Jan. 9, 1951

E. DAVIS

METHOD OF FORMING PRESSING ELEMENTS FOR IRONING MACHINES

2,537,746

Filed Aug. 22, 1946

2 Sheets-Sheet 1

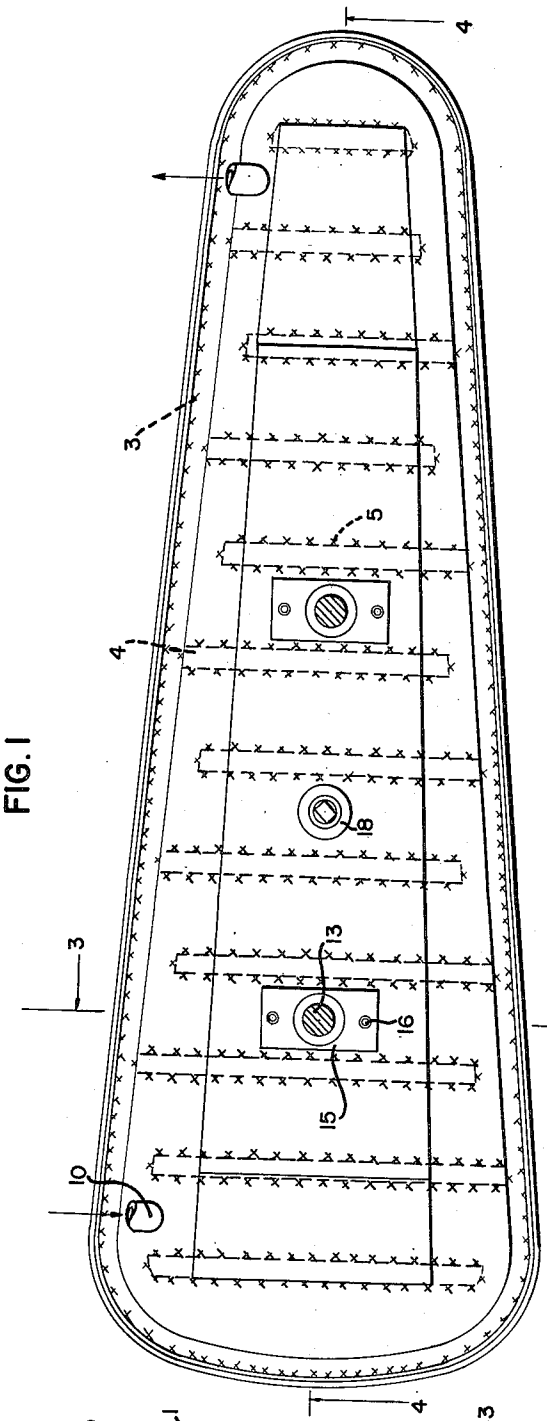


FIG. 1

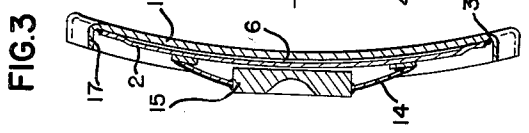


FIG. 3

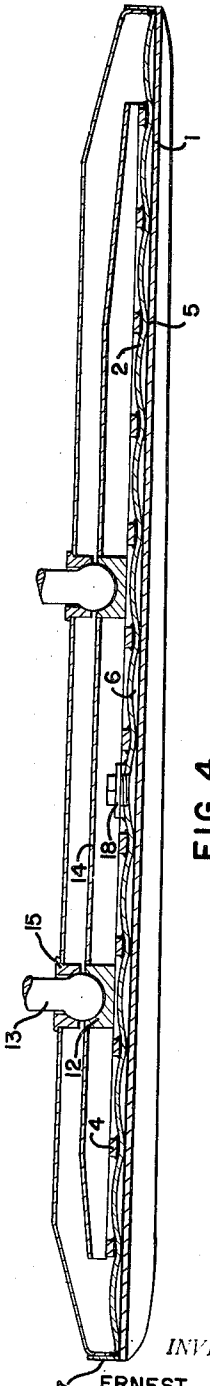


FIG. 4

INVENTOR.
ERNEST DAVIS

BY Bodell & Thompson

ATTORNEYS.

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E. DAVIS

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2 Sheets-Sheet 2

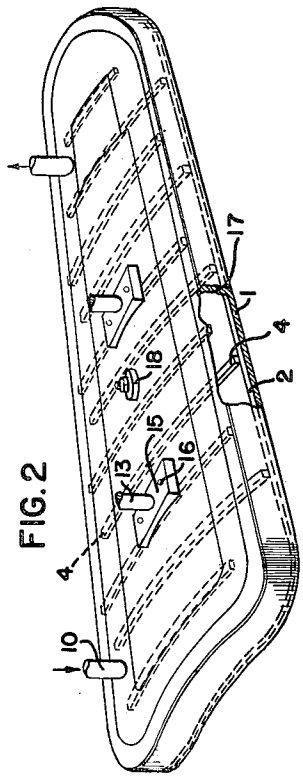


FIG. 2

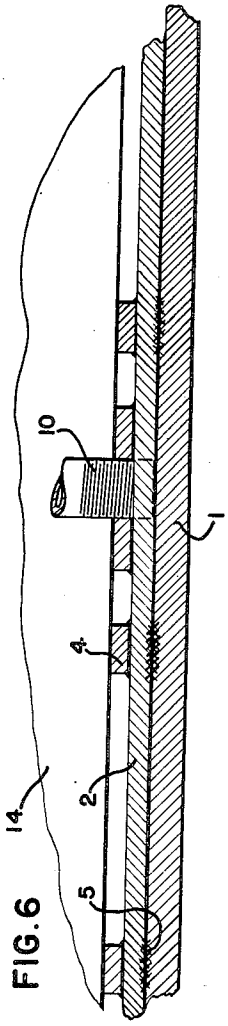


FIG. 6

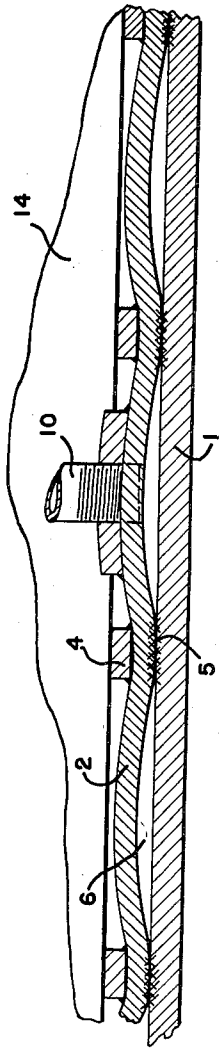


FIG. 5

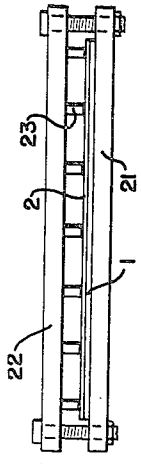
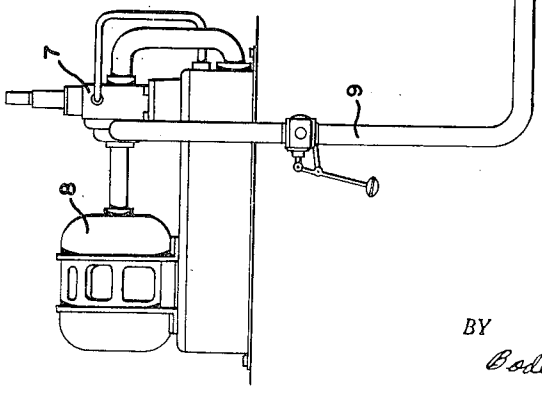


FIG. 7



INVENTOR.

ERNEST DAVIS

BY

Bodell & Thompson

ATTORNEYS.

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METHOD OF FORMING PRESSING ELEMENTS FOR IRONING MACHINES

Ernest Davis, Syracuse, N. Y., assignor to The Prosperity Company, Inc., Syracuse, N. Y., a corporation of New York

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1 Claim. (Cl. 29—148.2)

1

This invention has for its object a method of forming hollow sheet metal pressing elements or press heads and bucks for ironing or laundry and garment pressing machines, by which the hollow press heads or press heads with heating chambers may be economically manufactured.

The invention consists in the steps hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a plan view of one form of press head made in accordance with this method.

Figure 2 is an isometric view, partly broken away.

Figures 3 and 4 are sectional views taken on the planes of lines 3—3 and 4—4, Figure 1, respectively.

Figures 5 and 6 are enlarged fragmentary sectional views showing the position of the plates forming the pressing element after the internal pressure is applied and before the pressure is applied, respectively, the hydraulic pressure applying system being shown in Figure 5.

Figure 7 illustrates a fixture that may be used in practicing this method.

This method consists, generally, in securing or sealing two plates together at their margins throughout the extent thereof and applying internal hydraulic pressure between the plates with sufficient force to distort one of them only to separate the plates between the locations, where they are not held or secured together, thereby distorting one of the plates to form an internal chamber, the force applied being sufficient to distort or stretch the distortable plate to a point where it takes a permanent set in distorted position.

One of the plates, as the plate on which the pressing face is usually provided, is non-distortable under the pressure used, either because it is thicker than the distortable plate or because it is reinforced by being held against a plate or fixture, so that the plate or fixture holds it from distorting under the internal pressure. In order that the distortion of the distortable plate may be uniform, the distortable plate may be held at spaced points or may be secured, as by welding, at spaced apart points throughout its area to the other plate, said points being sufficiently numerous to hold the distortion of the plate substantially uniform.

In the method used in forming the press head, the plates 1, 2 of the press head are initially laid

2

flatwise on each other and secured together, as by welding at 3, around their margins and also secured together at spaced apart points throughout the area of the plates, as by transverse strips 4 overlying the distortable plate and welded thereto, the plates themselves being also welded together under or in line with the transverse strips, as at 5. The strips 4 extend from each side of the plate toward the other side, alternate strips extending in opposite transverse directions and terminating short of the other side, thereby providing a tortuous passage.

The internal hydraulic pressure is applied to the space between the plates, the pressure used being sufficient to distort or bulge the portions 6 of the distortable plate between the transverse strips, and the pressure continued long enough to cause these portions 6 to take a permanent set.

As seen in Figure 5, the force is applied by a suitable hydraulic apparatus, as a pump 7, operated by a suitable motor 8 and having its outlet connected to a valve-controlled pipe 9 to an inlet 10 into the space between the plates 1, 2, this space also having an outlet. The pressure, as hydraulic fluid or oil, is controlled in any suitable manner. The press head may be provided with suitable bearings by which it is connected to a carrying or actuating yoke lever for opening and closing the head. If the press element is stationary, it is similarly provided with suitable bearings for mounting on a base or goose neck.

As here illustrated, one section or block 12 of a socket for a ball type of connection 13 is shown as carried by a plate 14 suitably secured to the top plate 2 of the head, the other section 15 of each joint being secured to the section 12 in any suitable manner, as by screws or bolts 16 (Figure 2). The connection to a head-carrying yoke or lever or to a base may be of any suitable construction. The bottom plate 1 is shown as formed with a marginal angular flange 17 surrounding the edge of the plate 2, so that the plate 2 is nested in the flange. The marginal welding is in the angle of the flange and the bottom plate 1. The top plate 2 may be provided with a plug 18 (Figure 2) for closing the passage to the chamber between the plates.

In Figure 7 is shown a fixture by which two plates 1 and 2 are held together at their margins and also at spaced apart slots instead of along spaced apart lines or ribs, this fixture including a bottom plate section 21 on which the plate 1 is placed and an upper plate 22 having feet 23 which press the plate 1 at spots against the plate 2, so that the plate 22 is clamped in position

while the internal hydraulic pressure is being applied between the plates to distort the upper plate 2.

The method thus performed merely forms a different shape chamber from the tortuous passage of the pressing head shown in Figures 1 to 6. It also causes the distortion to be evenly distributed throughout the plate 1.

A pressing element or head or buck thus formed is light in weight and particularly economical in construction. It is also uniform throughout and capable of withstanding without cracking or exploding under the internal steam pressure used for heating the pressing head or element in the use of the pressing machine.

What I claim is:

The method of forming press heads consisting in arranging two plates so that one overlies the other with the plates being in face to face contact, and one plate being thicker than the other and hence undistortable by pressure that distorts the other plate, the thicker plate having an outer pressing face, securing and sealing the plates around their margins against the outlet of internal pressure; sealing the plates together at spaced points throughout the areas of their confronting faces, and applying hydraulic pressure between the plates sufficient to distort the thinner plate between the areas where the plates are sealed together.

ERNEST DAVIS.

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