Nov. 1, 1949 D. A. FREEMAN 2,486,740

PROTECTED EDGE PERFORATED PRESS PLATE

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Fig. 1

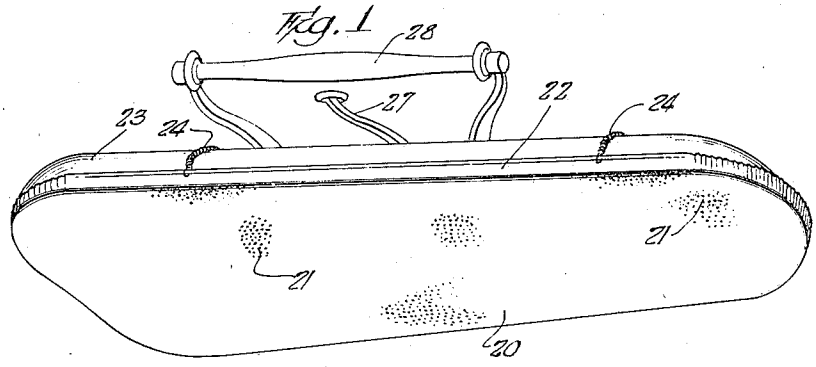


Fig. 2

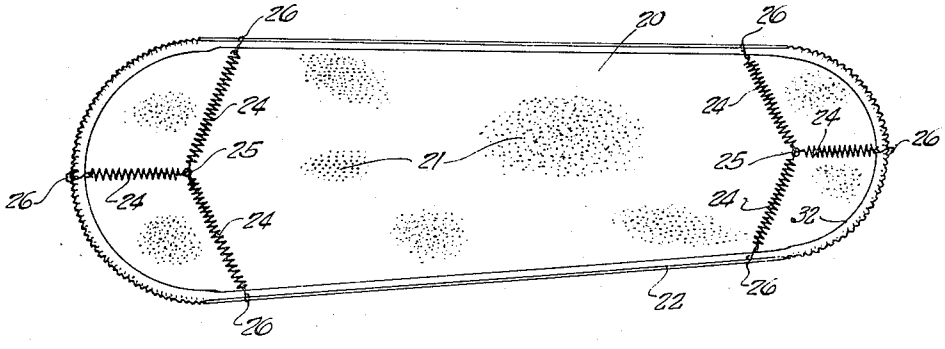


Fig. 3

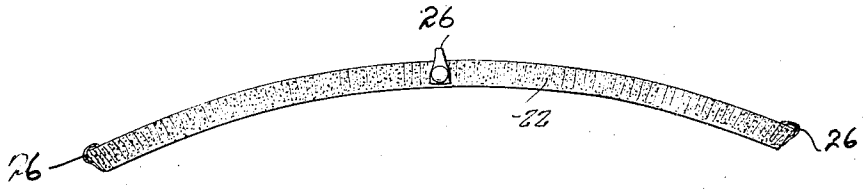
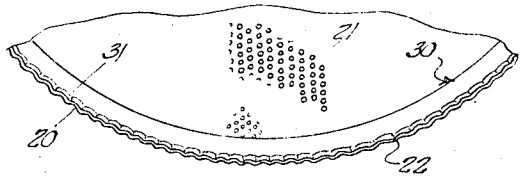


Fig. 4



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Fig. 6

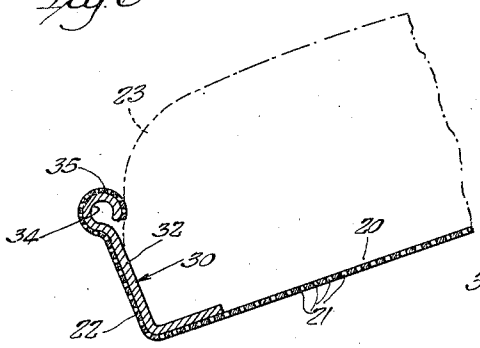


Fig. 5

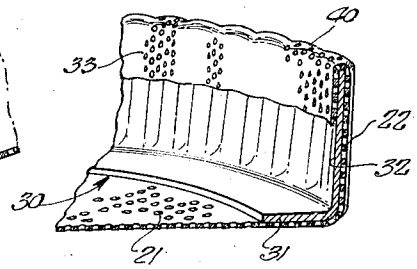


Fig. 7

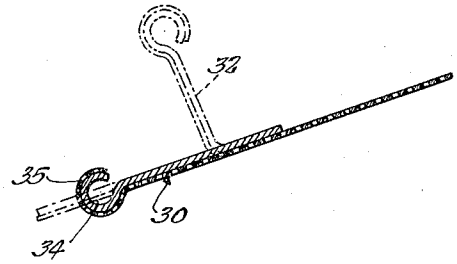


Fig. 8

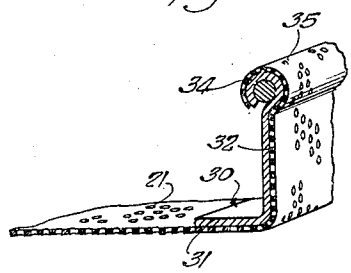
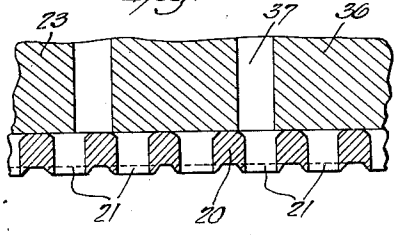


Fig. 9



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UNITED STATES PATENT OFFICE

2,486,740

PROTECTED EDGE PERFORATED PRESS PLATE

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Application June 28, 1946, Serial No. 680,171

4 Claims. (Cl. 38—66)

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This invention relates to improvements in press plates for the heads or clamping plates of garment steaming and pressing machines.

In U. S. Letters Patent No. 1,810,984, of June 23, 1931, to Ray, there is disclosed a head and press plate of the general type to which this invention relates, and while the improvements are shown herein as applied to the specific construction of press plate shown in that patent, they are applicable to any type of perforated metal or screen used as a pressing-machine plate.

In the case of the press plate of the said patent, the perforated portion covering the bottom or face of the head extends over the entire area thereof and up along the side edges of the bottom or face plate of the head. This permits the steam from within the head to shoot out at and over the edges into the presser's or operator's face and down over the edges of the buck or bottom clamp and onto the area of the garment thereon already pressed, which causes waviness and moire effects therein, resulting from the steaming of pressed areas of the previous lay. Another difficulty encountered is the liability of the plate, which is necessarily thin and extensively perforated, to crack or split longitudinally in use, such cracking usually starting at the ends of the plate.

It is an object of this invention to overcome these and other objections by providing a press plate with a protecting solid or imperforate edge portion, whereby steam cannot shoot out into the operator's face or spoil the work already done on the garment beneath and cracking is prevented.

In carrying out the invention, in the preferred form, in connection with a press plate of the type disclosed in said patent, a thin metal solid or imperforate strip or inner reinforcing band is supplied to line the inside of the corner formed by the upturned edge or flange with the face or body of the plate, and the flange is turned over the edge of the strip and the two pressed firmly together to form the edge flange of the press plate, the strip overlapping a narrow band of the face portion of the plate around the periphery of the same. In this way, when the press plate is applied to the head, all escape of steam at the edge of the head is prevented and the work below is protected as well as the presser. The greater strength of the edge and flange portion of the plate prevents cracks from starting and the normal life of the plate is preserved.

Other objects and advantages will appear from the description and claims to follow, in connection with the accompanying drawing, which illustrates, by way of example and not of limitation, one embodiment thereof, and in which—

Fig. 1 is a view looking directly at a head in substantially its raised position and is more or less a bottom perspective view of the head with the press plate of this invention applied thereto;

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Fig. 2 is a top plan view of the press plate itself, that is, detached from the head;

Fig. 3 is an end view of the same on a larger scale and showing the transverse curvature of the same, the better to fit it to the curved or concaved face of a head of a pressing machine;

Fig. 4 is a plan view of a portion of the end of the press plate to show on a larger scale the crimping of the material at the upturned edge or flange of the plate as it passes around the ends of the plate;

Fig. 5 is an inside perspective view of a section or portion of the press plate at the ends and showing the lining strip in the inside corner at the flange, the folding of the perforated plate material thereover and the crimping of the same together, and also a cross-section through the edge portion of the press plate and flange at this point;

Fig. 6 is a cross-section through the edge of the plate at substantially any point along its straight side portions and showing the bead formed in the upper edge of the lining strip at the flange and the way the outer plate material is pressed thereagainst and folded thereover;

Fig. 7 is a similar cross-section showing methods of manufacture whereby the lining strip at the edge of the plate may be bent up with the outside material to form the edge flange, or be bent before and the outside material then bent around it later;

Fig. 8 is a perspective view of a small section of the rim or edge portion of the press plate along the straight sides but showing a modification in that a reinforcing wire or similar core is inserted in the bead of the edge flange; and

Fig. 9 is a cross-section on a greatly enlarged scale through a portion of the perforated press plate and face of the head.

The press plate **20** is made of aluminum, preferably, Monel metal or other non-rusting thin sheet metal, and the entire area of the plate is perforated with very fine holes **21**, as indicated in the various figures. The peripheral edge of the plate **20** is bent up at an angle, which may be substantially a right angle to the plane of the body portion, to form an edge flange **22** thereabout. The press plate is usually oval in outline or ironing-board shape so as to fit over the face of the press head **23** of a steaming and pressing machine, with the flange **22** snugly embracing the edge thereof. The press plate **20** may be slightly curved transversely, as illustrated in Fig. 3, to conform to the under face of the press head **23**, which is usually concaved to fit over the convexed upper surface of the ironing board or "buck" of the machine.

The press plate **20** may be clamped or secured to the press head **23** by three relatively strong coil springs **24** at each end, as shown in Fig. 2,

the springs being suitably looped together at their adjacent ends **25** and detachably hooked at their outer ends to suitable loops **26** secured and attached to said flange **22** at the ends and along the sides of the plate. Thus the springs may be unhooked from the flange to attach the press plate to the head or to detach the same, the springs passing over the top of the head when the press plate is attached thereto (Fig. 1).

In such steaming and pressing machines, the head is hollow and controllably connected with the steam supply, as by the hand or finger operated lever **27** adjacent the handle **28** of the head itself, which is pivotally supported and adapted to be brought down upon the work and buck by the operator's or presser's grasping and pulling down on the handle and who at the same time may admit steam to the head by operation of the valve lever **27**.

The face of the head is provided with a plurality of small holes so that the steam may be distributed over the press plate **20**, and the construction of the latter is such as further to distribute the steam to all the minute holes **21** therein.

In machines of this type as heretofore constructed, the steam would shoot out at the edges into the presser's face and down onto the material below, which had been pressed and was hanging over or beyond the edge of the buck, and would cause it to become wavy and splotchy, which would necessitate that the work be done over again. Also, the repeated pounding effect of bringing the head down upon the buck caused the press plate to split and crack longitudinally, starting at or near the ends.

In order to overcome these difficulties and provide a press plate of long and satisfactory life, the plate is provided with solid or imperforate, protected and reinforced edges, whereby the steam cannot shoot out into the operator's face, the finished material or pressed areas from the previous lay are not struck by the steam escaping at the edges and the waviness and moire effects therein from such steam are prevented and the cracking of the plates is avoided.

In order to accomplish this in the preferred manner, the corner area formed by the flange **22** and the adjacent portion of the face of the press plate is made solid or imperforate, preferably by lining it with a thin solid or imperforate angle strip **30** of suitable metal, such as aluminum, Monel metal or other non-corrosive material. This angle strip **30** makes a comparatively strong reinforcement for the edge of the press plate and overlaps at its lower leg **31** a narrow peripheral band or edge portion of the inside face of the press plate and in intimate contact therewith so as rigidly to support and strengthen the same and also to cut off the flow of steam through the holes covered thereby. The vertical leg **32** of angle strip **30** also lies closely to and in intimate supporting and strengthening contact with the inside of the flange **22** and prevents the passage of steam therethrough.

The edge of the flange **22** is preferably closely bent over the top of leg **32** of the angle plate **30** and tightly pressed down thereagainst to hold the angle plate solidly in position and with its horizontal leg **31** pressed tightly against the face of plate **20**.

At the ends of the press plate, as shown in Fig. 5, the edge of the flange **22** is preferably bent and pressed down over the straight upper edge of the angle strip leg **32** and down the inside as at **33**,

and the complete flange is transversely crimped, as shown, to provide a relatively rigid flange construction and to take up the excess material on the curves.

Along the straight sides of the press plate, the edge of the leg **32** of the angle strip is preferably beaded, as at **34** (Figs. 6, 7 and 8), and the edge of the flange **22** is tightly rolled or formed thereover, as at **35**. This provides a smooth, strong edge for the press plate along its sides. If desired, a suitable wire may be inserted in the edge bead along the sides as shown in section in Fig. 8 to reinforce and strengthen the said edges and the plate as a whole longitudinally.

This angle lining and reinforcing strip **30** may be applied in flat condition to the press plate, as indicated in Fig. 7, and the two then bent up into the dotted-line position as shown in said figure; or it may first be bent to its angular form as seen in Figs. 6 and 8 and the edge of the press plate then bent, pressed and formed around it.

With the press plate thus formed and the same tightly held and pressed against the face of the press head and the flange or edge of the press plate fitting the edge of the head, the shooting of steam through the edge perforations of the press plate into the face of the presser and down onto the work is wholly prevented. The reinforced and strengthened edge portion of the press plate snugly grips the edge and corner of the head and prevents the cracking of the plate in the repeated poundings it receives in use.

Since such press plates have to be cleaned more or less frequently, the same may be readily removed by unhooking the springs **24** and pulling the same off the head. It is readily replaced by the reverse operation.

As stated, the lower wall or face **36** of the head **23**, Fig. 9, may have holes **37** therethrough to admit steam from the interior of the head to the back of the press plate **20**, which holes may be about ⅛ inch in diameter and spaced about an inch apart and extend over the area of the head face. Any other suitable construction of head may, however, be provided.

The perforated construction of the press plate, as mentioned, is preferably the same substantially as that of said patent, to which reference may be made, in which fine holes about 1/64 inch in diameter, spaced on 1/16 inch centers, are arranged in staggered rows over the entire area of the plate and all punched from the top side of the sheet so as to leave slight burrs and roughness on the lower side and myriads of smooth elevated portions on the upper side to provide paths or channels for the steam from the holes **37** to the pin holes **21** in even distribution.

Other ways of forming the apertured plate or screen for the press plate may be employed so long as the proper distribution of the steam results.

While the perforated press plate is preferably used directly against the bottom of the head, as indicated in Fig. 9, the face of the press head may be covered with a fine wire screen as shown in said Ray patent, in which case the press plate **20** may be placed thereover, the same as if said screen were not present.

From the foregoing the construction and operation of the invention will be apparent.

It will, however, be observed that certain of the advantages resulting from the use of member **30** and the manner in which the plate is secured thereto along its edges may be utilized also in connection with a plate **20** that is not necessarily

provided with perforations **21**, or is provided only partially with perforations. The use of member **30** in the way disclosed herein provides a very practical and commercial product, because a presser plate is usually thin and may be advantageously furnished with a part performing the useful function of this member **30**.

Without further elaboration, the foregoing will so fully explain the gist of this invention that others may, by applying current knowledge, readily adapt the same for use under varying conditions of service, without eliminating certain features which may properly be said to constitute the essential items of novelty involved, which items are intended to be defined and secured by the following claims.

I claim:

1. A thin metal press plate for attachment to the head of a garment steaming and pressing machine, said plate being formed to fit over the face of the head and having its peripheral edge bent up at an angle to the face to form a flange embracing the edge of the head, said flanged plate forming a relatively immovable part of the head during pressing and said plate being perforated with a multiplicity of small steam holes throughout its area including said flange, and a strip of thin solid or imperforate metal lining the peripheral corner of the plate and flange so as to extend inwardly and to overlie a portion of the perforated face as well as the perforated edge, the material of the plate in the flange being bent over the top edge of the solid strip and compressed thereon, the said flange of strip and plate material at the ends of the plate being crimped at the free edge thereof.

2. A thin metal press plate for attachment to the head of a garment steaming and pressing machine, said plate being formed to fit over the face of the head and having its peripheral edge bent up at an angle to the face to embrace the edge of the head, said head forming a relatively immovable and permanent cover for the head during use of the head in pressing though detachable for cleaning or the like, said plate being perforated throughout with a multiplicity of small steam holes throughout including said edge, and a strip of thin solid or imperforate sheet metal lining the peripheral corner of the plate and flange so as to overlap a narrow band of the face as well as the edge, the outer edge of the said strip along the sides of the plate being bent to form a bead and the edge of said plate material being formed and compressed thereover.

3. A thin metal press plate for attachment to the head of a garment steaming and pressing machine, said plate being formed to fit over the face of the head and having its peripheral edge bent up at an angle to the face to embrace the edge of the head, said plate when attached to the head being relatively immovable with respect thereto throughout the pressing strokes but being readily detachable from the head for cleaning, repair or replacement and said plate being perforated throughout with a multiplicity of small steam holes throughout including said bent-up edge, and a strip of thin solid or imperforate sheet metal lining the peripheral corner of the plate and flange so as to overlap a narrow band of the face as well as the edge, the outer edge of the said strip along the sides of the plate being reversely bent to form a hollow bead, a reinforcing wire in said bead, and the edge of the plate being tightly formed and compressed over said bead.

4. A thin metal press plate for attachment to the head of a garment steaming and pressing machine, said plate being formed to fit over the face of the head and having its peripheral edge bent up at an angle to the face to form a flange embracing the edge of the head, securing means to hold said plate tightly against the head throughout the pressing strokes of the head, said plate being perforated throughout with a multiplicity of small steam holes throughout its area including the said edge, and a strip of thin solid or imperforate metal lining the peripheral corner of the plate and flange so as to overlie a narrow band of the face as well as the edge, the material of the plate in the flange being bent over the top edge of the solid strip and compressed thereon, the said flange of strip and plate material at the ends of the plate being crimped at the free edge thereof, the outer edge of the said strip along the sides of the plate being bent to form a bead and the edge of said plate material being formed and compressed thereover.

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