

No. 709,051.

Patented Sept. 16, 1902.

J. P. SCHNELLER.
HEAT RADIATOR FOR SMOKE PIPES.

(Application filed Mar. 20, 1902.)

(No Model.)

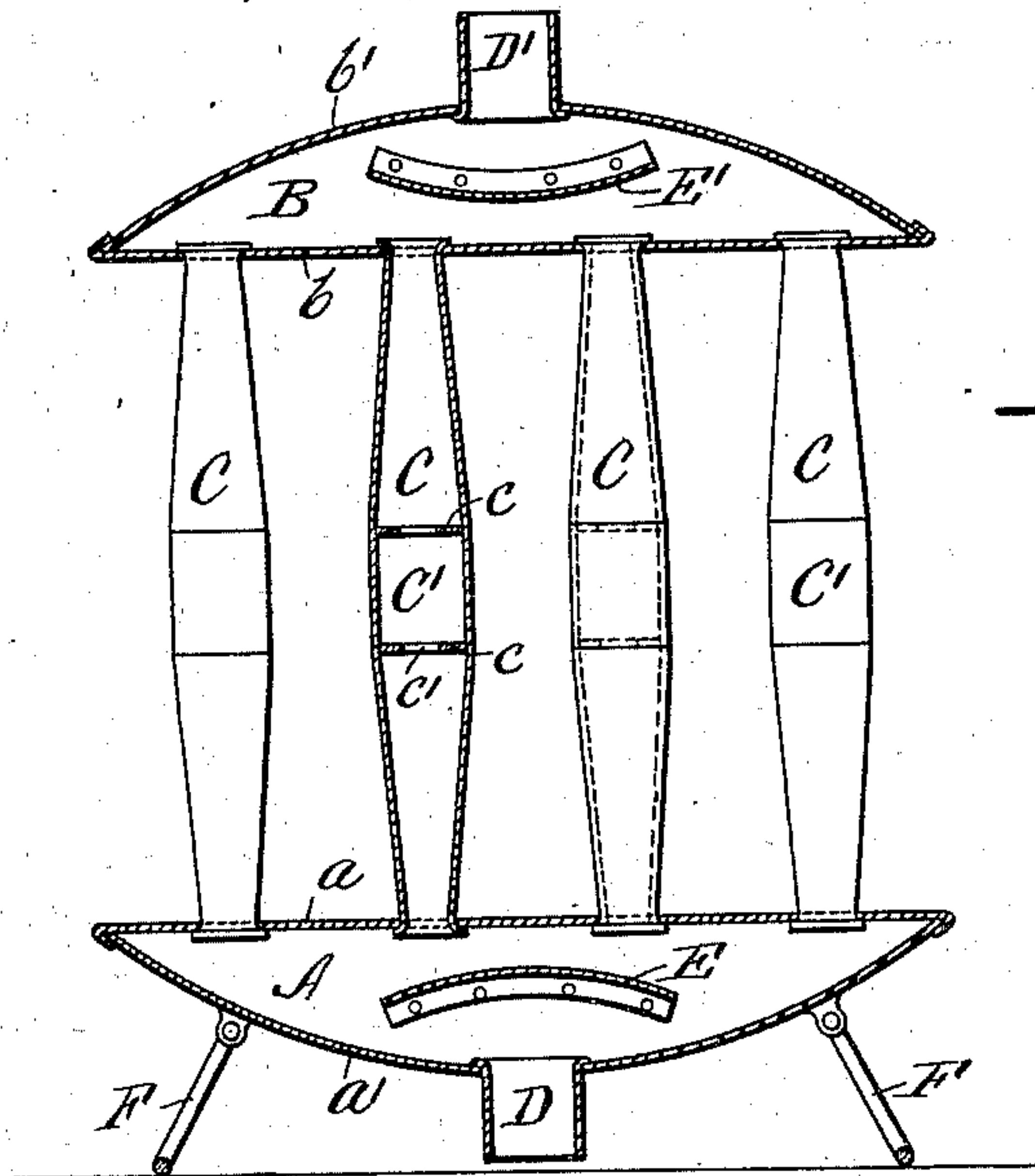


FIG. 1.

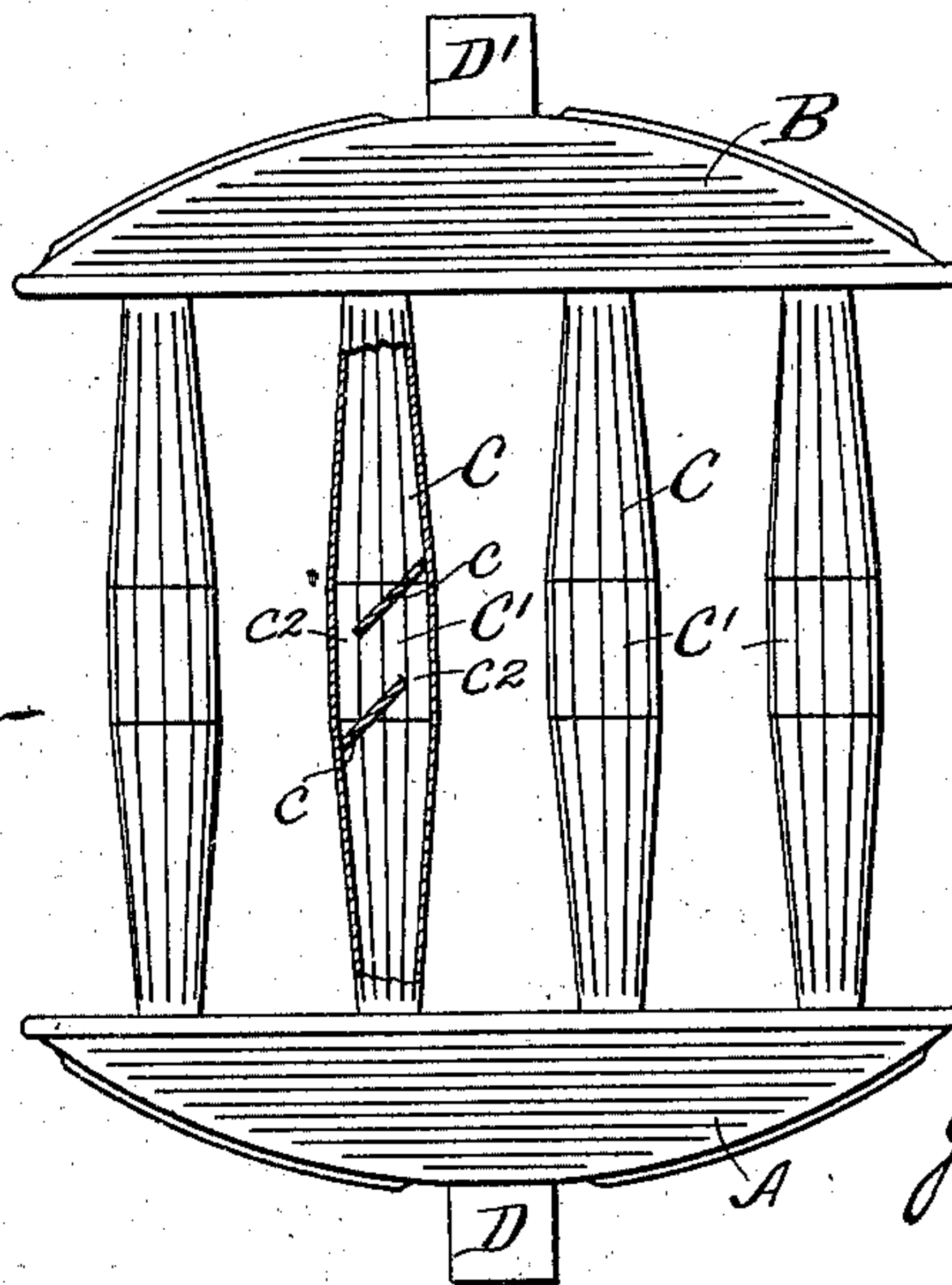


FIG. 2.

Witnesses

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JOHN P. SCHNELLER, OF CATASAUQUA, PENNSYLVANIA.

HEAT-RADIATOR FOR SMOKE-PIPES.

SPECIFICATION forming part of Letters Patent No. 709,051, dated September 16, 1902.

Application filed March 20, 1902. Serial No. 99,111. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. SCHNELLER, a citizen of the United States, residing in Catasauqua, county of Lehigh, State of Pennsylvania, have invented certain new and useful Improvements in Heat-Radiators for Smoke-Pipes, of which the following is a specification.

My invention relates to an improved radiator or drum for use in connection with a stove-pipe to utilize a portion of the heat in the products of combustion which is ordinarily wasted.

My main objects are to provide a maximum of effective heating-surface, while maintaining a constant upward movement of the gases to provide for conveniently connecting and supporting the radiator.

The invention is fully described in connection with the accompanying drawings, and the novel features are specifically pointed out in the claims.

Figure 1 is a sectional front elevation of a radiator embodying my improvements in preferred form. Fig. 2 illustrates a slight modification in the flue construction.

A and B represent similar bottom and top radiator-sections, reversely arranged and connected by one or more rows of vertical flues C C, secured to the opposing flat walls *a* and *b*, respectively, of the horizontal sections A and B. The outer walls *a'* and *b'* of these sections are outwardly arched and are provided midway of their length with smoke-pipe connections D and D', which form, respectively, an inlet and an outlet to and from the radiator for the products of combustion. These connections thus communicate with the sections at the point of their greatest height and equidistant from the end flues of the row or rows of flues connecting them, and the arched walls *a'* and *b'* both incline upwardly, so as to guide the gases in that direction. In order to distribute the latter equally to the whole series of flues, I provide arched deflector-plates E and E', respectively, in the radiator-sections A and B, each arranged with its concaved side opposite the inlet D and outlet D', respectively, and having its opposite ends inclined toward the arched wall *a'* or *b'*, but terminated at some distance therefrom, so as to prevent direct passage of the heated gases to and from the more centrally

located flues, compelling them to move laterally toward the end flues, the inflowing gases thus being divided, so that substantially equal portions will rise through each of the series of flues, and the outflow through the more central flows being similarly diverted in the top section, so as to cause the draft to pull equally upon the end flues.

In order to more fully utilize the heat of the gases and maintain a substantially uniform degree of heat in all portions of the radiator, I preferably make the flues C of double-conical form, with an enlarged cylindrical portion C' midway of their height, and within each flue I provide one or more partition-plates *c c*, having reduced openings *c'* there-through, the purpose of which is to insure the storing or backing up of a body of the heated gases in each of the different compartments into which the flue is thus divided, thereby insuring the more complete heating of the walls of the flues. In order to further increase the radiating-surface of the flues, they may be made of corrugated or fluted sheet metal, as indicated in Fig. 2, and the partition-plates *c* instead of being provided with the central opening *c'* may be made, as indicated in the latter figure, with opposite side openings *c² c²* and with the plates inclined; as shown, the effect being similar to that already described.

To provide for more conveniently connecting the radiator and supporting the same when applied to a smoke-pipe leading through the floor of the room in which it is located, I provide hinged supports F F near opposite ends of the lower section A, adapted to adjust themselves to the floor-line when the connection D is attached to the smoke-pipe, thus providing for slight variations in the height of the radiator above the floor, to which latter the looped ends of the supports are fastened after proper adjustment.

What I claim is—

1. A heat-radiator comprising top and bottom sections connected by one or more rows of vertical flues secured to the opposing flat wall thereof, the lower and upper walls of said sections being outwardly arched and having inlet and outlet connections respectively located midway of their length, and oppositely-arched deflector-plates in said sections cov-

ering said openings and forming reduced side passage-ways thereto, whereby the draft through the connecting-flues is equalized substantially as set forth.

5 2. The combination with the lower and upper radiator-sections of connecting double-conical flues having their reduced opposite ends connected to said lower and upper sections respectively and provided with partition-plates in the enlarged portions between
10 the sections, said plates being formed with reduced passage-ways substantially as and for the purpose set forth.

15 3. A heat-radiator comprising similar reversely-arranged top and bottom horizontal sections having opposing flat walls, and out-

wardly-arched outer walls with central openings, oppositely-arched deflector-plates in said sections covering said openings and forming reduced side passage-ways thereto, vertical double-conical flues having their reduced opposite ends connected to said opposing flat plates, and partition-plates in the enlarged portions of said flues having reduced openings therethrough substantially as and for the
20 purpose set forth. 25

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN P. SCHNELLER.

Witnesses:

D. M. STEWART,
W. G. STEWART.