

No. 698,630.

Patented Apr. 29, 1902.

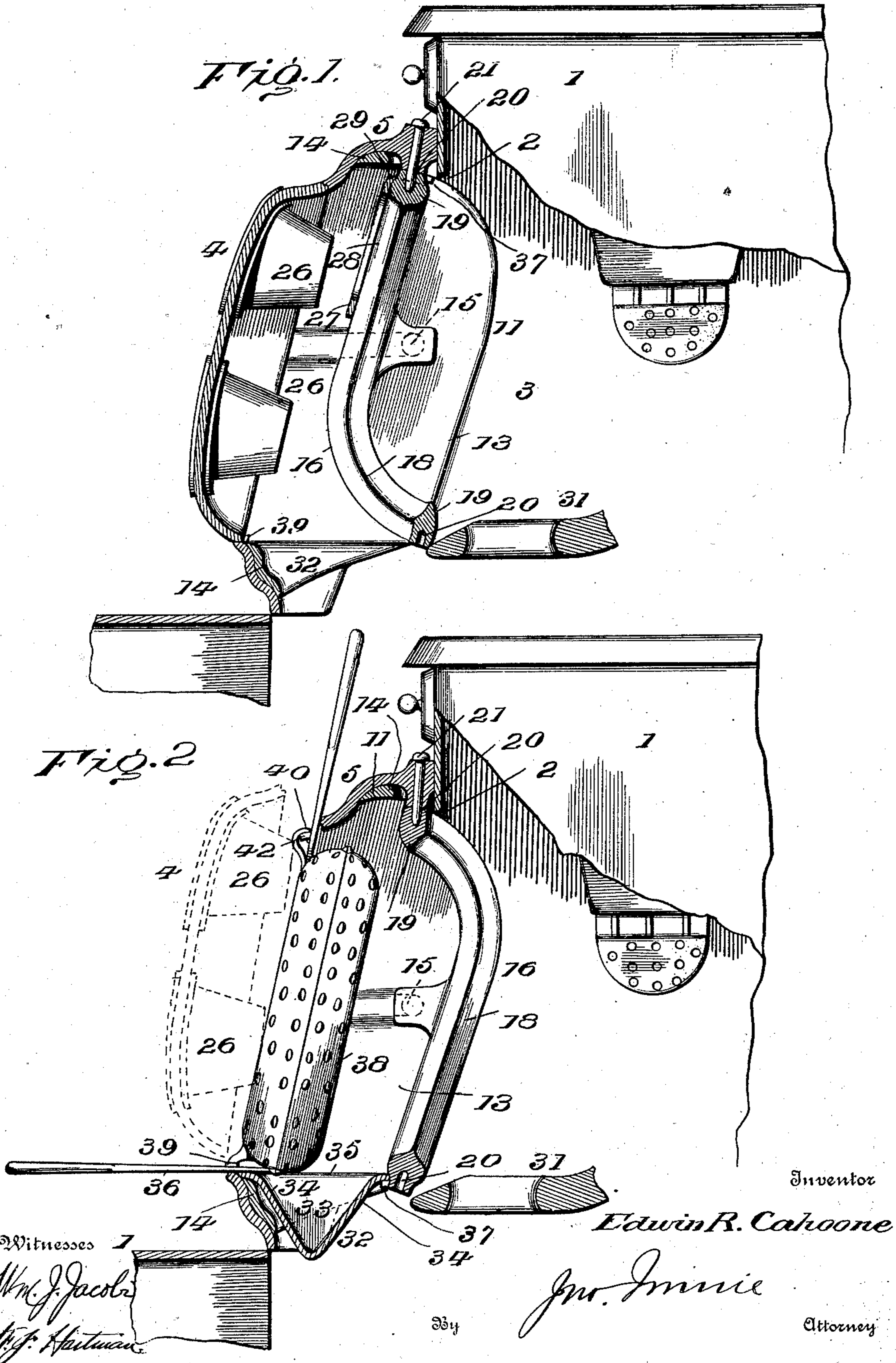
E. R. CAHOONE.

GRATE.

(Application filed Mar. 5, 1901.)

(No Model.)

2 Sheets—Sheet 1.



No. 698,630.

Patented Apr. 29, 1902.

E. R. CAHOONE.
GRATE.

(Application filed Mar. 5, 1901.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.

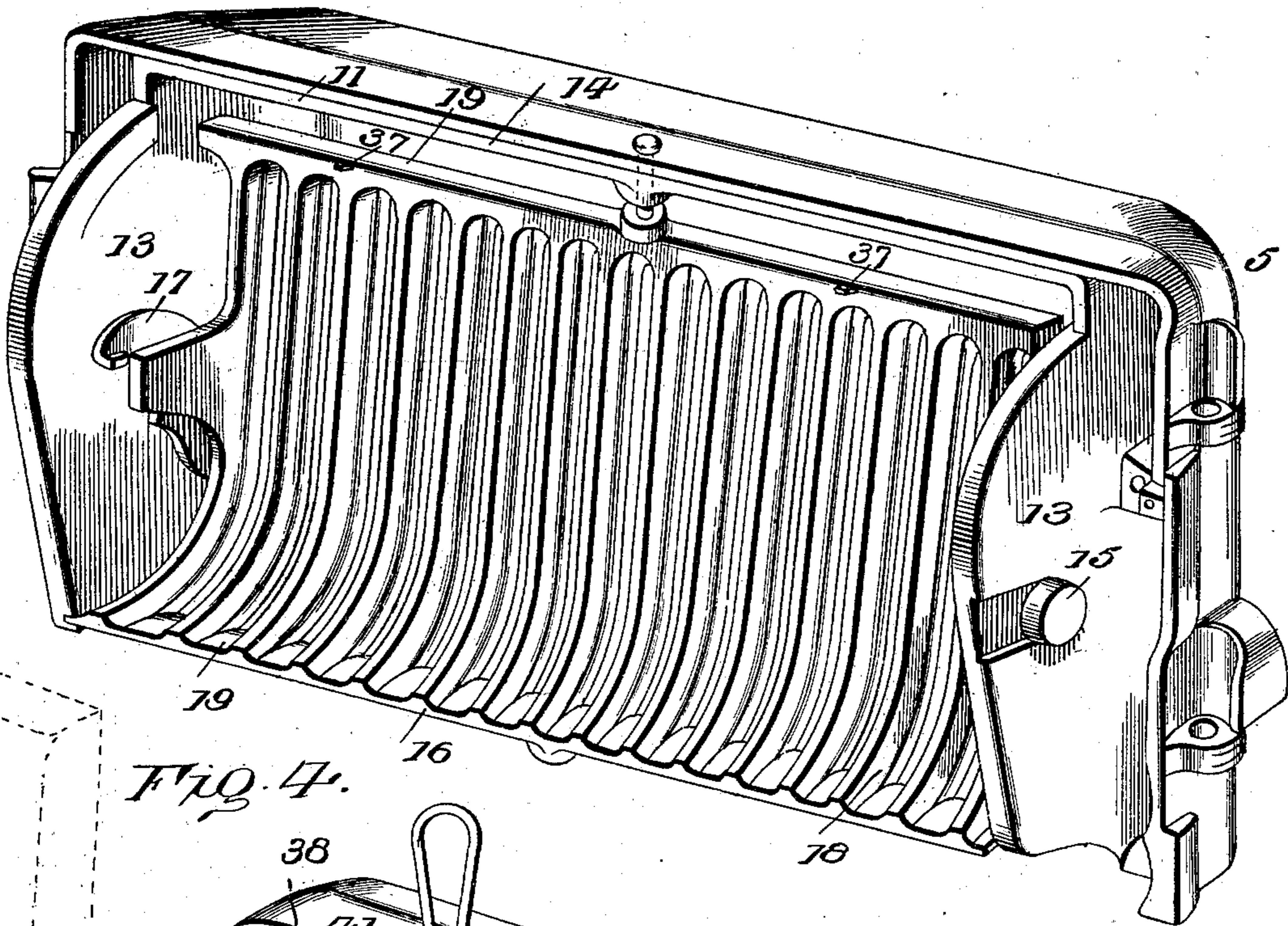


Fig. 4.

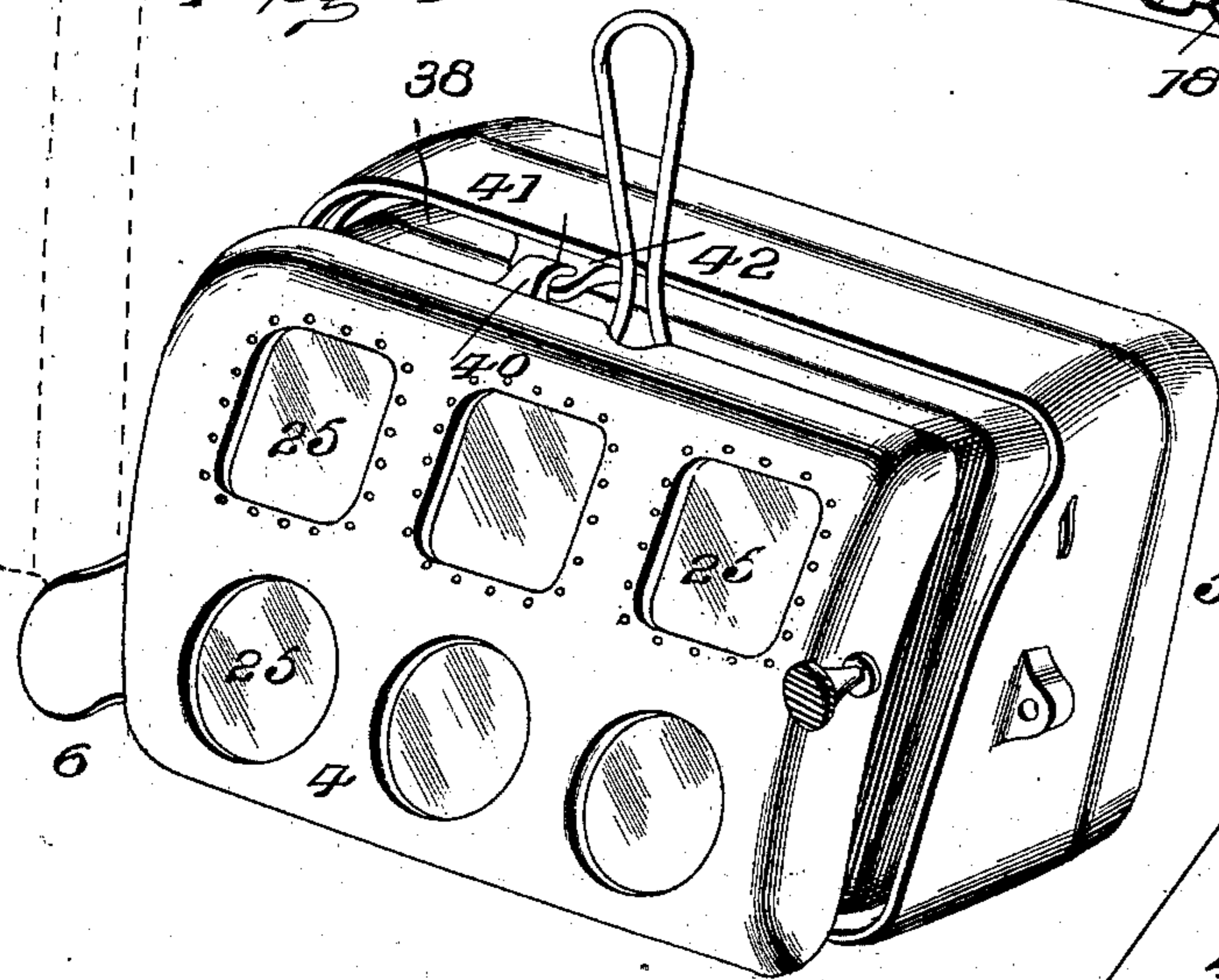


Fig. 5.

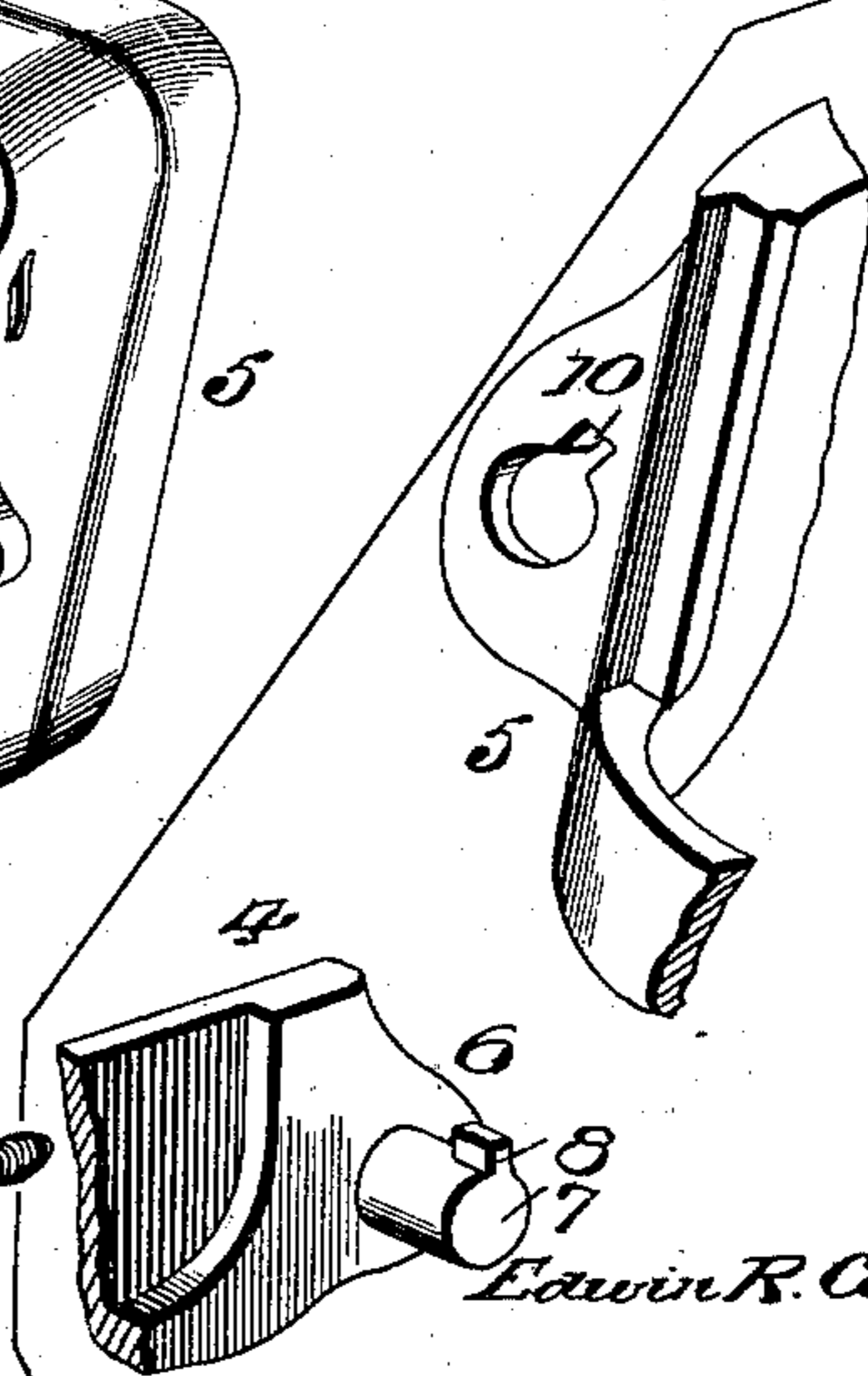
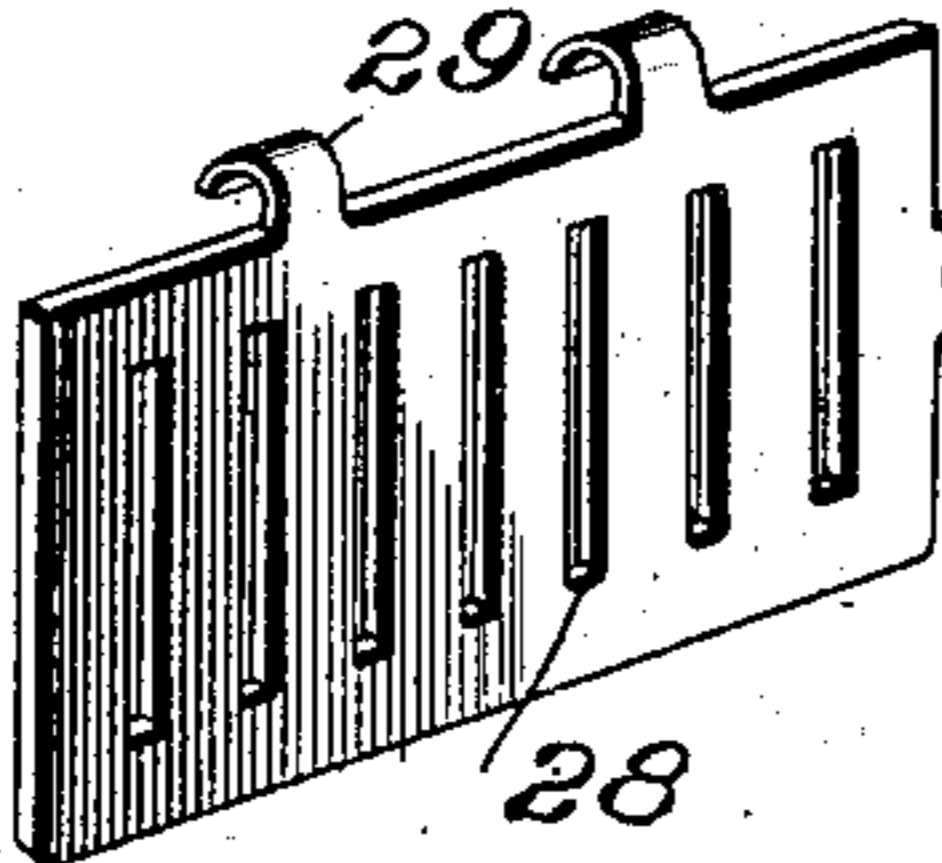


Fig. 6.



Witnesses

Wm. J. Jacob
H. J. Heitman

By

J. M. Irvine

Inventor

Edwin R. Cahoon

Attorney

UNITED STATES PATENT OFFICE.

EDWIN R. CAHOONE, OF NEWARK, NEW JERSEY.

GRATE.

SPECIFICATION forming part of Letters Patent No. 698,630, dated April 29, 1902.

Application filed March 5, 1901. Serial No. 49,821. (No model.)

To all whom it may concern:

Be it known that I, EDWIN R. CAHOONE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Grates, of which the following is a specification.

This invention relates to improvements in swinging vertical grates for stoves.

10 The object of the invention is to provide a swinging grate of such configuration that the capacity of the fire-pot may be quickly and readily increased or decreased, according to the will of the operator—that is to say, if the
15 grate be locked to position its convexity toward the front a large fire can be made in the fire-pot. On the other hand, if the concave portion of the grate be positioned toward the front then the coal capacity of the fire-pot
20 will be greatly diminished.

A further object of my invention is to provide a reversible vertical grate which will enable the operator to suitably support and house a broiler and drip-pan, thereby securing the benefit of the heat for toasting and broiling purposes, at the same time preserve all the drips or juices as they drop.

Many other objects will become apparent in the description to follow, and particularly
30 pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a vertical section of a portion of a stove, showing the application of my invention, the grate being positioned to
35 enlarge the fire-pot. Fig. 2 is a similar view showing the grate turned to diminish the size of the fire-pot. Fig. 3 is a perspective view of the grate and its supporting-frame. Fig. 4 is a perspective view showing a broiler incased between the front door and the grate, the latter being in the position shown in Fig. 2. Fig. 5 is a detail view of the door-hinge. Fig. 6 is a detail view of a shield used to prevent the smoking of the mica windows in the air
45 trunks or tubes.

The same numerals refer to like parts in all the figures.

1 indicates a stove having a front opening 2 adjacent the fire-pot 3, said opening being covered by a door 4, supported by a suitable frame 5. The door is loosely hinged at its lower corner, as at 6, the hinge connection consisting of

a pivot 7, extending from the rear of the door, and a locking-lug 8, projecting from the pivot. The frame 5 has a perforation 9 and a notch 55 10, communicating with said perforation, through which the locking-lug 8 passes when the pivot-pin engages the perforation 9. To fit the door, it is tilted on one end, as indicated by dotted lines in Fig. 4, to permit the
60 locking-lug 8 to pass through the notch 10. Then the door is swung down on its pivot 7, the latter being retained in place by the locking-lug 8 catching against the wall surrounding the perforation 9. This hinge connection 65 is so constructed as to permit of considerable lost motion, the purpose of which will be hereinafter referred to. The door is preferably provided with trunks or tubes 26 to permit a free supply of air to pass to the fuel. 70 However, as the details of these devices form no part of my present invention it is not deemed necessary to further describe them.

Secured to or formed with the door-frame 5 is a grate-supporting frame 11, composed of 75 end heads or flanges 13 13 and connecting-bars 14 14. The heads 13 have bearings for trunnions 15, which are formed on projections on the ends of the grate 16, these trunnions being locked in position in any well-known manner—for instance, that indicated at 17. 80

The grate 16 is composed of a series of parallel hooked shape bars 18, spaced apart and connected at their ends, as indicated at 19. 85 In cross-section each bar is somewhat beveled on both sides to offer as little resistance as possible to the air as it passes to the fuel. On the upper and lower edges of the grate is a perforation 20, with one of which a locking-pin 21, preferably in the top of the frame 5, engages when it is desired to hold the grate in a given position. 90

Between the frame 5 and the top of the grate is a suitable space forming a free passage 95 between the space behind the door and the fire-pot, the purpose of which is to permit the gases behind the door to be drawn into the fire-pot when the door is opened.

When the convex side of the grate is turned 100 toward the front, it brings the parallel bars in close proximity with the mica windows 25 in the trunks 26, and not infrequently this relationship causes the accumulation of soot

as well as smoky windows. To prevent this objectionable feature, I provide a shield 27, having a series of parallel slots and bars 28, which about equals the slots and bars of the grate. This shield only extends down approximately to a point slightly below the bottom of the trunks. Hooks 29, fitting over the upper end of the grate 16, support the shield, and it is moved laterally by a handle 30, projecting through the frames and in convenient reach of the operator. The upper portion of the slots between the grate-bars when the shield is used are almost closed, permitting of a sufficient current of air, but not open enough to cause the smoke and soot to collect on the windows.

The lower portion of the frame 5 and the bottom grate 31 are so constructed and arranged as to form a pocket 32 to accommodate a drip-pan 33, which is approximately of V shape in cross-section and is composed of the inclined sides 34, ends 35, and handle 36. As disclosed in Fig. 2, the pan may be supported by lugs 37, resting on the front grate, and the handle, resting on the frame 5.

In conjunction with the front grate and the drip-pan I use a broiler 38 of any well-known type. The broiler is supported by rests 39 on the lower part of the frame 5 and a hook 40, seated in a slot 41, formed in a lug 42 in the frame 5. The handle of the broiler projects up through a notch in the door and is always in convenient reach of the operator.

The operation of my invention is substantially as follows: In extremely cold climates, where a large fire-pot is a thing of necessity, the front grate 16 is swung on its trunnions to the position shown in Fig. 1, when the lock-pin engages the perforations 20 and the grate is fixed. By reason of the position of the trunnions and the curved hooked end of the grate the vertical portions of the bars are some distance from the front extremities of the bottom grate. However, the latter are in line with and practically touch the extreme end of the hooked portion of said bars. The two grates form an unbroken front and bottom grate-section. As before stated, when the front grate is turned in this position the shield is employed, this by reason of the close proximity of the grate-bars to the mica windows. Should, however, it be desired to diminish the size of the fire-pot, the pin 21 is removed, the grate turned as shown in Fig. 2, and the pin 21 inserted in the opposite perforation in the grate. With the parts in this position the shield 27 is removed and the grate-bars are nearer the center of the fire-pot, the straight portion of said bars being now at the bottom and the lower ends abutting against the front of the lower grate, while the hooked ends of said grate are at the top. This position, like the one previously described, presents practically an unbroken front and bottom grate-section, and yet the width of the fire-pot has been materially decreased, which enables a fire of medium size to be made. With the

grate-bars turned inwardly quite a considerable space is formed between the door 4 and the grate, in which space the broiler is supported. To apply the broiler, the door is thrown up and around on its pivot, the drip-pan is dropped in its seat, the hook on the broiler is slipped in its seat, and the lower end caught by the rests. With the parts in this position it stands to reason that the meat being broiled receives every advantage from the surrounding temperature. Not only is the broiling action going on, but the juice incident to such action is caught and readily preserved, the drip-pan being so located as to be almost out of reach of the excessive heat, cooling somewhat the temperature of the juice. Should it be preferred to incase the broiler, the door 4 can be almost closed, so much so that to all intent and purposes the broiler will be out of sight. The door does not cover the entire opening when so used and is made to adapt itself to this position by reason of the lost motion between the hinge-joint. This allows a sufficient quantity of air to pass in around the door to the broiler, which adds considerably to the broiling action.

Having thus described my invention, what I claim is—

1. A stove comprising a casing having an opening in one of its walls, a fire-pot adjacent said opening, and a grate extending from the top to the bottom of and pivotally supported horizontally in said opening in the casing, adapted to be reversed to increase the size of the fire-pot in one position and decrease said fire-pot when turned over in the opposite position, substantially as described.

2. A stove comprising a casing having an opening in one of its walls, a fire-pot, a pivoted and a hooked shaped grate in said opening adapted to increase the capacity of the fire-pot when turned in one position and decrease the capacity of said fire-pot when reversed in a second position, substantially as described.

3. A stove comprising a casing having an opening in one of its walls, a fire-pot, and means pivoted and located in said opening whereby the capacity of the fire-pot may be increased when said means are secured in one position and decreased when said means are turned over on its pivot to present the opposite face to the fire-pot in a second position, substantially as described.

4. A stove comprising a casing having an opening in one of the walls, a fire-pot, a grate in the bottom of said fire-pot, a hooked shape pivoted grate in said opening, said grate being adapted to be turned over and in either position form a continuation of the grate in the bottom of the fire-pot to increase or decrease said fire-pot, substantially as described.

5. A stove comprising a casing having an opening in one of its walls, a fire-pot, a pivoted hooked shape grate in said opening, a frame surrounding said grate, a door fitting said frame, and a broiler adapted to be sup-

ported in the space between the grate and the door, substantially as described.

6. A stove comprising a casing having an opening in one of its walls, a fire-pot, a swinging grate located in said opening, a frame surrounding the grate, a door fitting said frame, a broiler adapted to be supported in the space between the grate and the door, and a drip-pan located below said broiler and the line of the fire-pot, substantially as described.

7. A stove comprising a casing having an opening in one of its walls, a fire-pot, a swinging grate located in said opening, a frame surrounding the grate, a door fitting said frame, a loose pivot connection between the door and the frame adapted to permit of the door being brought in alinement with its seat, but spaced therefrom, substantially as described.

8. A stove comprising a casing having an opening in one of its walls, a swinging grate located in said opening means for supporting a broiler in close proximity to said grate, and a pocket formed at the bottom of said swinging grate to receive a drip-pan, substantially as described.

9. A stove comprising a casing having an opening in one of its walls, a grate located in said opening, a door adapted to cover said opening, mica-covered trunks or tubes attached to said door, and a slotted plate slidable on the grate and in front of said mica windows, substantially as described.

10. A stove comprising a casing having an

opening in one of its walls, a frame having flanged ends in said opening, a hooked shape grate pivoted and supported in said frame adapted to be swung to increase or decrease the capacity of the fire-pot, the end flanged walls of said frame forming the end inclosure for the grate when said grate is turned in either position, substantially as described.

11. In a stove, the combination of a casing having an opening therein, a fire-pot adjacent said opening, a grate horizontally and centrally pivoted in the opening in the casing, and adapted to be turned half-revolution to increase or decrease the fire-pot, and a door hinged to swing vertically to cover the opening, substantially as described.

12. A stove comprising a casing having an opening in one of its walls, a fire-pot, a revolving grate located in said opening, a door, a space being formed between the door and the front of the grate and between the top of the grate and the casing, establishing communication at all times between the space in front of the grate and the fire-pot, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWIN R. CAHOONE.

Witnesses:

GEO. E. FRECH,
W. A. WILLIAMS.