United States Patent [19]

Flowers

[11] **3,820,260**

[45] **June 28, 1974**

[54] **STEAM PRESSING IRON HAVING SELF-CLEANING MEANS**

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[52] **U.S. Cl.** **38/93**
[51] **Int. Cl.** **D06f 75/38**
[58] **Field of Search**..... 38/93, 77.5, 77.83

[56] **References Cited**

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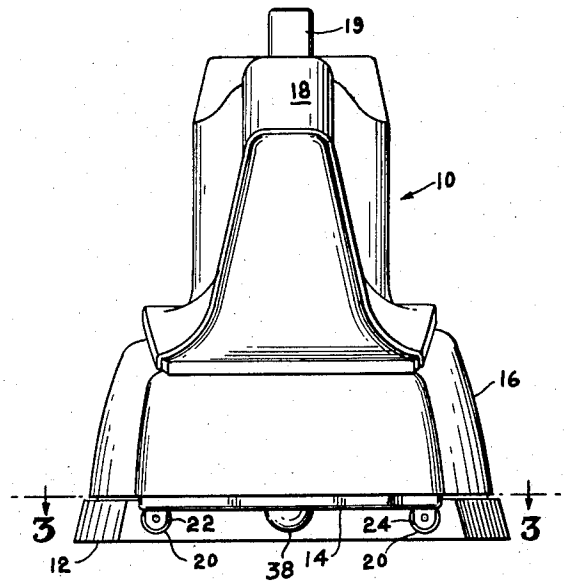
Primary Examiner—Patrick D. Lawson
Attorney, Agent, or Firm—Dallett Hoopes

[57] **ABSTRACT**

A steam pressing iron has flush ports in the rear of the soleplate. A pair of arms mounted on a pin at the center of the heel plate of the iron carries plugs to close the ports. A single operator button moves the arms to swing the plugs into or out of the ports.

4 Claims, 8 Drawing Figures



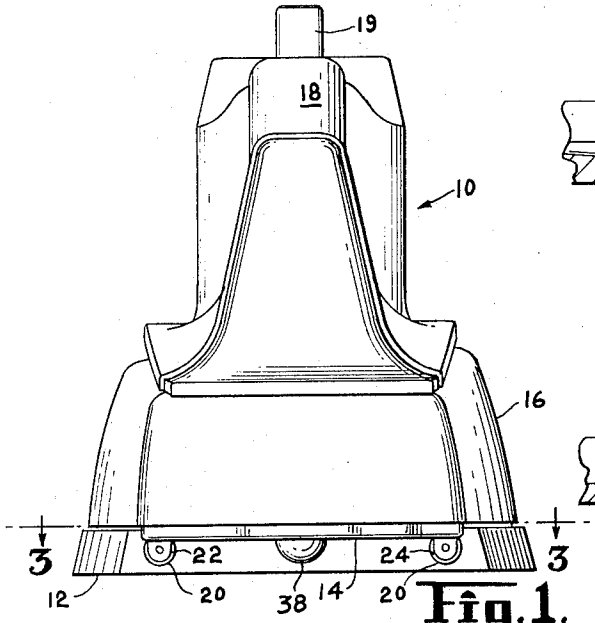


Fig. 1.

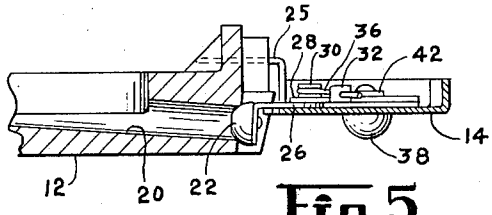


Fig. 5.

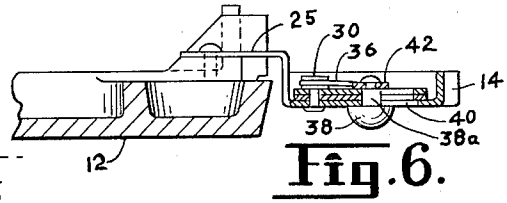


Fig. 6.

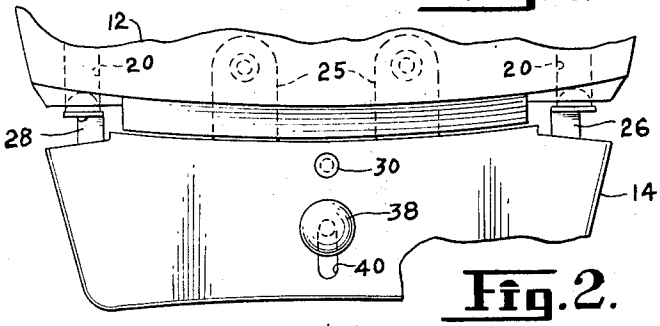


Fig. 2.

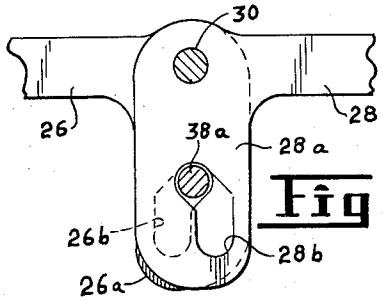


Fig. 7.

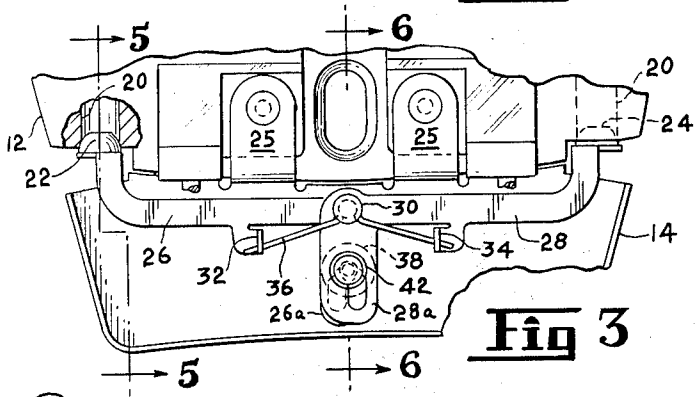


Fig 3

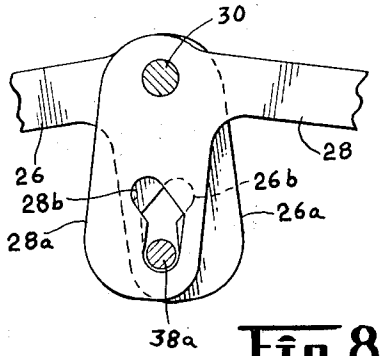


Fig. 8.

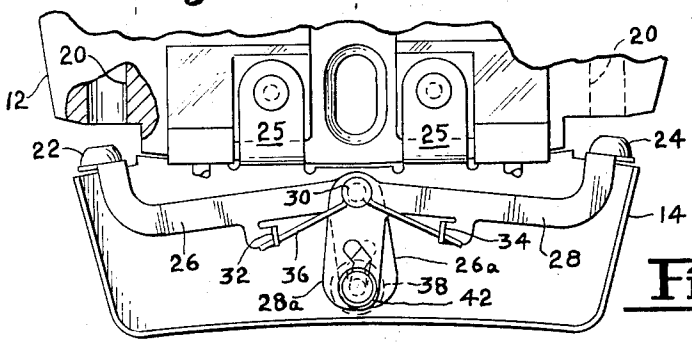


Fig. 4.

STEAM PRESSING IRON HAVING SELF-CLEANING MEANS

BRIEF SUMMARY OF THE INVENTION

1. Field of the Invention

This invention relates to a steam pressing iron. More specifically, this invention relates to an electric steam pressing iron having self-cleaning means, that is, means by which steam may flush accummulated pieces of lint and dust out ports in the rear of the iron to avoid staining the bottom face of the sole-plate. Still more specifically, the invention relates to means for opening and closing such rear flush ports.

2. Description of the Prior Art

In the prior art, there are many disclosures of self-cleaning pressing irons in which the steam generated in the iron is used after ironing to flush out lint and dirt from the passageways of the iron. One especially effective device is disclosed in my presently pending U.S. Pat. application Ser. No. 320,444, filed Jan. 2, 1973. In this device, flush ports are provided in the heel of the soleplate of the iron and, when these ports are unplugged, steam generated in the iron may flush scorched lint and other debris out the ports without staining the bottom face of the soleplate. Such flushing from the heel of the soleplate is desirable to avoid subsequent staining of garments being pressed. In the patent application identified above, plugs are held in the ports by spring arms mounted at the centerline of the iron.

The present invention presents an improvement over the means for mounting and operating the plugs of the above-identified application. Under the present invention, the two plugs may be moved together by the simple movement of a single operator button. This movement may be effected by knocking the button against the side of the ironing board. The opening or closing of the flush ports is thus accomplished in a simple, easy manner favored by by the housewife.

SUMMARY OF THE INVENTION

Under the present invention, the flush ports at the heel of the soleplate are provided with plugs. A pair of rigid arms are pivotally mounted on the heel plate of the iron by a pin disposed on the centerline. The plugs are secured to the ends of the arms respectively. Spring means bias the arms toward the position in which the plugs close the ports. Extensions of the arms are provided with cam surfaces which are engaged by follower means associated with an operating button slideably mounted on the heel plate whereby the arms may close or withdraw the plugs by the limited reciprocal movement of the button. The cam means may be especially shaped to provide a dwell assuring the holding open of the plugs when the button is in its extreme open position.

BRIEF DESCRIPTION OF THE DRAWINGS

Other features and objects of the invention will be apparent from a reading of the following specification, including the drawings, all of which show non-limiting embodiments of the invention. In the drawings:

FIG. 1 is a rear elevational view of an iron embodying the invention;

FIG. 2 is a slightly enlarged bottom plan view of the heel plate of the iron;

FIG. 3 is a sectional view taken on the line 3—3 of FIG. 1 and showing the plugs in closed position;

FIG. 4 is a view similar to FIG. 3 but showing the plugs in open condition;

FIG. 5 is a sectional view taken on the line 5—5 of FIG. 3;

FIG. 6 is a sectional view taken on the line 6—6 of FIG. 3;

FIG. 7 is an enlarged view of an operating extension of the arms as shown in FIG. 3; and

FIG. 8 is an enlarged view similar to FIG. 7 but showing the operation extensions in their locked open position.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more specifically to the drawings, an iron having the invention embodied therein is designated **10** in FIG. **1.** It comprises a soleplate **12,** a heel plate **14** secured to the rear thereof, a cover skirt **16,** and a handle member **18.** A steam control operator **19** is provided in the handle. Flushing ports **20** are provided in the heel of the soleplate in a manner described in the presently pending application. Plugs **22** and **24** are adapted to close the ports **20** respectively.

The heel plate **14** is of thin sheet metal and is mounted at the rear of the soleplate by a pair of brackets **25** (FIG. **3**). A pair of arms **26** and **28** are secured to the upper side of the heel plate **14** by a pin **30** and to the distal ends of the arms respectively are secured the plugs **22, 24.** The arms each have upward tabs **32** and **34,** and spring means **36** anchored by the pin **30** bias the arms **26** and **28** with the plugs closing the ports **20.**

Rearward extensions of the arms **26** and **28** respectively are labelled **26***a* and **28***a*, as shown best in FIG. **8,** and they are each provided with cam openings **26***b* and **28***b*. As shown, the openings **26***b* and **28***b* are mirror images of each other and are boomerang-shaped. A button **38** is mounted in a slot **40** on the centerline of the heel plate **14** and adapted to be reciprocally moved therein. The button has a stem **38***a* which extends through the openings **28***b* and **26***b* in the rearward extensions of the arms. The upper end of the stem is provided with a head means **42** which holds the button in place but permits its reciprocation.

The boomerang-shaped openings **28***b* and **26***b* are, in the embodiment shown, configured so that as the button **38** is moved from fore to aft position, the arms are forced open by the stem **38***a*. The rearward portion of the boomerang-shaped opening provides a cam dwell by which the stem is able to hold the arms with plugs open despite the opposite urging of the spring means **36.**

Prior to commencing her ironing operation, the housewife may knock the button **38** to its rearward position against the side of the ironing board, opening the ports **20.** She may then press the steam control operator **19** for generation of maximum steam, causing the steam to exit rapidly out the flush ports **20,** flushing out the accummulated particles of scorched lint, dust, and so on. To optimize the flushing action, out the ports **20,** the soleplate vents may be blocked by positioning the iron with its soleplate flat on an impervious supporting surface.

Because the flushing steam discharges out ports **20** rather than the face of the soleplate, there is no danger

of staining the said face. Such staining could easily result in a staining of the garment in the subsequent ironing operation.

After the flushing is accomplished, as described above, the housewife may then knock the button **38** against the edge of the ironing board to close the flush ports **20.** The iron is then ready for steam pressing operation.

Alternatively, the flushing may be accomplished after the ironing operation, or anytime the operator feels that it is necessary or desirable.

Many variations are possible from the preferred embodiment described above, all falling within the scope of the invention which may be described by the following claim language:

I claim:

1. An electric pressing iron comprising a soleplate having a steam generating chamber means therein and a plurality of steam vents on the bottom surface thereof; passage means formed in the soleplate to communicate steam to the vents from the chamber means; flush ports in the heel of the iron at either side thereof and connected to the passage means; a heel plate disposed parallel to and slightly above the bottom surface of the soleplate and secured to the heel thereof; a pair of rigid arms pivotally mounted on the heel plate by a pin disposed on the centerline of the iron, the arms having vent plugs secured at their distal ends respectively and adapted to close off the flush ports respectively; each of the arms having cam means; and an actuating button mounted on the heel plate for limited reciprocal movement along the centerline of the iron, the button having stem means adapted to engage the cam means whereby as the button is moved in one direction, the arms withdraw the plugs from the ports, and when the button is moved in the other direction, the arms move the plugs into the ports respectively.

2. An electric pressing iron as claimed in claim **1** wherein the cam means are boomerang-shaped openings and afford a locking surface, holding the arms with plugs away from the ports as the stem means engages the cam means in a dwell area.

3. An electric pressing iron as claimed in claim **1** wherein spring means bias the arms in a position at which the plugs close the ports.

4. An electric pressing iron as claimed in claim **3** wherein the spring means comprise a single length of spring wire extending from an engagement with one arm to an anchor locus at the pin and to engagement with the other arm.

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