MILLER & STAUFFER.

Mash Tub.

No. 39,739. Patented Sept. 1, 1863.

Fig. 3,

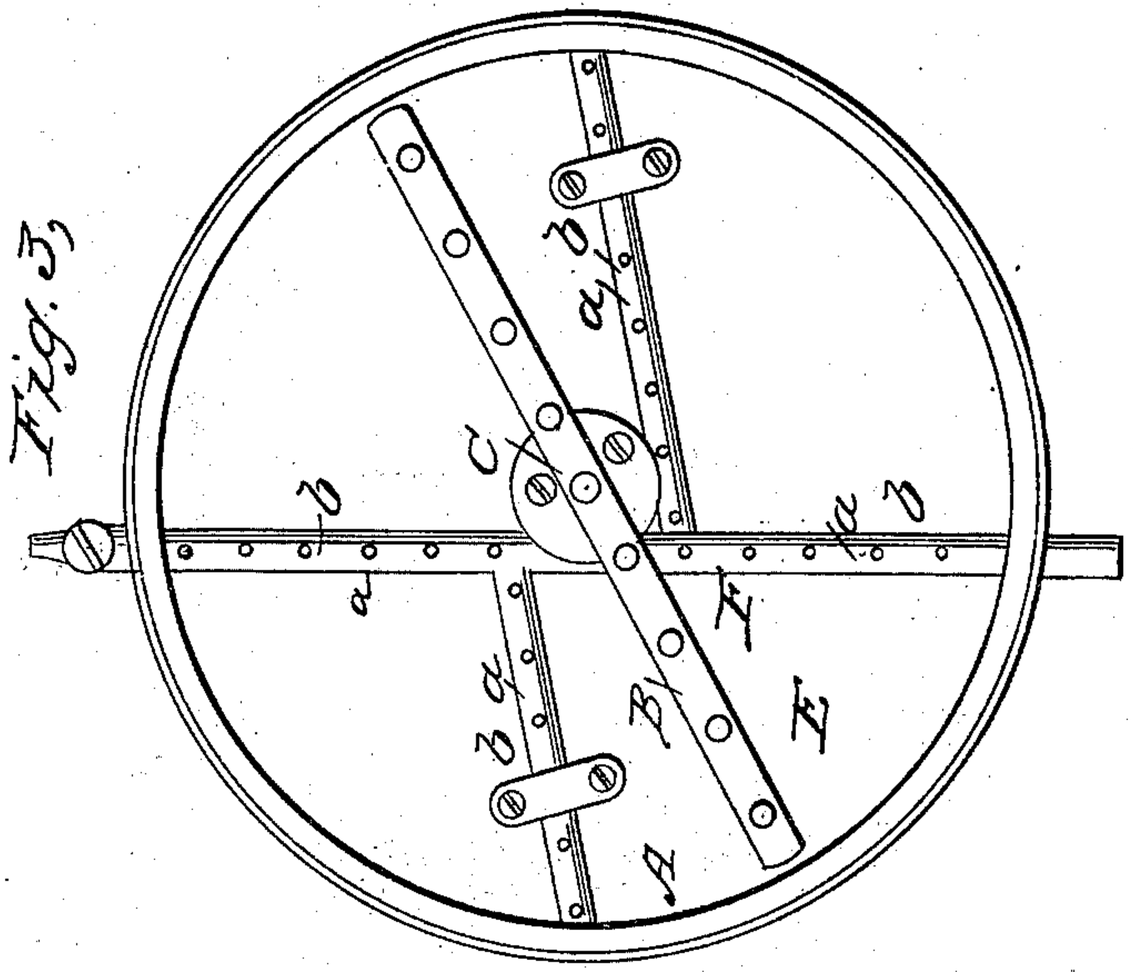


Fig. 1,

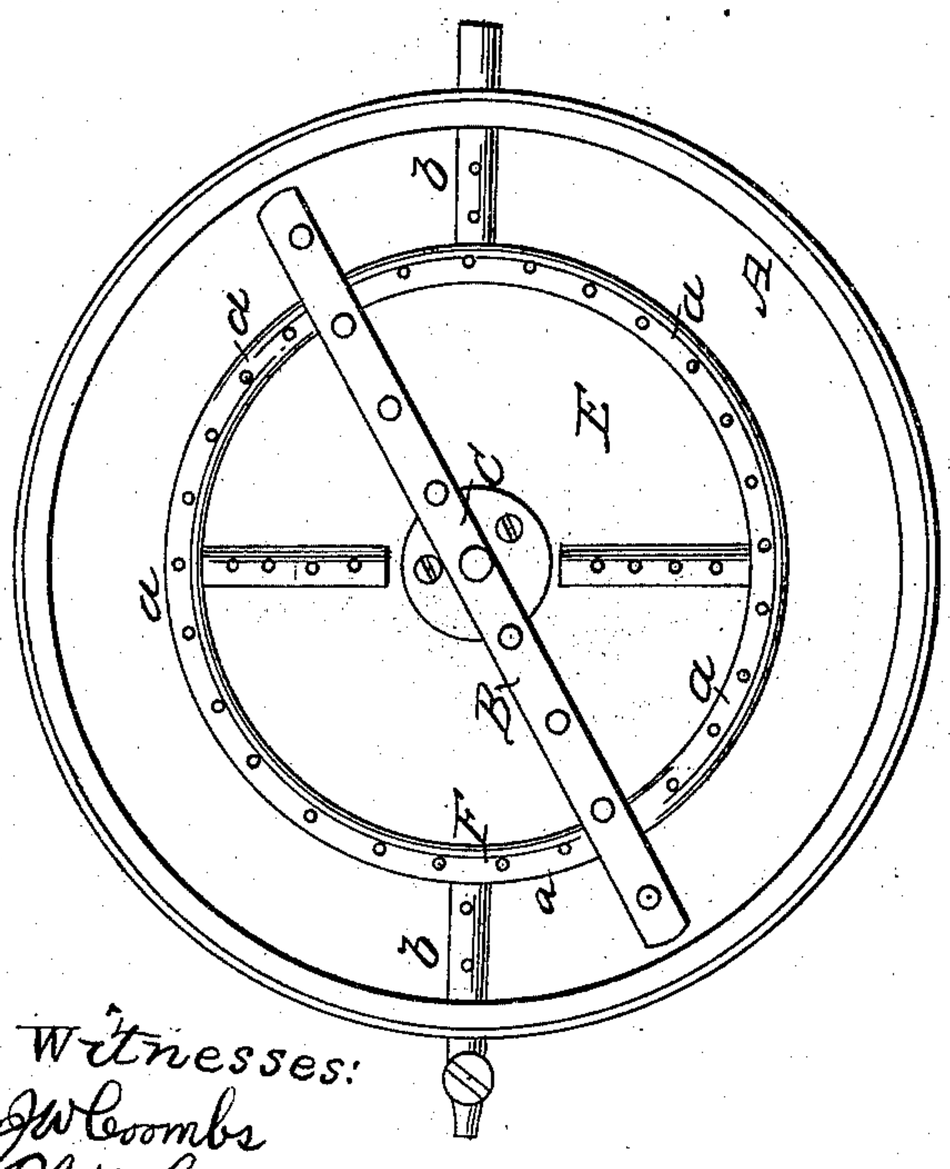
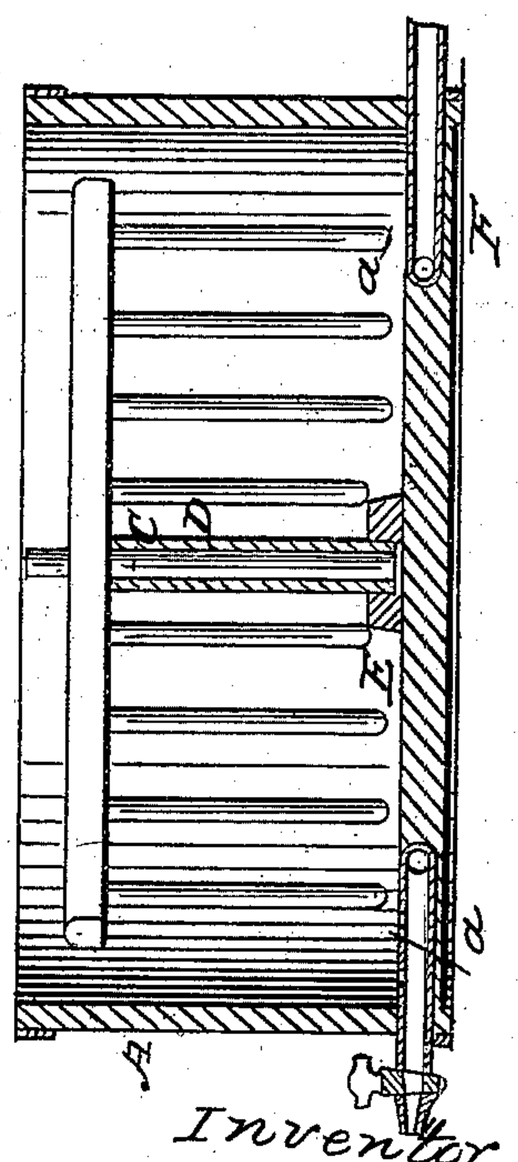


Fig. 2,



Witnesses:
J. W. Coombs
Robt. H. Louser

Inventor
A. Miller
J. R. Stauffer
By Munn & Co
Attys.

UNITED STATES PATENT OFFICE.

AMOS MILLER AND JOSEPH R. STAUFFER, OF PENNSVILLE, PENNSYLVANIA.

IMPROVEMENT IN MASH-TUBS.

Specification forming part of Letters Patent No. **39,739**, dated September 1, 1863.

To all whom it may concern:

Be it known that we, AMOS MILLER and J. R. STAUFFER, both of Pennsville, in the county of Fayette and State of Pennsylvania, have invented a new and useful Improvement in Mash-Tubs; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a plan or top view of our invention. Fig. 2 is a vertical central section of the same.

Similar letters of reference in the three views indicate corresponding parts.

This invention relates to an improvement in that class of mash-tubs in which steam is used for the purpose of heating the mash, and the object of the same is to simplify the construction of the tub and arrange the same so that the steam is equally distributed throughout the mash, and at the same time no chance is left for the accumulation of verdigris, whereby the fermentation is impaired.

The nature of our invention and the difference of our mash-tub from those now in use will be readily understood from the following description:

A represents a mash-tub constructed in the ordinary manner, of wood or other suitable material. This tub is provided with a rake, B, that is secured to a central pin or shaft, C, and this shaft fits into a tubular socket, D, which is secured to the bottom E of the tub. The shaft C and the rake receive a rotary motion by steam or any suitable power. The steam, which serves for boiling the mash, is introduced through a pipe, F, which is inserted into the bottom of the tub and provided with a number of perforations, *a*, which admit the steam to the interior of the tub and allow it to disseminate throughout the contents of the same. The quantity of steam used in this operation, the pressure required to drive the steam through all the perforations, and their uniform dissemination of the same throughout the mash depends entirely upon the distribution of the perforated pipes, and the object which we have sought to attain by our invention, and which, after long and costly experiments throughout several years, we flatter ourselves to have attained, is to boil the mash equally and uniformly throughout the entire tub with the smallest possible quantity of steam. If the steam is introduced through a perforated false bottom it requires in the first place a very large quantity of copper to make the false bottom in a tub of from twelve to sixteen feet diameter, and the perforations in the bottom are liable to stop up, and, furthermore, it takes an immense quantity of steam to pass uniformly through the entire contents of the tub. This false bottom is also difficult to clean and the large quantity of verdigris formed on its extensive surface is obnoxious to the fermentation of the liquor.

Our pipe F is arranged with four arms, *b*, which extend either from a central ring or from a common center in opposite directions, as clearly shown in Figs. 1 and 3. Through the perforations in these arms the smallest possible quantity of steam is admitted, and as the rake rotates the steam is permitted to follow the wake of the several tines and to penetrate the mash uniformly throughout. Steam of comparatively low pressure is perfectly able to keep the several perforations open and the entire pipe can be made of a comparatively small quantity of copper and placed into the bottom of any mash-tub, new or old, without trouble or loss of time. The pipe can very easily be cleaned by blowing steam through it, and it offers very little surface for the formation of verdigris.

Our pipe is simple, and cheap in its construction. It can be readily applied to any mash-tub, and it is economical in its operation.

What we claim as new, and desire to secure by Letters Patent, is—

The arrangement of a perforated pipe, F, with four arms, *b*, in the bottom of a mash-tub, constructed and operating in the manner and for the purpose shown and described.

AMOS MILLER.
JOSEPH R. STAUFFER.

Witnesses:
M. O'NEILL,
JOHN H. BOTTZ.