

G. YOUNG.  
Mash-Tub.

No. 216,011.

Patented May 27, 1879.

Fig. 1.

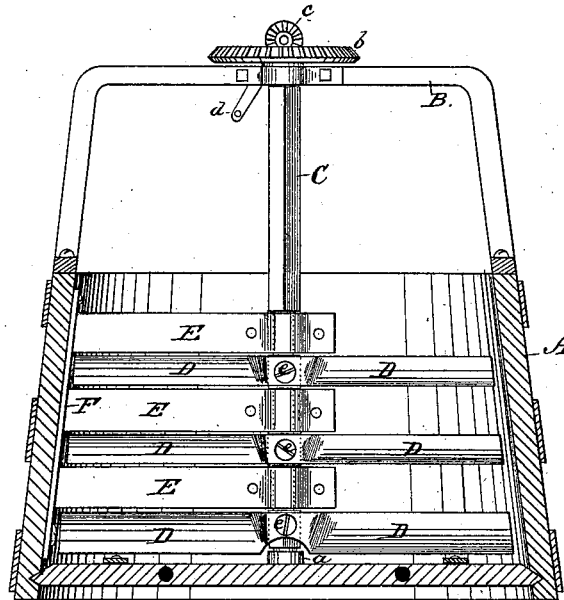


Fig. 2.

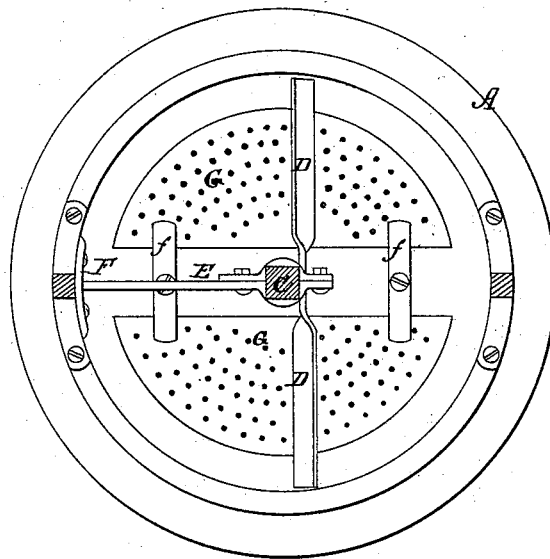
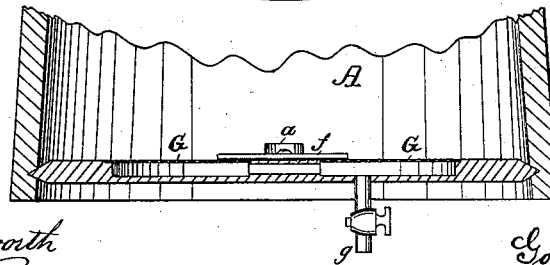


Fig. 3.



WITNESSES:

*W. W. Hollingsworth*  
*Edw. W. Byrn*

INVENTOR:

*Gottlieb Young*  
BY *Wm. L.*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

GOTTLEIB YOUNG, OF COLUMBIA, PENNSYLVANIA.

## IMPROVEMENT IN MASH-TUBS.

Specification forming part of Letters Patent No. **216,011**, dated May 27, 1879; application filed March 8, 1879.

*To all whom it may concern:*

Be it known that I, GOTTLEIB YOUNG, of Columbia, in the county of Lancaster and State of Pennsylvania, have invented a new and Improved Mash-Tub; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section; Fig. 2, a horizontal section; Fig. 3, a sectional detail of the bottom of the tub.

My invention is an improvement in mash-tubs for holding and mixing the mash or mixture of malt and warm water used in making malt liquors. In such tubs a vertical shaft is provided with stirrers, which, upon the revolution of said shaft, stir the mash and permit the liquor to run out therefrom, while a false bottom separates the mash from the liquor and allows the latter to be drawn off.

My invention consists in the peculiar construction and arrangement of the stirring devices, and in the construction of the false bottom, as hereinafter more fully described.

In the drawings, A represents the tub, which may be of any desired size. B is a yoke-shaped frame, resting upon the upper edges of the tub, and bolted thereto and spanning the center of the tub. C is a central shaft, arranged in bearings in the yoke-shaped frame at the top, and resting at its lower end upon a step, *a*, in the bottom of the tub. On the top of this shaft is fixed a crown-wheel, *b*, with which engages at right angles a pinion, *c*, arranged in a suitable frame, and rotated by a crank-handle, *d*, which devices furnish means for rotating the central shaft. Upon the lower portion of this central shaft is fixed a series of horizontal blades, D, formed of flat bars of metal slightly twisted, so that the upper edges incline forwardly. These blades are fastened directly to one side of the square shaft C by a single screw, *e*.

E E are a series of horizontal bars fixed to a vertical bar, F, screwed to one side of the tub, while bars E extend to the center of the tub, and are provided with bearings that encompass the central shaft between the blades. The merit of this arrangement of the bars E

is as follows: The said bars E, it will be seen, co-operate with arms D to mash and squeeze the material and promote the elimination of the liquor. In order to do this they must approach the arms D more or less closely, and this causes, by reason of the stiff character of the semi-fluid mass, a great strain on the necessarily long arms E. By causing the ends of such arms to encircle the main shaft, said arms are thoroughly braced and held firmly at both ends, and a much more efficient and substantial construction of mash-tub is obtained.

The false bottom is formed by cutting out the upper portion of the bottom of the tub on each side of the bars E in the shape of half-circles, and then covering over these recesses by corresponding semicircular plates G, which are perforated with numerous holes, and are secured by straps *ff*. These perforated bottom-plates form, with the recessed bottom, a shallow chamber, into which the liquor runs, and from which said liquor is drawn off by a suitable pipe, *g*.

In defining my invention more clearly, I would state that I am aware that in rotary churns agitator-blades corresponding to my blades D have been used in connection with resisting-blades corresponding to the bars E of my invention. In such case, however, the said bars (corresponding to E) had free ends, and were disconnected from the shaft, since the small diameter of the churn permitted said arms to be made sufficiently short and rigid.

In a vessel of the diameter of a mash-tub these bars have not been employed, for the reason that their length permitted too much flexibility. By attaching them to and causing them to encircle the shaft in the center I obviate this difficulty, and am enabled to employ this desirable form of stirring apparatus.

With respect to the false bottom, also, I am aware that a circular perforated pipe has been embedded in the bottom of a mash-tub. This, however, affords insufficient means for drawing off the liquor, and will soon become filled with solid particles that cannot be easily removed. My construction of recessed bottom and perforated plates gives free vent to the liquor. The plates may be removed to clean the recess, and their shape permits such removal

without interfering with or requiring the removal of the other devices.

Having thus described my invention, what I claim as new is—

1. The mash-tub A, the rotary central shaft C, having horizontal stirring-blades D, and the bars E, extending from the side of the tub to the central shaft and forming bearings for the latter, and alternating in position with the stirring-blades, substantially as described.

2. The mash-tub having its bottom recessed

or dug out to form semicircular recesses, in combination with correspondingly-shaped perforated plates G, as shown and described.

The above specification of my invention signed by me this 20th day of February, A. D. 1879.

GOTTLEIB YOUNG.

Witnesses:

SOLON C. KEMON,  
CHAS. A. PETTIT.