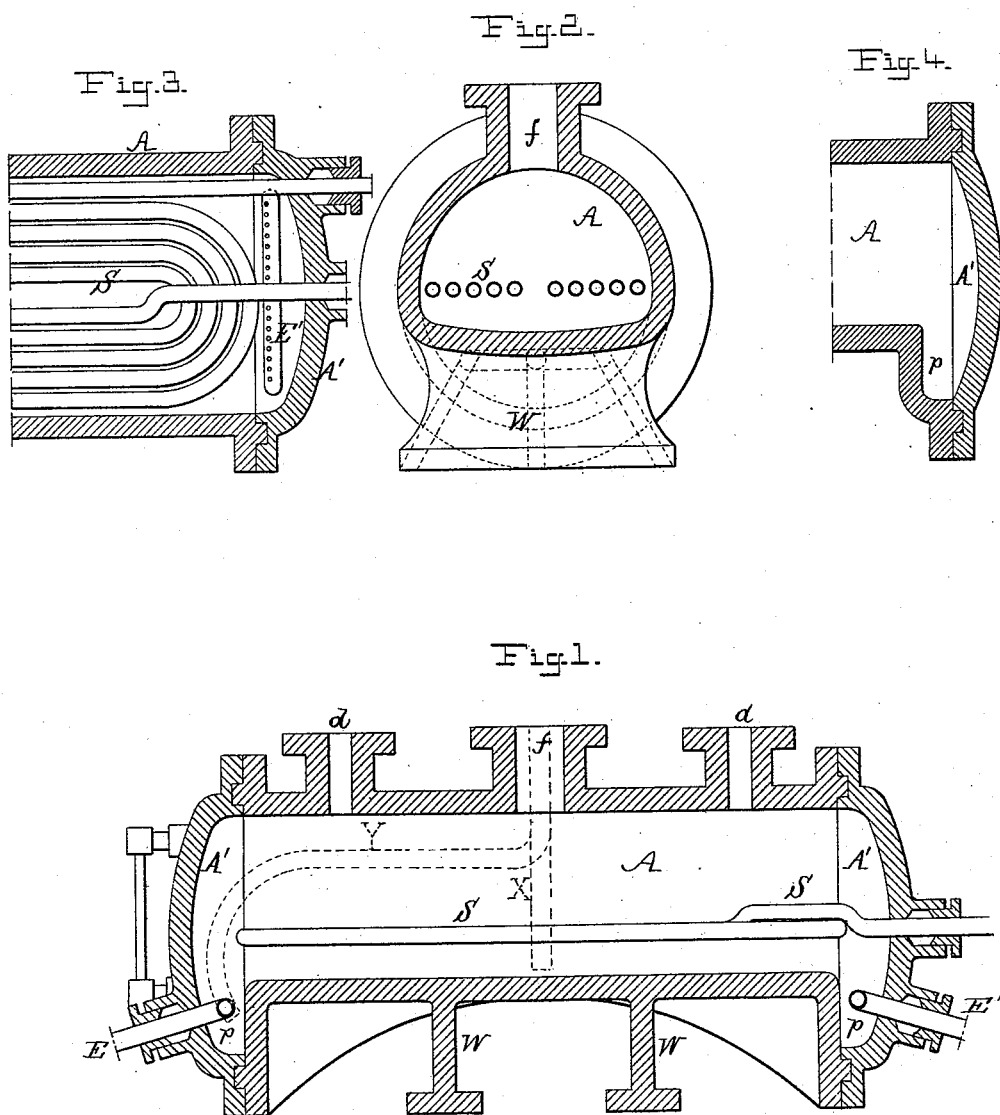


(No Model.)

N. W. CONDUCT, Jr.
STILL.

No. 493,247.

Patented Mar. 14, 1893.



WITNESSES:

George Baumann
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UNITED STATES PATENT OFFICE.

NATHAN W. CONDUCT, JR., OF JERSEY CITY, NEW JERSEY.

STILL.

SPECIFICATION forming part of Letters Patent No. 493,247, dated March 14, 1893.

Application filed June 11, 1890. Serial No. 355,007. (No model.)

To all whom it may concern:

Be it known that I, NATHAN W. CONDUCT, Jr., a citizen of the United States, and a resident of Jersey City, Hudson county, New Jersey, have invented an Improved Still for Refrigerating and other Processes, of which the following is a specification.

My invention relates more particularly to that class of stills for refrigerating by the ammonia absorption process in which the heat is applied by means of steam or other heating pipes or coils in the body of liquid ammonia contained in the still.

The object of my invention is to so construct the still as to carry on the process of distillation under the most advantageous circumstances with the production of the ammoniacal gas in a condition as nearly anhydrous as possible and with the use of the least possible amount of heat.

In the accompanying drawings Figure 1 is a transverse section of a still constructed in accordance with my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a sectional plan of one end of the still; and Fig. 4 is a view of a modification.

The still illustrated in the drawings is in the form of a single horizontal vessel in the nature of a cylinder, but it should be understood that my invention may be applied to a still in which there may be more than one of these vessels.

The still, as illustrated in the drawings, is constructed in some of its features on the principles forming the subject of Letters Patent which have been granted to me No. 402,809, dated May 7, 1889, and No. 421,673, dated February 18, 1890.

The upper part of the body of the still, as in the apparatus of my former patents, is provided with a central hollow leg *f* which is adapted to support the reservoir and rectifier (neither here shown) and also with passages *d* forming communication between the ends of the still and the ends of the reservoir.

In the apparatus of my former patents the body of the still itself has been shown as perfectly cylindrical, but according to my present invention the body of the still is made of a flattened oval or *D*-section with the flat side at the bottom, as shown clearly in Fig. 1, so that I may have a body of liquor of substantially uniform depth across the width of the

still. The coils of steam pipes *S* are preferably arranged to lie in a substantially horizontal plane, as shown by full lines in Fig. 1, and coiled as indicated in Fig. 3, although if preferred they may be arranged as shown and described in my former patents. The horizontal arrangement of the coils enables me to have a comparatively shallow or small body of water to act on in the still at any one time. The underside of the still is provided between its opposite ends with one or more webs *W*, and the number of these webs will vary with the length of the still. These webs may be availed of to act as feet to support the still and for this purpose they may have flanges, as shown in Figs. 1 and 2.

Although the body of the still is of flattened oval or *D*-section, as illustrated, the flanged ends of the body of the still are made of true circles for the reason among others that they may be conveniently turned up in the lathe for the reception of corresponding circular heads *A'*. A further advantage gained by providing circular end flanges on the still, in connection with circular heads, is that it enables me to form pockets *p* for the reception of the pipes for the supply of the strong liquor or discharge of the weak liquor, or both. These pockets may be formed conveniently by bulging out the heads *A'*, as shown in Fig. 2, or they may be formed in the ends of the body of the still, as shown in the modification, Fig. 4.

I prefer to construct the still on the principles set forth in my above mentioned patent of February, 1890, that is, with the inlet pipe *E* at one end for the strong liquor below the heating surface, and the outlet pipe *E'* at the opposite end for the weak liquor also below the heating surface, and in this way there is obtained the advantageous circulation which is described more fully in my patent. The conduction of these inlet and outlet pipes into these end pockets, in connection with the flattened oval or *D*-section of the body of the still, enables this circulation to go on to the best advantage, and at the same time in the part of the still where the gas is produced, there is but a comparatively small body of liquor all within active range of the heating surface, so that the gas is being produced all over this body of liquor, and the gas immedi-

ately rises to the top of the still and out to the reservoir and rectifier without having to pass through much liquid, so that not only is the gas produced in a comparatively anhydrous state, but a larger proportion of the gas is obtained, and consequently the weak liquor drawn off at the outlet is proportionately weaker and therefore more effective in its action in the absorber.

10 Notwithstanding the comparatively small quantity of liquor at any one time in the still to be acted on, the distillation may proceed as rapidly as may be desired by simply feeding in the strong liquor and drawing off the weak liquor rapidly. The strong liquor inlet pipe E may be led into its pocket either from the outside of the still as shown in full lines in Fig. 2 or may be brought down through the central leg supporting the rectifier, as indicated by dotted lines Y. The inlet and outlet pipes preferably have perforated branches, as indicated by dotted lines in Fig. 2 and full lines in Fig. 3.

25 Instead of feeding the strong liquor in at one end and drawing it off at the other end of

the still the strong liquor may be fed in at the center as indicated by dotted lines at X, and E and E' may in that case be the two weak liquor outlets, or the reverse arrangement may be employed, that is, two strong liquor inlets may be at opposite ends and a weak liquor outlet in the center.

I claim as my invention—

1. A still having a body of a flattened oval or D-section but with circular end flanges and having circular heads fitted to the flanges, substantially as and for the purpose set forth.

2. A still having a body of flattened oval or D-section with circular end flanges and bulged circular heads forming pockets at the ends of the still below the bottom level of the body of the still.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NATHAN W. CONDUCT, JR.

Witnesses:

EDITH J. GRISWOLD,
JOHN REVELL.