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71 Applicant: **PIFCO LIMITED**
Princess Street Failsworth
Manchester M35 0HS (GB)

72 Inventor: **Sharples, James Henry**
9 Kenilworth Close
Radcliffe Greater Manchester, M26 0HL (GB)

74 Representative: **Massey, Alexander et al**
MARKS & CLERK Suite 301 Sunlight House Quay Street
Manchester, M3 3JY (GB)

54 **A trousers press.**

57 A trousers press comprises a fixed flat pressing member (20), electrical heating means supported by the fixed flat pressing member, a resilient cushioning mat (30) covering a pressing face of the fixed flat pressing member, a pivotal flat pressing member (21) hingedly connected at its bottom end to the bottom end of the fixed flat pressing member, and arm means (33) pivoted to the sides of the fixed flat pressing member and cooperating with abutment means on the sides of the pivotal flat pressing member to urge the flat pressing members together for trouser pressing purposes and with the pivotal flat pressing member to restrict the extent of its pivoting movement relative to the fixed flat pressing member. The trousers press is characterised in that the hinge connection between the two flat pressing members is constituted by upwardly-open U-shaped resilient clip means, preferably two spring steel U-clips, between the limbs (41) of which the lower ends of the flat pressing members are accommodated with each flat pressing plate secured to a respective resilient limb of the resilient clip means, which resilient limbs flex to provide the required spacing to accommodate the thickness of material of the trousers to be pressed.

As a result of this hinge connection all thicknesses of trousers including, for example, turn-ups (cuffs) and tweeds can be readily catered for.

Description

A TROUSERS PRESS

This invention relates to a trousers press, particularly an electrically-operated trousers press.

Trousers presses are known (see British Patent Specifications Nos. 928293, 1233903, 1233904, 1566384 and 2175105A all in the name of John Corby Limited) which comprise two flat members between which trousers are pressed with a resilient cushioning mat covering a surface of at least one of the flat members and there being an electrical resistance heating element associated with the resilient mat and connectible by an electric cable to the electricity mains supply for the purpose of heating the trousers during pressing to remove creases. Such known trousers press also includes a means for gripping the trousers at the lower end of the trousers and a means in the form of stretcher bars, one at the top of each of the flat members, for stretching or applying tension to the trousers prior to pressing. The flat member supporting the resilient mat and the electrical resistance heating element is fixed within a frame while the other is pivoted or hinged at its lower end directly to the frame for movement towards and away from the fixed flat member. This known trousers press comprises also a means for resiliently clamping the two flat members together during the pressing operation.

Such means comprises a pair of interconnected pivotal arms, each disposed at one side of the frame and being bowed or cranked at their frame ends to cooperate with laterally-extending rollers on the sides of the hinged flat member resiliently to clamp the two flat members together for pressing purposes. The free end of each arm is intumed to engage the front face of the hinged flat member to restrict the extent of its pivotal movement relative to the fixed flat member.

In this known trousers press the stretcher bars each comprise convexly curved members movably mounted at the top of the flat members and adapted to perform a rolling action as the flat members are brought together to grip the upper part of the trousers therebetween and thereby stretch or tension the trousers between the flat members, the lower part of the trousers being gripped by a cuff board or resilient rod so that the trousers are longitudinally stretched or tensioned during the pressing operation.

Different thicknesses of trousers as, for example, at the cuffs (if such are provided) are accommodated in this known trousers press by flexure of the resilient cushioning mat.

The known trousers press is supported on two laterally-spaced feet extending normally and fore-and-aft of the flat pressing members.

It is an object of the present invention to provide a trousers press of the same general character as the aforesaid known trousers press which is more effective in accommodating different thicknesses of trousers.

According to the present invention there is provided a trousers press comprising a fixed flat

pressing member, electrical heating means supported by the fixed flat pressing member, a resilient cushioning mat covering a pressing face of the fixed flat pressing member, a pivotal flat pressing member hingedly connected at its bottom end to the bottom end of the fixed flat pressing member, and arm means pivoted to the sides of the fixed flat pressing member and cooperating with abutment means on the sides of the pivotal flat pressing member to urge the flat pressing members together for trouser pressing purposes and with the pivotal flat pressing member to restrict the extent of its pivoting movement relative to the fixed flat pressing member, the trousers press being characterised in that the hinge connection between the two flat pressing members is constituted by upwardly-open U-shaped resilient clip means between the limbs of which the lower ends of the flat pressing members are accommodated with each flat pressing plate secured to a respective resilient limb of the resilient clip means, which resilient limbs flex to provide the required spacing to accommodate the thickness of material of the trousers to be pressed.

As a result of this hinge connection all thicknesses of trousers including, for example, turn-ups (cuffs) and tweeds can be readily catered for.

Preferably the resilient clip means comprises a pair of laterally-spaced U-clips.

The U-clips are preferably formed of spring steel but may be formed of resilient plastics material. Any suitable material may be employed which is inherently flexible with the ability to flex without breaking.

Preferably, one resilient limb of each U-clip is flat and is secured to the front face of the pivotal flat pressing member, while the other resilient limb is secured to the rear face of the fixed flat pressing member but is spaced therefrom at its lower end to provide and/or assist the relative flexure between the resilient limbs.

The upper end of the other resilient limb extends rearwardly of the fixed flat pressing member for anti-roll purposes.

Preferably a fulcrum line extends forwardly of the fixed flat pressing member at a distance from the bottom of the latter equal to approximately half of the height of the resilient limbs.

Preferably the rear resilient limb of each U-clip mounts a locating device onto which a support foot for the trousers press can be resiliently and releasably engaged.

Preferably each locating device has two lateral edges spaced from the rear resilient limb and adapted to be slidably engaged by a slot in its respective support foot.

Experience has shown that the stretcher bars provided in the known aforesaid trousers press are unnecessary.

In the trousers press of the present invention the upper end of the pivotal flat pressing member is preferably enclosed in a plastics strip which serves to press and hold the upper portion of the trousers

being pressed against the resilient cushioning mat of the fixed flat pressing member.

If, however, it is desired to provide a trousers stretching device then the present invention provides two alternatives such stretching devices which are simpler than the known stretcher bars but equally effective.

A first trousers stretching device preferably comprises a resilient flexible means adapted to extend downwardly from a head member cantilever-supported by the top of the fixed flat pressing member to engage and apply a tensioning action to the upper part of the trousers as the latter and the pivotal flat pressing member are moved towards the fixed flat pressing member.

Preferably the stretching device comprises a flexible flap, for example, a brush element, or a row of bristles, or an elastomeric or plastics strip, extending the length of the head member and which, in use, effects a sweeping action on the upper part of the trousers outwardly of the head member thereby stretching the trousers upon closing of the flat pressing members together to perform a pressing operation.

A second form of stretching device preferably comprises an inflatable means provided on the pivoted flat pressing at and adjacent to the top thereof, the inflatable means extending along the top of the pivoted flat pressing member and normally being in a collapsed position but being expandible as the pivoted flat pressing member is moved towards the fixed flat pressing member to clamp trousers there between so that a stretching or tensioning force is applied to an upper part of the trousers overlying the top of the pivoted flat pressing member.

Preferably the inflatable means comprises an air-inflated sack extending across the pivotal flat pressing member downwardly of the top end thereof and in communication with an inflatable pocket, normally collapsed, which overlies the top end of pivotal flat pressing member, the arrangement being such that as the pivotal flat pressing member approaches the fixed flat pressing member with a pair of trousers supported thereon and overlying the top end the inflated sack is caused to collapse causing the air contained therein to flow upwardly to the inflatable pocket thereby causing the stretching or tensioning action on the trousers clamped between the two flat pressing members.

The electrical heating means of the trousers press preferably comprises a carrier sheet, preferably but not essentially of flexible material, printed with conductive inks, for example a carbon and silver compound, the carrier sheet being located between the fixed flat pressing member and the resilient cushioning mat covering the face of the latter and against which the trousers are pressed by the pivotal flat pressing member.

The control of the electrical heating means may be by way of a thermal cut-out or a timer which may or may not be electronic in nature, an on/off switch being provided.

An embodiment of the present invention will now be described, by way of example, with reference to

the accompanying drawings, in which:-

Fig. 1 is a perspective view of a trousers press according to the present invention from the rear and to one side;

Fig. 1A and 1B are detail views of the trousers press;

Fig. 2 is a fragmentary side view of the lower end of the trousers press;

Fig. 3 is a rear view corresponding to Fig. 2;

Fig. 4 is a transverse sectional view through the rear limb of U-clip and its connection with its support foot;

Fig. 5 is a fragmentary perspective view of the upper part of the trousers press showing the first trousers stretching device;

Fig. 6 is a side elevation of the same part of the trousers press as Fig. 5 showing the alternative and second trousers stretching device; and

Fig. 7 is a front view of the fixed flat pressing member showing the electrical resistance heating means.

The trousers press comprises two flat pressing members 20, 21 formed of wood, or laminate board, or any other suitable and convenient material hinged together at their bottom ends as generally indicated at 22.

The flat pressing member 20 is fixed while the flat pressing member 21 is pivotal relative to same to permit trousers to be pressed to be disposed therebetween and pressed trousers to be removed from therebetween.

During a pressing operation the flat pressing members 20, 21 are substantially parallel with the trousers clamped therebetween.

The fixed flat pressing member 20 supports, in cantilever fashion, across its top a head member 23 in the form of an accessory tray for supporting articles such as cuff-links, studs, watches etc. It may also provide, at each end, a support (not shown) for a tie or ties and a clothes brush and shoehorn which may or may not be of unitary construction.

At one end of the tray is fitted an electrical control means which will be referred to later.

The fixed flat pressing member 20 has secured to its front or inner face 24, i.e. the face against which trousers will be located, electrical heating means in the form of flexible insulating sheets 25 printed with a conductive ink such as a carbon and silver compound.

Electrical power is supplied to the heating elements 25 from the electricity mains supply at 26 via a cable 27 and control connections from the mains supply 26 and the heating elements 25 are indicated at 28, which connections 28 are electrically associated with an electrical control means 29 on the head tray 11. This control means 29 will generally comprise an on/off switch with a thermal cut-out, or a timer which may or may not be electronic.

The electrical heating means 25, 26 and 28 are concealed and protected by a resilient cushioning mat 30 secured to the front or inner face 24 by peripheral edge strips 31 along each vertical edge of the fixed flat pressing member 20.

The pivotal flat pressing board 21 is plain and has

secured along its upper edge a hard plastics extrusion 32 of inverted channel form which cooperates with the resilient cushioning mat 30 to grip and hold the upper end of a pair of trousers when the flat pressing members 20, 21 are clamped together during a pressing operation.

This clamping is effected by a pivotal arm arrangement generally indicated at 33 and which comprises a crossbar 34 rotatably secured in a central channel member 35 and laterally-spaced brackets 36 mounted on the back or outer surface of the fixed flat pressing member 20.

Each end of the crossbar 34 extends into a lateral arm 37 joined across the front face of the pivotal flat pressing member 21 by a roller or round bar 38.

Each arm 37 passes through a slotted bracket 39 secured to a respective lateral edge of the pivotal flat pressing member 21 adjacent to the top thereof. Each arm 37 in the region of the bracket 39 is of bowed or cranked configuration 40 to cooperate with the lower inner edge of the bracket 39 which is preferably rounded for this purpose to clamp the flat pressing members 20, 21 together when the roller 38 is pressed down and in towards the pivotal flat pressing member 21.

Lifting of the roller 38 allows the upper end of the pivotal flat pressing member 21 to pivot forwardly, its movement being arrested when it contacts the roller 38.

The two flat pressing members 20, 21 are, in accordance with this invention, hinged together at their bottom ends by a pair of laterally-spaced spring steel U-clips 40.

Each U-clip 40 receives between its inherently flexible limbs 41, 42 the two flat pressing members 20, 21.

The limbs 41, 42 are joined by a base 43 spaced slightly downwards from the bottom edges of the flat pressing members 20, 21 and indicated at 44.

The limb 41 is flat and is bolted to the front face of the pivotal flat pressing member 21.

The limb 42 is spaced rearwardly away from the rear face of the fixed flat pressing member 20 at its lower end as indicated at 45 to provide for and/or assist relative flexing between the limbs 41, 42, is bolted at a flat intermediate portion 46 to the fixed flat pressing member 20 as indicated at 47, and has an upper rearwardly inclined end 48 which serves as an anti-roll device for the support foot fitted to each U-clip 40 as later described.

This resilient U-clip hinge connection gives the trousers press the ability to accommodate between the flat pressing members 20, 21 without difficulty all trousers irrespective of thickness.

A fulcrum extrusion 49 is secured to the fixed flat pressing member 20 and has a transverse bead 50 thereacross defining the fulcrum point of the hinge connection.

The trousers press is supported by two support feet 51 releasably fitted to the U-clips 40. A locating and securing plate 52 is fastened to the flat portion 46 of each limb 42 by the bolt or screw 47 and has two lateral wings 53 spaced from the flat portion 46.

Each support foot 51 has an open-topped, open-faced slot 54 with lateral extensions 55

defining, in plan view, a T-slot.

Each support foot 51 can therefore be slid upwardly to engage the locating and securing plate 52 into the T-slot to secure the support foot 51 in position.

The support feet 51 are formed of plastics material so that they resiliently grip the locating and securing plates 52.

A jacket hanger 56 is removably secured to the rear of the accessory tray 23 by screws 57.

The brackets 36 are formed with keyhole slots 58 to permit the trousers press to be wall mounted instead of floor supported by the support feet 51.

Referring now to Fig. 5, the accessory tray 23 has along its length a depending brush element 59 formed, for example, of nylon or other plastics bristles which are of such a length that as the hinged flat pressing member 21 with trousers 60 supported thereover is pivoted towards the fixed flat pressing member 20 the bristles sweep against the trousers 60 to apply a tensioning or stretching force in the direction of arrow A, whereby the trousers 60, which are gripped at their bottom end, as is usual between the two flat pressing members, are tightly tensioned or stretched over the length of the trouser legs clamped between the fixed and hinged flat pressing members 20 and 21.

An alternative stretching device is shown in Fig. 6.

In this instance the trousers stretching device is fitted to the hinged flat pressing member 21 and comprises an inflatable arrangement generally indicated at 61 and extending across the width of the hinged flat pressing member 21 at the upper portion thereof and across the upper end thereof. The inflatable arrangement 61 comprises a normally air inflated sack 62 in communication with a normally deflated pocket 63.

Thus, referring to Fig. 6, when the hinged flat pressing member 21 is spaced away from the fixed flat pressing member 20 the sack 62 is inflated while the pocket 63 is deflated.

With a pair of trousers overhanging the hinged flat pressing member 21, as the latter is moved towards and against the fixed flat pressing member 20, the inflated sack 62 is caused to deflate and air flows therefrom into the deflated pocket 63 which is caused correspondingly to inflate thus applying a vertical pulling force on the trouser legs between the two flat pressing members 20 and 21 to stretch them for pressing purposes.

Claims

1. A trousers press comprising a fixed flat pressing member, electrical heating means supported by the fixed flat pressing member, a resilient cushioning mat covering a pressing face of the fixed flat pressing member, a pivotal flat pressing member hingedly connected at its bottom end to the bottom end of the fixed flat pressing member, and arm means pivoted to the sides of the fixed flat pressing member and cooperating with abutment means on the sides of the pivotal flat pressing member to urge the

flat pressing members together for trouser pressing purposes and with the pivotal flat pressing member to restrict the extent of its pivoting movement relative to the fixed flat pressing member, the trousers press being characterised in that the hinge connection between the two flat pressing members is constituted by upwardly-open U-shaped resilient clip means between the limbs of which the lower ends of the flat pressing members are accommodated with each flat pressing plate secured to a respective resilient limb of the resilient clip means, which resilient limbs flex to provide the required spacing to accommodate the thickness of material of the trousers to be pressed.

2. A trousers press as claimed in claim 1 in which the resilient clip means comprises a pair of laterally-spaced U-clips.

3. A trousers press as claimed in claim 2 in which the U-clips are formed of spring steel or a resilient plastics material.

4. A trousers press as claimed in claim 2 or 3, in which one resilient limb of each U-clip is flat and is secured to the front face of the pivotal flat pressing member, while the other resilient limb is secured to the rear face of the fixed flat pressing member but is spaced therefrom at its lower end to provide and/or assist the relative flexure between the resilient limbs.

5. A trousers press as claimed in claim 4, in which the upper end of the other resilient limb extends rearwardly of the fixed flat pressing member limb extends rearwardly of the fixed flat pressing member for anti-roll purposes.

6. A trousers press as claimed in any one of claims 2 to 5, in which a fulcrum line extends forwardly of the fixed flat pressing member at a distance from the bottom of the latter equal to approximately half of the height of the resilient limbs.

7. A trousers press as claimed in any one of claims 4 to 6 in which the rear resilient limb of each U-clip mounts a locating device onto which a support foot for the trousers press can be resiliently and releasably engaged.

8. A trousers press as claimed in claim 7 in which each locating device has two lateral edges spaced from the rear resilient limb and adapted to be slidably engaged by a slot in its respective support foot.

9. A trousers press as claimed in any one of claims 1 to 8, in which the upper end of the pivotal flat pressing member is preferably enclosed in a plastics strip which serves to press and hold the upper portion of the trousers being pressed against the resilient cushioning mat of the fixed flat pressing member.

10. A trousers press as claimed in any one of claims 1 to 8 in which a resilient flexible means extends downwardly from a head member cantilever-supported by the top of the fixed flat pressing member to engage and apply a tensioning action to the upper part of the trousers as the latter and the pivotal flat

pressing member are moved towards the fixed flat pressing member.

11. A trousers press as claimed in claim 10, in which the stretching device comprises a flexible flap, for example, a brush element, or a row of bristles, or an elastomeric or plastics strip, extending the length of the head member and which, in use, effects a sweeping action on the upper part of the trousers outwardly of the head member thereby stretching the trousers upon closing of the flat pressing members together to perform a pressing operation.

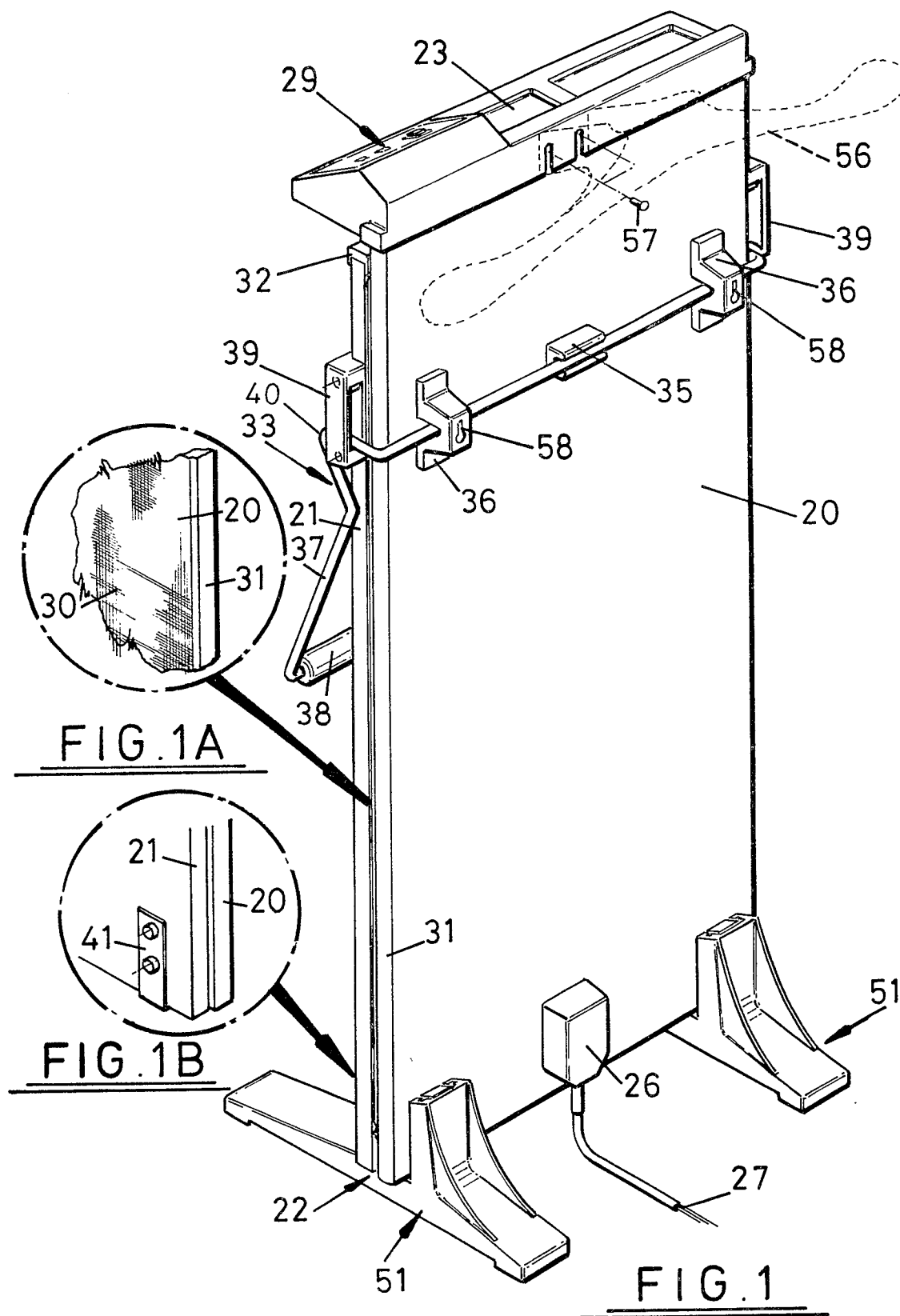
12. A trousers press as claimed in any one of claims 1 to 8 in which the trousers stretching device comprises an inflatable means provided on the pivoted flat pressing member at and adjacent to the top thereof, the inflatable means extending along the top of the pivoted flat pressing member and normally being in a collapsed position but being expandible as the pivoted flat pressing member is moved towards the fixed flat pressing member to clamp trousers there between so that a stretching or tensioning force is applied to an upper part of the trousers overlying the top of the pivoted flat pressing member.

13. A trousers press as claimed in claim 12 in which the inflatable means comprises an air-inflated sack extending across the pivotal flat pressing member downwardly of the top end thereof and in communication with an inflatable pocket, normally collapsed, which over lies the top end of pivotal flat pressing member, the arrangement being such that as the pivotal flat pressing member approaches the fixed flat pressing member with a pair of trousers supported thereon and overlying the top end the inflated sack is caused to collapse causing the air contained therein to flow upwardly to the inflatable pocket thereby causing the stretching or tensioning action on the trousers clamped between the two flat pressing members.

14. A trousers press as claimed in any one of claims 1 to 13, in which the electrical heating means of the trousers press preferably comprises a carrier sheet, preferably but not essentially of flexible material, printed with conductive inks, for example a carbon and silver compound, the carrier sheet being located between the fixed flat pressing member and the resilient cushioning mat covering the face of the latter and against which the trousers are pressed by the pivotal flat pressing member.

15. A trousers press as claimed in claim 14 in which the control of the electrical heating means is by way of an on/off switch, a thermal cut-out or a timer which may or may not be electronic in nature.

16. A trousers press, substantially as hereinbefore described with reference to the accompanying drawings.



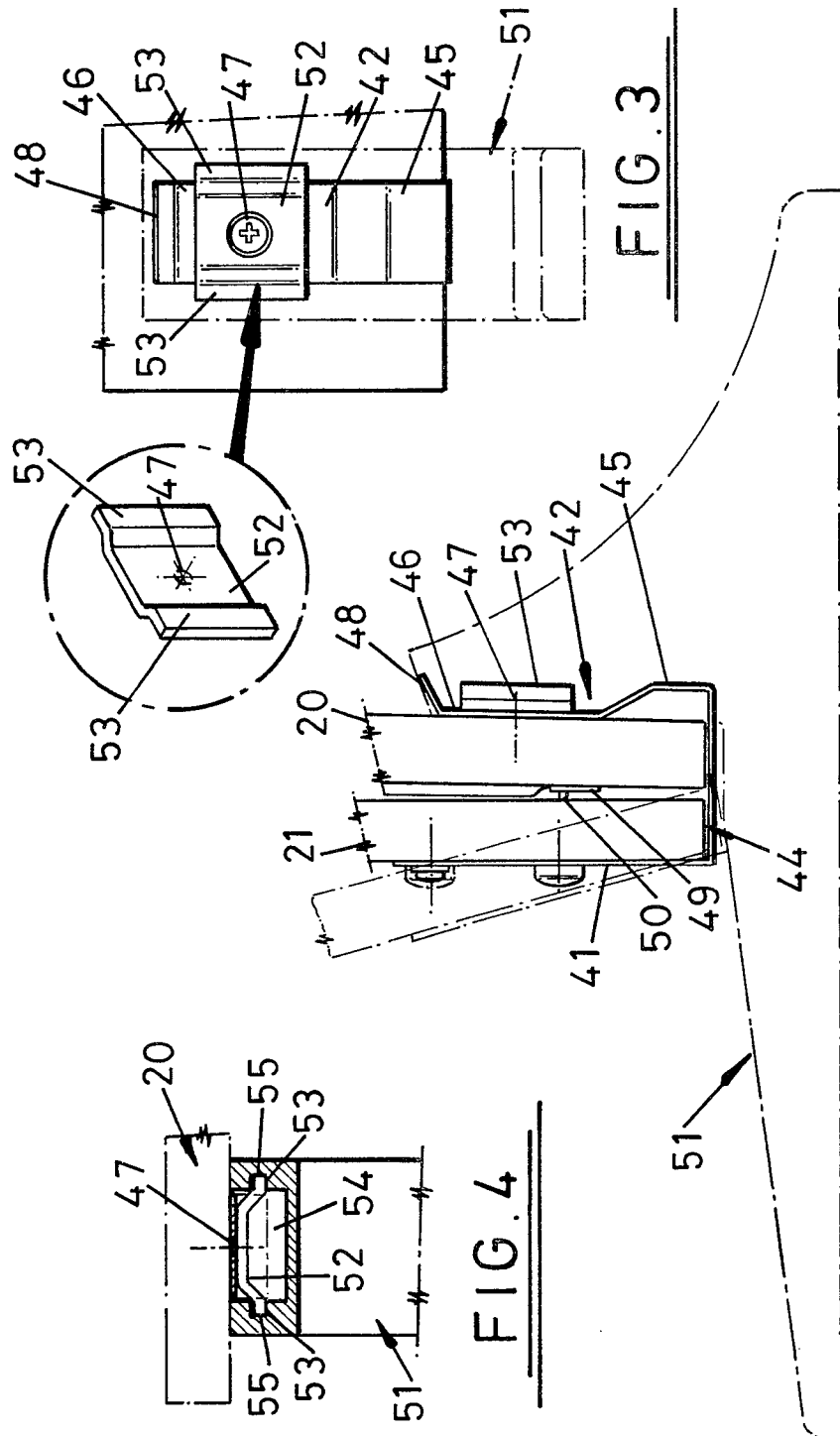


FIG. 2

FIG. 3.

FIG. 7.

