F. & G. F. Hovey,

Cider Mill.

No. 90,843 Patented June 1. 1869.

Fig. 2.

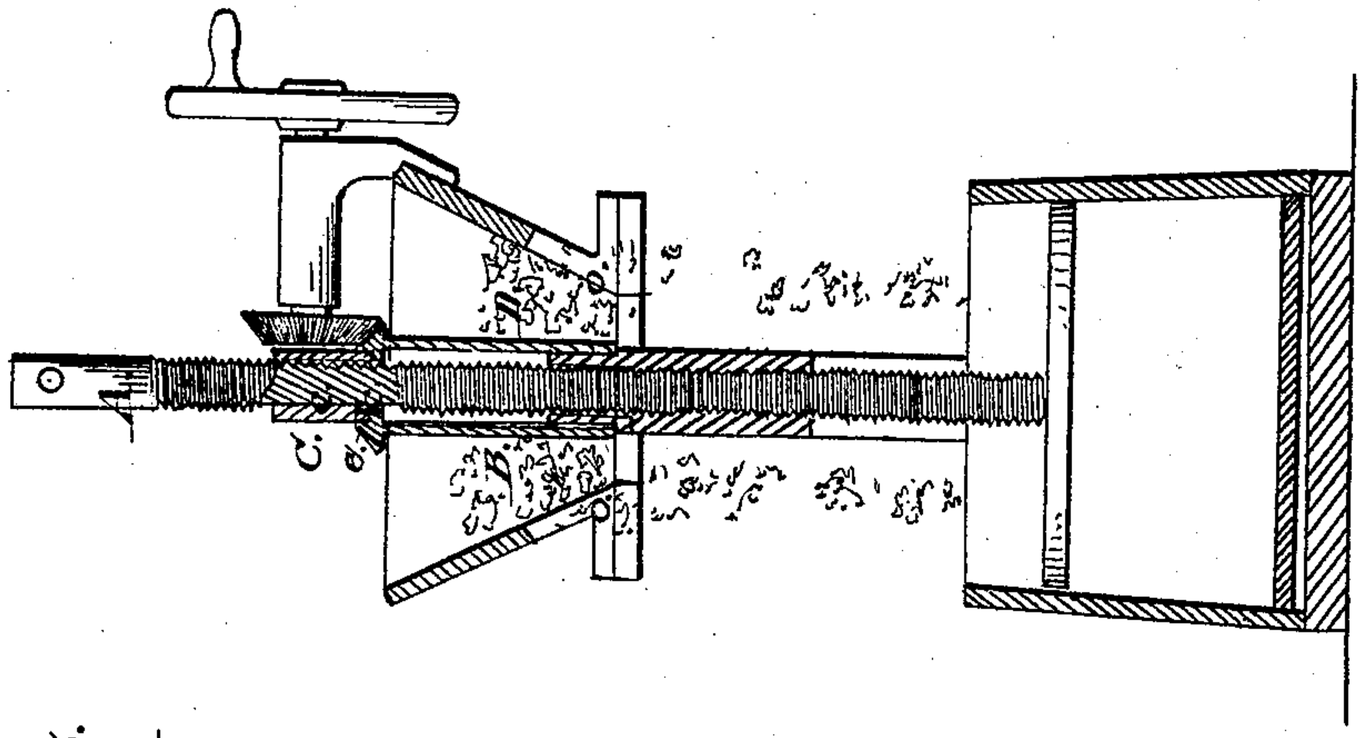

Fig. 3.

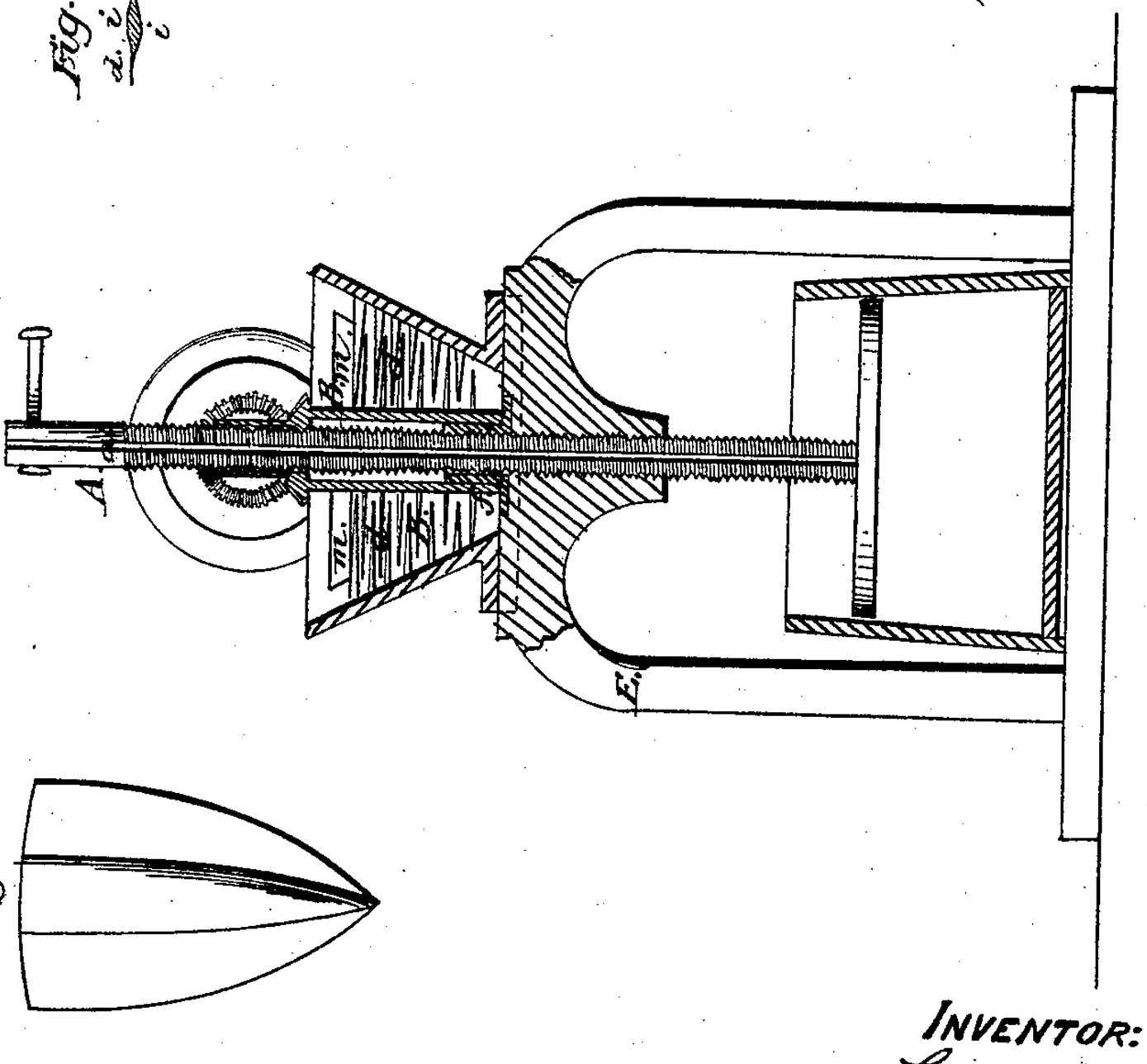

Fig. 1.

Fig. 4.

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Letters Patent No. 90,843, *dated June* 1, 1869.

IMPROVED CIDER-MILL AND PRESS.

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

To all whom it may concern:

Be it known that we, FRANCIS HOVEY and GEORGE F. HOVEY, of the city, county, and State of New York, have invented a new and useful Combined Cider-Mill and Press; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention consists in the arrangement, upon the screw, of a protecting-sleeve, secured to the frame of the mill, whereby the said screw is protected against injurious contact with the bruised apples, or the juice thereof; also, in the construction of the cutting-blades of the mill with one or more projecting ribs or corrugations upon their flat surfaces, whereby the apples are mashed, or partially ground between the fixed and moving blades, after being cut by the edges of the same.

Referring to the accompanying drawings—

Figures 1 and 2 represent sectional elevations, at right angles to each other, of a combined cider-mill and press constructed according to our invention, and

Figure 3 represents a transverse section of one of the cutting-blades thereof.

Figure 4 represents a top view of one of the cutting-blades detached, and on an enlarged scale.

Similar letters of reference indicate corresponding parts in the several figures.

A is the screw of a cider-press, passing through a central opening in the centre shaft, B, of a mill, D, and fitted into a female-threaded opening in the frame E, so that the mill or the press may be used in the performance of their individual functions separately, or in connection, without detriment to each other.

The screw A is provided with a longitudinal groove, *a*, for reception of a feather, *c*, projecting from the inner surface of a sleeve or collar, C.

This sleeve or collar C is arranged upon the upper portion of the screw A, or that portion thereof which is above the shaft B, and is susceptible of a longitudinal sliding movement upon the screw, without turning thereon, by means of the feather *c* fitting within the groove *a*.

Upon the lower extremity of this sleeve or collar C are provided one or more locking-projections, *e*, which, when the said collar C is brought downward upon the upper end of the central shaft B, lock with suitable notches or cavities provided therein, so that, when the shaft is rotated, the said locking-engagement of the parts, as above described, will cause the rotation of the collar C, together with the screw A.

The passing of the threads of the screw through the threaded opening in the frame causes the rising or lowering of the screw, while the sliding of the feather *c* within the groove *a* provides a means for the upward or downward passage of the screw through the said collar, while it remains locked to the upper part of the shaft B.

When it is desirable to operate the screw by other means, or when the mill is to be used without the press, the collar C is caused to slide upwardly along the screw, after disengagement from the shaft B, until its locking-projections *e* are beyond the reach of the notches or locking-cavities of said shaft.

f is a stationary sleeve, attached to the frame, at the bottom of the hopper D, and which passes upwardly within the centre shaft B, and encases the screw A, so as thereby to prevent the juice of the apples from coming in contact therewith.

Said stationary sleeve *f* may be cast upon the frame, and have a thread cut therein, so as to constitute a part of the threaded opening or bearing through which the screw A is passed.

The cutting-blades *d* of the mill are constructed with one or more projecting ribs or corrugations, *i i*, running lengthwise or otherwise upon their flat surfaces, for the purpose of mashing or grinding the apples between the fixed blades of the hopper D and the moving blades of the shaft B, after the cutting asunder of said apples by the edges of said blades.

m m are pressing-blades, extending radially and horizontally from the upper part of the mill-shaft B, and revolving within the upper part of the hopper D.

Said pressing-blades are so curved laterally, in an upward and forward direction, as, when revolving, o press down the uppermost apples in the hopper, for the purpose of preventing their falling over the sides of the mill.

o o are vertical openings made in the sides of the hopper D, near its bottom, and through which the apples are discharged after they have been ground.

These openings *o o* are arranged immediately forward of the fixed knives *d* of the hopper, where resistance to the onward movement of the ground apples is greatest, and, consequently, where the lateral escape and ejectment thereof will be more easily effected.

What we claim as our invention, and desire to have secured by Letters Patent, is—

1. The stationary sleeve *f*, attached to the bottom of the hopper, projecting within the shaft B, and surrounding the screw A, substantially as and for the purpose herein set forth.

2. The cutting-blades *d*, having one or more ribs or corrugations upon their flat surfaces or sides, whereby the apples are mashed after they are cut, substantially as specified.

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