Jan. 1, 1935. H. G. BEEDE 1,986,099

GARMENT PRESSING MACHINE

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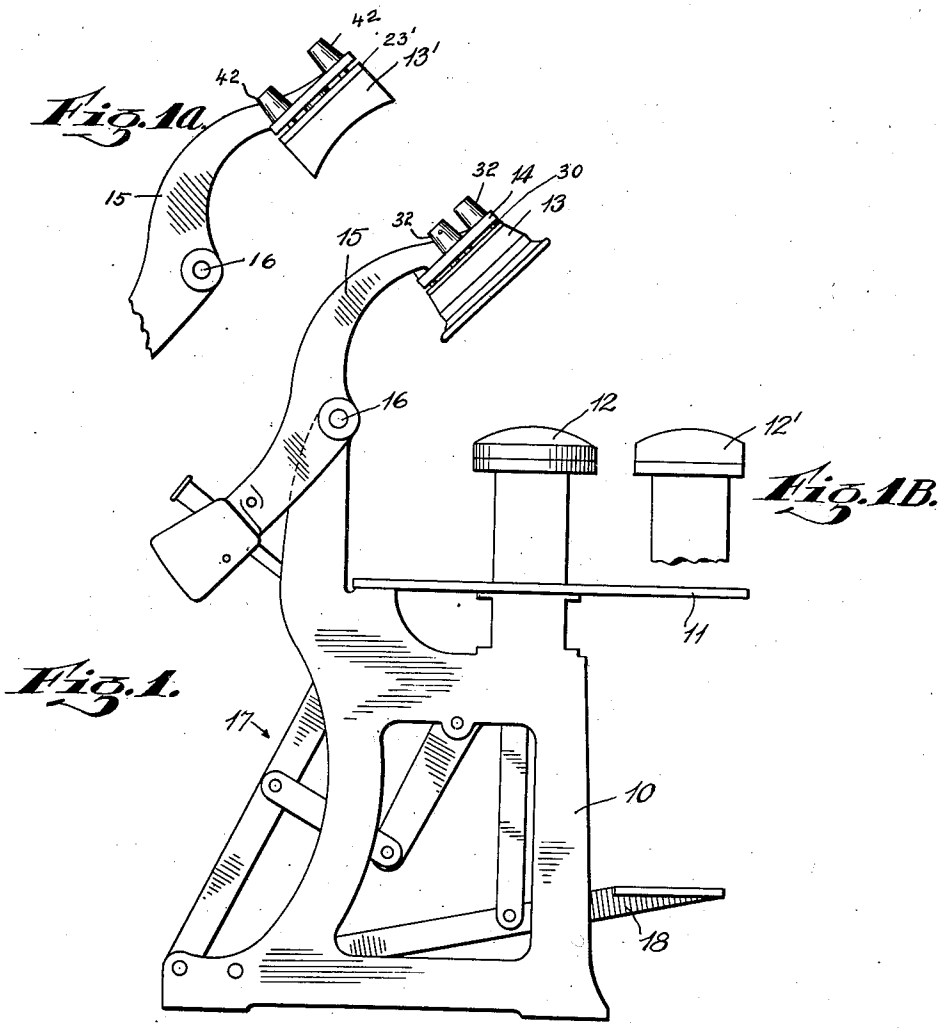


Fig. 1a.

Fig. 1B.

Fig. 1.

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Fig. 2.

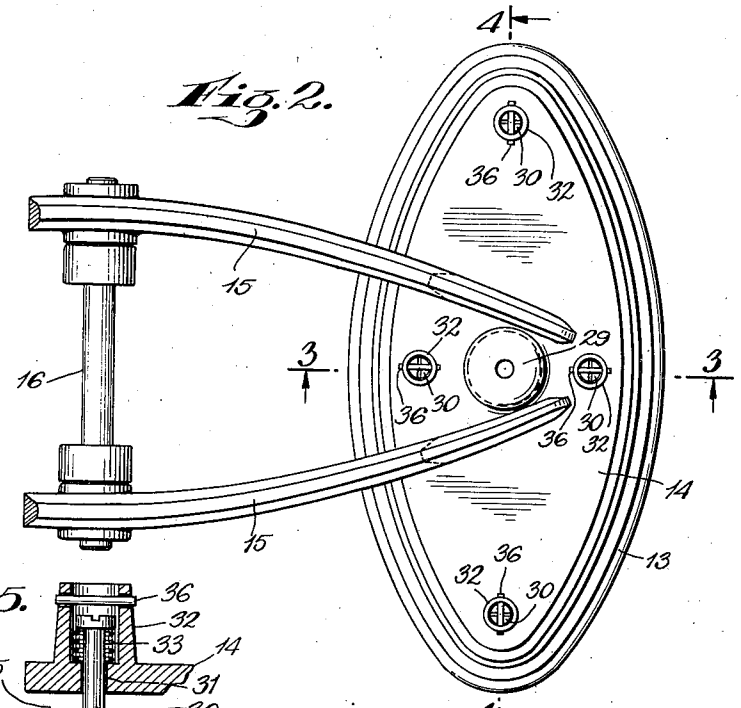


Fig. 5.

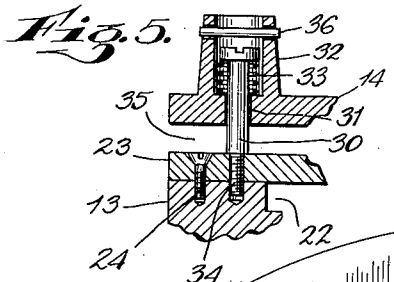


Fig. 3.

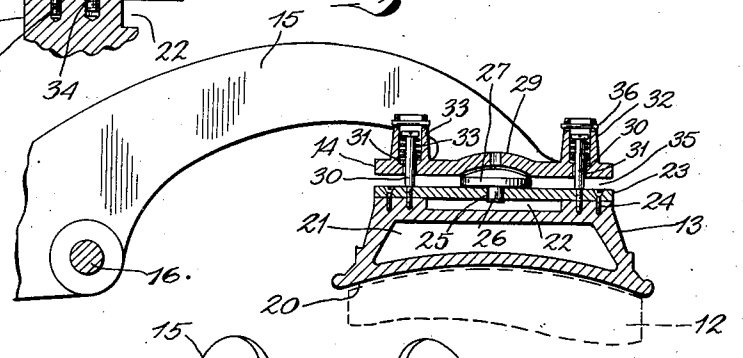
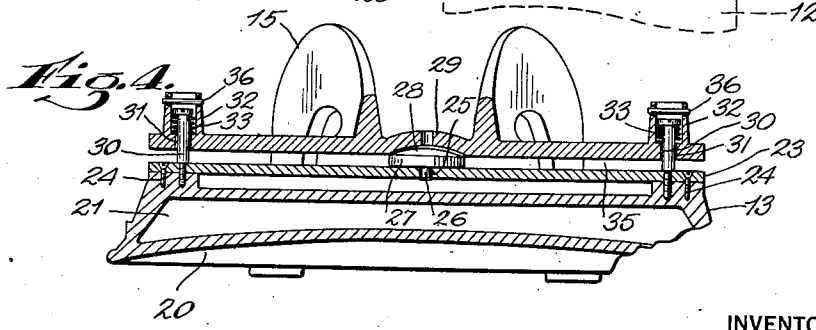


Fig. 4.



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Fig. 6

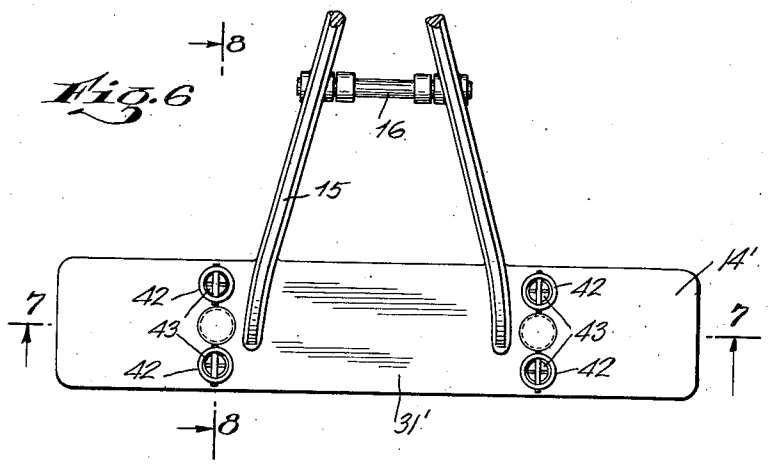


Fig. 7.

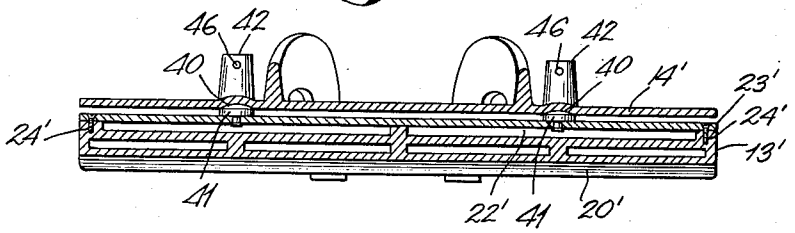
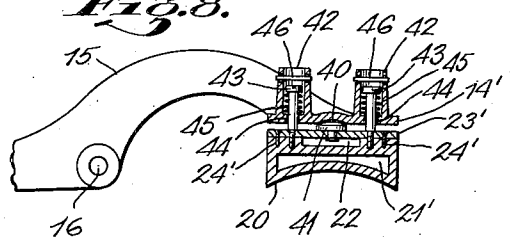


Fig. 8.



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UNITED STATES PATENT OFFICE

1,986,099

GARMENT PRESSING MACHINE

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Application August 12, 1931, Serial No. 556,695

5 Claims. (Cl. 68—9)

My invention relates to garment pressing machines embodying two pressing elements, one being movable relative to the other, and the invention resides more particularly in the provision of a yieldable mounting for one of the elements.

The general object of the invention is to provide means for effecting a pressing action such that the pressure between the pressing elements will be evenly distributed over all surfaces of the clothing or fabric between the elements regardless of variations in the thickness of the material being pressed, and to eliminate wrinkling or creasing of the material when the pressing elements are brought together.

The above and other objects and advantages of the invention which will become apparent during the course of the detailed description of the accompanying drawings may be accomplished by the provision of a yieldable mounting for the pressing head or moving pressing element characterized by a pivotal connection between parts of the head. Such connection is preferably in the form of a concave surface on one part to receive a convex surface carried by the other part, and so constructed and arranged as to locate the center of oscillation within the head or below the pressing surface of the head substantially at the pressing surface of the head, so that said pressing surface can readily adjust itself to the confronting surface of the fixed pressing element or padded buck or the material being pressed by moving at substantially right angles thereto, thus avoiding creasing or wrinkling of the material as is the case where pivotal connections are so constructed and arranged as to locate the center of oscillation above the head so that portions of the head have a sliding motion relative to the buck and material being pressed. In connection with the above arrangement a resilient connection between the parts by which the concave and convex surfaces are held in contact is provided by a plurality of springs arranged symmetrically with respect to the pivot so that each spring will perform its proportional share in holding the head in a normal predetermined position relative to the support from which it may move in several directions during pressing and to which it will return under action of the springs after release from pressing engagement with the material. It is desirable, as will be hereinafter particularly pointed out, to have each of the holding members, on which the springs are mounted, adjustable to permit adjustment of the head to a normal predetermined position.

Under another arrangement for the accomplishment of the above stated objects it is possible to provide for rocking movement of the head only on a horizontal axis by providing two or more concave-convex points of contact between parts of the head constructed and arranged to locate the center of rocking within the head or below the pressing surface of the head and substantially at the pressing surface so that the pressing surface of the head in adjusting itself to the padded buck or the material being pressed may move at approximately right angles to the buck thus avoiding the sliding motion on the material being pressed which results from constructions in which the pivotal center is above the top surface of the head. In connection with this arrangement for rocking movement of the head on the horizontal axis only I provide a plurality of springs, preferably four, in connection with the holding elements. The springs are preferably arranged in groups of two on each side of the pivot at approximately right angles to the longitudinal axis of the head whereby each will perform its proportionate share in holding the head in a normal predetermined position relative to the support.

Under both or either of the above constructions the pressing contact between the head and buck is equalized and the pressure evenly distributed over the entire surface of the material being pressed regardless of any unevenness in the thickness of the material, and this is obtained without wrinkling or creasing the material as the head is moved under pressure against the material and the stationary or fixed pressing elements.

In the accompanying drawings:

Fig. 1 is a side elevation of a garment pressing machine with the invention applied thereto;

Fig. 1*a* is a side elevation of a presser head of different type than that shown in Fig. 1 embodying the invention and a fragment of the swinging arm which carries the head;

Fig. 1*b* is a fragmentary side elevation of a buck or stationary pressing element to cooperate with the head shown in Fig. 1*a*;

Fig. 2 is a top plan view of the presser head shown in Fig. 1 and a portion of the swinging arm;

Fig. 3 is a cross sectional view on the lines 3—3 of Fig. 2;

Fig. 4 is a cross sectional view on the line 4—4 of Fig. 2;

Fig. 5 is an enlarged fragmentary sectional view of a portion of the pressing head showing a manner of securing the parts together;

Fig. 6 is a top plan view of the presser head shown in Fig. 1*a*;

Fig. 7 is a sectional view on the line 7—7 of Fig. 6; and

Fig. 8 is a sectional view on the line 8—8 of Fig. 6.

Referring to Fig. 1 of the drawings there is shown a garment pressing machine comprising a frame 10 on which is mounted the work table 11 with the stationary pressing element or buck 12 thereabove. The movable pressing element or head 13 is secured to a plate 14 carried by the swinging arm 15 pivoted at 16 on the frame and actuated by the toggle mechanism 17 operatively connected to the foot pedal lever 18. Such machines are well known and no description of the operation should be necessary as it will be apparent that when the lever 18 is depressed the toggles 17 will move the arm 15 to bring the head 13 down against the buck or against material imposed thereon to be pressed. Another type or shape of head 13' is illustrated in Fig. 1*a* and another type of buck 12' to cooperate with head 13' is illustrated in Fig. 1*b*.

Referring to Figs. 2–5 the head 13 is of the mushroom or dome type and comprises a casting having a pressing face 20 below the steam chamber 21, and on its top is provided with a recess 22 which is covered by a plate 23 secured to the casting by bolts 24. The plate 23 is provided with a central aperture 25 through which the shank 26 of the button 27 is mounted, the shank being riveted or otherwise rigidly secured to the plate 23. The top face of the button 27 is preferably convex in formation as indicated at 28 and receives the concave recess 29 of the plate or support 14 which is formed integral with or is rigidly secured to the arms 15. The concave surface 29 of the plate or support 14 is held in contact with the convex face 28 of the button 27 by means of the screws or bolts 30 which extend through openings 31 formed through the plate 14 at the lower end of the bosses 32 which form a housing for the upper ends of the screws 30 and for the springs 33 which are compressed between the lower end of the bosses and the upper end or heads of the screws 30. The screws 30 are threaded into the casting through the plate 23 as indicated at 34 thus securing the plate 14 and head 13 together as a unit. The thickness of the button 27 is calculated to leave a space 35 between the upper face of the head 13 and the lower face of the plate 14 so that the head 13 and plate 14 are secured together for relative movement as hereinafter more particularly pointed out. It will be noted by reference to Fig. 2 that there are preferably four bosses 32 provided on the plate 14, two at opposite ends of the plate and at equal distance from the center of the pivot button 27 and two at opposite sides of the button 27 on a line at right angles to a line through said first bosses and the center of the pivot and at equal distances therefrom. Such arrangement and the curvature of the top of the button 27, which may be considered a part of the head 13, and the formation of recess 29 on the plate 14 is such that the center of oscillation is substantially at the pressing surface within the head or below or at the pressing surface instead of above the head, so that when the head 13 is swung down to engage against the material placed on the buck 12 the head in adjusting itself to any unevenness of the material may pivot and move at approximately right angles to the buck instead of having a sliding motion thereacross thus avoiding creasing or wrinkling of the material being pressed. It should be obvious that such motion is enforced by the unevenness of the material. For instance, if the material is thicker at one end of the buck than at the other, when the head 13 is swung down thereagainst it will come in contact first with the thickest part and as the downward pressure continues the screw 30 at that end of the head engaging the thickest part of the material will be moved up in its boss 32 while the screw 30 at the other end of the head will move down against the action of the spring 33 as the head pivots on the button 27 and surface 29. The same is true if there is a thickness of the material at the front of the buck greater than at the back of the buck or vice versa in which case the head would pivot on its longitudinal axis. As will be obvious the head is so mounted that it may pivot on one of several axes through the button 27.

Each of the screws 30 is adjustable to permit setting the head in any of several predetermined planes relative to the support 14, that is, the head and support may be in close approach at the front and relatively wide apart at the back and vice versa, the same being true of the lengthwise and other relative adjustments as it is possible to adjust one or more than one of the screws to position the head as desired, but for all general purposes it may be best to have the support and head in parallel relation as shown in Fig. 3. The adjustability of the spring tension which regulates the oscillation of the head is desirable to meet the requirements of various kinds of pressing. A pin 36 may be mounted transversally across the bosses 32 above the head of the screws 30 to provide a guard against tampering with the adjustment or against accidental displacement of the screws.

It will be obvious upon reference to Figs. 2 and 3 that all parts of the support 14 are directly over the top of the steam chamber casting and that the support is affixed to the arms 15 so that the ends of the arms embrace the pivot 27 so that the pressure is applied equally on all sides of the pivot.

In Figs. 6–8 there is illustrated a type of presser head 13' which differs from the head 13 in that it is of a flat or oval type, and in connection with the same I have illustrated a yieldable or rocking support which is arranged so that the head is tiltable on a horizontal and longitudinal axis only. The head comprises the steam chamber 21' in proximity to the pressing face 20' and is provided with a recess 22' in its top covered by the plate 23' secured in place by the screws or bolts 24'. In order to provide for the rocking movement of the head on a horizontal axis I provide the support or plate 14 with spaced alined recesses 40 to contact the convex head of the buttons 41 which are secured through the plate 23' in the same manner that buttons 27 are secured to the plate 23 as previously described. The buttons 41 are so positioned that the longitudinal axis of the head 13' intersects them at their center so that the head is equally balanced, and on diametrically opposite sides of each of the buttons 41 and recesses 40 are provided bosses 42 corresponding to the bosses 32 of Figs. 2–5 which enclose the screws or bolts 43 which extend through openings 44 and have threaded engagement with the plate 23' and casting 13' thus securing the parts together. The support or plate 14' is integrally or rigidly secured to the arms 15 so that the casting 13', plate 23' and plate

14' move as a unit with the arms 15 to and from the buck. It will be noted that the head is movable with respect to the plate 14' on the buttons 41 along the longitudinal axis of the head and that due to the formation and location thereof as explained in connection with button 27 the center of rocking is located within the head or below the pressing surface of the head so that the pressing surface in adjusting itself to the material being pressed may move at approximately right angles to the buck and thus avoid creasing or wrinkling the material as is the case where portions of the head have a sliding motion on the material being pressed when the pivot is above the top surface of the head. As in the construction defined in connection with Figs. 2–5 springs 45 corresponding to springs 33 are mounted between the tops of the screws 43 and the bottom of the bosses 42 so that the recesses 40 are held in proper contact with the buttons 41 and with the support or plate 14' and the plate 23' spaced on opposite sides of the buttons, front and back, for self-adjusting rocking movement according to the surface with which the head is brought into contact. As in the construction shown in Figs. 2–5 the screws 43 and springs 45 are encased in or surrounded by the bosses 42 for the purpose not only of enclosing objectionable projections but also to afford means for guarding the adjustment by the insertion of pins 46.

It should be apparent from the foregoing that the constructions shown in Figs. 6–8 affords an even pressure over the entire surface when pressing material of varying thickness relative to the front and back of the head and buck by affording compensation at different points for the thickness of material as compensation for instance, for the thickness of the padding in clothing. It should be apparent that the screws may be adjusted to regulate the spring tension and the rocking movement of the head for various conditions in pressing and that regardless of the adjustment which is made to establish the head in a predetermined position relative to the support that the head will immediately be returned to that normal position when released from pressing engagement with the material or buck.

I wish it to be understood that while I have referred to the members containing the steam chamber and the plates 23 and 23' as the head, and the plates 14 and 14' as the support, in the claims I refer to all of these parts as a unitary structure comprising the head as connected to the arms 15.

I claim:

1. A pressing element of the character described having a top plate and a pressing face to engage material to be pressed, a supporting plate for said element, means between said top plate and supporting plate spacing them and affording oscillatory movement of the element relative to the supporting plate, said means comprising cooperating surfaces constructed and arranged to locate the center of oscillation of the element substantially at its pressing face, and means resiliently connecting said element and support.

2. A pressing member of the character described having a pressing face to engage material to be pressed, a support for said member, a button-like element fixedly mounted between said member and support, said element having a curved face and said support being provided with a recess having a curved surface to receive the curved face of the element to space said support and member and to provide for oscillating movement of the member relative to the support, said faces being so formed and arranged that the axis of oscillation of said member is below the button-like element and substantially at the pressing face, and means resiliently connecting said support and member.

3. A pressing member of the character described comprising a steam chamber having a pressing face, a plate substantially coextensive with said chamber and provided with a recess in its face confronting said chamber, a projection on the chamber having a curved face to seat in said recess to space said plate and chamber, said projection and recess being located centrally on said chamber and plate respectively and affording oscillatory movement of the chamber relative to the plate on a plurality of axes and the curvature of said recess and projection being such as to locate said axes of tilting below said projection and substantially at said pressing face, and means resiliently connecting said plate and chamber.

4. A pressing member of the character described comprising a steam chamber having a pressing face, a plate substantially coextensive with said chamber and provided with a plurality of alined recesses each having a curved face confronting said chamber, a plurality of alined projections on the chamber each having a curved face to seat in said recesses to space said plate and chamber, the curvature of the contacting faces of said projections and recesses being such as to permit oscillatory movement of the chamber relative to the plate on a single axis and being such as to locate said axis below said contacting faces and substantially at said pressing face, and means resiliently connecting said plate and chamber.

5. In a machine of the character described including a buck to receive materials to be pressed and a head movable to and from the buck and the material thereon, said head comprising superimposed plates, spaced alined projections on one plate having convex faces, concave recesses provided on the other plate to contact said convex faces and providing oscillatory movement between the plates on an axis in a plane intersecting the projections and lying substantially in the pressing surface of the head, and means yieldably connecting said plates at predetermined points at opposite sides of said plane to normally maintain said plates in predetermined relative spaced relation and permitting rocking movement of one plate relative to the other and to the buck when the head is brought into pressing engagement with the material.

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