the eccentric cogs, so as to form a curved blank space K', from the end of which to near the last eccentric cog nearest the center of the shaft C, the edge or space K², is curved inward slightly toward the center and eccentric with the same, so as to enable the last eccentric cog of the segment L, secured on the lower end of the diverging shaft G, to slide over its eccentric surface, and to hold the same, until the said eccentric surface K², has passed under it, as will be hereafter described. The cogs on this last mentioned segment L, correspond in number, and relative position with the center of the shaft G, with the cogs on the segment K, and the position they assume in relation to the center of the shaft C, that is to say, the first four cogs (2) nearest the first projection or large cog (1) of the segment L, are on a circle scribed from the center of the shaft G, and mesh in gear with the first corresponding form (3) of the segment K, and the next and last four cogs (4) on said segment L, are eccentric with the center of its shaft, and correspond and mesh in gear with the four eccentric cogs (5) of the said segment K.

The lower end of the knife shaft I, has a thin, flat, steel spring S, secured to it, which is attached by a pin, upon which it moves at its lower end, to a stud projecting from the segment L, between the outer edge of the projection or cog (1) of the same, and the center of the shaft G, in such a manner as to allow the knife shaft I, to be moved from the shaft G, in the slots of the arms H, H², by the surface of the apple acting on the gage or stock M of the knife, and drawn toward the same by the spiral spring N, attached to the end of the slotted arm H, and the knife shaft I.

The knife o, is formed of a thin piece of

steel, similar to the main spring of a watch, and is inserted in grooves formed in the forked prongs of the stock M, being stiffened on its back surface by a bar M', extending 5 from one prong to the other, and to which it is secured by a screw passing through a slot in the knife, and into a female screw in the bar M', in such a manner as to enable an extremely thin knife to be employed, which is better adapted to the purpose of paring than one of the thickness heretofore employed, from the fact that it will the more readily keep its position under the paring, no matter what may be the 15 putrid or spongy character of portions of the surface of the apple, and not run over such portions without paring them, as is the case with the thick knife heretofore used. Besides this advantage, there is another derived from the thinness of the 20 knife, which is, that the acids extracted from the apple in paring, having a thinner body of metal to act upon, are sufficient with the rubbing process, the edge of the knife is necessarily subjected to in the performance of its function, to always keep its edge to the proper degree of sharpness.

The operation of this machine is as follows: The apple to be pared is pressed upon 30 the prongs of the screw shaft E, when the knife shaft I and cogged segments K, L, are in the positions represented in Figs. 1, 2, and 3 of the drawings, so as to enable the knife O, to be pressed against the stem 35 end of the apple, by the spiral spring N, which is elongated by the act of forcing the apple on the prongs. The screw shaft E, is then revolved by its crank F, and the inclined shaft C, and cogged segment K, on 40 its lower end, is slowly turned by the threads of the screw shaft, acting on the cog wheel D, on its upper end, the apple being allowed to revolve once before the first cog 3, of the segment K, acts on the projection or 45 large cog 1, of the segment L, so as to enable the knife to cut a circular peeling from the end of the apple, near the core, after which the cogs 3, of the segment K, on the circle scribed from the center of the 50 shaft C, act on the corresponding cogs 2, of the segment L, and turn the same, and the knife shaft I, in the slots of its arms H, H², and causes the knife O, to be moved over the surface of the apple during its 55 revolution, at a uniform speed, until the cogs 5, of the smaller segment K, on an eccentric line, mesh in gear with the corresponding cogs L, of the larger segment L, when the speed of the knife over the more 60 convex portion of the end of the apple, in relation to its revolving progress, is reduced, so as to enable it to take a narrower spiral peeling from this portion, the nearer it approaches the center, where the convexity of 65 apples generally increases, until its end

nearly reaches the center, when the eccentric surface K², acts upon the last eccentric cog 4 of the larger segment L and holds it until said surface passes under the said cog, during which time the apple is enabled to make 70 a revolution while the knife is thus held nearly in a state of rest, so as to allow the same circular peeling to be taken from near the core part of this end, as was taken from the stem end. After the eccentric K², has 75 passed under this last cog 4, the knife shaft I, is brought back to its original position by the slotted arms H, H², being suddenly turned by the spiral spring N' (which has been contracted or wound up by the previous movement of the knife shaft) acting 80 on the shaft G. By thus moving the knife at an increased speed, over the less convex portion of the apple, where it is enabled to cut a wide slice or peeling, after it has remained stationary near the stem portion of 85 the core, until one revolution of the apple has been made, to cut a circular peeling therefrom, and decreasing the speed of its movement over the more convex portion, 90 nearest the opposite end, where it cannot cut so wide a slice or peeling, and causing it to be held near the core during one entire revolution of the apple, by the eccentric K², before it has released the last cog 4, of 95 the segment L, the knife is caused to pare the entire surface of the apple.

During the process of paring, the cutting edge of the knife is accommodated to the inequalities of the surface of the apple by 100 the flat steel spring S, which enables the knife shaft I, to have a slightly elastic turning movement, when either end of the knife gage, or edge of the knife, meets with such inequality, the twisting or torsion of 105 said spring, always acting in its elasticity, to bring the edge of the knife to its proper relative position with the surface of the apple.

What I claim as my invention and desire 110 to secure by Letters Patent is,

Attaching the lower end of the knife shaft I, to the stud projecting from the larger segment L, by a flat steel, or other spring S, for enabling the said knife shaft 115 to have a slight vibration, through the twisting or torsion of said spring, for the purpose of adapting the edge of the knife to the inequalities of the surface of the apple, during the process of paring, and enabling the elasticity of the spring S, produced by the twisting or torsion of the same, 120 to be exerted toward bringing the edge of the knife, when thus moved, back to its proper relation to the surface of the apple 125 as herein set forth.

E. L. PRATT.

Witnesses:

W. H. TOWERS,
H. S. LESHIER.