

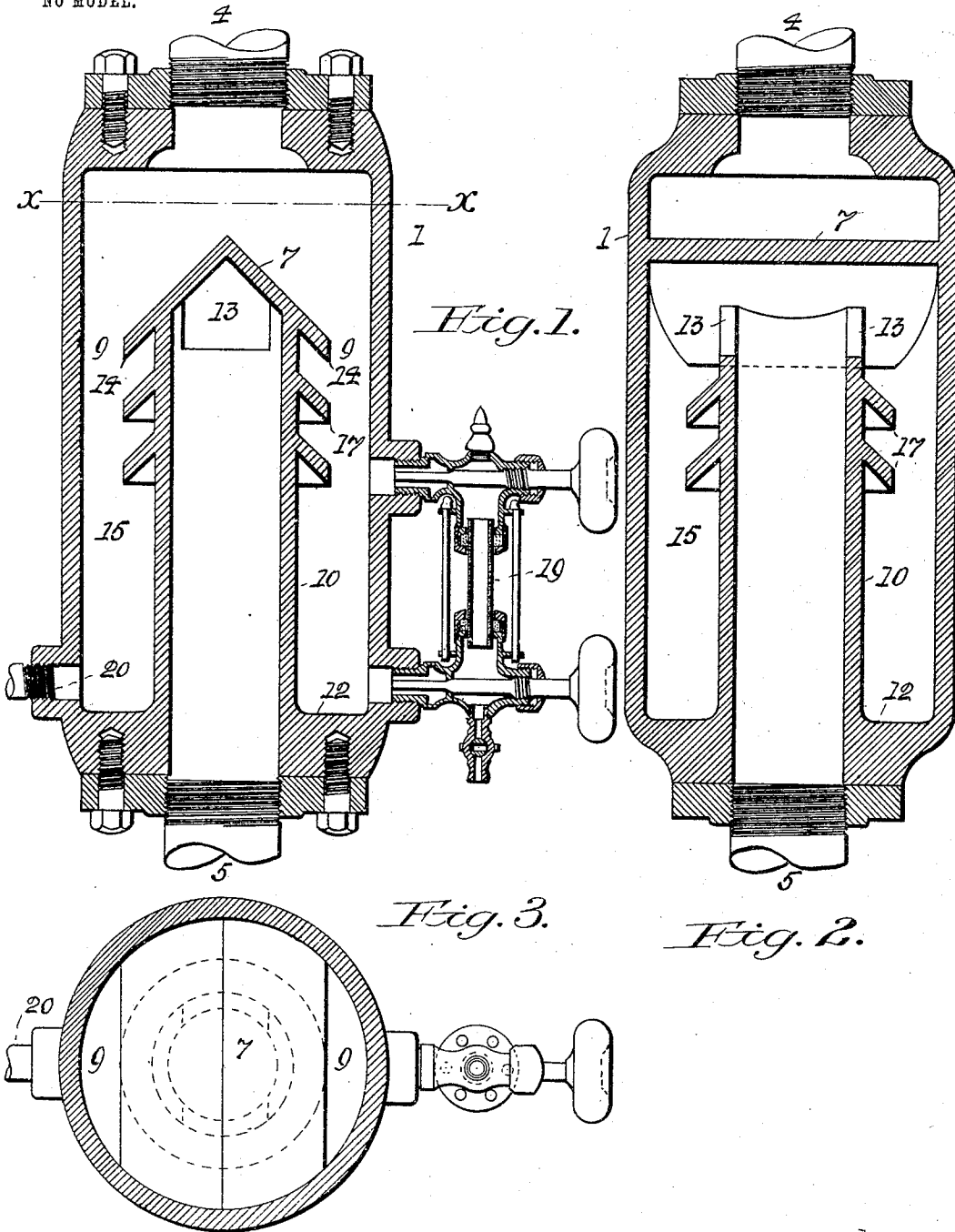
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A. J. GREENAWAY.
SEPARATOR.

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NO MODEL.



Witnesses
C. H. Walker.
Geo. J. Brennan.

Inventor
Arthur J. Greenaway,
by W. H. Howard,
Attorneys

UNITED STATES PATENT OFFICE.

ARTHUR J. GREENAWAY, OF DETROIT, MICHIGAN, ASSIGNOR TO THE GREENAWAY COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 774,518, dated November 8, 1904.

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To all whom it may concern:

Be it known that I, ARTHUR J. GREENAWAY, of the city of Detroit, in the county of Wayne and State of Michigan, have invented certain

Improvements in Steam and Water Separators, of which the following is a specification.

This invention relates to certain improvements in a steam and water separator adapted for insertion in the vertical portion of a steam-pipe leading to a steam-engine or to any apparatus where dry steam is required.

In the description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figures 1 and 2 are vertical sections of the improved separator as seen from points of view separated by ninety degrees. Fig. 3 is a section of Fig. 1, taken on the dotted line *x x*.

Referring now to the drawings, 1 is the shell of the separator, which is preferably of cylindrical form, and 4 and 5 are the entry and delivery sections of a steam-pipe, connected, respectively, to the top and bottom of the shell.

7 is a ridge-plate situated near the upper end of the shell 1 and extending entirely across it. The width of the base of the ridge-plate is made considerably less than the inner diameter of the shell 1, so as to produce the channels 9. (Shown in Figs. 1 and 3.)

10 is a hollow cylinder having a diameter about equal to that of the steam-pipe, formed integral with the bottom 12 of the shell 1 and extending from the said bottom to the under side of the ridge-plate 7 and constituting practically a continuation of the delivery-section 5 of the steam-pipe.

13 13 are openings in opposite sides of the wall of the cylinder 10 and situated immediately beneath the ridge-plate 7.

By reference to Fig. 1 of the drawings it will be seen that the eaves 14 of the ridge-plate project beyond the circumference of the cylinder 10. Consequently any water passing down the inclined surfaces of the ridge-plate will be carried beyond the cylinder and

dropped into the annular space 15, existing between it and the inner surface of the shell.

17 17 are petticoat-flanges arranged one above another on the cylinder 10, which serve to collect moisture from the steam coming in contact with them and conduct it to the annular space 15 in a manner similar to the eaves of the ridge-plate.

19 is an ordinary glass gage whereby the height of water in the shell is indicated, and 20 a pipe whereby the said water may be discharged. Steam entering the shell strikes the ridge-plate and is separated into two columns, which pass through the channels 9, thence upward under the eaves of the ridge-plate, thence through the openings 13 into the cylinder 10, and thence to the lower section of the steam-pipe.

It is well known that when saturated steam is made to rapidly change its direction of movement the globules of water held in suspension therein, being heavier than the surrounding steam, resist the change to a greater extent than the lighter body, and this peculiarity is availed of in the present invention. The steam passes readily under the eaves of the ridge-plate and enters the cylinder, while the globules of water pass down the inclined sides of the ridge-plate into the annular space between the cylinder and the inner surface of the shell, where it collects.

By extending the ridge-plate entirely across the shell the whole body of steam is forced to pass under the eaves of the ridge-plate before entering the openings leading to the interior of the cylinder.

I claim as my invention—

In a steam and water separator, a vertical shell with an entry and a delivery section of steam-pipe connected respectively to its upper and lower end, and a cylinder which extends vertically from the bottom of the shell and forms a continuation of the delivery-section of steam-pipe, combined with a ridge-plate which constitutes the termination of, and closes the upper end of the cylinder, sit-

uated under the entry-section of steam-pipe
and extends entirely across the shell, the said
ridge-plate having projecting eaves which ex-
tend beyond the circumference of the cylinder,
5 the said cylinder having oppositely-placed lat-
eral openings in its wall immediately below
the ridge-plate, and a petticoat-flange which

surrounds the said cylinder at a point below
the lateral openings in its wall, substantially
as, and for the purpose specified.

A. J. GREENAWAY.

Witnesses:

N. E. NASH,

F. M. WEBBER.