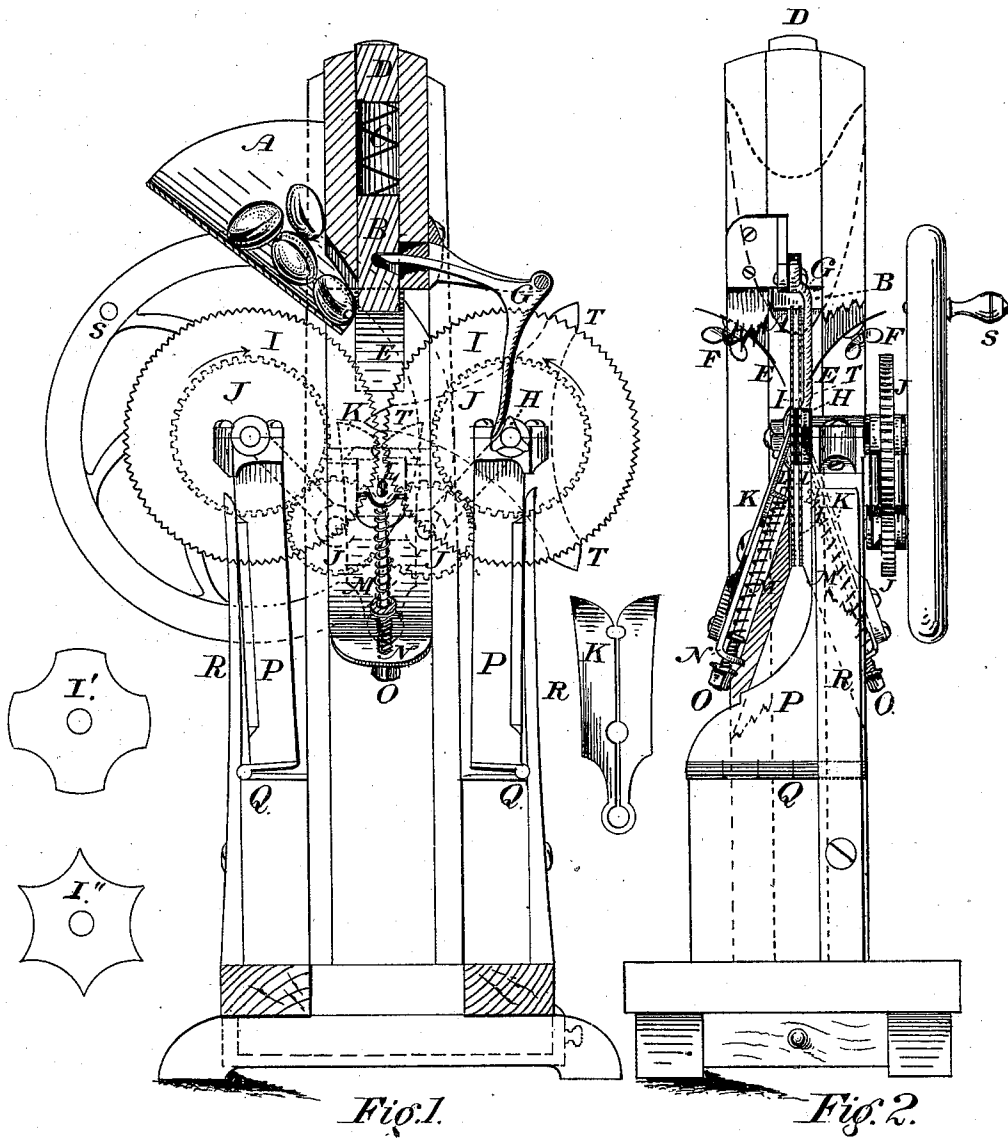


B. A. LILLIE.
MACHINE FOR STONING FRUIT.

No. 174,371.

Patented March 7, 1876.



Witnesses.
David Powell
Chas. B. Talbot.

Inventor.
Benj. A. Lillie

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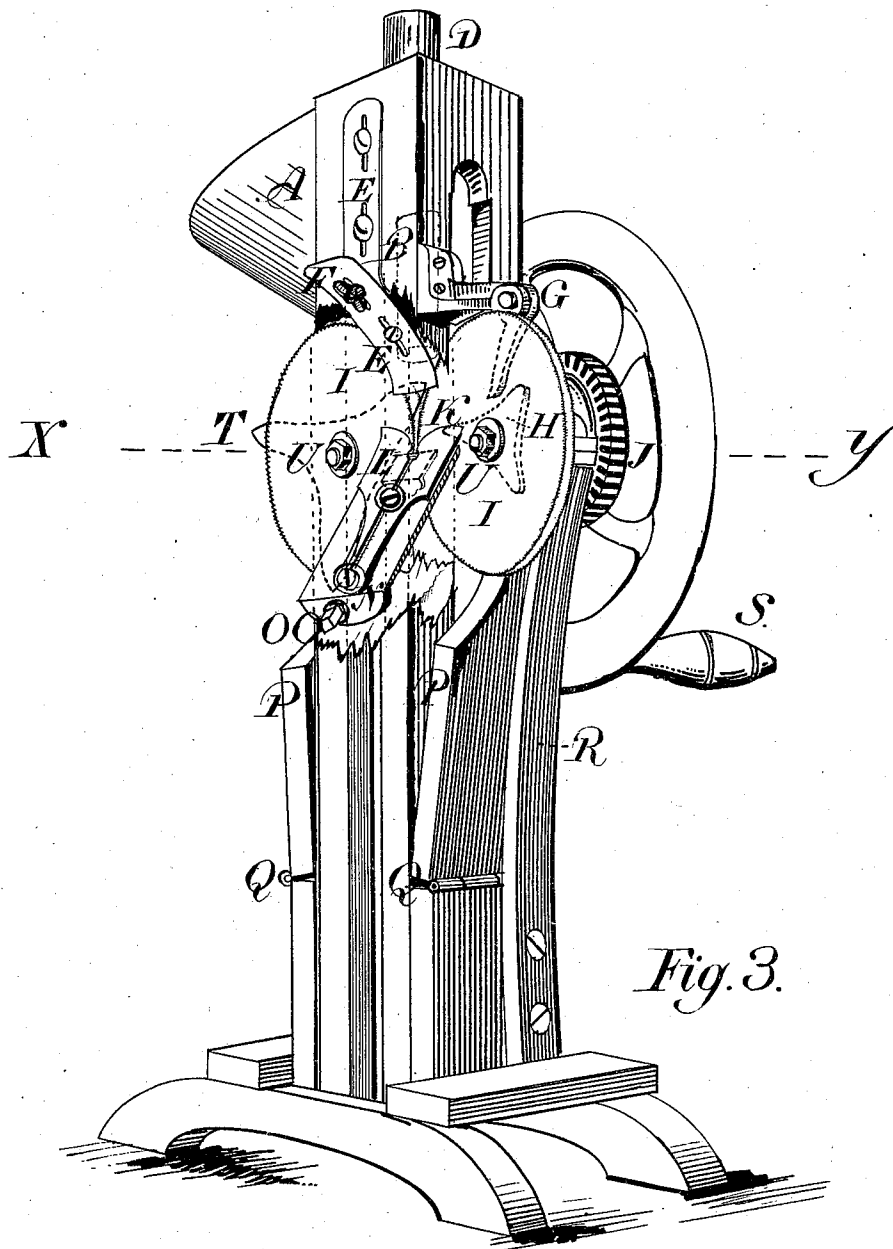


Fig. 3.

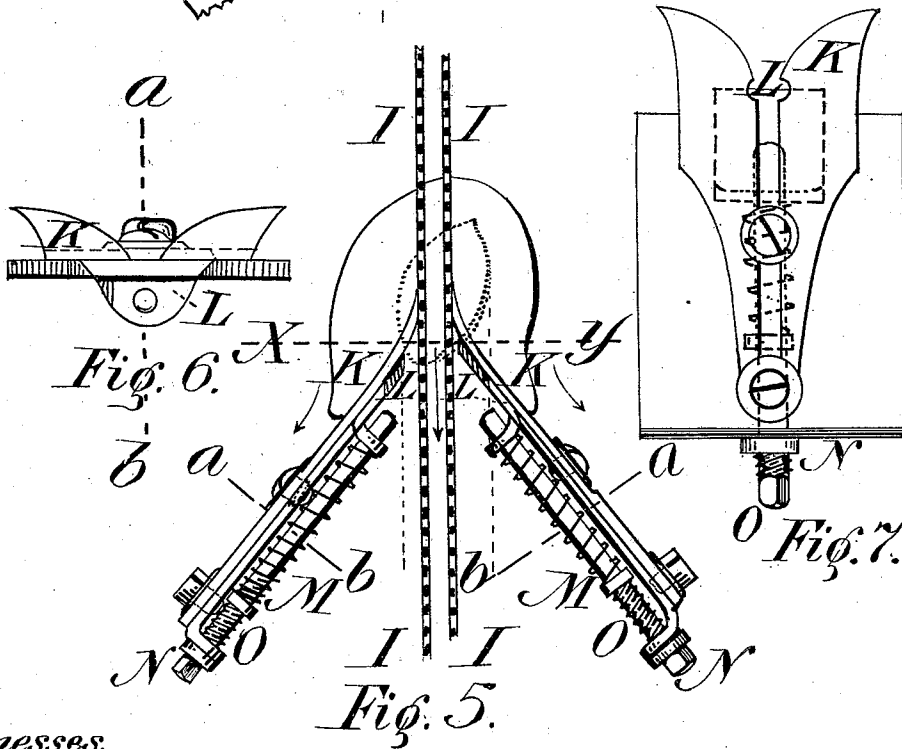
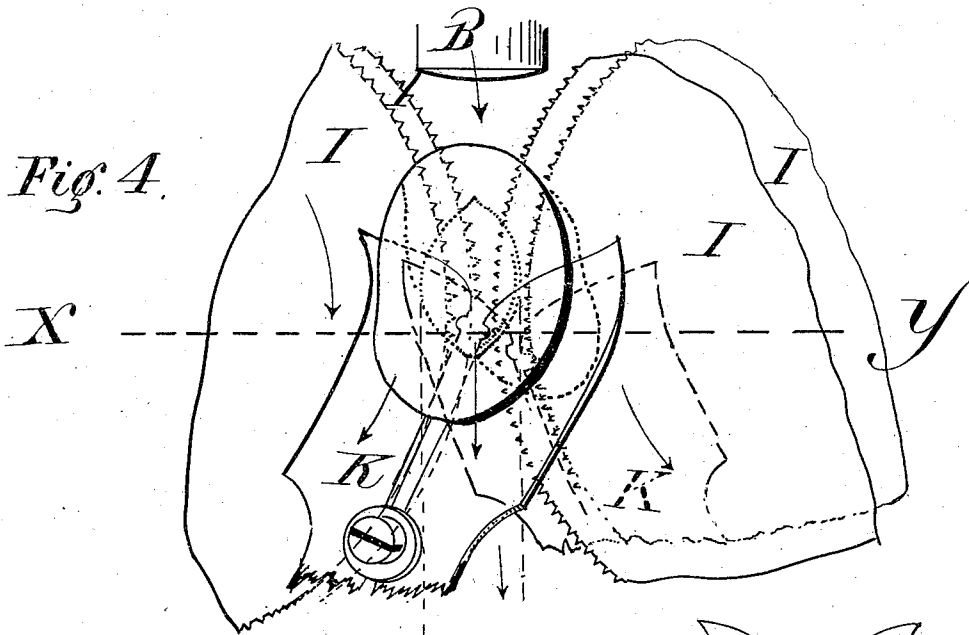
Witnesses
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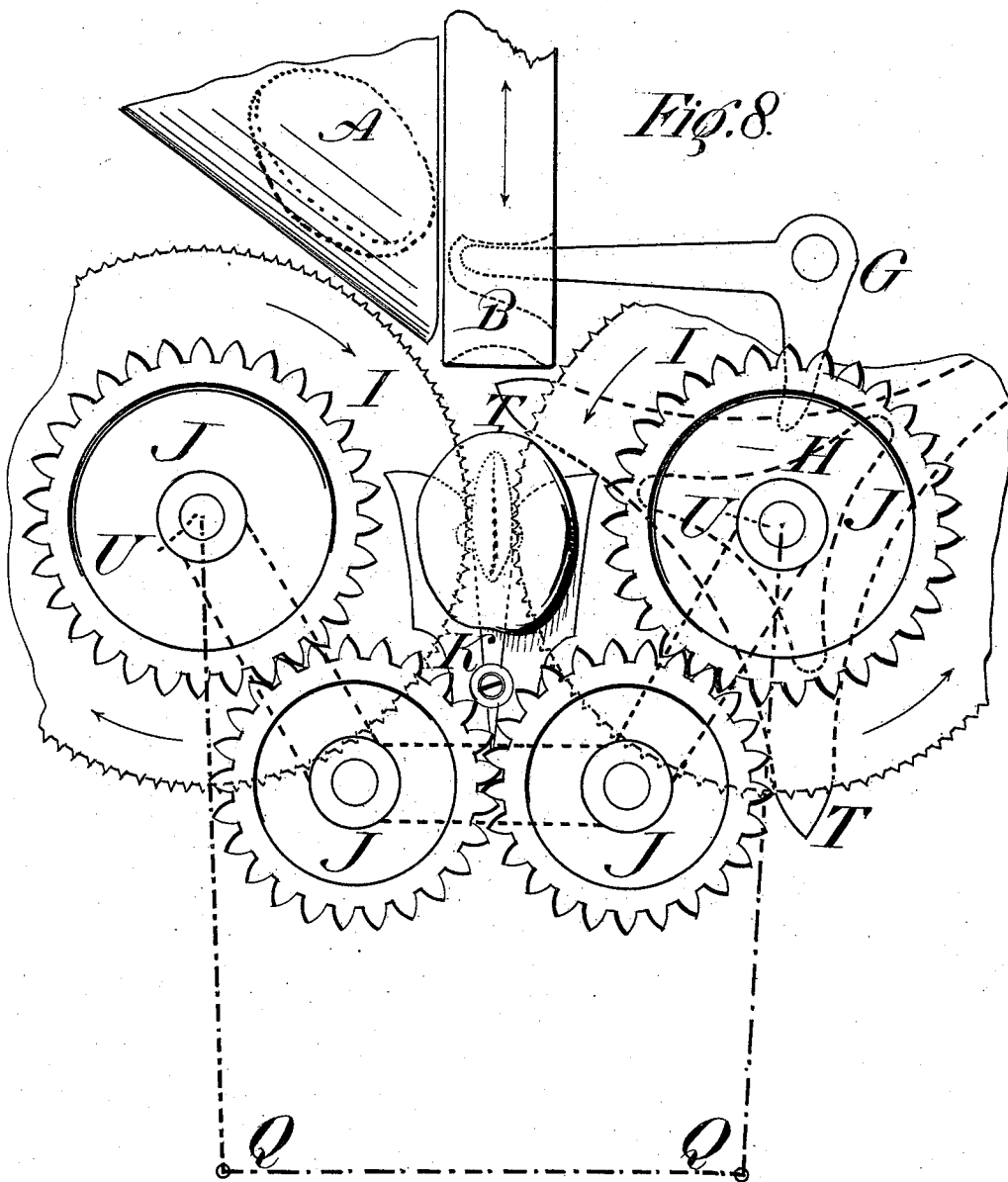
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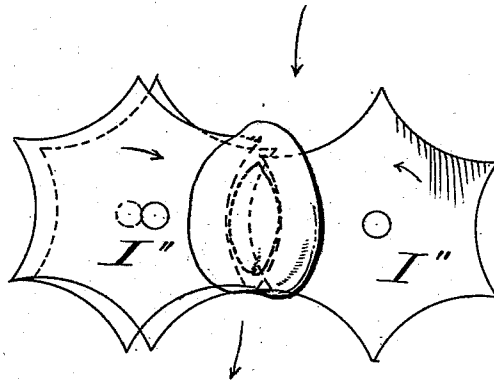


Fig. 9.

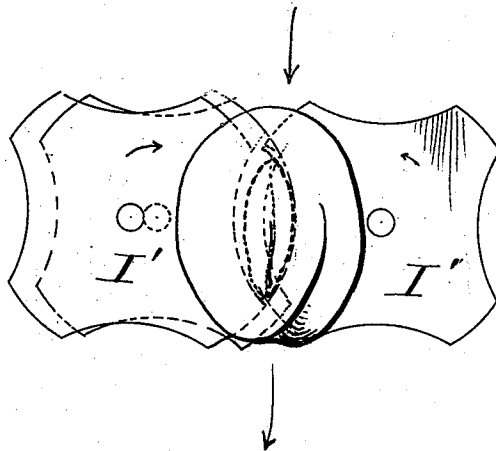


Fig. 10.

Witnesses.

Howard A. Thompson
Chas. B. Talbot.

Inventor.

Benjamin A. Lillie

UNITED STATES PATENT OFFICE.

BENJAMIN A. LILLIE, OF PORTLAND, OREGON.

IMPROVEMENT IN MACHINES FOR STONING FRUIT.

Specification forming part of Letters Patent No. **174,371**, dated March 7, 1876; application filed September 9, 1875.

To all whom it may concern :

Be it known that I, BENJ. A. LILLIE, of Portland, in the county of Multnomah, in the State of Oregon, have invented a Machine for Pitting or Stoning Fruit, of which the following is a specification :

The nature or object of my invention is to "stone" or "pit" fruit; and to accomplish this I have devised the mechanism shown in the drawings.

In Figure 1 is shown a side elevation, and in Fig. 2 a front elevation; and the letters of each apply to the same parts, and certain parts of each figure are seen in section. Fig. 3 is a perspective view; Fig. 4, an enlarged view of the four cutters I and the scrapers K, through the plane X Y, Fig. 3; Fig. 5, a front elevation through plane X Y, an enlargement of this portion of side elevation showing the scrapers K and L engaging with a pit in a piece of fruit; also, the manner in which the scrapers K separate the fruit from the pit with the assistance of the cutters I, the cutters I being separated more than when in actual use; Fig. 6, an end elevation of the scrapers K and L, looking from the plane X Y, *a* being the upper portion, and *b* the under part; Fig. 7, a plan of Fig. 6, looking from *a*. In all the figures the plane X Y is supposed to pass through the axes of the shafts U of the cutters I and extension-gears J. Fig. 8, an enlarged side elevation opposite Fig. 5, showing the lever G, cam H, check-bar B, prongs T, extension-gears J, and cutters I operating on centers Q during the passage of a pit between the cutters I, the arrows indicating the motion, and A the fruit-hopper closed by the check-bar B. Fig. 9 shows the position of I' in the act of embracing a stone in a piece of fruit, in which the cutters I' are shown, the single one working in the space between the two opposite ones, it being supposed that they are placed on the shafts U with proper washers between, and collars to secure them. Fig. 10 is a showing of I' similar to that above described of I'.

The number of concaves seen in the outer edges of the cutters I' and I'', as well as the depth given them, may vary to suit the variety of fruit to be stoned, the size of pit, stone, &c., also more than three cutters, I' or I'', being sometimes used.

Into a hopper, A, Fig. 1, the fruit is placed, and passes through the following operation: It is first held in check by a cylindrical check-bar, B, operated by a cam, H, and lever G. Between B and D a spiral spring is placed, which acts continually against the lever G and cam H. At the proper time for one of the pieces of fruit to fall into the machine the cam H raises the check-bar B, and allows it to descend between the four saw-shaped cutters I and the two segment-shaped springs E. These springs are adjusted for small and large fruit by the set-screws F, being opened for large fruit and closed for small fruit. The hopper A and the parts B C D E F G are held in place by four uprights placed in the exterior corners of the machine. When the fruit has fallen between the cutters I and the springs E it is immediately seized by the teeth on I, and drawn in between them, and as the cutters are almost together at their innermost approach to each other, the seed or pit is seized by them as they are turned by the crank S and the extension-gear J, and in its downward course it meets the scrapers K and L, K being so constructed as to open sidewise, as it is seen in Fig. 1; but these scrapers K are put on and against the outsides of the four cutters I, one on each outside. These cut the fruit open from the bottom, and scrape the seed as the saws bring it down and through them. To make sure that the seed shall not slip up or out of the machine in the rear direction, the prongs T close in behind, and press on the upper side of the pit, and so force it through the scrapers K and L. As the seed comes between the four cutters I, they become separated, according to the manner in which the seed may have entered between them, and the journals supporting the shaft of the cutters I are set on the upper end of a hinged piece, P, one on each side, and behind each of these pieces P a spring, R, is placed, which presses the cutters I together, and allows them to separate when occasion requires.

In ordinary cases the scrapers K are found sufficient; but it sometimes happens that in seeding cling-stone fruit it requires a little more scraping than the shape of K allows. So underneath them a chisel-shaped piece or cutter, L, is placed, one on each side, (one is

seen in the section, Fig. 2,) and pressed against the seed or pit by a spiral spring, M, which is adjusted by a nut and screw, N and O. When the scrapers K are open to admit the passage of a pit or seed, the scrapers or cutters L close the opening and scrape the seed.

The cutters or saws I are placed in the following manner on the mandrel, and are usually four in number, though I have sometimes only used two. When four are used they are placed different distances apart, according to the size or thickness of pits to be worked, two on each shaft, and held almost together by the springs R operating against supports P, hinged at Q. These cutters are made to move in the proper direction by means of the extension-gears J, which are held in place by links extending from their centers. Between one of the pairs of cutters I (it may be either one) the triangular piece, on the ends of which are the prongs T, (seen in Fig. 1,) is placed, and adjusted as before described.

It is sometimes necessary to have different cutters from those shown in the machine, Figs. 1 or 2, and those shown by the letters I' or I'' are used, and when a twin pair of these are used the prongs T may be dispensed with.

In Fig. 1 the left-hand half of the scrapers K L, &c., is removed to show the under side of the right-hand half in Fig. 2.

This machine may be used on any of the stone fruits, as cherries, apricots, nectarines, peaches, prunes, or plums, &c., at will, by making the necessary adjustments, and its operation in actual use has been highly satisfactory.

I claim—

1. In a machine for stoning fruit, the cutters I I' I'', the extension-gears J, hinged supports P, springs R, and shafts U; also, the spring scraping-knives K, the additional scrapers L, the operating-springs M, and the adjusting-screws O.

2. The lever G, cam H, check-bar B, spring C, and feed-prongs T, the supporting-springs E, and the adjusting-screws F, or their equivalents, substantially as described, and for the purposes set forth.

3. The combination of the cutters I I' I'', the extension-gears J, hinged supports P, springs R, shafts U, spring scraping-knives K, additional scrapers L, the operating-springs M, adjusting-screws O, lever G, cam H, check-bar B, spring C, feed-prongs T, supporting-springs E, and the adjusting-screws F, substantially as described, and for the purposes set forth.

BENJAMIN A. LILLIE.

Witnesses:

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CHAS. B. TALBOT.