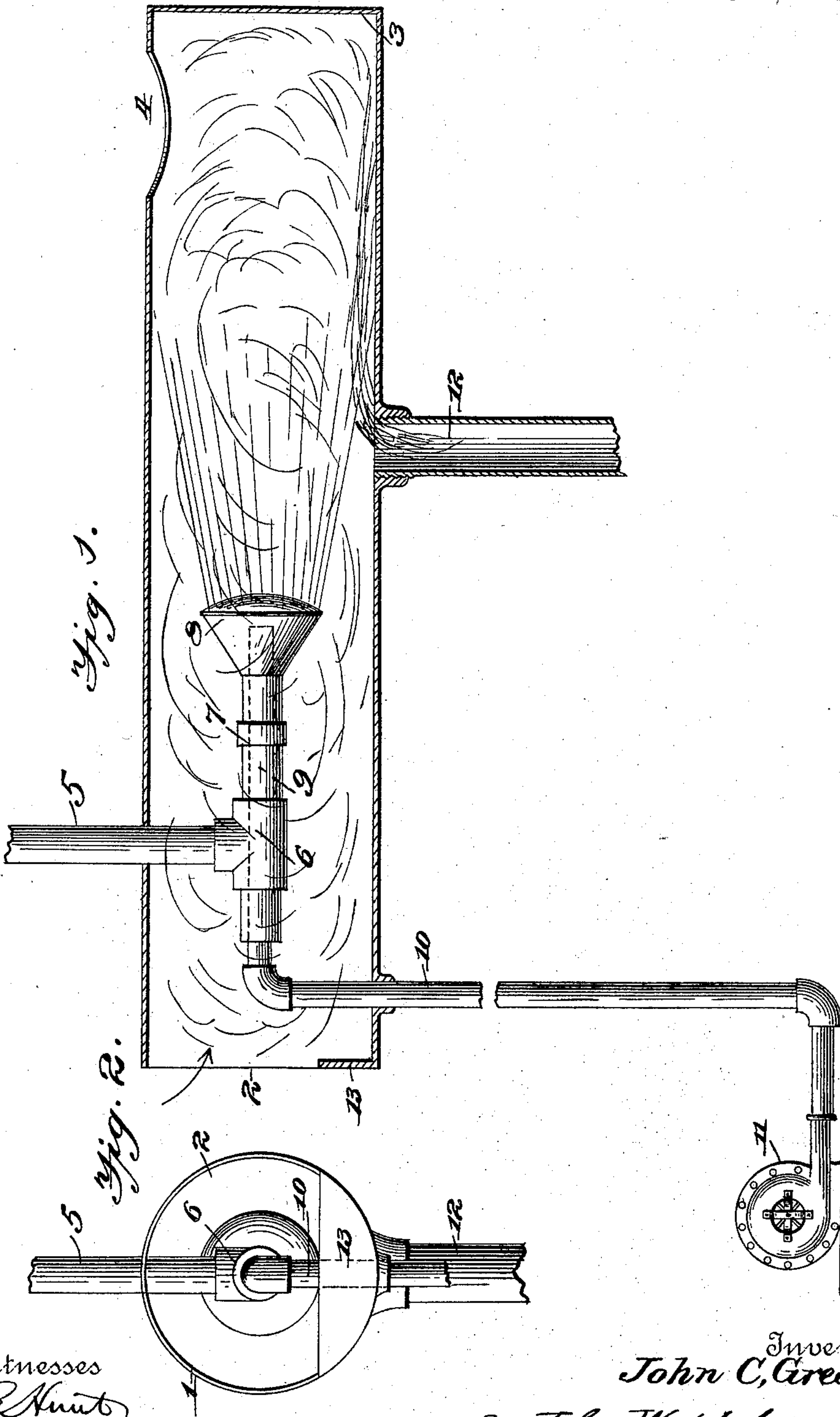


(No Model.)

J. C. GREEN.
SMOKE CONDENSER.

No. 605,280.

Patented June 7, 1898.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN C. GREEN, OF CLEVELAND, OHIO.

SMOKE-CONDENSER.

SPECIFICATION forming part of Letters Patent No. 605,280, dated June 7, 1898.

Application filed May 26, 1897. Serial No. 638,260. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. GREEN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful
5 Improvements in Smoke-Condensers; 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.

10 My invention relates to a smoke-condenser.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various
15 mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure 1 is a central longitudinal section through the condensing-chamber, showing the spraying apparatus in side elevation. Fig. 2 is an end
20 view of said chamber.

The condensing-chamber 1 is preferably made of cylindrical form and having its axis lying in a horizontal plane, provided at one
25 end with an inlet-opening 2 and at its opposite end with the outlet or smoke opening 4, through which may escape the smoke when the condenser is not in use. The extreme outer end of this chamber is preferably closed,
30 as indicated at 3, and the opening 4 may be connected with a suitable pipe or flue for conveying the products of combustion when not condensed to any point of discharge. Said chamber is perforated on its upper side and
35 near its inlet-opening to receive a water-pipe 5, which terminates in a T-coupling to receive a horizontal extension 7 of the water-pipe and terminating in a spray-nozzle 8, which discharges into said chamber. Within the
40 said horizontal portion of the water-pipe is located horizontal arm 9 of the air or steam pipe 10, which passes down through the bottom of the chamber and is connected at any suitable point with an air or steam blast 11
45 of any suitable construction. The horizontal arm of the air or steam pipe enters the coupling 6 near the inlet-opening 2, is encircled by said water-pipe, and is surrounded by an open annular air-space intermediate of
50 said blast-pipe and said water-pipe. The air-pipe extends through said water-pipe into

the nozzle 8 to a point near the spray-nozzle in such a manner that the water admitted through the pipe 5 is discharged from the nozzle thereof by the action of the blast of water
55 or steam in a fine spray, which thoroughly commingles with and condenses the smoke passing through the chamber. The condensed products of combustion, together with the water, escape from the chamber through the
60 pipe 12, opening into the bottom of said chamber intermediately of the inlet and outlet openings of said chamber. By means of said pipe 12 the products are conveyed to any desired point of discharge. At the inlet-open-
65 ing of said chamber a plate 13 closes the lower portion of said chamber, thus preventing the escape of the products of combustion into the flue that discharges into said chamber.

By the apparatus described a thorough and
70 effective intermingling of the commingled air and water is effected with the smoke, effectually condensing the same and creating an increased draft to the fire, promoting combustion, and at the same time effectually con-
75 densing the products of combustion.

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

In a smoke-condenser, the combination of
80 a cylindrical condensing-chamber having its axis in a horizontal plane and provided with inlet and outlet openings at opposite extremities, a water-pipe extending into said chamber near its inlet, an air-pipe projecting into
85 said chamber near its inlet and extending into and encircled by said water-pipe and having an open annular air-space intermediate of air-pipe and water-pipe, said water-pipe provided on its extremity with a spray-
90 nozzle discharging into said chamber, and an escape-pipe opening from the bottom of said condensing-chamber intermediately of said inlet and outlet openings, substantially as set forth.
95

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN C. GREEN.

Witnesses:

S. S. MINOR,

LEWIS JOHNSTON.