

G. B. FRALEY.
ELECTRIC BROILER.

No. 585,308.

Patented June 29, 1897.

Fig. 1.

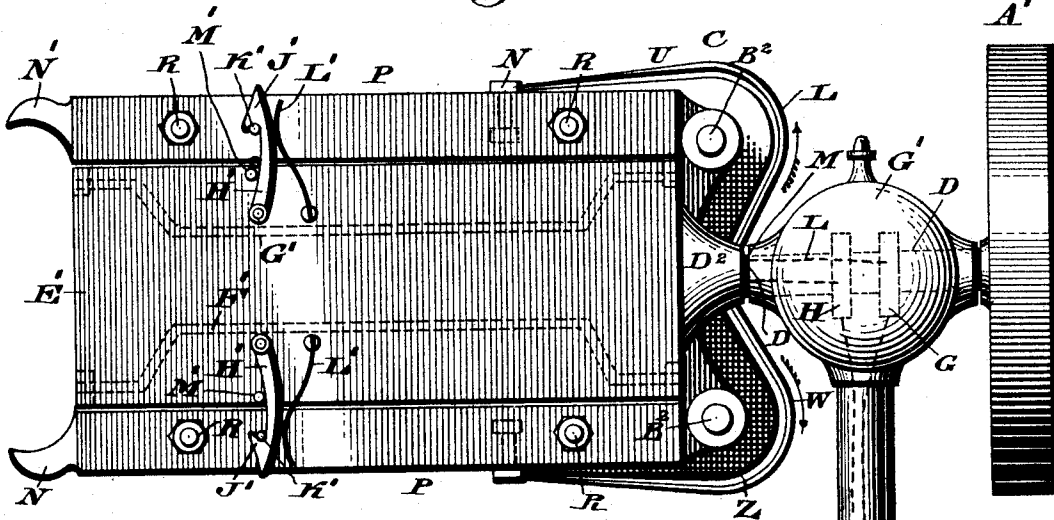
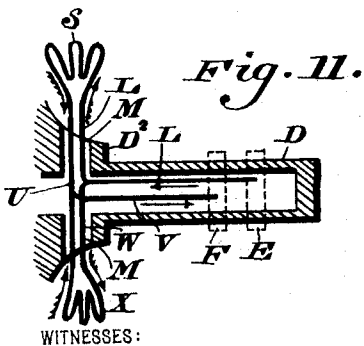
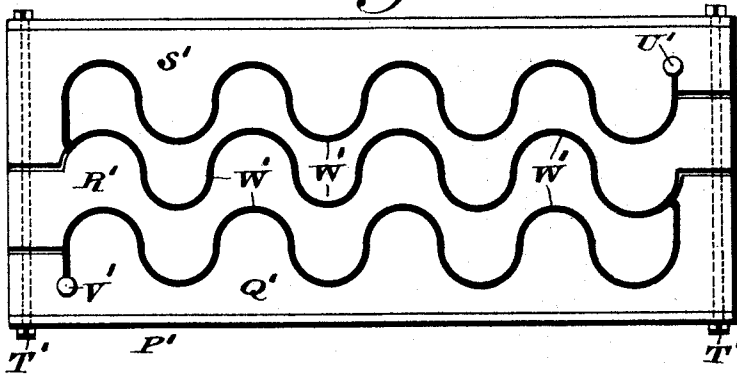
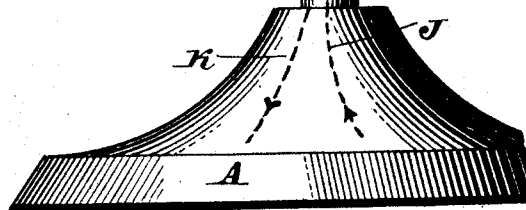


Fig. 7.



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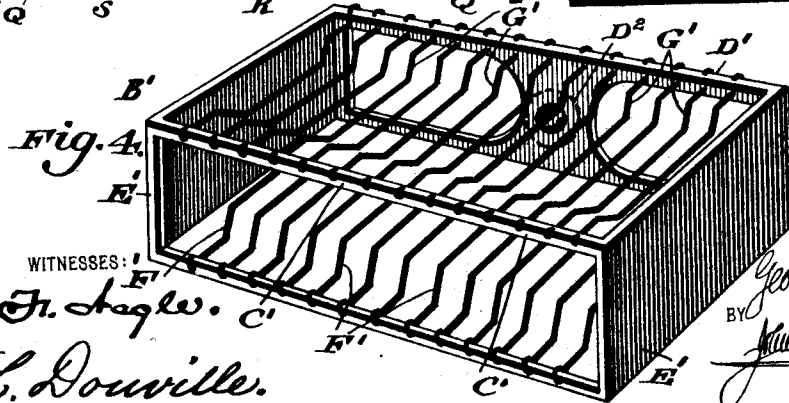
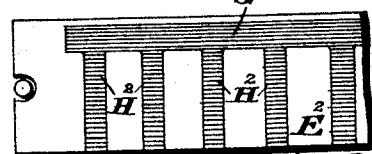
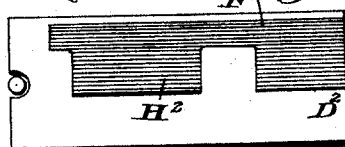
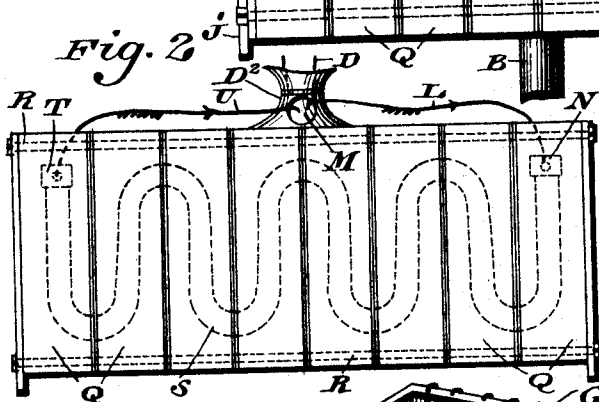
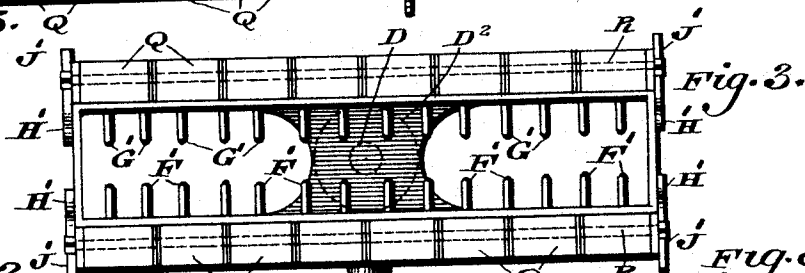
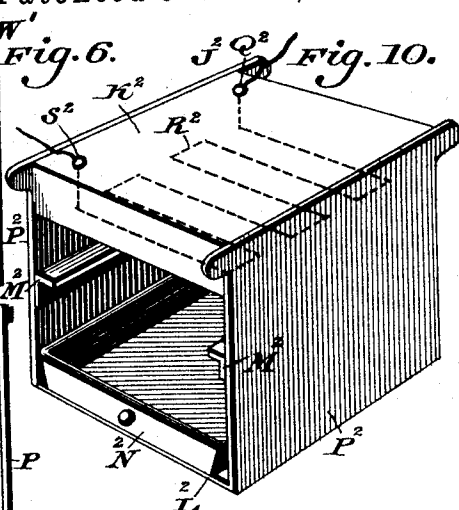
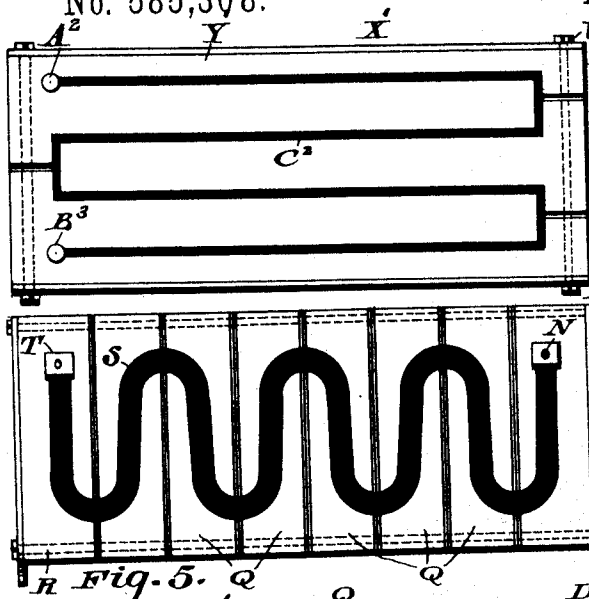


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UNITED STATES PATENT OFFICE.

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ELECTRIC BROILER.

SPECIFICATION forming part of Letters Patent No. 585,308, dated June 29, 1897.

Application filed October 28, 1896. Serial No. 610,275. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. FRALEY, a citizen of the United States, residing in the city of Denver, in the county of Arapahoe, State of Colorado, have invented a new and useful Improvement in Electric Broilers, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a novel construction of electric broiler in which the meats, viands, or other articles to be cooked, heated, or broiled are effectively subjected to heat from a source of electrical energy, provision being made for rotating the broiler and enabling the juices which are usually lost in the act of broiling to be effectively retained within the article which is being broiled.

It further consists of a novel construction of conductive blocks through which the electricity is conveyed while the apparatus is in operation.

It further consists of novel means for gaining access to the interior and for enabling the broiler to be rotated without retarding the operation thereof.

It further consists of novel details of construction, all as will be hereinafter set forth, and specifically pointed out in the claims.

Figure 1 represents a side elevation of an electric broiler embodying my invention. Fig. 2 represents a plan view of the broiler, the standard and its adjuncts being broken away. Fig. 3 represents a front view of the broiler seen in Fig. 1. Fig. 4 represents a perspective view of the receptacle in which the meats, &c., to be broiled are placed. Fig. 5 represents an interior plan view of one of the heating-blocks, showing the conductor for the electricity. Figs. 6, 7, 8, and 9 represent modified forms of heating-blocks which may be employed. Fig. 10 represents a perspective view of an oven for heating and working, showing the means for electrically heating the same and a drip-pan in which the juices from the viands cooked are received. Fig. 11 represents a detail view showing the manner of making the connections from the exterior to and through the hollow shaft on which the principal operative parts of the broiler are mounted.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a suitable base, and B a hollow standard arising therefrom upon which the broiler C is adapted to be supported.

D designates a shaft which is supported in suitable bearings, in the present instance near the top of said standard, said shaft having a hand-wheel A' mounted thereon, which latter may be provided with a handle, if desired.

E and F designate collars or commutators mounted on the shaft D, as seen in Fig. 11, which are adapted to be engaged by the commutator-strips G and H, (seen in Fig. 1,) respectively, into and away from which the electricity is conducted by means of the wires or other conductors J and K, the strips G and H hiding the respective commutators F and E in Fig. 1, and it being of course understood that said strips are supported in any suitable manner within the hollow shell G' at the top of the standard B, in which the shaft D has its bearing.

L designates a wire or conductor leading from the commutator E through the hollow shaft D and out through the port M to the binding-post or terminal N, which is located in the heating device P, the same consisting, in the present instance, of a series of blocks Q, which are held together by means of the bolts R or similar devices.

S designates a conductor of electricity which is sinuous in form, as will be evident from Figs. 2 and 5, said conductor being formed by grooving or recessing the blocks assembled, as shown, to the desired depth and painting the same with a composition of plumbago or carbon, which is pulverized and commingled through the medium of any suitable saccharine material, the said conducting device S leading to the terminal T, from which the wire U leads back to the port M, into the hollow shaft D, and thence by conductor V to the commutator F, and thence through the strip H to the conductor K, out and away from the broiler, the course of the current being understood from Figs. 1, 2, and 5 and the diagrammatic view seen in Fig. 11, the parts omitted from one figure for the sake of clearness of illustration being shown in the others.

The grooves or recesses in the blocks (seen in Fig. 5) are usually, in practice, painted every time the broiler is used with the composition of plumbago or carbon and saccharine material above referred to.

W designates a conductor leading from the conductor L into the external circuit, which is designated by X of the diagrammatic view in Fig. 11, it being understood that said circuit X represents the lower heating-block of a broiler in case the circuit S is designed to represent the upper block, as will be apparent, the current passing to and through the circuit X, through the wire W, and being thence conducted to the wire V and through the commutator F and strip II to the conductor K and out of the broiler.

B' designates a skeleton casing or oven, (best seen in Fig. 4,) within which the meats or other articles to be cooked are placed, said oven consisting of the front side C', the rear side D', which is provided with the boss D², which is adapted to be screwed into engagement with the hollow shaft D, as will be evident from Fig. 11, the oven having the ends E', which are shown in the present instance as closed or solid.

F' and G' designate wires or other devices having their ends attached to suitable supports, said wires being adapted to be bowed inwardly, as indicated in Figs. 1, 3, and 4, and to support thereupon the gridiron upon which the meats or other articles are to be broiled.

H' designates latches, (best seen in Figs. 1 and 3,) which are pivotally attached to the sides E' and have hooks J' thereon, which are adapted to engage the pins K', which are inserted in the heating blocks or devices P, the movement of said latches H' being limited by the pins M', and the position of said latches relative to said pins being assured by means of the springs L'.

N' designates lugs attached to the ends of the heating-blocks P for the purpose of readily manipulating the latter, which, it will be understood, are hinged or pivotally attached to a suitable support, which may be the casing B', through the medium of suitable lugs and the pins B².

P' designates a modified form of heating-block, (seen in Fig. 7,) in which are supported the sections Q', R', and S', which are held together by means of bolts T' or other suitable devices, said sections when assembled being provided with sinuous grooves W', which extend intermediate the terminals U' V', said grooves being filled with carbonized paper, silk, or other suitable analogous conducting material.

X' designates a modified form of heating-block, as seen in Fig. 6, and similar in some respects to the block seen in Fig. 7, except that the several elements of the conductors C² extend in substantially parallel lines to each other, the several blocks of which the heating device proper is composed being held

together by means of bolts W', and the conductor C² being provided with the terminals A² B³.

D² designates another manner of mounting or securing the conductor of the heating-block, (best seen in Fig. 8,) said conductor being designated as F² and having a depending portion H² and being struck up from a plate of metal or other suitable conductive material. In like manner the block E² (seen in Fig. 9) has its conductor embedded therein in an analogous manner, said conductor consisting of the strip G², which has the depending legs H² attached thereto, the current passing through the strip G² and by reason of the resistance of the latter heating the same to a high degree, and consequently the contiguous blocks between which said strip is held.

The function of the legs H² is to assist in the retention of the strip G² in place, it being of course understood that in practice the top of the strip G² preferably terminates near or projects slightly beyond the top of the adjacent blocks and that a plurality of strips and blocks are employed, which latter may be arranged substantially as seen in Figs. 5 and 6, if desired.

In Fig. 10 is seen another embodiment of the principle of my invention, J² designating an oven which has a top K², a base L², and the sides P², said top having embedded therein a suitable conductor R², which has the terminals Q² and S², into and through which the electricity is conveyed for the purpose of heating said top, which latter may be of fire-brick or other suitable material and being thus readily heated to a high degree.

The meats or other articles to be cooked may be placed on suitable skeleton frames or other devices, which are supported on the lugs M², it being of course understood that as many of the latter may be employed as desired.

N² designates a pan for the reception of the drippings from the meats or other viands while they are being cooked.

The operation is as follows: The meats or other articles to be cooked having been placed in position between the wires F' G', the heating blocks or devices P are brought against the top and bottom of the oven B' and are held in position by means of the latches H', the parts now assuming the position seen in Fig. 1, and the electricity, being conducted through the medium of a switch or similar device into the wires J, and thence through the heating-blocks, as has been explained, will, after completing the circuit through the heating devices, be conducted therefrom by the wire or conductor K, as has already been described. The broiler proper, C, being rotatably mounted on the shaft D' can be turned from time to time to the desired extent in unison with said shaft, so that the rich juices, &c., contained in the meats or viands, which are usually lost, can always be retained therein, since the broiler can be set so that either surface of the meat as desired may be at top

or bottom or the meat can be caused to assume an upright position, if desired.

The operation of the heating devices seen in Figs. 6, 7, 8, and 9 is substantially identical and it is thought will be apparent from the foregoing description without further explanation.

The operation of the oven seen in Fig. 10 has already been described.

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

1. In an electric broiler, supporting devices for the meats or other articles to be broiled, 15 heating-blocks located on either side of said devices and independent therefrom, means for passing an electric current through said heating-blocks, and means for rotating the latter and said supporting devices in unison 20 without interrupting the flow of electricity to said blocks.

2. In an electric broiler, supporting devices for the meat or other article to be broiled, a plurality of blocks pivotally mounted relative 25 to said devices, said blocks being out of electrical communication with said devices and movable independently thereof, and means for holding said blocks in normal position, in combination with means for electrically heating 30 said blocks.

3. In an electric broiler, a hollow standard, a hollow shaft rotatably mounted thereupon, blocks of fire-brick or other suitable material, means for holding said blocks in assembled 35 position, conductors embedded in said blocks, supporting devices for the material to be broiled and wires leading through said hollow standard and shaft to and from the terminals of said conductors, whereby said blocks 40 are heated.

4. In an electric broiler, the oven B' consisting of a frame having wires mounted thereon which are bowed inwardly toward each other, supporting devices for said oven, a heating-block on either side of said oven, a conductor embedded in each of said heating-blocks, means for holding said blocks in juxtaposition to said oven, and means for conducting electricity to and from each conductor. 50

5. In an electric broiler, a heating device consisting of a plurality of blocks and a conductor held therebetween, said conductor consisting

of a strip of suitable material, having its edge terminating near the face of said blocks, means for holding the latter and said strips in assembled position, and means for electrically heating said strip. 55

6. In an electric broiler, a heating device, consisting of a plurality of blocks and a conductor held therebetween, said conductor consisting of a strip of suitable material having its edge terminating near the face of said blocks, legs attached to said strip, means for holding the latter and said blocks in assembled position, and means for electrically heating said strip. 60 65

7. In an electric broiler, an oven, a casing, means for supporting therein the articles cooked, heating devices on either side of said oven, means for holding said devices in position, a hollow shaft to which said oven is attached, bearings for said shaft, commutators mounted on the latter, strips adapted to contact with said commutators, conductors 75 attached to the latter, and means for conducting electricity to said heating devices.

8. An electric broiler, having an oven, heating-blocks pivoted thereto on either side, latches for holding said blocks in position, a shaft on which said blocks and oven are mounted, means for rotating said shaft, and means for conveying electricity to said blocks in every position they may assume. 80

9. In an electric broiler, the combination of an oven having heating-blocks on either side thereof, with means for holding said blocks in position, a rotatable shaft on which said blocks and oven are mounted, and means for conveying electricity to said blocks in every position they may assume. 85 90

10. The combination of an electric broiler with a rotatable shaft on which said broiler is supported, suitable bearings for said shaft, and means for conducting electricity to said broiler in whatever position the latter may assume. 95

11. The combination of an electric broiler rotatably supported, with means for rotating said broiler, and means for conducting electricity to said broiler in every position it may assume. 100

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Witnesses:

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