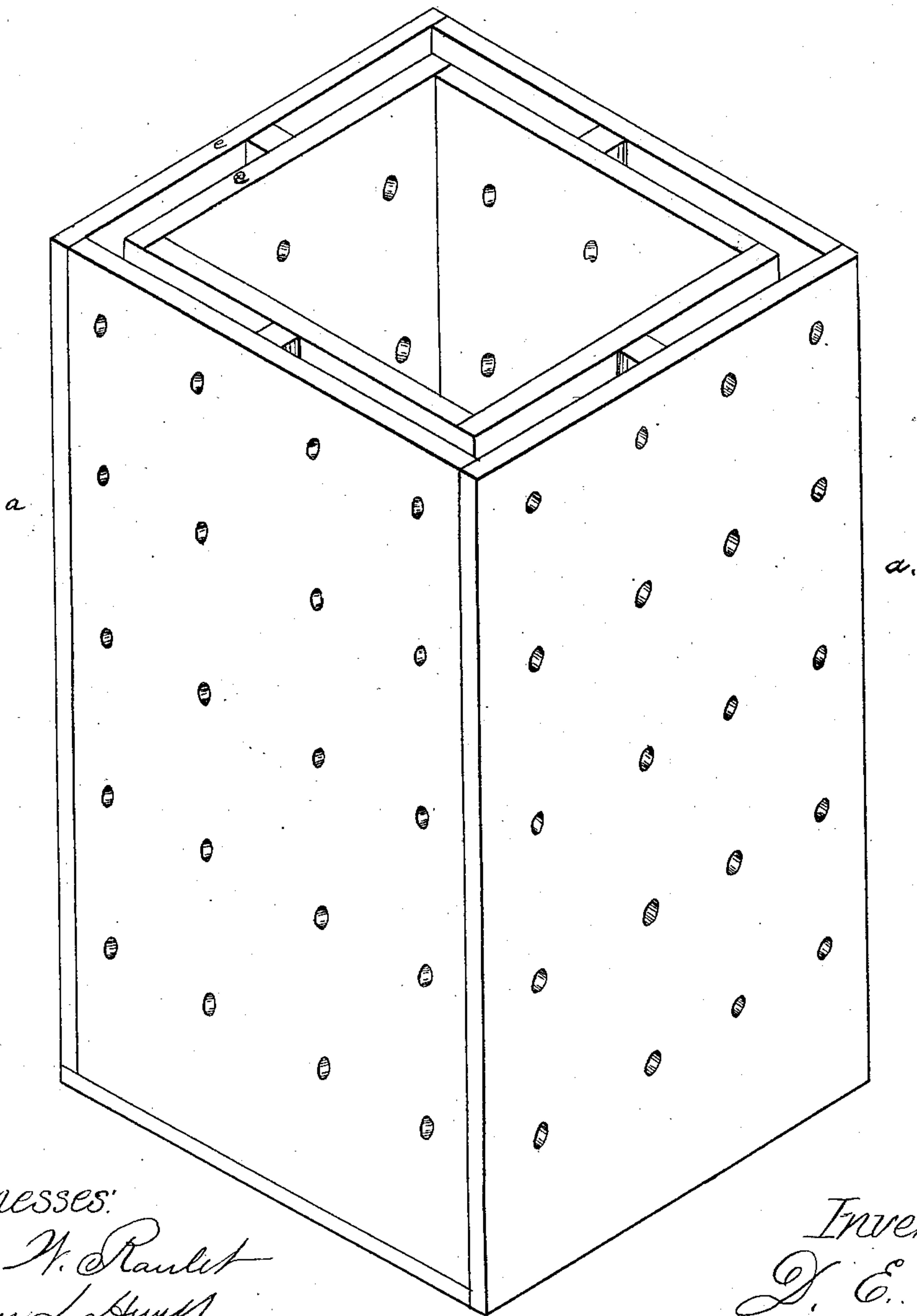


D. E. Simes,

House Ventilator.

N^o 44,671.

Patented Oct. 11, 1864.



Witnesses:

D. H. Raulst
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UNITED STATES PATENT OFFICE.

DANIEL E. SOMES, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVED MODE OF SECURING PURE AND WHOLESOME AIR IN DWELLINGS, &c.

Specification forming part of Letters Patent No. 44,671, dated October 11, 1864.

To all whom it may concern:

Be it known that I, DANIEL E. SOMES, of the city of Washington, in the District of Columbia, have invented a new and useful mode of securing pure and wholesome air in dwellings, halls, hospitals, and other places; and I do hereby declare that the following is a full and exact description of the same.

The nature of my invention consists in fixing or placing in the furniture of dwellings, halls, hospitals, and other like buildings and parts of buildings a receptacle for containing charcoal, said receptacle being so constructed that the air in the apartment may have free circulation among and through the charcoal, so as to be purified from noxious vapors and gases, while the charcoal itself is retained in the receptacle so as not to be dispersed or scattered in or about the room or place in which the furniture is to be used.

It has long been known that different kinds of charcoal have the property of absorbing and destroying noxious vapors and gases, but previous to my invention this valuable property has not been available in common household economy, for the reason that there has not been any convenient mode of applying it. By using it in the mode hereinafter more fully described it becomes easy to have at all times the air of dwellings pure and wholesome without any inconvenient or unsightly use of the purifying material.

There are many different modes of applying my invention, as will be obvious after I have shown the manner in which it is to be applied in some of the more common articles of household furniture.

In the annexed drawings, I have shown a tall box, *a*, with double walls, *e e*, which might serve as the pedestal or support of a center-table. Both walls of the receptacle are pierced with numerous holes, so as to allow a free circulation of air through the charcoal contained in the box. The holes are so arranged that those on the inside walls are not directly opposite those on the outside, so as to prevent any particles of charcoal from falling out when the table or other article of furniture to which it is attached is moved.

Instead of having the charcoal-receptacle made with double walls, as shown, many other devices may be made to accomplish the object

intended, which is so to inclose the charcoal that the air of the room may have free access to it and yet the charcoal be retained with sufficient security to prevent its waste. The inner lining, instead of being made of boards, may be made of wire-gauze, coarse loose cloth, hair-cloth, wicker-work, plaited splits of wood, strawrushes, perforated plates of metal, porcelain, porous earthenware, and the like. Some of these materials—such as wicker-work, metal plates, porcelain, &c.—may be used for the outer casing also.

If the piece of furniture does not require to be often moved, the charcoal-receptacle may be made with a single wall, properly perforated so as to admit of a free circulation of air through the body of charcoal.

The perforations may be arranged as shown in the annexed drawings, and to give a better appearance the holes may be finished with horn, ivory, bone, metal, wood of different colors, or in any way that may suit the fancy. Instead of being round, as shown, the perforations may be in elliptical scroll form, in the form of lattice-work, or of any other form or configuration which will accomplish the object of permitting the entrance and exit of the air.

I have mentioned common wood charcoal, for the reason that it answers a very good purpose and is generally easily procured; but other kinds of charcoal—such as bone-black, charred peat, and mixtures of various carbonaceous matters, provided they are porous and possess the property of absorbing noxious vapors and gases—may be substituted for wood charcoal.

The form of the charcoal-receptacle will of course vary with the requirements of the article of furniture to which it is attached. In ordinary tables and desks it may be made in the form of one or more drawers or as a box, to be fastened to the under side of the table. For sofas, lounges, and ottomans it may be in the form of a box or support for the seats. Stools, chairs, and benches may be provided with it in like manner. The pedestals of statues may with great convenience be made the charcoal-receptacle. In book-cases, wardrobes, and the like, any part found most convenient may be used as the charcoal-receptacle. The body of wash-stands will form, when made according to the principles of my

invention, a very convenient receptacle for charcoal. A box in the shape of a mattress may be fastened under beds or it may be in the form of a trundle-bed. There are frequently recesses and other parts of houses where permanent charcoal-receptacles may be arranged so as to resemble chests, tables, settees, book-cases, and the like.

The charcoal, when placed in the receptacle, should be thoroughly dry and freshly burned. If it has been kept some time, it should be placed in an oven and thoroughly dried before being used. The charcoal-receptacles should be made so as to be readily opened for the purpose of changing and removing the charcoal as often as may be necessary, for it is well known that charcoal after having been used becomes more or less impaired in its power of absorbing vapors and gases, but by placing it in an oven or retort and bringing it nearly to a red heat it is fully restored.

When used in ordinary dwellings, as above indicated, it is not necessary to renew the charcoal more than once in a year, and even after longer periods it will still possess some purifying power, for charcoal not only absorbs decaying organic matters and effluvia, but decomposes and destroys them.

In regard to the size of the charcoal to be used no definite rule need be given, since it should be regulated by the size and kind of receptacle used. Charcoal as ordinarily sold by charcoal-burners will answer very well, but for general use pieces about the size of a walnut are preferred.

When charcoal is placed in an apartment in the manner above described the natural currents in the air will generally suffice to keep it pure and wholesome, but when it is desirable artificial currents may be made to pass the air quickly through the charcoal-receptacle. Mechanism such as is well known for producing a blast, as in certain kinds of lamps and for carbureting air, will answer for this purpose; but such means are not at all necessary,

except when it is required to purify the air very rapidly—as in clouded assemblies or when the air is heavily loaded with noxious vapors—for the principle known as that of diffusion of gases will enable charcoal in any part of a room to absorb the noxious vapors from all parts of the room.

From long-continued experiment I am persuaded that the introduction of my invention into general use would greatly add to the health and comfort of the people, for even in the best-kept rooms the air is constantly vitiated from the presence of animal matter thrown off through breathing and perspiration. This is especially the case in houses that are imperfectly ventilated, as is the case since the general use of stoves and furnaces during cold weather.

I do not claim, broadly, the principle of purifying air by passing it through charcoal, nor do I claim removing noxious vapors and gases from cellars and similar places by spreading in them charcoal.

I am also aware that charcoal has been used as a filling material between the walls and lining of safes, refrigerators, ice-houses, and the like, but such use is for a purpose entirely different from that which is accomplished by my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The manufacture of articles of household furniture with receptacles for containing charcoal, substantially as herein set forth and described.

2. The mode herein described of purifying the air in dwellings, halls, hospitals, and other places by means of a charcoal-receptacle, constructed substantially as herein specified.

D. E. SOMES.

Witnesses:

D. W. RAULET,
J. S. HAYES.