

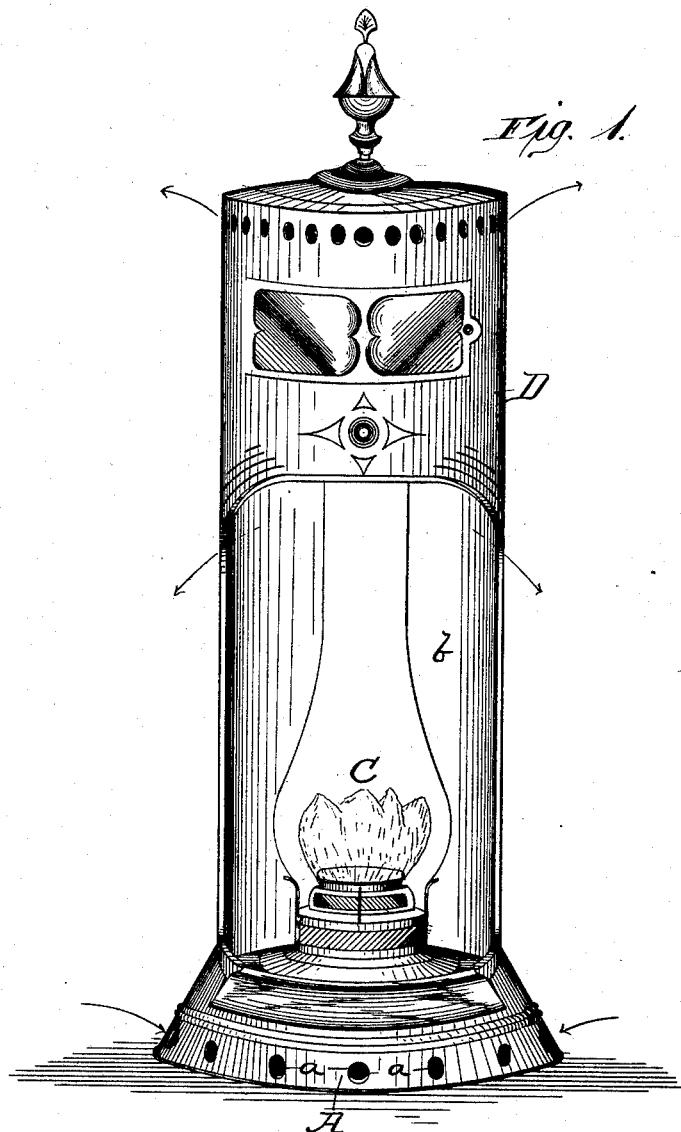
(No Model.)

2 Sheets—Sheet 1.

Z. H. BOOLS.  
HEATER.

No. 524,538.

Patented Aug. 14, 1894.



Witnesses:  
Chas. E. Gordon  
E. S. Thompson.

Inventor:  
Zadock H. Bools  
By Frank D. Thompson  
Attys.

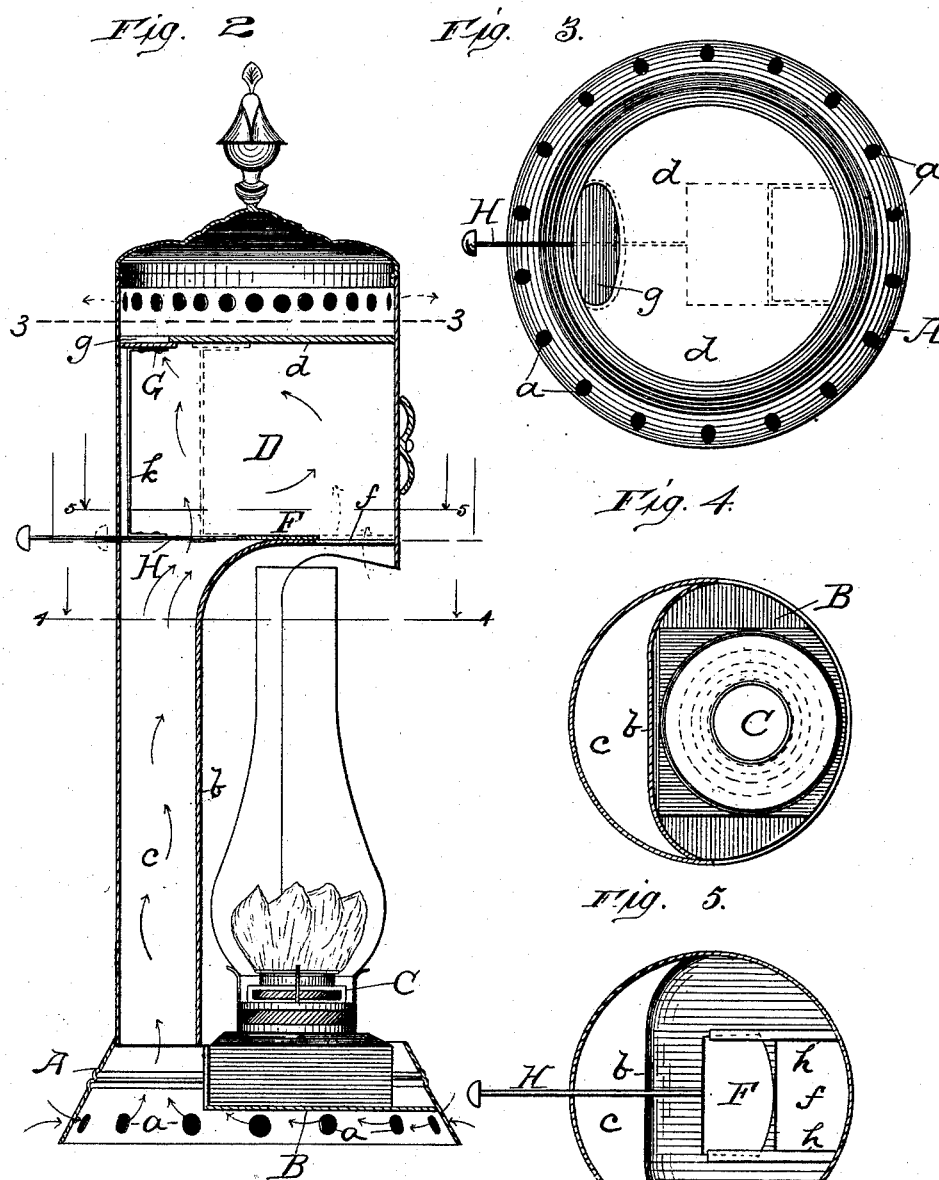
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2 Sheets—Sheet 2.

Z. H. BOOLS.  
HEATER.

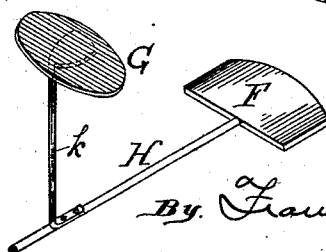
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Fig. 6.



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# UNITED STATES PATENT OFFICE.

ZADOCK H. BOOLS, OF CHICAGO, ILLINOIS.

## HEATER.

SPECIFICATION forming part of Letters Patent No. 524,538, dated August 14, 1894.

Application filed March 21, 1893. Serial No. 467,026. (No model.)

*To all whom it may concern:*

Be it known that I, ZADOCK H. BOOLS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Heaters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to a simple form of portable heaters, which are more particularly adapted for heating small rooms, and its object, aside from the fact of its economy of construction, is to enable its heat product to be deflected direct to the floor, or to draw the colder and damper lower stratas of air in the room into it, and heat and discharge them from the top thereof, and thus render the atmosphere dry and warm, substantially as hereinafter fully described, and as illustrated in the drawings, in which—

Figure 1 is a front elevation of my invention. Fig. 2 is a vertical longitudinal central section through the same. Fig. 3 is a horizontal section, taken on dotted line 3, 3, Fig. 2. Fig. 4 is a similar section taken on dotted line 4, 4, Fig. 2. Fig. 5 is a similar section taken on dotted line 5, 5, Fig. 2, and Fig. 6 is a detail view showing the compound damper in perspective.

In the drawings A represents the base rim of my improved heater, which is inclined outward or spreads so as to afford greater stability to the same, and is provided with a suitable series of perforations *a, a*, near the floor. Secured to this base rim, preferably, so as not to interfere with the free circulation of air through the perforations *a*, is a platform B for the lamp C to rest upon, the rear vertical wall of which does not rise above the upper edges of said rim, and corresponds in curvature to the inner curve of a crescent. The front and rear sides of the oil receptacle of lamp C are so shaped that it can be easily placed in or removed from this platform at will.

The lamp burner and chimney are, preferably, of that common kind that generate considerable heat when the lamp is lighted, and back of them I arrange a deflector *b*, which ex-

tends vertically from the top of the oil receptacle of the lamp to the top of the chimney thereof, over which it arches, substantially as shown. This deflector *b* constitutes the forward wall of the superstructure of my heater, which is secured and rises from the basal rim. The rear wall of this super-structure, which is secured to said base, is semi-cylindrical, and its forward vertical edges are united to the side edges of the deflector *b*, thus making a vertical flue *c*, which is open at the bottom to the area inclosed by the basal rim and discharges at the top into the hot air chamber D. This hot air chamber is made by completing a cylinder, above the plane of the deflector, with what, below the same, constitutes the rear wall of the flue *c*. The hood of the deflector forms the floor for the forward half of the chamber D, and its roof is made by a transverse partition *d*. The cylindrical walls of the chamber D extend a suitable distance above the partition *d*, are provided with a series of perforations *e*, and are covered by a cover E.

In the hood of the deflector *b*, next the forward wall of the chamber D, I make a draft opening *f*, and in the partition *d*, next the rear wall of the said chamber, and, preferably, diametrically opposite opening *f*, I make a draft opening *g*. Opening *f* is open or shut by means of the damper F, the side edges of which come under suitable guideways *h, h*, and it is moved by means of a longitudinal rod or bar H, which attaches to, and extends from the rear edge of the same. Draft opening *g* is always open when opening *f* is shut, and vice versa. A damper G on the under side of the partition closes opening *g*, and it could be moved independent of damper F by a rod or bar H extending longitudinally to the outside of the heater; I prefer, however, to attach the damper G to the top of a suitable post *k* arising from the bar H, which latter is located at such a point that when draft opening *f* is open the said damper G closes draft opening *g*, and when opening *f* is closed, opening *g* is open.

By closing damper F the major part of the radiated heat is deflected outward and downward by the deflector. In this event the hood

of the deflector becomes heated to a considerable extent, and thus warms the air currents which enter the heater through the apertures in the basal rim, pass up through the flue  
5 *c* and into chamber *D*; from whence they pass through the draft opening *g* and out of the perforations in the sides of the heater above the partition *d*.

When draft opening *f* is open the major  
10 part of the products of combustion pass into the hot air chamber, in which, as there is no outlet above, the air becomes thoroughly heated and heats the walls of the heater in the same manner that the sides of a simple  
15 cylinder stove become heated, and thus produces considerable warmth.

What I claim as new is—

1. The combination with a lamp, of a basal  
rim having a series of perforations therein, a  
20 lamp platform, a deflector back of said lamp, so constructed that its hood arches over the chimney thereof, and is provided with a draft opening *f* therein, a flue back of said deflector, and a hot-air chamber above the same which  
25 is connected by said flue to the area inclosed

within said basal rim, and is provided with a draft opening in its roof, damper *F* for closing opening *f*, and damper *G* for closing the opening in said roof, as set forth.

2. The combination with a lamp, of a basal  
rim having a series of perforations therein, a  
30 lamp platform, a deflector having a hood which arches over said lamp and has a draft opening therein, a flue back of said deflector open to the area inclosed by the basal rim, a  
35 hot-air chamber above said deflector, to which said flue leads, having a draft opening in its roof, a covered chamber above said hot-air chamber having a series of perforations, and  
40 the dampers *F* and *G*, bar *H* and post *k* connected to and connecting said dampers so that when said damper *F* closes the draft opening in the hood of the deflector, the draft opening in the roof of the hot-air chamber closes, and vice versa, as set forth.

ZADOCK H. BOOLS.

Witnesses:

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