Mar. 6, 1923. 1,447,535

C. DE ATLEY

LAUNDRY IRON

Filed July 25, 1921 2 sheets-sheet 1

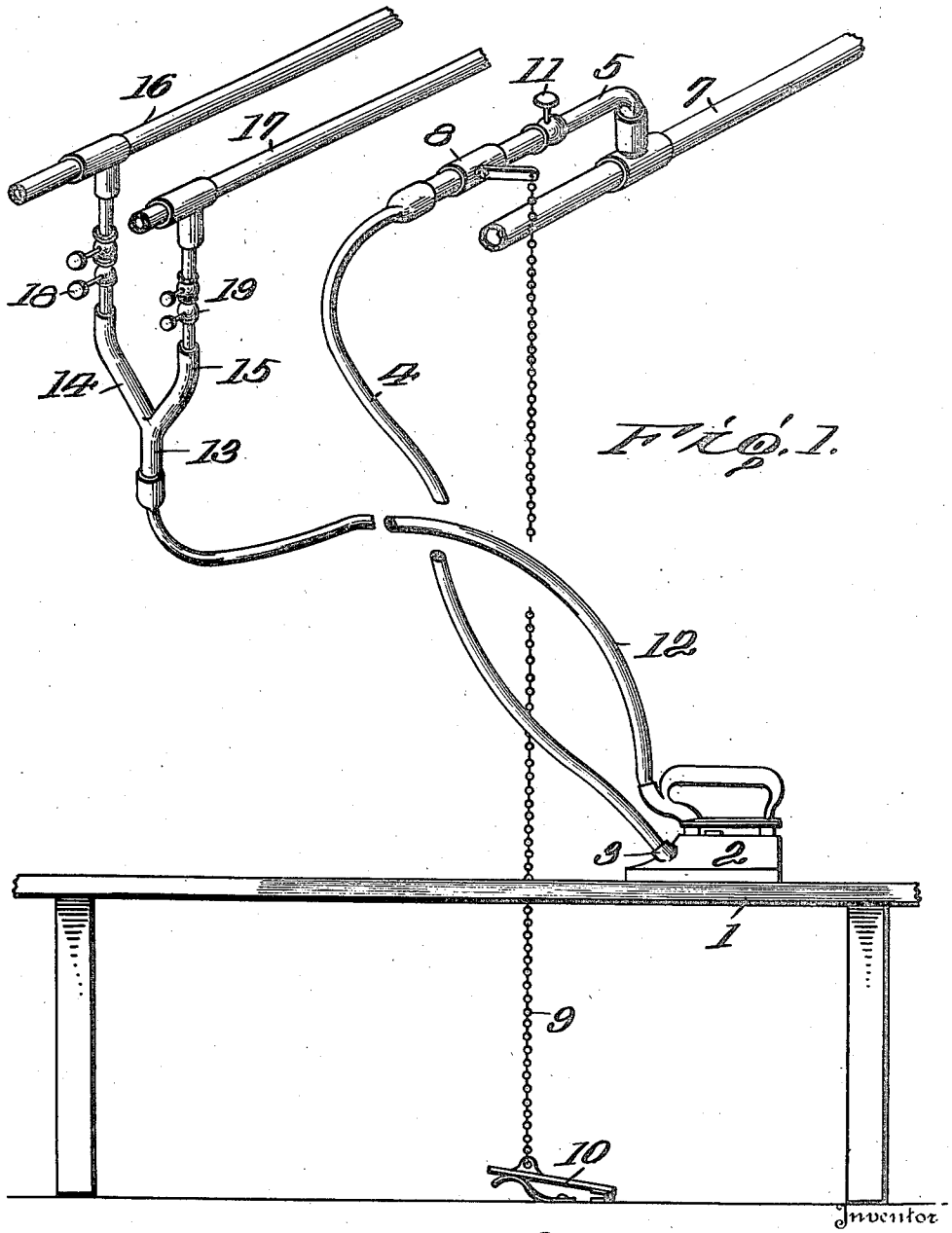


Fig. 1.

Inventor

CARROLL DE ATLEY.

By Sturtevant & Mason Attorneys

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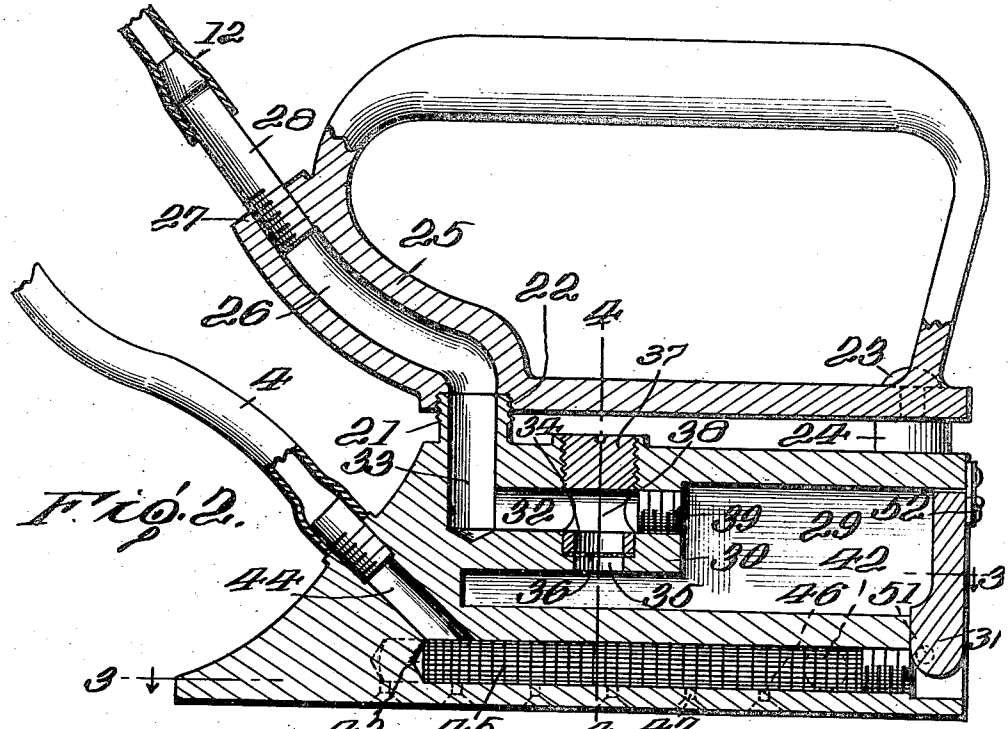


Fig. 2.

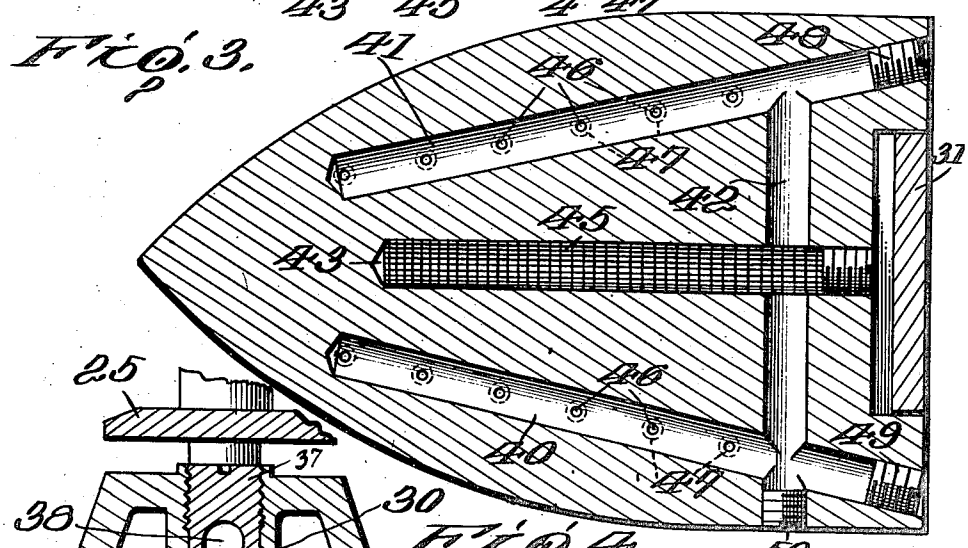


Fig. 3.

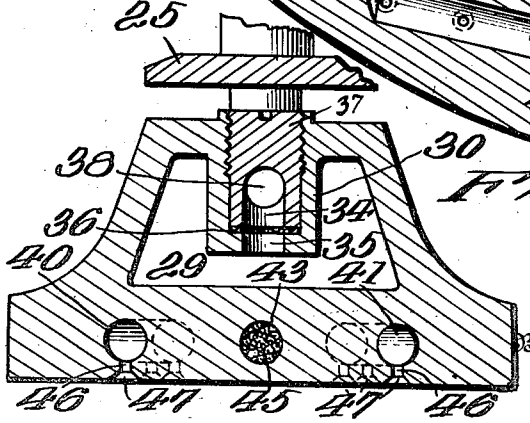


Fig. 4.

Inventor

CARROLL DE ATLEY.

By Sturtevant & Mason Attorneys

Patented Mar. 6, 1923. 1,447,535

UNITED STATES PATENT OFFICE.

CARROLL DE ATLEY, OF BALTIMORE, MARYLAND, ASSIGNOR TO KEGAN-GRACE COMPANY, OF BALTIMORE, MARYLAND, A COPARTNERSHIP.

LAUNDRY IRON.

Application filed July 25, 1921. Serial No. 487,229.

To all whom it may concern:

Be it known that I, CARROLL DE ATLEY, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Laundry Irons, of which the following is a description, reference being had to the accompanying drawing, and to the figures of reference marked thereon.

This invention relates to flat irons heated by an internal gas jet or flame, and more particularly to such an iron provided with a connection with a steam conduit adapted to discharge steam at the pressing face of the iron.

One of the objects of this invention is to provide a flat iron of the type described in which the steam flow to the iron is controlled directly at the steam buss pipe by a pedal operable by the foot of the presser, by which construction all danger of the escape of steam at the iron is precluded and also a more facile operation of the steam control is afforded than in prior constructions in which the steam cut-off is located directly on the iron itself.

A further object of this invention resides in providing the iron with a superheater for the steam in the shape of a recess containing means adapted to be heated to a temperature substantially higher than that of the incoming steam by the internal flame, which means is in contact with the steam passages in the body of the iron.

Still another feature of this invention resides in the general arrangement of a minimum number of steam passages in the iron body whereby the most effective distribution of the steam across the pressing face is secured.

Yet another phase of this invention resides in the novel steam discharge openings at the pressing face whereby the steam is spread as it exits.

A further object of this invention resides in the means directly in the flame nozzle for more intimately mixing the air and gaseous mixture before combustion.

A further object resides in the general sturdy and simple construction of the iron whereby it can be cheaply manufactured and easily assembled.

Yet a further object of this invention resides in constructing various portions of the iron body whereby the iron may be easily cleaned.

These and other objects will in part be obvious and will in part be hereinafter more fully disclosed.

Referring now to the drawings:—

Figure 1 is a perspective view of the iron and its connections to the steam and mixture pipes;

Fig. 2 is a sectional view of the iron;

Fig. 3 is a section on the line 3—3 of Fig. 2, thereof, and

Fig. 4 is a section on the line 4—4 of Fig. 2.

Referring now to the drawings in detail, 1 indicates the pressing platform or standard on which operates the flatiron 2 having a connection 3 with the flexible steam conduit 4 preferably in the form of the usual rubber pipe. This pipe connects with an elbow 5 joined to the overhead steam buss pipe 7. Instead of locating the steam cut-off valve on the flatiron as usual, I prefer to arrange it in a manner so that if the rubber pipe 4 bursts, the steam will not be projected into the face of the operator. To this end I arrange the valve between the buss pipe and the flexible rubber conduit 4. In the present construction, this steam control valve 8 of ordinary construction is located in the elbow pipe 5 and is controlled by a chain or flexible member 9 operated by a treadle 10 below the pressing bench 1. The elbow 5 is also provided with a hand-operated steam cock 11.

The flat iron 2 is also provided with a mixture conduit 12 in the form of a flexible rubber hose which joins with a Y-connection 13 having a gas branch 14 and an air branch 15 connecting to the gas and air buss pipes 16 and 17 governed by suitable cut-off valves 18 and 19.

The flat iron 2 is formed with a body portion and a handle. Preferably, the handle is attached to the body portion by forming the upper forward portion of the latter with an upstanding lug 21 exteriorly threaded to engage a threaded socket 22 on the front under side of the handle; at the rear, the handle is fastened by two or more screws or bolts 23

passing through the handle and engaging the body of the iron, there being a block 24 to maintain the correct spacing at the rear to correspond with the height of the lug 21.

Preferably the gaseous mixture or fuel of any nature is introduced into the combustion chamber of the iron by means of a conduit formed in the handle and to this end, the forward portion 25 of the handle is hollowed or cored out as at 26 to form a conduit at the front as at 27, and provided with a connection 28 for the flexible tube 12. The lower end of this conduit 26 opens into the threaded socket 22.

The iron is hollowed or cored out internally to provide a combustion chamber 29. In order to introduce the mixture into this combustion chamber, the iron is provided with a centrally located depending integral portion 30 which extends substantially half way to the rear wall or door 31 of the internal recess or chamber 29. This depending portion 30 is centrally recessed as at 32 to form a gas conduit which connects with a conduit 33 arranged substantially vertical in the forward body of the iron. This latter conduit extends upwardly, its upper end passing through the upstanding lug 21 which as heretofore described, makes a gas-tight joint with the recess 22 of the handle.

For the purpose of projecting the gaseous jet or flame downwardly against the bottom wall of the combustion chamber so that the flame will directly heat the pressing face of the iron, the depending portion 30 is provided with a gas orifice 34 arranged at right angles to the passage 32. In the preferred construction, this orifice is formed by boring downwardly from the top of the iron body transversely through the depending portion; the lower end of the bore as at 35 being of lesser diameter to receive a perforated disk or wire mesh 36 adapted to break up the mixture. This disk is held in its seat and the bore 34 closed at its outer end by means of a threaded plug 37 which is provided with a cross slot 38 to permit the passage of the mixture from the passageway 32 to the orifice. On the other side of the plug 37, the passage 32 is likewise closed by a threaded plug 39.

Disposed in the body of the iron beneath the bottom wall of the combustion chamber, are arranged the steam distributing conduits 40, 41 and 42, and the steam superheating means. In the present instance, these conduits are arranged in substantially the form of a V, with the junction of the V disposed at the front of the iron, and the opposite ends inclining outwardly. The conduit 42 which is preferably arranged at the broad end of the iron connects the conduits 40 and 41. Steam is fed to these conduits by means of a superheater passage 43 disposed centrally of the passageways 40 and 41 and connected at its front end by an upwardly inclined bore 44 making threaded connection with the steam conductor 4.

This bore 43 is filled or partly filled with a plurality of small preferably non-rusting metal rods or wire gauze 45 which acts as an effective resistance to the free passage of the steam and provides highly heated surfaces distributed throughout the area of the bore through which the steam must travel so that each particle of steam must come into intimate contact with a portion of this heated surface. In this manner practically all of the steam passing through the iron is superheated.

By this means, as the steam enters the passage 43 it is superheated and is conducted by the transverse passage 42 to the conduits 40 and 41. These passages are provided at desired intervals with nozzles 46 which carry the steam to the pressing face of the iron, and in order to effectively scatter the steam, the nozzles are flared as at 47. This construction affords a most excellent steam distribution. It is to be noted that the ends of the conduits 40 and 41 are also closed by threaded plugs 48 and 49 as is also the open end of the cross bore 42 by the plug 50. By this means, these passages are easily formed in the iron body. Since it is highly desirable to use dry steam in pressing, this superheating means constitutes a distinct advantage inasmuch as it most effectively removes the moisture from the steam before it is used at the pressing face of the iron.

The rear of the iron may be removable in order to give access to the combustion chamber and steam conduits. Preferably the rear wall 31 of the combustion chamber is formed as a door, the same being pivoted as at 51 so that it may swing outwardly. This door preferably makes a loose fit with its aperture in the wall of the iron so that the products of combustion are free to escape. Normally it is locked by the fastening device 52 which may be of any desired type. It will thus be seen that the interior of the iron is readily accessible for cleaning the chamber of soot and carbon and that likewise the perforated plate 36 may be quickly removed and cleaned.

It will be obvious that minor changes in the details of construction and the arrangement of the parts may be made without departing from the spirit of the invention as set forth in the appended claims.

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

1. In a device of the class described, the combination with the steam buss pipe, a pressing iron having means adapted to heat the iron and a steam chamber provided with outlets adapted to discharge steam at the pressing face of the iron, means connecting

said steam buss pipe with said steam chamber, and means including a valve having a connection with a treadle adapted to be operated by the foot of the presser for preventing the passage of steam from said buss pipe to said iron.

2. A pressing iron having an internal recess disposed above the pressing face of said iron to provide a combustion chamber, a fuel inlet for said chamber arranged to project a jet directly against the bottom wall of said chamber, a steam passage in said iron between said pressing face and said combustion chamber and having a plurality of steam outlets communicating with said pressing face, means for superheating said steam on its passage through said iron, including a recess in said iron between said pressing face and said combustion chamber and connecting with said steam passage, and means in said recess adapted to be rendered substantially hotter than the temperature of the steam flowing into said iron whereby to superheat said steam.

3. A pressing iron having an internal combustion chamber, means for introducing a gaseous mixture thereinto so as to project the flame against the bottom wall of said chamber, two steam conduits disposed in said iron between said chamber and the pressing face of said iron, said conduits being arranged in substantially V-shape whereby to more uniformly distribute the steam, a recess arranged between said steam conduits, means in said recess adapted to render the steam substantially dry by the heat of said combustion chamber, and a conduit extending from said recess to said steam conduits.

In testimony whereof, I affix my signature.

CARROLL DE ATLEY.