(No Model.)

J. W. WILLIAMS.

CIDER PURIFIER.

No. 386,515. Patented July 24, 1888.

Fig. 1

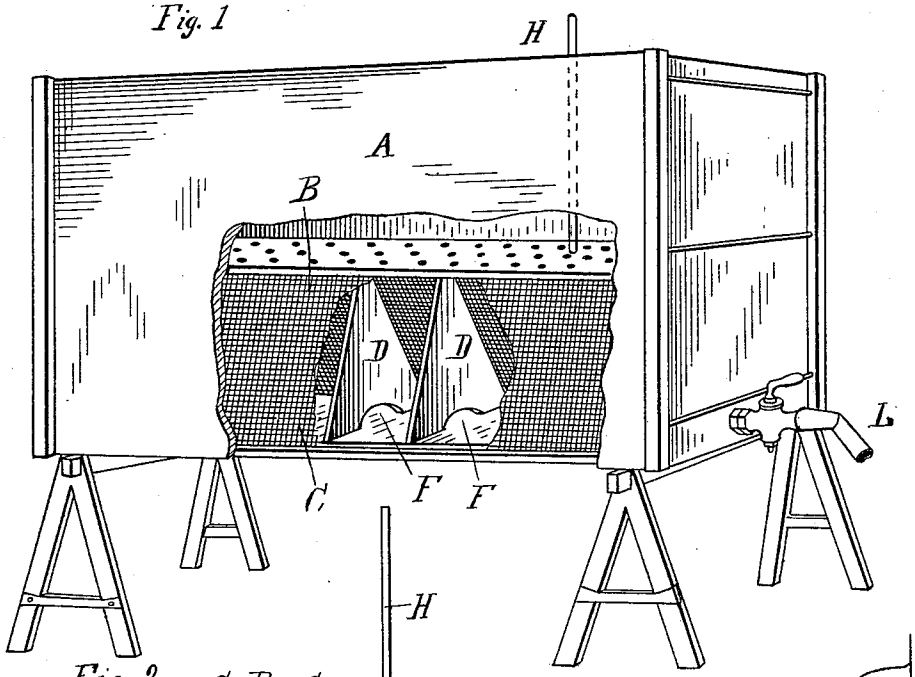


Fig. 2

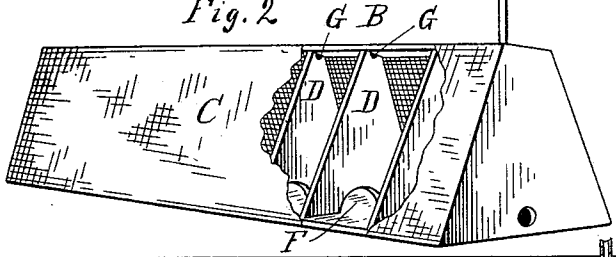


Fig. 3

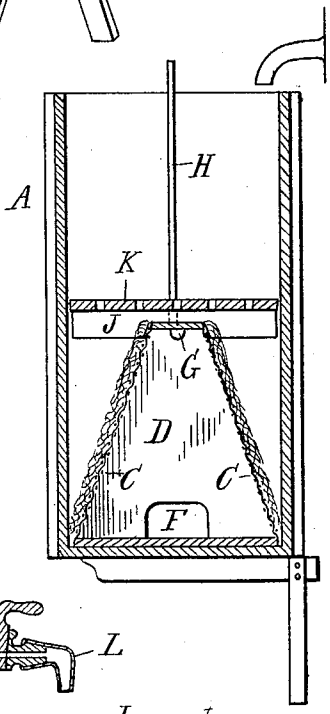


Fig. 4

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UNITED STATES PATENT OFFICE.

JOHN W. WILLIAMS, OF DEXTER, MICHIGAN.

CIDER-PURIFIER.

SPECIFICATION forming part of Letters Patent No. 386,515, dated July 24, 1888.

Application filed May 7, 1888. Serial No. 273,013. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. WILLIAMS, a citizen of the United States, residing at Dexter, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Cider-Purifiers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in cider-purifiers. In the present state of the art in constructing purifiers of the kind to which my invention belongs the same consist, substantially, of a receptacle into which the purified cider is introduced and of an interior partition or partitions of burlap or other suitable filtering medium through which the cider has to pass toward a bottom discharge-spout. Sand or linen-paper pulp has also been used as a filtering medium, the latter having been used by covering the outer face of the vertical screen-partition with it. Practical experience with the purifiers constructed upon these principles has found several objections. One objection is that the peculiar arrangement and construction of the screen-partitions necessarily require a bottom outlet for the purified cider. This is objectionable, considering that in purifying the operation is conducted in cellars or store-rooms of limited height, where it is impossible to raise the purifier high enough from the floor to be in convenient access to any receiving-tank placed below and at the same time have convenient access for filling the purifier or arranging a filling-tank on a higher level above. Another objection is that it is difficult to cover vertical screens with a filtering medium—such as pulp—as the same becomes too readily detached. Further, the use of sand or linen-paper pulp as a filtering medium is expensive, the former becoming useless after short use and has to be thrown away, and the latter, although it can be washed, after it becomes clogged with impurities cannot be further used, and is expensive in first cost.

My invention is designed to overcome these objections, and also to simplify and reduce the cost of the device; and to this end my invention consists in the peculiar and improved construction and arrangement of the parts, all as more fully hereinafter described, and shown in the drawings, in which—

Figure 1 is a perspective view with the side of the receiver and the side of the filter broken away to show the construction of the parts. Fig. 2 is a perspective view of the filter detached. Fig. 3 is a cross-section of the purifier, and Fig. 4 is a central longitudinal section thereof.

A is the receiver or tank into which the unpurified cider is poured or conducted through a trough or pipe from the supply-tank. It is preferably of rectangular shape and made of wood or any other suitable material. On the bottom of this receiver is supported one or more filters, B, of the form and construction shown in Fig. 2, and which consist of an inverted-V-shaped frame the bottom and ends of which are imperforate, while the sides C form screens, made of cotton-flannel cloth, burlap, or any other suitable fabric, secured to and stretched on the frame. Several cross-partitions, D, are secured intermediate between the ends to divide the interior into the compartments E, and these communicate with each other through apertures F on the bottom and through vent-holes G on top to communicate with the vent-pipe H. The partitions produce a quieting influence and distribute the filtering-action over the whole length of the filter. The cider passes through a filtering medium spread over the inclined sides to a suitable depth—say half an inch.

I propose to use wood fiber or wood pulp, which is not only cheaper than linen-paper pulp, as heretofore used, but also forms a stiffer and more substantial layer, less liable to break down. Furthermore, being placed upon an incline, it is better supported thereon and cannot become detached, as it invariably does when placed on a vertical screen-partition, which gives no support at all, but, on the contrary, draws away from the filtering medium in operation. The filter is removably secured on the bottom of the receiver A in any suitable manner, preferably by means of a couple of loose cleats, J, placed across the ends and suitably notched to engage with the top of the filter.

K is a board removably supported on the cleats J, and this board is either made a little smaller than the receiver or made with perforations to allow the unpurified cider poured into the receiver to pour into the lower part

of the receiver without producing any disturbance liable to detach or break down the filtering material placed over the screens.

L is a faucet placed through one side of the receiver and entering the end compartment of the filter, and through this the purified cider is allowed to flow off into receptacles, a spout being preferably secured movably to the end of the faucet, whereby the flow from the faucet may be quickly changed from one receptacle to the other at a change of the product resulting from some disturbing cause.

In practice the device is started in the following manner: A suitable quantity of wood pulp and cider are mixed and poured into the receptacle A, keeping it gently stirred up while allowing it to pass through the filter. The wood pulp is thus deposited on the outside of the screen, and if a suitable thickness is obtained to produce perfectly purified cider at the faucet the board K is placed in position to prevent the filtering medium from being disturbed by the filling in of unpurified cider.

For a less-experienced operator the easier way to deposit the filtering material upon the screen is to fill the receptacle with cider up to the top of the filter, then place the board in position, and then fill up with a mixture of wood pulp and cider. By opening the faucet the filtering operation is then started, and the wood pulp will be gradually deposited upon the whole exposed portion of the screen, and all the subsequently-added cider will have to pass first through the filtering medium. The condition of the cider at the spout will readily show when enough thickness of wood pulp is deposited upon the screen to effect a complete purification.

The filtering medium of course, after some time becomes clogged with the impurities, and then the screen is removed and a new one put into the receptacle and covered with fresh wood pulp in the manner described.

The impure wood pulp may be readily freed from its impurities by washing and used again.

What I claim as my invention is—

1. In a cider-purifier, the combination of the receiver or tank, the filter removably supported on the bottom thereof and provided with inclined sides formed of fabric and with imperforate bottom and top, a pulpous filtering material covering the fabric, a lateral discharge-opening, and transverse quieting-partitions provided with vent-apertures on top and bottom apertures communicating with the discharge, substantially as and for the purposes specified.

2. In a cider-purifier, the combination, with the receiver, of a filter of inverted-V-shape form with inclined sides formed of porous fabric and the bottom and sides imperforate, the partitions D, having apertures F and vents G, the vent-pipe H, the faucet L, and the board K, supported on the filter, all arranged to operate substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 26th day of April, 1888.

JOHN W. WILLIAMS.

Witnesses:
P. M. HULBERT,
JOHN SCHUMAN.