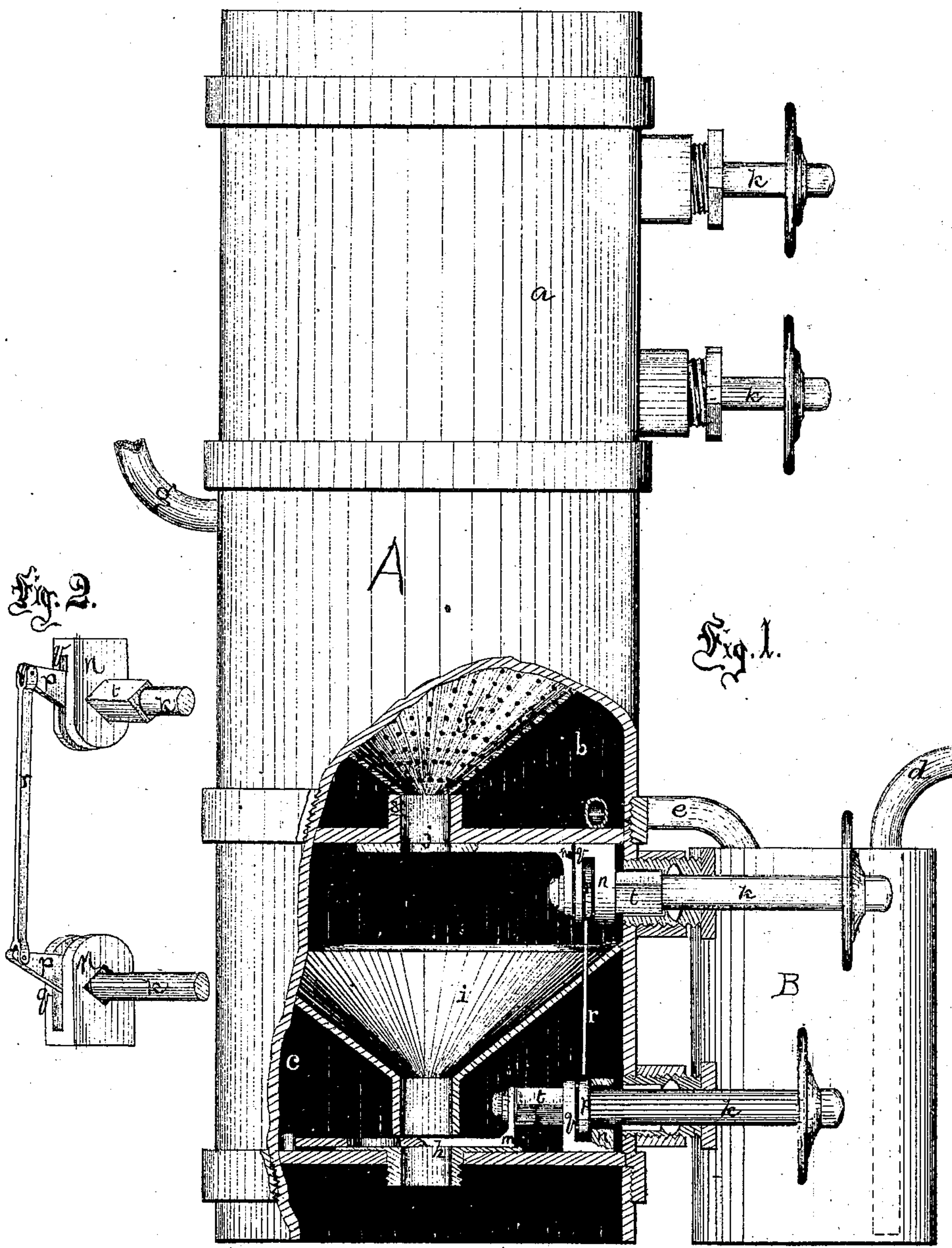


F. M. YOUNG.

Alcohol Still.

No. 102,745.

Patented May 3, 1870.



WITNESSES.

Chas. A. Clark
J. S. Brown

INVENTOR.

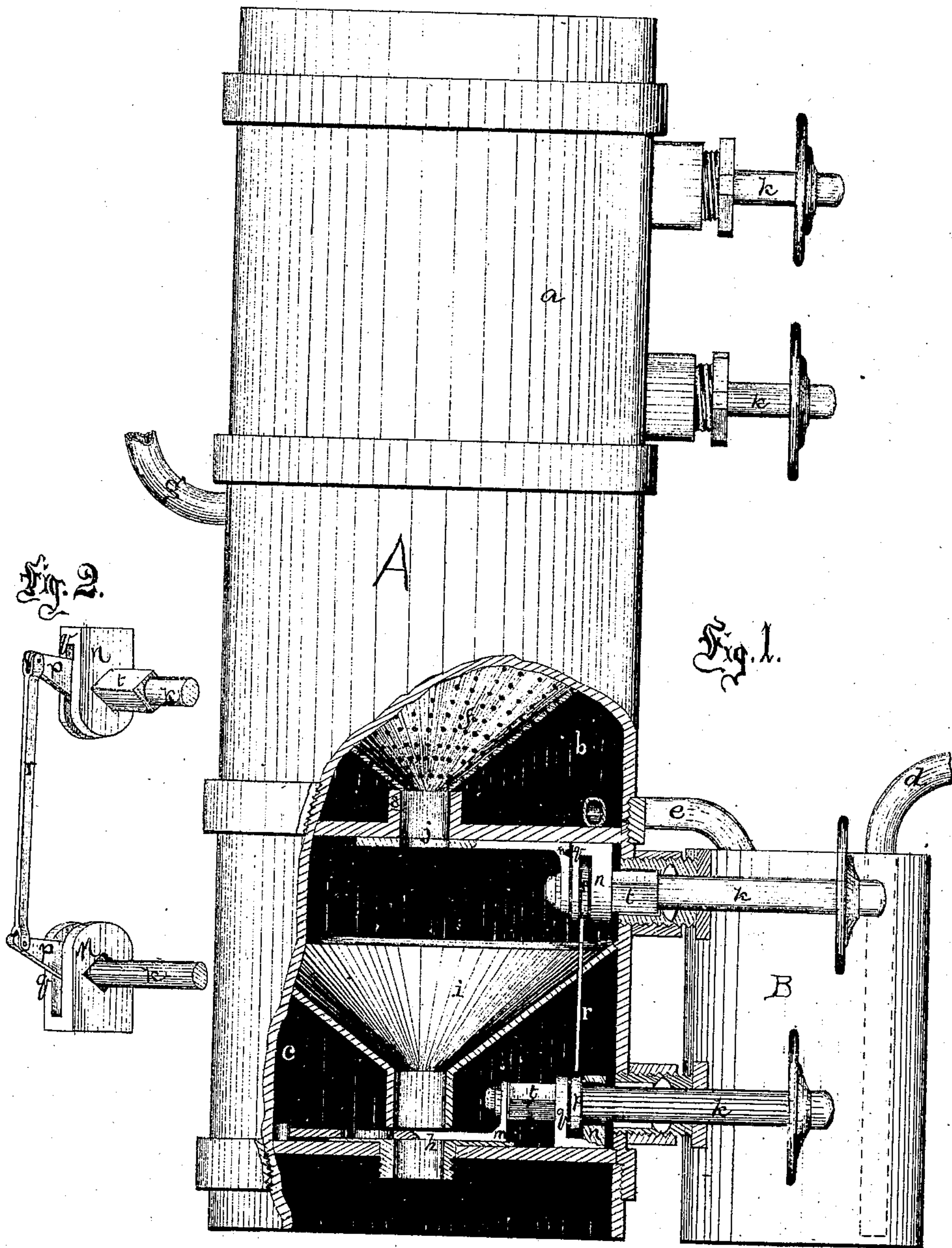
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UNITED STATES PATENT OFFICE.

FRANCIS M. YOUNG, OF NASHVILLE, TENNESSEE.

IMPROVEMENT IN APPARATUS FOR DISTILLING SPIRITS.

Specification forming part of Letters Patent No. 102,745, dated May 3, 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 Coaling Attachments for Distilling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my apparatus. Fig. 2 is a detached perspective of the valve-rod attachments.

My invention relates to that process of distillation wherein charcoal or an equivalent purifying agent is employed for the purpose of removing deleterious substances and producing "finished" liquors without "redistillation" or "rectification;" and it consists in an arrangement of valves, by means of which coal may be introduced to the purifier without permitting either an escape of steam or the abstraction of spirit during that process, and a corresponding arrangement of valves by means of which the spent coal may be discharged in an equally safe manner, as will be more fully described hereinafter.

My apparatus consists of a cylinder, A, constructed of suitable material, and of dimensions proportionate to the capacity of the still. This cylinder is divided into three chambers, *a b c*, of which the chamber *b* is the larger, and is the purifying-chamber. The doubler B receives the vapors from the still by the pipe *d*, and transmits them by the pipe *e* to the bottom of the purifying-chamber *b*. From thence they pass upward through the perforated hopper *f*, and through the mass of coal contained therein, and escape to the worm by the pipe *g*.

My invention is designed to enable the attendants to fill and discharge from the chamber *b* without permitting any escape of steam or low-wines, and without any possibility of abstracting spirit through the inlet or discharge orifices. To accomplish this purpose I place the chamber *a* above the purifier *b* and close the communication between them by a slide-valve, *h*. Above the valve *h* is a hopper, *i*, and above the hopper, in the cover of chamber *a*, is another slide-valve, *j*. When the chamber *b* is to be charged the valve *j* is withdrawn and the hopper *i* is filled with coal. The valve *j* is then closed and the valve *h* is opened. This permits the coal to descend into the chamber

b, and the operation is repeated until the purifier is filled with coal. The valves *h* and *j* are seated so as to be steam-tight, and the valve-rods pass through stuffing-boxes. It is evident that in this way a mass of coal may be passed into the chamber *b* without permitting the escape of steam while the still is in operation. To satisfy the requirements of the revenue laws at present in force it is, however, necessary that it should be rendered impossible to open both valves, *h j*, at the same time, by doing which it would become possible to abstract spirits from the apparatus. I therefore construct my valve-rods *k k* as follows:

The rod *k* is swiveled to the valve, as shown at *m*, and the rod is thence, for a sufficient distance, (equal to the extent of the end motion,) made square or angular, as at *t*. The standard *n* is perforated with a corresponding angular orifice, so that the valve can only be withdrawn when the angles of the rod conform to the angles of said hole. A small crank, *p*, is placed loosely upon the angular part of the valve-rod, and retained in position by a stay, *q*, or some equivalent device which will prevent the crank from moving back and forth with the rod *k*. Now it is apparent that if the rods of the valves *h* and *j* respectively are constructed as described, and their respective cranks are coupled by a connecting-rod, *r*, then the angular positions of the holes in the standards *n* must coincide to permit both valves, *h j*, to be withdrawn at one time. The relative positions of the angular parts of the valve-rods will be maintained by the connecting-rod *r*, and the angular holes in the standards *n* must have a different relative position. It will then be impossible to move both valves at one time, nor can one valve be opened until the other has been fully closed.

The arrangements for discharging and receiving the coal are duplicates of each other.

A ledge, *s*, surrounding the coal-discharge from the chamber *b*, prevents the escape in that direction of any spirits which may condense in the coal and run back to the bottom of said chamber.

The pipe *e* is arranged to enter the chamber *b* at a point so low that any condensed spirit may escape through it into the doubler B.

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

1. The combination of the purifying-cham-

ber *b* with the inlet and discharge valves *j h*, for the purpose set forth.

2. The combination and arrangement of the doubler B and purifying-chamber *b*, when the latter is provided with chambers *a c*, and the valves *j h*, substantially as and for the purpose set forth.

3. The valves *j h*, provided with angular-

faced valve-rods *k k*, moving through angular perforations in the standards *n*, and coupled in the manner and for the purpose set forth.

F. M. YOUNG.

Witnesses:

E. R. McKEAY,
R. D. O. SMITH.