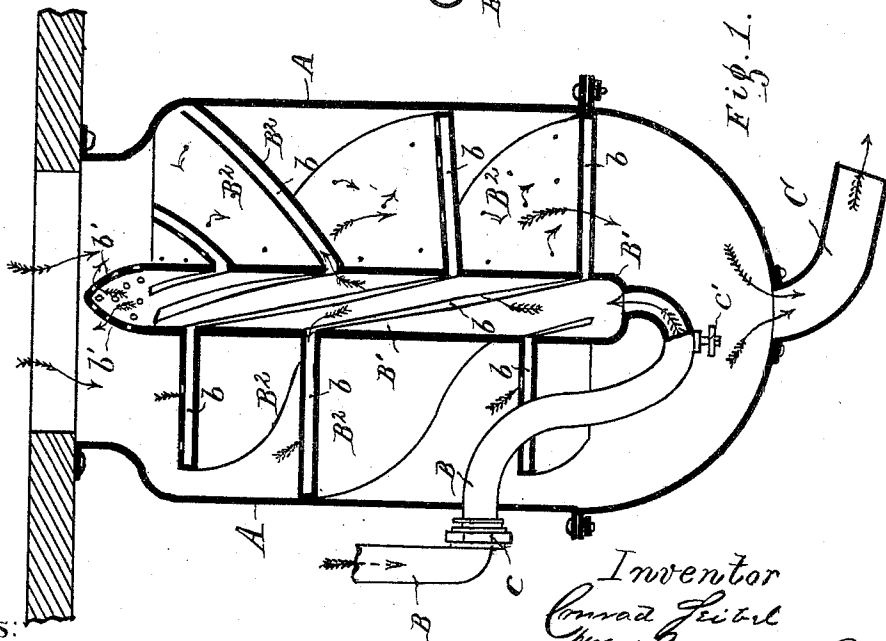
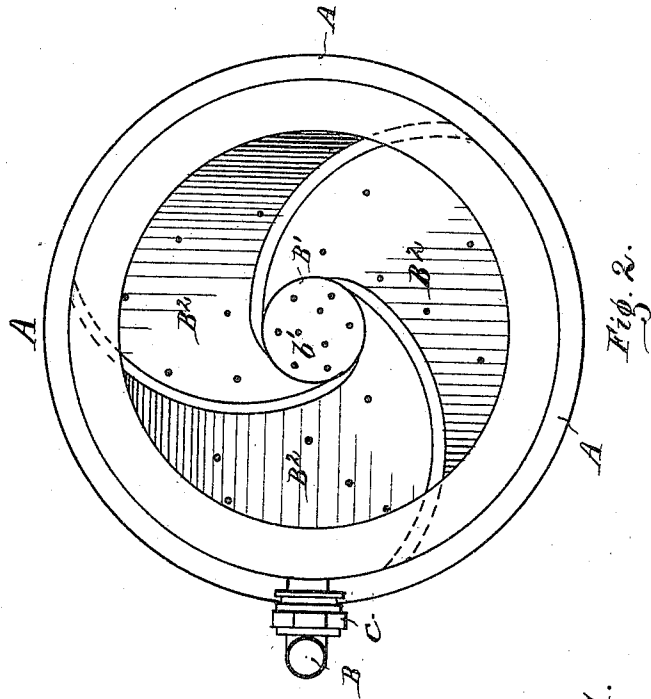


C. SEIBEL.

APPARATUS FOR FORMING MASH FOR BEER, &c.

No. 172,588.

Patented Jan. 25, 1876.



Witnesses:

J. M. Berthel.
Chas. F. Meunier.

Inventor
Conrad Seibel
per Berthel & Co.

UNITED STATES PATENT OFFICE.

CONRAD SEIBEL, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN APPARATUS FOR FORMING MASH FOR BEER, &c.

Specification forming part of Letters Patent No. 172,588, dated January 25, 1876; application filed September 17, 1875.

To all whom it may concern:

Be it known that I, CONRAD SEIBEL, of St. Louis, Missouri, have invented an Improved Apparatus for Forming Mash for Beer, &c., of which the following is a specification:

This invention is designed to be used for purposes of forming mash from ground or crushed malt.

The object of my invention is to avoid the extra time, labor, and expense incurred in the use of the well-known means for the purpose stated, and to form an improved apparatus, by the use of which, more especially, the strength and saccharine substance of the malt are more fully utilized, and a consequent better quality and greater quantity of beer, ale, and similar brewed fluid is produced.

My invention, therefore, consists in the novel construction of the apparatus and its operation, in the manner now to be more fully described.

Of the drawings, Figure 1 is a sectional elevation. Fig. 2 is a top plan.

A represents a suitable vessel to contain my improved operating parts. In the use of my invention I utilize the water contained in a tank, and which is usually stationed a floor or so higher than the malt-floor. The pipe B connects with the tank, and through said pipe the column of water is passed upward through my apparatus. Hence, as shown in Fig. 1, the inlet-pipe B is made to pass through the vessel A, so as to connect with a central upright pipe, B¹. This pipe B¹ I form to have surrounding it spiral-shaped blades B², being in appearance a turbine wheel, excepting, as here shown, the said parts are fixed stationary in the inclosing-vessel A. The spiral blades B² further, as shown in Fig. 1, are doubled, so as to leave an intervening space, *b*, which has open communication with the central pipe B¹ and pipe B. Hence, when the water fills the pipes B B¹, it also fills the spaces *b*, as indicated by the arrows; and, in order that the pressure of the water so contained in the stationary turbine may jet in different directions from out said spaces *b*, I further provide the top blades with small perforations, as clearly shown in Fig. 1.

The blades of the turbine, owing to their spiral form, causes the introduced malt to gradually pass along and down said spiral sur-

faces, until the lowest blade has been passed over, when said malt, owing to the moistening process it has passed through, is finally permitted to escape out at the bottom.

The top of the apparatus being open, (a slide establishing open or closed communication between the hopper of the malt-floor and the apparatus,) the malt drops, or, by its gravity, falls into the apparatus. In doing so the malt strikes upon the cone-shaped point *b'* at top of the central pipe B¹, which causes said grain to spread over the surface top of the turbine, while at same time the jets of water issuing out of the water-spaces *b* in all varying directions permeate and come in contact with each grain or particle, moistening it as it passes downward. By the time the malt passing through this moistening process has traversed over the surface of the lower blades it has been converted into a soft, pulpy substance, usually termed "mash," and as such it is finally passed through the bottom chute C into a mash-tub or proper receptacle.

As the water flows into the apparatus at same time with the inflowing malt, it is plain that no manual labor is required to stir or scatter the particles.

The amount of water or the degree of moisture which it is desired to mix with the malt can be graduated by a cock at *c*, which controls the flow of the main water-column; nor can any portion of the malt pass through the apparatus unmoistened, owing to the fact that a continual film of water passes with the malt over the surfaces of the turbine.

c' is a waste-cock, to permit the water to waste when the apparatus is not used.

What I claim is—

A mash-machine consisting of the upright pipe B¹, communicating with spiral blades B², with intervening spaces *b* between, the upper surfaces of said pipe and blades being perforated, in combination with a vessel, A, having inlet-pipe B, to form an improved apparatus, as and for the purpose set forth.

In testimony of said invention I have hereunto set my hand in presence of witnesses.

CONRAD SEIBEL.

Witnesses:

WILLIAM W. HERTHEL,
CHAS. F. MEISNER.