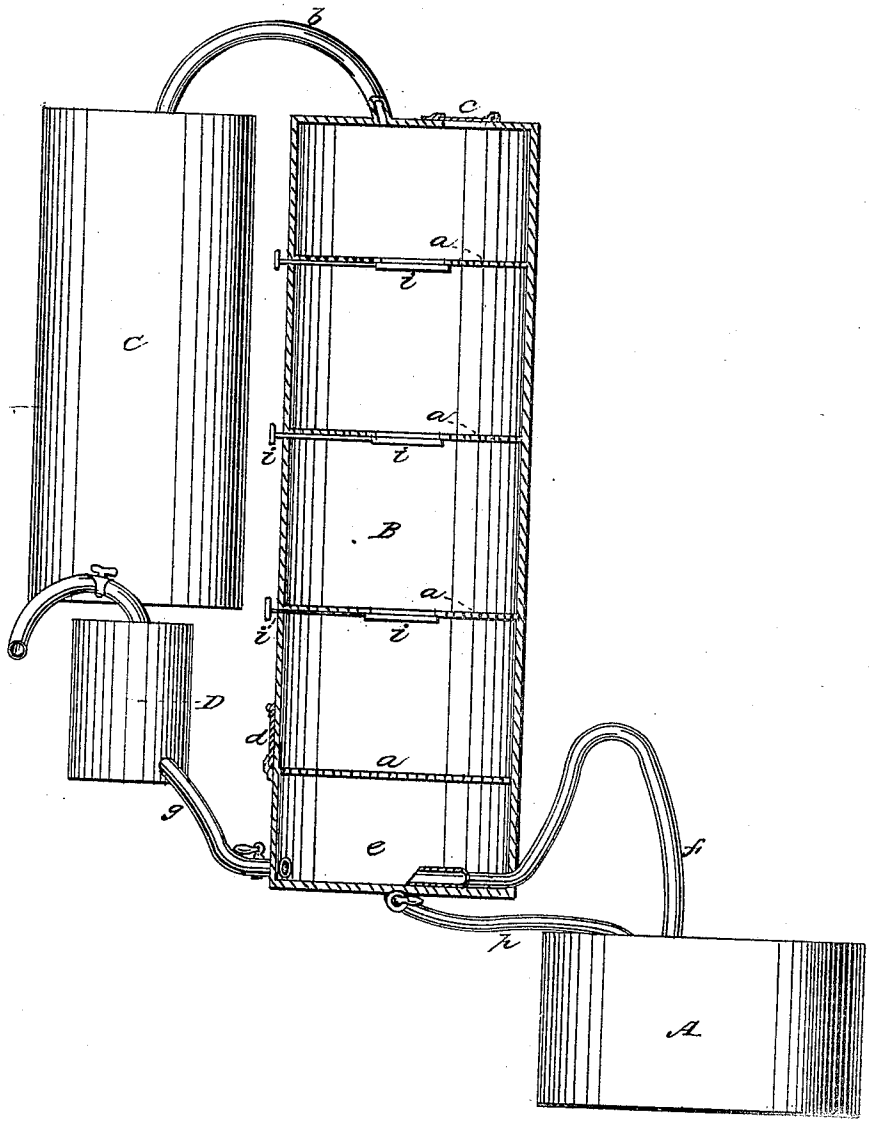
F. M. YOUNG.

Alcohol Still.

No. 103,535.

Patented May 24, 1870.



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FRANCIS M. YOUNG, OF NASHVILLE, TENNESSEE.

IMPROVEMENT IN APPARATUS FOR DISTILLING AND PURIFYING LIQUOR.

Specification forming part of Letters Patent No. **103,535**, dated May 24, 1870.

To all whom it may concern:

Be it known that I, FRANCIS M. YOUNG, of Nashville, in the county of Davidson and State of Tennessee, have invented a new and useful Improvement in the Process and Apparatus for Distilling; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

The drawing represents my device in vertical section, in position, and connected with other parts of the said apparatus.

My invention relates to that process of distillation wherein the vapor is passed through charcoal or an equivalent purifying agent; and it consists in arranging the receptacle which contains said charcoal so as to act as a doubler at the same time that it is employed as a purifier.

It also consists in the manner of constructing and arranging said receptacle so that the coal may be introduced in successive fresh charges at the top of the same, and discharged, when spent, at the bottom.

In the process of distillation, when charcoal is employed the ordinary mode is to place the charcoal in the still, and it therefore requires to be changed as often as the contents of the still are spent. This is troublesome and inefficient. If the coal is separated from the liquid and only permitted to act upon the vapors passing upward, the purification will be much more complete and the required proportion of charcoal much less. It also becomes feasible to employ a mass of coal sufficient to purify the vapors from the still for a long time—say thirty days—without renewal. This greatly facilitates the process, as it requires less care and labor than under the ordinary method. When the charcoal has been used to purify the vapors without being placed within the still an entirely separate device has been employed, from which any condensed liquid would necessarily run back into the still or remain in the bottom of the filter until drawn off. With my device the filter acts also as a doubler and takes the low-wines from the receiver.

Having now indicated the nature and scope of my invention, I will particularly describe the construction and operation of my device.

In the drawing, A represents the head of the still; B, the purifier and doubler; C, the worm-tub; and D, the low-wines receiver. The purifier and doubler is represented in vertical section.

In the process of distillation, with my apparatus arranged substantially as described, the vapors from the still A enter the bottom of the purifier B, pass upward through the mass of coal and out at the top. They thence pass to the worm C by the pipe *b*. When the proof has been so far reduced that low-wines only pass over, the same are turned into the low-wines receiver D, and from thence are returned to the doubler B, as usual. The general features of the process above indicated are not new, but by the device and process invented by me the purification and doubling is greatly facilitated.

The doubler and purifier B is composed of a cylinder constructed of suitable materials and provided with one or more perforated partitions, *a*, upon which the charcoal rests. The cylinder B is provided with openings *c d*, for the reception and discharge of the coal. The lower partition, *a*, is situated a short distance above the bottom of the cylinder, so as to form a chamber, *e*, below it, and into this chamber the steam and vapor are received from the still by the pipe *f*. The low-wines are also discharged, when desired, into said chamber by the pipe *g*, and the pipe *h* serves to return any liquid in the chamber *e* to the still, if required. It may be necessary to locate the still, purifier, &c., so that the liquids can only be transferred from the low-wines receiver, chamber *e*, &c., by means of monte-jus or pump. The low-wines returned to the chamber *e* are again vaporized and carried through the coal.

When several partitions *a* are employed in the purifier they are all, except the lower one, provided with valves *i*, by means of which the coal may be successively passed from the highest to the lowest and then discharged through the outlet *d*.

Rakes or other devices may be introduced to move the coal upon the partitions. Similar devices being common, it is not necessary to specifically describe them here.

From the above it will be perceived that fresh charges of coal may be introduced from time to time, as necessary, and the spent coal may be removed, and with suitable appliances, in connection with orifices *c d*, this may be done without interrupting the process of distillation.

I am aware that the process of purification by passing the vapors from the still through charcoal or other agents has long been practiced. I therefore do not claim anything as to that principle purification, but only as to the devices and manner of conducting said process herein described.

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

1. The cylinder B, constructed with the partition *a* and chamber *e*, and connected with the still A, worm C, and low-wines receiver D, as set forth, and for the purpose described.

2. The combined purifier and doubler B, constructed with several perforated partitions provided with valves *i*, substantially as set forth and described.

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