United States Patent

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[54] ANTI-POLLUTION CHAMBER

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[51] **Int. Cl.** **B01d 47/00**

[58] **Field of Search** 239/398; 261/DIG. 54; 55/94, 55/220, 257

[56] **References Cited**

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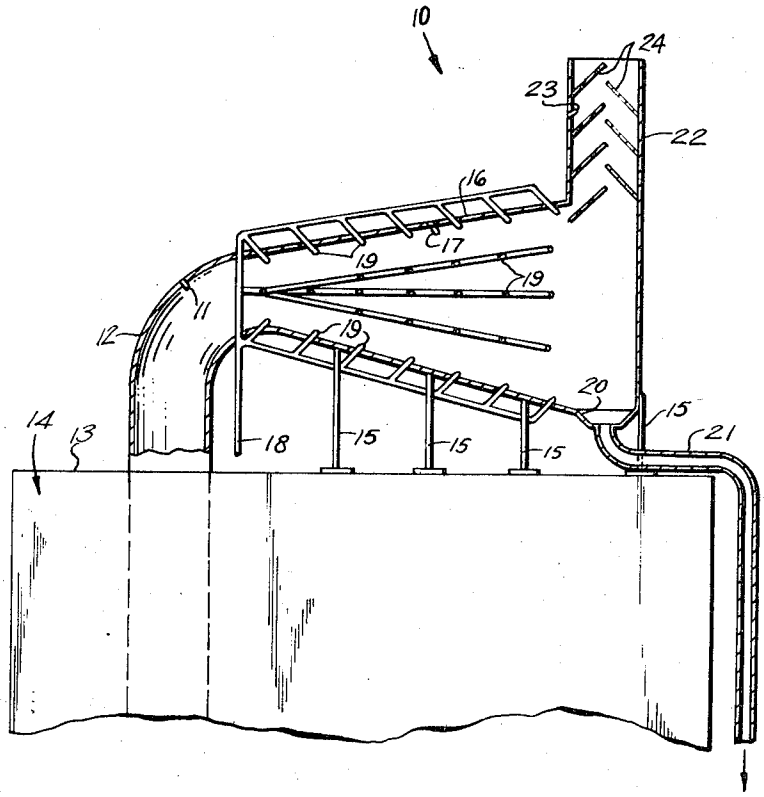
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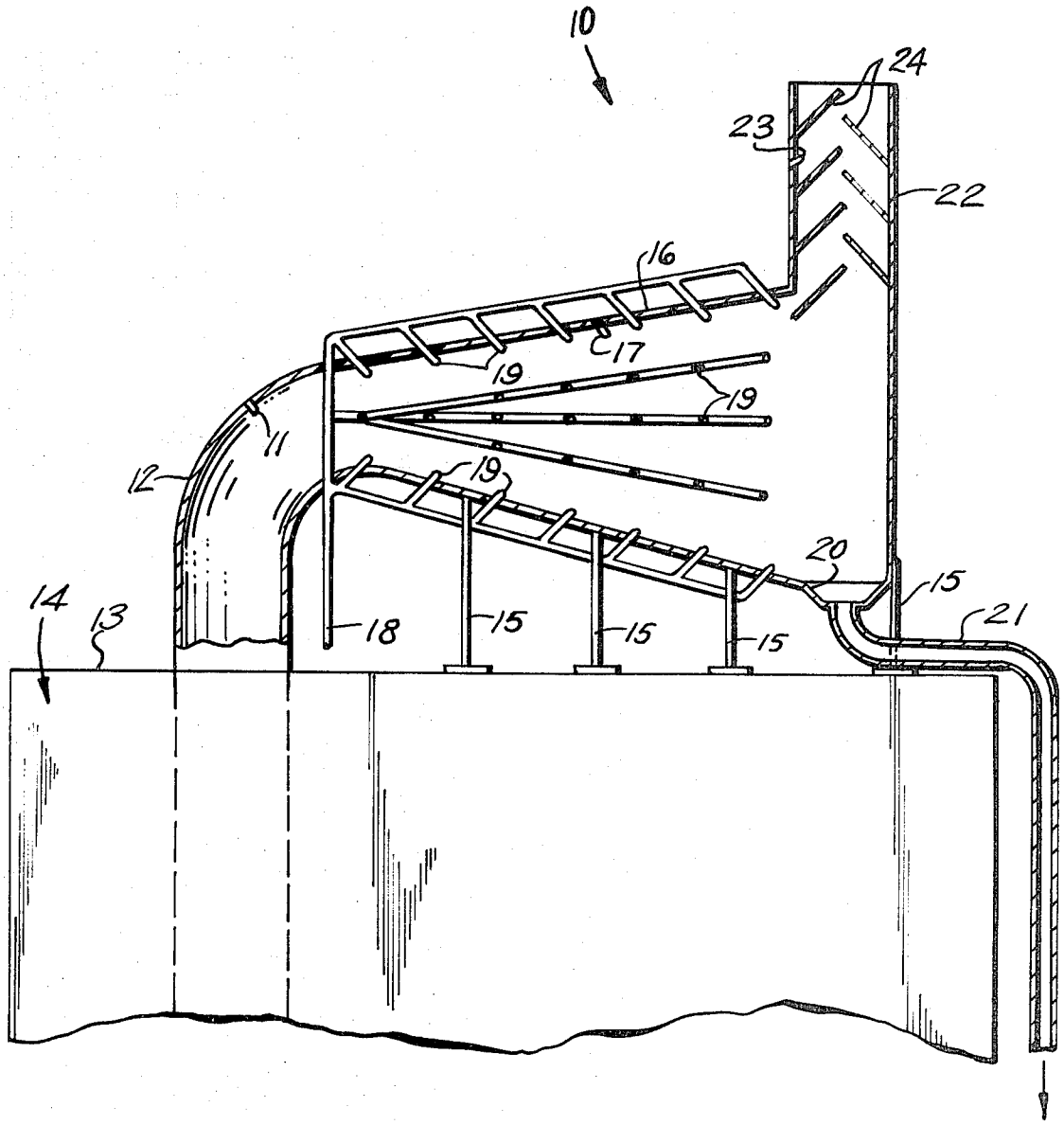
[57] **ABSTRACT**

A device for replacing common smoke stacks on industrial building roofs. This device includes a multiple number of pollution sensing devices on the interior of a chamber which contains a multiple number of spray nozzles which produce a high pressure fog.

The chamber also includes a catch basin which allows the fluid to drain off into the sump.

1 Claim, 1 Drawing Figure





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ANTI-POLLUTION CHAMBER

This invention relates to anti-pollution devices, and more particularly to an anti-pollution chamber.

It is therefore the primary purpose of this invention to provide an anti-pollution chamber which will replace the former conventional smoke stack of the prior art.

Another object of this invention is to provide an anti-pollution chamber which will have a hollow conical chamber which will be supported upon legs or other devices on top of an industrial building roof, the chamber having high pressure spray nozzle means for producing a high pressure fog which are positioned in such a manner so as to not cause a back pressure.

A further object of this invention is to provide a chamber of the type described which may be adapted to introduce chemicals into the water bath sump in order to change the nature of gases or to neutralize them.

A still further object of this invention is to provide an anti-pollution chamber in which the introduction of certain soaps, or salinity of certain levels or otherwise may be adapted for use with a particular gas or pollutant.

Other objects of the present invention are to provide an anti-pollution chamber which is simple in design, inexpensive to manufacture, rugged in construction, easy to use and efficient in operation.

These and other objects will be readily evident upon a study of the following specification and the accompanying drawing wherein:

The drawing is the sole view of the present invention.

According to this invention, an anti-pollution chamber **10** is shown to include a pollution sensing device **11** extending on the interior of the elbow **12** which rises out of the roof **13** of building **14**.

The pollution chamber **10** is supported upon a plurality of legs **15** and the main body **16** is conical in shape for the necessary purpose of substantially reducing any back pressure when it is in operation.

A pollution sensing device **17** extends from the wall of the main body **16**. A high pressure water line **18** secured to a pump (not shown) at a lower level is provided with a plurality of spaced apart nozzles **19** on the interior of the main body **16** and the nozzles **19** serve to produce a high pressure fog for 100 percent saturation of the smoke entering chamber **10**.

A catch basin **20** of chamber **10** allows for the return of the liquid, and/or chemicals to be carried off down the return line **21** to the sump (not shown).

A short stack **22** extends upwards from the wide end of the main body **16** of chamber **10** and is positioned over the catch basin **20**. The stack **22** is also provided with a pollution sensing device **23** on its interior and a plurality of baffle plates **24** are secured in an angle and in opposite relationship with each other within stack **22** in order to restrict the uptake until the pollutants are reduced to near zero.

The anti-pollution chamber **10** is of such structure as heretofore described so as to operate on the principal of cleaning a solid pollutant of exhausted smoke and gases from

all types of factories, refineries and the like where waste products are burned such as occurs at private or public dumping areas.

The spray nozzles **19** operate under sufficient pressure to atomize a water bath of high density fog in order to trap the solid pollutants in a mist and carry them to the catch basin **20** at the bottom of stack **22**, the solids then being carried through the return line **21** to the sump or sumps at ground level.

The filtered water or chemicals are reused by pumping them back through the system.

It will be noted that the drained off liquid will then allow the solids to dry out and be disposed of through other sources.

It shall further be noted that when chamber **10** is used, the resultant output from stack **22** will be a much cleaner and purified type of air.

What I claim is:

1. An anti-pollution chamber, comprising in combination, a conical configurated hollow main body, support means carried by said chamber for holding it rigidly to a roof of a building, elbow means carried by said chamber for introducing the smoke into said main body, a plurality of high pressure fog producing nozzles carried by said body for 100 percent saturation of the interior of said main body, pollution sensing devices carried on the interior of said chamber for indicating the degree of pollution of the smoke introduced therein, a baffle containing stack means carried by said chamber for letting off the purified air, a catch basin carried by said stack means providing a drain off of the pollutant in order to return the same to sumps at a lower level, said smoke entering through said elbow of said main body at a smaller end of a chamber thereof, and a high pressure water line being provided with a plurality of spaced apart nozzles on the interior of said main body, said nozzles producing said fog so to remove the solid particles and to change a gas into a purer state, said conical chamber of said main body and the position of said high pressure nozzles tending to move particles laden smoke in a circular motion toward a point of exit to the outside atmosphere, the criticality of the circular motion of pollution laden smoke being intended to retard the flow of the vapors only so long as to extract particles there from, said stack means comprising a stack of short length and provided with said baffle, said baffle being positioned angularly upwards and being of a number as necessary to restrict the uptake until the pollutants are reduced to nearly zero when the output passes through said stack and catch basin at the lower portion of the larger diameter area of said main body receiving the solid pollutants, water and chemicals, and allow them to be carried down the return line to said sumps within said building wherein filtering takes place and the water and chemicals are recycled by pumping means through the lines having said nozzles, said catch basin of said chamber being positioned beneath said stack at the large diameter end of said main body and being fed the solid pollutants and water by gravity means due to the axis of said main body being substantially parallel with a roof top of said building.

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