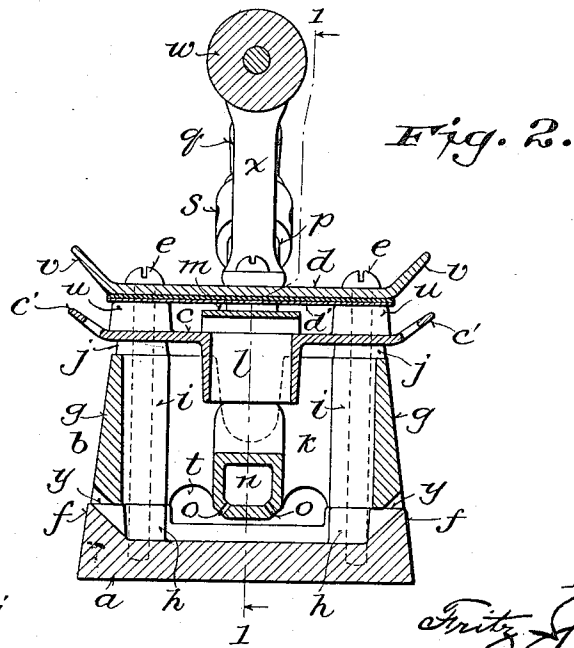
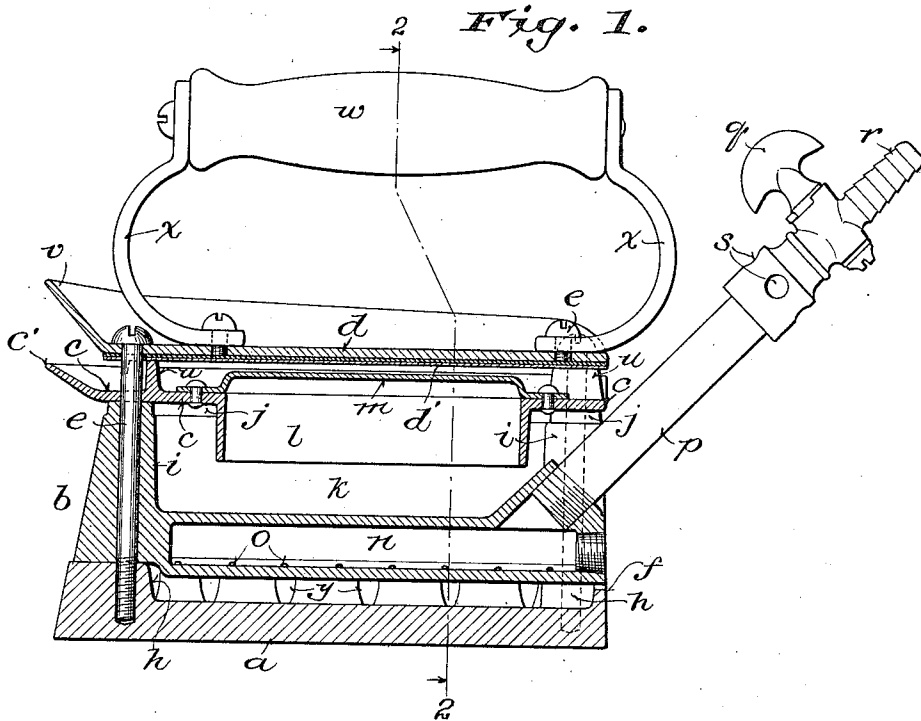


F. JOHNSON.
 FLAT IRON.
 APPLICATION FILED SEPT. 7, 1911.

1,017,099.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.



Witnesses:

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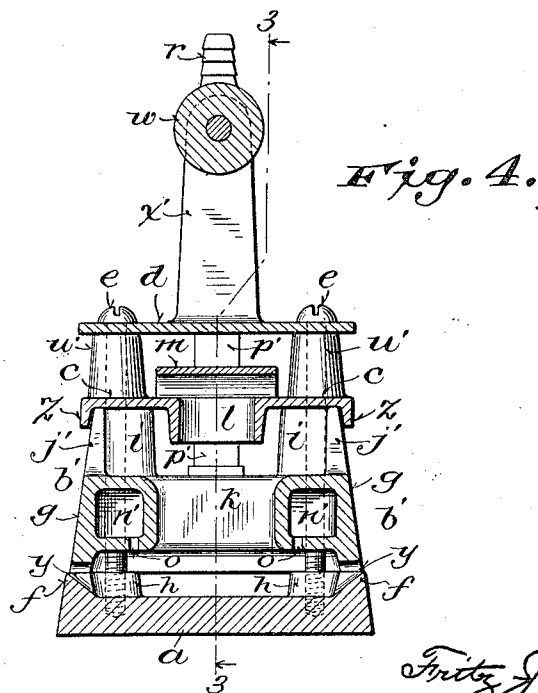
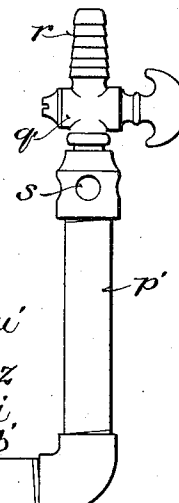
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APPLICATION FILED SEPT. 7, 1911.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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FLAT-IRON.

1,017,099.

Specification of Letters Patent.

Patented Feb. 13, 1912.

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To all whom it may concern:

Be it known that I, FRITZ JOHNSON, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Flat-Irons, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

10 This invention relates to sectional gas heated flat irons. Its main objects are to provide for readily replacing broken, burned or defective parts of the iron without loss of other parts; to provide for thorough combustion and hence economy in the use of gas; to provide for ample ventilation and thus prevent smoking and odor and overheating the handle; and generally to improve the construction and operation of flat irons of this class.

It consists in the construction, arrangement and combination of parts as hereinafter particularly described and defined in the claims.

25 In the accompanying drawing like characters designate the same or similar parts in the several figures.

30 Figure 1 is a vertical longitudinal section on the line 1 1, Fig. 2, of a flat iron embodying the invention; Fig. 2 is a vertical cross section of the same on the line 2 2, Fig. 1; Fig. 3 is a vertical longitudinal section on the line 3 3, Fig. 4, of a modified construction for irons of larger size; and Fig. 4 is a vertical cross section of the same on the line 4 4, Fig. 3.

35 Referring to Figs. 1 and 2, showing a construction for a small sized iron, *a* designates the base section or plate, *b* the burner section, *c* the top or flue plate or section, and *d* the handle plate or shield. The several parts above enumerated are detachably secured together by bolts *e* passing through the upper plates or sections and threaded at their lower ends in the base plate or section at the point and rear corners of the iron. The base *a* is formed with an upturned marginal wall *f*, and the burner section *b* is formed with a corresponding wall *g* forming an upward continuation of the wall *f*. At the point and rear corners of the iron the base *a* and the

burner section *b* are formed with internal tubular posts or enlargements *h* and *i* for the connecting bolts *e*. The posts *i* extend a short distance above the top of the wall *g* to form supports for the flue plate *c*, and to afford outlet openings *j* from the upper part of the combustion chamber *k* which is formed by the base *a*, burner section *b* and top or flue plate *c*. The flue plate *c* is formed with an upwardly and outwardly inclined and longitudinally slotted guard *c'* and with a downwardly flanged longitudinally elongated central opening *l*, and over this opening is provided with a deflector plate *m*, to direct the heated air and products of combustion from the chamber *k* away from the handle plate and shield *d*, and thus prevent overheating said plate and the handle attached thereto.

70 For irons of a smaller size or sizes, the intermediate section *g* is formed with a longitudinal tubular burner *n*, having two rows of downwardly directed and outwardly inclined jet orifices *o*, close to the base *a*. A gas and air supply and mixing tube *p* is screwed into or otherwise fastened in an opening in the rear end and upper part of the burner *n* and projects rearwardly and upwardly therefrom, being provided at its upper outer end with a gas cock *q* and hose connection *r*. The tube *p* is provided adjacent to the cock *q* with openings *s* to supply the proper admixture of air to the gas admitted to the burner through said cock and tube. At the rear end of the iron the wall *g* is formed with an opening *t*, as shown in Fig. 2, for lighting the burner.

80 The flue or top plate *c* is formed on the upper side adjacent to the bolts *e*, with lugs *u* to support the handle plate and shield *d* at a distance above said plate *c* and the deflector *h*, and provide between them an open air space for ventilation and preventing the transmission of heat to the handle and the hand of the operator. To further protect the hand of the operator from the hot air and gases escaping from the combustion chamber of the iron, the plate *d* is formed at the front end and on the sides with an upwardly and outwardly flaring flange *v*, and is provided on the underside with a

sheet of asbestos paper or other insulating material reinforced and held in place by a sheet metal plate *d'*.

The handle *w*, preferably made of wood or other suitable material which does not readily conduct heat, is connected at the ends by metal standards *x* with the plate *d*.

Air inlet openings *y*, preferably formed to facilitate casting, partly in the walls *f* and partly in the walls *g*, and preferably inclined downwardly toward their inner ends as shown in Fig. 2, lead into the lower part of the combustion chamber *k* on each side of the burner and supply the air necessary to produce perfect combustion of the gas issuing from the jet orifices *o*.

In the operation of the iron, a mixture of gas and air being supplied to the burner through the cock *q*, inlet openings *s* and mixing tube *p* and issuing from the jet orifices *o* in the under side of the burner, is lighted through the opening *t* in the back of the iron. The jets of flame directed against the base quickly heat the same and maintain it at the desired temperature, which is regulated by the adjustment of the cock *q*. The air required to produce complete combustion and to prevent smoke and odor, is supplied through the openings *y*, and the waste products of combustion with heated air, pass upwardly from the burner on each side thereof and escape from the upper part of the combustion chamber, mainly through the openings *j*, some of the waste gases with heated air however, passing out through the central opening *l* directly above the burner and thence underneath the deflector *m* through the open space between the plates *c* and *d*. The hot air and products of combustion issuing from the openings *j* at the sides of the iron, are partly deflected outwardly away from the iron *a* by the guard *c'* and partly pass upward through the slots or openings in said guard, which thus tends to dissipate the heat and to prevent the overheating of the upper edges of the walls *g* and also prevents the article or fabric on which the iron is being used, from coming in contact with and being scorched by the walls *g*. The hot air and gases escaping upwardly through the slots or openings in the guard *c'* are deflected away from the handle *w* by the upwardly and outwardly flaring flange *v* on the plate *d*, which thus protects the hand of the operator from the heat of the escaping gases as well as the heat radiated from the iron itself.

The construction herein shown and described not only affords means for readily replacing a defective section or part without loss of other parts, but also tends to prevent the cracking and warping of the iron, utilizes the heat of the burner to the best advantage, thus economizing gas, and pre-

vents the waste products of combustion from heating the handle or burning the hand of the operator.

Referring to Figs. 3 and 4, showing a somewhat modified construction for irons of larger size, the intermediate section *b'* is formed with an annular burner *n'* corresponding in shape with the contour of the iron and having a central opening through which the waste products of combustion escape upwardly through the central opening *l* in the flue or top plate *c* and through openings *j'* formed in the side walls *g*, upon which the plate *c* rests, the plate *c* in the present case being formed in place of the perforated heat dissipating guard *c'* with a downwardly projecting marginal flange *z*, which fits over the wall *g*. The handle plate and shield *d* has no marginal flange in this case, but is formed integrally with posts *w'* for the handle *w*. The gas supply and air mixing tube *p'* is provided with an elbow and is connected with an opening in the rear end of the burner extending from the elbow upwardly in a substantially vertical plane crosswise of the iron. The flue or top plate *c* is formed on the upper side with tubular posts *u'* which register with the posts *i* of the burner section and through which the connecting bolts *e* pass, for supporting the handle plate and shield *d* at a distance above the plate *c*. In other respects this modified form of the iron is substantially like that of the smaller iron shown in Figs. 1 and 2 both in construction and operation.

I claim:

1. In a flat iron the combination of a base having upturned marginal walls, a burner section formed with corresponding marginal walls and a tubular burner having downwardly directed jet orifices, a flue plate having a downwardly flanged central opening and a deflector over said opening and a handle plate and shield supported above said flue plate and deflector with an open air space between them, all of said parts being detachably secured together by bolts, and the walls of the base and of the burner section being formed with air inlet and outlet openings below and above the burner.

2. In a flat iron the combination of a base having upturned marginal walls, a burner section formed with corresponding marginal walls fitted to and forming an upward continuation of the base walls and with a longitudinal tubular burner having downwardly directed gas orifices in the lower side thereof close to the base, a flue plate having a downwardly flanged central opening and a deflector over said opening, and a handle plate and shield provided with a handle and supported above said flue plate and deflector with an open space between them, all of said parts being detachably secured together by bolts and the walls of the base and of the

burner section being formed with air inlet and outlet openings below and above the burner.

5 3. In a flat iron the combination of a base, a burner section provided with a burner adjacent to the base, and a top plate having an outwardly and upwardly inclined perforated marginal guard, all of said parts being secured together and forming a com-

bustion chamber with air inlet openings adjacent to the base and outlet openings adjacent to the top plate. 10

In witness whereof I hereto affix my signature in presence of two witnesses.

FRITZ JOHNSON.

Witnesses:

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JEANNETTE RUDAT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."