2 Sheets—Sheet 1.

C. H. BUCK.

HEATING-STOVE

No. 183,534. Patented Oct. 24, 1876.

Fig 1.

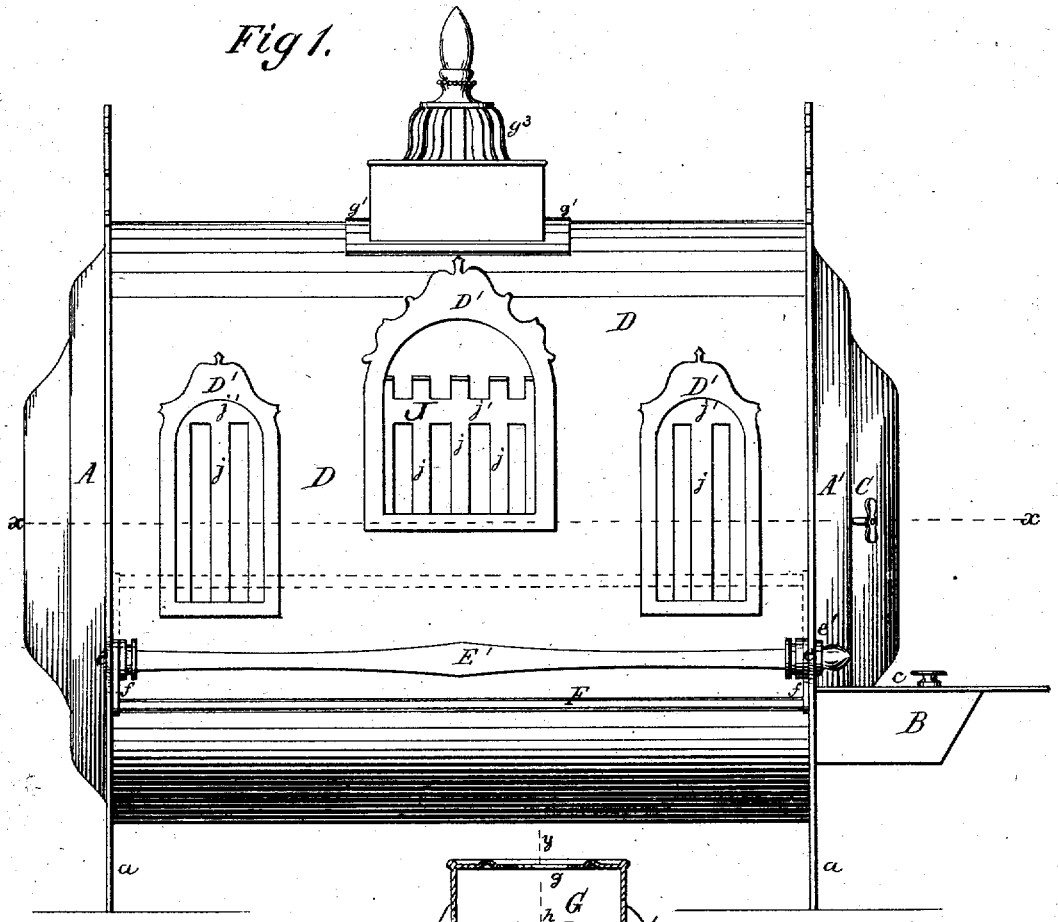


Fig 2.

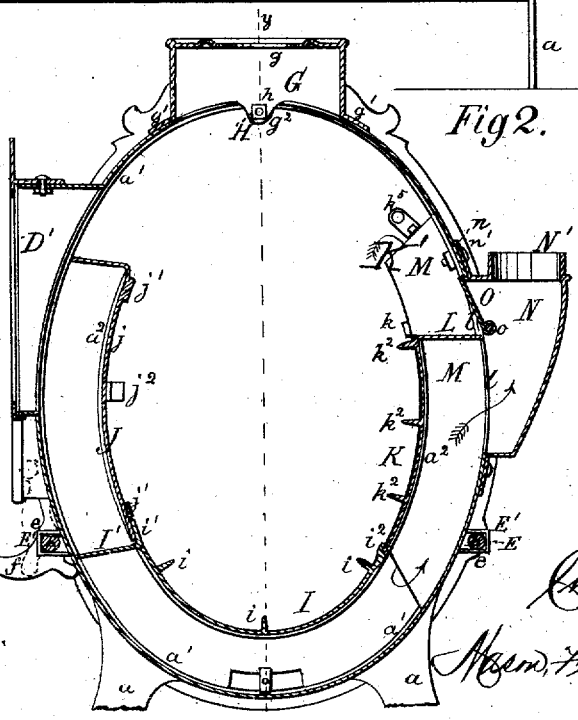
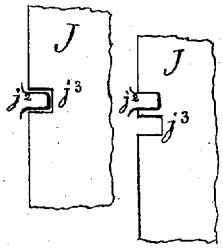


Fig 5. Fig 6.



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2 Sheets—Sheet 2.

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HEATING-STOVE.

No. 183,534. Patented Oct. 24, 1876.

Fig 3.

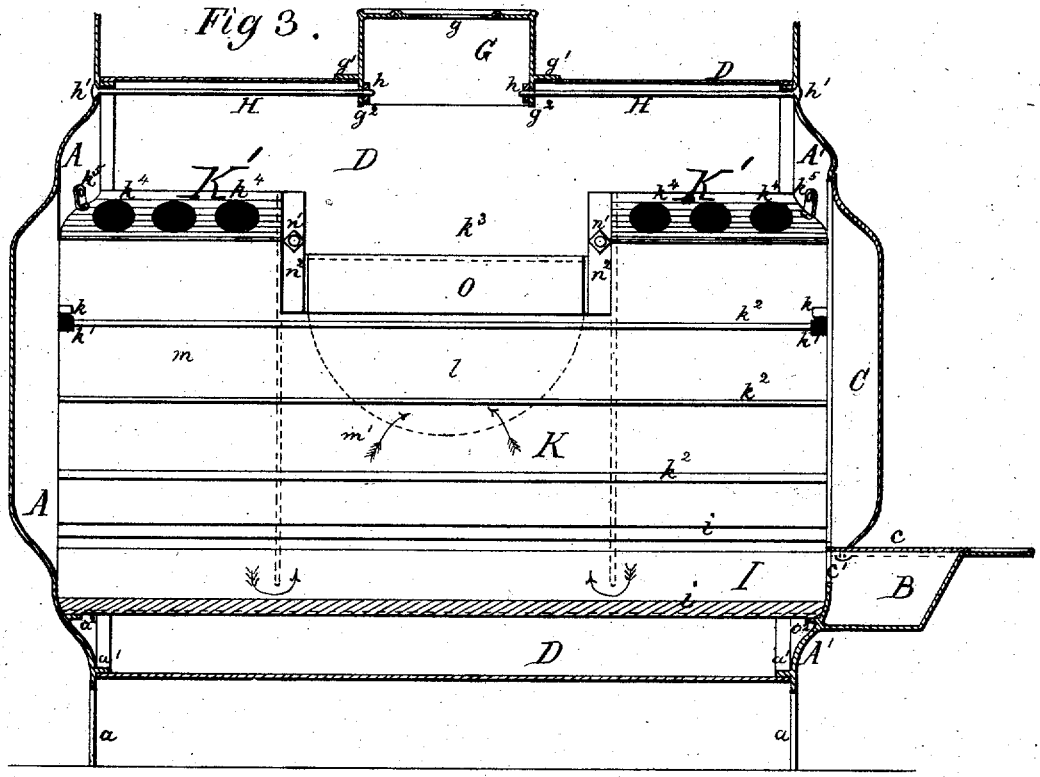
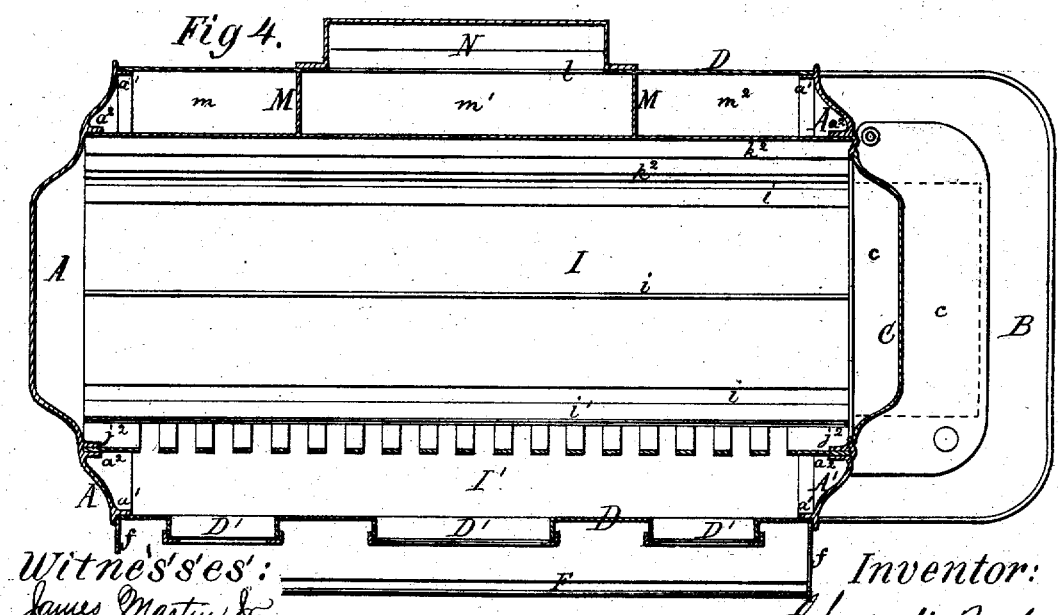


Fig 4.



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UNITED STATES PATENT OFFICE.

CHARLES H. BUCK, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **183,534**, dated October 24, 1876; application filed September 11, 1876.

To all whom it may concern:

Be it known that I, CHARLES H. BUCK, of the city and county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Heating-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of my improved heating-stove. Fig. 2 is a vertical central section of the same. Fig. 3 is a vertical longitudinal section of the same in the line *y y* of Fig. 2. Fig. 4 is a horizontal section in the line *x x* of Fig. 1. Figs. 5 and 6 are detailed views, illustrating the manner of fastening the linings and fender in their proper places.

My invention relates to that description of heating-stove which is constructed with a horizontal sheet-iron cylinder, and heads of cast-iron, with flanges or rims to receive the cylinder and support it. The heads have also rims or supports for keeping in place the cast-iron linings or plates in such a manner that an opening or flue between the outside cylinder and inside plate or lining is formed.

The nature of my invention consists in certain constructions, combinations, and arrangements of parts hereafter described and specifically claimed, whereby a heating-stove of the description above mentioned is greatly improved in the following particulars, viz: First, it is provided with dividing flue-strips, so as to make a return-flue instead of a flue going around the stove-lining, as is usual in this class of stoves, thus giving greater length of flue and more perfect combustion. Second, the linings are placed in the stove and fastened in position in a superior manner. Third, an open fender is arranged on the inside of the stove, opposite the mica windows, and along the whole length of the cylinder, and this fender is formed of a broad slotted plate, and it serves to protect the mica of the windows from injury by preventing the fuel from coming in contact with them, and at the same time it permits light and heat to pass through it toward the windows and front portion of the cylinder or case. The said fender is also applied in such a manner that it can be removed without taking away any other part of the stove. Fourth, the stove is braced in such a manner, by braces between the heads outside the cylinder, that no improper strain is produced when the plates are being secured or drawn together, thus lessening the chances of breaking the plates. Fifth, an adjustable foot-rail is provided, which can be raised up close to the cylinder when not in use as a foot-rest or when being shipped. Sixth, a peculiar way of fastening the pipe-collar is afforded. Seventh, an improved way of applying the damper is devised; and, finally, the whole structure is fastened together in a better manner than heretofore. The rods, being on the outside, cannot be burned off, and always can be got at more conveniently, if required to be screwed up.

In the drawings, A represents the back plate of my improved stove, which in this case has the shape of an elliptic cylinder. The said plate A is provided with legs *a* and elliptic parallel flanges a^1 and a^2. The front plate A′ has legs *a* and flanges a^1 a^2 similar to those on the plate A, but in addition thereto is an ash-box, B, a door, C, and a horizontally-swinging draft-regulator, *c*. The door C extends down to the draft-regulator *c*, below which the door-opening of the plate A′ extends, and forms a space, *c′*, for the admission of the draft to the fire. The flanges a^1 on both plates A A′ form the support of the covering D of the stove, which covering is made of one piece of sheet metal, and joined in the usual manner at the lowest point. By means of lugs *e* on the plates A and A′, and rods E with nuts *e′* outside of the stove, I fasten the lower part of the stove together.

To give the stove a more elegant appearance, and to protect the stove-covering from undue strain, I provide the plates A A′ with ornamental stays, in the shape of casings E′, around the rods E. To one of the said rods E a swinging foot-rail, F, is attached, by means of arms *f*, so shaped that they sustain the said foot-rail in its normal position by bearing against the cover D and the flange a^1. The said foot-rail is turned up against the stove when not used, or when the stove is packed up for transportation. Above the said foot-rail a number of mica windows, D′, are inserted in the usual manner into the covering D.

The top of the stove has a crown-piece, G, with a top opening, *g*, fastened to the covering D by means of a continuous surrounding

flange, g', of appropriate shape, and two rods, H, which rods connect the plates A and A′ with lugs g^2 on the crown-piece G, and below its flange g^1, by means of nuts n. This described construction enables me to place the rods H and their nuts h inside the stove with a fair access to the nuts, while the heads h' of the bolts are embedded in the plates A A′, as shown in Fig. 3.

The opening g in the crown-piece G may be closed with an ornamental cover, g^3, as shown in Fig. 1.

When the stove has been so far completed, the lining is inserted through the door in sections, which find their support on the rims a^2. The first section inserted is the bottom lining I, which has a number of longitudinal ribs, i, upon which the fuel is placed, wherewith air-channels below the fuel are created, which promote combustion. Near its upper edge, opposite the mica, and below the said windows, the lining I has an angular flange, I′, which forms a partition between the said lining and the covering D. The lining I projects above the said partition in the shape of an upright flange, i^1.

Above the flange I′ a fender, J, is placed, and secured by the rims a^2. The said fender consists of parallel strips j, curved like their supporting-rims a^2, and united by longitudinal bars j^1, and the said strips may bend at the top toward the covering D, or they may be cut off above the top bar j^1. The fender J is kept on the rim a^2 by means of lugs j^2, over which it is passed by means of notches j^3, and then vertically slipped between the rim a^2 and the said lugs, as shown in Figs. 5 and 6, in detail. Opposite the fender J, and joined to the bottom lining I by means of tongue and groove, as shown at i^2, the lining K is inserted in the stove and placed on the rims a^2, and secured there by lugs k with the aid of notches k^1 operated in a similar manner as the fender J. The said lining K has longitudinal ribs k^2 similar to those i of the bottom lining I. At the top the lining K closes up against the covering D by means of inclined flanges K′ near both ends, leaving between the said flanges K′ a passage, k^3, for the smoke, and the said passage is separated from the space between the lining K and covering D by a horizontal partition-flange, L, and two vertical partition-flanges, M, which latter extend around the lower side of the lining K to the bottom lining I, and thereby divide the space between the lining K and the cover D into three parts, m m^1 m^2. The inclined flanges K′ are provided with openings k^4, by means of which communication between the fire or fuel chamber and the passages m m^2 is effected. Above the flanges k^1 buttons k^5 are pivoted to the plates A and A′, which, when turned down, prevent said flanges from being moved upward. The passage k^3 leads, by means of an opening, l, in the covering D, into a smoke-chamber, N, which is fastened, by means of a continuous flange, n, and stove-bolts n^1, to the lining K, which, for that purpose, is provided with lugs or small flanges n^2 on the partitions M. The top of the said smoke-chamber N is provided with a collar, N′, upon which the smoke-pipe is fitted. The opening l extends below the horizontal flange L, and thus opens communication between the passage m^1 and the smoke-chamber. The opening above the said flange L may be closed by a valve, O, having a fulcrum-rod, o, which is passed through the walls of the smoke-chamber, and there provided with a hook or handle for the purpose of operating the valve. When the passage k^3 is open the valve O lies flat upon the flange L, and the smoke passes freely out of the stove into the smoke-chamber N, and from there into the smoke-pipe. When the passage k^3 is closed by the valve O, as shown in Fig. 2, the smoke from the stove enters through the holes k^4, the passages m m^2, passes around the ends of the partitions M into the passages m^1, and from there into the smoke-chamber N, and finally into the stove-pipe.

The fender J admits heat through it to the casing, and both light and heat to the mica windows, and prevents fuel from coming in contact with and injuring the mica. The smoke-chamber N is fitted loosely but snugly upon the casing D, and fastened to the lining K by means of the bolts n^1, and the said lining is firmly seated upon the lining I by means of the tongue-and-groove joint i^2 and buttons k^5.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the plates A A′, having rims a^2, lugs k, and buttons k^5, with the lining K, having notches k^1, substantially as and for the purpose set forth.

2. The combination of the plates A A′, having rims a^2 and lugs j^2, and the fender J, having notches j^3, substantially as and for the purpose set forth.

3. The combination of the fender J, the lining I having flanges I^1 and i^1, tongue-and-groove joint i^2, with the lining K, the buttons k^5, the lugs j^2 k, and the rims a^2, substantially as and for the purpose set forth.

4. The combination of the plates A A′, the rods E, and stays E′, substantially as set forth.

5. The combination of the crown-piece G, the rods H, rods E, and sheet-iron casing D, lining K, and the plates A A^1, substantially as and for the purpose set forth.

6. The combination of the sheet-iron casing D and plates A A′, lining K, the flange n of the smoke chamber N, and the bolts n^1, substantially as and for the purpose set forth.

7. The combination of the fuel or fire-chamber flues m m^1 m^2, the passages k^3 and l, the valve O, and the smoke-chamber N, substantially as and for the purpose set forth.

Witness my hand in the matter of my application for a patent for an improved heating-stove.

CHARLES H. BUCK.

Witnesses:
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E. W. EVERT.