

(No Model.)

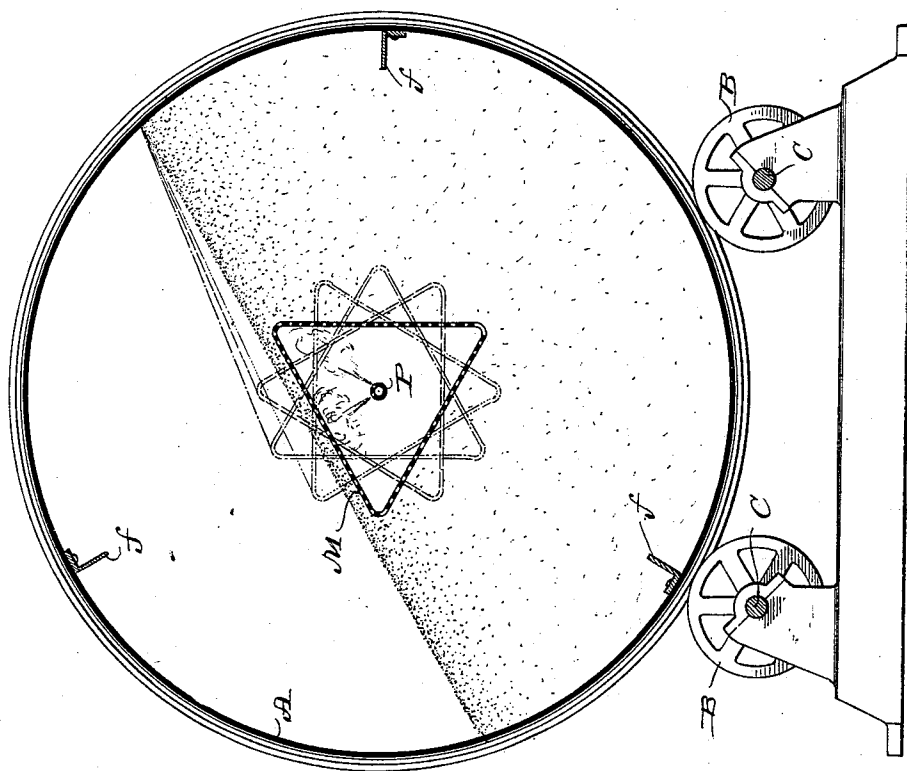
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F. B. GIESLER.
MALTING DRUM.

No. 507,536.

Patented Oct. 31, 1893.

Fig. 1.



Witnesses.
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N. E. Oliphant

Inventor
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(No Model.)

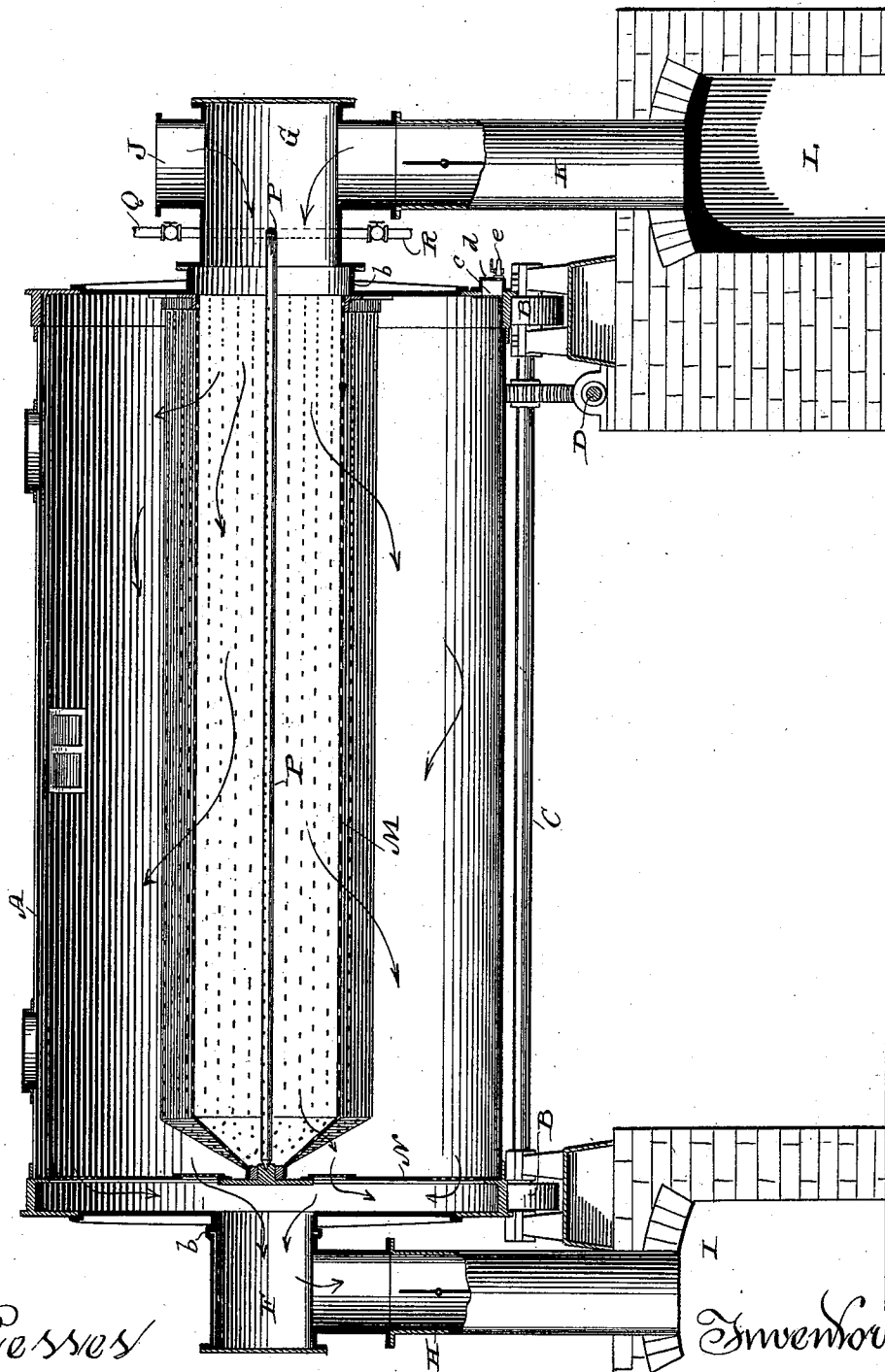
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F. B. GIESLER.
MALTING DRUM.

No. 507,536.

Patented Oct. 31, 1893.

Fig. 2



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UNITED STATES PATENT OFFICE.

FRANKLIN B. GIESLER, OF MILWAUKEE, WISCONSIN.

MALTING-DRUM.

SPECIFICATION forming part of Letters Patent No. 507,536, dated October 31, 1893.

Application filed March 6, 1893. Serial No. 464,832. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN B. GIESLER, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Malting-Drums; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide for a thorough agitation of a mass of material in a rotative pneumatic malting drum, as well as to prevent possible sticking of the material on the air distributor in said drum; and it consists in certain peculiarities of construction and combination of parts hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings:—Figure 1 represents a vertical transverse section of a pneumatic malting drum embodying my invention, and Fig. 2, a vertical longitudinal section of the same.

Referring by letter to the drawings, A represents a grain-receiving drum having the peripheries of its heads impinged against the usual friction-disks B, fast on shafts C arranged in suitable bearings on opposite sides of the center of the drum, beneath the same, and, as is common in the art, these shafts are worm-gearred to a drive-shaft D, this construction and arrangement of parts serving to impart rotation to said drum, this rotation being intermittent or constant, as the different steps in the conversion of grain to malt may require, and of such speed as is found best suited to the work. In common with drums of other pneumatic malting apparatus, the one herein shown is provided with the necessary openings such as grain-inlets, a malt discharge and a man-hole having suitable closures.

I show the present drum as having outwardly flanged central openings in its heads, the flanges *b* constituting trunnions that turn freely in chambers F, G, having closed outer ends. The chamber F has a damper-controlled tubular connection H with a duct I in communication with a suction-fan, not shown, but common in the art to which my invention relates. The chamber G has a tube J for connection with a malt withering and drying apparatus (not shown) and another damper-controlled tube K connects the latter chamber

with a duct L through which cool, moist atmospheric air is drawn. I also show the drum as having one head thereof provided with a grated drain-outlet *c* inclosed by an exterior box *d* having a draw-off cock *e*, and centrally arranged in said drum to turn therewith is a perforated polygonal shell M, beveled at one end, this beveled end being opposite a transverse partition N perforated adjacent to its periphery and center, as shown in Fig. 2, this partition being the boundary of an air-space in the aforesaid drum. As a matter of preference the interior of the drum is provided with longitudinal ribs *f* arranged at intervals around its circumference, as illustrated in Fig. 1. The shell M herein shown has the same diameter at all points away from its beveled end and the perforations in said shell gradually diminish as the same recedes from the suction of the drum. By this construction I provide for an equal distribution of air throughout the length of the shell because of a gradual increase of resistance toward the point at which the suction is greatest. Supported in the shell M central of the latter is a pipe P having lines of perforations, and this pipe connects with other pipes Q, R, that respectively connect with sources of water and steam supply, these latter pipes being controlled by suitable valves.

By the construction and arrangement of parts herein specified the operations of washing, steeping, generating, withering and drying necessary in the conversion of grain to malt may be carried on in the same receptacle, but the essential feature of the present application is the perforated polygonal shell M centrally arranged in the drum.

In practice the mass of material in the rotating drum is lifted and turned over, and this agitation is aided by the longitudinal ribs *f* upon the interior circumference of said drum. At a certain point the material in the drum falls of its own gravity in an oblique direction transverse of said drum, as will be apparent from an observation of Fig. 1, and while at times said material may fall in a line parallel to and above faces of the perforated polygonal shell M, at other times, incidental to the rotation, corners of this shell will gradually rise above the aforesaid material and the latter in its fall will dam up against an

elevated corner of said shell and fall over the same, as indicated by a dotted line diagram in Fig. 1. From the foregoing it will be seen that I provide for a very thorough agitation
5 of the material in the drum and thereby prevent its adhesion on the shell.

While a shell similar to the one herein shown and described may be preferable, I may vary its form and the arrangement of
10 its perforations in a longitudinal direction without departure from the spirit of my invention, and in transverse section this shell may have the triangular form shown or such other polygonal contour found desirable to
15 employ.

While I have shown the partition N provided with the perforations set forth, this partition may be of any other suitable construction that will permit a suction of air through
20 the shell M and the material in the drum.

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

1. A rotative horizontal malting drum interiorly provided with a perforated shell of polygonal contour in transverse section open to an induced current of air, and having its perforations at variable intervals of its length,
25 substantially as set forth.

2. A rotative horizontal malting drum interiorly provided with a perforated shell of polygonal contour in transverse section open to an induced current of air and beveled at that end farthest from the inlet of the air, and a
30 transverse partition in the drum adjacent to the beveled end of the shell, this partition being of such construction as to permit an exhaust of said air, substantially as set forth.

3. A rotative horizontal malting-drum having one end thereof communicating with an air-exhaust and interiorly provided with a
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perforated longitudinal shell having a polygonal contour in transverse section and open to air at that end farthest from the exhaust, but of such construction as to have a gradual
45 increase of resistance to the escape of the air toward the point at which the suction is greatest; and suitable means for the provision of an air-space within the drum intermediate of said exhaust and adjacent end of the per-
50 forated shell, this air space being in communication with that portion of the aforesaid drum containing said shell, substantially as set forth.

4. A rotative horizontal malting drum having one end thereof communicating with an air-exhaust and interiorly provided with a perforated longitudinal shell having a polygonal contour in transverse section and open to air at that end farthest from the exhaust,
60 but of such construction as to have a gradual increase of resistance to the escape of air toward the point at which the suction is greatest; suitable means for the provision of an air-space within the drum intermediate of
65 said exhaust and adjacent end of the perforated shell, this air-space being in communication with that portion of the aforesaid drum containing said shell, a perforated pipe arranged within the aforesaid shell longitudi-
70 nally of the same, and water and steam supply pipes connected to said perforated pipe, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in
75 the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

FRANKLIN B. GIESLER.

Witnesses:

N. E. OLIPHANT,
JOHN E. WILES.