

(No Model.)

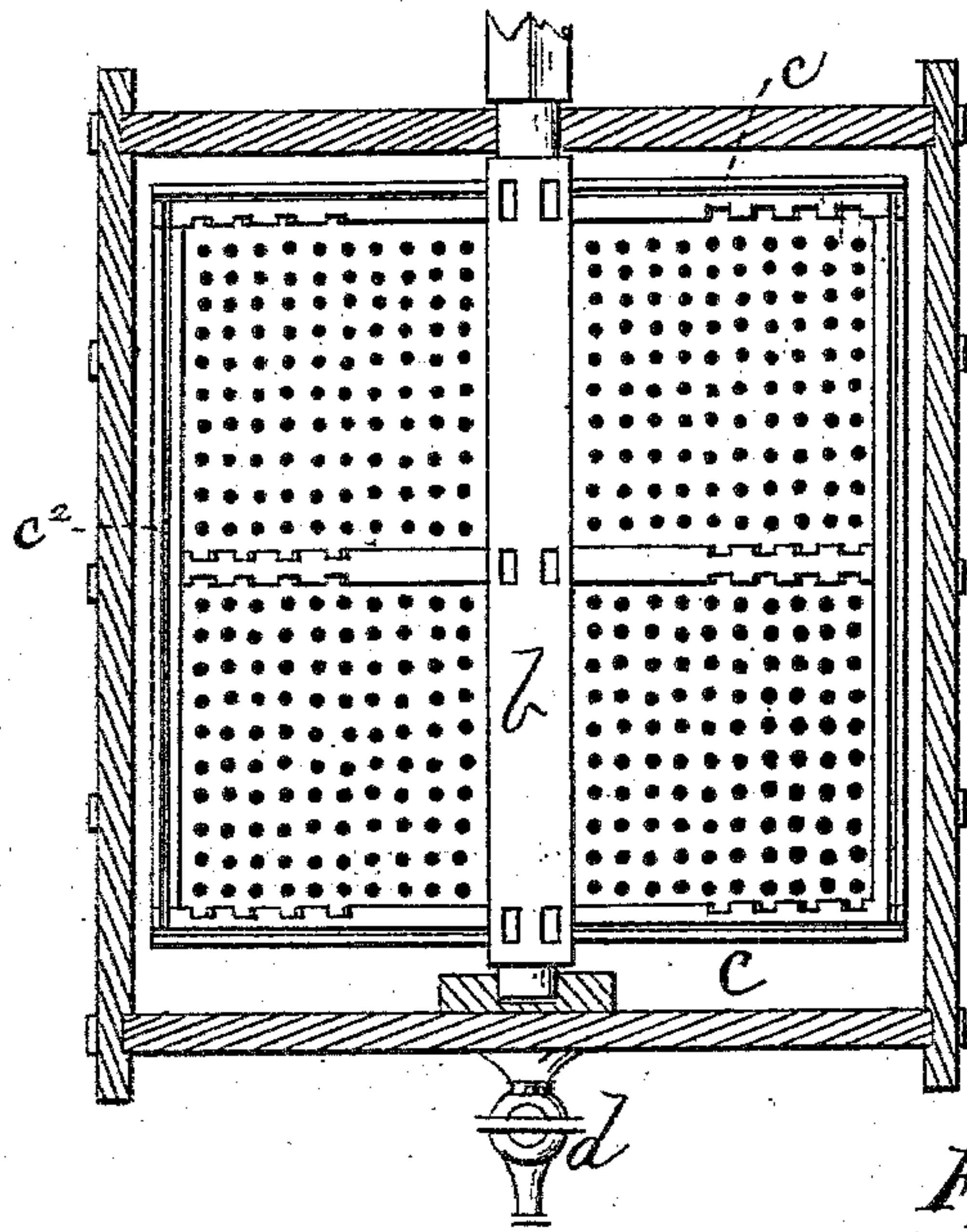
2 Sheets—Sheet 1.

R. H. HERDER.  
VINEGAR GENERATOR.

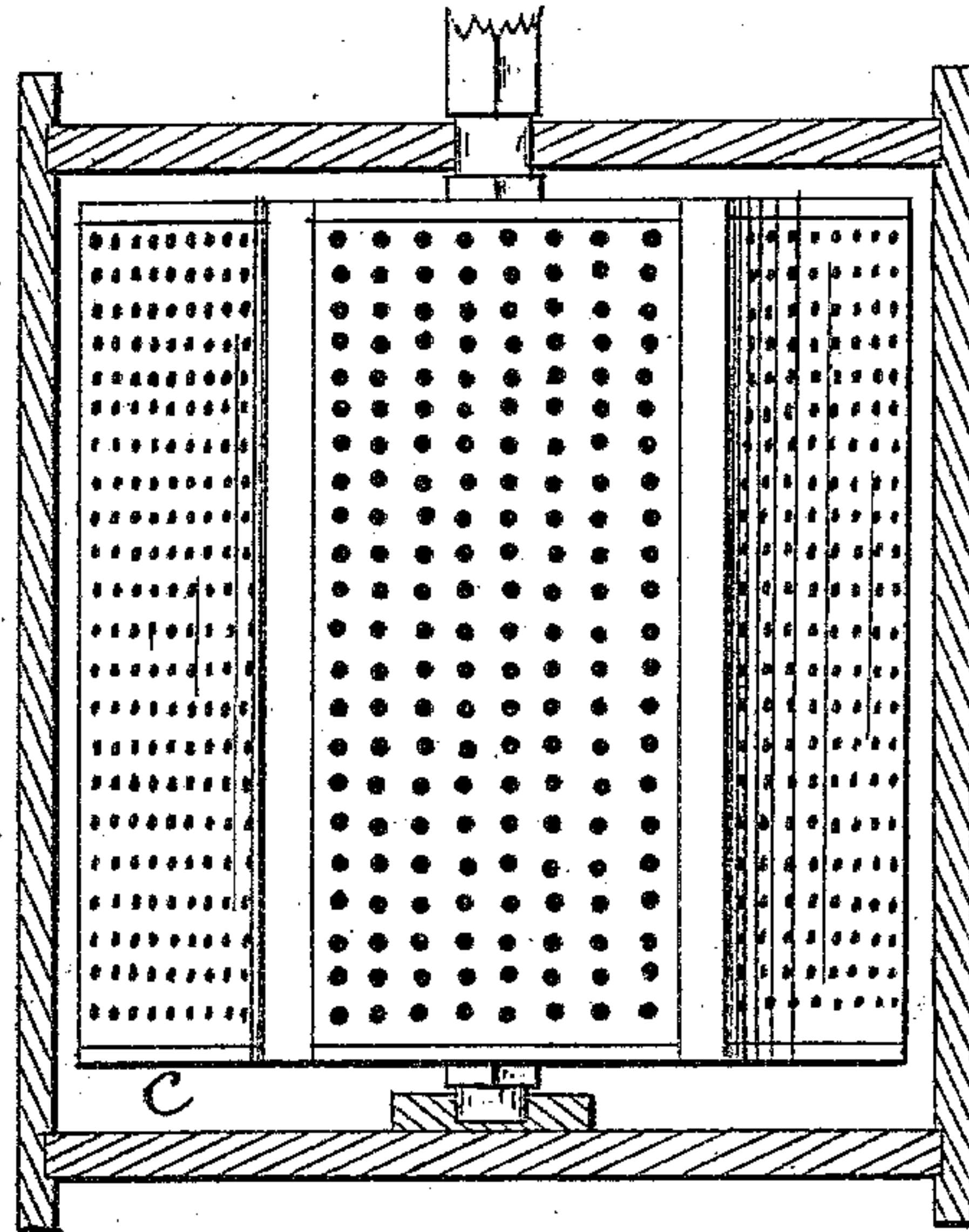
No. 288,055.

Patented Nov. 6, 1883.

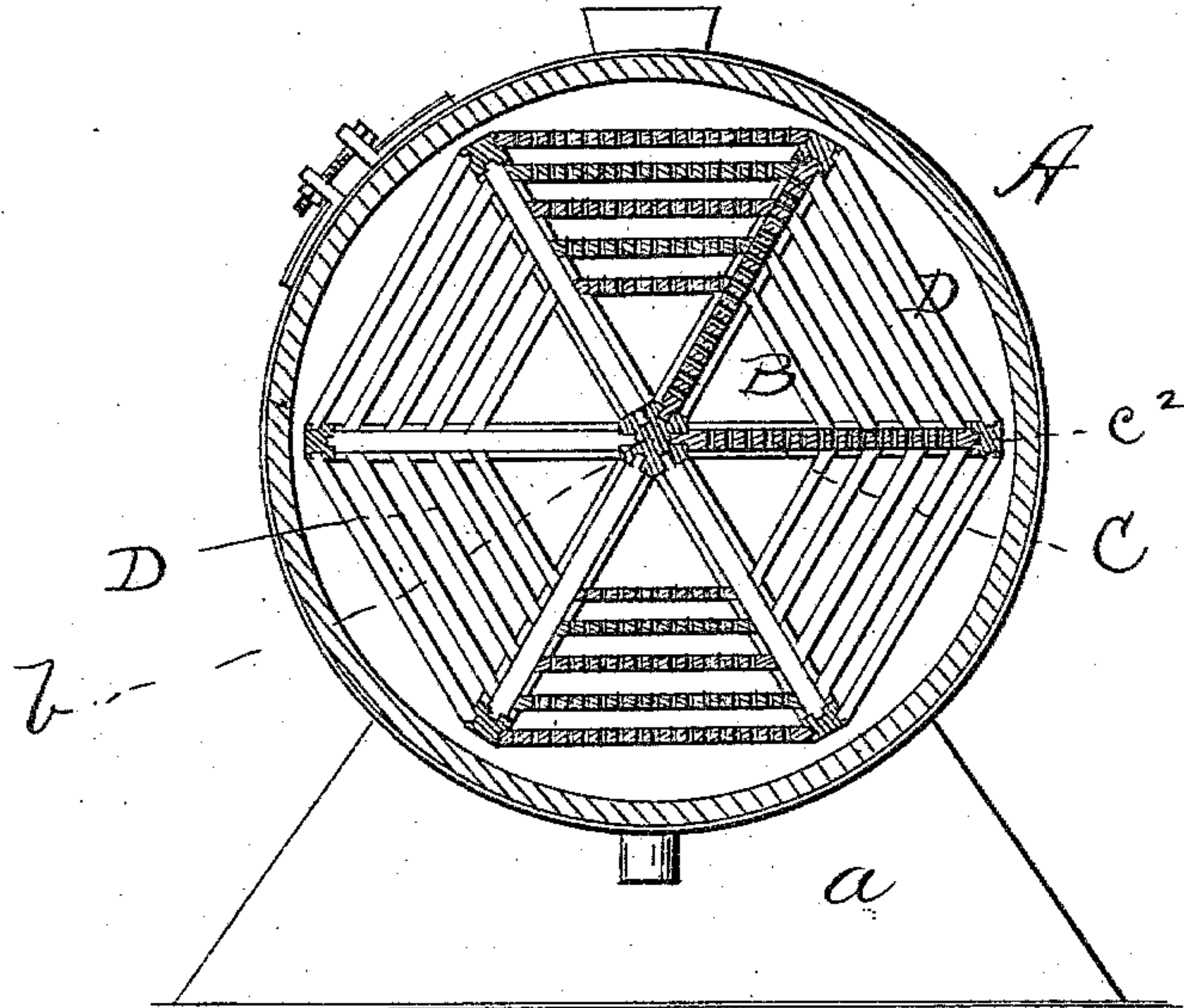
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses.*

*Saml R. Turner.*  
*R. B. Inpin*

*Inventor.*

*Rudolph H. Herder*

*By R. B. & A. Lacey*  
*Attys*

(No Model.)

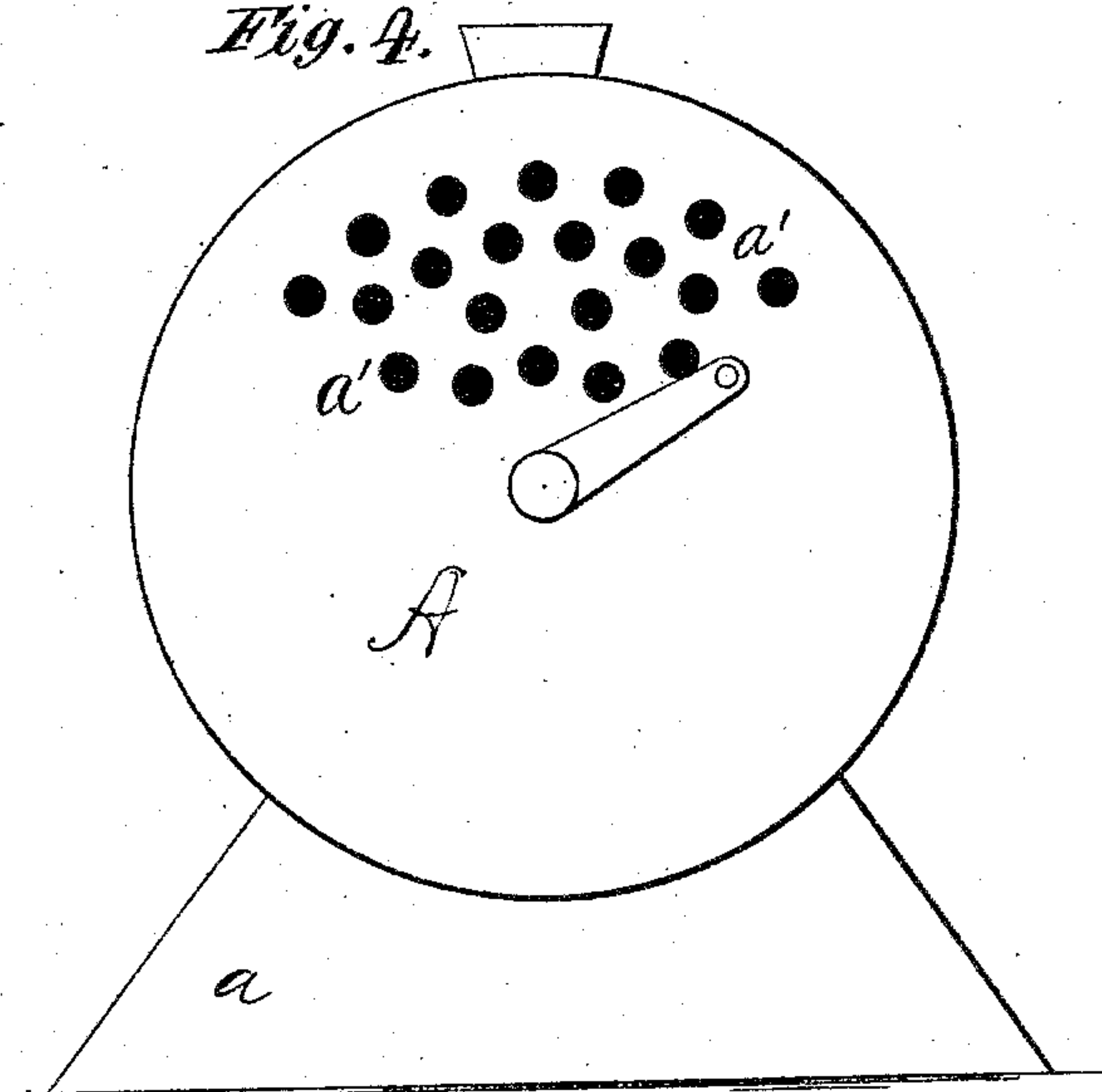
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R. H. HERDER.  
VINEGAR GENERATOR.

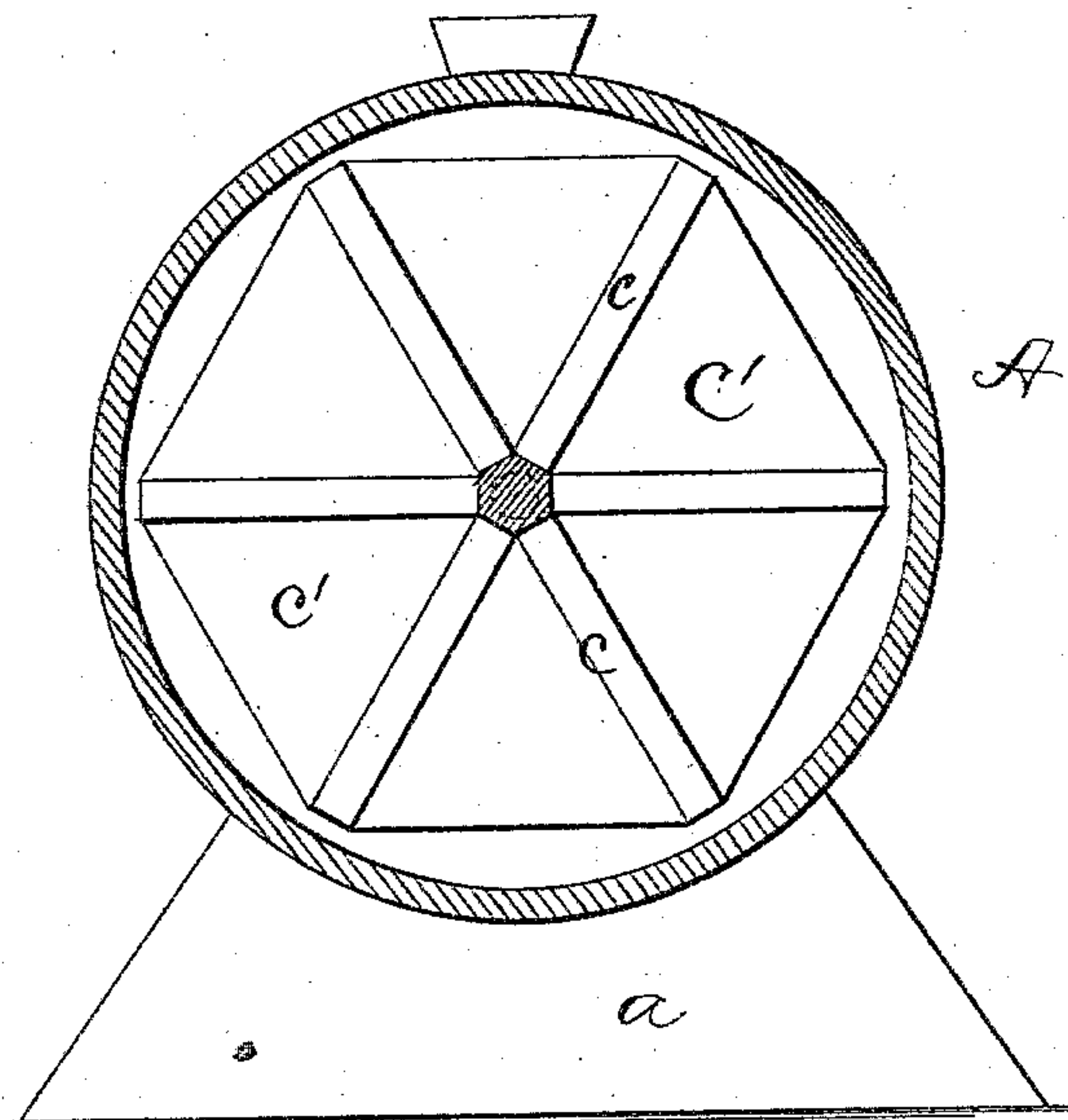
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*Fig. 4.*



*Fig. 5.*



*Witnesses.*

*Saml R. Turner*

*P. B. Murphy*

*Inventor.*

*Rudolph H. Herder*

*By R. S. & A. P. Lacey*  
*Attys.*



# UNITED STATES PATENT OFFICE.

RUDOLPH H. HERDER, OF TOPEKA, KANSAS.

## VINEGAR-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 288,055, dated November 6, 1883.

Application filed June 23, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, RUDOLPH H. HERDER, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Vinegar-Generators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention pertains to improvements in vinegar-generators, having for its object to facilitate the process of fermentation and to effect that end thoroughly; and it consists of apparatus comprising, mainly, an outer stationary receptacle, or the "vat," and an inner vessel or receptacle capable of rotation, and of the construction substantially as hereinafter more fully set forth and claimed.

In the accompanying drawings, Figure 1 is a view partly in section and partly in plan of my vinegar-generator, with a number of the panels and arms of the revolving receptacle or vessel removed. Fig. 2 is a similar view thereof, but without any of the parts of the inner vessel removed. Fig. 3 is a vertical transverse section of the same. Fig. 4 is an end elevation, and Fig. 5 is a view partly in vertical transverse section and partly in end elevation of the same.

In carrying into effect my invention I employ a stationary outer receptacle or vat, A, supported in any suitable stable manner. It may be upon low, broad, edgewise boards or feet *a*, and made, preferably, cylindrical, with a filling or supply funnel mouthed opening and a discharge opening or outlet, as most clearly seen in Fig. 3. It is made, of course, perfectly water-tight, after the manner of constructing casks and analogous vessels. With- in this receptacle I support, intact therewith and upon a shaft or axis, *b*, bearing in the heads of the cylinder A, a rotatable vessel or receptacle, B, which may in cross-section be of hexagonal or of other geometrical shape, as may be desired. Radiating from the shaft *b* of said vessel B (said shaft passing through

its center) are series of arms *c*, arranged one series at each end of the shaft, which arms, together with end pieces, *c'*, inserted firmly between them, constitute water-tight heads or ends of the receptacle B. The outer ends of these arms are secured to longitudinal peripheral bars *c''* in any suitable manner.

C C are longitudinal serially-perforated panels, arranged between the shaft *b* and the peripheral bars *c''*, into both of which they are mortised, as seen in Fig. 3, said panels being designated, for distinction from others, to be hereinafter described, as "radial panels."

D D are series of panels, similar in construction to panels C, (the same having, also, numerous perforations,) which panels D are arranged intermediately between the panels C, with their ends disposed to the sides of the latter, against which they rest, as more clearly seen in Fig. 3.

Additional perforated panels yet may be arranged between the radial panels C, at right angles to a plane touching either the panels D or panels C at their sides.

The functions of the foregoing described panels will be presently referred to.

To revert to the cylinder or outer receptacle, A, it will be seen that the same is provided with a series of apertures, *a'*, in one end, (which may be made in both of its ends,) in the upper half thereof, the purpose of which is to admit air into the generator. A faucet, *d*, is applied to the outer receptacle or cylinder, A, to allow the ready withdrawal of the contents of the same; and to the shaft of the rotatable receptacle may be applied a crank or handle, to permit its operation by hand; or the said receptacle may be driven by a belt and pulley or other suitable means.

It being well understood that the process of fermentation will be hastened in proportion to the extent to which the particles of the mash or malt are exposed to or brought into contact with the air, it therefore follows that if the air be caused to circulate freely throughout the entire mass, or as nearly so as practicable, the process will be much more rapid than if the same mass of mash remained in an undisturbed state with only a portion of its surface exposed to the air. From the foregoing,



then, it will be seen that the advantage of hastening or obtaining rapid fermentation is secured, as, with the mash supplied to the generator until it is nearly half full the mash will  
5 rise and separate in part from the cylinder A into the perforated vessel B, while the air will enter through the apertures  $a'$  of the former receptacle, and by rotating the inner receptacle it will be further separated, it being caused to  
10 pass through the numerous apertures of the variously-disposed panels, permitting the entire mass to be exposed to the incoming air.

Having thus fully described my invention, I claim and desire to secure by Letters Patent—  
15 1. In a generator for hastening fermenta-

tion, the revolving interior aerator constructed with perforated compartments, substantially as and for the purpose set forth.

2. The combination of the external or outer receptacle or vat, having a series of air-apertures, with the inner rotatable receptacle, having chambers or compartments composed of a series of variously-arranged perforated panels, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in  
25 presence of two witnesses.

RUDOLPH H. HERDER.

Witnesses:

JACOB MÜLLER,  
LUDWIG MAIER.