Jan. 2, 1923.

1,440,379

W. W. DODGE, JR.
TOASTER.
FILED JAN. 10, 1922.

2 SHEETS-SHEET 1

Fig. 1.

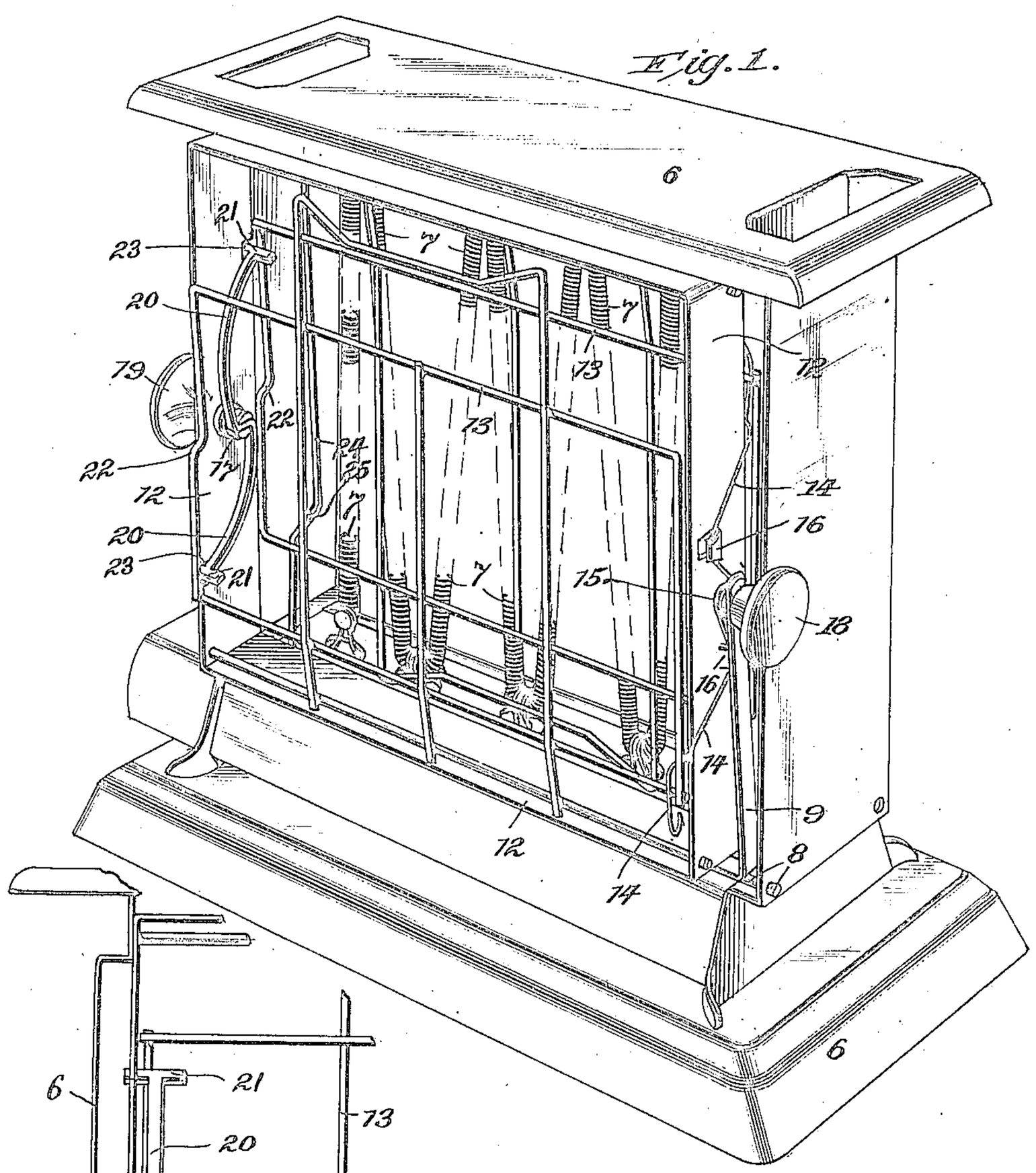
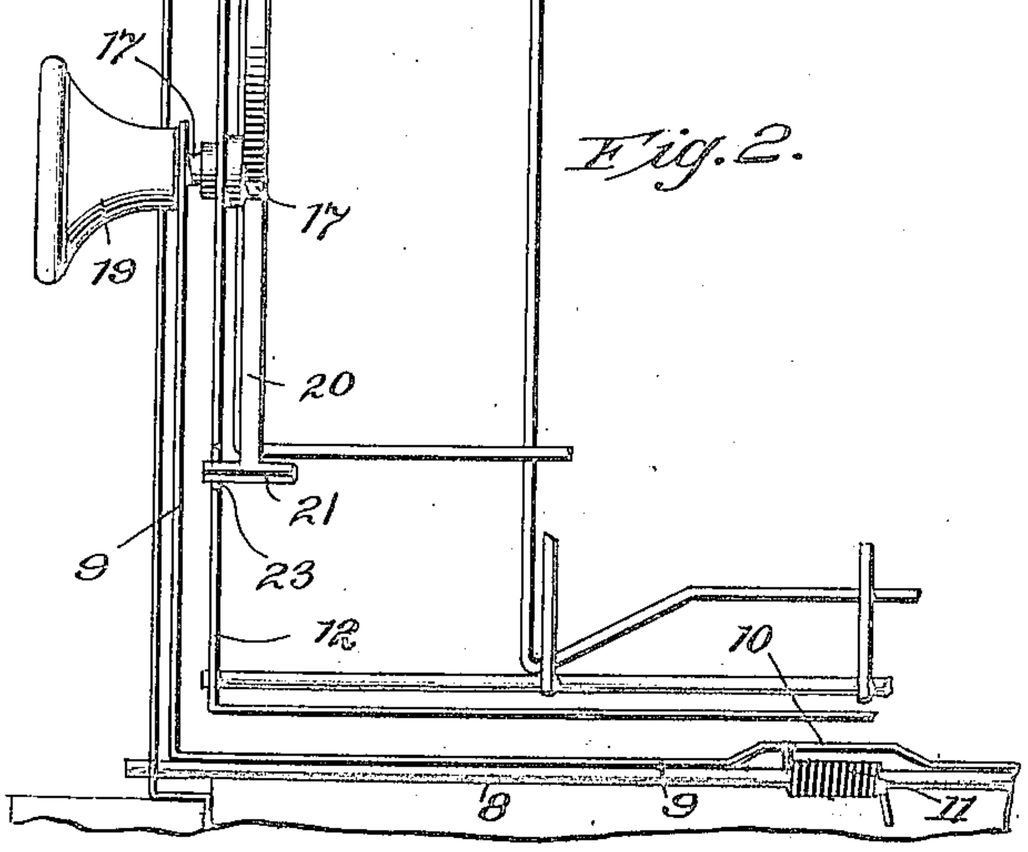


Fig. 2.



Inventor
William W. Dodge, Jr.
by Dodge and Dodge.

Attorneys

Jan. 2, 1923.

1,440,379

W. W. DODGE, JR.
TOASTER.
FILED JAN. 10, 1922.

2 SHEETS-SHEET 2

Fig. 1.

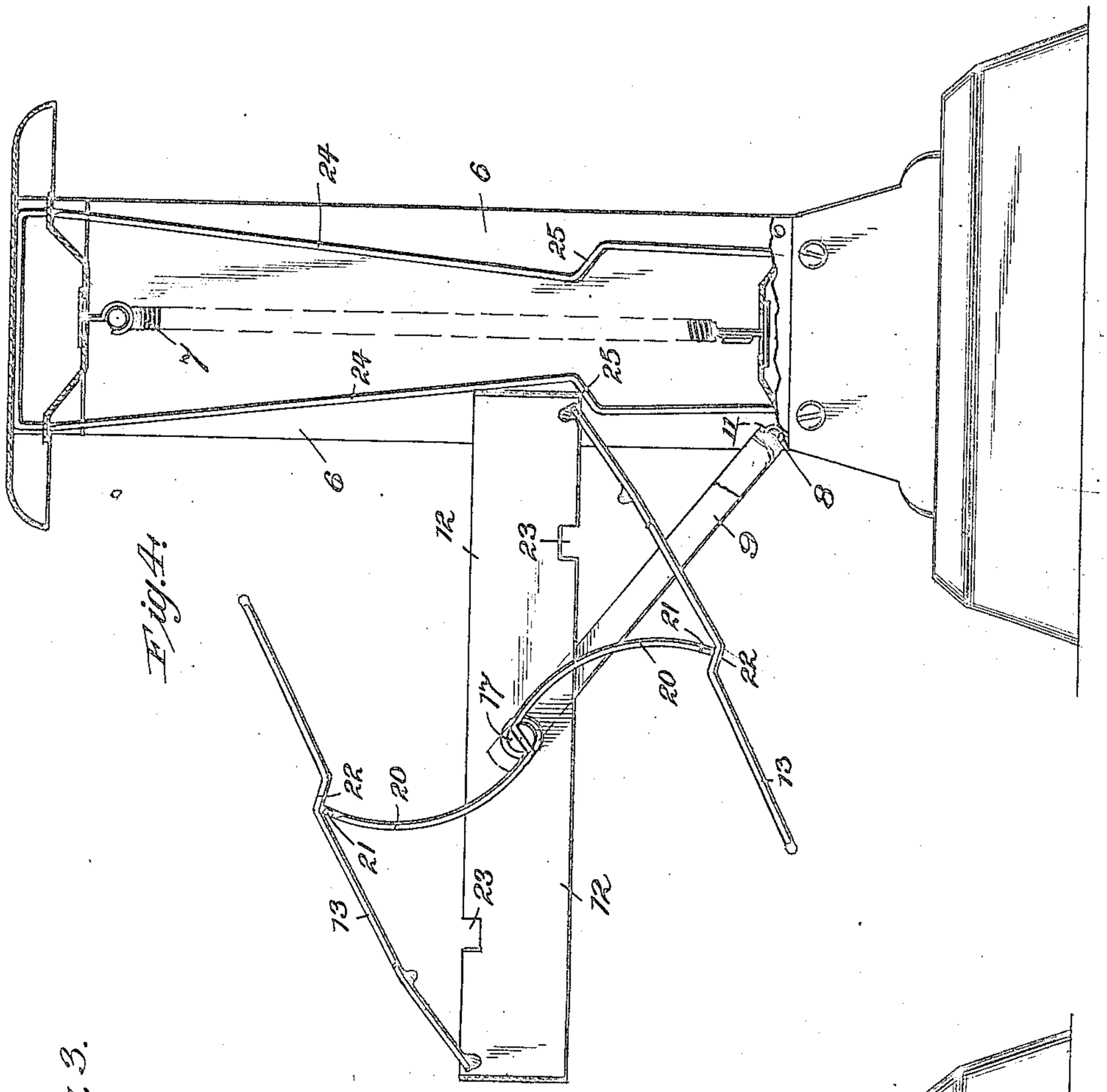
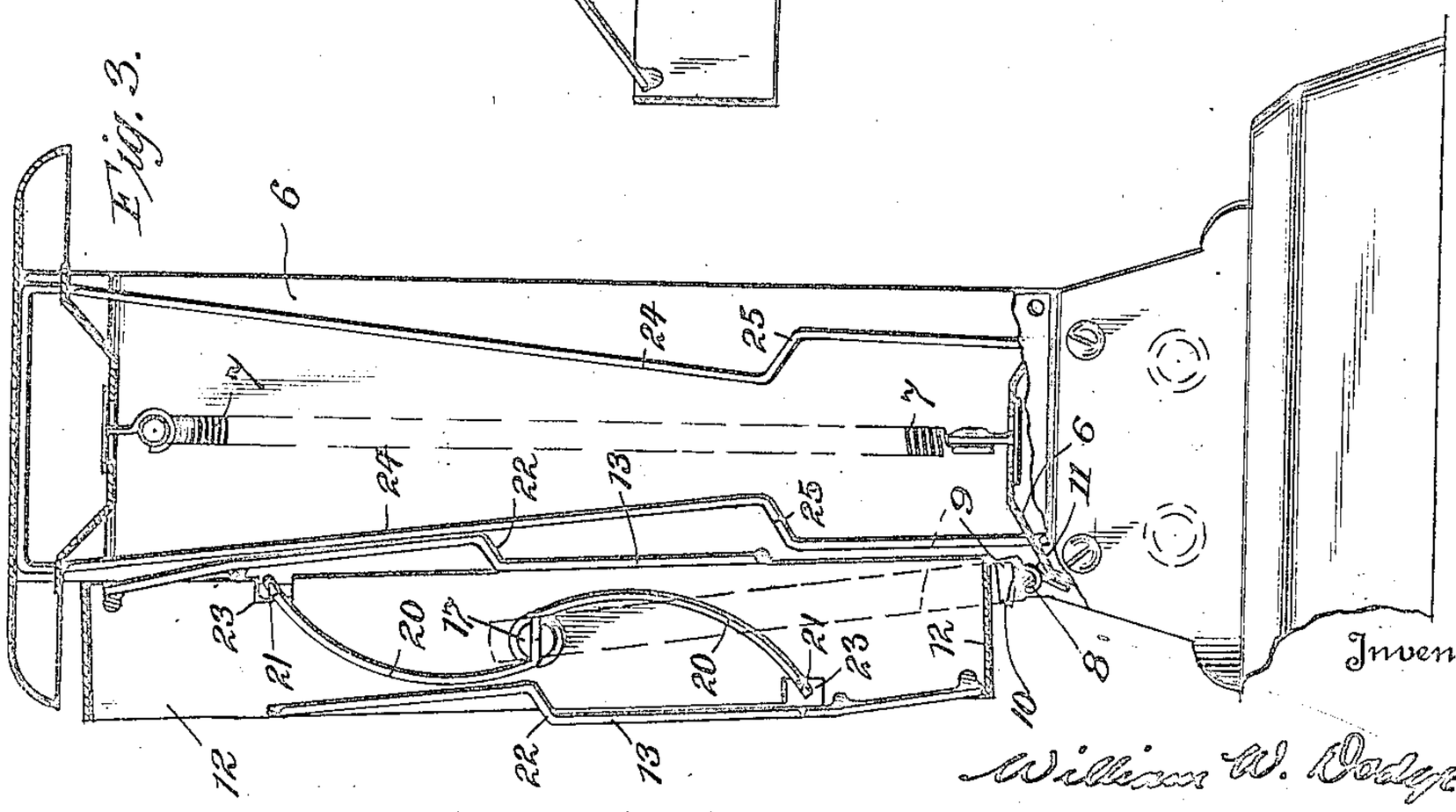


Fig. 3.



Inventor
William W. Dodge, Jr.
By Dodge and Owen,
Attorneys

Patented Jan. 2, 1923. 1,440,379

UNITED STATES PATENT OFFICE.

WILLIAM W. DODGE, JR., OF MERIDEN, CONNECTICUT.

TOASTER.

Application filed January 10, 1922. Serial No. 528,275.

To all whom it may concern:

Be it known that I, WILLIAM W. DODGE, Jr., a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Toasters, of which the following is a specification.

This invention relates to toasters of the type in which the bread to be toasted is held in reversible frames or carriers having gates or clamps which are released to discharge the toasted bread. The principal object of the invention is to provide a simple device which may be operated with one hand, and which will serve alternatively to reverse a frame, and to release its gates.

In the preferred embodiment of the invention the carrier is mounted on trunnions so as to be freely rotatable in a U-shaped yoke, and this yoke is hinged at its bottom to the frame of the toaster. A spring urges the yoke toward the frame of the toaster, so that the carrier is normally positioned close to the heating elements carried by the frame, but may be drawn away far enough to permit the carrier to be reversed by rotating it on its trunnions. For rotating the carrier there is provided a knob which is fast to one of the trunnions on which the carrier turns, and this trunnion is so mounted as to be capable of a limited rotation with reference to the carrier against spring resistance. The strength of the spring is sufficient to rotate the carrier, but if the carrier is held against rotation the trunnion can be turned relatively thereto, and this relative rotation is used to actuate the gates.

Many embodiments of the gate actuating mechanism may be made, but I prefer the one shown in the drawings. In this there are two gates held closed by springs, and the trunnion carries a cam which acts directly on the gates. The gate springs thus offer the necessary yielding resistance to the rotation of the trunnion relatively to the carrier.

In order to hold the carrier against rotation when it is desired to open the gates, an abutment is provided on the frame of the toaster in such position as to arrest the carrier if the yoke is allowed to swing a short distance toward the frame. The same general result may be had by fixing a knob to the opposite end of the carrier, so that the second knob may be grasped and held while the first is turned to open the gates. This manipulation requires the use of both hands, and hence it is generally preferable to use the abutment to arrest the carrier.

An embodiment of the invention capable of manipulation in either of the ways just described is shown in the accompanying drawings, in which;—

Fig. 1 is a perspective view of a toaster having an electric heating unit. In this view the carrier is shown in its normal position adjacent the heating unit.

Fig. 2 is a fragmentary front elevation of the gate actuating mechanism.

Figure 3 is a transverse section showing the parts in the positions shown in Fig. 1.

Fig. 4 is a similar section showing the gates held open by the gate actuating mechanism.

In toasters of the type illustrated in the drawings it is customary to use two carriers, one on each side of the heating unit. As the carriers are duplicates, and are independent of each other, the second carrier has been omitted from each of the figures in order to simplify the drawings.

The toaster frame is shown at 6 and the heating unit at 7. These parts are of any usual construction, and the drawing shows one well known commercial form.

Rotatably mounted in the end plates of the frame 6 is a fulcrum rod 8, and to this is electrically welded a U-shaped yoke 9 formed of sheet metal. The yoke 9 has two upstanding arms to carry the reversible bread-carrier, and at its middle is formed with an offset 10 which serves as a seat for one end of a spring 11. This spring is wound around rod 8 and bears at its other end against frame 6, so as to urge the yoke toward the heating unit.

The reversible bread-carrier includes a rectangular frame 12, of sheet metal, two gates or bread-clamps 13, formed of wires spot-welded together, and two combined spring and limit stop wires 14, one for each gate 13. The gates 13 are pivoted at opposite sides and near opposite faces of the frame 12, as is best shown in Fig. 4, and are drawn toward each other by the springs 14, which, by means of their hooked ends, limit the distance that the gates 13 may be forced apart. As is best shown in Fig. 1, the combined spring and stop wires 14 are held in place by having one end looped around the trunnion 15, fixed to the frame 12, and by passing behind a lug 16

struck up from frame 12. The free end of each spring overlies a wire of the corresponding gate 13, so as to urge the gate closed.

The trunnion 15 is at the middle of the end of frame 12, and alined with it at the opposite end of frame 12 is a second trunnion 17, which, unlike trunnion 15, is rotatably mounted in frame 12. Each trunnion is mounted to rotate freely in the corresponding one of the arms of the yoke 9, and the parts are so proportioned as to present the frame 12 directly opposite the heating unit 7.

The trunnion 15 has a knob 18 by which the frame 12 may be turned, when the yoke 9 is retracted, to present either side to the heating unit. The trunnion 17 has a similar knob 19 on its outer end, and has at its inner end a double-armed cam or wiper 20, formed with a laterally enlarged head 21 at the end of each arm. These heads 21 engage end wires of the gates 13, so that when cam 20 is turned relatively to frame 12, by turning the knob 19, the gates 13 are forced open to the position shown in Fig. 4. Offsets 22 in the engaged wires of gates 13 exert a slight retaining action on the cam in the open position of the gates, so that the knob 19 need not be held to maintain the gates in their open position. The reverse movement of the cam 20 is limited by the engagement of heads 21 in the stop notches 23.

To prevent the frame 12 from moving too close to the heating unit 7, two or more upright guard wires 24 are provided, and each of these is formed with a sharp offset 25 in position to serve as a stop and thus arrest the frame 12 in a substantially horizontal position, if the frame be turned when the yoke 9 is only partially retracted. This function is clearly shown in Fig. 4.

To open the gates of the carrier, the user grasps the knob 19 and draws the yoke 9 and frame 12 nearly, but not quite, to their limit of forward movement. The knob 19 is then rotated to turn the top of frame 12 toward guide wires 24, until offsets 25 arrest the frame. Continued rotation of knob 19 in the same direction will then open the gates. In the full-open position they latch open impositively. A slight, but sudden reverse rotation of the knob 19 will, because of the inertia of frame 12, overcome the impositive latching, permitting the springs 14 to close the gates and restore the cam 20 and knob 19 to their normal positions. If the yoke 9 and frame 12 are drawn out far enough to clear the offsets 25 the frame may be reversed by means of the knob 19.

It will be observed that an important characteristic of my invention is the provision of a single actuating means, which normally moves with the bread carrying frame and serves to reverse the latter, but which may be moved relatively to the bread carrying frame to actuate gates or clamps which serve to retain the bread in these frames. In the broad aspects of my invention it is not essential that this relative movement be rotary, nor is it essential to use a cam to impart movement to the gates. The arrangement illustrated is preferred, however, because it is simple to construct and easy to operate, and may readily be applied to commercial types of toaster.

It will be observed that the lower gate is inclined when the gates are open, so that the effect of opening the gates is not merely to release but also to discharge the bread automatically. In certain of the claims I refer to the gates as means for discharging the bread. I also use the term "handle" to refer to the knob 19, the word being used in a generic sense for the purpose of covering functional equivalents.

What I claim is:—

1. In a toaster, the combination of a heating element; a reversible bread-carrier; a handle adapted to move with said carrier to reverse the same, but capable of movement relatively to said carrier; and means for discharging bread from said carrier, operatively connected with said handle and adapted to be actuated by such relative movement.

2. In a toaster, the combination of a heating element; a reversible bread-carrier; a handle adapted to move with said carrier to reverse the same, but capable of rotation relatively to said carrier; means for releasing bread from said carrier, operatively related to said handle and adapted to be actuated by such relative rotation; and a spring opposing such relative rotation.

3. In a toaster, the combination of a heating element; a reversible bread-carrier; a handle adapted to move with said carrier to reverse the same, but capable of rotation relatively to said carrier; means for releasing bread from said carrier, operatively related to said handle and adapted to be actuated by such relative rotation; a spring opposing such relative rotation; a stop capable of arresting the movement of said carrier; and mans under the control of the operator for rendering said stop operative or inoperative.

4. In a toaster, the combination of a heating element; a reversible bread-carrier; a handle adapted to move with said carrier to reverse the same, but capable of movement relatively to said carrier; and means for releasing bread from said carrier, operatively connected with said handle and adapted to be actuated by such relative movement.

5. The combination of a heating element; a yoke movable toward and from said heat-

ing element; a bread-carrier rotatably mounted in said yoke; a handle mounted coaxially with said carrier, and rotatable relatively thereto; a bread-retaining gate on said carrier; an operative connection between said gate and handle for operating the gate by said relative rotation of the handle; a spring normally holding said gate closed; and a stop operative in one position of said yoke to arrest said carrier.

6. The combination of a heating element; a yoke movable toward and from said heating element; a bread carrier rotatably mounted in said yoke; a handle mounted coaxially with said carrier, and rotatable relatively thereto; a pair of opposed, reversely hinged gates, on said carrier and serving to control the retention of bread therein; a spring mechanism normally holding said gates closed; a cam mechanism operated by the rotation of said handle relatively to said carrier, and acting directly on said gates to force the same open; and means for arresting the rotation of said carrier.

7. The combination of a heating element; a yoke movable toward and from said heating element; a bread carrier rotatably mounted in said yoke; a handle mounted coaxially with said carrier, and rotatable relatively thereto; a bread-retaining gate hinged on said carrier; a spring normally holding said gate closed; a cam operated by the rotation of said handle relatively to said carrier and acting on said gate to force the same open; means for retaining the cam impositively in the open position of the gate; and means effective at the will of the operator for arresting the rotation of said carrier.

In testimony whereof I have signed my name to this specification.

WILLIAM W. DODGE, Jr.