L. EISENBEIS & C. NAU.

VINEGAR-GENERATOR.

No. 193,324. Patented July 24, 1877.

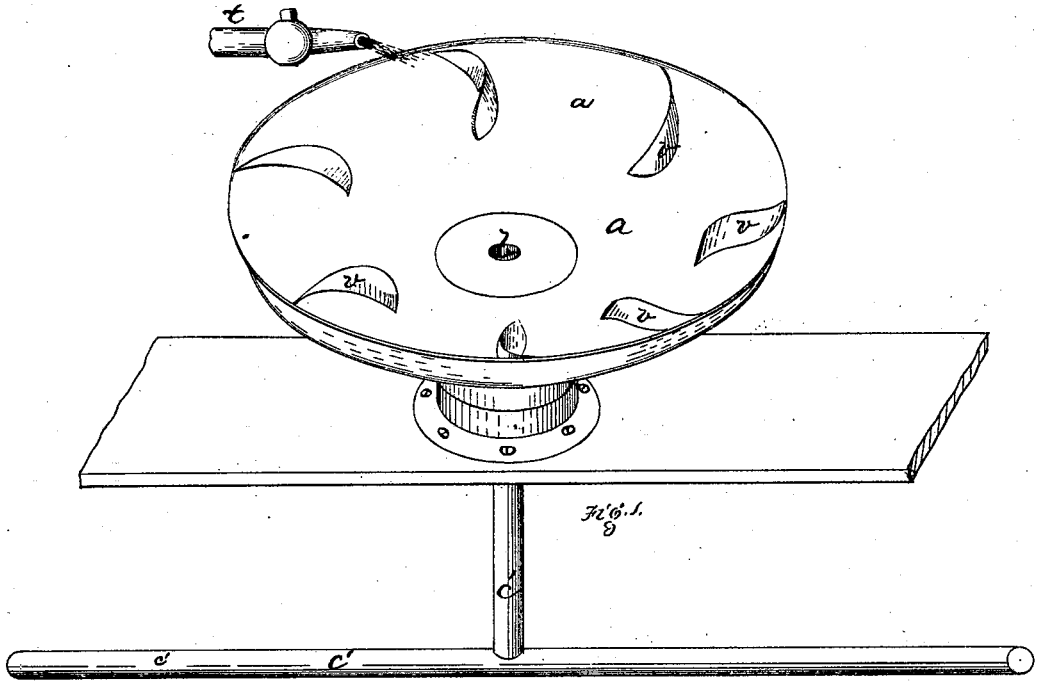

Fig. 1.

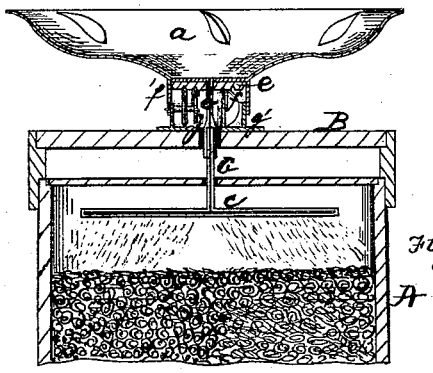

Fig. 2.

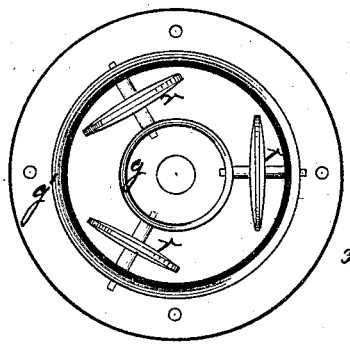

Fig. 3.

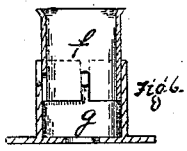

Fig. 6.

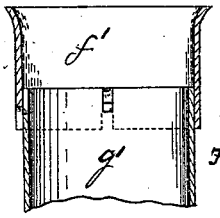

Fig. 7.

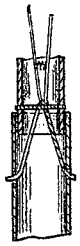

Fig. 5.

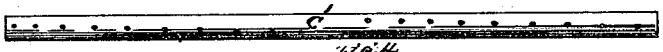

Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

LOUIS EISENBEIS AND CHARLES NAU, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN VINEGAR-GENERATORS.

Specification forming part of Letters Patent No. **193,324**, dated July 24, 1877; application filed April 27, 1877.

To all whom it may concern:

Be it known that we, LOUIS EISENBEIS and CHARLES NAU, of Allegheny city, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Automatic Feeders for Vinegar-Generators; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a perspective view of feeding devices embodying our invention. Fig. 2 is a sectional view of the same, and a partial view of the top of a generator, showing the manner of using our devices. Fig. 3 is a detached view of the bearing of the funnel or cup. Fig. 4 is a view of the under side of the distributing tube or pipe, showing the preferred manner of perforation. Fig. 5 is a diagram showing the way the funnel and distributing-tube may be connected when the latter is of glass. Figs. 6 and 7 are sleeves for closing the bearing.

Like letters refer to like parts wherever they occur.

Our invention relates to automatic feeders for supplying the wash to vinegar-generators; and consists, first, in a funnel or receiving cup and distributer, so suspended upon bearings that they are adapted to receive a continuous regulated supply of wash and distribute it uniformly over the upper part of a generator; secondly, in providing the funnel or receiving cup with a series of vanes which may assist in receiving the impact of the stream of wash, and aid in causing the funnel and distributer to revolve; thirdly, in journaling the funnel or receiver upon a series of anti-friction rolls; fourthly, in protecting the bearing against the action of acid by a series of sleeves or like devices which inclose the bearing.

Vinegar-generators as ordinarily constructed have two perforated heads, between which beech-wood shavings or like material is placed to obtain oxidizing-surface. The perforations in the upper head are closed or partially closed by pieces of wicking, straw, sticks, or other material which will prevent the rapid escape of wash thrown into the chamber above said head, but will compel the liquid to trickle or pass by drops, so as to evenly distribute the same over the shavings.

The liquid or wash is supplied to these generators by an attendant, whose duty it is to pour into the top of the generator three or four gallons of the wash every hour, thus requiring an attendant for every ten or twelve generators, each of which will yield about thirty gallons of vinegar in a day of ten hours.

In such methods of feeding several difficulties are encountered—first, the frequent clogging of the perforations, so that the wash will pass irregularly, and through portions only of the generator, disturbing the temperature and interfering with the proper oxidation of the wash; and, secondly, the necessity of employing a double force of workmen, or of stopping the generators during the night with the consequent loss in production.

The object of the present invention is to obviate these objections; first, by dispensing with the upper perforated head; and, secondly, by supplying automatic devices which will receive and evenly distribute a graduated quantity of the wash, whereby one or ten gallons may be fed to the generator during the hour, according as the case requires.

We will now proceed to describe our invention, so that others skilled in the art to which it appertains may make and use the same.

In the drawing, A indicates a generator with which our devices may be employed, and B a cross-bar or like means of supporting the devices. *a* is a receiver or funnel for receiving the wash, provided with a short central tube or pipe, *b*, projecting downward, and to which the distributer or distributing-tube *c* is attached either directly or by means of a sleeve, *c'*, as preferred. This funnel or receiver is so placed on bearings that it will be caused to revolve by the impact of a fine stream of liquid (wash) near the periphery; but in order to aid the impact, and also to direct the wash a series of vanes, *v*, may be placed on the funnel, as shown in Fig. 1. To the under surface of the funnel *a*, and surrounding the central discharge-tube *b*, is secured an annular seat, *e*, which may be formed from solid metal, or may be struck up from sheet metal, as desired. This seat rests upon the peripheries of a series of anti-friction rollers, *r*, which

form a bearing on which the funnel will revolve with little or no friction.

Through a supporting-bar, B, which carries the bearing, is formed a hole for the passage of the central tube *b* of funnel *a*, and the bearing itself is formed by two hollow cylinders, *f* and *g*, which are notched for the journals of the anti-friction rolls *r*. In order to protect the bearing from acid fumes two telescoping or cap cylinders, *f'* and *g'*, are slipped on the ends of *f g*, when the rolls *r* are in place, said cylinders *f'* and *g'* extending up to the under surface of the bearing-piece *e*, so as to inclose the anti-friction rolls *r*.

c represents the distributer or distributing-tube, consisting of a vertical tube which connects with the funnel-tube, and of a T-piece, *c'*, closed at the ends and perforated on the under side to permit the escape of liquid in the form of a fine spray. In order that the wash may spread evenly through the T-piece, and commence and combine to discharge uniformly, we prefer to arrange the perforations obliquely or tangentially to a line drawn parallel to the axis of the T, as shown in Fig. 4.

The device herein described may be made of any suitable material. For common use tin or tinned metal may be preferred; but hard rubber and glass may be employed, or any metal not affected by the acid vapors of the generator.

For some purposes a glass-distributer may be deemed desirable, in which case it can be secured to the funnel-tube by a spring or clamp, as indicated in Fig. 5, or by like devices. Where a metal or hard rubber is employed a sleeve or screw coupling can be employed, as preferred. *t* indicates a pipe or tube for supplying the wash, said tube leading to a reservoir or supply-tank, and being provided with a suitable cock to regulate or stop the flow of liquid.

The operation of these devices is as follows: The automatic feeder being properly placed with relation to a generator, a limited supply of liquid is allowed to flow from pipe *t*, and, striking the periphery of funnel or receiver *a*, causes the same to revolve. The liquid, continuing to flow, passes into distributing-pipe *c*, and, spreading out therein or in the T-piece thereof, escapes through the perforations, and as the distributer revolves with the funnel the wash is evenly distributed over the top of the shavings (or other material employed) in the generator, without disturbing the mother or interfering with the regular action of the generator.

The advantages of our invention are that one man can tend a large number of generators; generators can be run continuously; that they will act more regularly and uniformly, and require less care as to temperature, &c.; and, finally, the old perforated and often clogging and warping head is dispensed with.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a vinegar-generator feeder, the funnel or receiver and distributer suspended upon bearings, and adapted to receive the wash and distribute it uniformly over the upper part of a generator, substantially as and for the purpose specified.

2. In a vinegar-generator feeder, the funnel or receiver, provided with a T-distributer, vanes, and a journal or bearing, substantially as and for the purpose specified.

3. In a rotary vinegar-generator feeder, the inclosed anti-friction roll bearing, substantially as and for the purpose specified.

In testimony whereof we, the said LOUIS EISENBEIS and CHARLES NAU, have hereunto set our hands.

LOUIS EISENBEIS.
CHARLES NAU.

Witnesses:
F. W. RITTER, Jr.
JAMES K. BAKEWELL.