

No. 730,464.

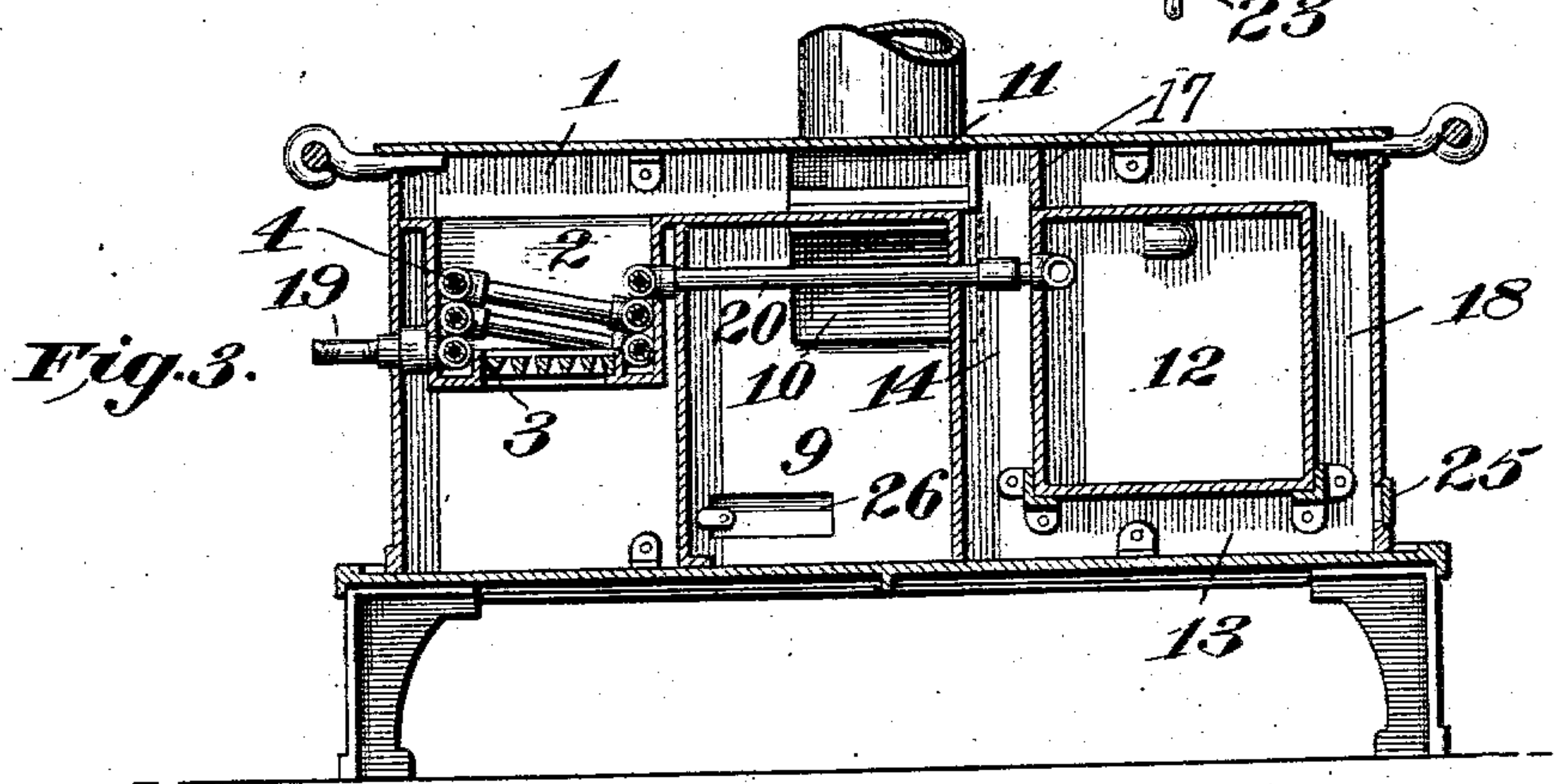
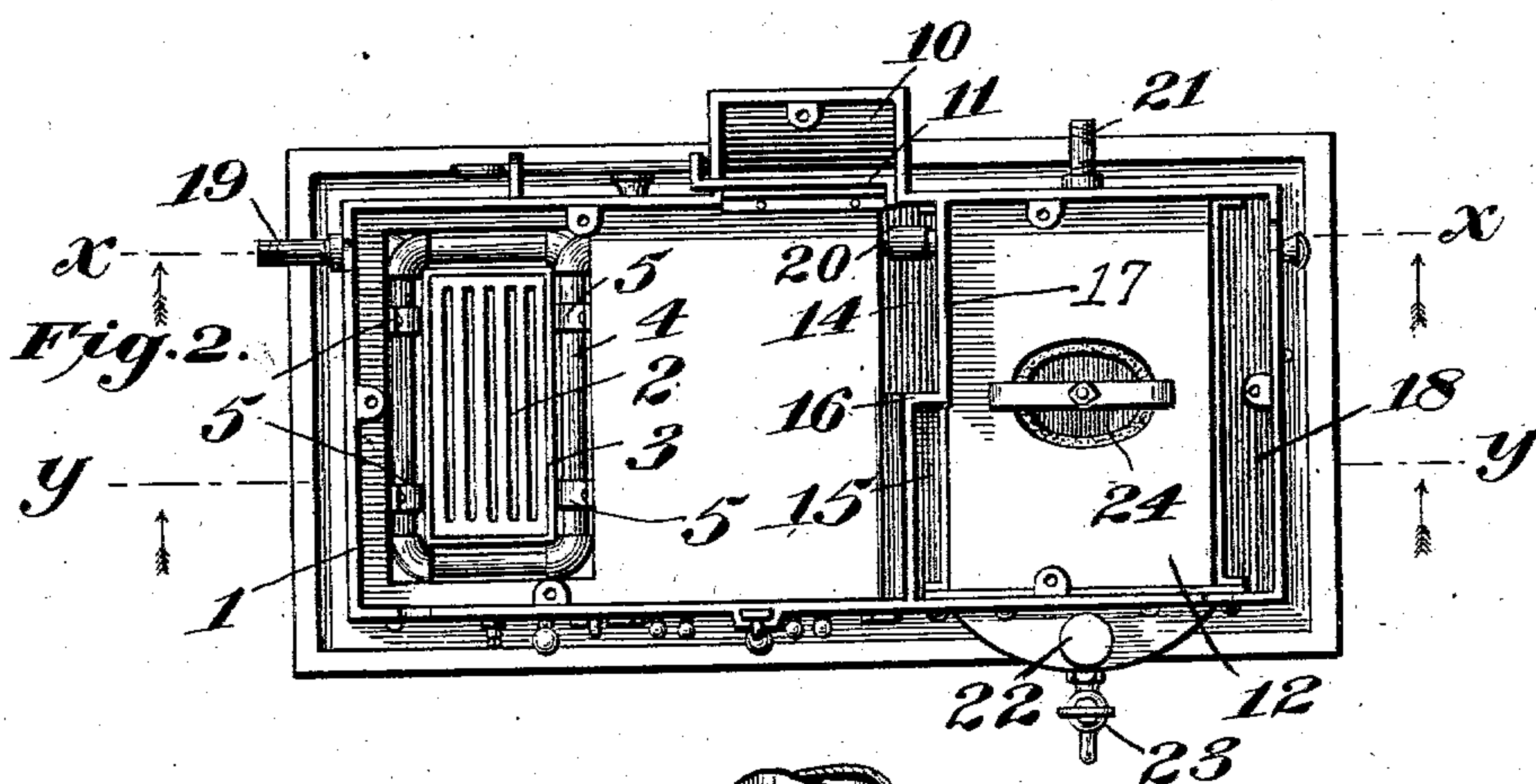
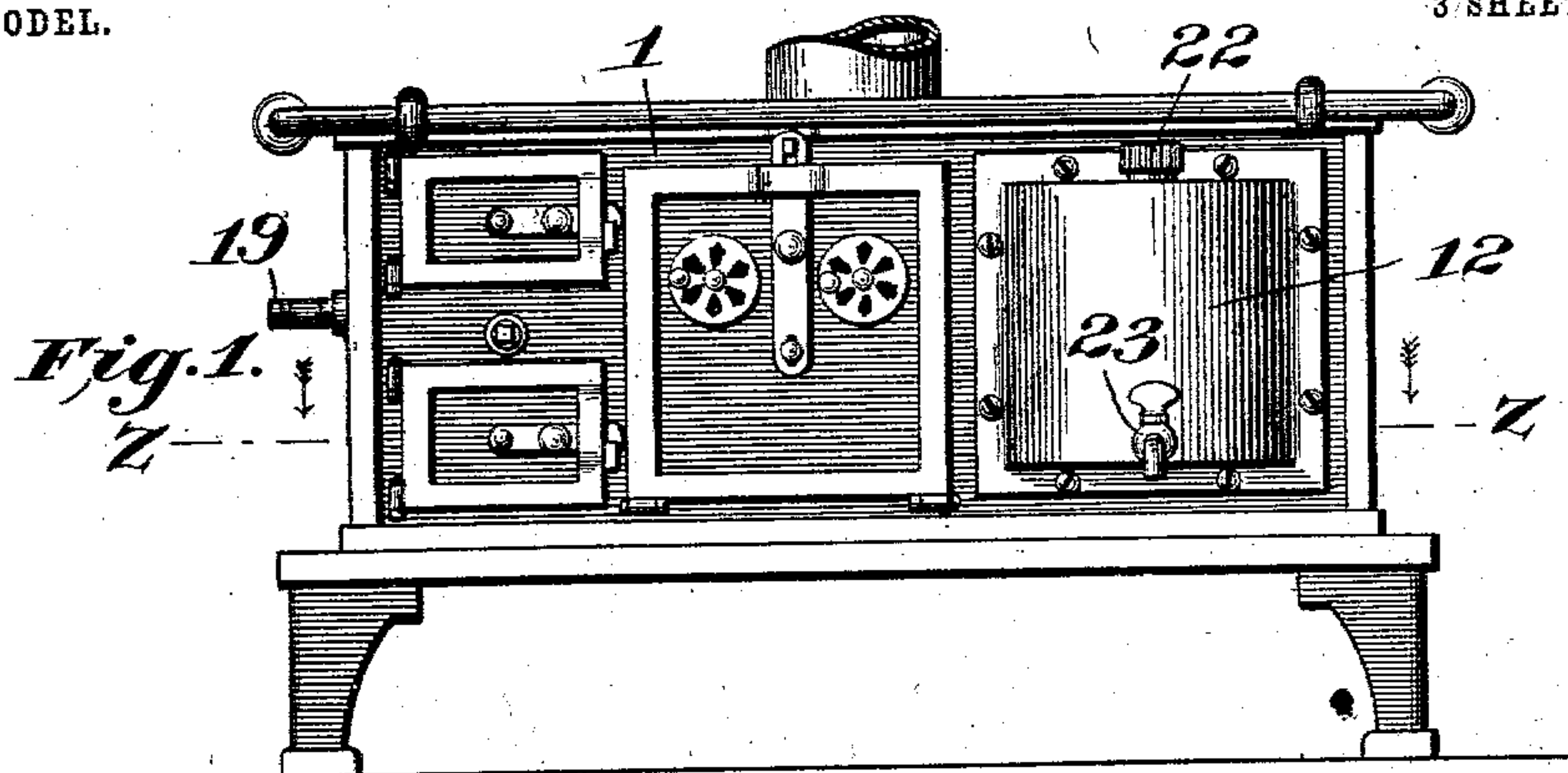
PATENTED JUNE 9, 1903.

F. KRUX.
STOVE.

APPLICATION FILED DEC. 30, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

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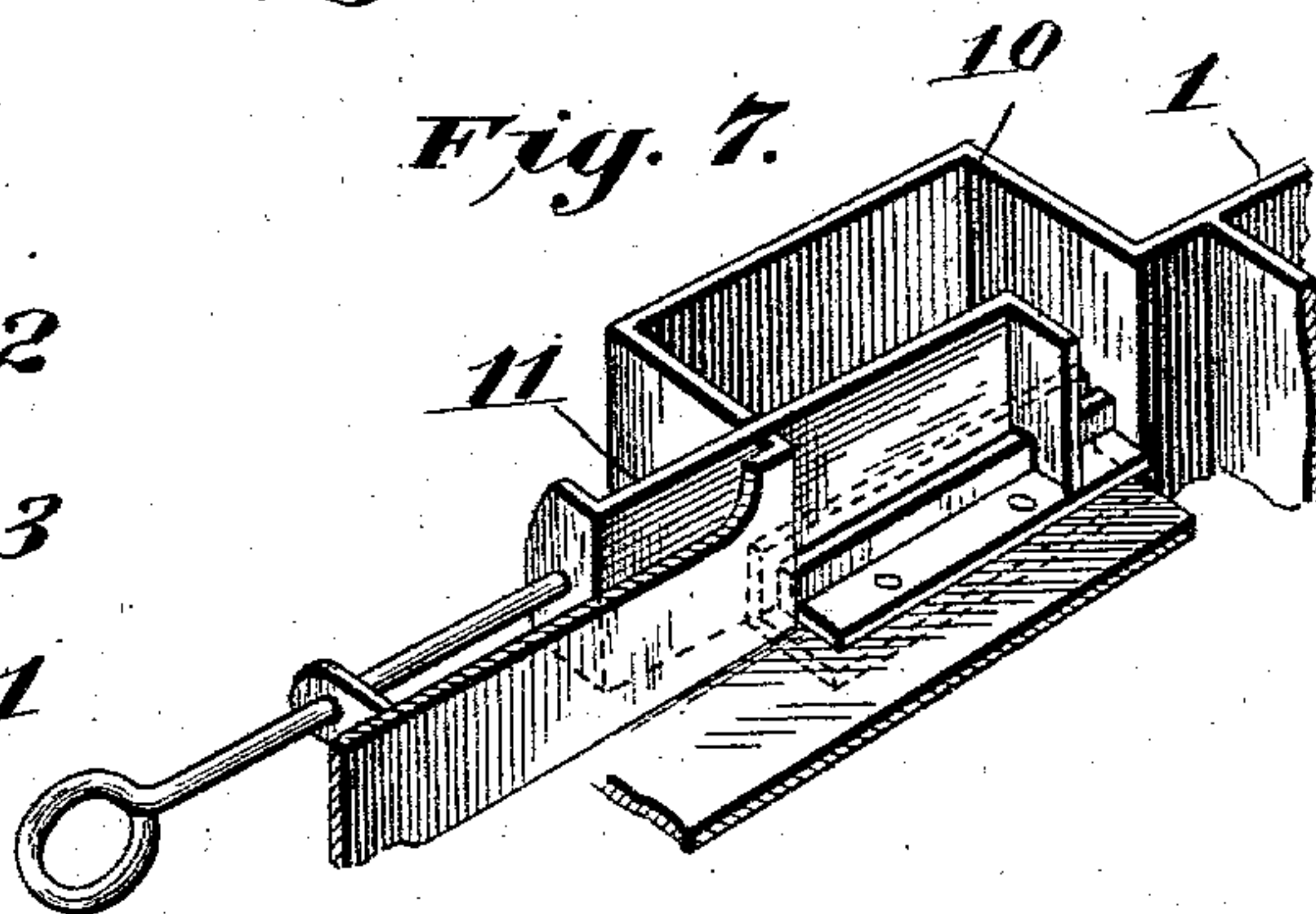
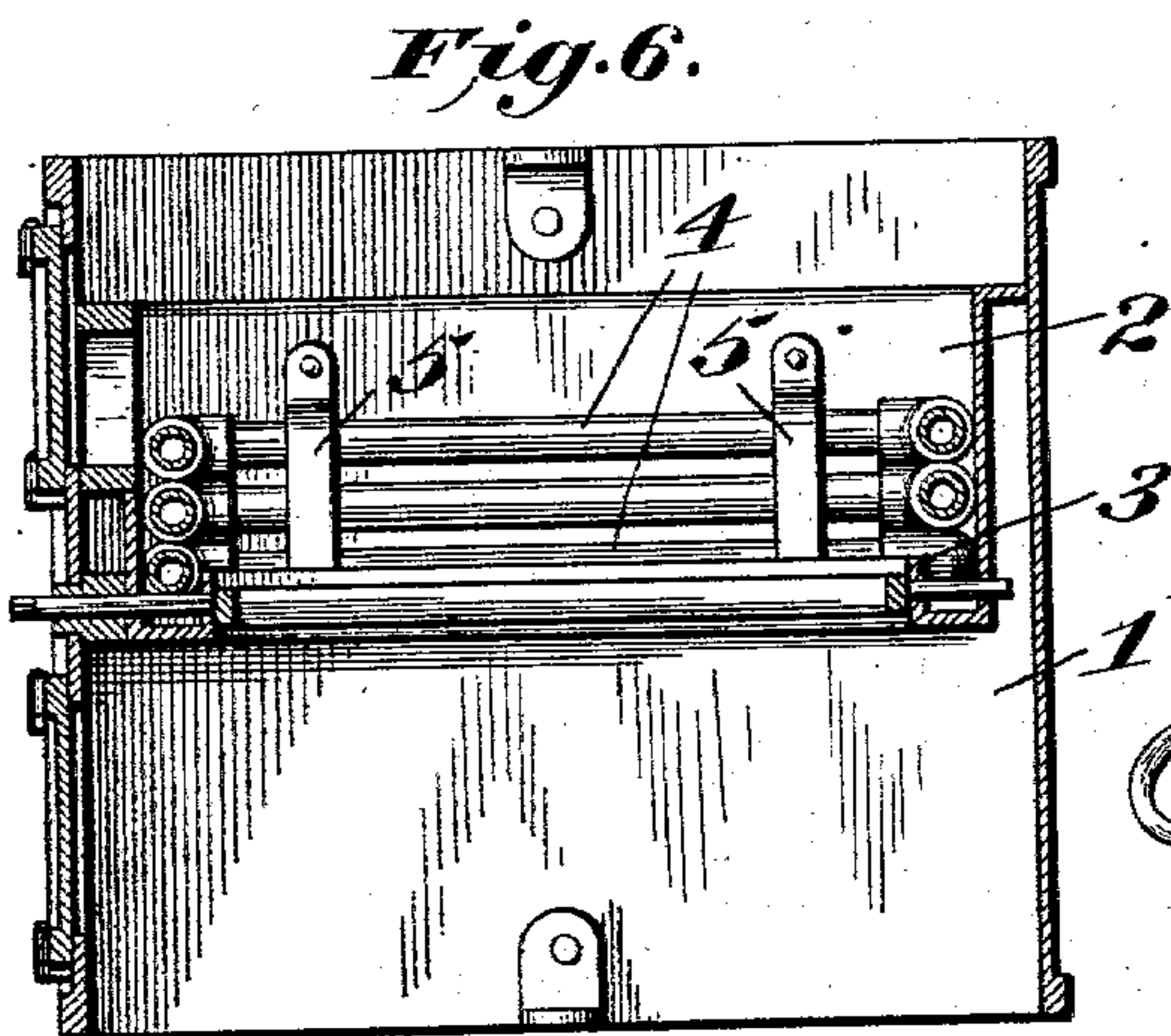
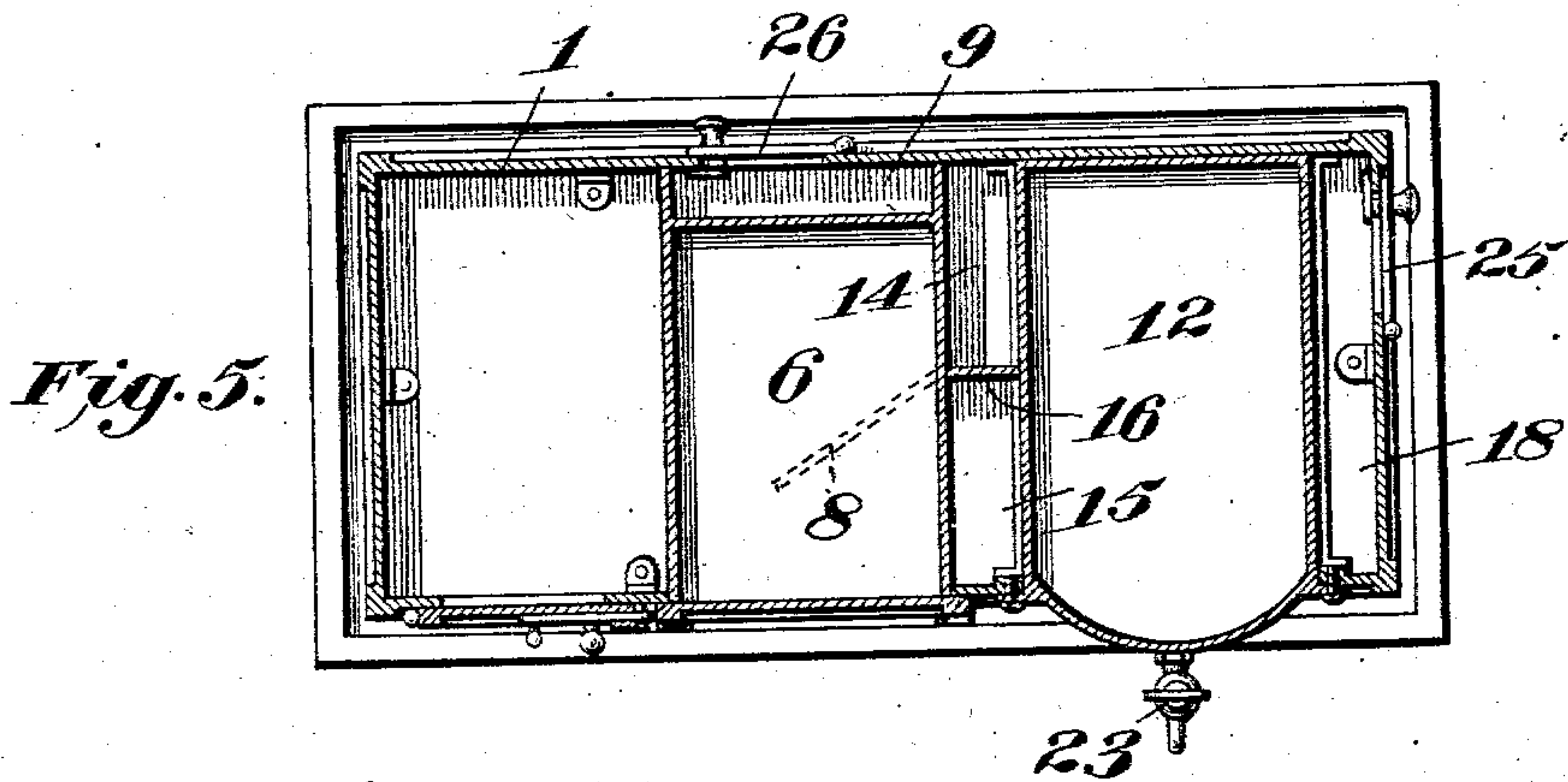
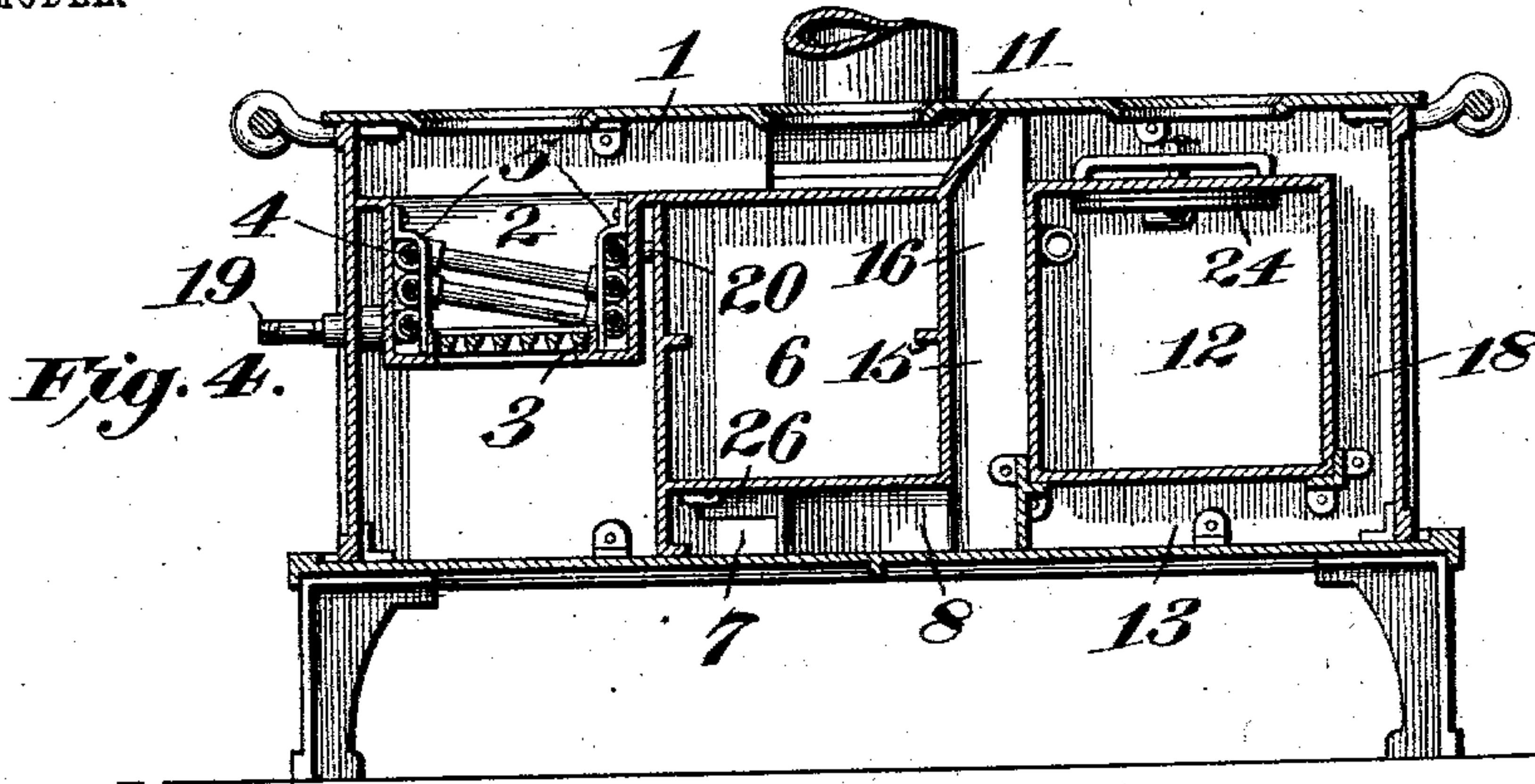
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F. KRUX.
STOVE.

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3 SHEETS—SHEET 2.

NO MODEL.



Witnesses

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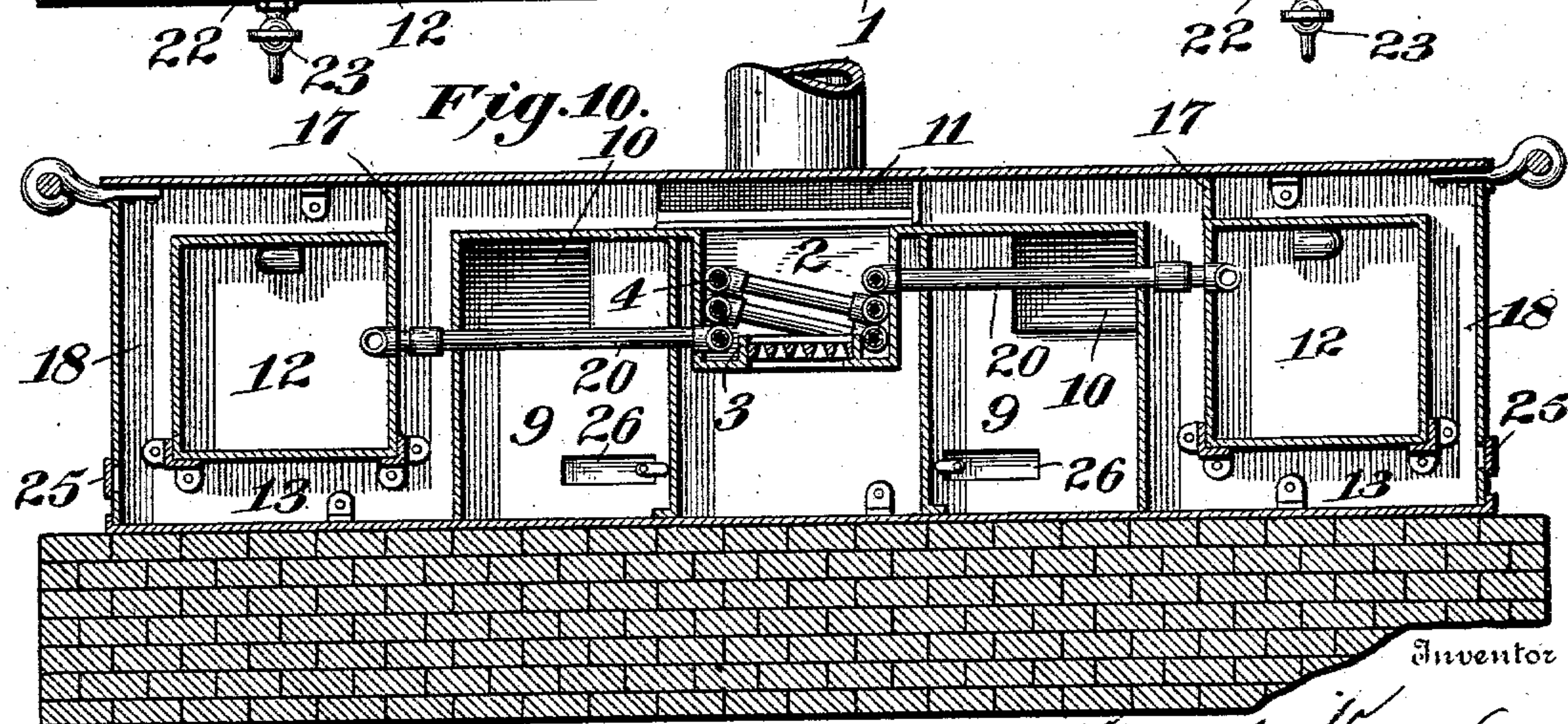
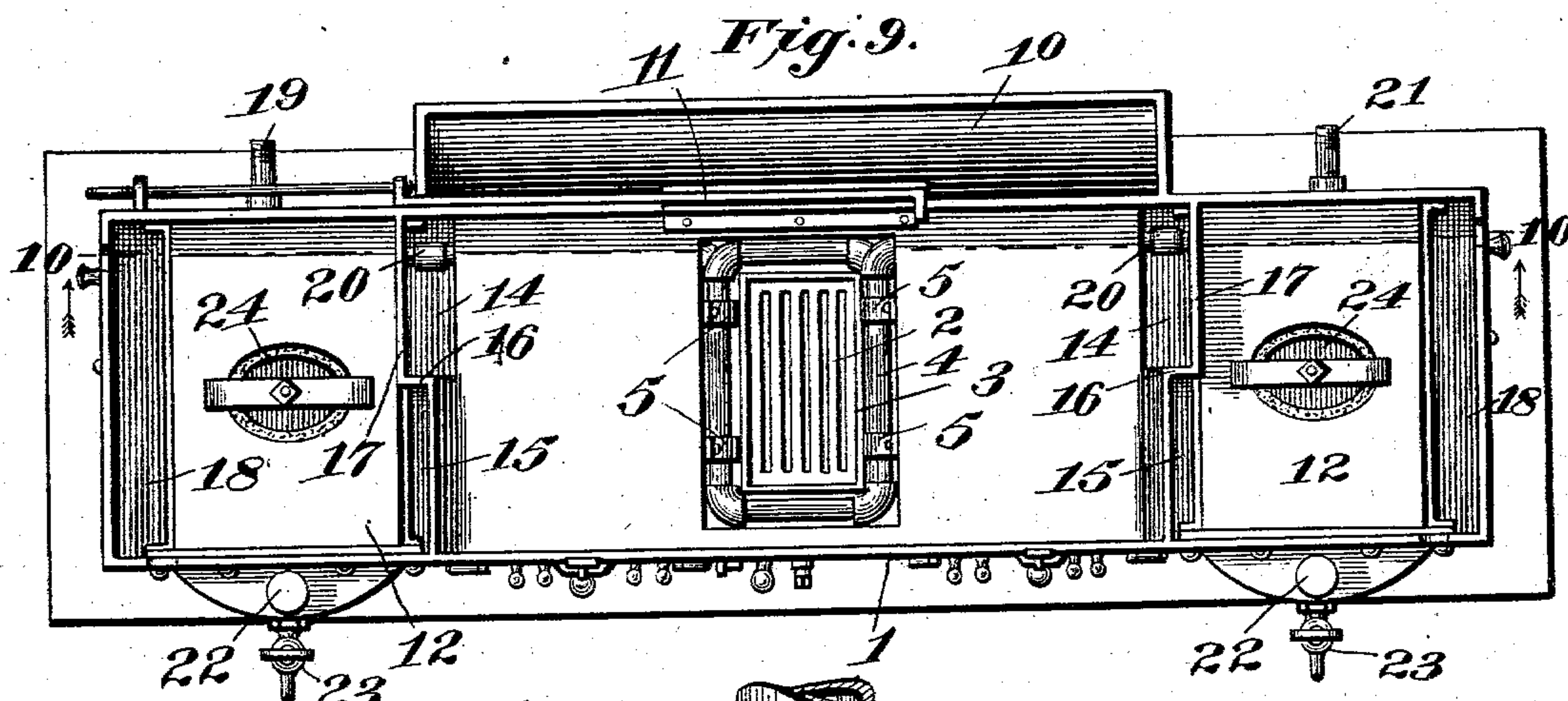
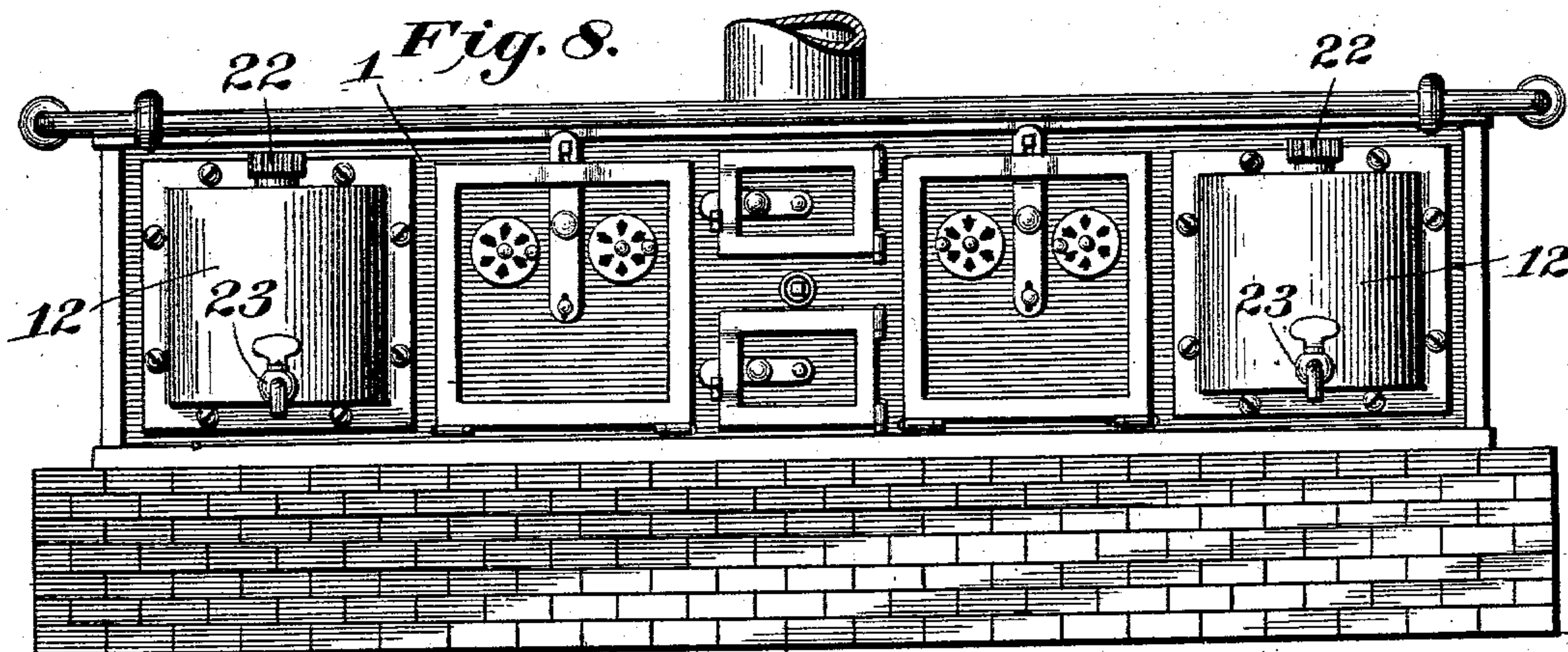
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F. KRUX.
STOVE.

APPLICATION FILED DEC. 30, 1902.

NO MODEL.

3 SHEETS—SHEET 3



Witnesses

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UNITED STATES PATENT OFFICE.

FRANK KRUX, OF SAN FRANCISCO, CALIFORNIA.

STOVE.

SPECIFICATION forming part of Letters Patent No. 730,464, dated June 9, 1903.

Application filed December 30, 1902. Serial No. 137,191. (No model.)

To all whom it may concern:

Be it known that I, FRANK KRUX, a citizen of the United States, residing at San Francisco, county of San Francisco, and State of California, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

My invention relates to stoves of the general type embodying a heating-coil in the fire-box, an oven, a boiler in communication with the heating-coil, and flues for conducting the hot-air currents from the fire-box around the oven and boiler.

The object of my invention is to provide improvements in stoves of this general type, and more particularly to provide a stove wherein the boiler, as well as the oven, is contained within the stove-casing and the flues are arranged to conduct the heated air around both the boiler and the oven, thereby providing a compact and self-contained construction to pass the hot air entirely around the boiler, so that the heating effect of the air may be had at all points of the boiler, and to provide a novel arrangement of flues and deflecting means whereby the greatest possible heating effect is obtained from the hot air, as well as to make provision for the combined heating of the boiler by the hot air passing therearound and the direct heating of the water from a water-coil in the fire-box.

With the foregoing objects in view it is also my purpose to provide a stove which can be arranged for residences, boarding-house, and hotel use and wherein provision will be made for the convenient tempering of the heating effect, drawing off of the heated water, cleaning of the flues and boiler, and coupling to ordinary stationary boiler, if desired.

Having the foregoing objects in view, the invention embraces certain improved features of construction and novel arrangements and combinations, as set forth fully herein after and recited in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation; Fig. 2, a plan view with the top of the stove removed; Fig. 3, a vertical section on line *x x* of Fig. 2; Fig. 4, a vertical section on line *y y* of Fig. 2; Fig. 5, a horizontal section on line *z z* of Fig. 1; Fig.

6, a detail view of the interior of the fire-box; Fig. 7, a detail view of the damper; Fig. 8, a front view illustrating the construction when two boilers and two ovens are employed, as for boarding-houses or hotel use; Fig. 9, a plan view of the construction shown in Fig. 8 with the top of the stove removed; Fig. 10, a vertical section on line 10 10 of Fig. 9.

The stove shell or casing 1 can be of cast-iron or sheet metal and screws or bolts employed for connecting the various parts together. The fire-box 2 is provided with the usual grate, which is pivoted in an upturned ledge 3, extending entirely around the bottom of the fire-box. There is a water-coil 4 in the fire-box and against the sides thereof, which is held by straps 5, with its bottom coils seated in the ledge aforesaid. The oven 6 is contained within the stove-casing, as usual, and raised above the bottom of the casing, thereby providing an exit heating-flue 7, while an inclined wing or deflector 8 on the bottom of the oven distributes the heated air over the bottom of the oven, as will more fully appear hereinafter. A flue 9 leads from the flue 7 up the back of the oven and into the flue 10, which leads to the chimney.

The numeral 11 designates a sliding damper, which controls the amount of hot air passing around the oven and boiler. In other words, when this damper is closed the hot air cannot find direct access to the flue 10 across the top of the oven, and hence has to take a circuitous path around the oven and boiler, and when this damper is more or less open more or less of the heated air escapes directly into the flue 10, and thus the amount passing around the oven and boiler is regulated. This damper is shown in detail in Fig. 7.

The numeral 12 designates the boiler, which is contained within the stove-casing and is raised above the bottom of the casing, and thereby provides the flue or space 13 under the entire bottom of the boiler. The boiler is separated from the oven by diving-flues 14 and 15, and to prevent the hot air from having direct access to the top of the boiler after passing over the top of the oven the partition 17 is provided. The diving-flues 14 and 15

are separated by the vertical partition 16. The boiler is separated from the end of the stove-casing by the riser-flue 18, which extends the entire length of the boiler or from
 5 front to rear of the stove-casing. The side of the boiler adjacent the diving-flue 14 does not extend to the bottom of the stove-casing, thus permitting the hot air passing over the
 10 top of the oven and diving down the flue 14 to pass under the boiler and into the riser-flue 18; but the side of the boiler next to the diving-flue 15 extends down to the bottom of the stove-casing, so that the hot air cannot get into the diving-flue 15 at this point, but
 15 has to pass into the riser-flue 18 and thence across the top of the boiler before it can dive down the flue 15 and gain access to the bottom of the oven, and after diving down flue 15 the hot air is distributed by the wing or
 20 deflector 8 toward the front of the oven, so that before it can pass into the flue at the back of the oven it has to traverse the entire bottom of the oven. It will be seen, therefore, that the heating effect of the hot air is
 25 obtained on every side of the oven except the front side thereof, and similarly the heating effect of the hot air is had on every side of the boiler except the front and back ends thereof, and thus heating of the oven and
 30 boiler are obtained with a minimum waste of fuel.

The heating-coil 4 has a nipple or coupling 19 to which a water-pipe can be connected, and the other end of the coil is connected by
 35 a pipe 20 to the boiler. At the back and top of the boiler is a nipple 21, which can be connected to a stationary boiler, if one be used. If the stove is used in a location where no stationary boiler exists, the nipple 21 can be
 40 closed by a cap and the heating-coil 4 removed and only the currents of hot air utilized to heat the water in the boiler; but by the employment of the coil the water is heated much more quickly, as a double heating effect
 45 is had, and by connecting to the usual stationary boiler the heating of both the boiler in the stove and the stationary boiler is readily effected without additional stove consumption.

50 The front of the boiler is provided with a filling-orifice 22, closed by a suitable cap, through which water can be introduced from any suitable source into the boiler, and a faucet 23 is also provided for drawing off the
 55 water from the boiler for immediate use. In the top of the boiler is a suitable closure 24, through which access can be had to the interior of the boiler for purposes of cleaning. At the end and back of the stove are doors
 60 25 and 26, which render cleaning of the soot and ashes from the flues convenient.

In Figs. 8, 9, and 10 I have illustrated the form the invention can assume when the stove is to be used in a boarding-house or hotel,
 65 where a greater oven capacity and a larger quantity of hot water is needed. The construction is in all respects practically the

same as that heretofore described except that the oven and boiler are duplicated on the left-hand end of the stove. In other words, 70 an additional oven is used on the opposite side of the fire-box, and near this oven is another boiler. A single stovepipe and damper serve to carry off the products of combustion, and the heat and the damper is used to 75 regulate the amount of heat passing in both directions, toward the left and toward the right, over the ovens and boilers. As the heat rises from the fire-box it divides, one-half going toward the right and one-half to- 80 ward the left, and pursues its circuitous courses until it conveniently reaches the stovepipe.

Suitable doors, fastenings, grate, and other features existing in stoves are provided. 85

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

1. The herein-described stove comprising a casing, a fire-box, an oven and a boiler located 90 side by side in the casing, said oven having its top below the top of the casing thus providing a flue, and its bottom above the bottom of the casing thus providing a flue, an outlet-flue at one end of the oven and in communi- 95 cation with both of the aforesaid flues, a damper controlling the outlet-flue where it joins the flue above the oven, said boiler having its top below the top of the casing thus providing a flue, and its bottom above the bot- 100 tom of the casing thus providing a flue, a portion of the boiler-wall extending to the bottom of the casing, and its side farthest from the oven being also separated from the casing, and providing a riser-flue, a diving-flue be- 105 tween the oven and the boiler to take down the heat coming across the top of the oven from the fire-box and direct it under the boiler, and a diving-flue between the boiler and oven to take down the heat returning across 110 the top of the boiler and direct it under the oven.

2. The herein-described stove comprising a casing, a fire-box, an oven and a boiler located 115 side by side in the casing, said oven having its top below the top of the casing thus providing a flue, and its bottom above the bottom of the casing thus providing a flue, an outlet-flue at one end of the oven and in communi- 120 cation with both of the aforesaid flues, a damper controlling the outlet-flue where it joins the flue above the oven, said boiler having its top below the top of the casing thus providing a flue, and its bottom above the bot- 125 tom of the casing thus providing a flue, a portion of the boiler-wall extending to the bottom of the casing, and its side farthest from the oven being also separated from the casing and providing a riser-flue, a diving-flue be- 130 tween the oven and the boiler to take down the heat coming across the top of the oven from the fire-box and direct it under the boiler, a diving-flue between the boiler and oven to take down the heat returning across the top

of the boiler and direct it under the oven, and a water-coil arranged in the fire-box around the sides thereof and connected to the boiler.

5 3. In a stove, the combination with a fire-box having an inwardly-extending trough-shaped ledge bounding the grate-bars, of a heating-coil disposed around the sides of the fire-box and supported in the ledge, and fas-

teners securing the coil to the sides of the fire-box.

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

FRANK KRUX.

Witnesses:

CRESS GANNON,

O. A. TREITMOR.