

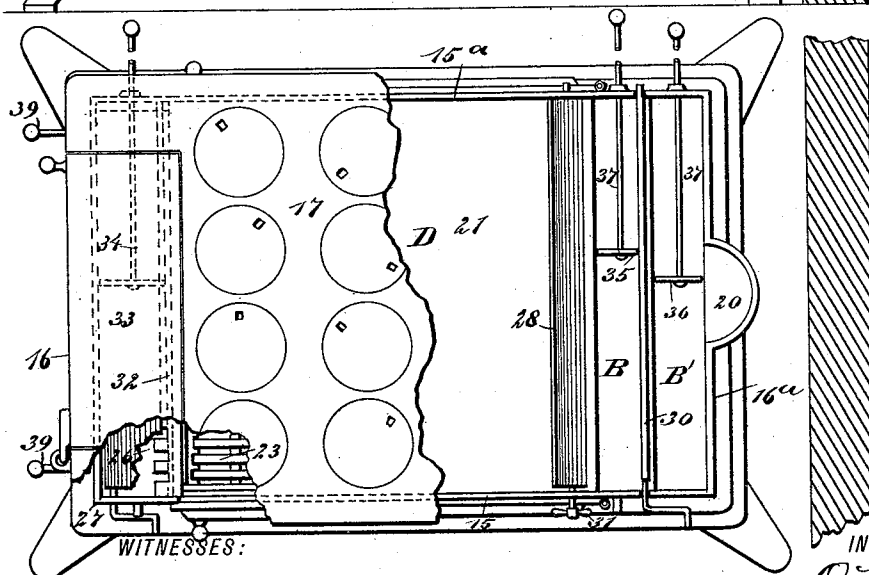
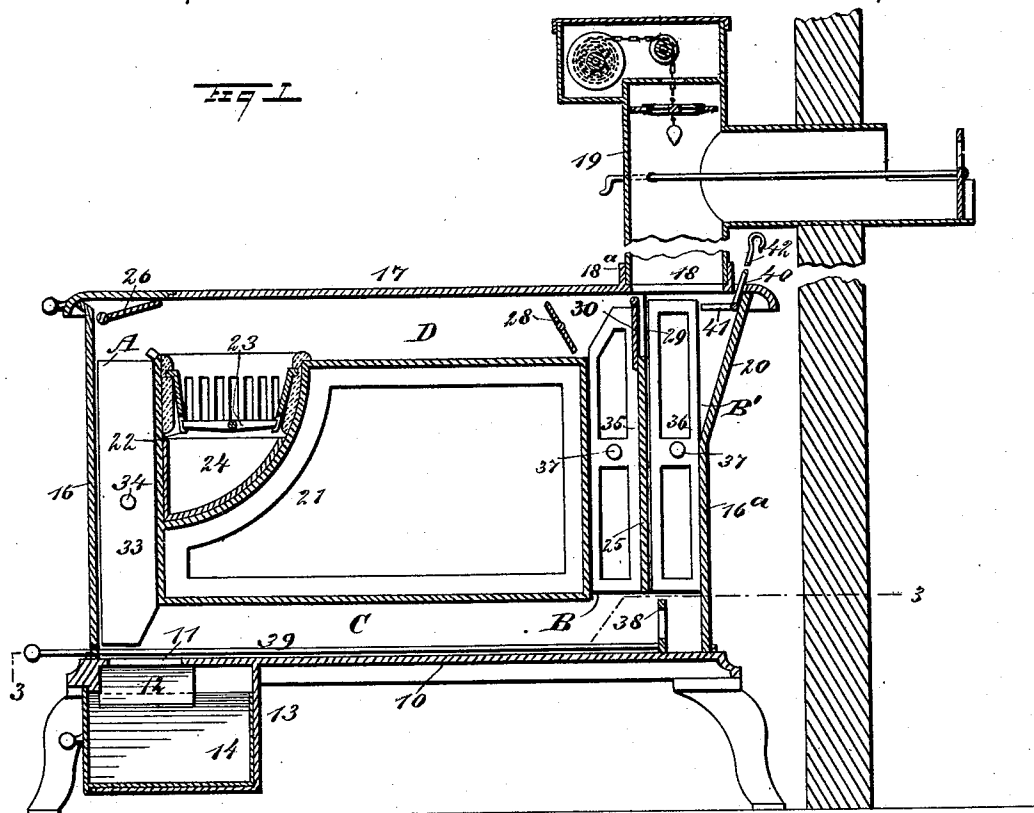
(No Model.)

2 Sheets—Sheet 1.

O. NILSON.
STOVE.

No. 484,230.

Patented Oct. 11, 1892.



WITNESSES:

H. Walker
C. Sedgwick

INVENTOR

O. Nilson

BY

Munn & Co

ATTORNEYS

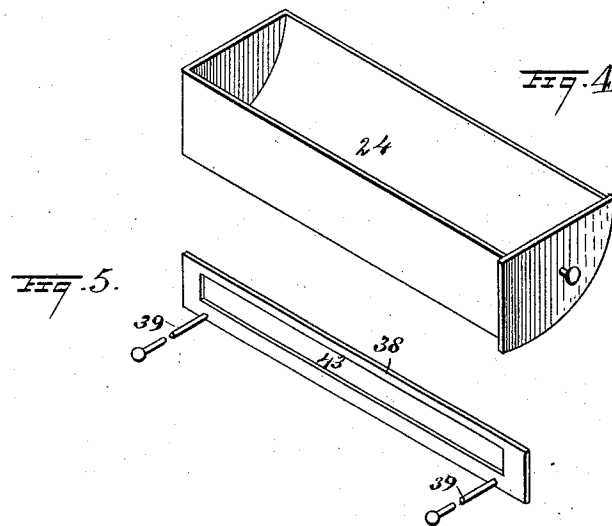
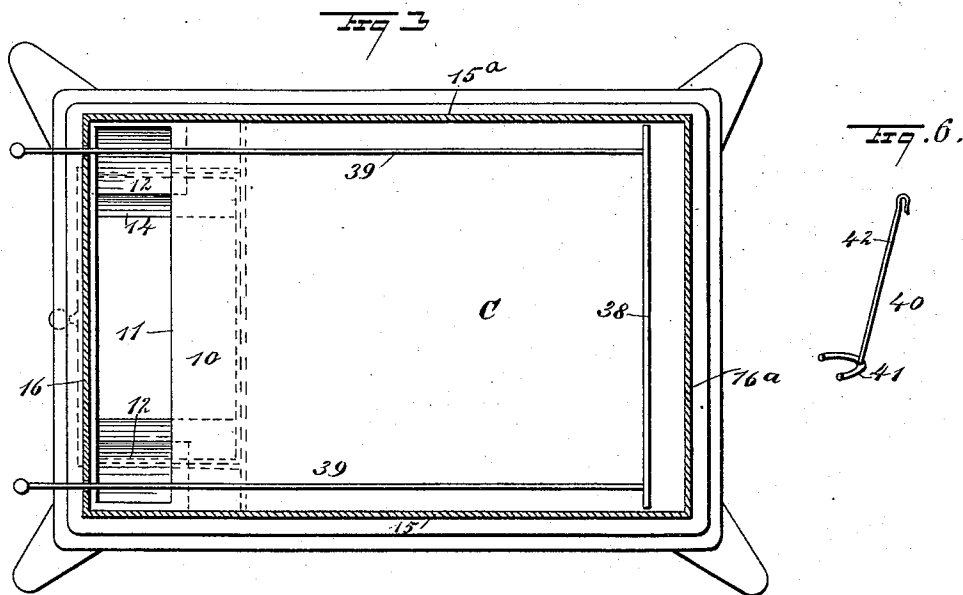
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UNITED STATES PATENT OFFICE.

OLOF NILSON, OF SALT LAKE CITY, UTAH TERRITORY.

STOVE.

SPECIFICATION forming part of Letters Patent No. 484,230, dated October 11, 1892.

Application filed September 1, 1891. Serial No. 404,393. (No model.)

To all whom it may concern:

Be it known that I, OLOF NILSON, of Salt Lake City, in the county of Salt Lake and Territory of Utah, have invented a new and useful Improvement in Stoves, of which the following is a full, clear, and exact description.

My invention relates to an improvement in the construction of stoves, and has for its object to provide a means whereby every portion of the stove calculated to receive dust or soot may be cleaned without soiling the hands or the carpet or floor upon which the stove stands, and whereby also all of the dust or soot, &c., loosened from the stove may be quickly and conveniently carried to one receptacle located in the stove and removable therefrom.

It is also the object of the invention to so locate the oven with respect to the front, back, top, and bottom of the stove that the heat and products of combustion from the fire-pot may circulate entirely around the oven, and thus insure the oven baking uniformly throughout its length and breadth.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a central longitudinal vertical section through the improved stove and pipe connected therewith. Fig. 2 is a plan view, the cover being partly broken away. Fig. 3 is a horizontal section taken, practically, on the line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of the ash-pan. Fig. 5 is a detail perspective view of one of the scrapers employed in connection with the stove at the base thereof. Fig. 6 is a perspective view of a scraper used in connection with the back of the stove near the collar.

The bottom of the stove 10, near its forward end, is provided with a transverse opening 11, and at each end of the opening downwardly-flared plates 12 are located, the said plates and the openings 11 being surrounded by a box-like casing 13, open at the front and

adapted to receive a removable pan 14 or the equivalent thereof. From the bottom 10 the front and rear walls of plates 16 and 16^a and the side walls of plates 15 and 15^a extend upward to meet a top 17, with which top they are connected. These plates and the bottom constitute the frame of the stove. The top 17 is provided with the usual opening 18 at its rear near the center, surrounded by a flange or collar 18^a, to receive the stovepipe 19, and the back plate 16^a at its upper central portion is swelled at an angle rearward to its lower portion in a manner to form an inclined chute 20, preferably semicircular in cross-section. The oven 21 is located in the central portion of the stove and extends from side to side. The upper front portion of the oven is concaved, and the front plate or wall of the oven is carried upward in front of the concavity essentially flush with the rear upper surface, as is best shown in Fig. 1, forming thereby a fire-pot 22, the front wall of which is straight and the rear concaved. The fire-pot contains any suitable form of grate 23, and beneath the grate in the fire-pot an ash-pan 24 is removably located, which ash-pan conforms in shape in cross-section to that of the fire-pot and is illustrated in detail in Fig. 5. The ash-pan is capable of being withdrawn from the fire-pot through a suitable opening produced in one of the sides of the stove.

Between the front plate or wall 22 of the oven and the front of the stove a chamber A is formed, and a wider space is provided between the rear of the oven and the back of the stove, which is divided into two compartments B and B' through the medium of a vertical partition 25. A space likewise occurs between the bottom of the oven and the bottom of the stove, forming a lower chamber C, which intersects with the front chamber A and both of the rear compartments B and B', and a similar chamber D is formed above the fire-pot and the oven and the top of the stove. In the upper chamber D at the front of the stove a gate or door 26 is pivoted, operated by a suitable handle 27, as shown in Figs. 1 and 2, which gate or door when carried upward to an engagement with the top of the stove provides for a direct communication between the upper chamber D and the front chamber A; but when the gate or door is

closed down upon the front wall or plate of the oven and fire-pot this communication is closed. Preferably over the rear portion of the oven in the chamber D a damper 28 is
 5 pivoted, operated from the outside of the stove in any suitable or approved manner, and in the upper portion of the partition 25, at the rear of the stove, which partition extends upward to a junction with the top of
 10 the stove near the front of the pipe-opening, an opening 29 is produced, which may be closed when desired by a door 30, manipulated from the outside of the stove through the medium of an attached handle 31, or in
 15 any other suitable or approved manner. When the damper 28 is open and the door 30 closed over the opening 29 in the partition 25 and the front door 26 in the chamber D is also open, the products of combustion passing from
 20 the fire-pot will be divided, a portion passing down the chamber A into the lower chamber C and thence up through the compartment B' to the stovepipe 19, while the other portion of the products of combustion passes
 25 rearward within the chamber D and down through the compartment B and thence up through the next compartment B'. By this means it will be observed that the products of combustion may be made to circulate entirely
 30 around the oven, thereby imparting to it a uniform heat. When a direct draft is desired, the front door or gate 26 is closed, thus preventing the products of combustion from entering the chamber A, the damper is opened
 35 and likewise the gate or door 30, and the products of combustion pass only over the top of the oven and out through the opening 29 in the rear partition 25 directly to the stovepipe. Coal may be poured into the fire-pot
 40 through an opening in the front of the stove at the top, normally closed by a door 32.

The prime object of this invention is to provide for the cleaning of every part of the stove and its pipe without removing the latter and without soiling the hands of the operator or the carpet or floor upon which the
 45 stove is located. To that end a vertical scraper 33 is located in the chamber A, which scraper consists of a plate of metal of sufficient width to neatly slide in the said chamber and of a length to extend from a point
 50 within the lower chamber C to the upper chamber D, as is best shown in Fig. 1. This scraper has attached thereto a rod 34, which is carried horizontally out through one side
 55 of the stove and is provided with a suitable handle, as shown in Fig. 2. Through the medium of the rod 34 the scraper 33 may be laterally reciprocated, and in this reciprocation
 60 will remove all dust or soot clinging to the front inner face of the stove-frame and the opposed face of the oven and fire-pot. In each compartment B and B' a scraper is also located, designated, respectively, as 35 and 36
 65 and best shown in Figs. 1 and 2. These scrapers act in like manner as the front scraper 33, but do not extend downward into the lower

chamber C. At their upper ends, however, they closely approach the top of the stove. In order that the rear scrapers 35 and 36 may
 70 not interfere with the currents of heat, the said scrapers are made as much as possible in the shape of skeleton frames, or the plates from which the scrapers are made may contain a series of openings or apertures.

The scrapers 35 and 36 have each attached thereto a rod 37, which rods, like the rod 34 of the forward scraper, extend outward
 75 through one side of the stove. Within the bottom chamber C a horizontal scraper 38 is located, which rests upon the bottom of the stove and extends from side to side. This scraper is of sufficient height to engage with
 80 the bottom of the oven at the same time that it engages with the bottom of the stove proper, and the lower scraper is manipulated, preferably, through the medium of two rods 39, one being attached at each end of the scraper, and the rods are carried out beyond the front of
 85 the stove.

A scraper 40, differing in construction from the scrapers heretofore described, and illustrated in detail in Fig. 9, is employed to clean
 90 the chute-section 20 at the back of the stove. This scraper usually consists of a semicircular foot 41, conforming to the inner contour of the chute-section, and a shank-section 42, connected with the foot, which shank-section extends outward through the top of the stove
 95 at the back of the flange surrounding the pipe-opening 18 therein, and this scraper is normally held with its foot near the top by hooking or otherwise connecting the upper end of its shank to the pipe 19, as best shown in Fig. 1. The scraper 38 in the lower chamber C is
 100 preferably provided with an opening 43, extending from end to end and of a width and length to give the scraper the appearance of a skeleton frame, as shown in Fig. 6.

The stove may be cleaned while in place
 110 and with the fire burning. The operation is as follows: The top of the oven is swept off and the sweepings drop down the compartment B into the bottom chamber C. The front and rear scrapers 33, 35, and 36 are
 115 then reciprocated until the front chamber A and both rear compartments B and B' are cleaned, the soot and dust dropping into the lower chamber C, which, it will be observed, receives the dust and soot from all portions
 120 of the stove, and also from the pipe. The final step in the operation of cleaning is accomplished by drawing the scraper 38, located in the lower chamber C, toward the front and carrying it back again; repeating the operation
 125 until all of the dust and soot contained in said chamber has been delivered through the opening 11 in the bottom of the stove into the pan 14 beneath the bottom. The pan may then be readily removed from the stove, emptied,
 130 and replaced.

When the dampers and draft-chambers are located as above set forth, the oven is not only heated evenly, but as the flames and pro-

ducts of combustion may be made to pass in opposite directions from the fire-pot a vessel located in a stove opening over the fire-pot will have its entire bottom subjected to the action of heat.

I do not claim the stovepipe and its appliances in this application.

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

1. A stove comprising the outer frame, an oven within the frame, flues or chambers A B C D between the front and rear ends and bottom and top, respectively, of the oven and frame, a fire-pot at the upper forward corner of the oven, an ash-pit beneath the fire-pot and having a door in the side of the stove, a damper 26 at the juncture of chambers or flues A D, a flue or chamber B' between the rear wall of the frame and the flue or chamber B and communicating with the chamber or flue C, a damper 30 in the upper end of the partition 25, which separates the flues or chambers B B', and a smoke-outlet in the top of the frame over the flue or chamber B', the said flues or chambers B B' being the full width and height of the oven and both opening at their lower ends directly into the rear end of the single undivided chamber C, substantially as set forth.

2. A stove comprising the rectangular frame, an oven therein, the fire-pot at the upper forward corner of the oven, the front chamber or flue A, top and bottom flues or chambers D C, and rear flues or chambers B B', having a dividing-partition 25, provided at its upper end with a damper to connect flue D with the outlet for a direct draft, the said flues or chambers B B' being the full width and height of the oven and both opening at their lower ends directly into the rear end of the single undivided chamber C, the damper 26 at juncture of flues or chambers A D, an opening 11

through the forward end of the frame bottom below chamber or flue A, and a casing or dust-chamber into which said opening leads, substantially as set forth.

3. A stove comprising the rectangular frame, an oven therein, flues or chambers A B B' C D, spacing the front and rear ends and the bottom and top of the oven from the frame, the rear flues or chambers B B' being separated by a vertical partition transverse to the stove and having a damper 30 at its upper end and terminating at its lower end at the bottom line of the oven, the said flues or chambers B B' being the full width and height of the oven and both opening at their lower ends directly into the rear end of the single undivided chamber C, a fire-pot flush with the front and top walls of the oven and having an ash-pit opening through one side of the frame, a damper 26 at the juncture of the chambers or flues A D, vertical scraper-blades in the chambers or channels A B B', and a horizontal scraper in the chamber or flue C, movable toward and from the front end of the stove, an opening 11 through the front end of the stove-bottom, and a dust-chamber into which said opening leads, substantially as set forth.

4. A stove having the rear wall of its rear vertical flue enlarged or swelled outward and upward at its upper end, as shown at 20, beneath the smoke-outlet, and the scraper comprising the semicircular foot 41, working in said enlargement or swelling and having a shank-section 42 projecting through the top of the slope and having a suspension hook or eye at its upper end, substantially as set forth.

OLOF NILSON.

Witnesses:

CARL O. JOHNSON,
ANTON HOFFENBEEK.