

C. S. DAVIS.

STOVE.

APPLICATION FILED APR. 19, 1909.

934,891.

Patented Sept. 21, 1909.

2 SHEETS—SHEET 1.

FIG. 1.

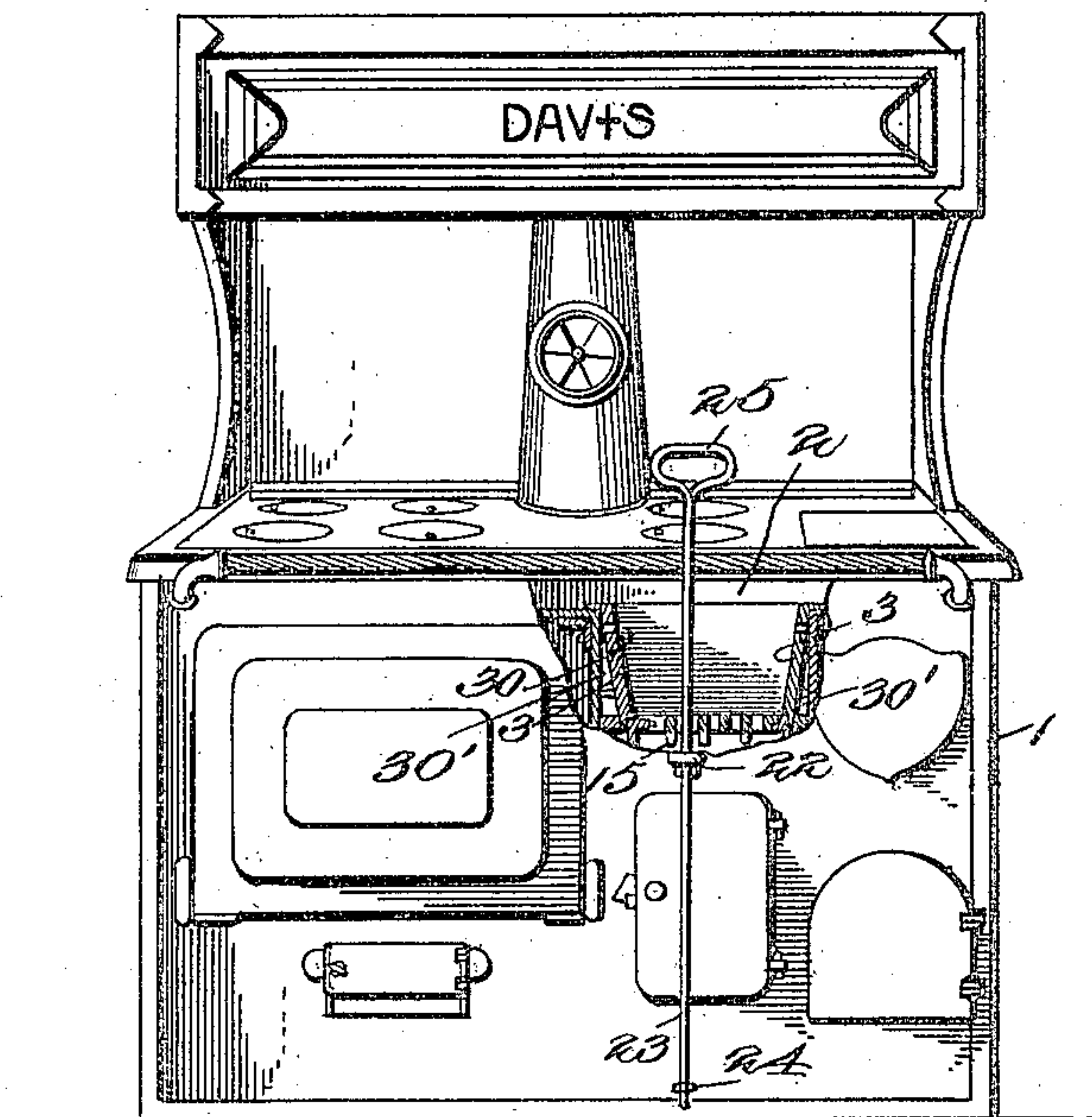


FIG. 2.

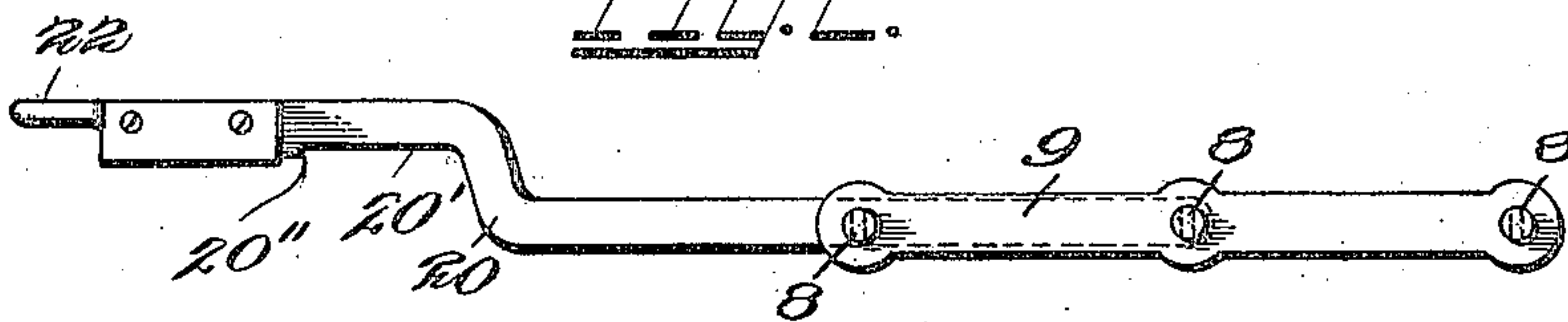
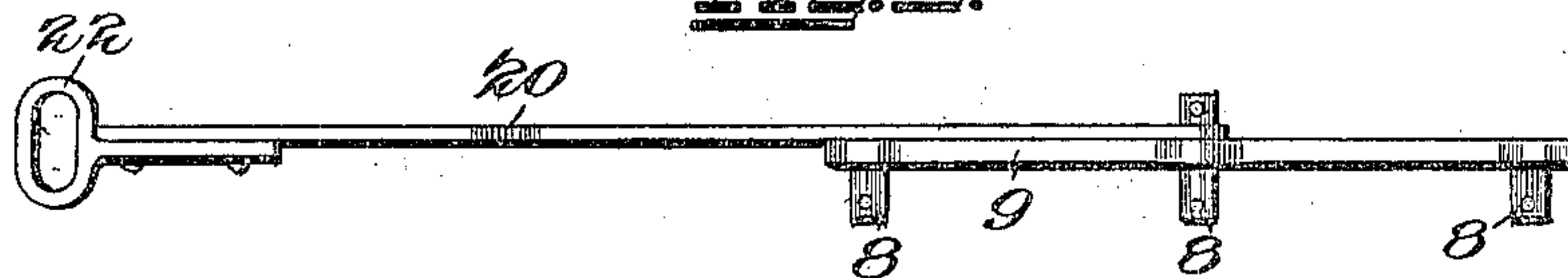


FIG. 3.



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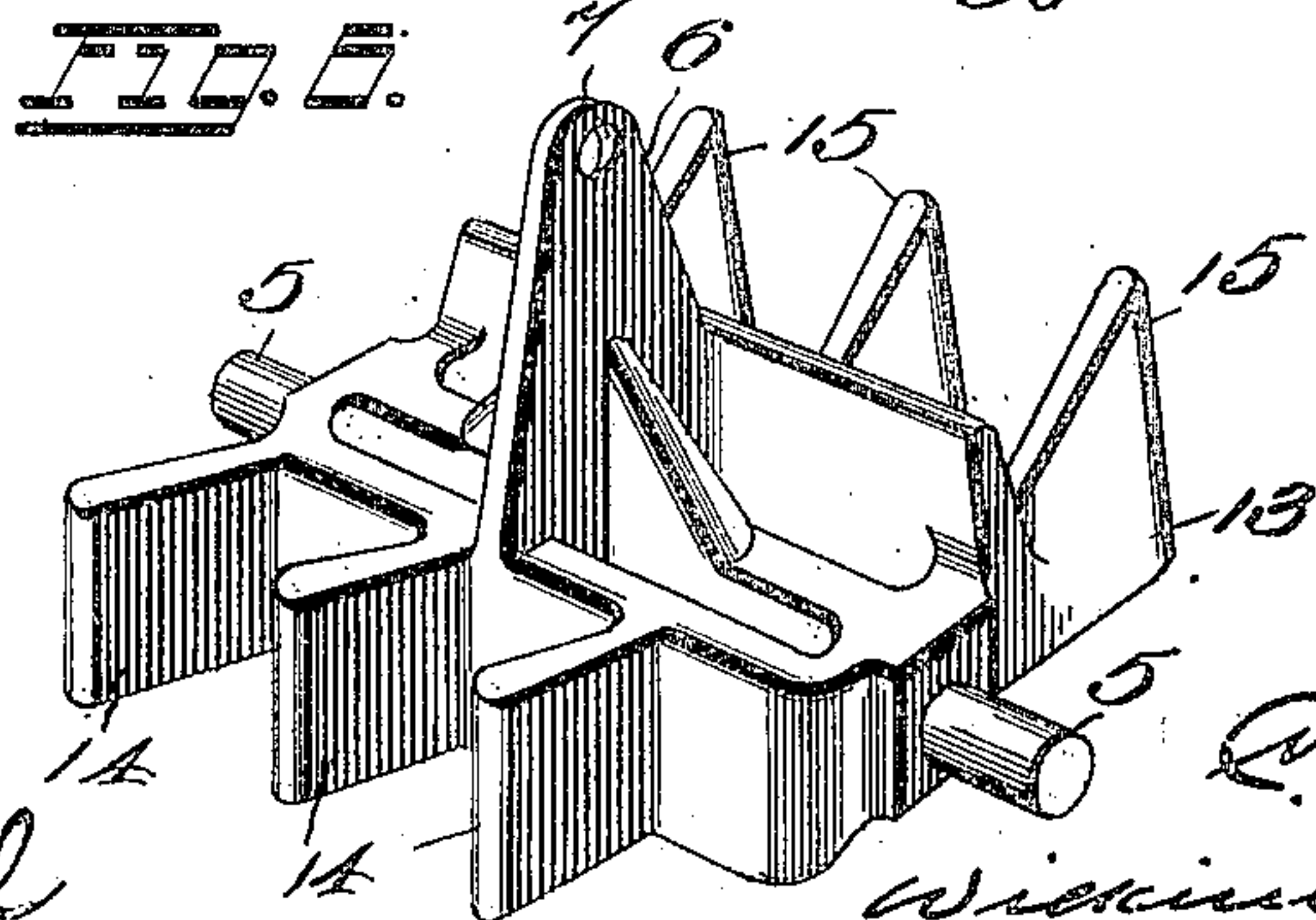
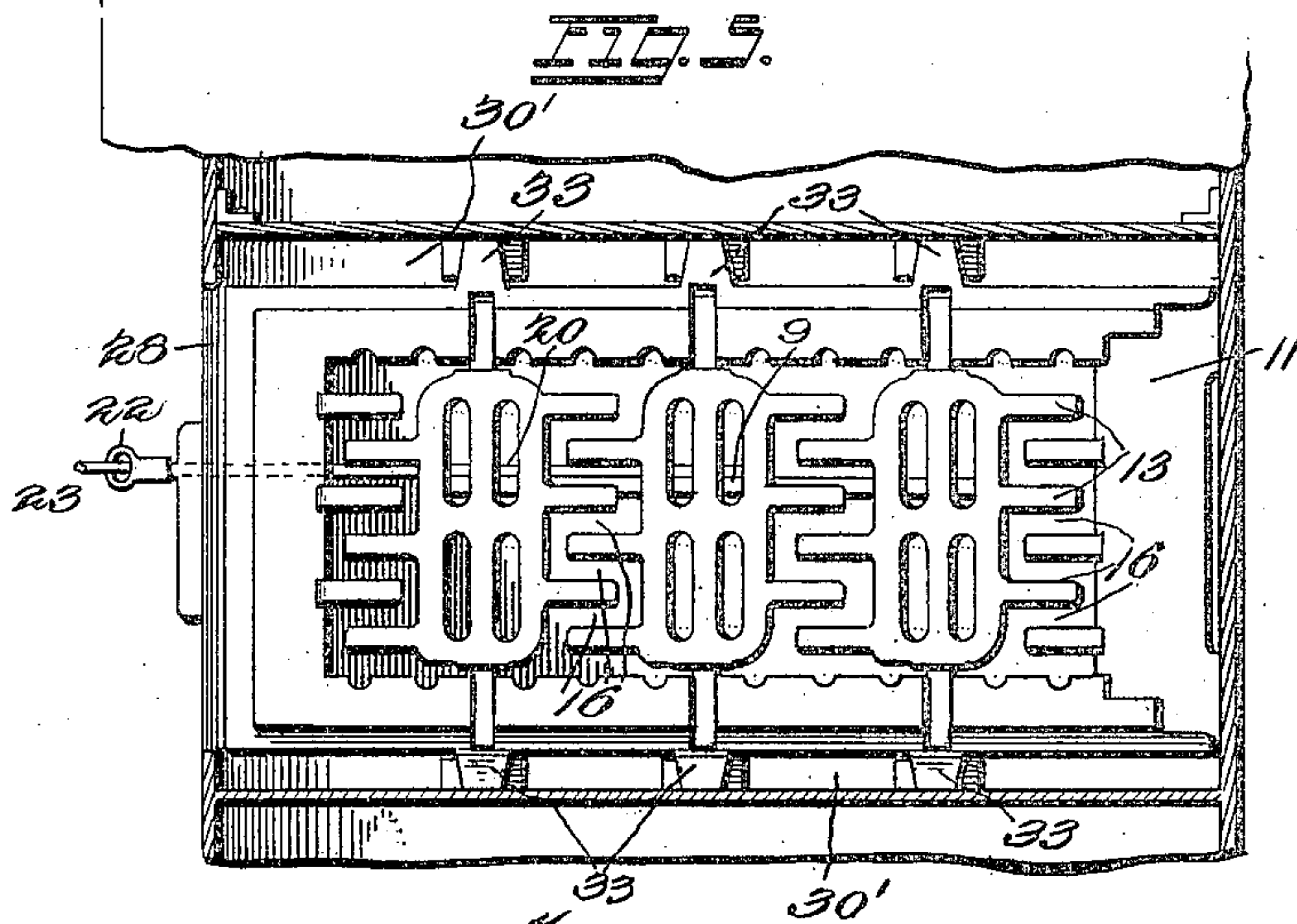
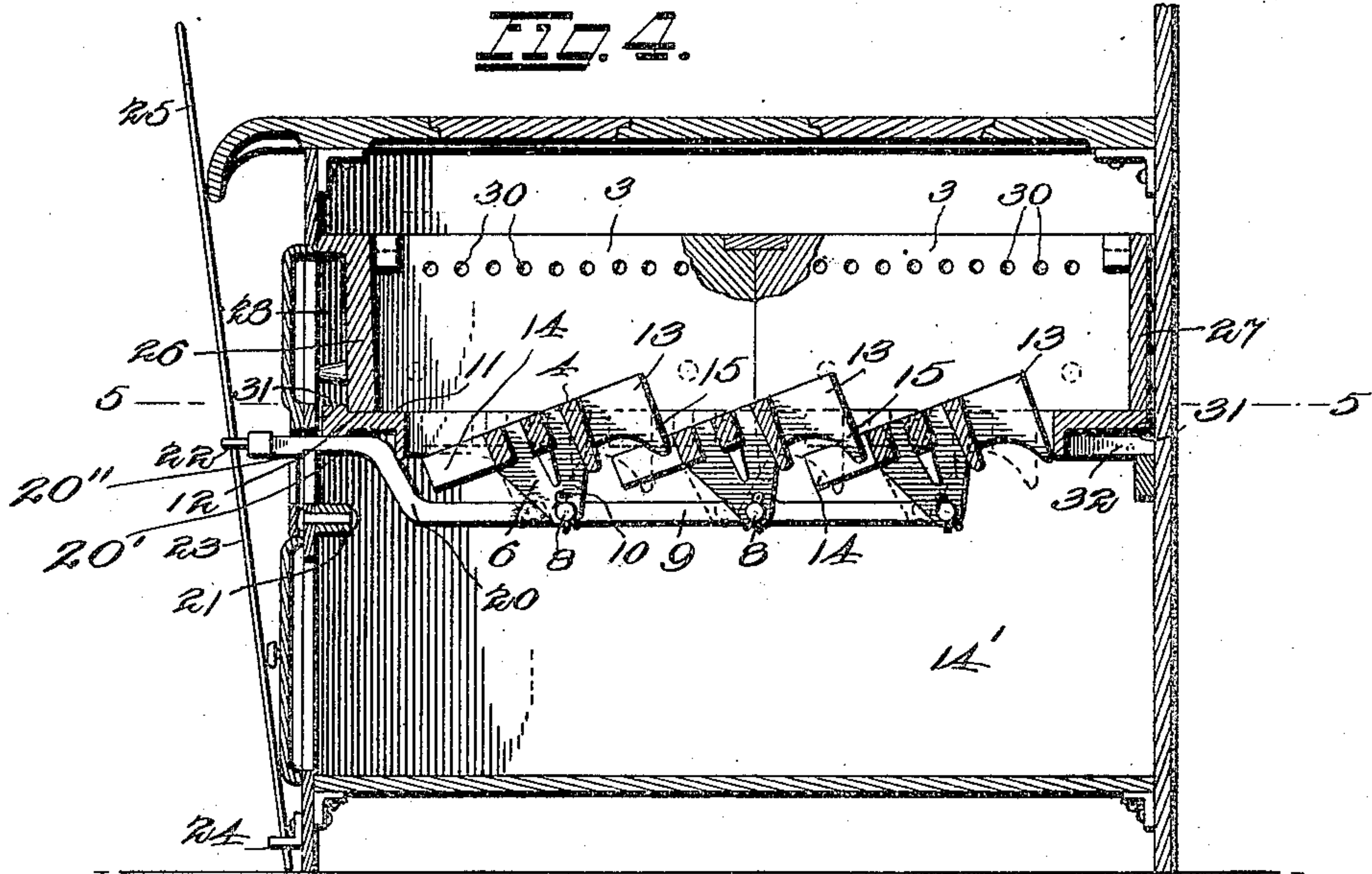
STOVE.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES S. DAVIS, OF OAKLAND, MARYLAND.

STOVE.

934,891.

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To all whom it may concern:

Be it known that I, CHARLES S. DAVIS, a citizen of the United States, residing at Oakland, in the county of Garrett and State of Maryland, have invented certain new and useful Improvements in Stoves; 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 invention relates to stoves, and has for its object the production of a tilting grate adapted for general use, which is preferably made of a plurality of parts, and which may be tilted in such a manner as not to permit the coal to fall therethrough, while at the same time, it may serve as an efficient means for sifting out the ashes, and preventing the clinkers, cinders, etc. from wedging between the parts and thereby interfering with their efficient operation.

With these and other objects in view, the invention consists in the novel details of construction and combination of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings, forming a part of this specification:—Figure 1 is an end elevational view partly in section of a stove with my improvement attached thereto; Fig. 2, a side elevational view of the connecting bar for the grate sections; Fig. 3, a plan view of such bar; Fig. 4, a sectional view of a stove showing the fire box in sectional elevation; Fig. 5, a sectional view showing the grate bars in plan; and Fig. 6, a perspective view of one of the grate bars inverted.

1 illustrates the body of the stove, 2 the fire box thereof, provided with perforated lining plates 3, and tilting grate bars 4 as illustrated.

Each of the tilting grate bars 4 is provided with a pair of trunnions 5 and a depending lug 6 having a hole 7 passing therethrough, in which fits a pin or lug 8 attached to the connecting shaker bar 9, and through which pin 8 passes a cotter pin or other fastening 10 to hold the parts securely in position.

The trunnions 5 fit into suitable slots in the bottom frame work 11 of the fire box surrounding the grate bars as best illustrated in Fig. 5, and the depending lugs 6 extend some distance below said frame work

11 as best shown in Fig. 4. The pins or lugs 8 attached to the shaker bar 9 are passed through the holes 7 and are so spaced apart that they will permit the grate bars 4 to rise to their extreme elevated position as illustrated in full lines in Fig. 4, but not to rise any farther. This position is just sufficient to cause the coal to be given a good shaking, when operating the bar 9; and, yet, it is not sufficient to permit the coal to be dumped into the ash pit 14'. In order to aid in preventing the coal from sliding into the ash pit the fingers 13 on one side of the grate bars are made with lugs 15, adapted to extend down between other fingers 14 on said bars, even when the latter are in their extreme positions as illustrated in Fig. 4, and they thereby prevent coal or other combustible material from falling into the ash pit below. At the same time, however, there are left numerous spaces 16 between the intermeshing fingers 13 and 14 to permit ashes to freely fall into the ash pit.

When tilting the fingers 13 upwardly, of course, the fingers 14 must move downwardly, and therefore, any clinkers, cinders, etc. that might have been wedged in between said fingers when the grate bars were in their normal position as indicated by dotted lines in Fig. 4, will of necessity be freed, and dropped into the ash pit. In the same way when the fingers 13 are passing downwardly and the fingers 14 upwardly, any cinders that are too large to pass between said fingers will be forced back into the fire; and therefore in both operations the movement of these bars is free from any wedging action due to cinders, which is an important feature of my invention.

When the bar is drawn forward so as to bring the grate bars into their dotted line position as shown in Fig. 4, a shoulder 20 thereof strikes against any suitable stop 21, and thereby prevents the grate bars from passing beyond their horizontal positions. Were it not for this limited motion, it is evident that the bars could be swung as far in the other direction as they were in the extreme position shown, and that there being no lugs 15 on the fingers 14, the coal would thereupon be permitted to pass into the ash pit. The stop 21, however, effectually prevents movement beyond the horizontal position in one direction, and the spacing of the pins 8 prevents a too great movement in the other direction, so that at all

times the coal is held above the bars. This bar is also provided with a cut away portion 20' terminating in a shoulder 20''. The extremities of this cut away portion may strike
 5 the inner and outer surfaces of the front wall of the stove and thereby also limit the in and out movements of said bar 9, in which case the stop 21 may be dispensed with if desired.

- 10 The shaking bar 9 is provided at its extreme end with an eye or catch 22 through which may be passed a rod or poker 23, the lower end of which may be fulcrumed in an eye or catch 24 near the base of the stove.
 15 By simply moving the upper end 25 of said rod 23, back and forth, the fire will be stirred and the ashes sifted through the operations above disclosed.

- It is preferred to provide the frame 11
 20 with a seat 12 spaced from the outer wall of the fire box, and to fit to said seat a front plate 26 and a back plate 27 leaving a space 28 between the same and the front and back walls of the fire box as shown. Holes 30 are
 25 provided in the side plates 3 to facilitate the complete combustion to CO_2 (carbon dioxid) of any carbon monoxid gas CO , that may otherwise escape out of the fire box. Spaces 30' are also provided between each
 30 of the side plates or liners 3 and the walls of the fire box, and these spaces together with the openings in the grate rest are made sufficiently large to permit ashes to freely fall therethrough, so that no ashes can collect
 35 behind said plates 3. This I regard as an important feature of my invention, and it adds to the durability of the liners or plates 3. There is preferably a space 31 between the outer walls of the fire box and the frame
 40 11, in order to permit any dust that might collect in the space 28 to settle down into the ash pit 14', and to this end passages 32 may be provided under said frame, see Fig. 4. The said frame is also provided with lugs
 45 33, shown in Fig. 5, which serve to support the same on the walls of the fire box.

Of course, the bar 9 may be operated by a stove lifter, or other instrument, or even by grasping the eye 22 if desired. And it is

evident that those skilled in the art could 50 vary the details of construction without departing from the spirit of my invention, therefore, I do not wish to be limited to the exact disclosure except as may be required by the claims. 55

What I claim is:—

1. In a stove, the combination of a plurality of grate bars provided with intermeshing fingers, some of which are provided with extensions 15; trunnions rigid with said bars; 60 depending lugs also rigid with said bars; a shaking bar; fastenings connecting said shaking bar and said depending lugs and so spaced apart that when the shaking bar is pushed to its extreme position in one direction, said extensions will still intermesh with their corresponding fingers; and a stop to so limit said shaking bar that when it is moved to its extreme position in the opposite direction, said grate bars will all be horizontal, substantially as described. 70

2. In a stove, the combination of a plurality of grate bars provided with intermeshing fingers, adapted to move in opposite directions, and some of which are provided with extensions 15; trunnions rigid with said bars; depending lugs also rigid with said bars; a shaking bar; fastenings connecting said shaking bar and said depending lugs and so spaced apart that when said shaking 80 bar is pushed to its extreme position in one direction, said intermeshing fingers will move in opposite directions and increase the spaces between the same, while said extensions will still intermesh with their corresponding fingers; a stop to so limit said shaking bar that when it is moved to its extreme position in the opposite direction, said grate bars will all be horizontal; and a rod adapted to engage the outer end of said shaking bar for 90 operating the same, substantially as described.

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

CHARLES S. DAVIS.

Witnesses:

HARLAND L. JONES,
 G. A. FRALEY.