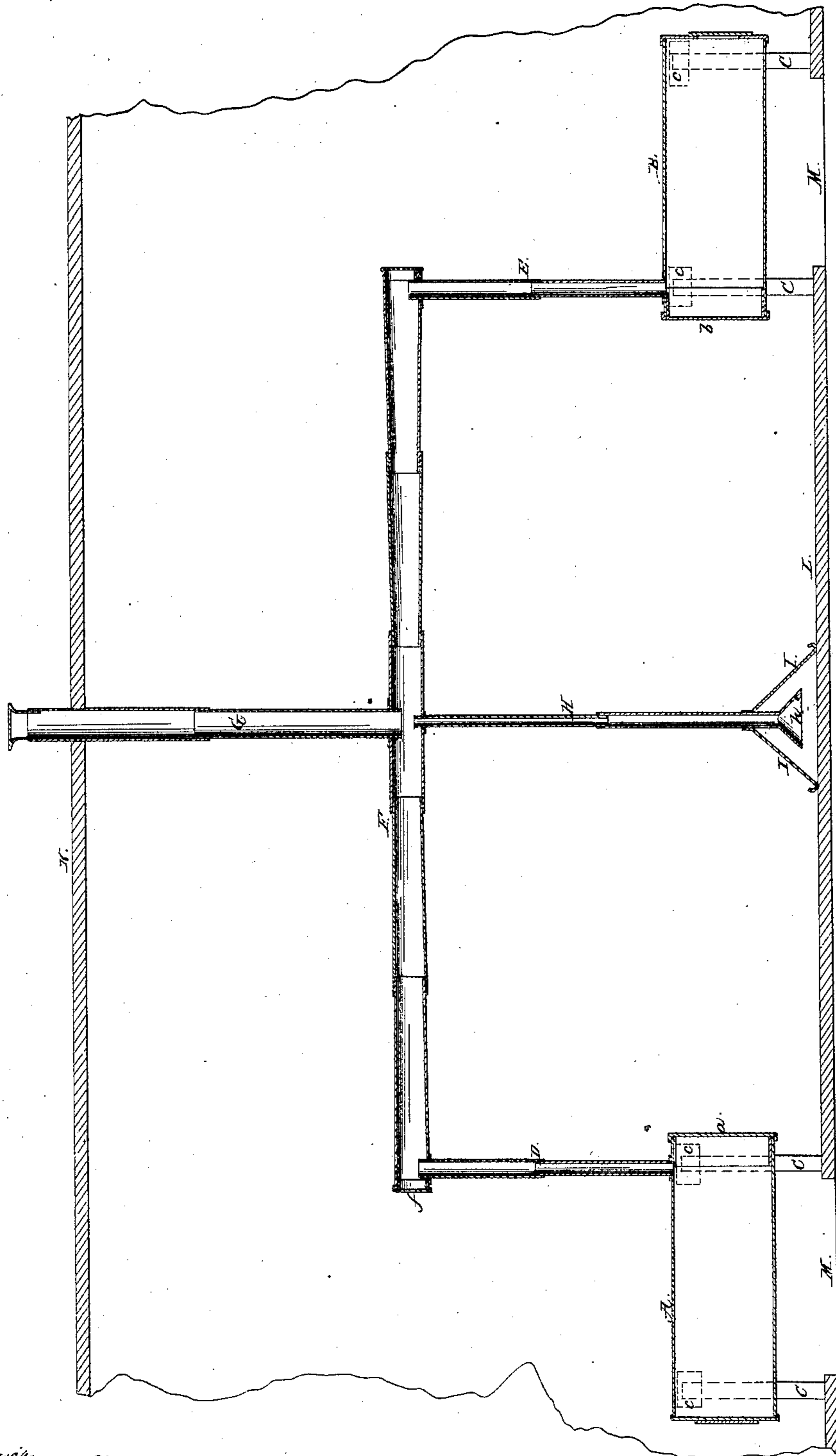


*R. Kingsland,*  
*House Ventilator,*

*N<sup>o</sup> 37,042.*

*Patented Dec. 2, 1862.*



*Witnesses:*  
*Charles Smith*  
*J. H. Schuberschmidt.*

*Inventor:*  
*Richard Kingsland*  
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# UNITED STATES PATENT OFFICE.

RICHARDS KINGSLAND, OF NEW YORK, N. Y.

## IMPROVEMENT IN HEATERS AND VENTILATORS FOR TENTS.

Specification forming part of Letters Patent No. 37,042, dated December 2, 1862.

*To all whom it may concern:*

Be it known that I, RICHARDS KINGSLAND, of the city, county, and State of New York, have invented a certain new and Improved Army-Hospital Heater and Ventilator; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing, which forms a part of this specification, and which represents a vertical longitudinal section of an apparatus illustrating my invention.

The subject of my said invention is an apparatus designed chiefly for heating hospital and other tents of large size, which apparatus may consist of two stoves with smoke-flues delivering into each end of a long drum, from the center of which the discharge-flue rises and a ventilating-tube descends, as will be herein-after more fully described.

To enable others skilled in the art to which my invention appertains to make and use the same, I will proceed to describe its construction and operation.

A and B represent two stoves of similar construction to that described in my application filed the 17th and 21st days of October, 1862, having movable ends or heads *a b*, so that one stove may fit completely within the other, for which purpose the stove B is made half an inch smaller in length and diameter than the stove A.

C C are legs fitting in sockets *c c* in the sides of the stove, so that they may be taken out and placed within the stove-pipe.

D E are the flue-pipes, conveying smoke from the stoves A B, and delivering it near each end into a long drum, F, the ends of which are closed by movable heads *f f*.

G is a discharge-flue rising from the center of the drum and delivering above the roof.

H is a ventilating-pipe terminating at its lower end in a bell or funnel shaped mouth, *h*, and communicating at top with the drum F. The said pipe rests upon legs I, and may assist in supporting the center of the drum.

K may represent the roof or the ridge-pole of the tent.

L is the tent floor.

M M are apertures beneath the stoves A B, through which apertures fresh air is admitted to the tent.

All the above-described pipes are made of

conical form, to adapt them to fit one within another, and in lengths which adapt them all to fit completely within the smaller stove B. By forming the pipes of the diameters given in the drawing the whole may be inserted one inside another within the three largest lengths, and these three lengths, filled with those of smaller diameter, may be placed, together with the eight stove-legs, within the stove B, and the latter after being so filled within the stove A.

The operation of the apparatus is as follows: Pure cold air, entering through the apertures M, passes in immediate contact with the heated stoves A B, and being thereby heated and rarefied rises to the upper region of the apartment, taking the place of vitiated air, which, descending by reason of its greater weight, is drawn off through the funnel-tube H by the draft generated therein, and discharged with the smoke through the flue G. The arrows indicate the direction of the air-currents.

Vitiated air is well known to be heavier than pure air of equal temperature, and hence the pure air will naturally find the highest level unless it be introduced at a lower temperature than that of the interior; but in the above-described apparatus the pure air at the time of entering becomes heated to a temperature much higher than the mean temperature within the apartment, and therefore the effect alluded to is the stronger.

Many practical advantages in the apparatus will readily suggest themselves, among which I shall cite:

First. The most thorough and effective ventilation is secured without the necessity of any aperture in the upper part of the tent to carry off the heat as fast as generated. The apparatus is therefore very economical of heat.

Second. All injurious drafts are avoided by the fresh air being heated immediately on entering, and thereby carried away from the floor.

Third. By reason of the higher temperature of the pure air that which is impure is prevented from collecting and remaining in the upper region of the apartment, and is discharged from the lower region where it naturally tends to rest.

Fourth. The invention affords the most com-

pact method of packing a complete ventilating apparatus for transportation.

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

The combination of the stoves A B, drum F, ventilating-pipe H, and discharge-pipe G, constructed and arranged to operate in manner substantially as and for the purposes set forth.

The above specification of my improved army hospital heater and ventilator, signed this 3d day of November, 1862.

RICHARDS KINGSLAND.

Witnesses:

OCTAVIUS KNIGHT,  
CHARLES SMITH,