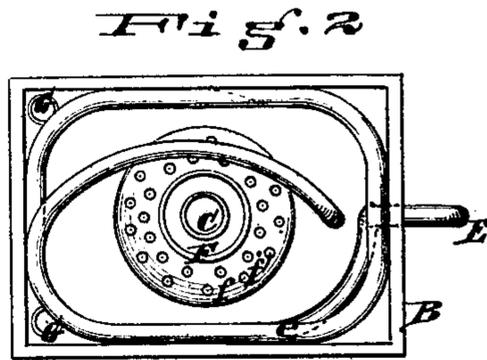
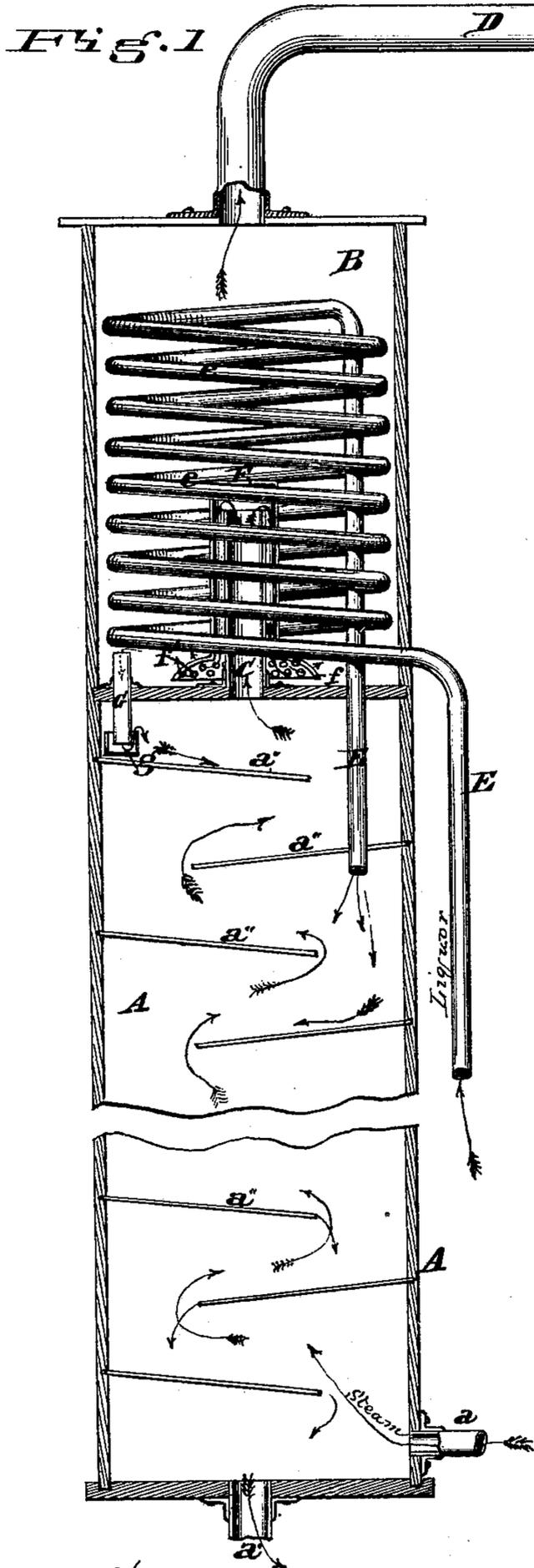


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STILLS.

No. 189,448.

Patented April 10, 1877.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN STILLS.

Specification forming part of Letters Patent No. **189,418**, dated April 10, 1877; application filed November 17, 1875.

*To all whom it may concern:*

Be it known that I, THOMAS GAFF, of Aurora, Dearborn county, and State of Indiana, have invented an Improvement in Stills, of which the following is a specification:

My invention consists of certain devices which, as applied by me to a still or column, produce useful results; and my invention consists, in the first part, of a certain conducting-pipe and cap, terminating in a perforated bell-mouth, in connection with the doubler and still, which conducts the heated vapors from the still in such manner as to boil and redistill the low wines precipitated in the bottom of the doubler by the condensation from the beer-coil, and thereby raise the proof of the spirits that are conducted to the worm. My invention consists, in the second part, in connection with the still or column, the doubler, comprising the beer-coil and the conducting-pipe and cap, terminating in a perforated bell-mouth, and of certain adjustable overflow-pipes, suitably trapped, for returning the low-wines to the still as they accumulate in the doubler.

Figure 1 is a broken sectional elevation of a still or column with my improvement attached. Fig. 2 is a plan showing my improvements. Fig. 3 shows the cross-configuration of the beer-pipe.

A is the column or still, having steam-pipe *a* and discharge-pipe *a'* and extending shelves or plates *a''*. Secured upon the top of this still is a case, B, having intimate connection with the still through pipe C, and with the worm through exit-pipe D. E is the pipe leading from the beer-pumps, and it enters the case B, and is bent so as to form a worm or coil, *e*, after which it passes down and into the column till it passes the second plate *a''*. Suspended over the upper mouth of pipe C is a cylindrical cap, F, extending nearly to the bottom of case B, where it enlarges preferably to a bell-shaped mouth, *f*, having perforations *f'*. G G are overflow-pipes leading from the case B to the still, and provided with suitable trappings *g*.

The operation of the device as an entirety is as follows: The beer or wash is pumped

through the pipe E *e*, and thence to the still, where it distributes over the plates *a''*, and is boiled or distilled by the steam from the pipe *a*. The vapor arising from this distillation, in company with the uncondensed steam, rises and passes up through pipe C into the case B, which it enters near the bottom by first passing down the cylindrical cap F, and thence out, and under or through the perforations *f'* in the bell-shaped mouth *f*. After having fairly entered the case B, the vapors permeate the case and around the coil *e* of beer-pipe E, thereby, on account of their high temperature, heating the beer in the pipe E *e*, and in the same operation depositing the heavier and less volatile vapors to the bottom of the case, and leaving the high-wines to pursue their course through pipe D to the worm.

It is obvious that, by this operation, a higher proof of spirit is obtained, which is delivered to the worm. It is also obvious that the beer, when thus heated before entering the column, will require less heating after entering it, and a correspondingly less number of plates or shelves *a''* upon which it is heated, thus dispensing with much unnecessary height in the column.

It will readily be seen the vapors passing through the low-wines—that, as before stated, are precipitated in the bottom of the case from the bell-mouth *f* of cap F—will boil or redistill them, and carry the purer particles along toward the worm, subject, however, to the condensing properties of the coil *e*. Thus the action will continue, leaving the grosser particles behind always, and for the disposing of which latter I provide overflow-pipes G G, having suitable traps *g*, which will return said low-wines to the still, where they are again subject to the action of the rising steam. When the wash is freed from all alcoholic particles, it precipitates itself to the bottom of the still, and runs off through pipe *a'*.

I am aware that all the elements of my still, separately considered, are old, and that some of them have been used in combination, and with others in stills of the character described.

For these reasons the ensuing claims are strictly limited to the special combinations therein set forth.

Having thus described my invention, I claim—

1. In combination with still A, case B, pipes E *e*, and conducting-pipe C, the downwardly-conducting cap F, terminating in a perforated bell-mouth, *ff'*, for spreading the vapors, substantially as and for the purpose specified.

2. In combination with still A, case B, pipes E *e*, pipe C, and cap F *ff'*, the trapped overflow-pipes G *g*, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

THOS. GAFF.

Witnesses:

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