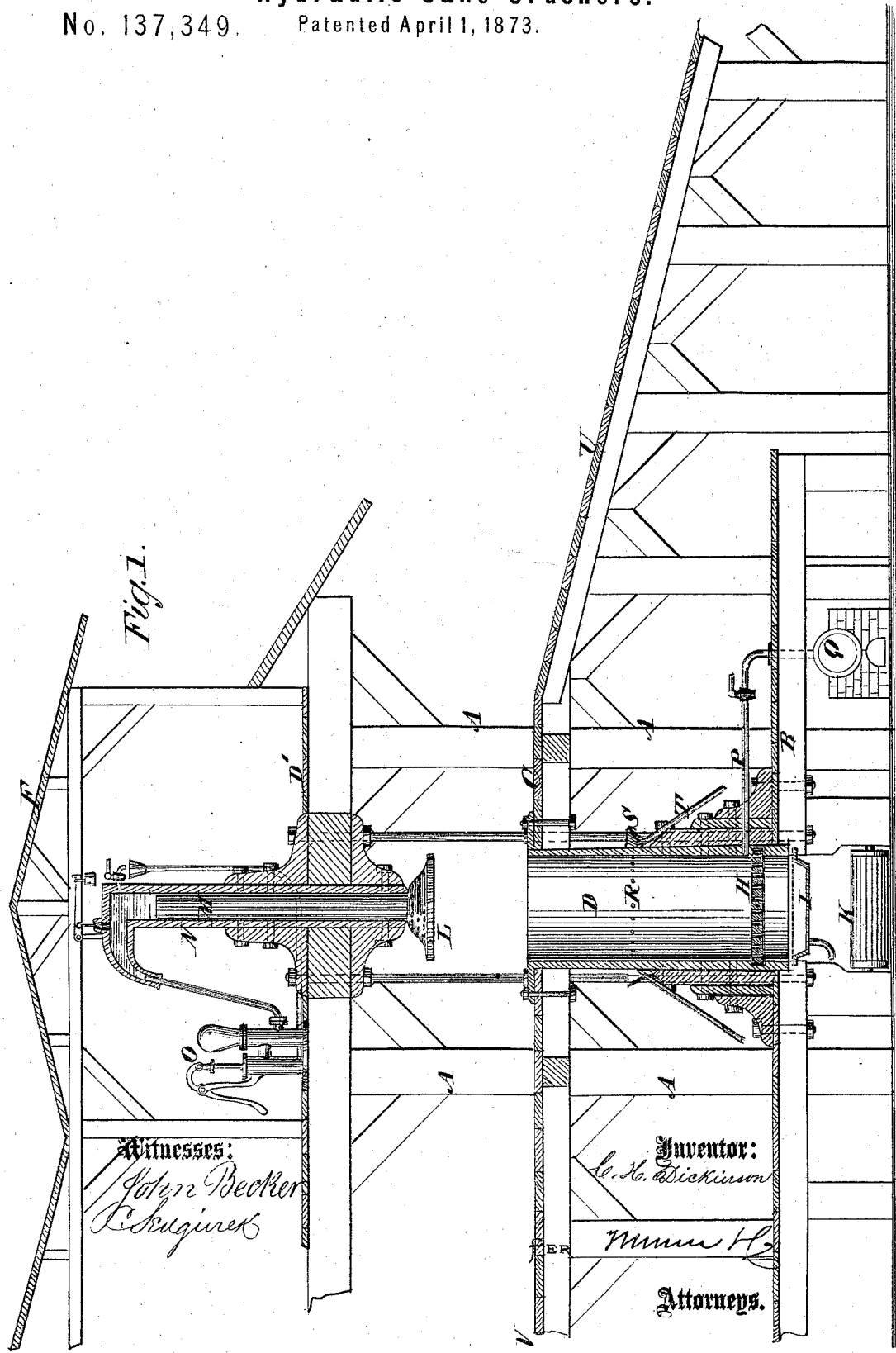


C. H. DICKINSON.
Hydraulic Cane-Crushers.

No. 137,349. Patented April 1, 1873.



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2 Sheets--Sheet 2.

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Fig. 3.

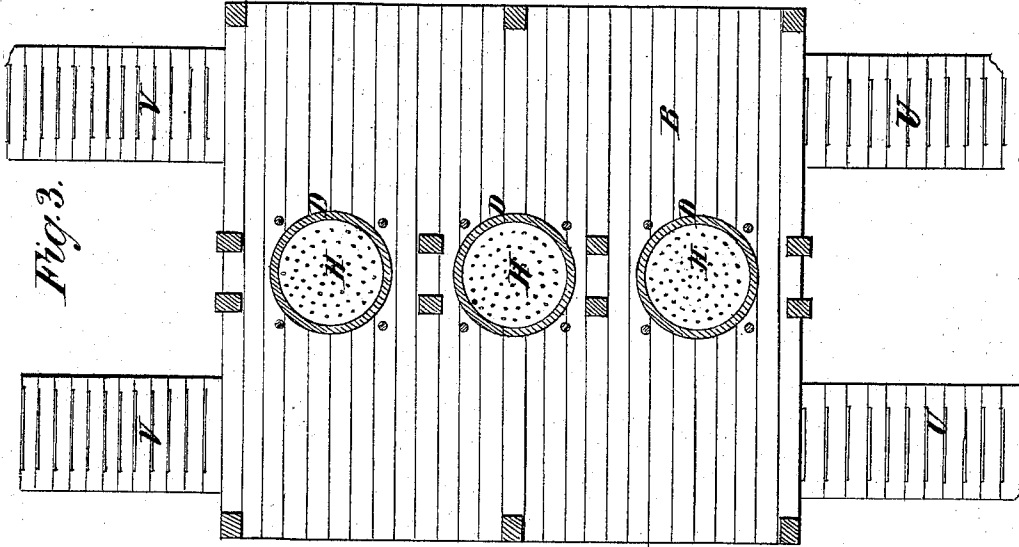
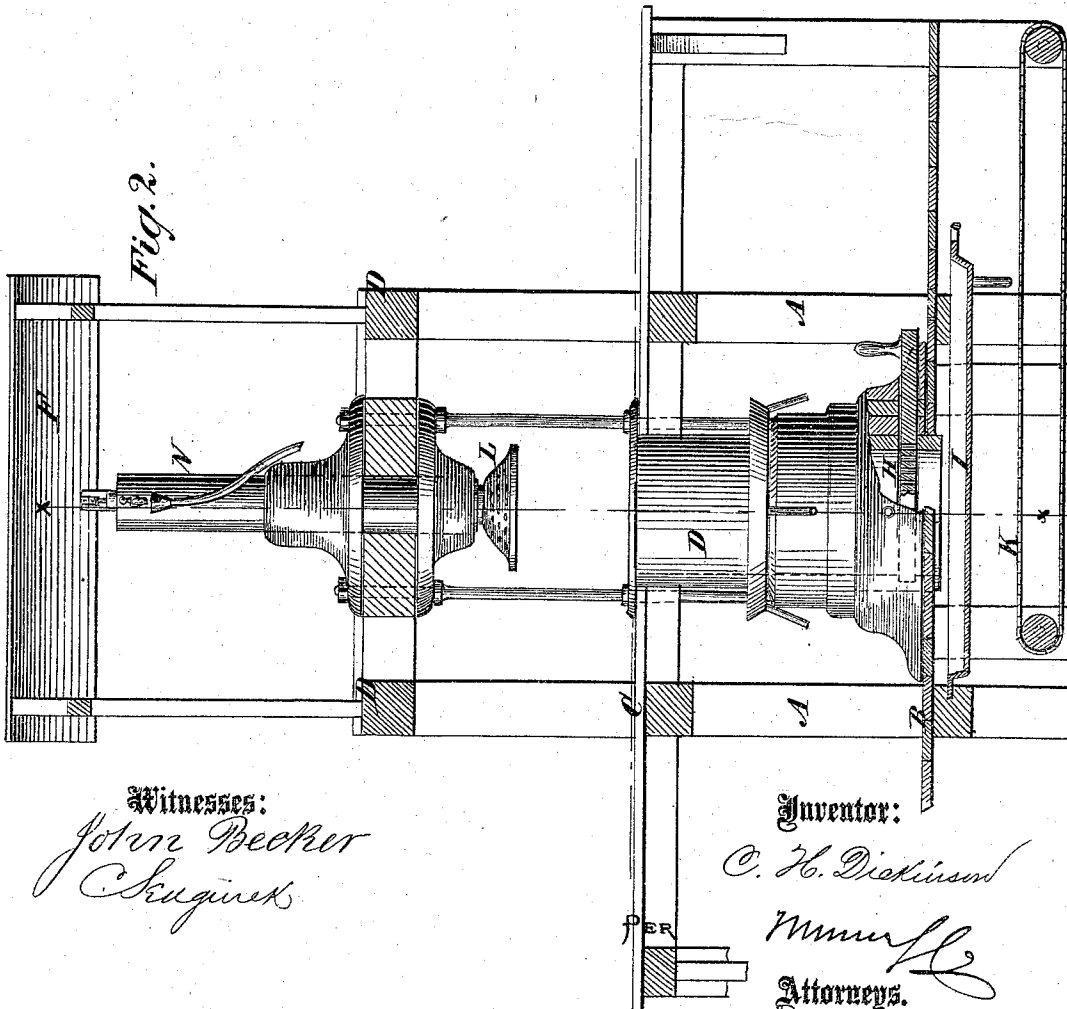


Fig. 2.



Witnesses:

John Becker
Chargers

Inventor:

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UNITED STATES PATENT OFFICE.

CHARLES H. DICKINSON, OF ROSEDALE, LOUISIANA.

IMPROVEMENT IN HYDRAULIC CANE-CRUSHERS.

Specification forming part of Letters Patent No. **137,349**, dated April 1, 1873; application filed September 28, 1872.

To all whom it may concern:

Be it known that I, CHARLES H. DICKINSON, of Rosedale, in the parish of Iberville and State of Louisiana, have invented a new and useful Improvement in Crushing Sugar-Cane, of which the following is a specification:

The invention consists in the improvement of cane-crushers, as hereinafter described and pointed out in the claim.

Figure 1 is a longitudinal sectional elevation of my improved crushing apparatus taken on the line *xx* of Fig. 2. Fig. 2 is a transverse sectional elevation taken on the line *yy* of Fig. 1; and Fig. 3 is a horizontal section of a plan for three presses in a gang.

Similar letters of reference indicate corresponding parts.

A represents a strong frame with three floors, C D' E, and a roof, F, covering the whole. D is a large powerful cylinder entering on the lower floor, extending up through floor C flush with the top, and having a perforated bottom, H, capable of sliding outward to open the cylinder completely at the bottom. I is a pan below the perforated bottom; it is also capable of sliding out and in. K is an endless-belt carrier arranged below the pan. L is a piston adapted to work in the cylinder D; it is suspended upon the lower end of a piston rod working in the cylinder N of a hydraulic press mounted on the top floor D', suitably for forcing piston L down into cylinder D. O is the pump for working the hydraulic press. P is a pipe connecting the cylinder D at or near the upper side of the perforated floor with a steam-boiler, Q. R represents perforations through the cylinder above the bottom for the escape of the juice that may be expelled during the first part of the operation; S, a trough for receiving the juice so expelled; and T, pipes for conducting it away; U and V, ascending and descending ways for the carts to go up and down for run-

ning to the top of the cylinders to dump the cane into them.

By preference the crushing-cylinders will have capacity for about two cart-loads of cane, but they may be larger or smaller, as preferred.

The cane being dumped from the cart into the crushing-cylinders, the pistons L are forced down upon it by the hydraulic presses with great force, crushing the cane far more effectually than it can be by the common roller presses, and expelling the juice into the pan below. The pistons are then partially withdrawn; the bagasse is saturated with steam introduced through pipe P to saturate it and dissolve the crystallized particles, so they can be expelled; then the pistons are brought down to act a second time upon the bagasse and expel the remaining portion of the juice or the greater part of it. Water may be used with good results instead of the steam for saturating the partially-crushed bagasse, but steam is much more effective.

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

1. The sliding grate H applied at the bottom of a cane-press cylinder, as and for the purpose described.

2. A cylinder for a cane-press provided with holes R for the exit of juice that rises above piston, a grate-bottom, H, for the escape of the juice that flows in advance of piston, and the intermediate part of cylinder made solid, as described.

3. The sliding pan I arranged beneath the perforated bottom of the cylinder of a cane-crusher, as and for the purpose specified.

4. The endless carrier K applied below the pan I, as and for the purpose described.

CHARLES H. DICKINSON.

Witnesses:

JOSEPH HOTON,
ALEXANDER HOLAND.