

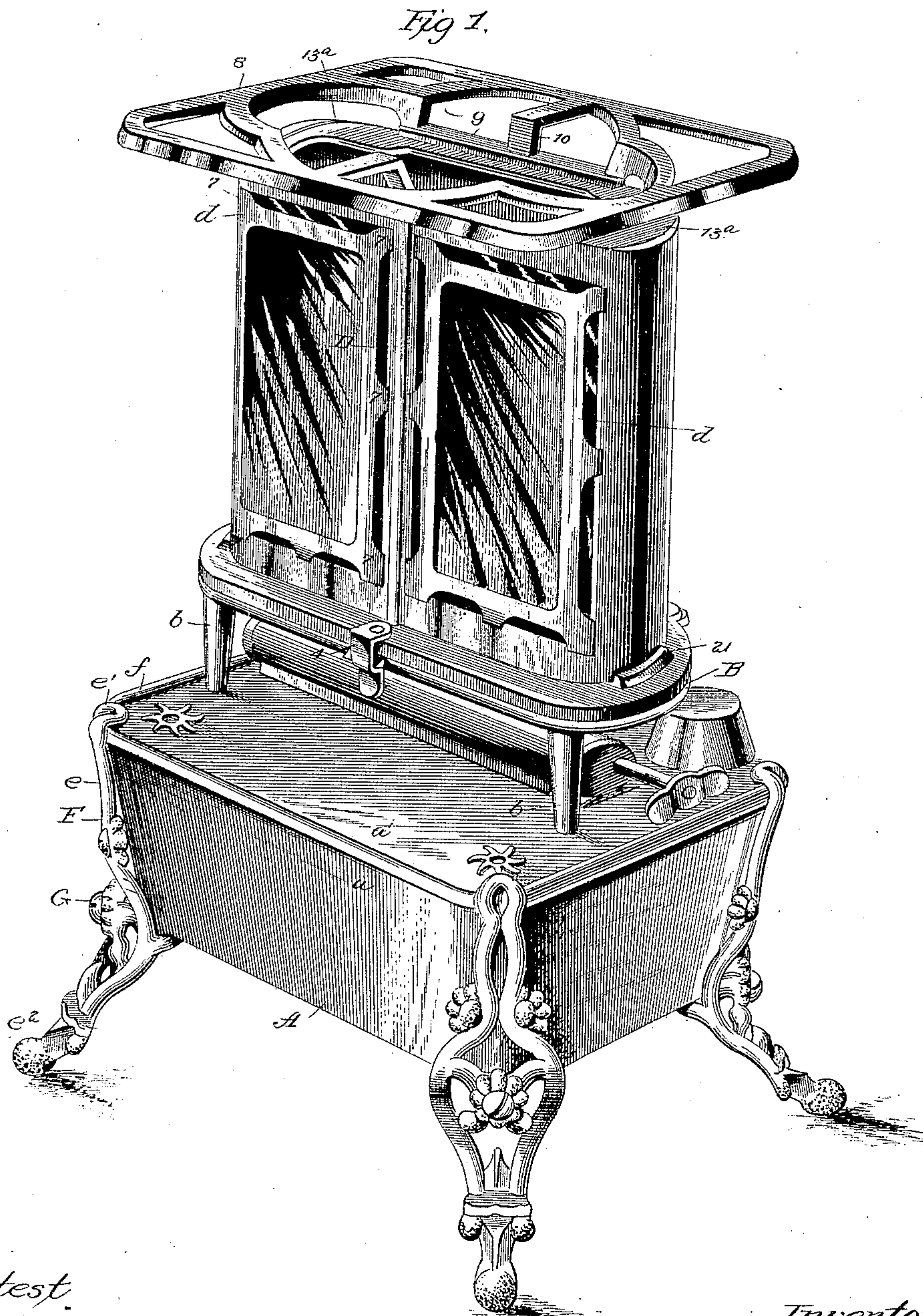
(No Model.)

3 Sheets—Sheet 1.

W. H. WILDER.
LAMP STOVE.

No. 411,209.

Patented Sept. 17, 1889.



Attest.
F. L. Middleton
Jas. M. Spear

Inventor
Wm H. Wilder

by
Mallett Donaldson & Co.

Atty.

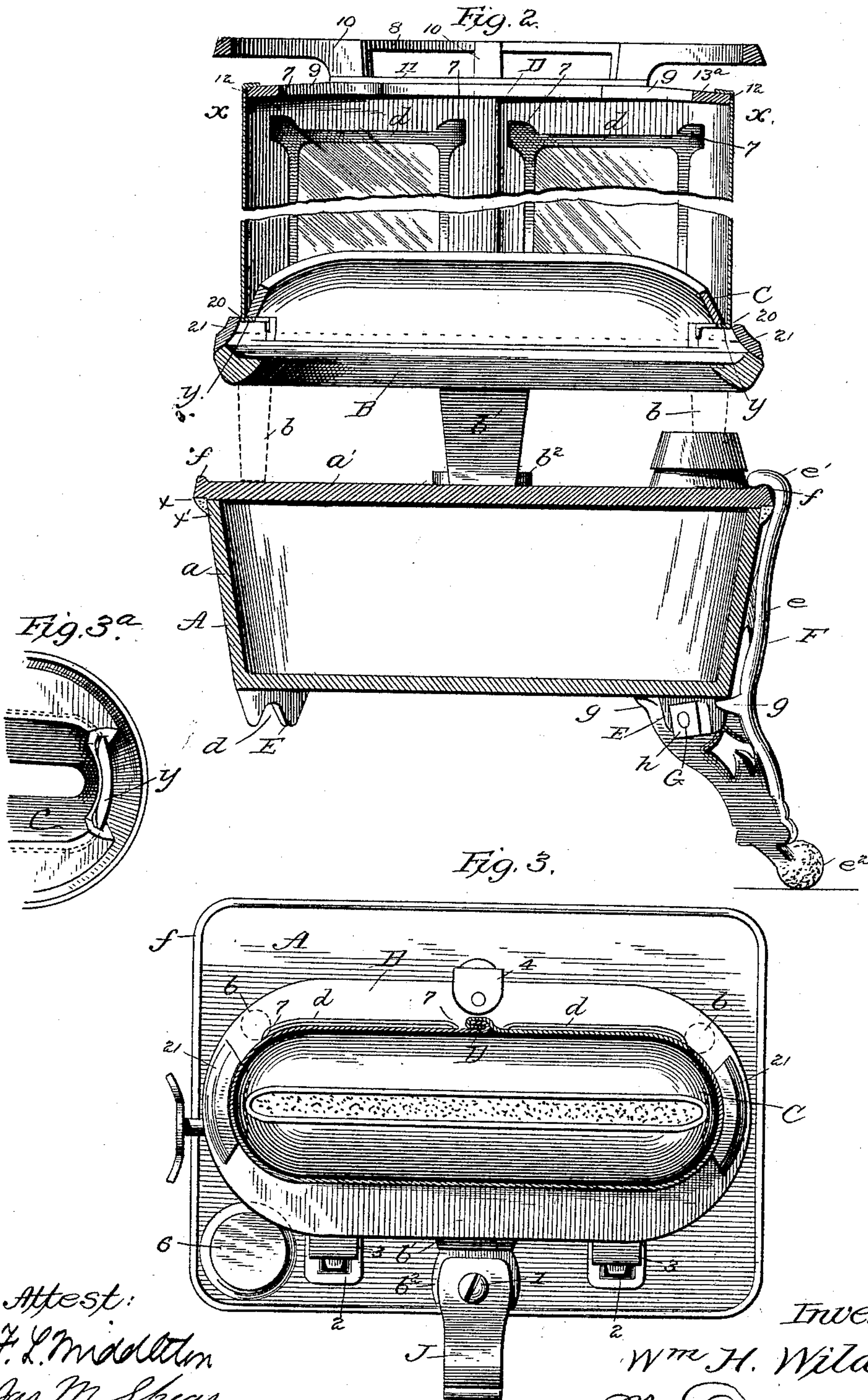
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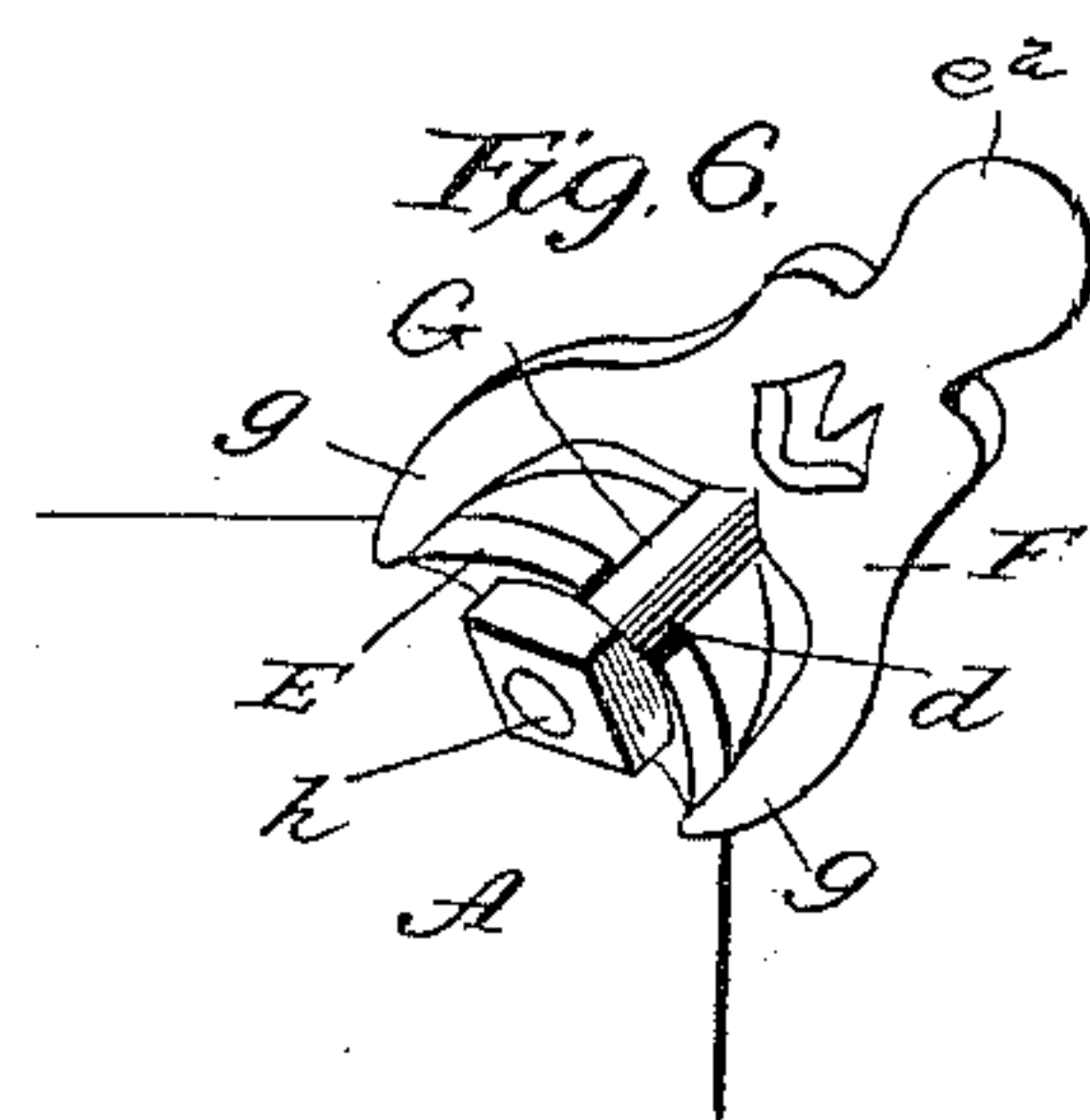
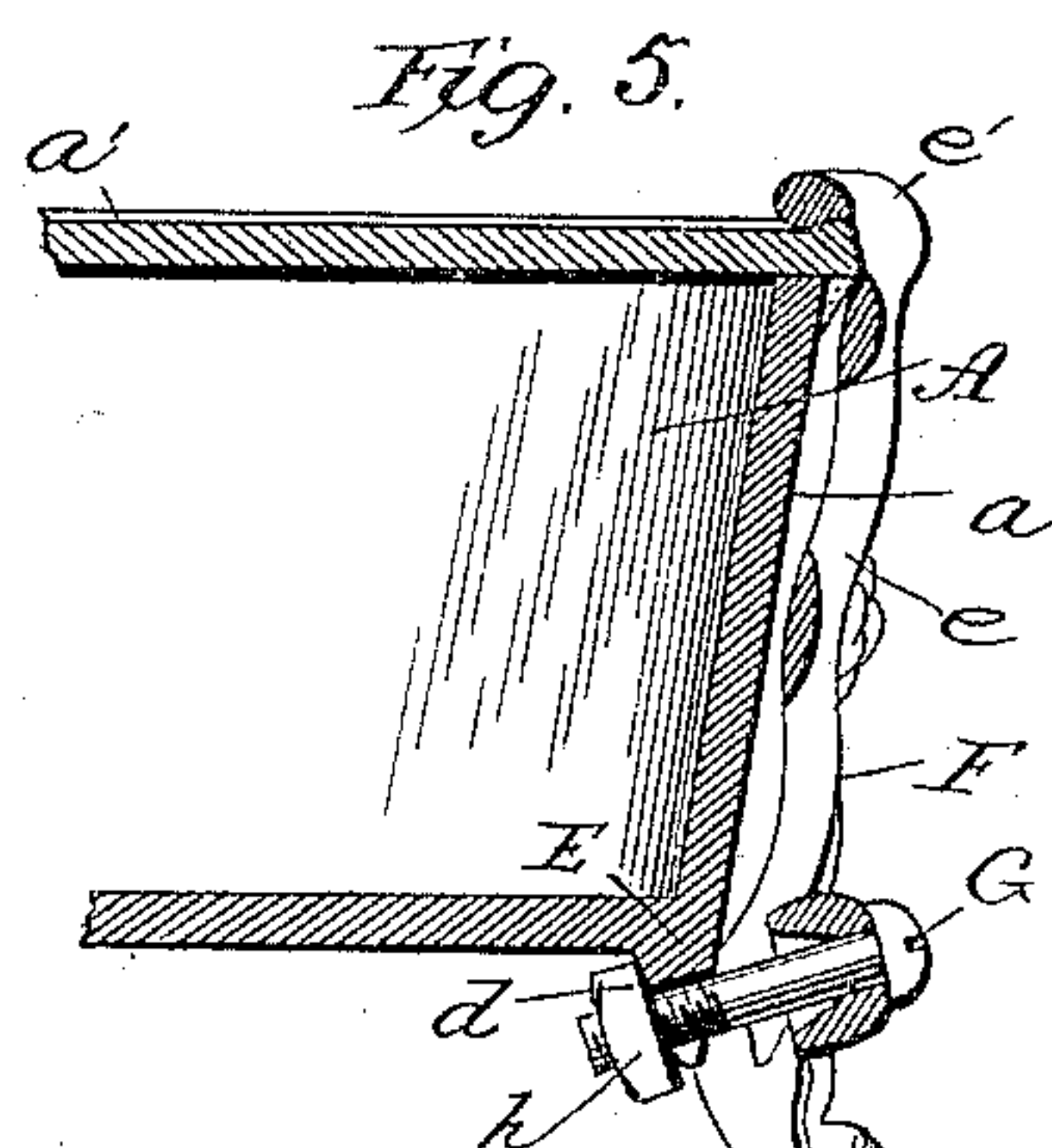
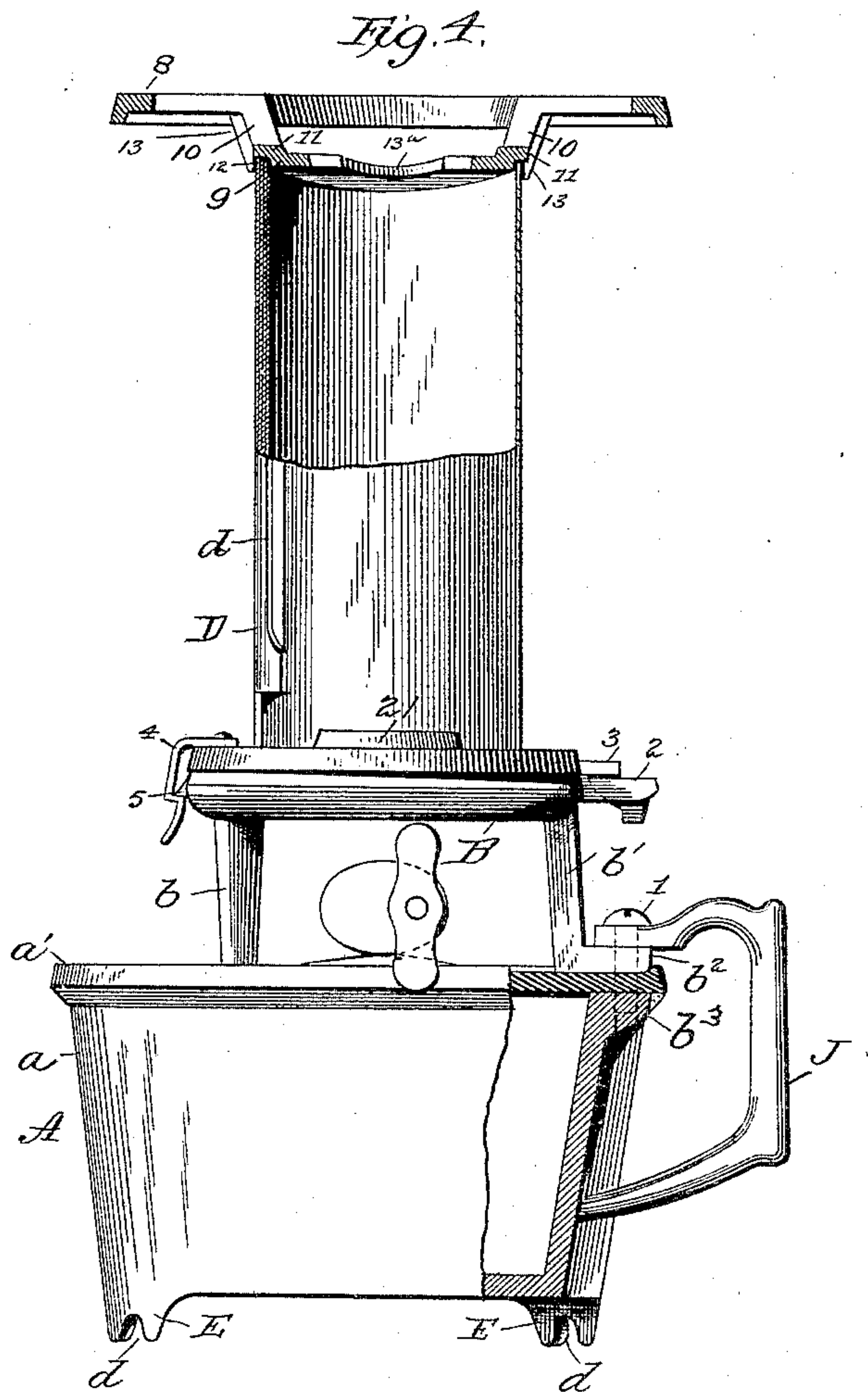
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UNITED STATES PATENT OFFICE.

WILLIAM H. WILDER, OF GARDNER, MASSACHUSETTS.

LAMP-STOVE.

SPECIFICATION forming part of Letters Patent No. 411,209, dated September 17, 1889.

Application filed November 16, 1888. Serial No. 291,012. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WILDER, a citizen of the United States of America, residing at Gardner, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Lamp-Stoves, of which the following is a specification, reference being had therein to the accompanying drawings.

My objects are generally to reduce the number of parts, to cheapen the manufacture, to insure durability, and to produce a simple and salable article.

It is desirable in lamp-stoves to provide lighting-openings of the largest size possible consistent with preserving the strength of the chimney. Heretofore it has been the practice to cut out a portion of the chimney directly in the center of the front and to form the seam at the side or end. This construction is objectionable for two reasons—namely, the front side is weakened by the cutting away of the central portion and only a limited amount of metal can be removed, and the seams at the ends detract from the looks of the stove. The chimney as constructed by me consists of a sheet of metal having openings formed near each end for receiving the mica, said sheet being bent into proper elongated form and united by its interlocking ends centrally of the front. Another feature of my lamp-stove lies in utilizing the chimney as the whole connecting and holding means for the cone and the top grate, dispensing with screws, pins, and the like. I have devised a special form of removable leg adapted particularly to stoves of this character in which a tank is used, said leg being secured to the tank at or near the lower portion thereof and having an upward extension lying along in front of the tank side, which extension is held at its upper end to the tank and preferably to the top thereof.

In the drawings, Figure 1 is a perspective view of the entire stove, looking from the front. Fig. 2 is a central vertical section through the stove, a portion of the chimney being broken away. Fig. 3 is a horizontal section through the chimney on line $x x$ of Fig. 2, the tank being shown in plan. Fig. 3^a is a plan view of the under side of the end of the cone-plate, showing the manner of bend-

ing the end edge of the chimney. Fig. 4 is an end elevation of the stove, the top grate and part of the chimney and tank being in section. Fig. 5 is a detail sectional view of the supporting-leg and tank. Fig. 6 is a detail bottom view of the tank corner and leg.

A is the tank, composed of the bottom portion a and the top a' , each of which is of cast metal. The cone-rest B is supported by the front legs $b b$, one of which is located at each end of the same, and by a central back leg b' , the foot b^2 of which rests upon and is secured by a screw 1 to the tank-cover. On each side of this leg are the bearing-sockets 2 2, which receive the angular projections 3 3 of the cone C. These projections act as pivotal bearing-points, by which the cone with the chimney and the top grate may be tilted when desired. The cone is held at the front of the cone-rest by the spring-catch 4 on the cone engaging with a lip 5 on the cone-rest. The rear leg b' is held by a single screw, as before stated, and when this is secured the whole upper part of the stove is supported on and fastened to the tank, the front legs merely bearing on the tank-top. This arrangement of supporting-legs allows the hinges and catch to be conveniently positioned without interference. The filling-aperture is located at the rear in one corner, as at 6. The whole arrangement is such that the front of the lamp is left clear and unobstructed. The handle J is also located at the rear, and the screw which secures the rear central leg to the tank-top also fastens the handle. The lower end of the handle fits in a recess, Fig. 4, formed in the back of the tank, and is thus held against lateral movement, while the upper end lies upon the foot of the central leg and is held by the screw. The formation of the tank with the recess also serves another useful function besides holding the lower end of the handle, in that a flange or lip b^3 is thus provided extending inwardly from the rear edge of the tank, and the lip receives the screw which holds the handle and all the upper parts. It will be obvious that were the screw seated in the upper edge of the tank it would be so near the edge that breakage would easily occur. By the lip, however, the screw has a firm bearing without weakening the joint.

The chimney is formed of sheet metal bent

into elongated form with rounded ends. In making this part of the article I aim to provide large openings in the front for the emission of light without impairing the strength of the chimney. For this purpose the seam D, which unites the ends of the sheet metal, is made to come directly in the center of the front, while the openings for the mica are located upon each side of this central seam. The seam acts as a supporting-post, and being formed of four thicknesses of metal it supplies any deficiency in strength which might arise from the cutting out of the metal.

As will be seen, the mica extends practically all the way across the front of the chimney, and light is thus derived from end to end of the flame. The central seam, besides adding strength where it is most desired, presents, in connection with the cut-out portions, an ornamental appearance. The mica is held by the frames *d d*, which are punched out of the sheet-metal chimney and forced to the front, being intact with the chimney at points 7.

In order to accomplish my object more fully regarding the reduction of the article to the simplest construction, I aim to make the chimney answer as the sole support and holder for the top grate, and also the sole means of connection and attachment between the said top grate and the cone. The top grate is composed of the upper bars 8 and a plate 9 of elongated form, which is connected with the upper bars by means of arms 10, it being understood that the bars, the plate, and arms are all cast in one piece. The plate 9 has a flange 11 extending along the front and rear and in a plane slightly above the bottom of the plate, thus forming a bearing for the upper part of the chimney, which when in place rests against the edge 12 of the plate and serves to support the same by means of the flange 11, which rests upon it.

Projections 13 are provided at the front and rear of the plate, which extend below the edge of the chimney and thus serve to retain the same in place against outward movement; and it will be noticed, also, that tendency to inward movement under the pressure of the article being heated is resisted by the edge of the plate. The grate is held by bending the upper edge of the chimney at the ends over the projecting ends of the plate 9, as shown in Figs. 1 and 2. This has been found to be a highly effective mode of fastening the grate and chimney together. It does away with screws, pins, or the like, and obviates the necessity of drilling or other work, which is a decided advantage in articles of this character intended for household use and consequently to be placed upon the market at a low figure. It will be noticed that the regular and symmetrical contour of the chimney is described. The chimney is the same height at the ends as at other points, and in order to allow the bending to be done the ends 13^a of the plate 9 are bent downward slightly, so

that the edges adjacent to the ends of the chimney are somewhat below the plane thereof and the metal can be easily turned over. The edges of the chimney at the ends may project all slightly upward in order to attain the same end as regards bending without bending down the ends of the plate 9. The chimney rests upon the horizontal cone-plate, with its lower edge abutting squarely thereupon, and for the purpose of connecting the chimney the upwardly-extending walls of the cone are provided with slots a little above the plane of the horizontal cone-plate, so that the connection can be effectively completed by simply bending inwardly the end edge *y*, Figs. 2 and 3, of the chimney at these points. Curved ribs 21 are formed on the cone-plate, and the chimney-edge fits between these and the wall of the cone. The bending of the edge of the chimney is done from beneath the cone-plate, and the ribs serve to cover the slots in the cones and the ends of the chimney. It will be noticed that this arrangement avoids the use of projecting tongues, as the slots are above the plane of the lower edge, and there is no waste of material. The grate resting directly upon the edge of the chimney and the latter bearing with its edge squarely against the horizontal cone-plate make a strong construction, as the pressure of the weight is directly down and in a line coincident with the chimney-walls.

I now come to the special form of leg which is particularly adapted to be used in combination with a lamp-stove.

The tank is cast with projections E at each lower corner, which ordinarily answer the purpose of feet. These projections are notched, as at *d*, to receive screw-pins, as hereinafter described. The leg F has an upper portion *e*, adapted to lie along the side of the tank and to hook over or engage with the cover by means of the hooked end *e'*, adapted to fit the rib *f'*, formed on the cover. At a point adjacent to the lower edge of the tank the leg broadens out and is provided on its inner side with projections *g g*, which go under the tank on either side of the small projections E. From this point the leg inclines outwardly to the foot *e*², the hooked end engaging with the cover and the projections engaging with the bottom of the tank constituting the supporting parts of the leg, and in order to draw the said leg into position I employ a screw G, which passes through the leg and the notch *d* of the projection E, where it is held by a nut *h*. The hooked upper end of the leg serves also the purpose of securing the cover and aids in resisting straining or separating of the cover and tank.

While I have shown the tank top or cover as made separate from the body, it will be understood that it is only necessary for the success of this portion of my invention that the leg engage or fit over the upper edge of the tank or over the top, whether it be separate from or integral with the body, which connection

avoids the use of additional securing means at this point, such as screws, pins, or bolts.

I claim as my invention—

1. In a lamp-stove, the tank, the top grate, 5 the chimney formed of sheet metal bent into elongated form and having the lighting-opening extending approximately all the way across the front or from end to end of the wick, said chimney being united at the center 10 of the front, forming a seam intermediate of the lighting-openings, which serve to support the top grate, substantially as described.

2. In combination, the horizontal cone-plate having the cone projecting upward there- 15 from, the chimney having its lower edge resting upon the cone-plate, the said cone being formed with slots in its upwardly-extending wall above the surface of the cone-plate and the said chimney having a portion of its edge 20 bent therein, substantially as described.

3. In combination, the chimney and the grate, said grate resting upon a portion of the upper edge of the chimney, whereby the said grate is supported by the metal on edge, said 25 grate having projecting ends 13^a bent downwardly, and the said supporting-chimney having portions of its upper edge bent over the said downwardly-bent ends 13^a to connect the parts, substantially as described.

30 4. In combination, in a lamp-stove, the tank and the leg, said leg being formed to lie along the side of the tank and to engage with its top, and means for holding the leg at the bottom of the tank, substantially as described.

35 5. In combination, in a lamp-stove, the tank and the leg, said leg having a hooked upper end to engage with the tank-top, and the screw passing through the leg and engaging with the tank, substantially as described.

6. In combination, in a lamp-stove having 40 the notched projections, the tank, the leg having its end engaging with the tank-top, the screw passing through the leg, and the notch in the projection on the tank and the nut on the inner end of the screw, substan- 45 tially as described.

7. In combination, in a lamp-stove, the tank, the leg extending along the side of said tank and having its end engaging with the top 50 thereof, the two projections on the leg to bear upon the corner of the tank, and the screw for drawing the leg into proper position.

8. In combination, a lamp-stove, the tank made of two parts—namely, the cover and the body portion—and a supporting-leg held to 55 the tank and having a hooked end engaging with the cover, substantially as described.

9. In combination, in a lamp-stove, the tank provided with a rib, and a supporting-leg held to the tank and having an upward extension 60 with a hooked end engaging with the rib, substantially as described.

10. In a lamp-stove, and in combination, the tank and the removable legs therefor, and means for removably securing the legs to the 65 tank at or near the lower portion thereof, each of said legs having a portion extending upwardly in front of the tank-side, the upper end of which is connected to the tank, substan- 70 tially as described.

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

WILLIAM H. WILDER.

Witnesses:

H. D. BURNHAM,
HATTIE M. GATES.