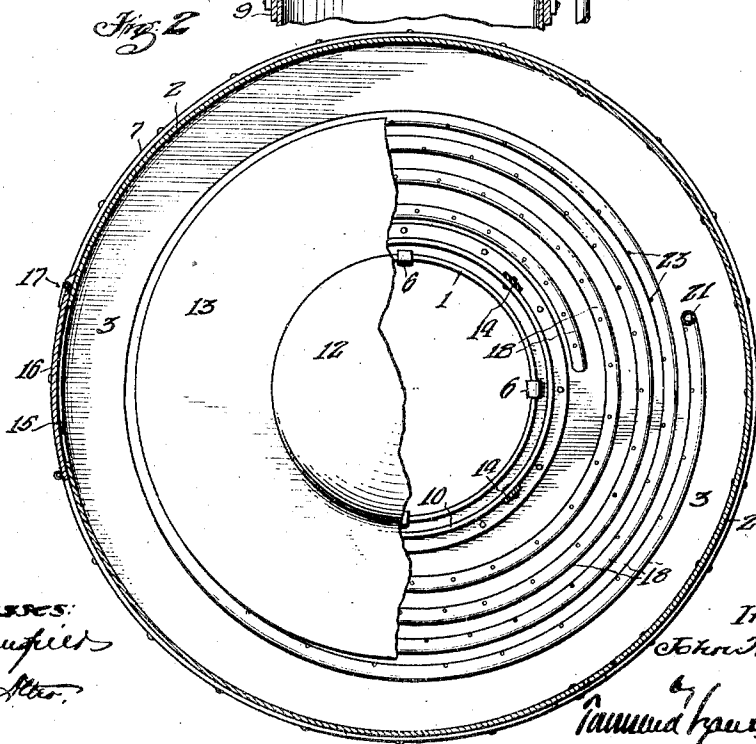
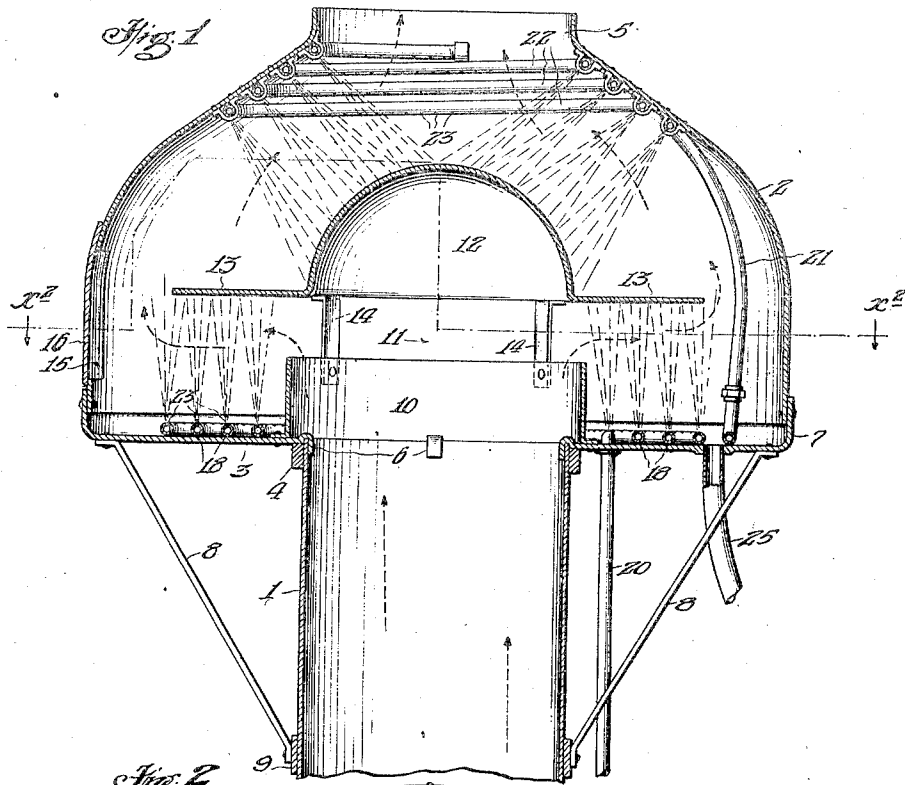


J. H. GAMBLIN.  
DUST ARRESTER.  
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1,009,963.

Patented Nov. 28, 1911.



Witnesses:  
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att'y

# UNITED STATES PATENT OFFICE.

JOHN H. GAMBLIN, OF RIVERSIDE, CALIFORNIA.

## DUST-ARRESTER.

1,009,963.

Specification of Letters Patent.

Patented Nov. 28, 1911.

Application filed March 11, 1911. Serial No. 613,925.

*To all whom it may concern:*

Be it known that I, JOHN H. GAMBLIN, a citizen of the United States, residing at Riverside, in the county of Riverside and State of California, have invented a new and useful Dust-Arrester, of which the following is a specification.

This invention is particularly adapted and intended for arresting and collecting dust from the flues or stacks of cement works, but is applicable to arresting dust or the solid particles of smoke in flues or chimneys of any kind.

The dust which is discharged from the stacks or chimneys of cement works is injurious to vegetation in the surrounding country, and the main object of the present invention is to do away with such injury by arresting and collecting the dust and separating it from the discharged gases.

The accompanying drawings illustrate the invention and referring thereto:

Figure 1 is a vertical section of the device. Fig. 2 is a horizontal section on line  $x^2-x^2$  in Fig. 1.

1 designates a flue, stack or chimney to which the invention is applied. A casing or box 2 is supported on the upper end of this stack and comprises a bottom plate 3 resting on a collar or ring 4 on the upper end of the stack and a wall portion extending upwardly from this bottom plate and converging at its upper portion to form a contracted discharge opening or outlet 5. The bottom plate 3 is provided with hook-shaped lugs 6 extending over the top of the stack to hold the casing in place and with a peripheral up-turned rim or flange 7 to which the body portion or wall of the casing 2 is secured. Braces indicated at 8 may extend diagonally downward and inward from the outer portion of the bottom plate 3 to a collar or ring 9 secured to and surrounding the stack 1. A ring or annular flange 10 is secured to the bottom plate 3 and extends upwardly therefrom around the top of the stack 1 and a deflector plate or member extends above said ring leaving an intervening space 11 for the passage of gases between the ring and said member. Said deflector plate or member comprises a central dome-shaped portion 12 directly over the stack and a peripheral horizontal flange 13 extending outwardly from the bottom of the said dome-shaped portion over the space above the bottom plate 3 and around the

ring 10. Said deflector plate or member is supported by bars 14 secured to the ring 10 and to said member. An opening 15 is provided in one side of the casing 2, said opening being normally closed by a door 16 hinged to the casing at 17, said door providing for access to and inspection of the interior of the casing.

Means are provided for spraying water within the casing and against the surfaces of the deflecting member 12, 13. For this purpose a coil pipe 18 is provided resting on the bottom plate 3 and connected at one end to a water supply pipe 20 and at the other end to a pipe 21 leading to an upper coil of pipe 22 extending within the casing around and directly below the outlet portion 5 thereof, these pipe portions 18 and 22 being provided with perforations 23 so that when the water is supplied to the pipe under considerable pressure, it will be discharged in a spray from the pipe 18 against the bottom of the portion 13 of the deflector member and from the pipe portion 22 against the top of the portion 12 of the deflector member. A drain pipe 25 extends from the bottom of the casing to carry out the water with the dust collected thereby.

The operation is as follows: The gases discharged from the stack 1 pass upwardly within the ring 10 and are deflected by the deflector member 12, 13, so that they are caused to pass outwardly below the deflector plate 13 and around said deflector plate and then upwardly over said deflector plate to the outlet 5. In passing in this manner, the gases are subjected to the spraying action from the pipes 18 and 22 and the dust is thereby washed out of the gases and off of the deflector plates, the spraying action serving not only to wash out the dust by direct contact with the dust in the gases, but by washing off the dust which has accumulated on the deflector plates. The water containing the dust falls or settles to the bottom of the casing and runs off through the drain pipe 25.

What I claim is:

In combination with a stack, a dust arrester comprising a casing supported on top of said stack and having a bottom plate extending outwardly from the stack, walls extending upwardly from said bottom plate and converging at their upper ends to form a contracted outlet above said stack, an annular flange extending upwardly from said

bottom plate and around the outlet of the stack, a deflector member supported within the casing above said annular flange and below said outlet of the casing, said deflector member comprising a dome-shaped central portion and a horizontal flange extending from the bottom of said central portion, a coil pipe on said bottom plate perforated at its top to discharge water against the bottom of the horizontal flange on the deflector member, a coil pipe extending within the

casing above the deflector member and perforated to discharge a spray of water on top of said deflector member, and means for supplying water to said coils of pipe.

In testimony whereof, I have hereunto set my hand at Riverside California, this 2nd day of March, 1911. 15

JOHN H. GAMBLIN.

In presence of—

EUGENE BEST,

W. O. MAYFIELD.