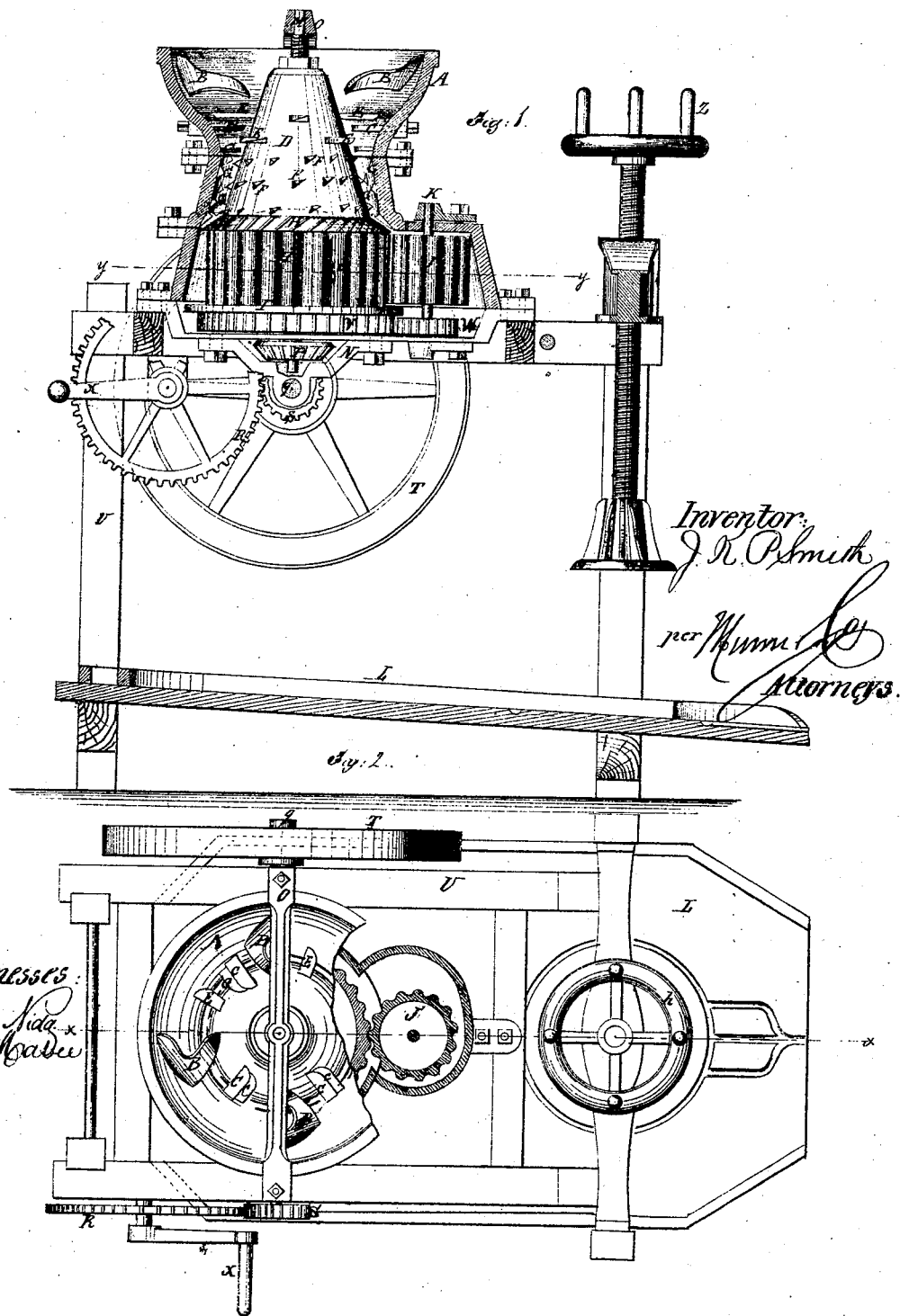


J. K. F. Smith,

Cider Mill.

No. 108645.

Patented Oct. 25. 1870.



United States Patent Office.

JAMES K. P. SMITH, OF JEFFERSONVILLE, INDIANA, ASSIGNOR TO HIMSELF AND L. S. SHULER, OF SAME PLACE.

Letters Patent No. 108,645, dated October 25, 1870.

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, JAMES K. P. SMITH, of Jeffersonville, in the county of Clarke and State of Indiana, have invented a new and useful Improvement in Cider-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to a new and useful improvement in mills for grinding apples in the process of making cider, which mill may be used for crushing or grinding other fruits or substances preparatory to expressing the juice therefrom; and

The invention consists in the construction and arrangement of parts, as hereinafter more fully described.

In the accompanying drawing—

Figure 1 represents a vertical section of the mill taken on the line *z z* of fig. 2.

Figure 2 is a sectional plan view, the sectional portion being on the line *y y* of fig. 1.

Similar letters of reference indicate corresponding parts.

A is the hopper or shell, which is provided with four (more or less) inclined wings, B, on its inner side, and a series of knives, C, as seen in the drawing.

D is the cone cylinder, which is made to revolve on a vertical shaft within the hopper, provided with a series of knives, E, and cogs or lugs F.

The middle portion of the shell is provided with cogs or lugs G.

The cylinder may have knives which will interlock with knives on the shell, if desired.

H is a section of the cylinder at the base of the cone, which is serrated or cogged, the angle of which varies from the face of the cylinder, opposite to which the shell is made, to correspond therewith, as seen in the drawing.

Be neath this section H the cylinder H' is vertical in position, and fluted or serrated.

I is a bottom plate at the base of the shell beneath the cylinder A.

J is a cylinder attached to the vertical shaft K, which is fluted or serrated, and revolves with the

lower portion of the cylinder A, and serves as a carrier to convey the pulp from the mill, and deliver it onto the platform L.

M is the shaft of the main cylinder D, which is supported at its bottom end by the bridge-tree N, and at the top by the cross-tree O, both of which trees are attached to the shell A.

The main shaft is revolved by means of a pair of bevel-gears, P, which are actuated from a horizontal shaft, *q*, which is driven by the spur-wheel and pinion R S, the former of which is on the driving-shaft of the mill.

T is a fly-wheel on the outer end of the shaft *q*.

U is the frame, by which the apparatus above described is supported.

The carrier-cylinder J is revolved by means of the spur gear-wheel V on the main cylinder-shaft M, and the pinion on the shaft K.

In this example of my invention the mill is actuated by a crank, *x*, on the driving-shaft, but it may be driven by a belt, or in any convenient manner.

Y represents a screw-press, supported by the frame U, and operated by the hand-wheel Z.

For making cider and wine, and for all similar purposes, this apparatus will be found of the greatest advantage.

The mill may be made of any required size, to adapt it to either hand or other motive power; but it is more especially intended for a portable hand-mill for farmers' and fruit-growers' use.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The combination of the hopper or shell A, the cylinder D, with the sections H and H', and the carrier-cylinder J, arranged and operating substantially as and for the purposes herein shown and described.

2. In combination with the hopper A, the inclined wings B, constructed as described, for guiding the fruit downward as the cylinder is revolved, substantially as described.

JAMES K. P. SMITH.

Witnesses:

J. PERDUE,

ISAAC BRINKWORTH.