

E. H. ZACHARIAS.  
 GARMENT SEAM PRESSING IRON.  
 APPLICATION FILED APR. 7, 1917.

1,239,552.

Patented Sept. 11, 1917.  
 2 SHEETS—SHEET 1.

Fig. 4.

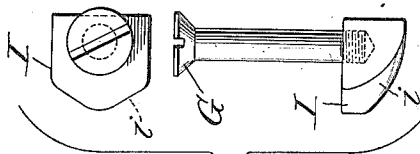
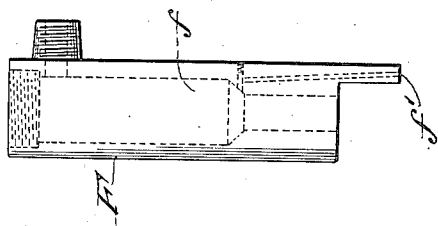


Fig. 5.

Fig. 1.

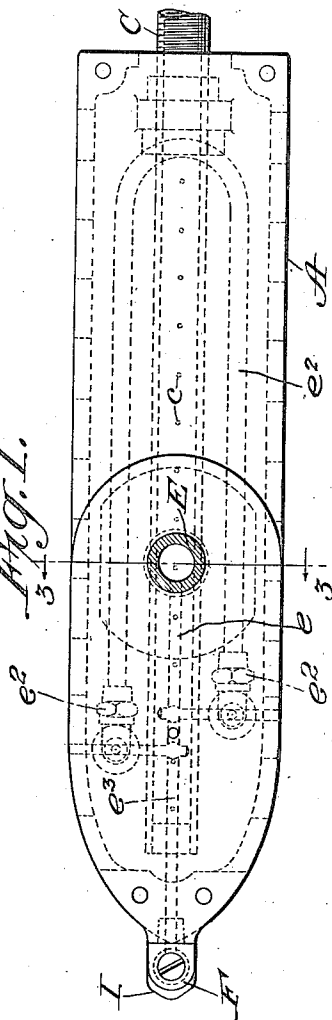


Fig. 2.

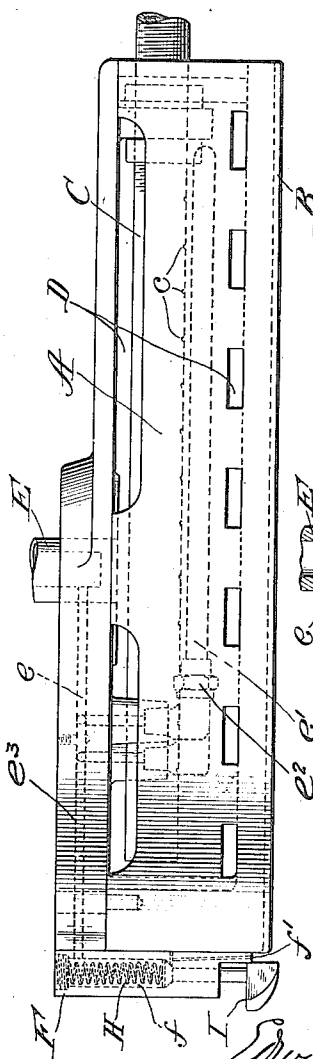
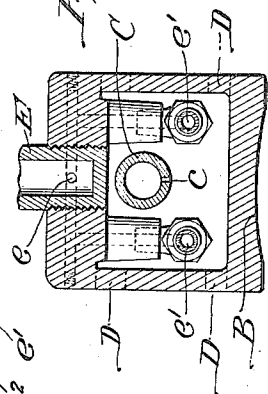


Fig. 3.



Inventor

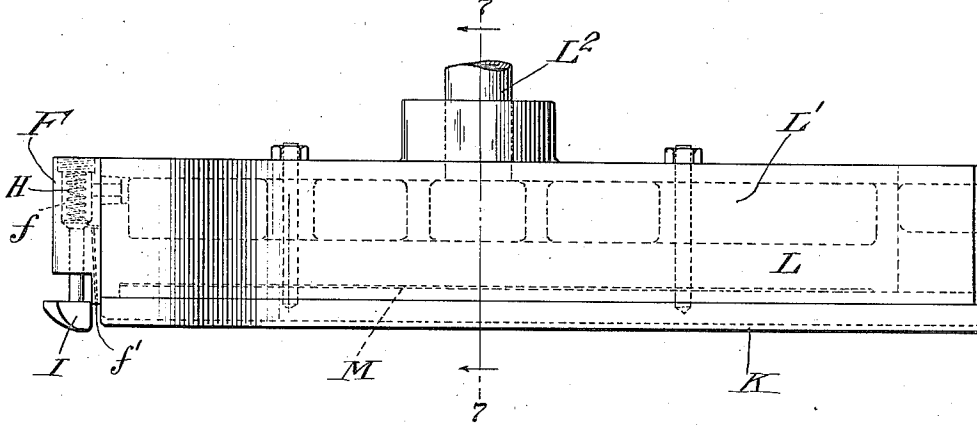
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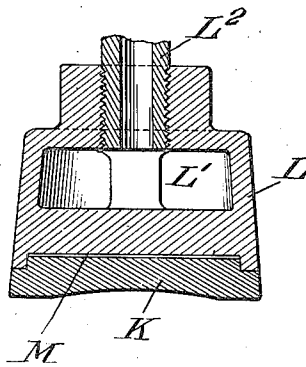
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2 SHEETS—SHEET 2.

*Fig. 6.*



*Fig. 7.*



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# UNITED STATES PATENT OFFICE.

EDWIN H. ZACHARIAS, OF READING, PENNSYLVANIA.

GARMENT-SEAM-PRESSING IRON.

1,239,552.

Specification of Letters Patent. Patented Sept. 11, 1917.

Application filed April 7, 1917. Serial No. 160,466.

*To all whom it may concern:*

Be it known that I, EDWIN H. ZACHARIAS, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Garment-Seam-Pressing Irons; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates primarily to pressing irons designed for use in opening out and pressing flat the seams of garments of various kinds, particularly where the pressing operation is performed by mechanical means and the speed of operation is rapid as compared with the ordinary hand operation, although features of the invention are applicable to pressing irons generally, wherever it becomes desirable to give the goods a substantially permanent set, as in eliminating wrinkles or in setting the goods in the final formation of seams, etc.

The primary object of the invention is to provide a means whereby moisture in the form of steam at a high temperature may be imposed upon the goods at a point where the goods are held in substantially the position to be finally occupied, but before the pressure of the pressing face of the iron is applied thereto, and to control the application of the steam by the pressure which is normally exerted in holding the iron against the surface of the goods, whereby when no pressure is exerted the application of steam to the goods is automatically arrested. Steam is applied only during the active operation of the iron, with the result that no excess of moisture will be present at any time, and the moisture which is supplied is in such form that with practically a single pass of the pressing surface over the goods, it is entirely eliminated, and the goods left in a substantially dry condition, with the permanent set imparted thereto.

Referring to the accompanying drawings:

Figure 1 is a plan view of a so-called gas iron embodying the present invention, said iron being of a form adapted for use in connection with a seam pressing machine in which the iron is guided and moved by mechanical means over the garment which has been placed on a pressing board or support.

Fig. 2 is a side elevation of the iron shown

in Fig. 1, with the internal chambers and passages in dotted lines.

Fig. 3 is a transverse section, substantially in the plane indicated by the line 3—3 of Fig. 1.

Fig. 4 is a detail elevation of the nose piece of the iron, in which the discharge port for the steam and valve are located.

Fig. 5 is a detail elevation and plan of the valve with its operating device in the form of a seam opener.

Fig. 6 is a side elevation of an electrically heated iron embodying the present improvements; and

Fig. 7 is a transverse section in a vertical plane at approximately the center of the iron shown in Fig. 6.

Like letters of reference in the several figures indicate the same parts.

The body A of the iron, which may be a solid or built-up structure depending upon the particular kind of iron or the method of manufacture adopted in its production, embodies a pressing face B which will be made to conform transversely to the board or goods in connection with which the iron is to be used, and, as shown in Fig. 3, it is slightly concave in cross section. The iron is provided with heating means, which, as shown in Figs. 1, 2 and 3, consists of a Bunsen burner C from which the flame is directed against the bottom of the internal face of the iron, to thereby directly heat the pressing face, and suitable vent apertures D are provided as usual for the escape of products of combustion and the supply of oxygen to maintain combustion. This construction conforms to any known or preferred practice and may be varied accordingly.

The top plate of the iron body is provided with a connection through which steam may be supplied, and this connection conveniently also forms the means through which mechanical pressure is applied to the iron during the pressing operation, means for this purpose being well understood and needing no detail description. The connection, as shown, is in the form of a steam pipe plug or union E which screws into the top of the iron and from which a duct *e* leads to a superheater duct or chamber, which, as shown in Figs. 1, 2 and 3, is in the form of a coil or U-shaped copper pipe *e'* located in the heating chamber of the iron

and provided with unions  $e^2$  by means of which it may be readily attached or detached, should repairs be necessary.

The superheating duct or heater  $e'$  communicates at its discharge end with a duct  $e^3$  preferably located in the top of the iron and extending forwardly into communication with a valve chamber  $f$  formed in the removable nose piece F at the front end of the iron. The valve chamber  $f$  at its lower end is provided with a seat for upwardly opening valve G, and with a discharge port in or below the valve seat, as shown at  $f'$  in Figs. 2 and 4.

The valve G is adapted to close downwardly and may be conveniently held closed by the steam pressure, although this pressure may be supplemented by a spring H shown in Fig. 2, and when closed, it is adapted to prevent the discharge of steam through the port  $f'$ . For opening the valve it is provided with an operating means which conveniently takes the form of a seam opener I provided with inclined front faces  $i$  adapting it to enter between the portions of the fabric at the seam and to spread the seam out in a substantially flat position before the pressing face of the iron reaches the same. This valve operating member or means is preferably spaced from the front end of the pressing face a distance which will permit the discharge port  $f'$  to discharge the superheated steam on the goods at a time when the goods have been opened or laid out substantially flat, but before being reached by the heated pressing face of the iron, the idea being to soften up the goods and to permit the steam to partly evaporate preliminary to the application of the pressure of the pressing face. The valve operating member normally, in the preferred construction, projects slightly below the plane of the pressing face and it is held in such position by the steam pressure or the spring F with sufficient force to prevent the valve from being opened, save at such time as pressing pressure is applied to the iron, and consequently the escape of steam or the action of the steam on the goods is prevented, except when lifted by contact with the seam, during the pressing operation. At this time the iron is in motion and excess heating, burning or injury to the goods is not likely, because of the brief period during which the goods is subjected to the action of the steam and iron.

Obviously the invention is equally applicable to irons adapted for being heated by any of the various well known means, such, for example, as electrically heated irons, and in Figs. 6 and 7, an iron of the electrically heated type is illustrated. In this construction, the pressing face of the iron K is made separate from the body L and the electric heating elements are located be-

tween the pressing face and the body in the shallow space indicated at M. The body is formed with an internal steam chamber L', to which the steam supply connection leads, and at the forward end this steam chamber communicates with the valve chamber  $f$  in the nose piece F, which, in this construction, corresponds to that shown in Figs. 1, 2 and 4. The valve and its operating means in this instance, correspond to the valve and operating means before described, so that further description of these parts is unnecessary.

In operation, it will be understood that steam is supplied from a suitable steam boiler located at any suitable point with relation to the iron, and it is to be noted that not only is it a material advantage to supply steam to the iron, because of the advantages accruing from discharging superheated steam on the goods, but, also because of the fact that practice has demonstrated that a very considerable economy results, inasmuch as the iron may be brought to a higher temperature and maintained at a more uniform temperature, with the use of less gas or electric current than is possible where water is supplied to the iron and steam generated in the iron by direct vaporization and consequent loss of heat which would otherwise be used in maintaining the proper temperature of the pressing face. In other words, by supplying steam to the iron, the effective heating and accurate regulation of the temperature of the pressing face may be effected which results are difficult, if not impossible of attainment, where water is vaporized into steam, within the iron itself.

What is claimed is:—

1. An iron for pressing garment seams, embodying a body having a pressing face, means for heating the pressing face, means for supplying steam, a discharge port for the steam located at the forward end of the pressing face, a valve controlling the discharge of steam through said port, and means for operating said valve controlled to automatically open the valve by pressure for holding the iron down on the seam being pressed and to close said valve when the pressure is relieved, said valve operating means being located in advance of the discharge port.

2. An iron for pressing garment seams, embodying a body having a pressing face, means for heating the same, means for supplying steam to the body, a discharge port for the steam located at the forward end of the pressing face, a valve controlling the discharge of steam through said port, and a valve operating member located in advance of the discharge port projecting below the pressing face in position to be retracted to open the valve by contact with the seam being pressed.

3. An iron for pressing garment seams, embodying a body having a pressing face, means for heating the same, a steam supply duct in the body, a discharge port for the steam at the forward end of the pressing face, a valve controlling the discharge of steam through the port, and a valve operating member at the forward end of the pressing face having an inclined face forming a seam opener.

4. An iron for pressing garment seams, embodying a body having a pressing face, means for heating the same, means for supplying steam, a seam opener located in advance of and spaced from the pressing face, a port for the discharge of steam located in the space between the seam opener and forward end of the pressing face, a valve controlling the discharge of steam through the port and connections intermediate the seam opener and valve whereby the latter may be actuated by the seam opener.

5. An iron for pressing garment seams, embodying a body having a pressing face, means for heating the same, means for supplying steam, a discharge port located at the forward end of the pressing face, a valve controlling the discharge of steam through the port, a yielding seam opener having an

inclined face located in advance of the port, and a connection intermediate the seam opener and valve, whereby the valve is opened by the seam opener when moved with relation to the body.

6. An iron for pressing garment seams, comprising a body having a pressing face, means for heating the pressing face, means for supplying steam, a discharge port for the steam located in advance of the pressing face, a valve controlling the discharge of steam through said port, and a combined seam opener and valve operating member movable with relation to the body of the iron and adapted to be moved automatically to open the steam port by downward pressure on the iron impressing a seam.

7. An iron for pressing garment seams, comprising a body having a pressing face, means for heating the pressing face, means for supplying steam, a discharge port for the steam located at the forward end of the pressing face, and a combined seam opener and valve operating member located in advance of the discharge port and projecting beyond the pressing face in position to be retracted to open the valve by contact with the seam being pressed.

EDWIN H. ZACHARIAS.