

W. J. FRANCIS & C. S. TAGGART.
 SELF HEATING FLAT IRON.
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1,002,573.

Patented Sept. 5, 1911.

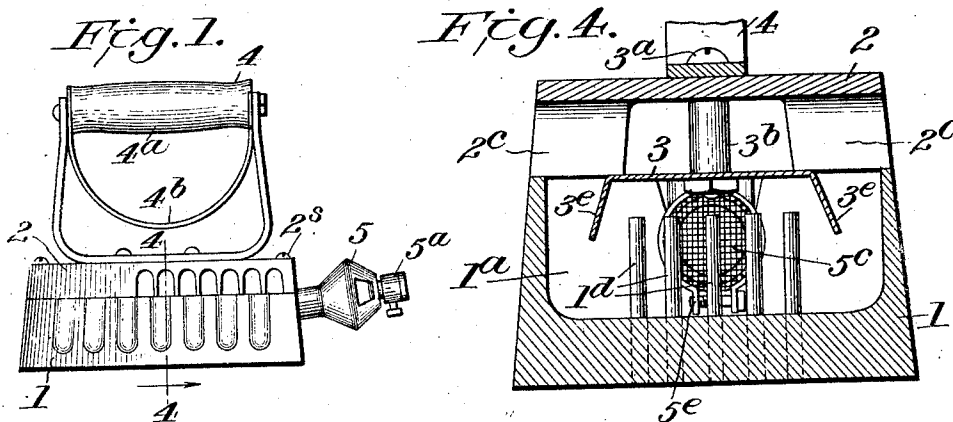
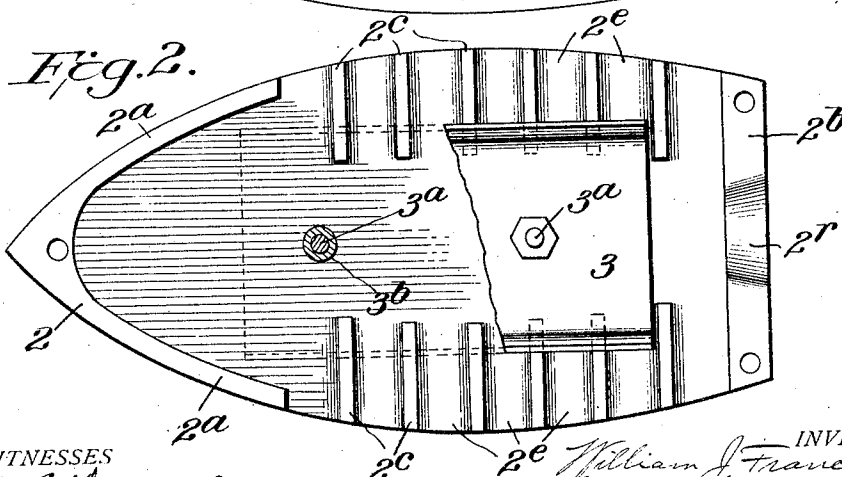
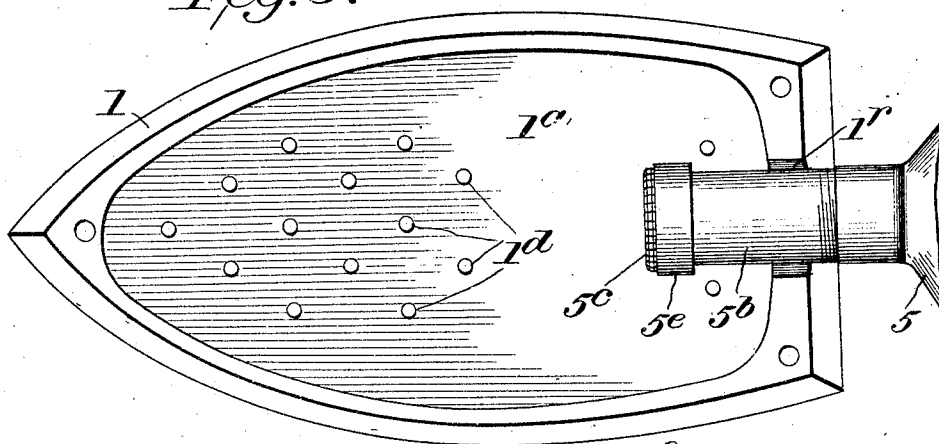


Fig. 3.



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WILLIAM J. FRANCIS AND CARRIE S. TAGGART, OF PITTSBURG, PENNSYLVANIA.

SELF-HEATING FLAT-IRON.

1,002,573.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, WILLIAM J. FRANCIS and CARRIE S. TAGGART, both of Pittsburg, Allegheny county, State of Pennsylvania, have invented certain new and useful Improvements in Self-Heating Flat-Irons; and we hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is a novel self-heating flat iron for laundry work; its object is to provide a flat iron which can be satisfactorily and properly heated by means of gas without danger or inconvenience to the operator, and in which the gas will be fully consumed and the flame cannot come out the side of the flat iron so as to injure the operator or the goods being ironed.

The invention consists in the novel construction of the flat iron as hereinafter described and as illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the iron. Fig. 2 is an enlarged bottom view of the top portion of the iron removed with the shield partly broken away. Fig. 3 is a plan view of the lower part of the iron with the top portion removed. Fig. 4 is an enlarged sectional view on line 4—4 Fig. 1.

The flat iron is composed of a lower body portion 1, and a top portion 2, which together form the body of the iron and are separable on a horizontal line. The body 1 is hollowed on its upper surface to form a chamber 1^a which is closed on all sides except the rear, and it is provided with a number of upstanding pins 1^b, preferably formed of steel wire which are secured in the body of the iron by being inserted in the mold and having the body 1 cast around them. These pins 1^b serve both to disseminate the mixture of gas and air entering the chamber 1^a, and to transmit heat from the burning gases to the bottom of the iron. The top 2 of the iron is of novel construction, it is also hollow, but its top is imperforate and it is provided on its sides with depending flanges which rest upon the top edge of the body 1, and thus the hollow in the top part increases the area of the combustion chamber in the iron.

The flanges 2^a at the front of the top are imperforate as shown so that there is no

outlet from the chamber 1^a at the front of the iron; and the rear flange 2^b of the top is also imperforate, so that there is no escape for the gas at the rear of the combustion chamber. At each side of the top 2, intermediate the front and rear flanges 2^a, 2^b, is a series of transversely disposed depending flanges 2^c which extend inward from the outermost edge of the top to about one-third across the width thereof, see Figs. 2 and 4; and the spaces between these transverse flanges 2^c form passages 2^d for the exit of the products of combustion.

Secured to the top 2 beneath flanges 2^c and overlapping the inner ends of said flanges is a deflector 3 see Figs. 2 and 4, which may be secured to the top by means of bolts 3^a transfixing top 2, and the deflector may be spaced from the underside of top 2 by means of tubular washers 3^b strung on bolts 3^a as shown. The bolts 3^a may also be used to attach the handle 4 to the top 2. This handle may be provided with a hand-piece 4^a of any suitable construction; and the handle may be provided with a heat deflector 4^b beneath the hand-piece as shown. The deflector is provided on its sides with downwardly turned flanges 3^c which contract the combustion space within the chamber 1^a and prevent any flame jetting outward through the outlets 2^d. The space below the deflector 3 forms the primary combustion chamber of the iron and the space above it constitutes an air chamber which is interposed between the combustion chamber and the handle, so that the principal heat of the iron will be confined to and within the lower part 1 where it is most necessary.

Preferably the iron is heated by gas, and for this purpose a gas mixer 5 of the usual type may be used. This mixer has a nipple 5^a that may be connected by a flexible hose (not shown) to a convenient gas supply. The mixer 5 has a short tube 5^b entering the rear end of the chamber 1^a. The mixer can be conveniently connected to the flat iron by having the tube 5^b engaging recesses 1^c and 2^c in the rear end flanges of the body 1 and top 2 as shown.

The top piece 2 may be detachably attached to the body 1 by any suitable means, preferably by means of screws 2^e passing through holes in the top and engaging threaded apertures in the body 1 as shown. The inner end of the tube 5^b may be covered

with wire gauze 5°, which may be secured thereto by a clamp ring 5° or other suitable means.

In using the flat iron gas and air are admitted through mixer 5, and ignited in the chamber 1^a; the burning gases flow beneath the deflector 3 and are thoroughly commingled in passing through this chamber by the pins 1^b. The flame is practically confined within the body of the iron 1, below deflector 3, and the products of combustion flow to the other end of the iron and eventually escape through the outlets. We have found that it is most essential to the successful operation of the iron, to have the transverse flanges 2° extend inward some distance to and above and over the deflector 3. It will be seen that the combustion chamber is practically entirely closed on all sides and in front. By having the top cut out or hollowed in front of and above the deflector and provided with the transverse flanges, the gases are divided up and disseminated to the different outlets in their escape. The peculiar construction of the top with transverse flanges 2° and the deflector are essential features of the flat iron; and with such construction the gas is fully consumed and the flame does not flare out of the sides of the iron and the gas is entirely consumed without odor.

What we claim is:

1. In a flat iron, the combination of a hollow body portion, a top portion provided with front and rear depending imperforate flanges fitted on the body portion, and a series of transversely disposed flanges on its underside intermediate the front and rear flanges thereof; with a deflector plate secured to the top portion below the said transverse flanges and depending within the body portion and having its side edges bent downwardly to confine the flame in the body portion.

2. In a flat iron, the combination of a hol-

low body portion having a series of upstanding pins connected with its bottom, and a gas and air mixer connected with the body in rear of the pins; a top portion provided with front and rear depending flanges fitted on the body portion, and a series of transversely disposed flanges on the underside of the top portion intermediate the front and rear flanges thereof.

3. In a flat iron, the combination of a hollow body portion having a series of upstanding pins connected with its bottom, and a gas-and-air mixer connected with the body in rear of the pins, a top portion fitted on the body portion and provided with opposite series of transversely disposed flanges on its underside; and a deflector plate secured to the top portion below the said flanges and depending within the body portion and having its side edges bent downwardly, substantially as described.

4. In a flat iron, the combination of a hollow body portion having a series of upstanding pins connected with its bottom in casting; and a gas and air mixer connected with the body in rear of the pins; a top portion provided with front and rear depending imperforate flanges resting on the body portion and a series of transversely disposed flanges on the underside of the top portion intermediate the front and rear flanges thereof; and a deflector plate secured to the top portion below the transverse flanges and depending within the body portion and having its side edges bent downwardly, substantially as described.

In testimony that we claim the foregoing as our own, we affix our signatures in presence of two witnesses.

WILLIAM J. FRANCIS.
CARRIE S. TAGGART.

In presence of—

LOUIS F. GEYER,
RAYMOND F. HAUGHEY.