

C. BOUL.
WINE AND CIDER MILL.

No. 171,761.

Patented Jan. 4, 1876.

Fig. 1.

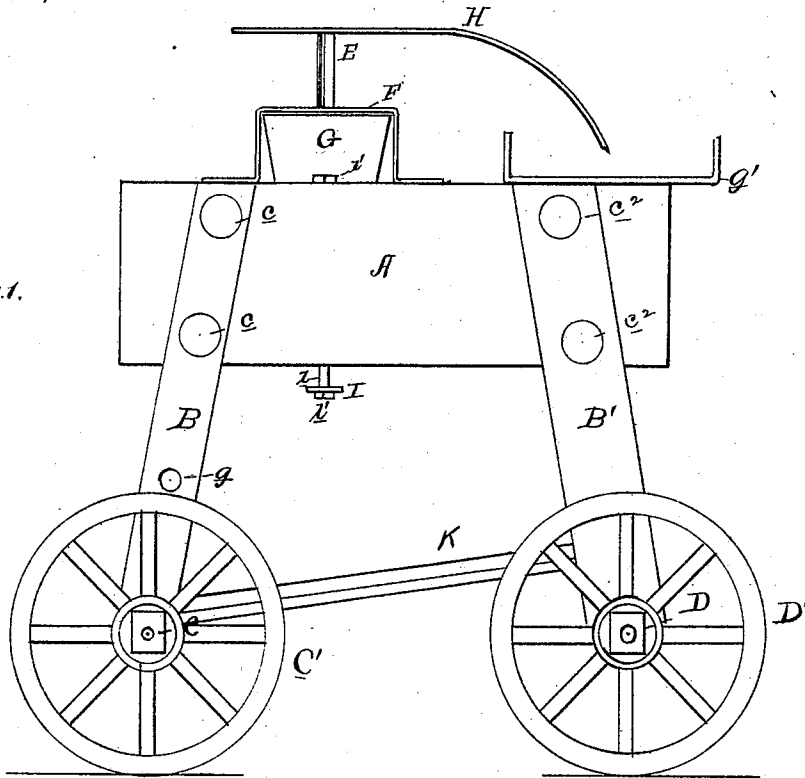
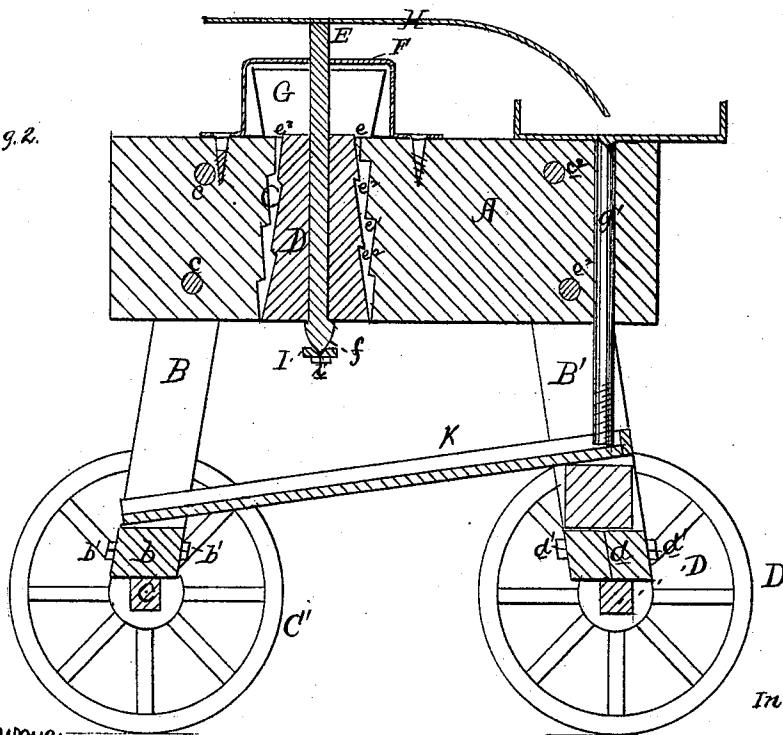


Fig. 2.



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Fig. 3.

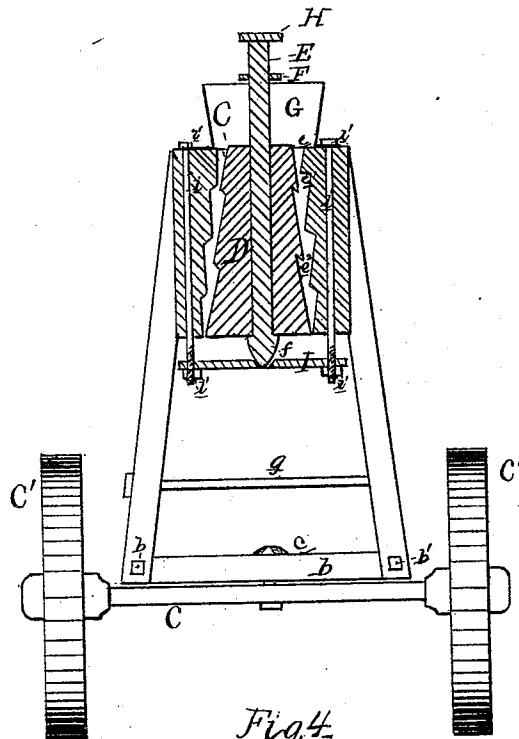
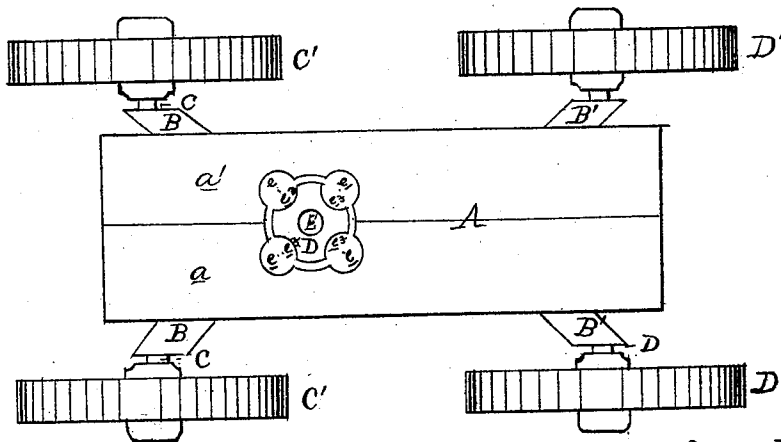


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHRISOSTOMUS BOUL, OF OGLE STATION, ILLINOIS.

IMPROVEMENT IN WINE AND CIDER MILLS.

Specification forming part of Letters Patent No. **171,761**, dated January 4, 1876; application filed December 3, 1875.

To all whom it may concern:

Be it known that I, CHRISOSTOMUS BOUL, of Ogle Station, in the county of St. Clair and State of Illinois, have invented a new and useful Improvement in Cider and Wine Mills; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The object of my invention is the production of a portable cider and wine mill, more particularly designed to be used in the country, where one mill would be sufficient for a number of farmers, it being hauled from place to place wherever it is desired to be used; and, further, to make such a portable mill strong, durable, and cheap, and to have it so constructed that the pomace can be prepared rapidly and economically, and yield the maximum quantity of juice; and my invention therein consists in the various new combinations of the principal operative parts, all as more particularly herein-after described.

To enable others skilled in the art to make my invention, I now proceed to describe the same in connection with the drawings, in which—

Figure 1 is a side elevation; Fig. 2, a longitudinal section on the line of the crusher-spindle; Fig. 3, a cross-section on the line of the crusher-spindle; and Fig. 4, a top view with the hopper removed, showing the shape of the mouth of the receiver.

Like letters denote corresponding parts in each figure.

A represents a block, preferably of wood, longitudinally divided into two equal parts, *a a'*, which are supported upon four stout standards, B B B' B'. The two standards B B are connected at their lower ends by a cross-beam, *b*, tenoned into each, the joints being strengthened by bolts *b¹ b¹*. These standards B incline toward each other and toward the center of the block A, and have their inner sides cut away from their tops, on a line at right angles to the beam *b*, to a shoulder, *b²*, upon which rests the forward end of the block A. Bolts *c c* pass through the standards B B and entirely through the block A, connecting its two parts *a a'* and the said standards B B rigidly together. To the center of the beam *b* is pivoted,

by the king-bolt *c¹*, the forward axle C, having wheels C' C'. The two standards B' B' are inclined and secured to the block A by bolts *c² c²*, in a similar manner to the standards B B, and have shoulders *c³ c³*, also the same as the shoulders *b² b²* of the standards B B. The lower end of the standards B' B' are secured rigidly to the rear axle D, having wheels D' D', and are connected directly above the said axle by a cross-beam, *d*, which is tenoned into the standards B' B', the joints being strengthened, the same as the joints to the standards B B, by bolts *d' d'*. The two sets of standards, by their inclination and in connection with the bolts, brace each other, rigidly support the block A, and hold its parts *a a'* firmly together, while the wheels allow it to be drawn from place to place. C is the receiver, which is an opening, in general outline, of the form of a frustum of a cone, made through the block A longitudinally toward the forward end of the block, but laterally exactly in the center of said block A, one-half of the opening being made in each of the two parts *a a'*. In the walls of the receiver are formed a number of grooves, *e*, descending spirally from the top to the bottom of the block A, a regular distance apart, each groove making about two-thirds of a revolution around said receiver. These grooves are made quite deep at their tops, and diminish in depth gradually until they reach the bottom of the receiver, where they are very shallow, and almost cease to be grooves. The grooves, where they open in the top of the receiver, are met by large circular vertical grooves *e¹*. D is the crusher, preferably made of wood, of the same general outline as the receiver C, and adapted to enter such receiver from the bottom. It has grooves *e²*, corresponding to the grooves *e* of the receiver, but running in an opposite direction. The top of each groove *e²* opens into a large circular vertical groove, *e³*, formed in the crusher, corresponding to the vertical grooves *e¹* of the receiver. E is the crusher-spindle, preferably made of metal passing entirely through and rigidly secured to the crusher, and having its lower end *f* rounded and enlarged to form a shoulder, upon which the crusher rests. F is a brace passing over the mouth of the receiver, and holding the hopper G in place. This brace

also supports the upper end of the crusher-spindle, which passes through it and has secured to its upper end a sweep, H, for rotating said spindle. The lower end of the crusher-spindle rests upon a step, I, which has a depressed bearing for the lower rounded end of the spindle. This step is suspended laterally across and below the bottom of the receiver by two vertical rods, *i i*, which connect one with each end of the step and pass up through the block A on each side of the hopper, with nuts *i' i'* screwed on their upper ends for adjusting the same. K is a trough resting in an inclined position upon the cross-beams *b d*, under the receiver and crusher, which conveys the juice to any proper removable receptacle. The trough is raised onto the rod *g*, which passes through the uprights B above the cross-beam *b*, to remove it out of the way of the wheels C' C' when the mill is being drawn around, and allows the wheels to pass entirely under the said trough. A screw-rod, *g'*, holds the trough in place.

In operation the crusher is turned by a horse attached, by a line or rod, to the end of the sweep H. The crusher is adjusted to crush the pomace to the desired fineness. The apples are then thrown into the hopper whole. When two of the large vertical grooves, *e¹* and *e²*, come opposite each other they form an opening large enough to receive a whole apple, which is drawn downwardly into a gradually-diminishing space and thoroughly compressed. The juice flows freely down between the crusher and receiver, but the opening is so small that none of the pomace can go through. When

it is desired to clean out the pomace the adjustable step is lowered until the space is large enough for it to pass out, the whole being cleaned by water thrown in from above, or in any other convenient way. The crusher, however, can be entirely removed by taking the sweep off of the upper end of the crusher-spindle, and unscrewing the nuts *i' i'*, so that the bolts *i i* can be taken out and the step I lowered out of the way.

When a lighter pressure is needed, as in making wine, the crusher is lowered, allowing the grapes to be compressed without being torn.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cider and wine mill, the combination, with the block A, of the uprights, cross-beams, bolts, axles, and wheels, forming a portable frame for the mill, substantially as described and shown.

2. In a portable cider and wine mill, substantially as described, the combination of the following elements: the block A, the receiver C, adjustable crusher D, hopper G, and inclined conveying-trough K, all the parts being mounted upon wheels and adapted to be drawn from place to place, substantially as described and shown.

This specification signed and witnessed this 9th day of October, 1875.

CH. BOUL.

Witnesses:

CHAS. D. MOODY,
SAML. S. BOYD.