

H. O. AMES.
Evaporating Pan.

No. 30,443.

Patented Oct. 16, 1860.

Fig. 1.

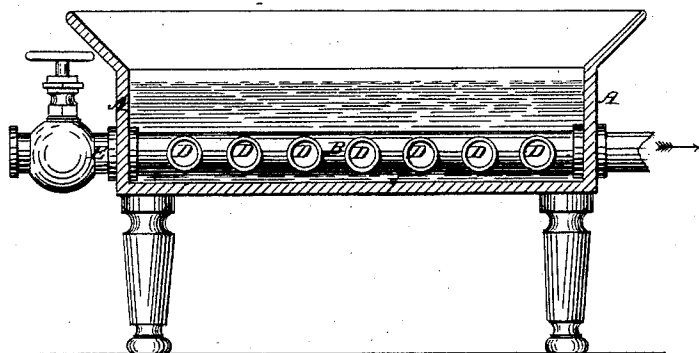
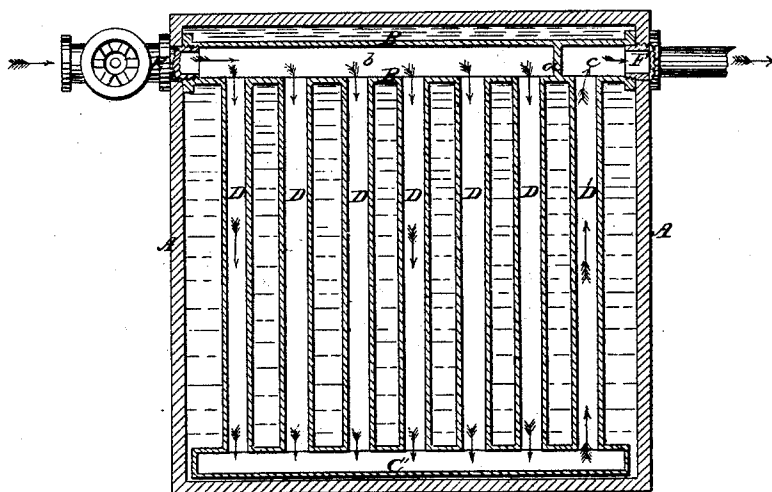


Fig. 2.



Witnesses:

J. W. Coombs
R. S. Spencer

Inventor:

H. O. Ames
by Messrs H. O.
Atty

UNITED STATES PATENT OFFICE.

H. O. AMES, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO HIMSELF AND
F. W. AMES, OF SAME PLACE.

IMPROVEMENT IN EVAPORATING-PANS.

Specification forming part of Letters Patent No. 30,443, dated October 16, 1860.

To all whom it may concern:

Be it known that I, H. O. AMES, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Steam-Pipes for Evaporating-Pans and other Apparatus for Boiling or Heating Liquids by Steam; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of an evaporating-pan with my improvement applied. Fig. 2 is a plan of the same.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to a system of parallel pipes, connected at their ends with two transverse boxes, one of which is, by a transverse partition, made to serve partly as the induction or steam chamber and partly an eduction or water chamber, and is also made to turn on its axis to permit the cleaning of the evaporating-vessel.

The improvement consists in so arranging the aforesaid partition in the main box with respect to the pipes whereby the water of condensation is conveyed from the pipes and boxes through a single pipe or through a small number of the pipes only, so that nearly the whole or the greater number of the pipes are made fully effective for evaporation instead of one-half only, as in other arrangements of the partition in the main box.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the evaporating-pan.

B C are the two boxes, made of tubing or in any other way; and D D D' are the evaporating-pipes, of which there may be any number, but of which I propose, generally, to use about twenty, arranged parallel with each other, and connected at one end with the main box B, and at the other end with the opposite box, C.

E is the induction-pipe, for admitting steam from the boiler to the box B; and F is the eduction-pipe for carrying off the water of

condensation, and any waste steam that may remain uncondensed after passing through the pipes. These pipes E and F enter the pan at opposite points, and their ends are fitted steam-tight into the ends of the main box B, but in such manner that the said box is capable of turning upon them to allow the pipes D D D' and box C to swing upward and thus permit the removal of all the contents of the pan and the cleaning of the bottom thereof.

a is the transverse partition in the box B, dividing it into the steam-chamber b, and exhaust-chamber c. This partition is arranged so near to the eduction-pipe F that only the pipe D' is between the said partition and the said pipe F, and in communication with the exhaust-chamber c, and all the others D D are between the said partition and the induction-pipe E and in communication with the steam-chamber b. The effect of this arrangement of the partition a is that the live steam passes from the main box B to the box C through all the pipes D D, and the water of condensation and the escape steam only returns from the box C through the single pipe D', and hence all the pipes but D' are of equal or nearly equal temperature and fully effective, and there is no perceptible difference in the boiling throughout the whole horizontal area of the pan, and the water of condensation having but a short distance to travel, does not interfere with the evaporating or boiling process, as it does in most other arrangements of steam-pipes for evaporating, in which one-half of the whole length of pipe is more effective than the other half. - It is obvious that the same advantage may be obtained in a less degree by arranging the partition a to bring more than one pipe, or any number less than half of the whole number of pipes D D D', in communication with the exhaust-chamber c, and therefore I do not confine myself to the precise arrangement represented, whereby only one pipe is made to communicate with the exhaust-chamber c.

I do not claim the combination of two boxes, B C, and a series of connecting-pipes like D D; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement of the partition *a* in the main box B, substantially as described, in relation to the evaporating-pipes D D D', the induction and eduction pipes E F, and box C, whereby only one or a limited num-

ber of the said pipes D D D' are brought into communication with the exhaust-chamber *c*.

HUGH O. AMES.

Witnesses:

JOHN M. JONES,
P. C. GOSELING.