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R. EASON.

Cider-Mill.

No. 208,723. Patented Oct. 8, 1878.

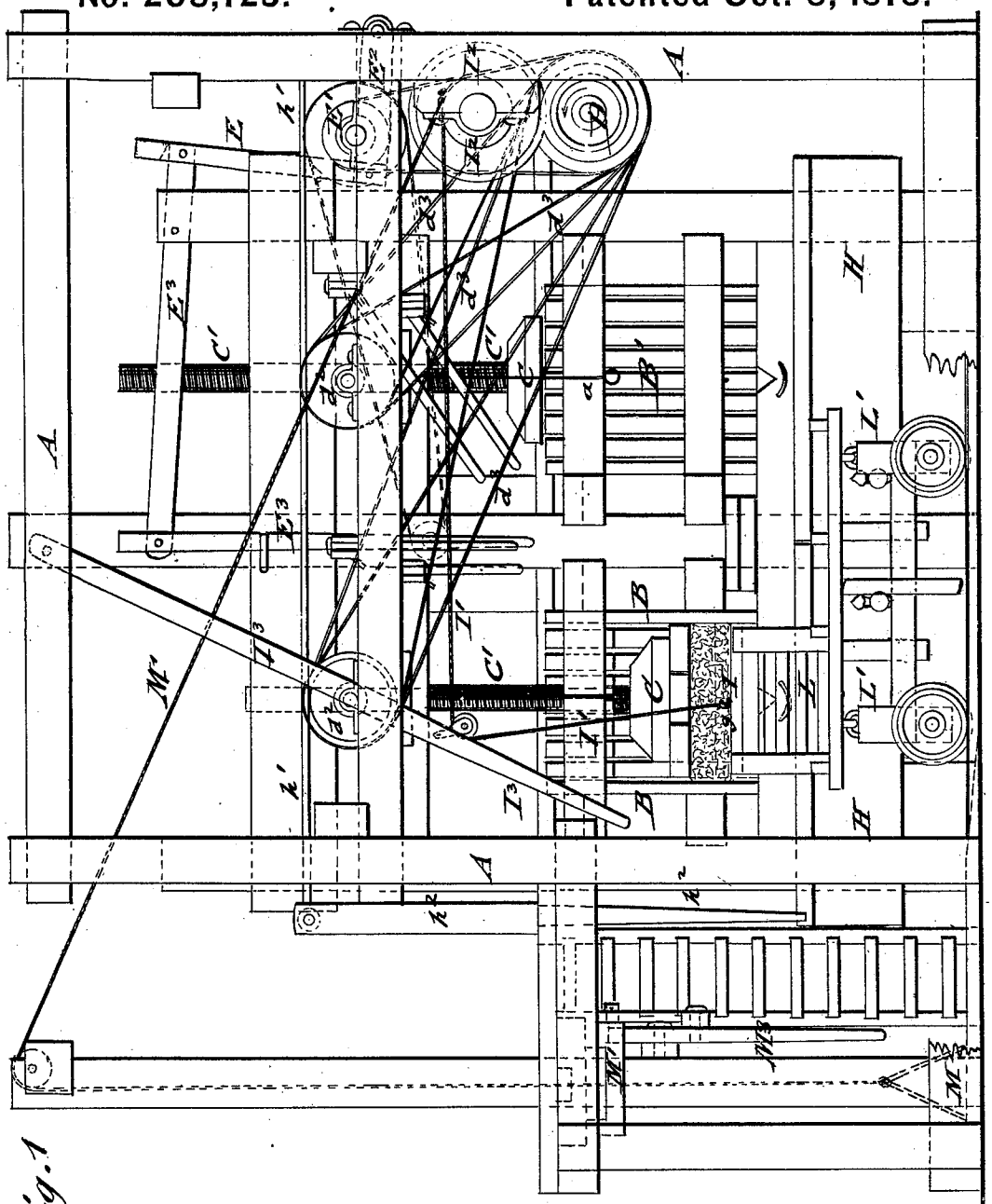


Fig. 1.

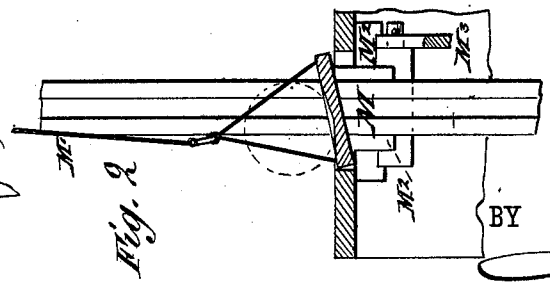


Fig. 2.

WITNESSES:

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Fig. 5

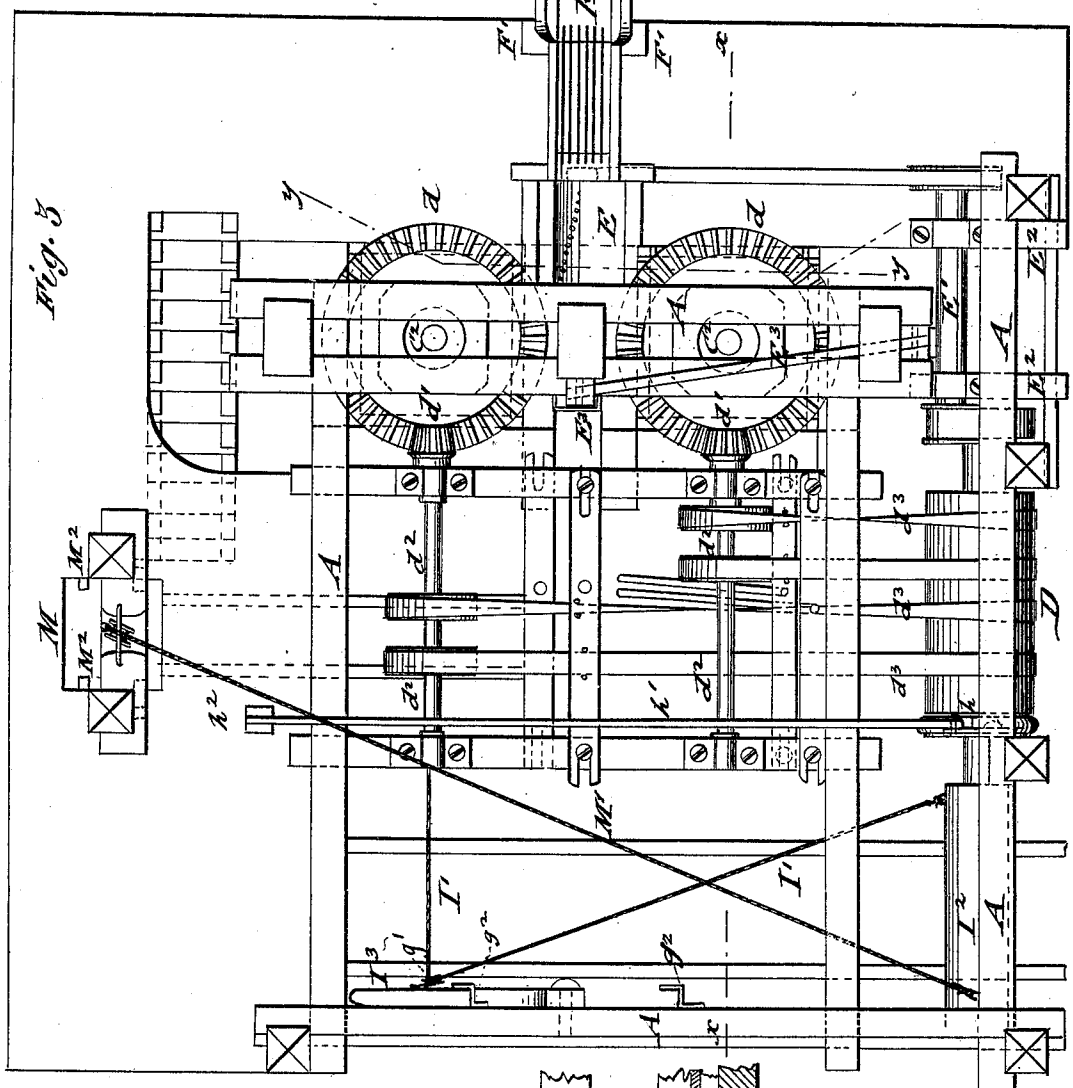
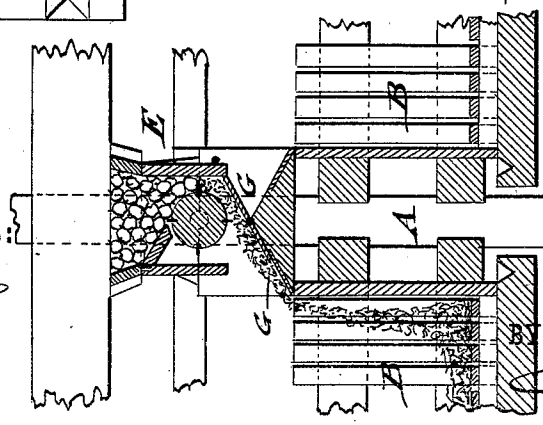


Fig. 1



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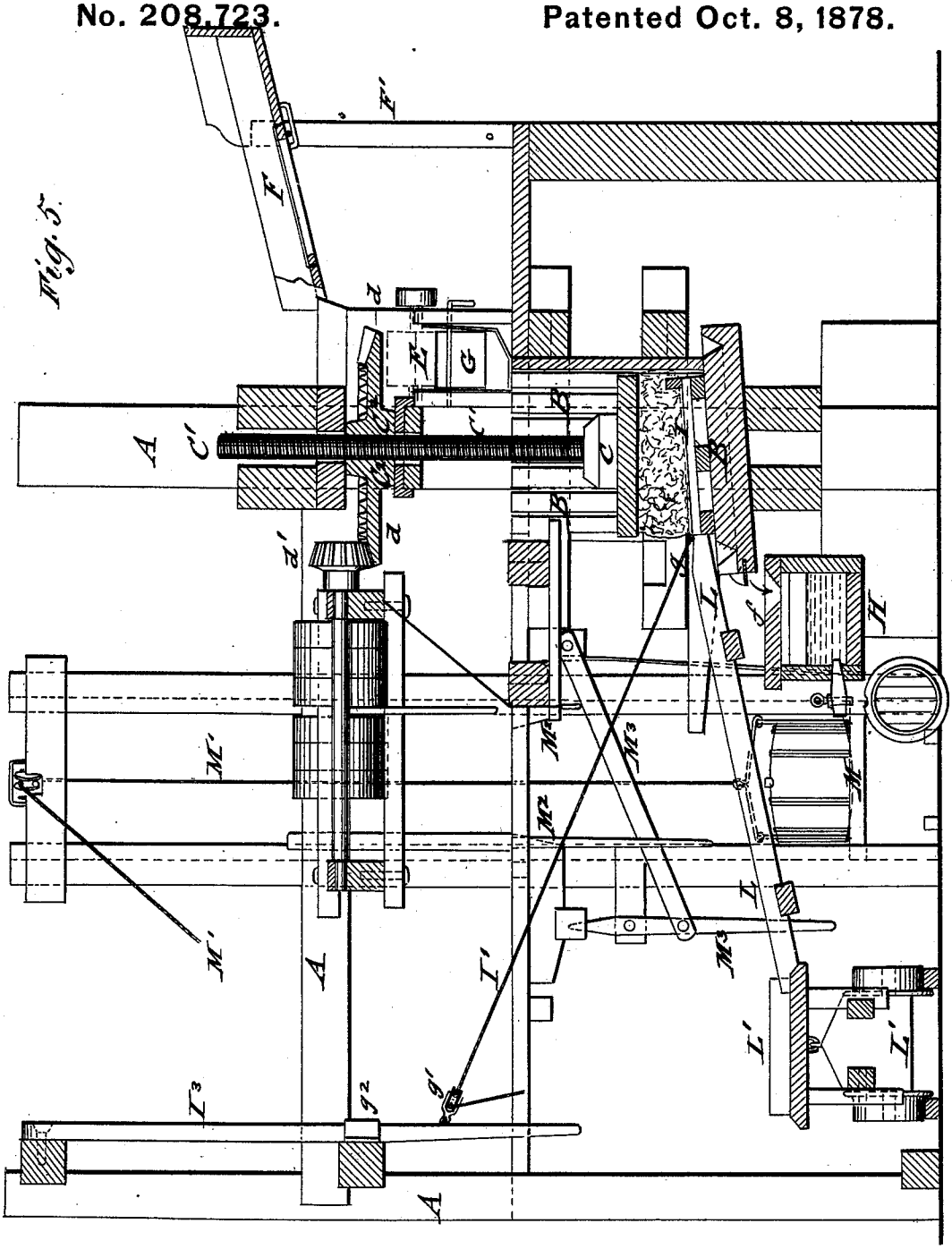
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Fig. 3.



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UNITED STATES PATENT OFFICE.

ROBERT EASON, OF SPRINGVILLE, OHIO.

IMPROVEMENT IN CIDER-MILLS.

Specification forming part of Letters Patent No. **208,723,** dated October 8, 1878; application filed August 2, 1878.

To all whom it may concern:

Be it known that I, ROBERT EASON, of Springville, in the county of Wayne and State of Ohio, have invented a new and Improved Cider-Mill, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a front elevation of my improved cider-mill; Fig. 2, a detail vertical transverse view of the mechanism for hoisting or lowering the full barrels of cider. Fig. 3 is a plan view of the cider-mill; Fig. 4, a detail vertical transverse section of the grinding mechanism on line *y y*, Fig. 3; and Fig. 5, a vertical longitudinal section of the cider-mill on line *x x*, Fig. 4.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish a cider-mill by which the cider is made with great rapidity and with but a small amount of manual labor, the different operations being all performed by use of suitable devices operated from the driving-shaft of the mill. The cider-mill may be operated by one attendant only, who controls the entire machine from one platform, accomplishing successively the grinding of the apples and pressing of the pomace, the removal of the pomace from the cribs, the filling of the cider into barrels, and the hoisting and conveying of the barrels.

The entire manufacture of the cider up to the removal of the filled barrels is thus attended to without manual labor by the different parts of the machine.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

The grinding apparatus is also operated from the driving-shaft, and thrown in or out of gear by a lever arrangement. The apples are supplied to the hopper of the grinding mechanism by a tilting chute with bottom screen. The pomace is quickly removed from the cribs to a car by means of a triangular frame or sled being drawn over a skid by a rope winding upon a drum receiving motion from the driving-shaft. The cider is conveyed from the crib into a trough, and from the same into the barrels, which are rolled, when filled, to a platform, and hoisted by mechanism operated from the driving-shaft to the next story, where they are rolled off from the platform by suitable contrivances, ready for conveyance or shipment.

Referring to the drawings, A represents the supporting-frame of my improved cider-mill; B B, two cribs, which are arranged sidewise of each other, and C the followers of the same. The cribs are of the usual construction, and provided with removable slat bottoms and top planks for compressing the ground apples.

The fronts B′ of the cribs are removable, and may be raised and held suspended by cords and rings *a* of the main frame, so as to be out of the way when removing the cakes of pomace. The followers C are secured to the lower ends of screw-spindles C^1, which are screwed up or down by nuts C^2, that are turned in either direction by bevel-wheels *d* of the nuts, which mesh with pinions d^1 of two shafts, d^2, having each two loose pulleys and one fast pulley. The pulleys are connected by direct and crossing belts d^3 with the driving main shaft D, and are readily shifted by the usual shifting devices and hand-levers from the loose pulleys to the fast one and back, and thereby the followers either lowered to compress the ground apples in the crib or raised for removing the pomace and charging the cribs again.

The cribs are supplied with ground apples from a grinding-mill, E, that consists of a toothed grinding-cylinder, with outer casing and removable top hopper. The apples are supplied to the hopper of the grinding-mill from the wagon by a sliding and tilting chute, F, which rests on upright posts F′, and has a bottom screen for clearing the apples of dirt, stone, &c., in their passage to the hopper.

The grinding-cylinder is driven by belt-and-pulley connection with an intermediate shaft, E^1, that turns in oscillating bearings E^2, which are raised or lowered by a lever-connection, E^3, from the same point or platform from which the shifting devices of the belts that operate the followers are operated. The intermediate shaft E^1 is revolved by a belt and pulleys from the main shaft D, and motion transmitted to the grinding-cylinder when the shaft E^1 is raised, but discontinued when it is lowered.

The grinding apparatus may thus be thrown in or out of gear, so as to work the same or

interrupt its operation, without stopping the motion of any other part of the mill.

Below the grinding-cylinder is arranged a centrally-pivoted gate, G, that may be tilted to either side, so as to throw the ground apples into either crib, at the pleasure of the operator. The pivot-shaft upon which the gate swings may be passed through the supporting-post between the cribs, and provided with a crank-arm, so as to be under immediate and ready control of the operator standing upon a platform in front of and between the cribs.

The pomace is compressed between the top planks and slat bottom, and the cider discharged from the slightly-inclined bottom, having the usual front gutter and spout, into a trough or vat, H, with funnel-shaped top openings, *f*. The trough or vat H has a partition, so that the contents of the cribs can be kept separate and prevented from mingling with each other while the mill is operated, giving thus to each customer his own cider.

The cider is discharged from the trough by brass spigots into the barrels, which, when full, are rolled upon a platform and hoisted.

The pressed pomace is removed from the cribs, after raising the front section of the same, by means of a triangular frame or sled, I, which is formed of a strip of wood, and a metallic bail attached rigidly thereto. The sled I is placed on the slat bottom before the crib is charged, and retained in the crib during the compressing of the pomace.

For removing the pomace the hook *g* of a rope, I^1, is attached to a ring or eye of the triangular sled, and the same drawn out of the crib by winding the rope I^1 upon a drum, I^2, which is revolved by friction-pulleys or otherwise from the main shaft. The rope I^1 passes through a pulley, g^1, of a pivoted lever, I^3, which is supported in seats g^2 of the main frame, said seats being respectively in front of the cribs, so that the same rope and sled may be used for removing the pomace from either crib by shifting the lever I^3 to the required seat g^2. The opposite end of the rope I^1 is attached by a hook to the winding-drum I^2, so as to be readily detached when not in use.

The winding-up drum I^2 is revolved by throwing its convex friction-pulley into contact with the concave friction-pulley of the driving-shaft, which is accomplished by making one of its bearings vertically adjustable, and lowering it by a bell-crank, *h*, lever-rod h^1, and hand-lever h^2. The drum upon which the rope winds is revolved or stopped by operating the hand-lever h^2, and thereby the rope wound up, so as to draw out the pomace from the cribs.

The pomace and sled pass from the cribs over skids L to a car, L′, which is moved off on a track, and the pomace finally dumped therefrom at a suitable place of deposit. When the pomace has been transferred to the car the winding up of the rope is interrupted, the sled returned to the crib, and the front section, B′, lowered, preparatory to supplying the next charge to the crib.

The full barrels are hoisted, after being rolled on a platform, M, by a hoisting-rope, M^1, that passes over a top pulley of the grooved guide-posts of the platform to the drum I^2, so that by throwing the same into gear with the driving-shaft the platform and barrel are hoisted. When the platform arrives at a level with the next floor it is supported on sliding and guided stops M^2 at both sides of the guide-posts, which stops are thrown inwardly by springs. The outer stops, M^2, are of less height than the inner stops, so that the platform, when interrupting the motion of the hoisting, settles thereon in inclined position, and causes the rolling of the barrel in automatical manner, as shown in Fig. 2. The platform is lowered by withdrawing the stops M^2 by means of a fulcrumed hand-lever and connecting-rod, M^3. (Shown in Fig. 5.) The operator, by taking hold of the hoisting and releasing levers, has perfect control over the heaviest barrels, and raises or lowers them without danger and with great facility. The platform is centrally dished or concaved, so that the barrel is retained thereon without rolling off when in transit. The platform is kept in place by guide-pins running in grooves of the guide-posts.

The different operations in cider-making, from the grinding of the apples up to the removing of the pressed-out pomace and of the filled barrels, are all accomplished in rapid manner by this machine with but one attendant, who has full control over every part of the machine, with little manual labor, the work being all done by horse, steam, or other power applied to the driving-shaft.

The cider may be delivered into the wagon of the customer, requiring only to be rolled over a level floor. Large quantities of apples can therefore be successfully handled and made to cider, and the cider manufactured in a clean and superior manner without waste by dripping.

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

1. In a cider-mill, the combination of the grinding apparatus with a tilting chute having bottom screen for conducting the apples to grinding-mill and cleaning them, substantially as specified.

2. In a cider-mill, the combination of a pomace-carrying frame or sled with a draw-rope, winding-up drum, and lever mechanism to start or stop motion of sled, substantially as set forth.

3. In a cider-mill, the combination of the pomace-carrying frame or sled with a draw-rope, winding-up drum, and lever mechanism to move or stop the sled, and with a pivoted lever and a seat or stop for each crib, so that

the sled may be worked with either crib, substantially as specified.

4. In a cider-mill, the combination of the crib having removable front section, of a pomace-carrying frame or sled placed between top planks and slat bottom, of mechanism for removing the pomace from the crib, and of a skid to conduct the pomace from the crib to a car, substantially as set forth.

ROBERT EASON.

Witnesses:
CHARLES H. POND
BENJAMIN EASON.