S. H. GILMAN.

Bagasse Drier.

No. 8,466. Patented Oct. 28, 1851.

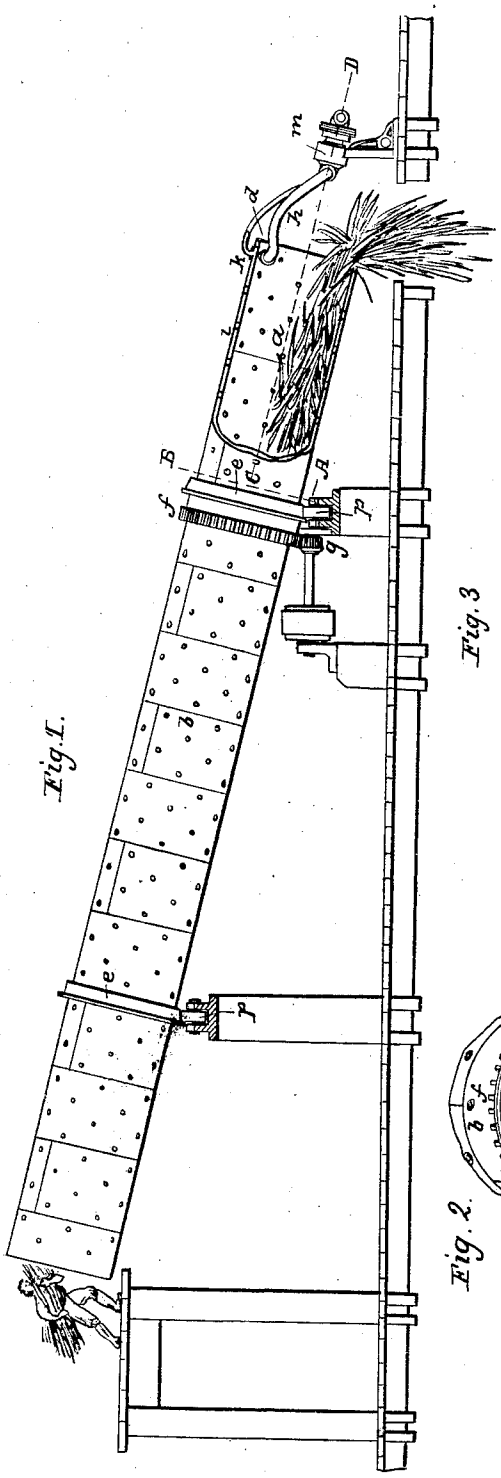

Fig. 1.

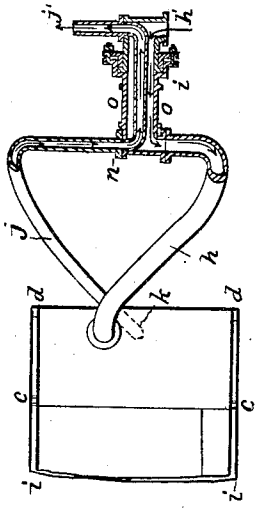

Fig. 3

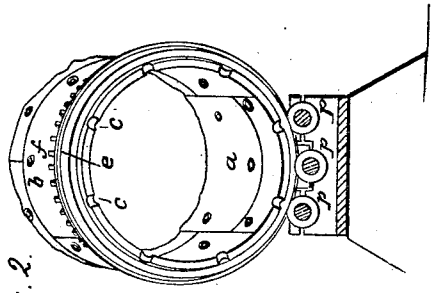

Fig. 2.

UNITED STATES PATENT OFFICE.

SAMUEL H. GILMAN, OF CINCINNATI, OHIO.

MACHINE FOR DRYING BAGASSE.

Specification of Letters Patent No. 8,466, dated October 28, 1851.

To all whom it may concern:

Be it known that I, SAMUEL H. GILMAN, of Cincinnati, Hamilton county, Ohio, have invented new and useful Improvements in Apparatus for Drying Bagasse, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification.

The main object of my invention is to provide an economical and expeditious means of preparing bagasse for immediate consumption as fuel, the manner of application of the heat being such as not to subject the material to the danger of accidental conflagration.

In the annexed drawings representing an apparatus embodying my improvements, Figure 1, is a side elevation of the apparatus a portion of the lower end being broken away, to expose the interior. Fig. 2, is a transverse section of the cylinder immediately behind the forward bearing, looking forward (viz, line A B, Fig. 1). Fig. 3 is a longitudinal section through the axis of the cylinder, &c. (viz, line C D, Fig. 1).

Similar letters in the several figures have reference to like parts throughout.

(*a b*) are two cylinders constructed of iron boiler plate, one cylinder (*a*) being of slightly less diameter than the other one (*b*) and fixed concentrically within it so as to leave between the two cylinders an annular space (*i*). The two cylinders are secured to each other by bolts or rivets (*c*) each of which being perforated from end to end along the line of its axis, unites to the functions of attachment those of ventilation; and by this means the vapor from the bagasse having free egress passes directly away through all parts of the cylinder, which serves to facilitate the escape of the aqueous particles, a matter as essential in drying processes as the due application of heat.

The ends of the annular space may be closed by rings (*d*). The outer cylinder, is at suitable intervals, begirt with flanged rings (*e*) each resting upon two, three, or more rollers (*p*) which while they retain the cylinder to its proper bearings, permit of its easy rotation. To one of these rings is cast a cog wheel (*f*) which gears to a pinion (*g*) from which the motion is derived.

(*h*) is a pipe by which the annular space (*i*) is supplied with steam, and (*j*) is a pipe for carrying away the water, which is from time to time precipitated by the steam. This water pipe is made to communicate with the steam space near the extreme lower end of the outer cylinder at (*k*) as represented, and thence is curved backward in a spiral form so as to meet the central bearing say about 90° from its attachment; this form is adopted in order that as the part of the cylinder where the pipe is attached begins to ascend, the water, instead of running back into the cylinder may flow rearward through the pipe. This water pipe entering the steam pipe at (*n*) passes along the center of the latter and the two pipes being finished at (*l*) in a plain ground butt joint meet there two similar but stationary pipes (*h' j'*) which continue the steam passage to the steam generator and conduct the water passage to a tank or otherwise.

A portion of the revolving steam pipe is journaled (*o*) and confined within a suitable journal bearing (*m*)—so as to permit the pipes (*h j*) to revolve and yet at the same time to retain them to their proper juxtaposition to the stationary pipes. The steam pipe is curved in the opposite direction to the water pipe—in order to avoid that which is desired in the water pipe namely the backward flow or escape of the condensation water. This revolving system of pipes meeting on the common axis of rotation, some distance from the lower end of the cylinder supersedes the necessity of a ground joint at the cylinder itself, which would of necessity much extend the wearing surfaces and increase the chance of leakage, and it also leaves the discharging end open for the free egress of the contents.

The steam used may be that which escapes in the ordinary way from the engine.

Having thus fully described my improvements in apparatus for drying bagasse, &c., I wish it to be understood that I do not claim for such purposes a heated cylinder revolving upon an inclined axis, such cylinders, in various forms having been long in use but

What I claim herein as new and of my invention and desire to secure by Letters Patent are—

1. The arrangement (substantially as herein described) of two cylinders, one so secured (by hollow bolts or rivets) concentrically within the other, as to leave between them an annular steam space crossed by ven-

tilating apertures, and the whole made to revolve around an inclined axis for the expeditious drying (free from the danger of accidental ignition) of bagasse, and other like substances.

2. The steam and condensed-water pipes, revolving together (one within the other) within a common journal bearing, and entering the steam space of the cylinder in oppositely oblique directions as described, for facilitating at the same time the discharge of the water and the admission of steam during the revolution of the cylinder.

In testimony whereof, I have hereunto set my hand before two subscribing witnesses.

SAMUEL H. GILMAN.

Witnesses:
J. N. GETZENDANNER,
GEO. H. KNIGHT.