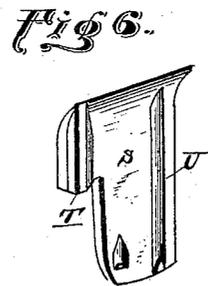
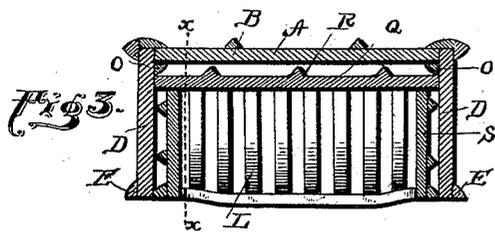
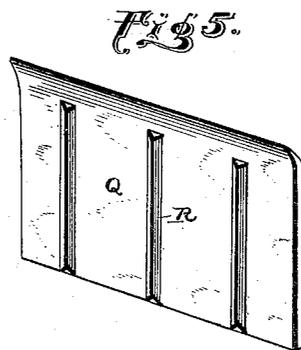
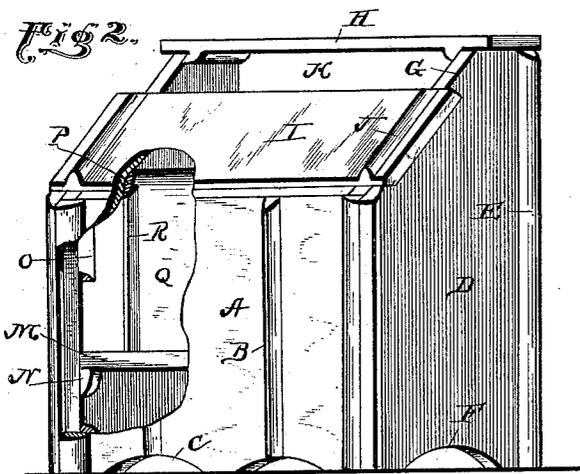
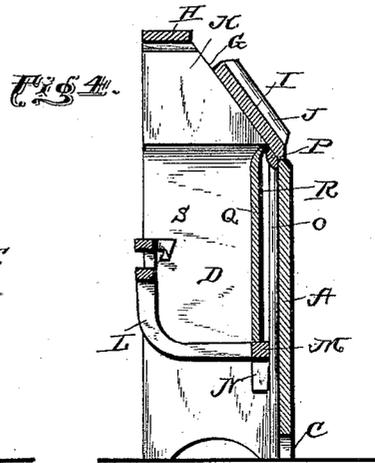
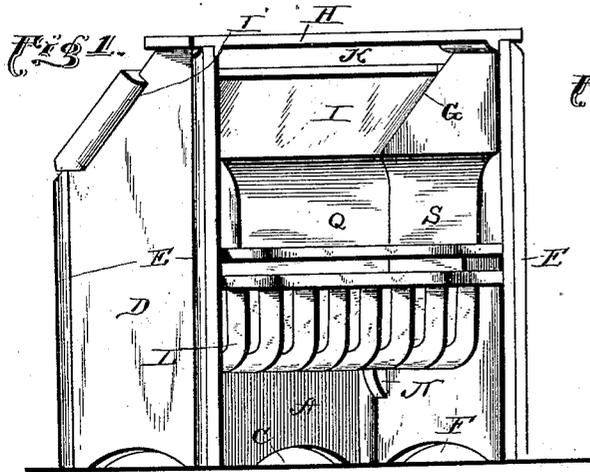


(No Model.)

L. P. WOODS.  
GRATE.

No. 395,606.

Patented Jan. 1, 1889.



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

LEWIS P. WOODS, OF BLAIRSVILLE, PENNSYLVANIA.

## GRATE.

SPECIFICATION forming part of Letters Patent No. 395,606, dated January 1, 1889.

Application filed December 14, 1887. Serial No. 257,886. (No model.)

*To all whom it may concern:*

Be it known that I, LEWIS P. WOODS, a citizen of the United States, and a resident of Blairsville, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Grates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front perspective view of my improved fire-grate. Fig. 2 is a rear perspective view of the same, showing a portion broken away. Fig. 3 is a horizontal sectional view. Fig. 4 is a transverse section on the line  $x x$ , Fig. 3; and Figs. 5 and 6 are detail views, in perspective, of the rear and side fire-plates.

Like letters of reference indicate corresponding parts throughout the several figures.

My invention has relation to improvements in portable grates for fire-places; and it has for its object to provide a grate which may be adapted to be inserted into any ordinary fire-place; and it consists of the peculiar arrangement and combinations of parts of the same, as hereinafter more fully set forth.

Referring to the accompanying drawings, the letter A represents the rear piece of the frame of the grate provided with vertical strips B, and also having suitable draft-openings, C, in its lower end.

The side pieces of the frame are indicated by the letters D D, and are each provided with edge strips, E, and also have suitable draft-openings, F, at their lower ends. The upper parts of these side pieces are inclined or slanting at G, while the extreme upper points are squared off and form a horizontal surface. To this upper horizontal surface a top piece, H, is secured, the ends of the said top pieces protruding beyond the side pieces.

An inclined top piece, I, is secured to the inclined upper portion of the side pieces, of a width narrower than the width of the incline of the side pieces and provided with ribs or strips J. The ends of the top piece, I, are extended out beyond the side pieces, and are formed or provided with downward flanges

I', said flanges fitting closely against the side pieces of the frame, whereby the pieces are kept in proper position.

Inasmuch as the top piece, I, is of a width less than the width of the inclined portion of the sides, a space is left between the said piece I and the horizontal top piece, H, forming the flue opening or passage K of the grate.

Within the frame is the ordinary grate, (indicated by the letter L,) having its rear transverse bar, M, resting upon lugs N N, secured to the side pieces of the frame.

Vertical strips O O are arranged in the corners of the frame, extending from the bottom thereof to the top, and upon which rests a cross-piece, P.

The letter Q indicates the rear fire-plate, the upper edge of which is curved and bears against the cross-piece P. The rear surface of this plate is provided with ribs or strips R, preferably triangular in cross-section, and having their rear edges even with the rear edge of the upper curved portion of the plate and bears against the rear piece of the frame, whereby an even bearing-surface is provided over the entire plate and warping is prevented. By the arrangement of the ribs, as well as the curved upper portion of the plate, dead-air spaces are also formed between the rear fire-plate and the rear piece of the frame.

The side fire-plates are indicated by the letters S S, the upper parts of the rear edges thereof being curved so as to provide a close fit against the rear fire-plate, while their outer or front edges are provided with steps or shoulders T T, adapted to fit over the upper cross-bar of the grate. The upper edges of these plates are curved outward and bear against the side pieces of the frame in like manner as the rear fire-plate, while the rear surfaces of these side fire-plates are provided with a series of vertical strips or ribs, U, preferably triangular in cross-section, said strips having their rear edges even with the rear edge of the upper curved portion of the plate to form an even bearing-surface. A space is thus formed between the rear fire-plate and the rear piece of the frame, as well as between the side fire-plates and the side pieces of the frame, so as to permit the ready access of the air through the flue-openings, thereby to a

great extent counteracting injury and damage likely to arise from the extreme heat occasioned by the fire, and preserving the frame from these injurious consequences. This construction also prevents the radiation and loss of heat through the surrounding wall or setting of the grate.

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

1. The combination of the rear piece having vertical ribs or projections, the side pieces each provided with an inclined upper portion terminating in a squared-off or horizontal surface and having edge ribs or strips, the horizontal top piece secured to the squared-off portions of the side pieces and having extending ends, and the inclined top piece provided with strips, the ends of said inclined piece extending beyond the side pieces and formed or provided with downward flanges engaging therewith, said inclined top piece being also of a width less than the width of

the inclined portions of said side pieces, whereby a space or smoke-outlet is formed between the upper edge of said inclined piece and the rear edge of the horizontal top piece.

2. The combination of the frame having the vertical outer strips or ribs, the rear fire-plate having a curved upper edge and provided with vertical ribs or strips upon its rear surface, the side fire-plates having the upper parts of their rear edges curved, their outer or front edges provided with steps or shoulders, their upper edges curved outward and their rear surfaces provided with vertical strips or ribs, the corner-strips, and the cross-strip having the ends thereof resting upon the tops of said corner-strips.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

LEWIS P. WOODS.

Witnesses:

JOHN STONEBACK,  
A. K. STONEBACK.