J. BERSCH.

Ventilating-Bung.

No. 203,580. Patented May 14, 1878.

Fig. 1

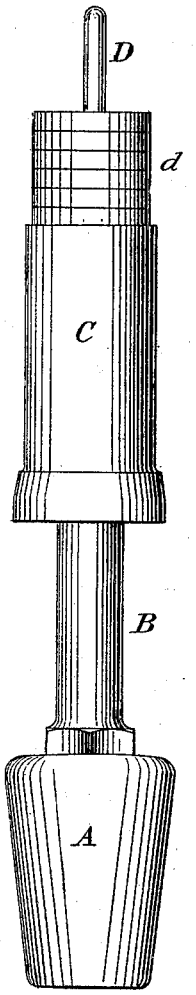


Fig. 3

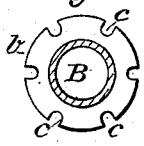
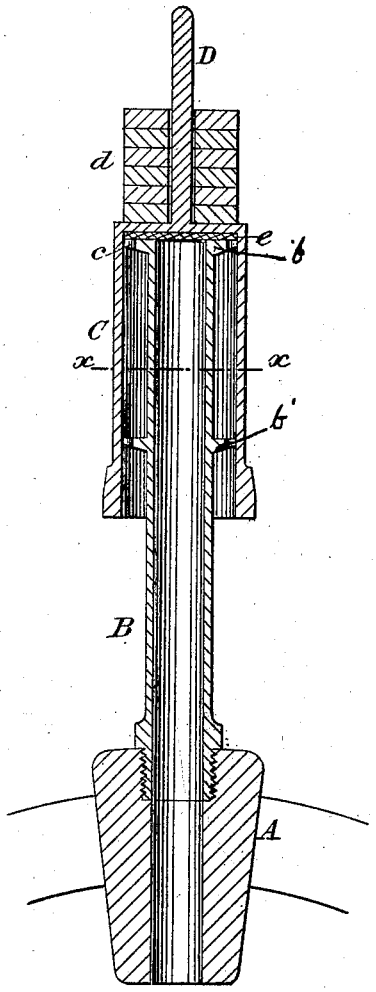


Fig. 2



Attest

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UNITED STATES PATENT OFFICE.

JOSEF BERSCH, OF BADEN, AUSTRIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO HENRY GATH, OF NEW YORK, N. Y.

IMPROVEMENT IN VENTILATING-BUNGS.

Specification forming part of Letters Patent No. **203,580**, dated May 14, 1878; application filed April 9, 1878.

To all whom it may concern:

Be it known that I, Dr. JOSEF BERSCH, of the city of Baden and Empire of Austria, have invented certain new and useful Improvements in Ventilating-Bungs; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to bungs for regulating the fermentation of beer and other malt liquors, and the object is to prevent the beer, &c., from becoming flat or spoiling.

The invention consists of a bung into which a vertical pipe or tube is screwed, having two disks or pistons at its upper end, which fit into an inverted cup-shaped cylinder, which slides up and down on the pistons as the pressure increases or decreases. In the upper end of the cylinder is fitted a rubber washer to prevent leakage of air through the tube. A pin or rod is secured to the cylinder, upon which any suitable number of weights are placed, according to the different pressures desired, all of which will be more fully described hereinafter, reference being had to the accompanying drawing, in which—

Figure 1 is a side elevation of my improved bung. Fig. 2 is a vertical cross-section of the same. Fig. 3 is a section on line *x x* of Fig. 2.

In the drawing, A represents a common bung, which is driven into a barrel in the usual way. In this bung is screwed a vertical pipe, B, having two disks or pistons, *b b'*, at its upper end, and arranged some distance apart. Each of these pistons is provided with a number of grooves or indentations, *c c*, on their periphery, to allow the air in the cylinder to escape. A cylinder, C, of light metal, is provided at its lower end with a collar to weight it, and slides up and down over the two pistons. At its upper end the cylinder C has a rod or pin, D, attached or cast to it, upon which any number of flat weights *d* are placed to give the desired pressure. In the cylinder, at its upper end, is placed a disk or washer of rubber or caoutchouc, *e*, by which the mouth of the tube B is closed, as it comes in contact with it, when the cylinder C descends.

The operation is as follows: The tube B being screwed into the bung and weighted to the desired amount, the beer will remain at that point until gas is generated in sufficient quantity to raise the weighted cylinder, when the surplus gas will escape through the grooves in the pistons into the atmosphere. The pressure on the beer is thus always kept at a uniform degree, and it will not become stale or flat.

The advantages of the bung are, first, the beer contained in barrels provided with this bung ferments perfectly even, and the effervescence can be carried to any desired degree; second, the beer will not spoil or become stale or flat, because over the beer there will be always a layer of carbonic-acid gas, and prevent the admission of air; third, the rising of the ferment sediment cannot occur, and the beer will remain perfectly clear, as it is well known that during sudden thunder-storms, in consequence of the sudden falling of the atmosphere in temperature, the sediment will rise in the barrels, and often beer that has already become perfectly clear will become muddled and ferment again; fourth, the bung operates automatically, and after it has been placed in position requires no further attention, the principle being that the atmosphere exerts a certain pressure upon a certain sized area, which would amount on one square millimeter to ten grams, or for one square centimeter to one kilogram. If, for instance, a surface of a certain size were weighted with a certain weight, which would be such that a power of one-twentieth, two-twentieths, three-twentieths, &c., of an atmospheric pressure were necessary to raise the weight, then evidently gas would have to be developed in the fermenting beer until this had attained a somewhat greater pressure than one-twentieth, two-twentieths, &c., of the atmospheric pressure, when it would raise the weight and escape. By increasing the weight, as will be readily understood, the tension of the gas could also be increased and retained.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

The barrel-vent herein described, consisting of the plug A, tube B, provided with pistons *b b'*, cylinder C, having rod D, and the weights *d d*, all constructed and arranged as shown, and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

DR. JOSEF BERSCH.

Witnesses:

EUGEN NORSE,

CONST. MANDRONIC.