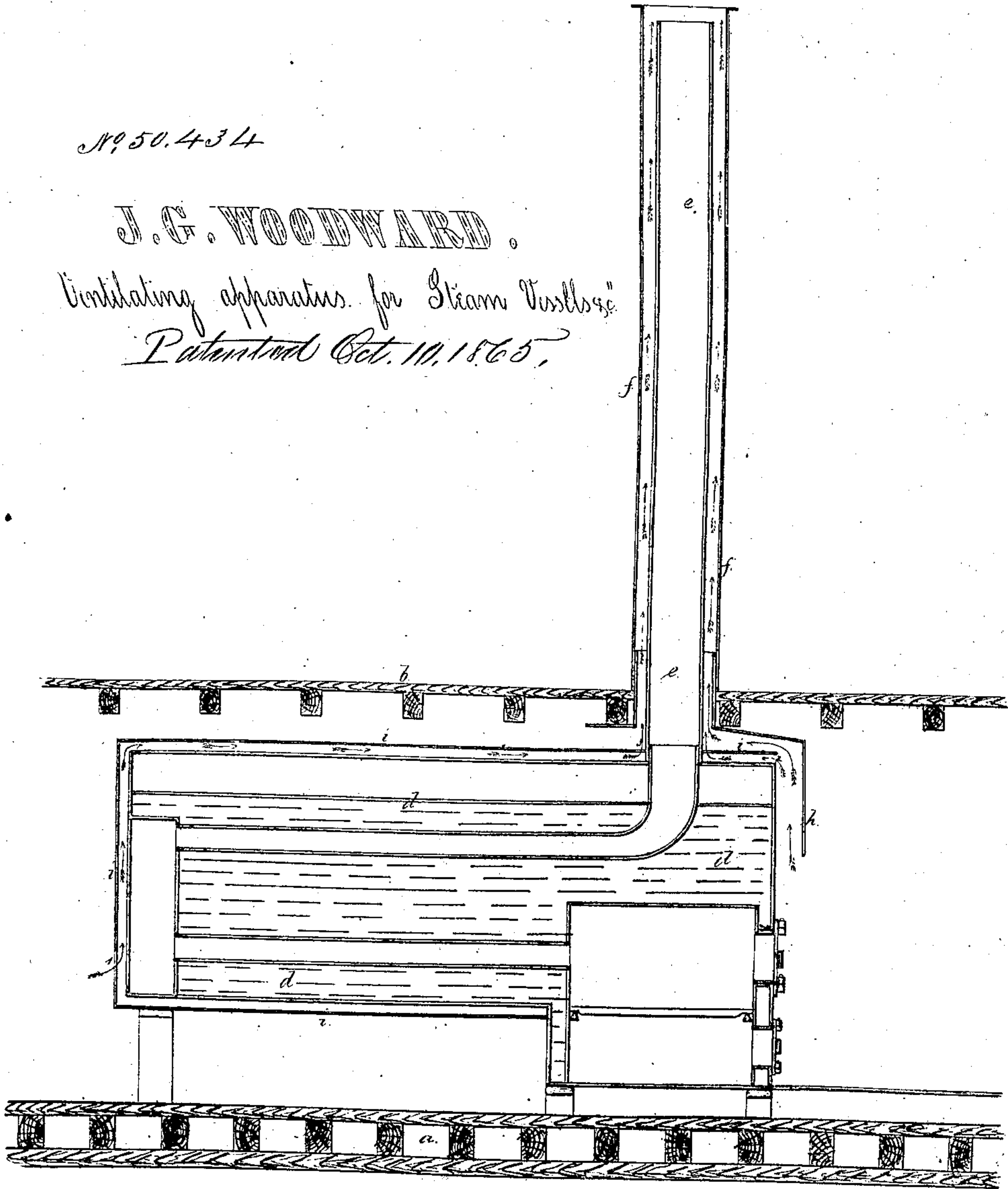


No. 50,434

J. G. WOODWARD.

Ventilating apparatus for Steam Vessels.
Patented Oct. 10, 1865.



Witnesses,

Geo. H. Wall Sec

Chas. H. Smith

New York September 22nd 1865.

J. G. Woodward
per L. W. Fenell
Att'y.

UNITED STATES PATENT OFFICE.

JOHN G. WOODWARD, OF ST. JOHN, NEW BRUNSWICK.

VENTILATING APPARATUS FOR STEAM-VESSELS, &c.

Specification forming part of Letters Patent No. 50,434, dated October 10, 1865.

To all whom it may concern:

Be it known that I, JOHN G. WOODWARD, of St. John, in the Province of New Brunswick, have invented, made, and applied to use a certain new and useful Improvement in Ventilating Apparatus for Steam-Vessels, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, wherein I have represented a vertical section of said ventilating apparatus as fitted into a vessel.

Great difficulty is experienced in the ventilation of engine and fire rooms on board of steam boats and ships in consequence of the confined space and great heat radiated from the boilers and furnaces. Wind-sails and canvas tubes have been employed, and also ventilating-pipes; but still the temperature upon many steamboats, gunboats, monitors, and sea-going steamships is so great that the engineers and firemen are often prostrated, and are obliged to come upon deck frequently to enable them to continue their duties. Besides this, the dust, sparks, and ashes very often blow about the fire and engine rooms, particularly when the doors are opened for charging or raking the fires; and when it becomes necessary to draw out the fires and extinguish the coals the heat, dust, steam, and dirt are very inconvenient and oppressive.

The nature of my said invention consists in a ventilating-casing surrounding or contiguous to the smoke-pipe or funnel through which air is drawn from the engine and fire rooms by the column of air ascending by being warmed by the smoke-pipe. This current of air taken from the engine-room conveys away any noxious gases, dust, vapors, and also the heated air, and in place thereof the cool air will descend by a natural action through the hatchways, thus rendering the engine-room of an agreeable temperature, and this system of ventilation may be extended by pipes to the other portions of the vessel. I also carry the said ventilating-case up above the top end of the smoke-pipe or funnel of the boilers, in order that the ascending ventilating-current of air may increase the draft of air passing through the furnace.

In the drawings, *a* represents the bottom of the vessel, or one of the decks. *b* represents the other deck. *d* is a boiler of any usual or desired construction, and *e* is the smoke-pipe or funnel, as usual. *f* is a casing surrounding the funnel and extending from the deck immediately above the boiler to the top of and slightly above the said smoke-pipe. The space between this casing *f* and the smoke-pipe becomes an annular ventilator, that takes up all dust, vapors, heated air, &c., with a powerful circulating current induced by the heat of the smoke-pipe, and, passing above the upper end of said smoke-pipe, aids the draft to the fires by promoting the escape of the products of combustion from this end of said pipe. The annular ventilating-space is connected at its lower end in any convenient manner by a casing or pipes with the parts of the vessel to be ventilated.

In the drawings the smoke-pipe is shown at the furnace end of the boiler, and a partition or hood, *h*, extending down near the front of the furnace to a short distance above the fire-doors, serves to direct the circulating current of air in such a manner as to convey away all dust and vapors and prevent the heat from coming into the engine-room.

I have represented a casing, *i*, made in sections, so that it can be removed, surrounding the boiler, leaving an air-space between itself and the boiler, the object of which is to retain heat and prevent the ventilating-current of air cooling the boiler too much. This casing is to be retained in place by hoops running around the boiler, the metallic plates running lengthwise of said boiler, and, if preferred, openings may be left in the casing at the points 1, 2, and 3, so that a small circulation of air may be allowed to prevent the air becoming too much heated within the casing *i*.

What I claim, and desire to secure by Letters Patent, is—

1. A ventilating-casing around or contiguous to the smoke-pipe or funnel, substantially as set forth, so that the ventilating-current of air may be induced by the heat of the smoke-pipe, as set forth.

2. Extending the ventilating-casing above the top of the smoke-pipe or funnel to increase

the rapidity of the escape of the products of combustion from said smoke-pipe, as set forth.

3. A partition or hood extending down in front of the furnace at a short distance from the same, in combination with the ventilating-casing around the smoke-pipe, as specified.

4. Inclosing the boiler in a casing made of sheet metal a short distance from said boiler,

leaving an air-space, as set forth, said casing being removable in sections, as specified.

Dated this 21st day of September, A. D. 1865.

J. G. WOODWARD.

Witnesses:

CHAS. H. SMITH,

GEO. D. WALKER.