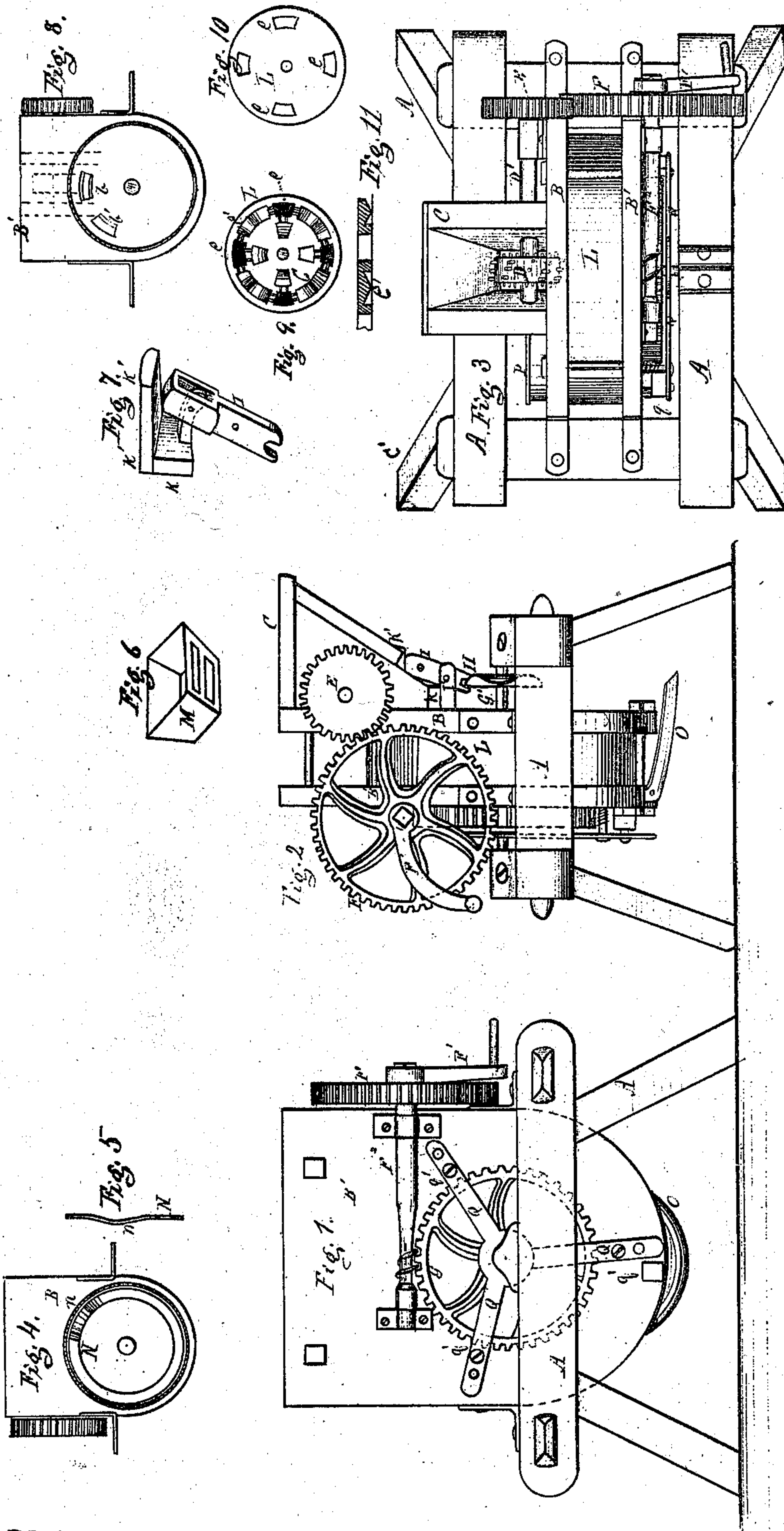


L. Wilson,

Grider Mill.

No. 97,743.

Patented Dec. 7, 1869.



Witnesses.  
Geo R Edson  
A. Ruppert.

Levi Wilson  
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Attys



# United States Patent Office.

LEVI WILSON, OF SPRINGFIELD, OHIO.

Letters Patent No. 97,743, dated December 7, 1869.

## IMPROVEMENT IN CIDER-MILLS.

The Schedule referred to in these Letters Patent and making part of the same

*To all whom it may concern :*

Be it known that I, LEVI WILSON, of Springfield, in the county of Clark, and State of Ohio, have invented a new and useful Improved Cider-Mill; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation;

Figure 2 is an end elevation;

Figure 3 is a top view;

Figure 4 is an elevation of the cam-plate which operates upon the followers to expel the pomace;

Figure 5 is a view of the edge of said plate;

Figure 6, a perspective view of the follower;

Figure 7, a perspective view of the plunger, and lever operating it;

Figure 8 is an elevation of the side of the case, opposed to the side shown in fig. 4;

Figure 9 is an elevation of the wheel containing the pressing-chamber; and

Figure 10, an elevation of the other side of said wheel.

Figure 11 is a section of the same.

The same letters in all the figures are used to indicate identical parts.

My invention relates to a mill for grinding fruit, in combination with a press for pressing the pomace; and consists in the peculiar construction, combination, and arrangement of parts, to be hereinafter fully described, and particularly specified in the claims.

In the annexed drawings—

A is a strong frame, upon which the machine is supported.

To this frame, two parallel side pieces, B B', are securely bolted.

The hopper C is attached on the outside of the side B.

The fruit placed in the hopper is ground by the spiked wheel D, the pomace falling into a chamber below the wheel.

D' is the shaft of the wheel D, bearing upon its outer end the pinion E, which receives an accelerated motion from the spur-wheel F, which is driven by the winch F<sup>1</sup>, or by a pulley or gearing, if other than human power is used.

The shaft F<sup>2</sup> extends through the eye of the wheel F, and carries the thread of an endless-screw, which engages the teeth of a wheel, G, placed on the shaft G<sup>1</sup>, which passes transversely through the machine, and has upon its opposite end, under the hopper, a scalloped cam-wheel, H.

A lever, I, has its fulcrum on the standard I', which projects from the side of the case, and has a notch in the end of the lower arm, which encloses the edge of the cam-wheel H, so that, as the latter revolves, it will cause the lever to oscillate.

The upper arm of the lever is fastened to a stem projecting from the plunger K.

This plunger has a vertical face presented against the pomace which is contained in the chamber below the hopper-wheel D, and a horizontal shelf, K', extending outward, which, when the plunger is pressed into the chamber, will support the pomace falling from the mill, until the plunger is retracted, when such pomace will be scraped off, and fall into the chamber.

A chambered-wheel, L, is keyed to the shaft G', and placed between the vertical parallel side-pieces B B'.

This wheel is constructed with chambered slots, l, and chambered recesses, l', connected therewith by narrow slits, cut in the wall which separates the two sets of chambers, and will permit the juices expressed from the pomace to flow down from one chamber to another until it escapes at an opening at O.

M is a follower, having a grating in its side, as clearly shown in fig. 6.

One of these followers is placed in each of these chambers l, and it receives the action of the plunger which feeds against the pomace into the chamber below the grinding-wheel.

The plunger works through an opening in the case B', shown at b, and another opening is formed in the case at b', through which the pomace is expelled by the following means:

A cam-plate N, placed against the side B, has a raised surface, as shown at n, and as the wheel passes onward from the plunger K, this projection comes in contact with the follower M, and expels the pomace through an opening in the side-piece B', at b'; placed immediately opposite to the point n.

The pomace falling from the opening b' will be discharged by the trough P, at one end of the machine.

The cam-plate N is attached by stud-pins passing through the side B, and received in the ends of the three-armed plate Q, which is held to the side piece by set-screws, q'.

Springs, g, of India rubber, are placed around the stud-pins, to give elasticity in case of excessive pressure. The set-screws allow the pressure to be regulated as required.

The operation of the machine will be readily perceived from the foregoing description.

The fruit, being placed in the hopper, will be ground by the wheel D, and fall into the chamber in front of the plunger.

When the opening l, containing the follower M, is opposite the plunger, it will be thrust forward against the pomace, compressing it between the inclined face of the cam-wheel as it revolves, and the follower, causing the juice to be expressed, and flow down through



the wheel L, by means of the connected chambers, or through the spaces between the wheel and the side pieces, and be discharged at O.

As the wheel continues to revolve, the follower will come in contact with the point *n*, of the cam-plate N, and be forced in the opposite direction, so as to expel the pomace through the opening *b'*.

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

1. The combination of the wheel D, reciprocating-plunger K, and chambered wheel L, arranged to operate substantially as and for the purpose set forth.

2. In combination with the plunger K, a revolving-wheel L, constructed with chambers *l*, containing followers M, substantially as set forth.

3. The wheel L, when constructed with chambers *l*, and chambered recesses *l'*, connected by slits, to permit the expressed juice to flow through the wheel.

4. The combination of the wheel L, the followers M, and the cam-plate N, arranged in relation to each other, substantially as and for the purpose set forth.

5. The combination of the plunger K, lever I, and cam-wheel H, constructed and arranged to operate substantially as and for the purpose set forth.

6. The combination of the chambered wheel, the cam-plate N, springs *q*, plate Q, and set-screws, for regulating the relation of the cam-plate to the wheel, substantially as and for the purpose set forth.

7. The combination of the spur-wheel F, pinion E, and shaft F<sup>2</sup>, bearing the thread of an endless screw-wheel G, shaft G', and cam-wheel H, for simultaneously operating the grinding-wheel, press, plunger, and chambered wheel L, substantially as set forth.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

LEVI WILSON.

Witnesses:

C. J. MONROE,  
S. K. BOARDMAN.