(No Model.) 2 Sheets—Sheet 1.

C. LIGHT.

STOVE LINING.

No. 494,578. Patented Apr. 4, 1893.

Fig. 1.

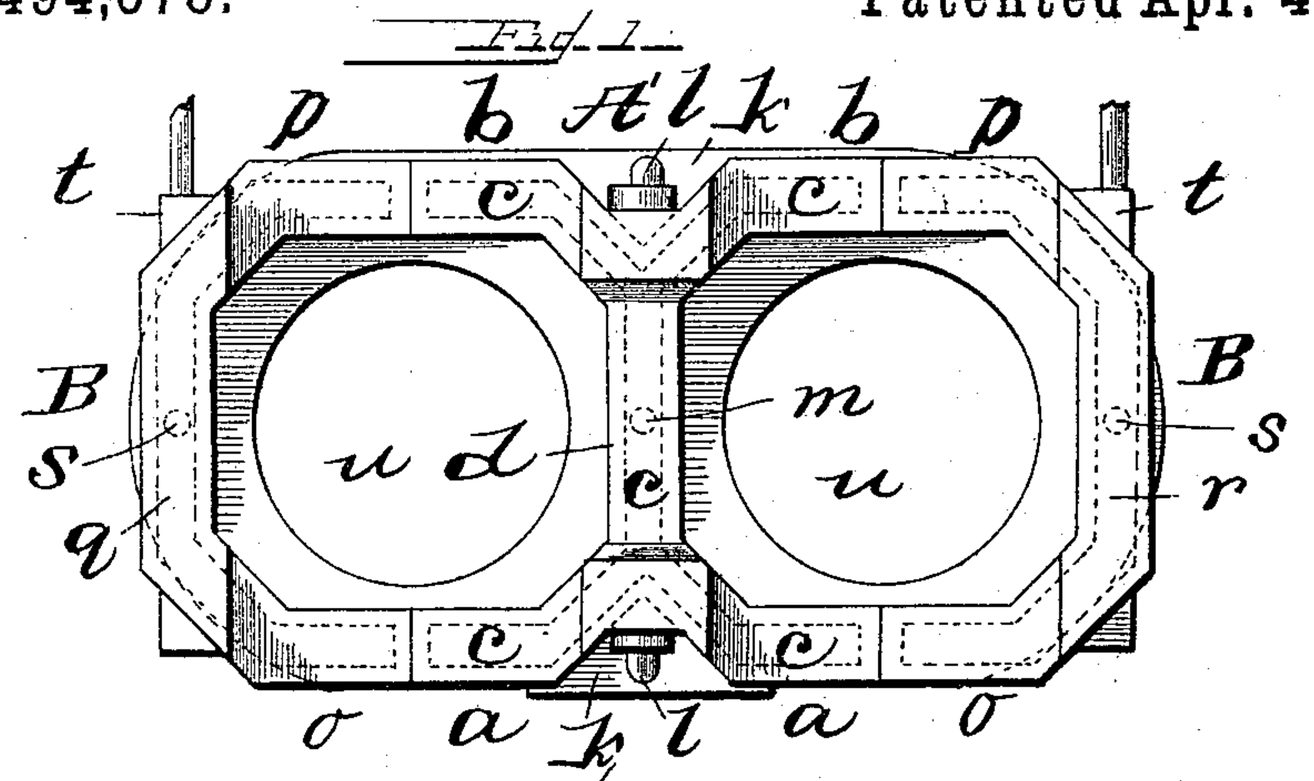


Fig. 2.

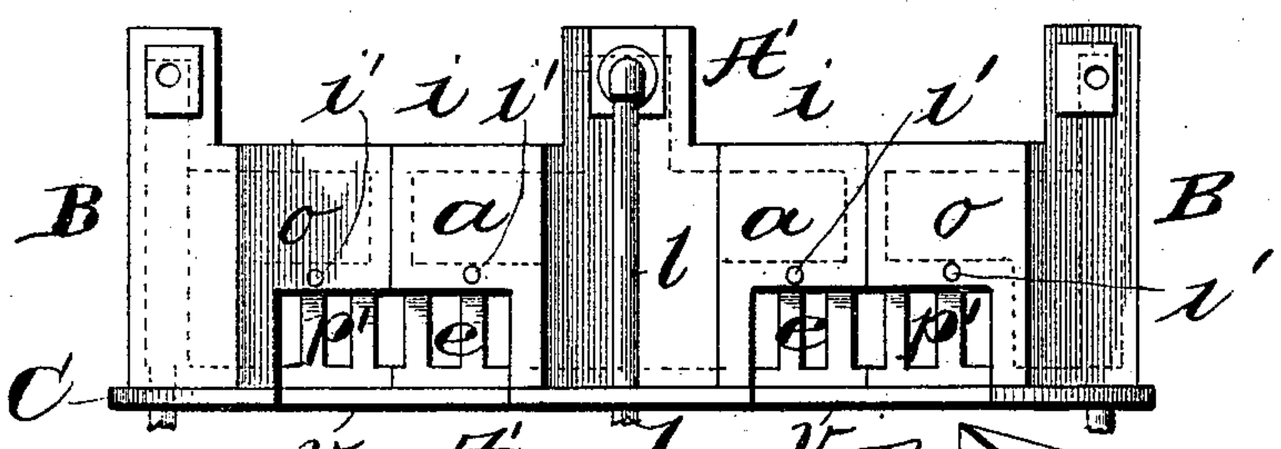
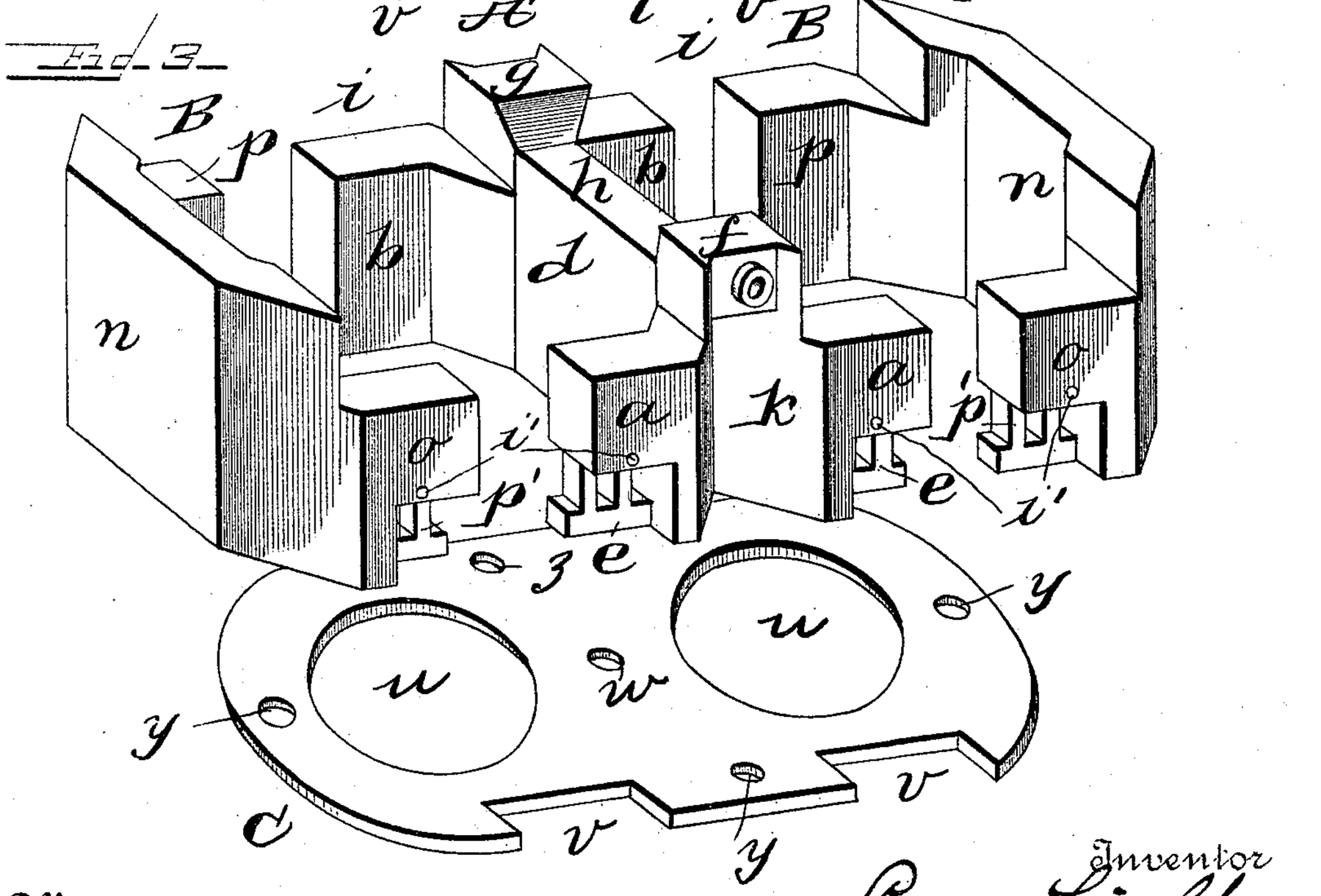


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

C. LIGHT.

STOVE LINING.

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Fig. 4.

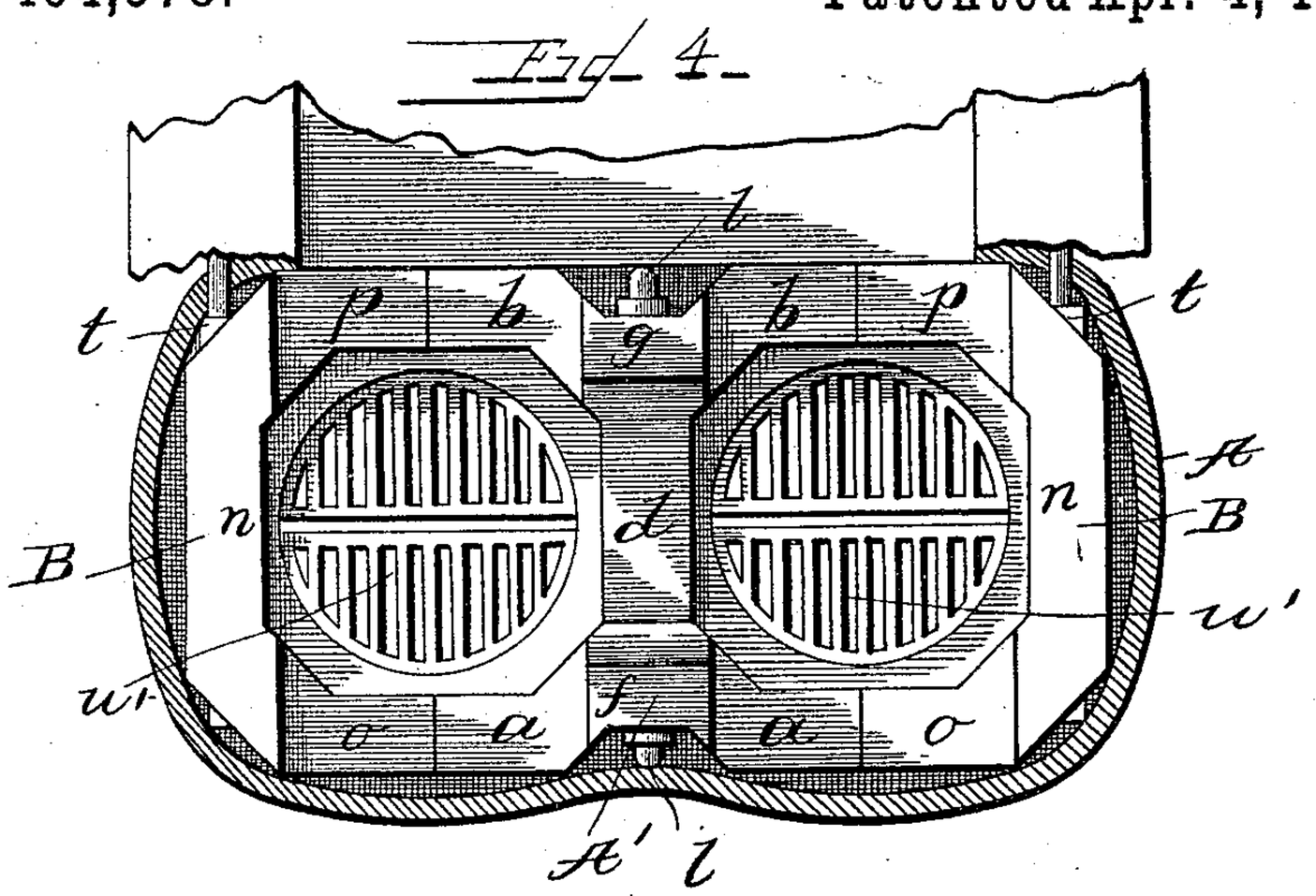
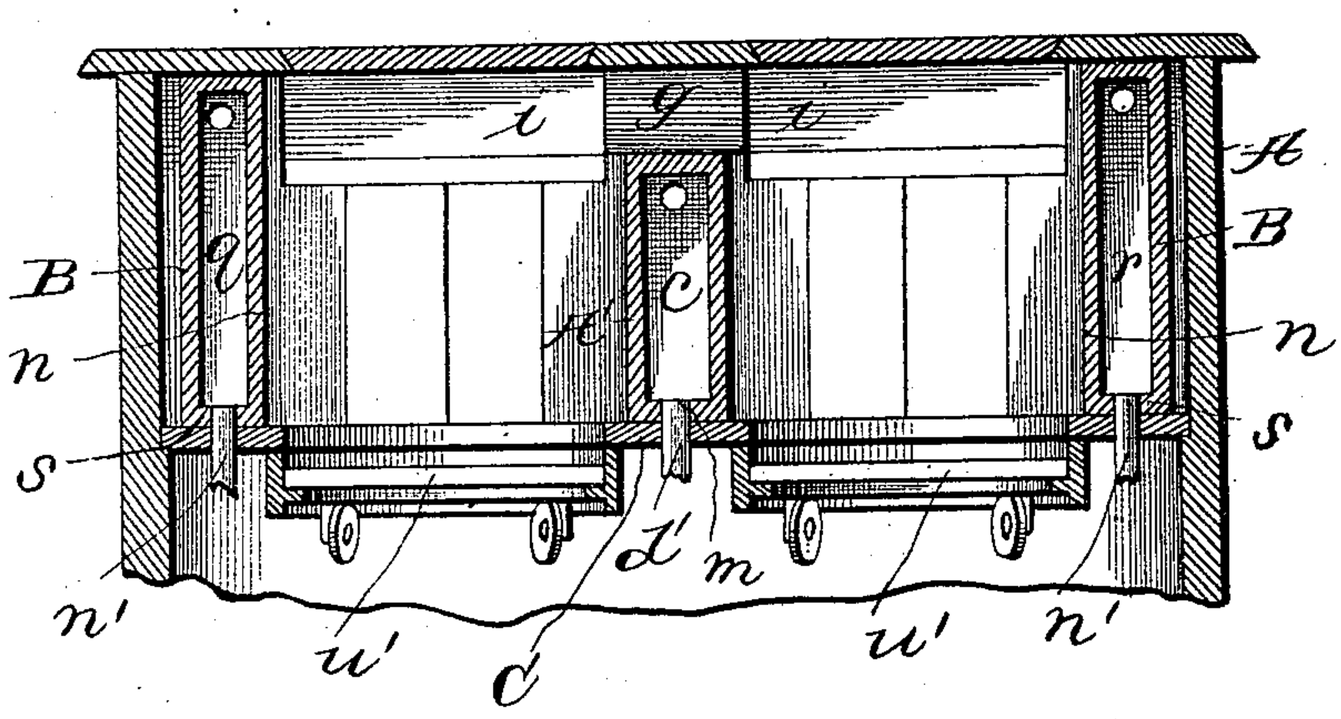


Fig. 5.



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UNITED STATES PATENT OFFICE.

CYRUS LIGHT, OF LEBANON, PENNSYLVANIA, ASSIGNOR TO GEORGE F. LIGHT, OF SAME PLACE.

STOVE-LINING.

SPECIFICATION forming part of Letters Patent No. 494,578, dated April 4, 1893.

Application filed April 11, 1892. Serial No. 428,688. (No model.)

To all whom it may concern:

Be it known that I, CYRUS LIGHT, a citizen of the United States, residing at Lebanon, in the county of Lebanon and State of Pennsylvania, have invented certain new and useful Improvements in Stove-Linings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to cooking-stoves and has especial reference to that class in which water is heated in the fire-pot or furnace of the stove, and has for its object certain improvements in linings for the fire-pot or furnace whereby the maximum water heating surface is obtained.

As heretofore constructed, the water heating chamber, or water-back as it usually designated extended only around the sides and ends of the furnace of a stove or range, and to get the full benefit of the water heating surface the furnace must be kept full of fuel, and when any portion of the water-back becomes burned, the entire structure must be removed. It is my purpose to utilize the heat contained in the center and the sides and ends of the body of fuel, when the furnace is being run full, or both sides and ends, when only one side of the furnace is used; and to construct the lining in separate sections, one of which forms the center, and each of the remaining two an end section, so that if either is burned out it can be renewed without renewing the other two sections.

The invention will be fully disclosed in the following specification and claims.

In the accompanying drawings which form part of this specification Figure 1, represents a top plan view of my improved stove lining separate and distinct from a stove; Fig. 2, a front elevation; Fig. 3, a detail perspective showing the sections of the lining separated, and the supporting plate; Fig. 4, a view of part of a stove with the upper plates removed showing my improved lining applied, and Fig. 5 a transverse vertical section through the furnace or fire pot of a stove.

Reference being had to the drawings and the letters thereon A indicates a stove *a'* the middle section of the lining which is provided with lateral extensions *a a* in front, and *b b* in the back end, both sets of which are hollow and form water chambers *c c*, and the front and back parts of said section are connected by a bar *d* which is also hollow and forms a continuation of the chambers *c c* by connecting the same. In the outer end and on the lower side of each extension *a* is a grated section *e* to admit air to the fuel chamber formed by the lining and above the grate on which the fuel rests. The center bar *d* is lower than the ends at *f g* and forms a passage *h* for the hot gases over the top of said bar, and the extensions *a a* and *b b* are reduced in height to form draft passages *i i;* and in the front and rear end of the section A in the center thereof are recesses *k k* which reduce the weight of the section and form passages for the hot water pipes *l l* which pass downward and conduct the hot water to a suitable reservoir. Cold water is supplied to said section through the lower side of the bar *d* by a suitable pipe *d'* (not shown) connecting with the aperture *m* shown in Figs. 1 and 5.

B, B, indicate the end sections of the lining, and each consists of an end wall *n* and front and rear right angled extensions *o p* which correspond with and abut against the lateral extensions *a a* and *b b* respectively of the section A, and the front extensions *o o* are each provided with a grated section *p'* which coincides with the grated section *e* of the extensions *a a*. The end sections B, B, are hollow and form water chambers *q r* respectively, and said chambers do not communicate with the chamber *c* of the section A, but are supplied with cold water through the lower side of the end wall *n* by a pipe *n'* connecting with the aperture *s;* and hot water is discharged, preferably at the rear side, of the section, as at *t*. The extensions *o p* are lower than the end wall *n*, and in conjunction with extensions *a a*, *b b* from the front and rear draft passages *i i* to which reference has already been made. Above each grate section *e* and and *p'* is an aperture *i' i'* through the lining for the insertion of a bar (not shown) in each aperture to support the body of fuel while cinders are being removed through the grate (not shown) over which the lining is supported.

C indicates a base-plate on which the sections A, B, B, rest and in the base-plate are openings *u u* under each of which a grate *u'* is supported. The plate C is cut away at *v* in front of the grated portions of the lining to allow any ashes that may work through said grated portion to fall into the ash pan of the stove; and through the plate are formed holes *w*, for the water supply pipe for the section A, *y y* for sections B, B, and *z z* for the discharge pipes from section A.

It is obvious that the sections A and B, B, can be manipulated to supply stoves with three or more fire-pots or fuel chambers, and that the two end sections can be brought together to form a single fuel chamber.

By the construction shown the fuel is confined within the walls of the lining and is surrounded on all sides by water chambers, whereby the full effect of the burning fuel is utilized to heat water without in any degree interferring with the utility of the fuel for cooking purposes; and the sections can be readily renewed when burned out.

Having thus fully described my invention, what I claim is—

1. A lining for stoves consisting of separate end sections the length of the width of a furnace or fire-pot and the depth thereof and provided with inward extensions; and a center separate section crossing the furnace transversely and separating it into two distinct fuel chambers and provided with lateral extensions at both ends and on both sides.

2. A lining for stoves consisting of a hollow center section having lateral extensions, and hollow end sections having extensions corresponding with and abutting said lateral extensions, and suitable supply and discharge apertures for said sections.

3. A lining for stoves consisting of a hollow center separate section crossing the furnace transversely and provided with front and rear lateral extensions having vertical grates in the front extensions; and separate hollow end sections provided with front and rear inward extensions having vertical grates in the front extensions, and suitable supply and discharge apertures for said sections.

4. A hollow lining for stoves made in separate sections extending from the top to the bottom of the furnace or fire-pot on all four sides and having a vertical grate at the lower edge of the front wall and a draft passage in the upper edges of the front and rear walls.

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

CYRUS LIGHT.

Witnesses:
LEWIS REHR,
ARTHUR M. PETERS.