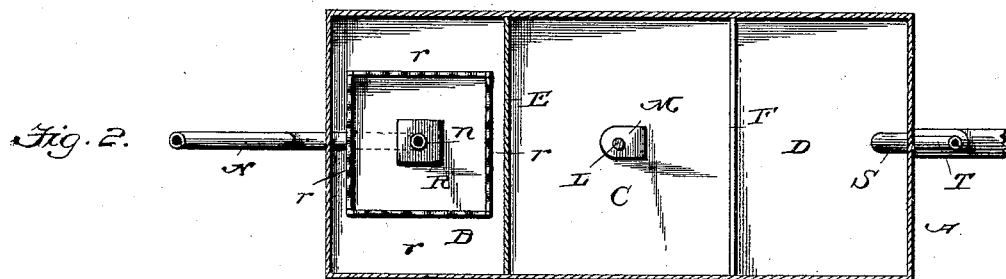
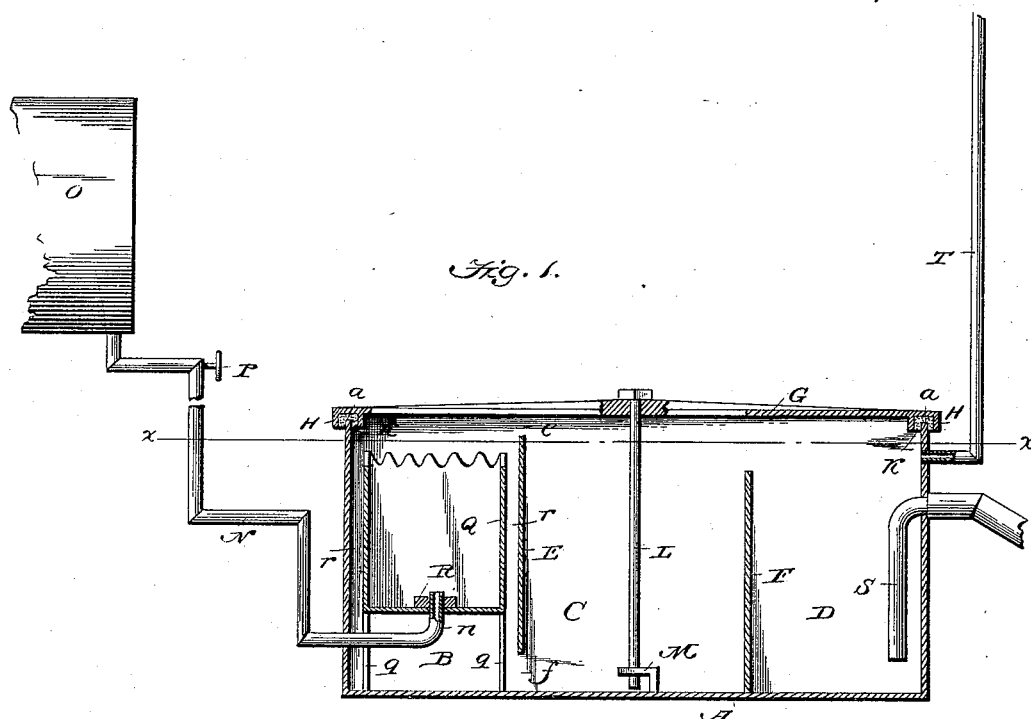


(No Model.)

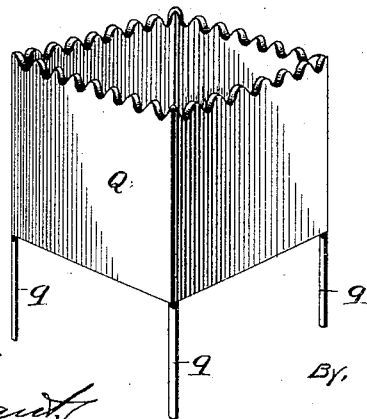
J. F. COTTER.  
BLOW OFF BASIN FOR STEAM BOILERS.

No. 489,602.

Patented Jan. 10, 1893.



*Fig. 3.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

JOHN F. COTTER, OF ST. LOUIS, MISSOURI.

## BLOW-OFF BASIN FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 489,602, dated January 10, 1893.

Application filed March 17, 1892. Serial No. 425,284. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. COTTER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Blow-Off Basins for Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in blow off basins for steam boilers, and the object of the invention is to provide a simple, cheap and durable basin which effectually prevents gas escaping from the sewer, with which said basin is connected, from passing to and through the boiler into the interior of the building.

With this end in view, my invention consists in the peculiar construction and arrangement of parts as will be hereinafter fully pointed out and claimed.

In the accompanying drawings:—Figure 1 is a vertical sectional view of my improvements; Fig. 2 is a plan view on the line  $x-x$  of Fig. 1; and Fig. 3 is a detached detail view of the steam separator.

Like letters of reference denote corresponding parts in the several figures of the drawings, referring to which:—

A designates my improved blow off basin for steam boilers which basin is made of any desired and suitable material and shape though I preferably make the same rectangular in cross section, as shown.

The basin or chest A is divided into a series of compartments B, C, D, by means of partitions E, F, which partitions are made integral with or rigidly secured to the basin A. The partition E is not as wide as the partition F and is connected only to the side walls of the basin or chest A, thus leaving passages  $e, f$ , connecting the compartments or chambers B, C, above and below said partition. The partition F is attached to the bottom as well as the side walls and the chambers or compartments C, D, are only connected by a passage  $g$  over the upper edge of the partition F.

The top of the basin is closed by means of a cover or cap G. The cover G is provided on its under side with parallel downwardly

extending flanges H, between which the upper edges of the sides  $a$  of the basin or chest A fit when the cover is placed in position on the said basin or chest. The space between the flanges H and the sides  $a$  of the basin A is filled with any suitable packing K so as to form a perfectly steam and gas tight joint between the basin and its cover. The cover G is held firmly in place on the basin A by means of a bolt L which passes through said cover and is screwed into a suitable fixed lug or projection M attached to the bottom of the basin A in the central compartment or chamber C thereof.

A blow off pipe N connects the compartment or chamber B of the basin A with a steam boiler O and in said pipe is arranged a suitable regulating valve P. The inner end  $n$  of the pipe N is threaded and said pipe is bent upwardly after entering the chamber B, as shown.

Within the chamber B of the basin A is arranged a steam separator Q which consists of an open vessel mounted on suitable legs or supports  $q$ , which rest on the bottom of the basin. The separator Q which may be of any desired and suitable material or shape, though preferably made rectangular in cross section, as shown, does not completely fill the compartment or chamber B, but an annular passage  $r$  is left between the sides of said compartment and the separator. The inner threaded end  $n$  of the blow off or inlet pipe N extends through a suitable aperture in the bottom of the steam separator Q and on such threaded end is screwed a nut R. The upper edges of the side walls of the separator Q are corrugated or notched, as shown, and said upper edges preferably terminate a short distance below the top of the partition E.

In the end wall of the compartment or chamber D are formed two openings or apertures in one of which is fitted an angular or bent pipe S which connects the said compartment or chamber D with a sewer pipe, not shown. In the other aperture or opening in the wall of the chamber or compartment D is secured the lower or inner end of a vapor pipe T which extends from the basin or chest A to any suitable point outside of the room or building in which the boiler and blow off basin are situated. It will be noticed that the vapor pipe

T communicates with the chamber or compartment D of the basin A above the point where said compartment connects with the sewer and also above the upper edge of the partition F. The lower end of the siphon pipe S is but a short distance above the floor or bottom of the basin A.

The operation and advantages of my invention are as follows: Water and steam escaping from the boiler are conducted into the compartment B by the pipe N. As the separator Q becomes filled the water passes over the corrugated or notched edges of the side walls thereof and the cooler water falls to the bottom of the compartment B while a portion of the steam contained in the water escapes over the top of the partitions E, F, and passes out of the chest or basin A through the vapor pipe T. As water continues to enter the compartment B from the boiler, the water already in said compartment is forced on into the compartments C, D, respectively. Any steam which has been carried down with the water when leaving the separator Q will be freed and escape through the vapor pipe as the water passes over the partition F. As the compartment or chamber D becomes filled, the water therein will be siphoned out through the pipe S and escape into the sewer. When the water in the compartment or chamber D, above the lower end of the pipe T, has passed out through said siphon pipe into the sewer, gas escaping from the sewer cannot pass back through the compartments C, B, and pipe N, into the boiler, because the said compartments B, C, will still be filled with water and the inner open end of the blow off pipe N effectually sealed. This advantage will be readily appreciated by those skilled in the art to which my improvements relate. In the ordinary construction of blow off basin, consisting of only one compartment, when the siphon has exhausted the water to a level with its lower end it takes but a short time for enough of the water to evaporate and thus allow gas escaping from the sewer to pass into the boiler and from there into all portions of the building.

I am aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described, as an embodiment of my invention, can be made without departing from the spirit or sacrificing the advantages of my im-

provements, and I, therefore, reserve the right to make such changes as fall within the scope of my invention.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination of a blow off basin having its interior divided into a series of communicating compartments, one of which is adapted to be connected to a boiler and another to a sewer, a steam separator arranged in one of the compartments, and a vapor pipe communicating with another of the compartments, substantially as and for the purpose set forth.

2. The combination of a blow off basin divided by integral transverse partitions into a series of communicating compartments, a steam separator arranged in one of the compartments, a boiler, a pipe having one end connected to the boiler and its other end terminating within the steam separator, a vapor pipe communicating with one of the compartments of the basin and connections between one of said compartments of the basin and a sewer, substantially as described.

3. The combination of a blow off basin, the interior of which is divided into a series of communicating compartments or chambers, a steam separator arranged in one of the compartments or chambers and having its upper edges notched or corrugated, a boiler, a pipe leading from the boiler to the steam separator, a vapor pipe communicating with one of the compartments near the upper end thereof, and a siphon connection between one of the compartments and a sewer, substantially as described.

4. A blow off basin consisting of the interiorly divided shell adapted to be connected with a boiler and a sewer, a top cap or cover provided with the depending parallel flanges between which the upper edges of the side walls of the basin fit, packing arranged between such side walls and the flanges on the cover, and a single central screw bolt connecting said cover with the floor or bottom of the basin, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN F. COTTER.

Witnesses:

J. G. BRAKLEIN,  
J. S. QUINN.