J. Bowen,

Cider Mill.

No. 40,237. Patented Oct. 13, 1863.

Fig. 2.

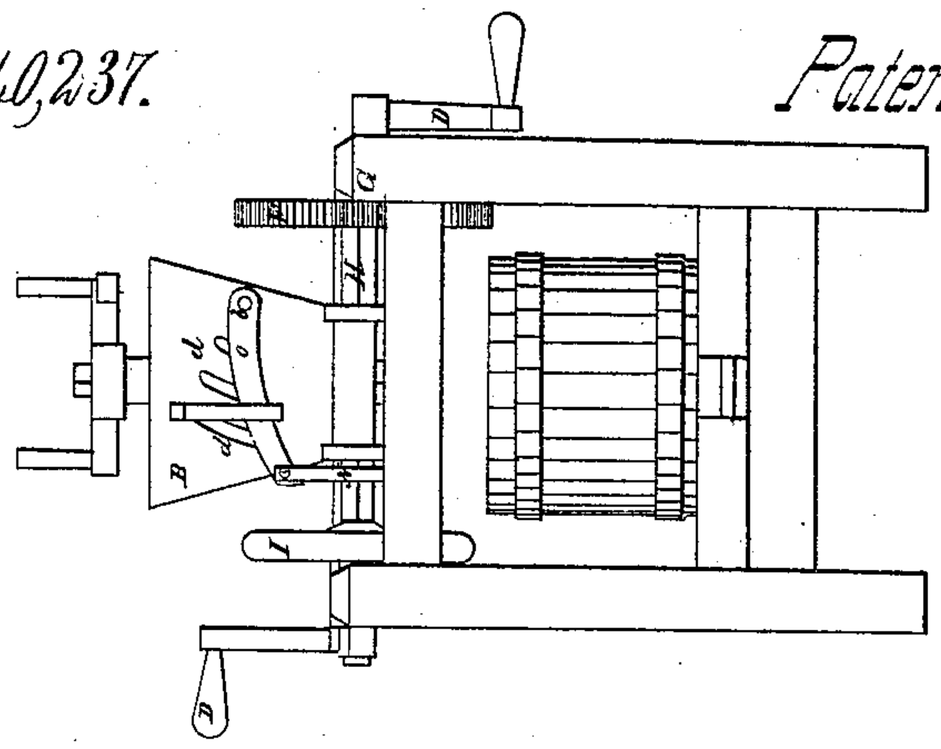


Fig. 3

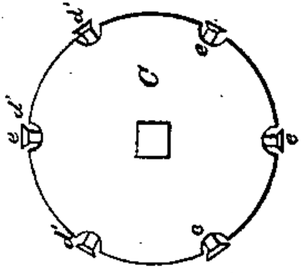
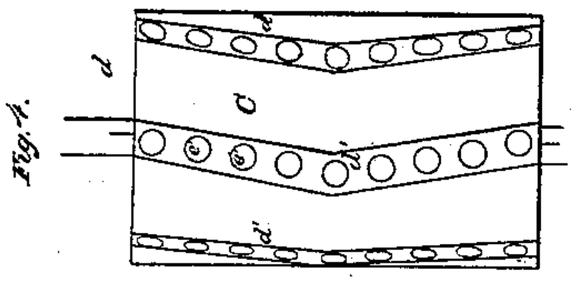


Fig. 4.



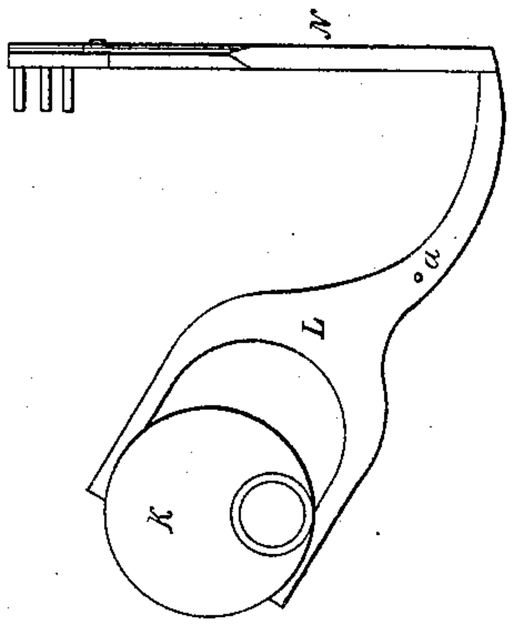
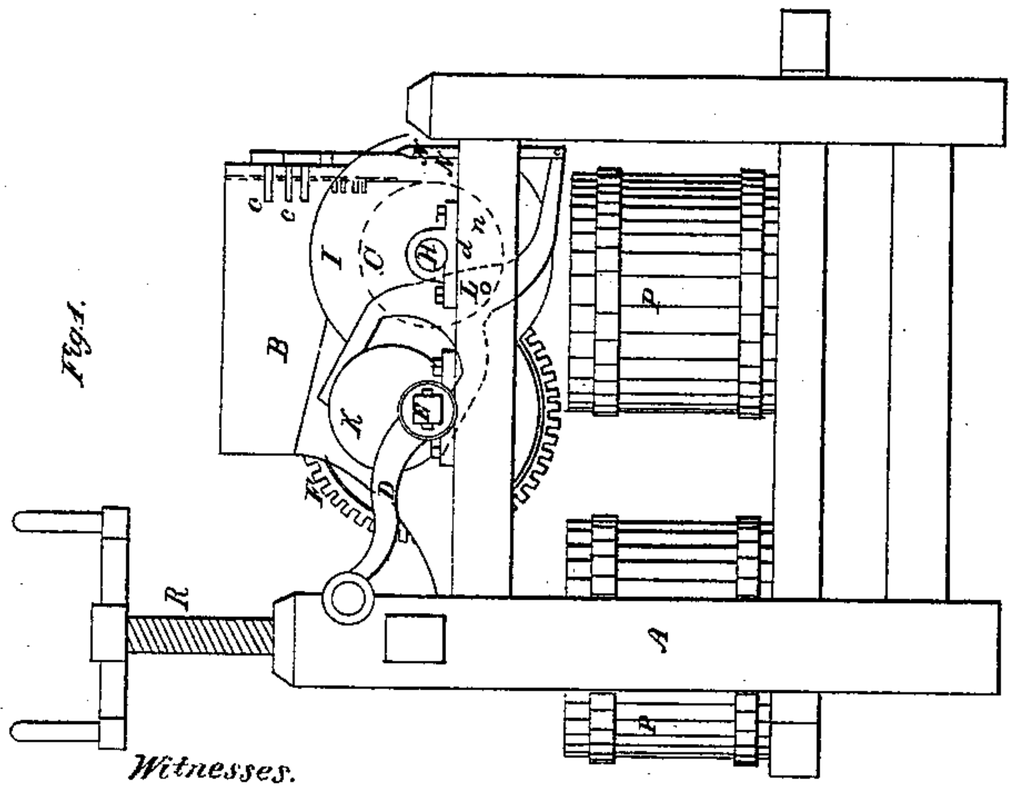


Fig. 1.



Witnesses.

Boyd Elliott

H. Norton

Inventor:

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UNITED STATES PATENT OFFICE.

JESSE BOWEN, OF YELLOW BUD, OHIO.

IMPROVEMENT IN CIDER-MILLS.

Specification forming part of Letters Patent No. **40,237**, dated October 13, 1863.

To all whom it may concern:

Be it known that I, JESSE BOWEN, of Yellow Bud, in the county of Ross, in the State of Ohio, have invented certain new and useful Improvements in Apple-Mills; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings and letters of reference marked thereon, forming a part of this specification.

My invention relates to the class of cider-mills which operate by scraping or rasping the fruit with a toothed cylinder; and my improvements consist in the peculiar construction of the toothed cylinder, by which the operation is more perfectly effected; also, in a device pressing the fruit against the surface of the cylinder when in motion, and, if necessary, cutting the fruit into parts to facilitate the operation of rasping or reducing the same to pulp.

In the accompanying drawings, Figure 1 is a side elevation of the mill. Fig. 2 is an end elevation. Fig. 3 is a transverse section of the rasping-cylinder. Fig. 4 is an elevation of the same. Fig. 5 is a representation of the eccentric lever and reciprocating arm, which will be described.

Like letters of reference indicate like parts in all the drawings.

A is a strong rectangular frame, to which the working parts of the mill are attached. B is the hopper of the machine, in the bottom of which the rasping-cylinder C is placed. D D are hand-cranks on opposite ends of shaft E, and upon the same shaft is a spur-wheel, F, geared with pinion G on shaft H and imparting accelerated motion thereto. The shaft H carries the rasping-cylinder C, also a fly-wheel, I.

Upon shaft E is an eccentric, K, and adapted thereto is a bifurcated lever, L, pivoted at *a*, and so arranged as to receive a vibrating motion from said eccentric. The opposite end of L is pivoted to a vertical rod or connecting-bar, N, the upper end of which is pivoted to an arm, O, the latter being pivoted, as shown, at *b*. The arm O is furnished with prongs, which project through elongated openings *d* into the hopper and over the face of the cylinder C. The arrangement of these parts just described is such that the motion imparted by the eccentric K to lever L is communicated through rod N to lever O, and the prongs *c*, being caused to reciprocate slowly in the hopper above the cylinder, operate to press the apples or other fruit down upon the face thereof or into the space between the cylinder and the front board or breast of the mill, thereby facilitating the operation of rasping or reducing the fruit to pulp. If desired, the prongs *c* may be made with cutting-edges, but ordinarily I think it will not be required.

The cylinder C is made of wood and armed with ordinary machine-screws, the heads of which project from the face of the cylinder, forming cutting or rasping edges. As heretofore constructed, the heads or rasping-edges have been made to project from the plain face of the cylinder. In such machines the pulp of the fruit tends to collect and remain under the cutting-edges, forming a hard mass and rendering them comparatively inoperative.

In my improved mill the face of the cylinder is grooved or channeled, as represented at *d'*, Figs. 3 and 4, and the screws *e* are inserted, as shown, in the channels, with the heads or cutting-edges projecting slightly beyond the face of the cylinder. By this construction the rasping or cutting edges are prevented from taking a deep hold upon the fruit, which would cut off the substance in small fragments and not scrape it off. At the same time the pulp as it is scraped from the fruit passes into the grooves, and is free to escape without any tendency or hardly a possibility of its wedging into a solid mass under the rasping-edges. For greater effect, the channels or grooves are formed in spiral directions upon the face of cylinder, the spiral direction being changed or reversed at the center between the two ends of cylinder, as represented.

P P are hoops for receiving the pulp as it is ground and leaves the mill.

R is a screw by which the juice is expressed from the same.

The arrangement and operation of these parts are common and well known and need not be further explained.

Having fully described my invention, what

I claim as new, and desire to secure by Letters Patent, is the following:

1. The arrangement of the eccentric K, lever L, rod N, arm O, and projections *c*, substantially as and for the purpose specified.

2. In the construction of the rasping-cylinder C, inserting the screws or rasping-pins *e* in the channels or grooves *d'*, allowing their heads to project but a short distance beyond the face of the cylinder, at the same time affording a sufficient space under the heads for the free escape of pulp, as herein specified.

JESSE BOWEN.

Witnesses:

MILTON TOOTLE,

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