No. 830,524. PATENTED SEPT. 11, 1906.

G. H. PETRI.

BAKING OVEN.

APPLICATION FILED MAR. 7, 1904.

2 SHEETS—SHEET 1.

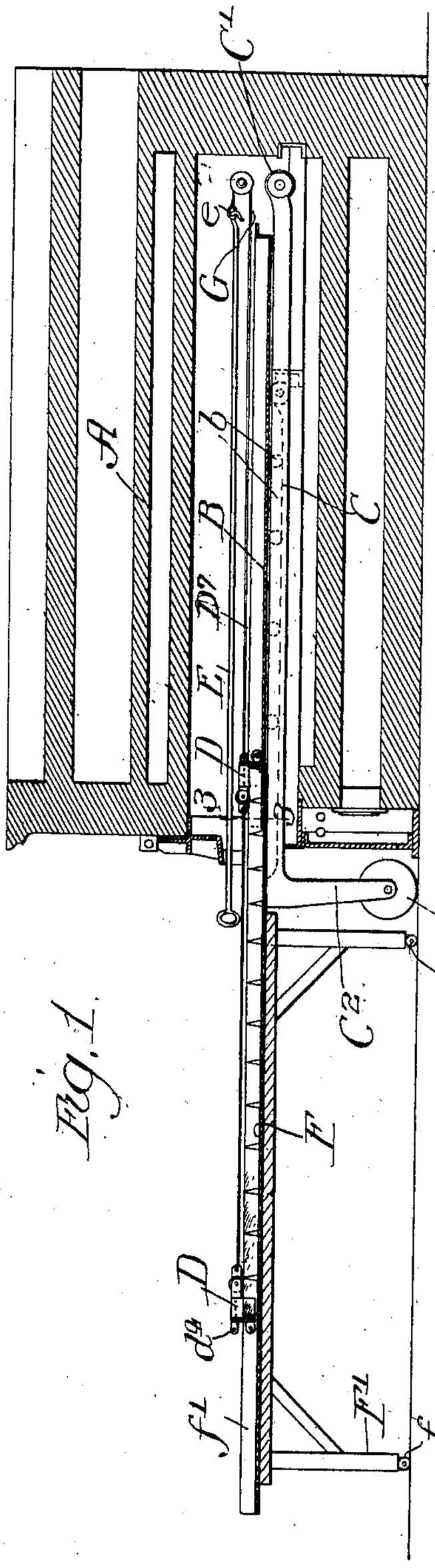

Fig. 1.

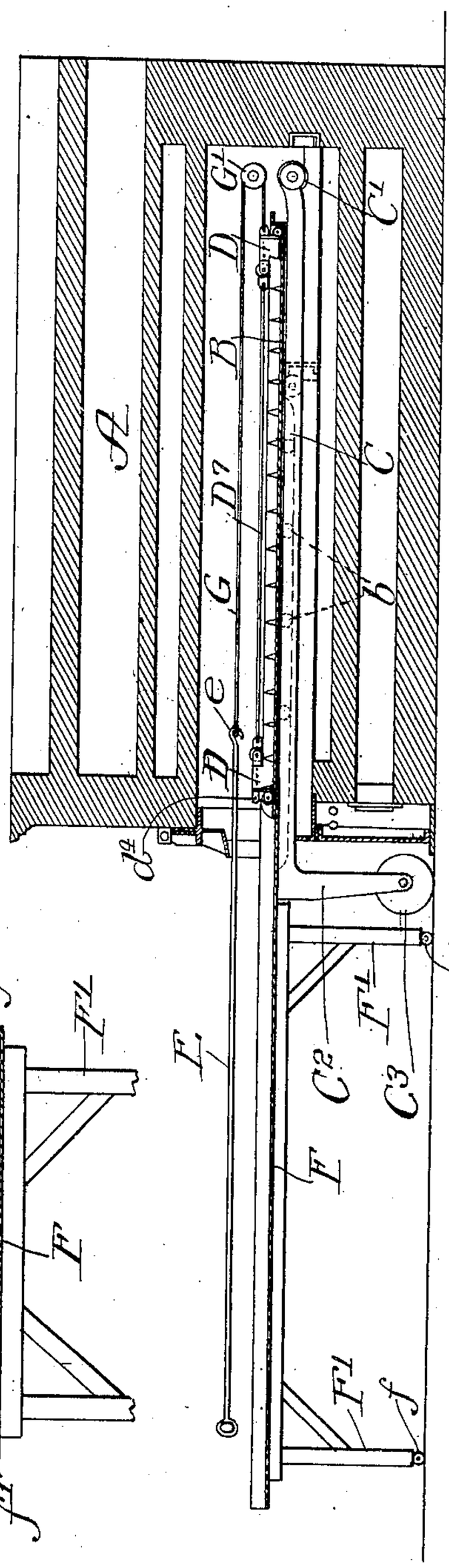

Fig. 2.

Fig. 3.

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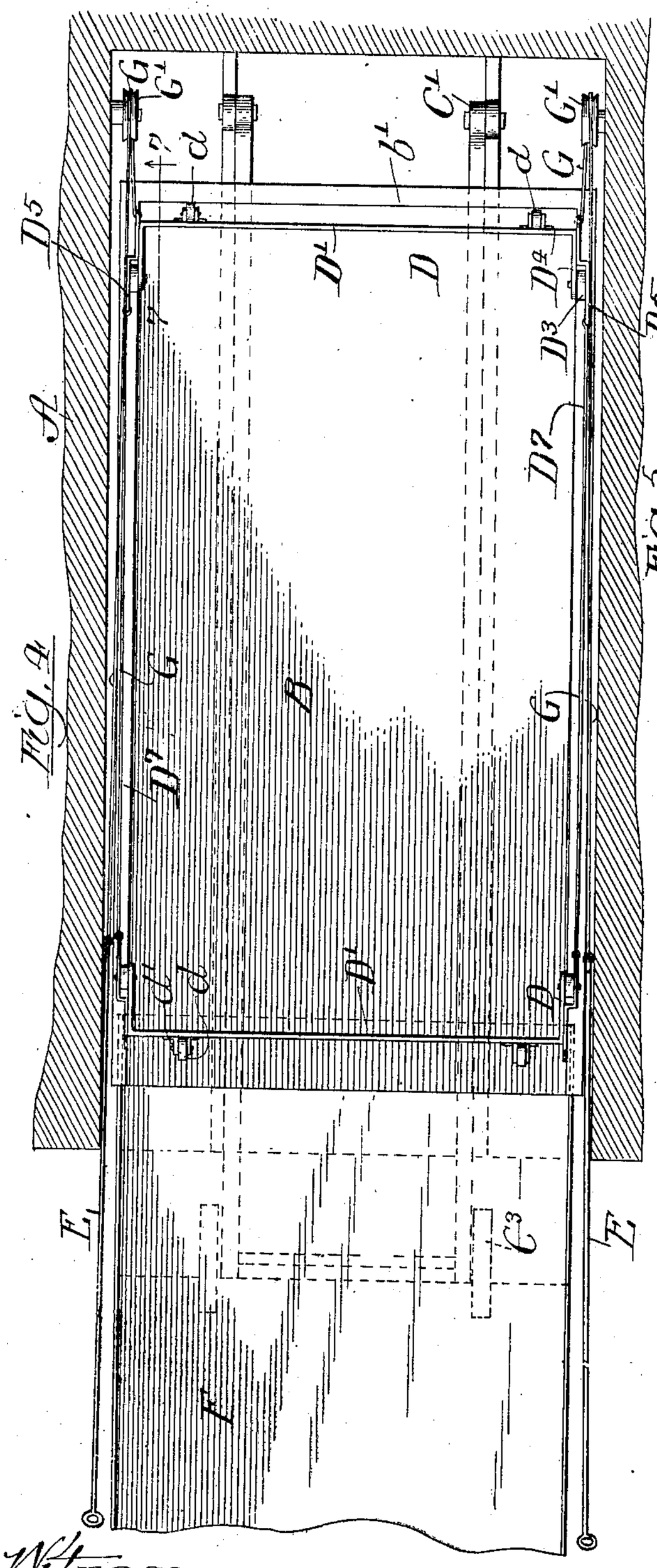

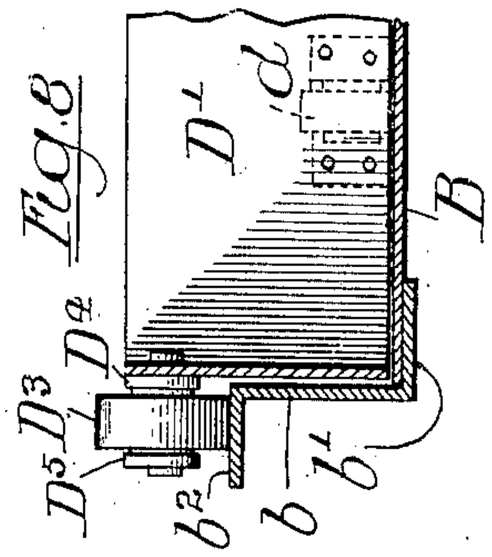

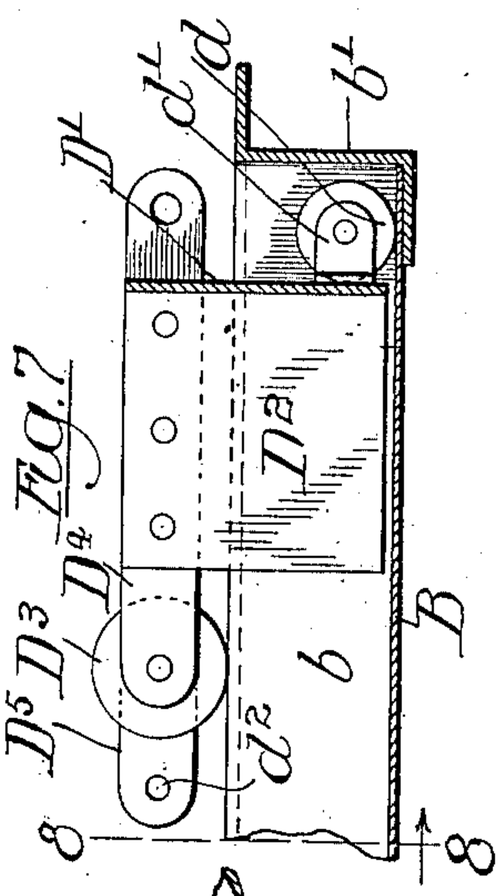

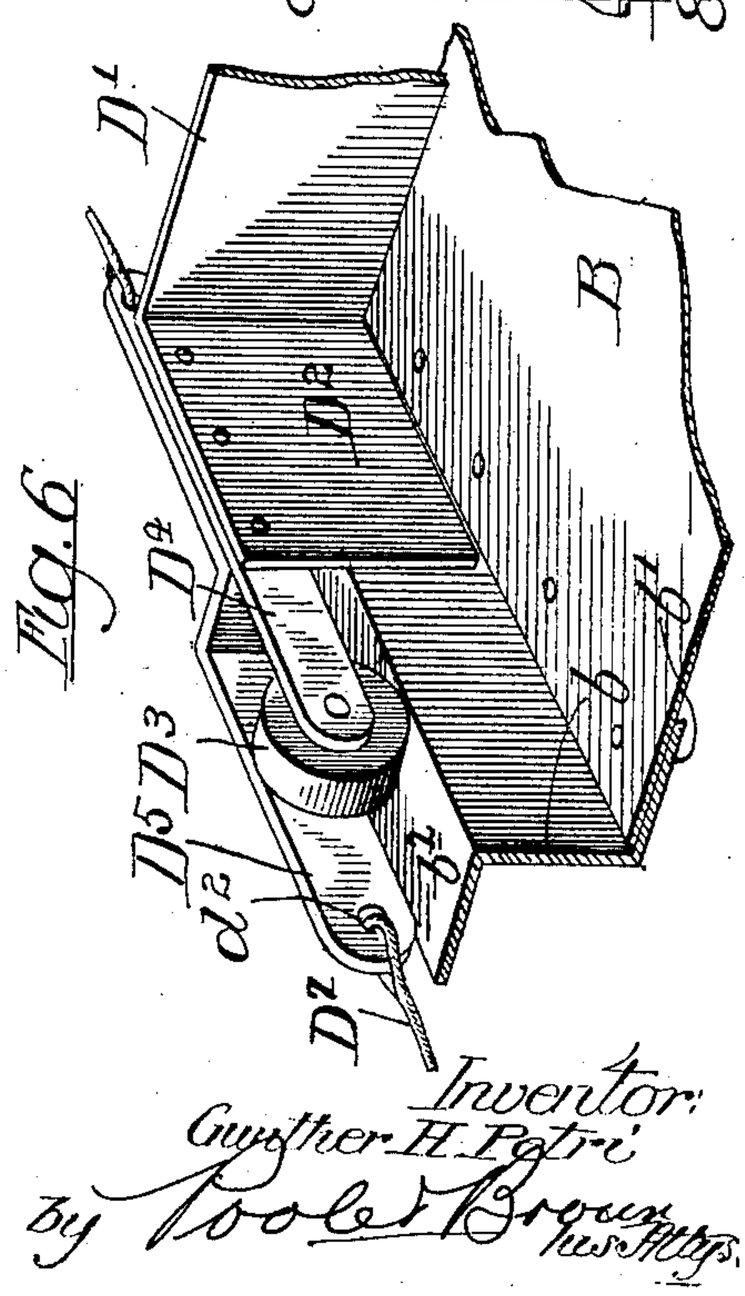

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UNITED STATES PATENT OFFICE.

GUNTHER H. PETRI, OF SAGINAW, MICHIGAN.

BAKING-OVEN.

No. 830,524. Specification of Letters Patent. Patented Sept. 11, 1906.

Application filed March 7, 1904. Serial No. 196,948.

To all whom it may concern:

Be it known that I, GUNTHER H. PETRI, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Baking-Ovens; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in baking-ovens; and the invention consists of the matters hereinafter set forth, and more particularly pointed out in the appended claims.

The object of the invention is to provide a device for quickly loading and unloading ovens and by means of which space in front of the oven is economized.

So far as the adaptation of the improvements to unloading ovens, it is particularly applicable to that class of ovens known as "draw-plate" ovens—such, for instance, as is shown in the prior United States patent to Werner and Pfleiderer, No. 566,639, granted August 25, 1896. The device may be employed, however, both for loading and unloading and in connection with ovens without the draw-plate feature.

In the drawings, Figure 1 is a longitudinal vertical section of an oven of the draw-plate type, provided with my improvements. Fig. 2 is a similar view with the parts thereof shown in changed positions. Fig. 3 is a transverse section taken on line 3 3 of Fig. 1 with parts omitted. Fig. 4 is a top plan view, enlarged, showing the draw-plate in the oven and a table upon which the contents of the oven is to be unloaded and showing my improved loading and unloading scrapers or devices. Fig. 5 is a detail showing a stop between the draw-plate and the loading and unloading table. Fig. 6 is a perspective view of one corner of my unloading-scraper, showing the means of mounting it on the draw-plate. Fig. 7 is a vertical section taken through the scraper and table on line 7 7 of Fig. 4. Fig. 8 is a cross-section taken on line 8 8 of Fig. 7.

As shown in the drawings, A designates the front part of a baking-oven, which may be of any well-known construction and the details of which need not be referred to herein.

B designates a horizontal plate on which are supported the bread-pans while the bread is baking. Said plate constitutes in this form of oven the floor or supporting-surface of the baking-chamber for the baking-pans. Said plate is supported by means of rollers *c* on a carriage, (designated as a whole by the letter C,) which is supported at its rear end on rollers or wheels C′, resting and rolling on suitable supports in the furnace and provided at its forward ends with downwardly-extending legs C^2, having wheels C^3 at their lower ends, which latter in practice are designed to travel on suitable guide-rails (not shown) outside the furnace. The carriage mounted in this manner is adapted to be withdrawn from the furnace to load and unload the same and the plate may be removed from the carriage when desired.

The parts of the furnace just described are shown as made substantially like the same parts in the prior Werner and Pfleiderer patent above referred to and may be operated in substantially the same manner. They may be embodied together with my improvements in a double-deck furnace as well as in the single-deck furnace herein shown. The other details of the furnace, such as the mounting of the front door of the furnace and the means for operating said door, as well as other details, are not herein shown, inasmuch as such devices constitute no part of the present invention.

My invention embraces, in general terms, a scraping device which, so far as its application to a furnace of the character illustrated is concerned, is adapted more particularly for scraping out or unloading the baking-pans from the oven after the baking process has been completed. Heretofore in this class of ovens it has been a common practice to draw out the baking-plate B and the carriage C from the furnace and to place a table to receive the baking-pans therefrom at the end of said drawn-out plate and scrape the pans from the plate to the table. In many instances there is not sufficient room between the back wall of the baking room or chamber and the furnace to permit a table to be placed at the end of the drawn-out carriage and baking or draw plate. Under such circumstances the table has been placed at the side of the drawn-out baking-plate; but this is inconvenient so far as the operation of transferring the bread to the table is concerned, and when there are a number of

ovens side by side such side tables for one oven are in the way of the tables of the other adjacent ovens. I propose to provide a construction wherein the table which receives the baked bread may be placed immediately in front of the oven-door and the bread scraped thereon from the baking-plate while occupying its usual position in the oven. The apparatus may also be so constructed as to enable the baking-pans filled with the dough to be scraped directly from said table upon the baking-plate while in the furnace. This latter form of apparatus is also adapted for use in ovens not provided with draw-plates.

A device for thus unloading an oven of the type herein shown, and which may be used for loading a simple form of oven, as suggested, consists, essentially, of a scraper, designated as a whole by the letter D, which is made of a length to extend transversely across the baking-plate or baking-floor of the oven. The rear scraper, which is especially applicable to the draw-plate type of oven, is shown at the rear end of the draw-plate B in Figs. 2 and 4, and the details of the device are shown in Figs. 6, 7, and 8. Said scraper consists of a main vertical body D′, extending transversely across the draw-plate and provided at its ends with forwardly-directed parts D^2, which fit closely against the side walls or rim of the draw-plate. The side and end walls or rims of the draw-plate are herein shown as formed by the webs *b* of Z-bars. The lower flanges *b′* of said Z-bars overlap and are riveted to the margins of the body of the plate, and the upper flanges b^2 thereof extend horizontally outwardly from the upper margins of the rims, as shown in Figs. 6, 7, and 8. The main body D′ of the scrapers are supported on rollers *d*, mounted in brackets *d′*, attached thereto in the manner shown in Fig. 7, and the ends of the scraper are guided by rollers D^3, which rest and roll on the side walls or rims of the draw-plate. The said rollers at the ends of the scraper are shown as journaled in forwardly-directed arms D^4, attached to the scraper in any suitable manner, the arms being herein shown as riveted to the outer sides of the forwardly-directed parts D^2 of the scraper. When the side walls or rims of the plate are made of Z-bars, as herein shown, the guide-rollers D^3 are made with flat faces and rest and roll on the upper horizontal flanges of said bars; but if said upper flanges be omitted the same guiding effect will be produced by providing the rollers with guide-flanges.

D^5 designates draft-arms which are attached to the ends of the scraper outside of said guide-rollers and which are provided at their forward ends with apertures for engagement with suitable means for drawing the scraper forwardly in the oven.

F designates a table which is placed in front of the furnace to receive the bread scraped from the baking-plate, and said table is supported on the legs or standards F′, provided at their lower ends with casters *f*. Said table, as shown, is provided with side flanges or rims *f′ f′*. The table is provided at one end with an extension, which is adapted to project through the oven-door a sufficient distance to underlap the forward end of the baking or draw plate B, which latter terminates a short distance in rear of the oven-door. The extended end of the table passes beneath the forward end of the draw-plate, and the side rims or flanges pass outside of the side walls or rims of the draw-plate, as clearly shown in Figs. 3 and 5. In order to prevent the draw-plate from being pulled forwardly by the draft of the scraper when the pans are being scraped off the plate on the table, stops b^4 are provided on the plate, as shown in Fig. 5, which engage the inner end of the table.

The scraper may be drawn forwardly over the draw-plate or the floor of the oven, as the case may be, by any suitable draft device to scrape the baking-pans containing the bread therefrom upon the table placed to receive the same. If the rear scraper D is to be used singly to scrape the plates from the oven, it may be pulled from the oven by means of draft-bars E by engaging the hooks *e* at the rear ends thereof with the apertures d^2 in the forward ends of the draft-arms of the scraper. Two of such draft-bars, one for each end of the scraper, are employed. The plate may be drawn backwardly into its rearmost position by means of cables G G, which are attached to the rear side of the opposite ends of the scraper and are trained over guide-pulleys G′, fixed in the side walls of the oven and directed forwardly therefrom. Said cables, as herein shown, are provided at their forward ends with loops for engagement with the hooks of the draft-bar E. In the foregoing it is assumed that the rear scraper is used singly to scrape the baked bread from the oven. As herein shown, however, two scrapers are employed, one for loading and the other for unloading the oven.

The scraper for loading the furnace is designated by the same reference-letters as the scraper described and is made in all respects like the previously-described scraper excepting, of course, that it faces in the opposite direction. Said forward or loading scraper when the bread is in the oven occupies the front end of the furnace area, as clearly shown in Fig. 2, it being contained within the oven-door, while the unloading scraper at this time occupies the rear end of the oven.

In Fig. 1 is shown pans filled with dough and placed on the table F with the forward scraper in position to scrape said pans into the oven. Said forward scraper is connected with the rear scraper by means of connect-

ing-cables D^7 D^7 in such manner that when the forward scraper is drawn forwardly the rear scraper follows and when the rear scraper is drawn inwardly the forward scraper is also pulled inwardly. The scrapers are drawn outwardly by engagement of the draft-bars E with eyes d^4 at the front side of the forward scraper and when the scrapers are to be pulled inwardly the draft-bars E are engaged with the looped ends of the cables G, as shown in Fig. 1.

It will be understood that one or both of the scrapers may be adapted to a furnace not provided with draw-plates, but wherein the bread-pans rest directly upon a stationary baking-plate or oven-floor. The single unloading scraper is especially applicable for ovens having the draw-plates, inasmuch as it enables the ovens to be unloaded in a space in front of the furnace sufficiently wide only to receive separately the draw-plate or the table upon which the bread from the furnace is to be unloaded.

I claim as my invention—

1. The combination with a baker's oven having a deep baking-chamber provided with a flat floor plate or hearth and a front opening made of the full width of the chamber and closed by a door, of a scraping device extending entirely across the chamber and made of a length less than the width of the door, said device normally occupying the rear end of the chamber and withdrawing means extending forwardly and rearwardly from the scraping device operating severally to withdraw said scraping device forwardly toward the front door-opening and rearwardly away from said opening.

2. In a baking-oven, the combination with the baking-plate provided with marginal vertical rims, of a scraping device extending across the baking-plate and provided with rollers which rest on said plate-rollers at the ends of said scraping device which rest and roll on the rims of the plate, and means for drawing the scraping device forwardly over the baking-plate to scrape the baking-pans therefrom.

3. In a baking-oven, the combination with a baking plate or floor, of a scraping device extending across the same from side to side thereof, guide and supporting rollers on the scraping device engaging guiding and supporting surfaces on the plate or floor, means for drawing said scraping device forwardly over said baking-plate, and cables attached to the rear side of said scraping device and trained over pulleys in the side walls of the furnace for drawing the scraping device rearwardly into the oven.

4. In a baking-oven the combination with the baking plate or floor, of two scraping devices extending from side to side thereof, one of said scraping devices being located normally in rear of the oven and the other normally in front of the oven, and means connecting said scraping devices whereby they may be withdrawn from and retracted into the oven simultaneously, whereby one of said devices serves to load and the other to unload the oven.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 17th day of February, A. D. 1904.

GUNTHER H. PETRI.

Witnesses:
JNO. A. MCKAY,
E. M. O'BRIEN.