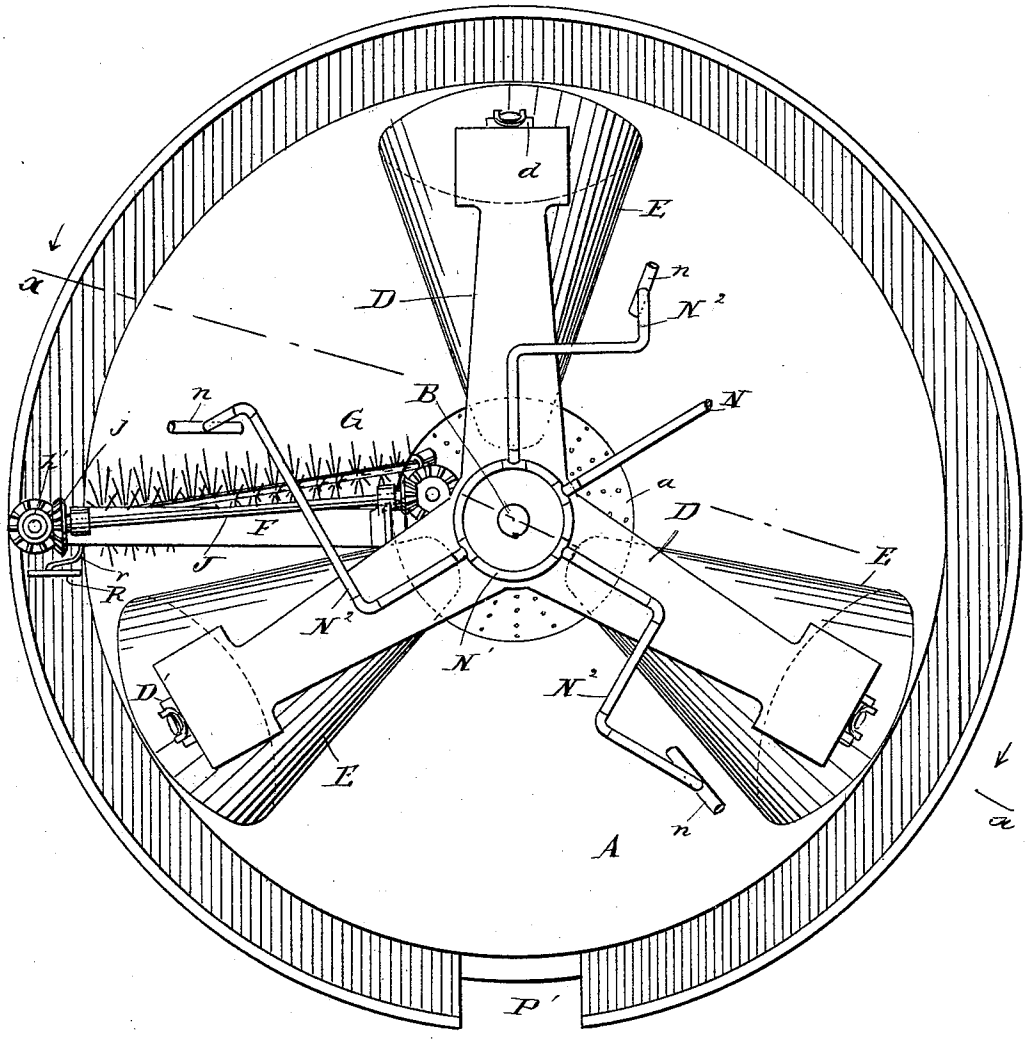
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G. CASTAÑOS & G. L. DE LARA.

JUICE EXTRACTOR.

No. 452,213. Patented May 12, 1891.

Fig. 1.



WITNESSES.

Chas. Nieta.

C. Sedgwick

INVENTOR:

G. Castaños

BY G. L. de Lara

Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

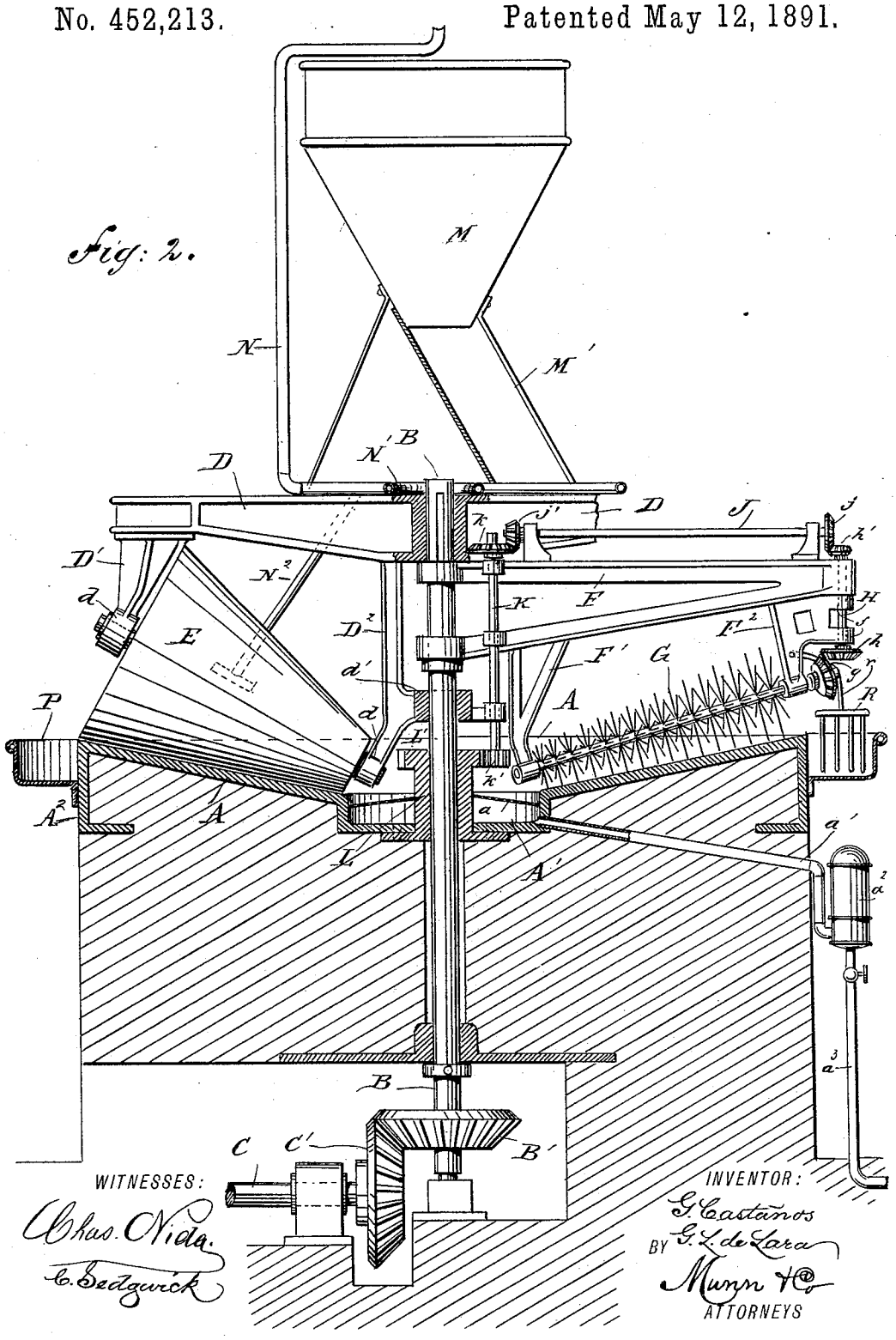
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Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GABRIEL CASTAÑOS AND GUADALUPE LÓPEZ DE LARA, OF GUADALAJARA, MEXICO.

JUICE-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 452,213, dated May 12, 1891.

Application filed August 4, 1890. Serial No. 360,896. (No model.) Patented in Mexico October 30, 1890, No. 30.

To all whom it may concern:

Be it known that we, GABRIEL CASTAÑOS and GUADALUPE LÓPEZ DE LARA, of Guadalajara, Mexico, have invented a new and Improved Juice-Extractor, (patented in Mexico No. 30, dated October 30, 1890,) of which the following is a full, clear, and exact description.

Our invention relates to improvements in machines for crushing and extracting the juice from various plants, and more especially from the Mexican mescal; and the object of our invention is to produce a simple and durable machine that will thoroughly extract the juice from a large quantity of mescal with little or no waste.

To this end our invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional plan view of the machine embodying our invention, and Fig. 2 is a vertical cross-section of the same on the line $x\ x$ of Fig. 1.

An annular bed-plate A, having the form of an inverted cone and provided with a central depressed basin A′, is mounted upon a suitable support. Preferably the bed-plate is provided with an annular depending flange A^2. The basin A′ is provided with a perforated cover or strainer a, and a pipe a' extends from the basin to a receiver a^2. A sleeve L, fixed centrally in the basin A′, serves as a journal-box for a vertical shaft B, suitably supported at its lower end, where it carries a bevel gear-wheel B′, meshing with a gear-wheel C′ on a horizontal driving-shaft C; but the shaft B may be otherwise driven.

The shaft B carries at its upper end, which projects above the plate A, a three-armed spider-like frame D, the arms of which extend to about the edge of the plate A and are each provided with the depending hangers D′ and D^2, the hangers D′ being located at the outer ends of the arms and being shorter than the hangers D^2, which are located at the inner ends of the arms and are connected with a collar d', bored to fit on the shaft B. The hangers D′ D^2 are provided at their lower ends with boxes d, which receive the journals of conical rollers E, adapted to roll upon and rotate around the axis of the bed-plate A, the large ends of the rollers being located at the periphery of the plate.

Fixed to the shaft B immediately below the spider D is a laterally-extending arm F, having at its inner end a depending bracket F′ and at its outer end a shorter depending bracket F^2, said brackets carrying the revoluble cone-shaped brush G, which is arranged in relation to the bed-plate A so that the ends of the bristles, which are preferably of wire, will just touch the bed-plate. The brush G is hung in the machine with the base of the cone outward.

The brush G is hung with its axis at an angle to the arm F, so that as it revolves on the bed-plate it will force the material thereon gradually toward the outer edge thereof. The sleeve L in the bottom of the basin A′ has its upper end formed into a toothed wheel L′. A vertical shaft K is mounted in suitable bearings adjacent to the shaft B above the bed A, said shaft having at its lower end a pinion k', which meshes with the toothed wheel L′, and at its upper end, which extends above the arm F, a beveled pinion k, which pinion meshes with a beveled pinion j' on the inner end of a shaft J, mounted horizontally on the arm F, and having at its outer end a beveled gear-wheel j, which meshes with a beveled pinion h' at the upper end of a vertical shaft H, journaled in ears f of the bracket F^2, and having at its lower end a pinion h, which meshes with the gear-wheel g on the outer end of the brush-shaft. It will thus be seen that as the arm F swings around the pinion k' will be turned by its contact with the toothed wheel L′, thus turning the shaft K, the horizontal shaft J, the vertical shaft H, and imparting a rotary motion to the brush G.

A hopper M is suitably supported above the machine, and opening from the hopper is an inclined spout M′, which delivers to the central portion of the bed-plate A. A water-pipe N connects with the circular pipe N′, which is mounted upon the spider D, and opening laterally from the pipe N′ are the bent pipes N^2, having at their outer ends suit-

able jets n, which deliver upon the bed-plate A near the rollers. The pipe N is bent inwardly above the hopper and may thus revolve with the spider on which it rests, as its axis aligns with the shaft B.

A trough P is fixed to the flange A^2 and extends around the same just below the outer edge of the bed-plate A, said trough having in one side an opening P′. A fork R fits within the trough P, said fork being supported by the shank r, which in turn is supported from the bracket F^2.

The machine operates as follows: The mescal, which has first been cut into small pieces, is placed in the hopper M and will be fed slowly through the spout M′ to the bed-plate A. The rollers E, as they are revolved by the shaft B, will crush the particles of the plant, thereby squeezing the juice from the same, and the juice will flow into the basin A′, and from thence through the pipe a' into the receiver a^2, and from thence through the pipe a^3 to the fermenting-tubs. The mescal juice is very heavy, having about the consistency of sirup; but the water from the pipes N^2 thins the juice so that it flows readily, and when the particles of the plant are thoroughly wet the juice is more easily extracted. As the arm F swings around and the brush G revolves, it gradually forces the material upon the bed-plate toward the outer edge thereof, causing the material to be thoroughly crushed and the juice extracted by the rollers, the residuum being forced by the brush into the trough P, and as the fork R travels around the trough it pushes the residuum through the opening P′, under which a suitable receptacle is intended to be placed to receive the residuum.

From the foregoing description it will be seen that the machine is very simple in construction and that the shape of the bed-plate is such that no juice is lost.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A juice-extracting machine consisting in a concave bed provided with an outlet, a central vertical rotary shaft provided with a horizontal spider or armed frame above the bed, conical rollers journaled in the frame or spider-arms, a radial arm projecting from the vertical shaft across the bed, and the conical brush carried by said arm with its axis at an angle thereto and with its larger end outward to sweep the material on the bed gradually outward and off and provided with an operating mechanism, substantially as set forth.

2. The combination, with the circular stationary concave bed and a stationary horizontal gear at the center thereof, of a vertical shaft concentric with said gear and provided with radial arms, conical rollers, and a conical brush carried by said arms, and gearing connecting the shaft of the said brush with the said stationary gear, substantially as set forth.

3. A juice-extracting machine consisting, essentially, of an annular concave bed having an inclined bearing-face, a central basin, a strainer in the upper part of the said basin, and a pipe opening from the basin, revoluble conical rollers having a supporting and operating mechanism and adapted to fit the bearing-face of the bed and to travel around on the same, and a revoluble brush mounted above the bed across its inclined face and adapted to carry the material thereon toward the outer edge, and means for operating the brush, substantially as described.

4. A juice-extracting machine consisting of an inclined bed having a discharge-pipe, a revoluble shaft extending centrally through the bed, a spider fixed to the upper end of the shaft and provided with radially-extending arms carrying depending hangers, conical rollers mounted in said hangers and adapted to fit the face of the bed, a radially-extending arm fixed to the vertical shaft below the spider, and a revoluble conical brush supported from the said arm at an angle thereto and revolved by gear mechanism connecting with the main shaft, substantially as described.

5. In a juice-extracting machine, the combination, with an inclined bed having a discharge-pipe, revoluble rollers adapted to travel around on the bed-plate, and a revoluble brush adapted to force the material thereon toward the outer edge, of the water-pipes located above the bed-plate and adapted to sprinkle the water thereon, substantially as described.

6. In a juice-extracting machine, the combination, with an inclined bed and an annular trough arranged around the outer edge of the bed and provided with an opening, as shown, of a vertical revoluble shaft extending centrally through the bed-plate, the crushing-rolls carried thereby, a radially-extending arm fixed to the shaft, a revoluble brush supported upon the arm and adapted to carry the material on the bed-plate into the trough, and a fork supported from the arm and fitting within the trough, substantially as described.

GABRIEL CASTAÑOS.
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Witnesses:
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