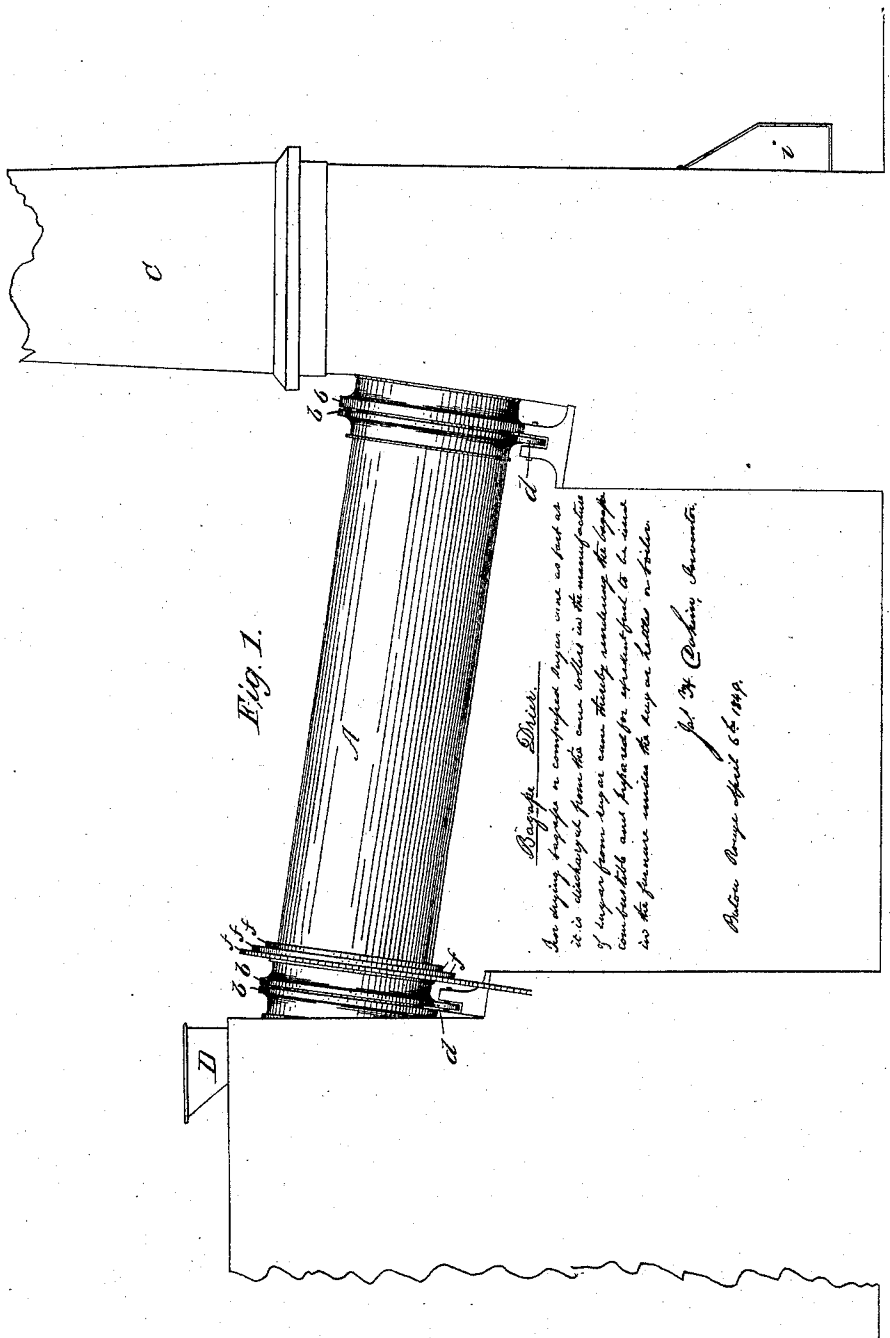
J. H. DAKIN.

MACHINE FOR DRYING BAGASSE.

No. 7,375. Patented May 21, 1850.



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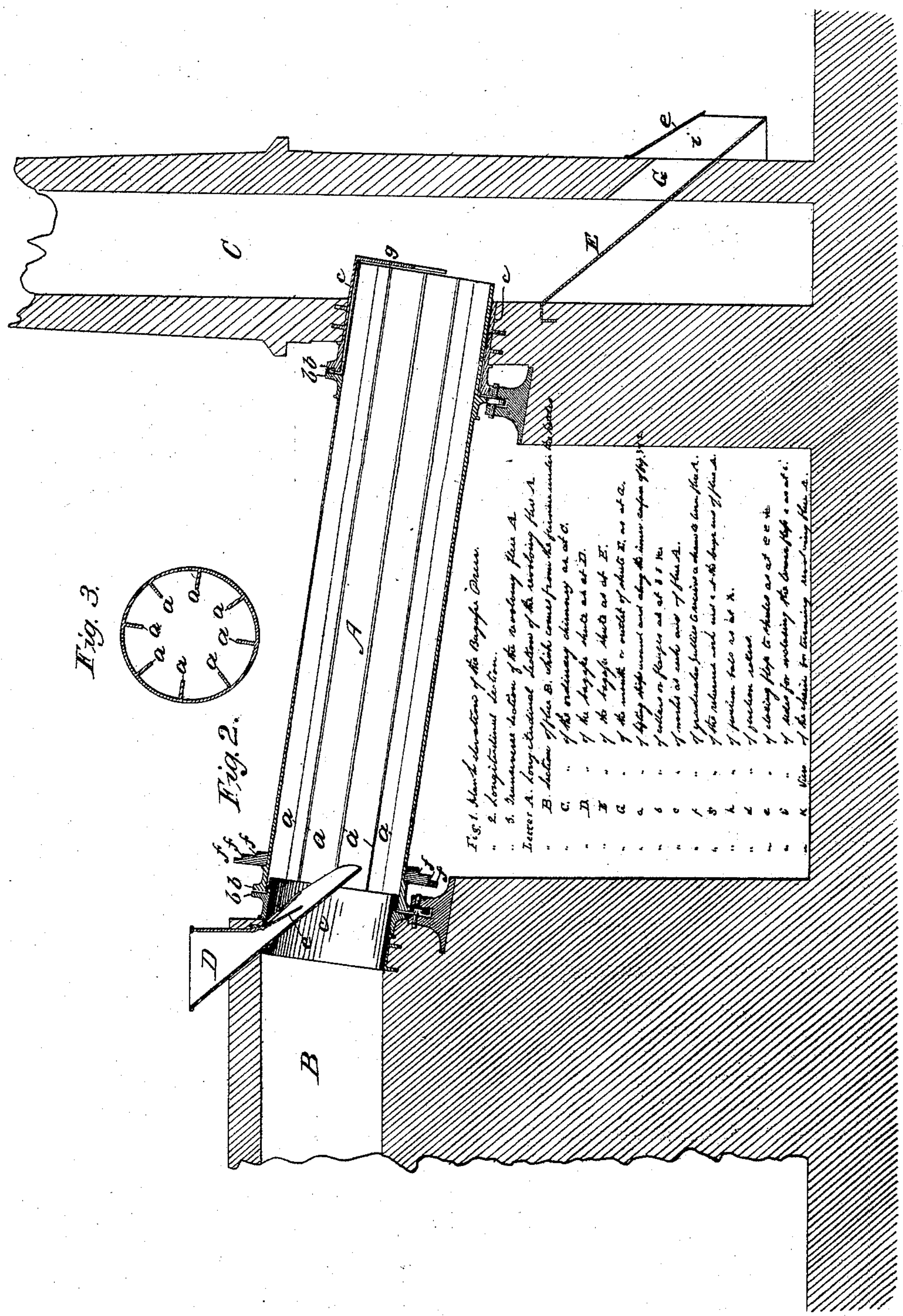

UNITED STATES PATENT OFFICE.

JAS. H. DAKIN, OF BATON ROUGE, LOUISIANA.

MACHINE FOR DRYING BAGASSE.

Specification of Letters Patent No. 7,375, dated May 21, 1850.

To all whom it may concern:

Be it known that I, JAMES HARRISON DAKIN, of the city of Baton Rouge, in the parish of East Baton Rouge and State of Louisiana, have invented a new and useful machine or apparatus, which I call a "Bagasse Drier," for drying and making fuel of bagasse or compressed sugar cane as fast as it is discharged from the cane rollers in the manufacture of sugar from sugar-cane; and I do hereby declare that the following is a clear, full, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a general view of the flank or side elevation, and Fig. 2 a longitudinal section of the works, and Fig. 3 a transverse section of a revolving flue.

Letter A, shows the revolving flue; B, the ordinary or draft flue as coming from the furnace under the sugar kettles; C, the ordinary chimney; D, a bagasse chute at the upper end, and E a bagasse chute at the lower end of the revolving flue A; G, mouth or outlet of chute E.

The small letters *c c* show necks, and *b b* collars or flanges near each end of flue A, by which means the flue A is connected to the flue B and the chimney C.

Letters *a a a a*, &c., show lifting strips upon and around the inner surface of the flue A; *d*, friction rollers under collars *b*, to prevent the surface of flue A, coming in contact with the sides or surface of the necks *c c*, &c.; *e*, *e*, closing flaps to chute mouth G and chute passage D; *f f f*, a set of graduated pullies to carry chains for the purpose of connecting the revolving flue A, with the machinery of the sugar mill, or engine of the works, &c., thereby getting the rotary motion for flue A.

Letter *g* shows the end of the neck *c* at the lower end of flue A, turning down and partially closing the end of that flue for the purpose of concentrating the heat thereof, should it be found necessary.

The parts which are tinted with lake, indicate brick work, &c.

I place this machine, or apparatus at any convenient point or place for the reception of bagasse, &c.; then I conduct the flue B to, and connect it with the revolving flue A by means of the neck *c*. The lower end of flue A runs through neck *c*, and into the chimney C. The revolving flue is set to any suitable angle of inclination, from 6 to 10 degrees below a horizontal plane, as it recedes from the upper end or from its neck *c*. At the upper end of flue A, I fix a bagasse chute running at a sharp angle of inclination, down and partly through neck *c*, and into the end of flue A, as at D. Then I place a bagasse chute under the lower end of flue A, running through the chimney C, and out at the mouth or outlet G, as at E. These chutes are each provided with a closing flap made of thin light metal, which will have a tendency, always to keep the chutes closed, and thereby preserve the draft of the flues from being impaired. The specific gravity of the bagasse will always have an effect to open these flaps, and cause the bagasse to slide under them. From these causes therefore, the chutes will be so nearly closed that they will not injure the draft of the chimney or flues.

The flue A may be made of thick sheet or boiler iron, and its neck also, or of any other suitable metal and the collars or flanges *b*, *b*, of cast iron. In the lowermost collar or flange I make a groove in which are placed a number of friction balls as at *h*, &c., for the purpose of keeping the opposite surfaces of these lowermost collars from touching each other. The pulleys *f f f f* at the upper end of flue A, are so graduated as to increase or diminish the revolving speed of flue A, at pleasure, by shifting their chain from one gradation or diameter to the other, in the usual manner for such pulleys. This chain may be of the kind called a pich chain, or of that kind called a "De Gaucanson" chain. The chute D and E, may be made of any suitable metal. The diameter of the revolving flue should be about six feet, and its lifting strips *a a*, &c., should be about ten inches in width, running the whole length of the flue. The flue should be from twenty to twenty-eight feet in length, and it may be cylindrical or polygonal, in its transverse section, and its longitudinal sides may be parallel or conical at pleasure. If its longitudinal section is conical its heat will be concentrated as it approaches its lower end, thereby bringing the heat upon the bagasse, with greater intensity.

The flue A is now to be put in motion, when the bagasse will be caused, as it comes from the cane rollers, by an endless carrier apparatus or otherwise, to fall into chute

D, from which it will freely slide into the upper end of flue A, and by means of the inclination and rotary motion of that flue, it will be carried through its length and discharged into chute E, from which it will slide out through outlet G, into the atmosphere again. As the closing flap *e* rises for the passage of the bagasse, the opening at each end will be closed by sides rising from the chute bottom as at *i*, &c.

The heat, fire, or flame from the kettle furnace passing through the revolving flue, and coming in direct contact with the bagasse at the same time, will dry it and render it ready as fuel, to be used in the furnace the moment it escapes from the outlet G. The lifting strips *a a*, &c., have an effect to carry the bagasse up the sides of flue A, toward its upper surface, when it will fall again to the bottom or lower surface, and so on continually through the flue to the chute E, and in its passage through the flue, it will be kept in constant agitation, causing the heat, &c., to surround every particle of it in its transit.

The inclination and motion of the revolving flue determines the speed at which the bagasse passes through it, and consequently in a great degree the state or condition of the bagasse when it escapes from the outlet G, being more or less dry as may be desired.

The figures and letters of reference on the sections and elevation refer to corresponding parts, &c.

What I claim as my invention, and desire to secure by Letters Patent, is—

The employment of a revolving or rotary inclined flue, as applied and used for drying the bagasse, or compressed sugar cane, or any other green or wet substance intended for fuel, with the heat and flame coming from the furnace under the sugar kettles, or from any furnace, whatever, all passing into and through this said inclined or rotary flue, at one and the same time, causing thereby the said bagasse or compressed sugar cane, or other said substance intended for fuel, to become dry and combustible, and prepared for fuel the moment that it has passed through said flue, using such machinery or mechanical means, as I have herein described, or any other suitable mechanical agency, or means that will enable me to carry out, and put into practical execution, or use the principle or principles herein set forth, described and claimed, and to obtain the intended objects and results in combination as a whole.

JAMES HARRISON DAKIN.

Witnesses:

MANUEL MORENO,

RICHARD LOUCKS.