

(No Model.)

H. KULLMAN.
Bark Mill.

No. 238,923.

Patented March 15, 1881.

Fig. 1.

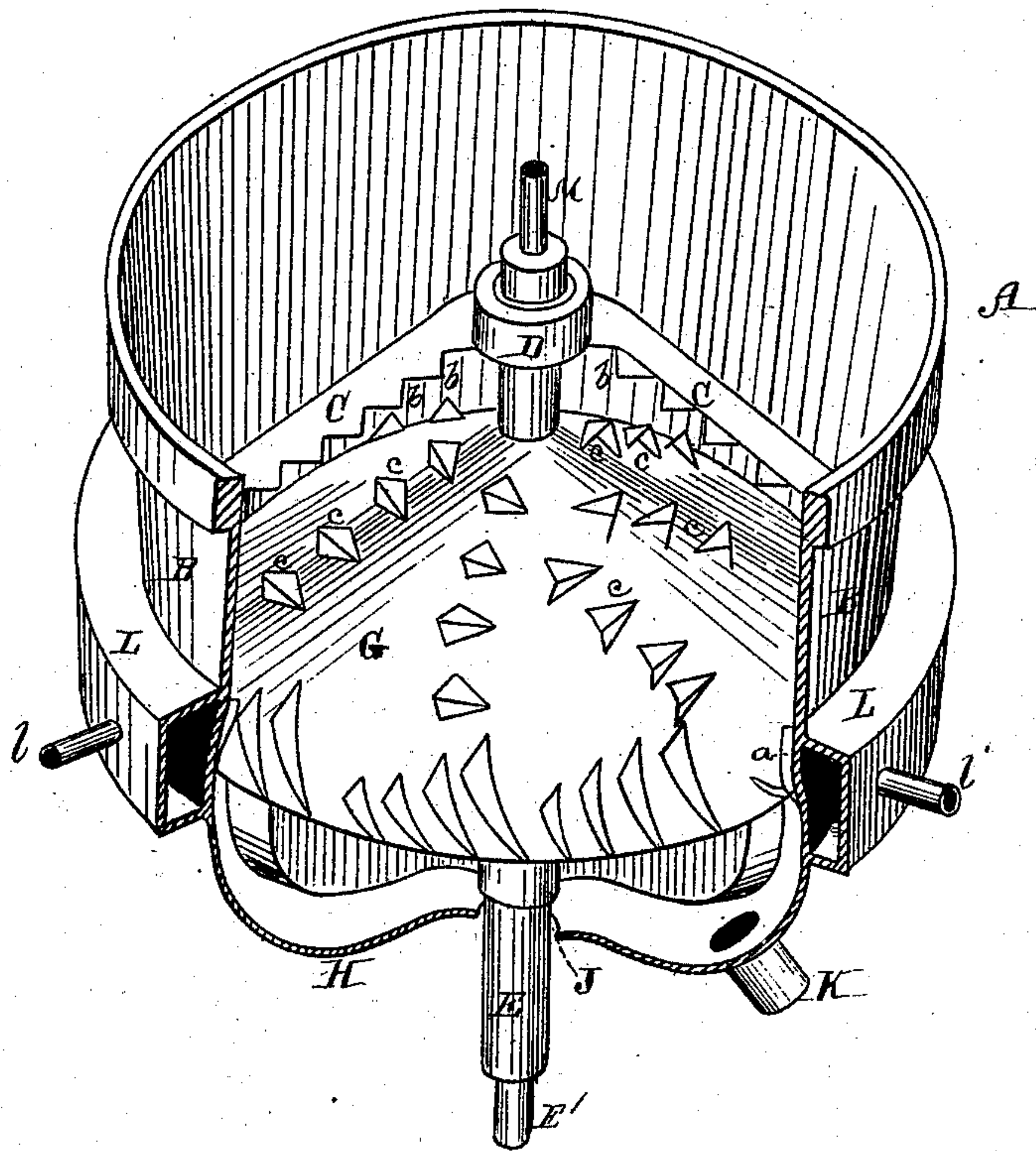
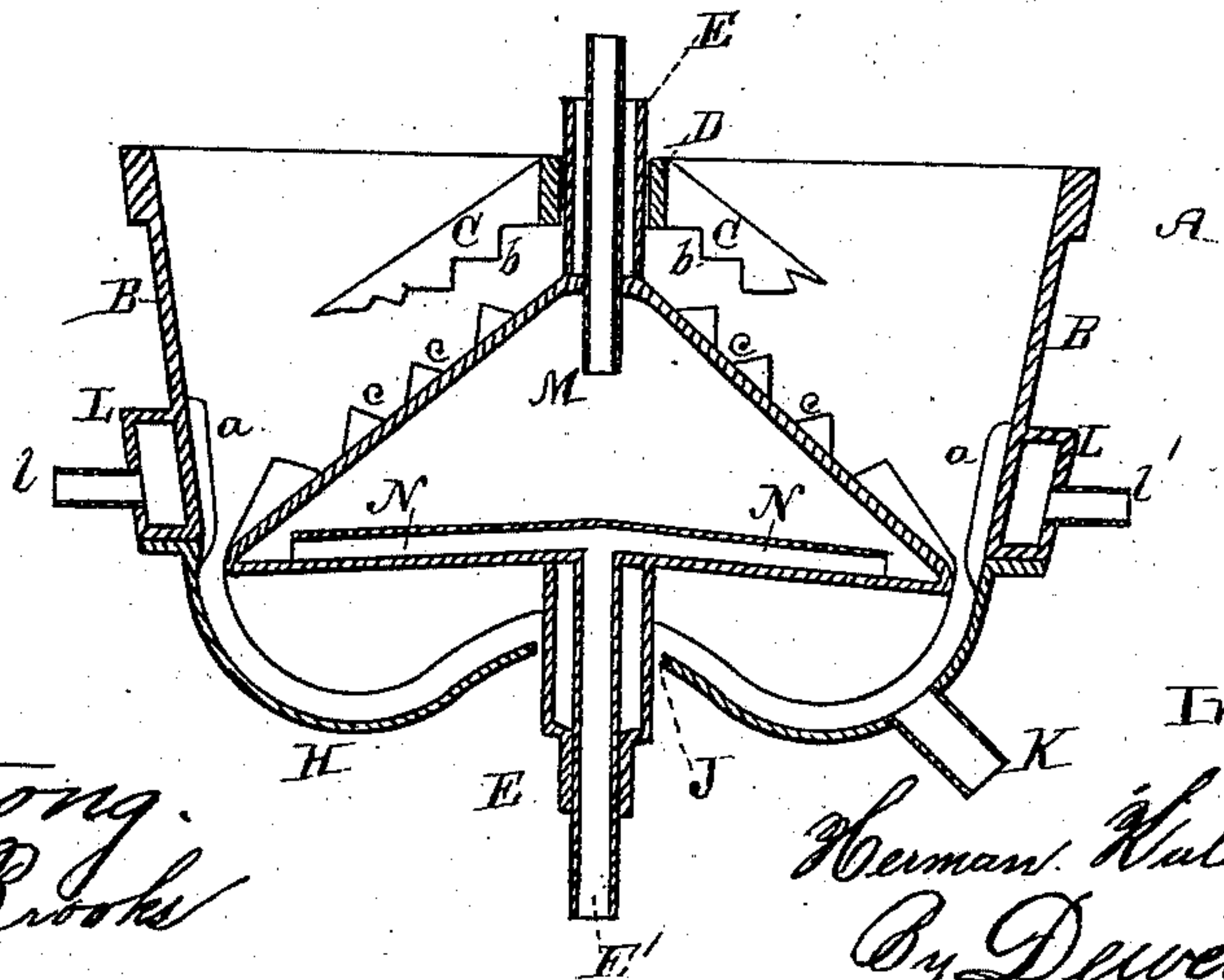


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

HERMAN KULLMAN, OF SAN FRANCISCO, CALIFORNIA.

BARK-MILL.

SPECIFICATION forming part of Letters Patent No. 238,923, dated March 15, 1881.

Application filed September 4, 1880. (No model.)

To all whom it may concern:

Be it known that I, HERMAN KULLMAN, of the city and county of San Francisco, State of California, have invented an Improvement in
5 Bark and other Grinding Mills; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in mills for grinding bark, some kinds of drugs,
10 and other similar materials, whereby I introduce and use steam for the purpose of keeping the parts of the grinder heated and preventing the bark from sticking and clogging the machine when damp or wet.

15 My invention consists, mainly, in the peculiar construction and arrangement of the parts and their combinations, as more fully hereinafter described and specifically claimed.

By the use of my invention the bark may be
20 put into the mill at once without any preliminary drying, and I am only obliged to keep on hand the amount of bark necessary for each day's use. I also save the drying-floors and the expense of heating them.

25 Referring to the accompanying drawings, Figure 1 is a view of my invention. Fig. 2 is a section.

Let A represent the bark-grinder, operating in the ordinary manner, having the curb furnished
30 with the teeth around its lower inner circumference, as shown at *a*, and its inclined radial arms C furnished with the downwardly-projecting teeth *b*, and forming the box or support D, in which the hollow shaft E of the
35 runner G revolves. The runner G is in the usual conical form, furnished with the teeth *c* over its surface. It revolves in the receiving-pan H by means of its driving-shaft, which extends inward through the bottom from below,
40 as shown at J.

K is the discharge-pipe of the machine, through which the bark passes after being ground.

Around the outer base of the curb B is the
45 hollow belt or jacket L, which receives steam through the pipe *l* and discharges it through the opposite pipe, *l'*, whereby the curb is heated.

To heat the runner G, which is hollow, I
50 have the pipe M inserted in the hollow shaft E, having steam-tight packing, either where it enters the shaft or at some other point, where-

by the pipe M may remain stationary, while the shaft revolves. On the base of the runner G, I have the radial or cross pipes N N, hav-
55 ing their entrance-opening at the circumference of the base and their discharge-opening at the center into the hollow shaft E', which passes through the opening J in the receiving-pan H. In this way the steam is conducted
60 into the runner at M, and passes off through the cross-pipes N N and the pipe-shaft E', whereby the runner is heated. The water from the condensation in the runner G, by gravitation and centrifugal force, will seek the outer
65 circumference of the bottom, and by presenting a large surface to the steam will require but a low pressure to force it into the small openings of the pipes N N and through the vertical shaft E' into the air.

70 The machine will be connected with a boiler in any convenient way. The parts of the machine being heated will dry the bark, and it will not stick to the sides, but pass down through the throat and be discharged at the
75 opening K.

It will be seen that this invention need not be restricted to grinding bark, but can be used for all purposes in which the material to be
80 ground can be worked through when perfectly dry better than when damp.

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

1. The combination, with the runner, of the
85 induction-pipe M, for supplying steam to the interior of such runner, with the pipes N and eduction-pipe E', substantially as set forth.

2. The runner G of a bark-mill, rotating within the curb B and receiving steam into its
90 interior through pipes, as shown, in combination with the radial or cross pipes N N, open at their outer ends, whereby the water of condensation, which is carried to the circumference by centrifugal action, will be carried to
95 the central discharge-opening by the pressure of steam, substantially as herein described.

In witness whereof I have hereunto set my hand.

HERMAN KULLMAN.

Witnesses:

EDWD. CHATTIN,
W. N. KEMPSTON.