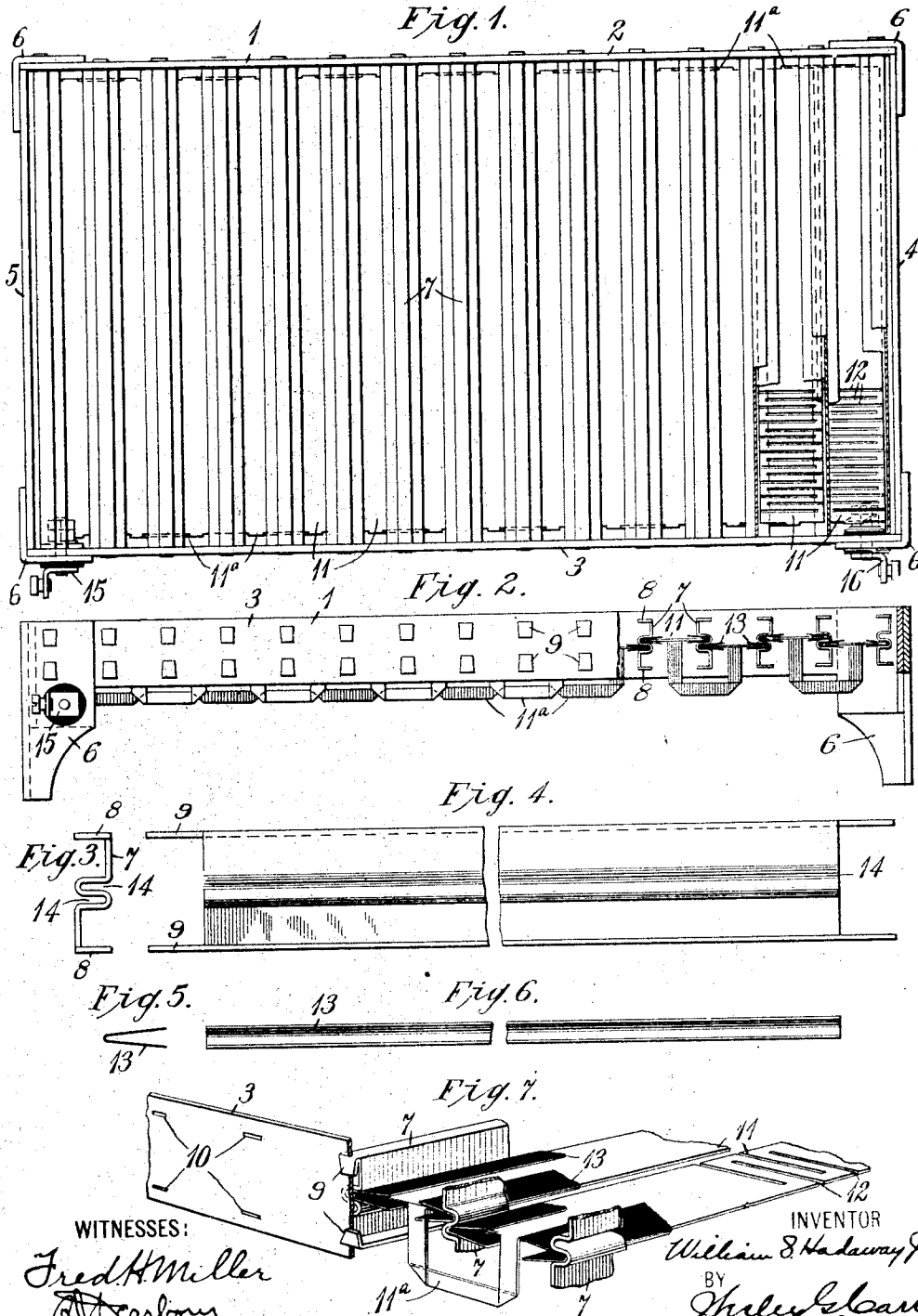


W. S. HADAWAY, JR.
ELECTRIC TOASTER.

APPLICATION FILED MAY 1, 1909. RENEWED MAR. 21, 1910.

977,626.

Patented Dec. 6, 1910.



WITNESSES:
Fred H. Miller
J. J. Carbone

INVENTOR
William S. Hadaway Jr.
BY
Thurley S. Carr
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM S. HADAWAY, JR., OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

ELECTRIC TOASTER.

977,626.

Specification of Letters Patent.

Patented Dec. 6, 1910.

Application filed May 1, 1909, Serial No. 493,410. Renewed March 21, 1910. Serial No. 550,807.

To all whom it may concern:

Be it known that I, WILLIAM S. HADAWAY, JR., a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Electric Toasters, of which the following is a specification.

My invention relates to electric resistance or heating devices, and it has for its object to provide a simple and durable electric toaster so constructed that slices of bread or other articles to be toasted may be subjected to the direct heat of the current-conducting element

Figure 1 of the accompanying drawings is a plan view of a toaster constructed in accordance with my invention, certain of the parts being broken away to disclose a portion of the resistance element. Fig. 2 is a side elevation, Figs. 3, 4, 5 and 6 detail views and Fig. 7 a fragmentary perspective view, of the device shown in Fig. 1.

Referring to the drawings, the structure here illustrated comprises a substantially rectangular supporting frame 1, having side strips 2 and 3 and end strips 4 and 5 that are supported at their corners by brackets 6 which project downwardly to constitute feet on which the structure rests, and a plurality of stamped or punched cross bars 7 which are supported at their ends by the side strips 2 and 3.

Each of the cross bars 7 is formed from a strip of sheet metal which is crimped longitudinally into an S-section and its edges are bent in opposite directions, at right angles to its body portion to form flanges 8 upon which slices of bread, or other articles to be toasted, may be laid. The body portions of the bars are cut back so that the ends of the flanges form projections 9 which extend through suitable perforations 10 in the side strips 2 and 3 and are bent over to hold the parts together (see Fig. 7).

The resistance element comprises a strip or ribbon 11 of steel or other suitable resistance material having a plurality of lateral slots 12 cut alternately from opposite edges to form a zig-zag path for the electric current. The ribbon 11 is divided into a series of sections which correspond in length to the bars 7 between which they are supported, as shown in Figs. 2 and 7. In order to expose a maximum area of the rib-

bon, strips 13 of mica or other suitable insulation are folded over the edges of each section, the insulated edges being then inserted in the grooves 14 which are formed by the crimps in the cross bars. The slotted sections of the resistance ribbon are joined by low resistance sections 11^a which are bent back to avoid making contact with the side strips 2 and 3. The terminals of the resistance ribbon are clamped to connectors 15 and 16 that are secured to and insulated from the corner brackets 6.

Since all of the parts of my toaster are punched or stamped, no machine work is required and the manufacturing cost is materially reduced.

It is evident that modifications may be effected in the size of the structure shown and described and in the arrangements of its parts without departing from the spirit of my invention, and I desire that its scope shall be limited only by the appended claims.

I claim as my invention:

1. A heating device comprising a supporting frame, a plurality of cross bars and sections of resistance ribbon supported only at their edges by, and insulated from, said bars.

2. An electric heater or resistance device comprising a substantially rectangular supporting frame, a plurality of longitudinally crimped channel shaped cross bars that are supported at their ends by the sides of the supporting frame, and a resistance element supported by, and insulated from, the crimped portions of the cross bars.

3. An electric heater or resistance device comprising a substantially rectangular supporting frame, a plurality of longitudinally crimped channel shaped cross bars that are supported at their ends by the sides of the supporting frame and a partially exposed resistance element supported by, and insulated from, the crimped portion of the cross bars.

4. An electric heater or resistance device comprising a punched or stamped rectangular supporting frame, a plurality of longitudinally crimped cross bars and a resistance element comprising a resistance strip or ribbon divided into sections and having a series of lateral slots cut alternately from opposite edges to provide a zig-zag path for the electric current, said slotted portions be-

ing insulated only at their edges and supported in the crimped portions of the cross bars between which they are disposed.

5 5. An electric toaster comprising a plurality of heater elements or sections, and a frame having cross bars provided with longitudinal recesses in which the edges of said elements or sections are seated.

10 6. An electric heater comprising a plurality of electrically connected resistance ribbons, and a frame having cross bars pro-

vided with longitudinal side recesses in which the edges of said ribbons are seated and from which they are insulated.

In testimony whereof, I have hereunto subscribed my name this 20th day of April, 1909.

WILLIAM S. HADAWAY, JR.

Witnesses:

R. J. DEARBORN,

B. B. HINES.