(No Model.)

F. B. GIESLER.

ATOMIZER.

No. 507,581. Patented Oct. 31, 1893.

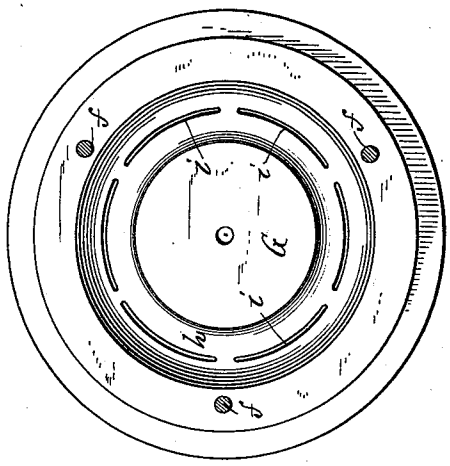

Fig. 4.

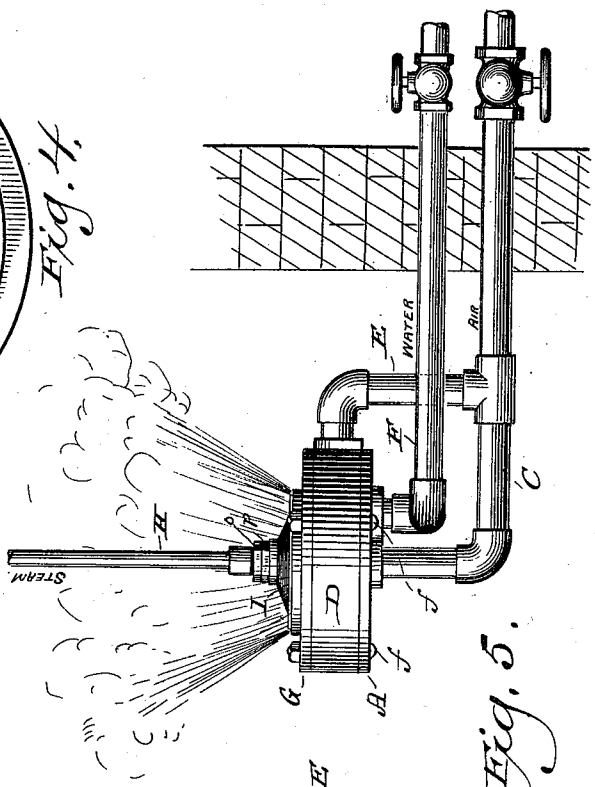

Fig. 5.

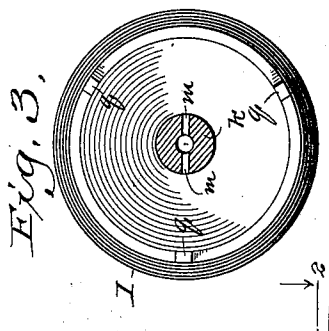

Fig. 3.

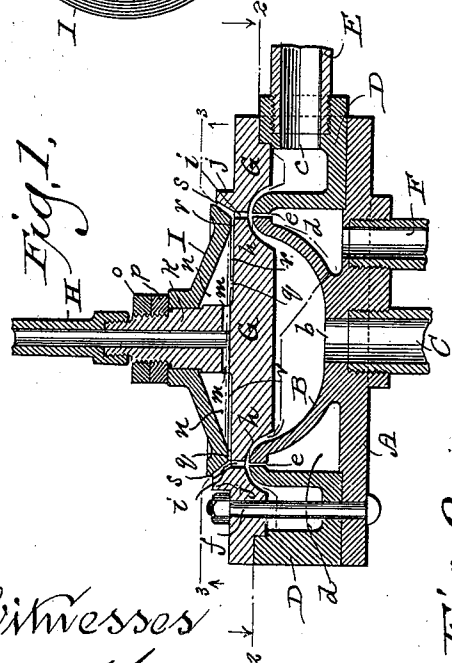

Fig. 1.

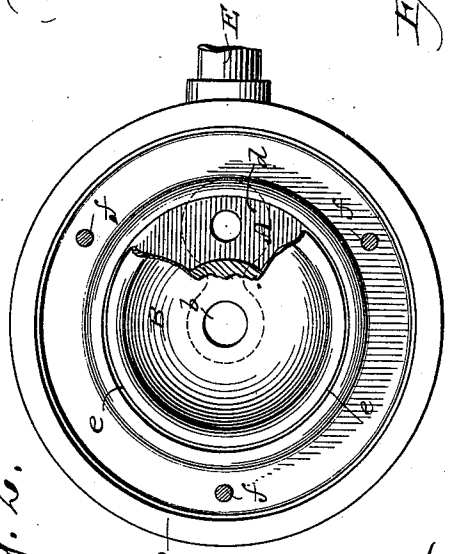

Fig. 2.

Witnesses
Geo. W. Young.
W. E. Oliphant

Inventor
Franklin B. Giesler.
By H. G. Underwood.
Attorney

UNITED STATES PATENT OFFICE.

FRANKLIN B. GIESLER, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE GALLAND-HENNING PNEUMATIC MALTING DRUM MANUFACTURING COMPANY, OF SAME PLACE.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 507,581, dated October 31, 1893.

Application filed November 18, 1892. Serial No. 452,403. (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 Atomizers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple and efficient atomizer, especially designed for use in connection with pneumatic malting apparatus; 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 an atomizer constructed according to my invention; Fig. 2, a plan view partly broken away and illustrating my device as it appears below line 2—2 of the preceding figure; Fig. 3, an inverted plan view of the parts above line 3—3 of Fig. 1; Fig. 4, a view taken on said line 2—2 of Fig. 1, looking upward, and Fig. 5, an elevation of the atomizer, set up in an air-duct and connected to air, water and steam inlet-pipes.

Referring by letter to the drawings, A represents the base of my device in the form of a disk, and cast with or otherwise rigidly connected to the upper face of this disk is a cup B having a central bottom opening *b* into which is fitted a valve-controlled pipe C that leads from a source of air under pressure. Seated on the disk to surround the cup is a trough D having an opening *c* for the reception of a branch E that leads from the air-pipe C above specified. The space *d* intermediate of the cup and trough on the disk A communicates with a valve-controlled pipe F that leads from a source of water supply, and the outlet from said space is in the form of a narrow channel *e* between the opposing edges of said cup and trough.

Fitted to the trough D is a cover-plate G held in place by means of bolts *f* passed through itself, said trough and the disk A, as best illustrated in Fig. 1. The cover-plate has its under side provided with a groove that engages the opposing edges of the cup and trough on the disk A the area of this groove being such that the result of said engagement is a channel *h* that communicates with said cup and trough and has its outlet in the form of ports *i* cut in the grooved portion of said cover-plate to register with the channel *e* above specified.

The upper face of the cover-plate is provided with a collar *j* beveled outward upon its inner side from the outer line of the ports *i*, and extended up from the center of said plate is a hollow boss *k* that is fitted at its upper end to a steam-pipe H and has its lower end provided with lateral ports *m* leading into a chamber *n* formed by the aforesaid plate and a hollowed or conical cap I, which latter engages the boss *k* and is held in place by means of jam-nuts *o*, *p*, engaging screw-threads cut on said boss. The cap I is provided with vertical lugs *q* that rest on the cover-plate G, above specified, and the outer edge of said cap is beveled parallel to the inner face of the collar *j* on said plate. By having the cap provided with the supporting lugs *q* I obtain spaces or ports *r* intermediate of said cap and the cover-plate G for the escape of steam from the above described chamber *n*, and the greatest diameter of the aforesaid cap being less than that of the collar *j* on said cover-plate I obtain a channel *s* between the opposing beveled faces of these parts, this channel being in direct register with the one *e* and the ports *i* hereinbefore set forth.

From the construction and arrangement of parts as defined in the foregoing it will be readily seen that there is an equal pressure of air on opposite sides of the channel *e* and that water let into the space *d*, intermediate of the cup B and trough D, will be mingled with the air and converted into vapor, this vapor having its escape through the ports *i* and channel *s* in register therewith.

For the purpose of raising the temperature of the moist air or vapor, steam is let on through the pipe H to escape through the lateral ports *m*, of the hollow boss *k*, into the space *n* and from thence through the ports *r*

to mingle with said moist air or vapor at the intersection of the ports *i* and channel *s*, the product of the intermingled air, water and steam having its escape through the latter channel. This channel *s* being divergent, the discharge therefrom is deflected from the atomizer and thoroughly distributed.

While the atomizer herein set forth is more particularly designed for saturating, heating or both of the air admitted to a pneumatic malting apparatus, it may be utilized for vaporizing fluid other than water.

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

1. An atomizer comprising two concentric air-spaces connected by a suitable channel, an intermediate fluid-space having an outlet communicating with the channel, and a final outlet in register with said channel, substantially as set forth.

2. An atomizer comprising two concentric air-spaces connected by a suitable channel, an intermediate fluid space having an outlet communicating with the channel, a final outlet in register with said channel, and a steam-discharge communicating with the latter outlet, substantially as set forth.

3. An atomizer comprising a base provided with a cup having an opening for communication with a source of air under-pressure, a trough on the base surrounding the cup and also provided with an opening for communication with the source of air under pressure, a chamber that is bounded by the base, cup and trough, but has an opening for communication with a source of water-supply and is provided with an outlet between said cup and trough; a cover-plate grooved to form a channel communicating with the aforesaid cup, trough and outlet; and ports formed in the cover-plate to intercept said channel, substantially as set forth.

4. An atomizer comprising a base provided with a cup having an opening for communication with a source of air under pressure, a trough on the base surrounding the cup and also provided with an opening for communication with the source of air under pressure, a chamber that is bounded by the base, cup and trough but has an opening for communication with a source of water-supply and is provided with an outlet between said cup and trough; a cover-plate grooved to form a channel communicating with the aforesaid cup, trough and outlet; ports formed in the cover-plate to intercept said channel, a collar on the cover-plate, a hollow boss extended up from said cover-plate to connect with a source of steam supply and provided at its lower end with lateral ports; and a hollowed cap that is positioned on the boss and provided with supporting lugs resting on the aforesaid cover-plate, the greatest diameter of this cap being less than that of said collar, whereby a channel is formed between the two in communication with the cover-plate ports and the steam space intermediate of said cap and cover-plate, substantially as set forth.

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

FRANKLIN B. GIESLER.

Witnesses:
H. G. UNDERWOOD,
N. E. OLIPHANT.