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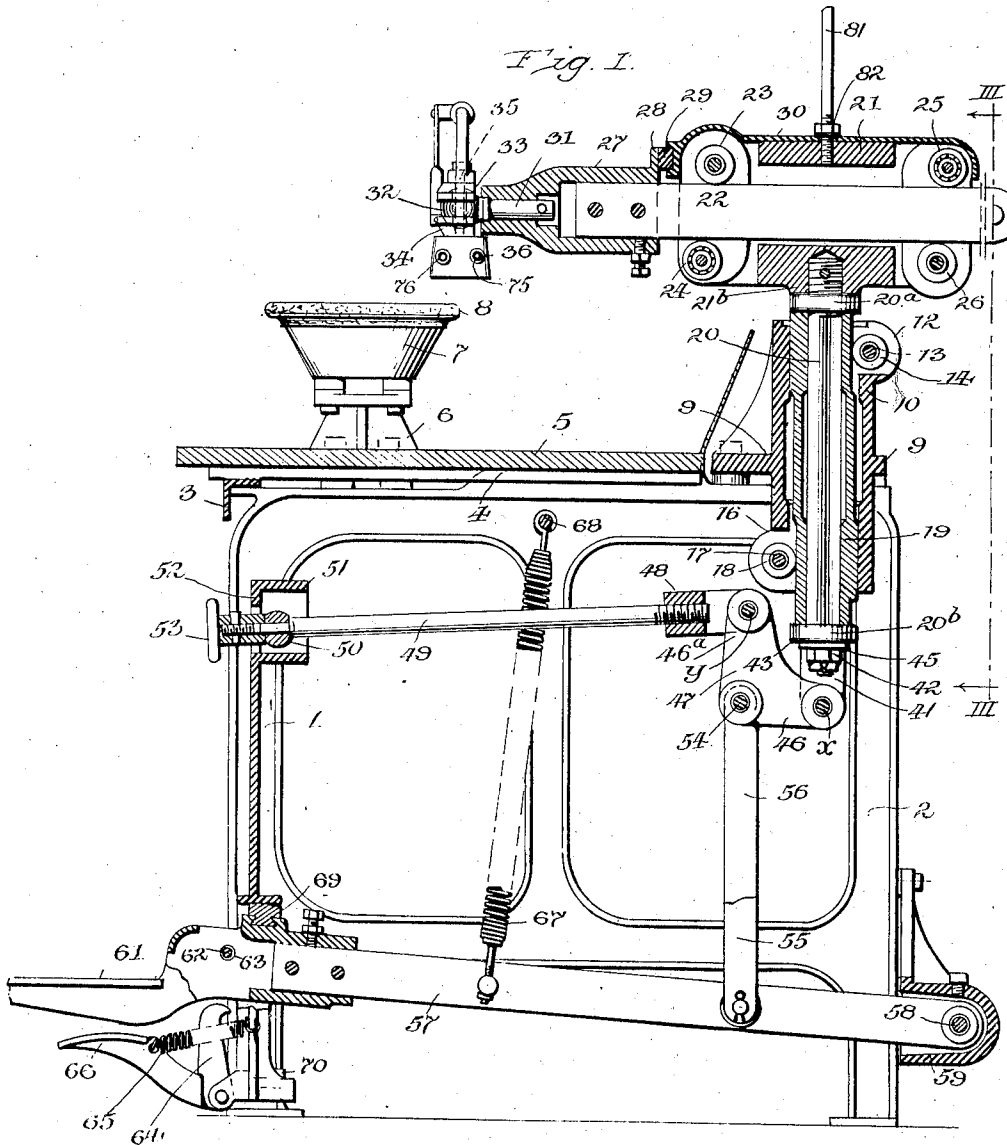
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PRESS

Filed March 14, 1932

3 Sheets-Sheet



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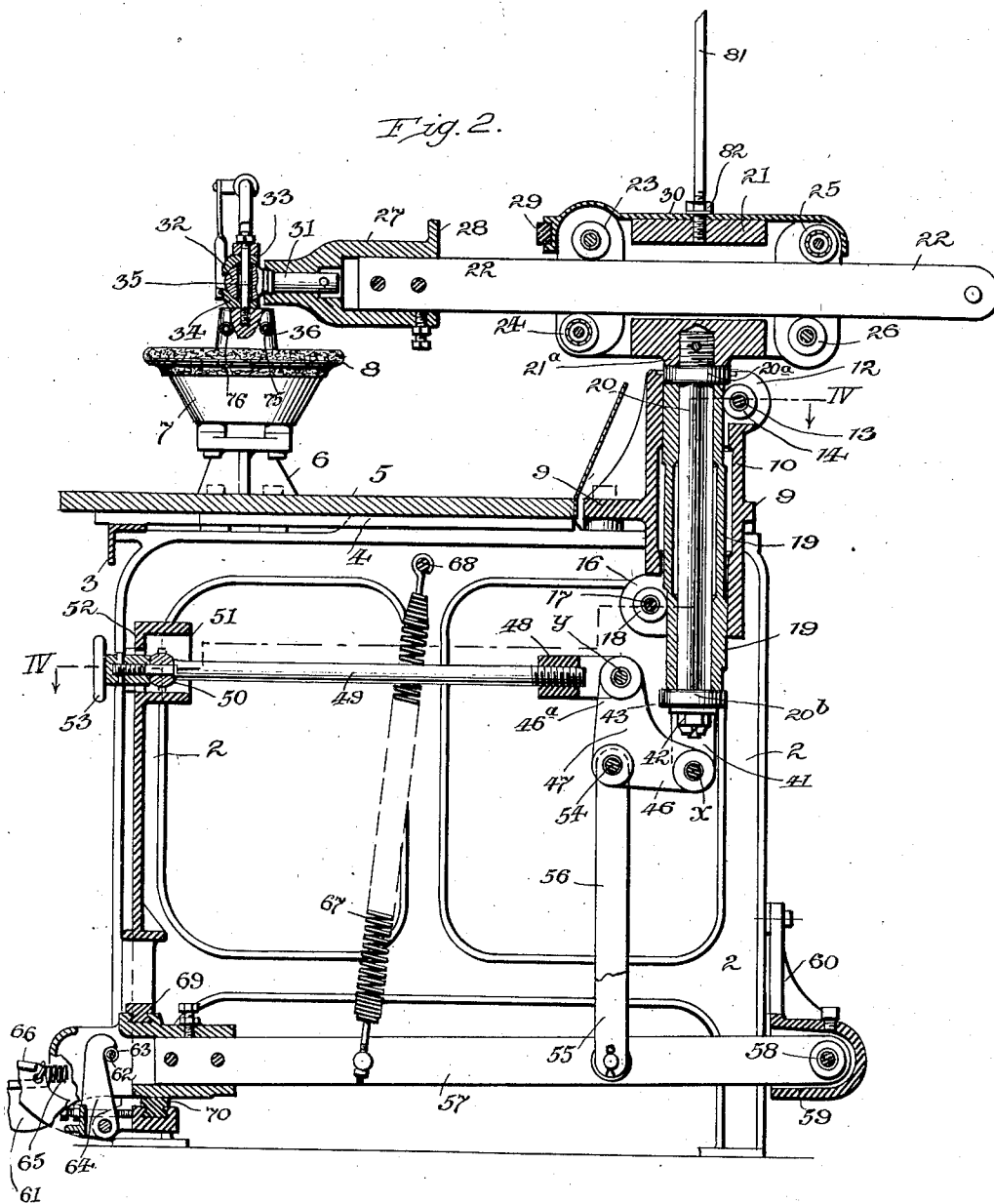
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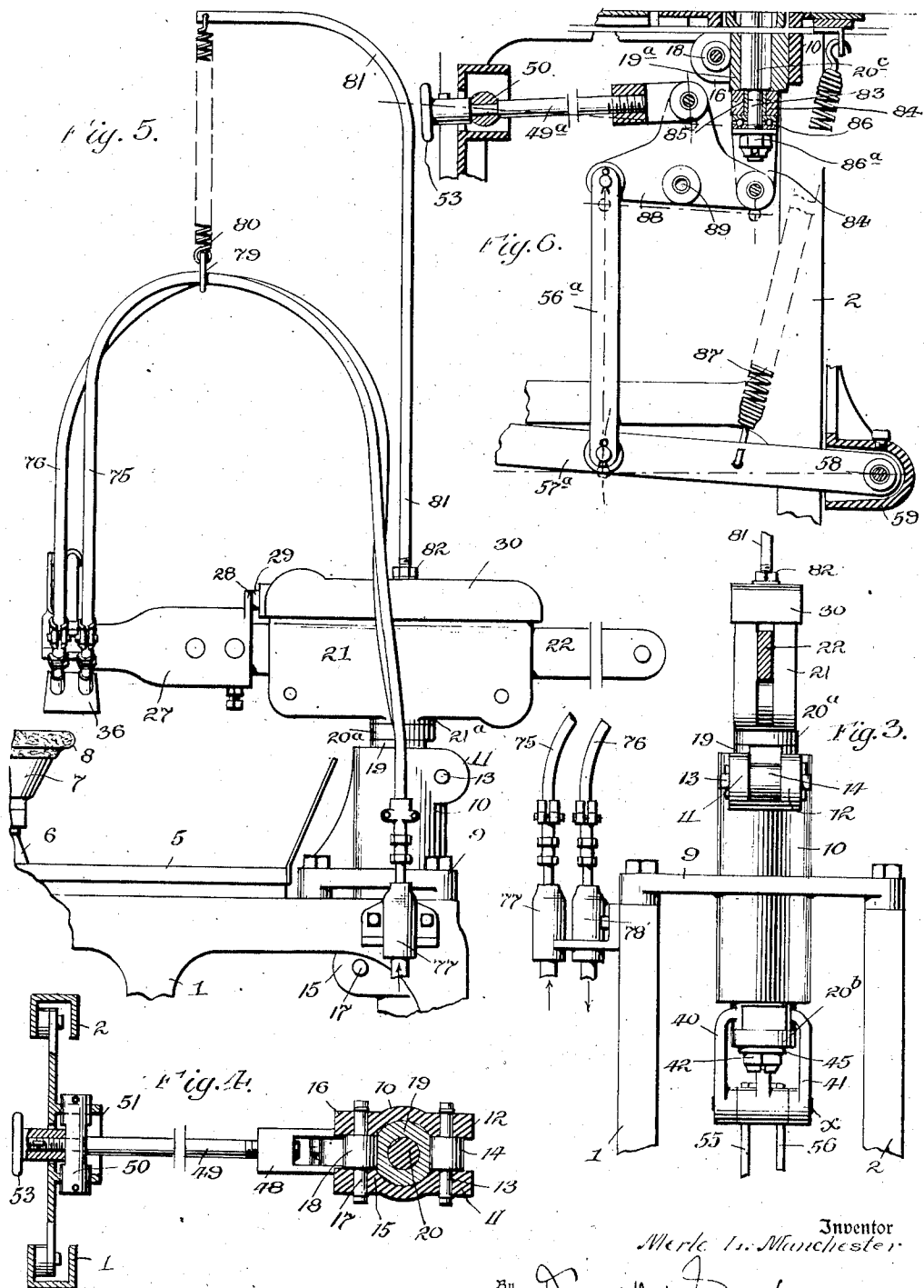
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PRESS

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22 Claims. (Cl. 68—9)

This invention pertains to an improved press of the so-called jumper type which may be utilized in various garment pressing operations, it being particularly applicable for opening and pressing seams.

The main object of the invention is to produce a relatively simple and yet withal rigid structure which, while possessing such characteristics, may be readily adjusted for garment thickness and likewise easily manipulated.

A further object of the invention is to provide a suitable supporting means for the flexible steam hose or electric cable leading to the pressing iron, which means is movable with the iron supporting means whereby strain and chafing of such hose or cable is prevented.

A press embodying my invention is illustrated in the annexed drawings, wherein:

Fig. 1 is a vertical sectional view of the press, the iron (or head) being shown in its elevated position and moved to the rear so as to allow free access to the ironing board or buck;

Fig. 2, a similar view with the parts in that position where the iron overlies the board with the iron fully depressed and the parts locked in such position;

Fig. 3, a detail vertical sectional view taken on the line III—III of Fig. 1 and the table top and allied elements being omitted.

Fig. 4, a horizontal sectional view, on an enlarged scale, taken on the line IV—IV of Fig. 2;

Fig. 5, a side elevation of the iron supporting means and the associated hose or cable support; and

Fig. 6, a detail sectional view of a slightly modified form of means for drawing the iron supporting column downwardly to produce pressure on the iron.

In said drawings, and referring first to Figs. 1 to 5 inclusive, 1 and 2 denote the side elements of the main frame which are connected to each other by cross elements later to be referred to.

Secured to and extending across the forward upper portion of the members 1 and 2 is an angle plate 3 which forms the support for the forward ends of cleats 4 secured to the under face of a table 5.

A pedestal or base-piece 6 is secured to the frame of the machine and is surmounted by a buck or table 7, which under ordinary conditions will be provided with the usual textile covering or padding, denoted by 8.

Secured to and extending across from the members 1 and 2 at the rear of the machine is a casting 9 provided with a vertically extending

guiding column 10. At its upper end and extending rearwardly therefrom the column is provided with a pair of ears 11 and 12 (see more particularly Fig. 4), through which extends a pin or axle 13 upon which is mounted a roller 14. A similar pair of ears 15 and 16 extend forwardly from the lower portion of the column and a pin or axle 17 mounted therein forms the proper support for a second roller 18. The rollers 14 and 18 are preferably formed of hard metal to withstand strain to which they are subjected in the operation of the machine.

The column 10 and the rollers 14 and 18 are designed to form a support for a vertically slidable sleeve 19 which is freely movable up and down in the column when actuated by the mechanism hereinafter referred to.

The faces of the sleeve 19 which are adjacent the rollers 14 and 18 are flattened so as to afford the rollers a fair and full bearing thereon as will best be seen upon reference to Fig. 4.

Sleeve 19 forms the support for a vertically disposed rod or column 20 which is freely rotatable therein and has secured to its upper end a hollow head piece or casting 21. Said sleeve is formed at its lower end with a clevis, the arms whereof are denoted by 40 and 41 respectively (see Fig. 3). Thrust bearings 20^a and 20^b surround the column and a nut 42 threaded on the lower end of the column holds bearing 20^b against the lower end of the sleeve while the upper bearing 20^a is held between the upper end of the sleeve and a shoulder 21^a of a head piece or casting 21. This arrangement holds the parts in proper assembly while permitting free rotative movement of the column within the sleeve.

The head piece 21, which is hollow has mounted at each of the forward and rear ends thereof a pair of rollers which form the support and guide for an iron supporting arm 22. The upper roller 23 of the forward pair is formed of hard material and is sufficiently large to withstand any pressure which may be applied thereto, as will hereinafter appear. The lower roller 24 of the forward pair may be made lighter and mounted upon roller or ball bearings as shown. The uppermost roller 25 of the rear pair is mounted in a manner similar to the roller 24 while the lowermost roller 26 of the rear pair is formed and mounted in the same manner as is the roller 23. The purpose of this arrangement will appear in the description of the operation.

At the forward end of the bar or arm 22 there is rigidly affixed a head or casting 27 having

an upwardly extending finger or flange 28 designed, when the bar 22 is moved to its full rearward position, to abut a bumper 29 mounted in the forward end of a cover plate 30 secured to the head-piece or casting 21.

In the forward end of the head 27 there is rotatably mounted a post-like element 31, the outer end 32 whereof is rounded and designed to receive shoes or socket elements, as 33 and 34, together with a through bolt 35, which elements form the support for an iron 36. This arrangement ensures a substantially universal mounting for the iron limited only by the amount of clearance around the bolt.

Pivotaly connected to the lower ends of the clevis arms 40 and 41, as at *x*, is the lower rearwardly extending arm 46 of a floating bell crank or elbow lever 47, the upper arm whereof is designated by 46^a. The latter extends upwardly and has pivotally attached thereto, as at *y*, a clevis 48 into which is threaded for adjustment a rod 49, said rod extending forwardly and having its outer end reduced. Said reduced end extends through a rocking bar or abutment member 50 mounted in a bracket 51 extending inwardly from a cross bar or frame member 52 which in turn is connected to the vertically disposed frame elements 1 and 2. The rod is threaded at its extreme forward end and there is mounted thereon a knob or hand-wheel 53.

As will be seen upon reference to Figs. 1, 2 and 4, those faces of the rocking bar 50 which stand at right angles to the axis of the rod 49 are flattened so that the shouldered portion of the rod 49 from which the reduced end extends and the inner face of the hub of the hand-wheel 53 bear directly thereagainst. There is, therefore, no lost motion at these points while the rod 49 may be freely rotated by manipulation of the handwheel 53 to turn the rod in and out of the clevis 48.

The bell crank or elbow lever 47 has mounted therein, at its angle, a supporting pin 54 and pivotally attached thereto and extending downwardly therefrom is a pair of draw-links 55 and 56, which latter at their lower ends are connected to a lever 57 fulcrumed upon a bearing 58 mounted in a rearward extension 59 formed as an integral portion of a member 60 connected to the lower rear portion of the vertical frames 1 and 2.

At its forward end the lever 57 has a foot treadle 61 secured thereto, said treadle carrying a cross pin 62 supporting a roller 63. The latter is designed to coact with a pivoted latch 64 normally held in a position to engage the roller through the action of a spring 65 having one end thereof secured to a fixed portion of the frame while its opposite end is secured to a foot piece 66 formed as a portion of the latch.

When the lever 57 is depressed, or moved from the position shown in Fig. 1 to that shown in Fig. 2, the latch will be caused to swing outwardly and then again inwardly so that its upper hooked end will over-ride the roller 63 and lock the lever 57 in its lowest position. The latch may be readily released by depressing the foot-piece 66. A spring 67 will preferably be employed and connected to the lever 57 and to a fixed portion of the frame of the machine or to a rod, as 68, secured to the frame elements. This spring tends to raise the lever 57 and through the connections above described to raise the sleeve and column, to which latter the iron-supporting mechanism is attached.

As will be seen more particularly by reference to Fig. 2, suitable bumpers, as 69 and 70, will be employed to cushion the lever 57 at the limit of its upward and downward movements.

The iron may be heated in any suitable manner, as by steam, gas or electric current.

In the drawings there are shown two cables or flexible pipes, as 75 and 76, connected to the iron and to suitable inlet and outlet connections 77 and 78 (see Fig. 3).

The pipes (or cables) pass through a ring 79 (Fig. 5), which latter is attached to one end of a coiled spring 80 suspended from the upper forwardly extending end of a rod 81, which at its lower end is threaded into the head 21.

A nut 82, mounted on the rod 81 bears upon the cover plate 30 and securely locks the plate and rod in fixed relation to the head. By this arrangement the rod 81 swings or moves with the head 21 and consequently the pipes (or cables) are swung with the iron as the latter is moved over the buck or ironing board 8. This arrangement prevents chafing of the pipes and placing of undue strain thereon during movement of the iron.

Through the utilization of the bell crank lever, and the means whereby it may be said to be adjustably supported, the degree of pressure which is exerted upon the goods through the iron upon depression of the treadle 61, may be regulated as desired.

As will be readily appreciated, inasmuch as the supporting head piece 21 for the iron supporting arm 22 moves up and down in a right line direction, the iron 36 must of necessity, when actuated by the lever 57, move toward the ironing board or buck at right angles thereto. The iron, by reason of its mounting, may however accommodate itself to any unevenness of the goods against which it is pressed.

The floating bell crank or elbow lever 47 and its allied parts afford a simple and effective means whereby the machine may be adjusted for any variance in the thickness of goods being pressed. Upon reference to the drawings it will be noted that with the treadle in either the up or down position the pivot point 54 becomes a relatively fixed center of rotation for the bell crank. By turning the rod 49 in or out of the clevis 48, and thereby rocking the bell crank, the pivoted point *x*, between the arm 46 and the clevis attached to column 20, will be raised or lowered, it being kept in mind that the rod 49 is not free to move endwise by reason of its connection with the rocking abutment member 50.

Let it now be assumed that the lever 57 is in its uppermost position with the bumper 69 in contact with the frame element as shown in Fig. 1. When downward pressure is applied to the treadle 61 a force is exerted in a downward direction upon the pivotal point 54. The arm 46^a of the bell crank 47 is restrained from moving outwardly, or toward the front of the machine, by reason of the clevis 48, the rod 49, and the formation of the bar or abutment element 50 which cooperates with the rod. The only path of movement left for the bell crank, therefore, is in a downward direction, which of course draws the clevis connected at *x* to the arm 46 of the bell crank in a downward direction. In this manner the arm or bar 22 is drawn downwardly and the iron is forced into direct contact with the goods imposed upon the buck or board 7.

By adjustment of the rod 49 with reference

to the clevis 48 the position of the bell crank or elbow lever 47 may be changed and through such variation the degree of pressure exerted upon the goods upon the ironing board or buck may be increased or lessened as may be desired. Such type of adjustment always permits the lever 57 to be latched in its lowermost position.

The bell crank 47 is so positioned that the thrust which is imposed upon the rod 49 in an outward direction through the arm 46^a helps to counterbalance the thrust imposed upon the rollers 14 and 18 respectively. It will be seen that it is these rollers which take the thrust from the sleeve 19 and column 20 when pressure is applied to the goods by the iron and that the rollers 23 and 26 act in a like manner with reference to arm 22 under like circumstances. It is for this reason that such rollers are not provided with ball bearings which might tend to crush under the load imposed thereon. Again, by having the sleeve 19 take direct thrust and by mounting the column 20 for rotation therein the machine may be easily manipulated.

In Fig. 6 a slightly modified form of structure is shown. Under such showing, instead of forming a clevis as an integral part of the column supporting sleeve, a separate clevis is utilized as well as a lever arrangement in place of the bell crank, as heretofore described.

The head supporting column is designated by 20^c, its lower end being reduced in diameter, as at 83, and its extremity threaded. A clevis 84 having a bearing bushing 85 is placed on said reduced portion being held in place against a bearing 86 by a nut 86^a. This arrangement allows the column to rotate within the sleeve designated by 19^a while still permitting the parts to be raised and lowered. The upward movement of the parts is effected by a spring 87 and the downward movement by the treadle lever 57^a, link 56^a, lever 88 and the adjustable swinging abutment bar 49^a.

Lever 88 may be said to be of an inverted T-shape and by the employment of the same the leverage applied to the iron is decreased without disturbance of the balance of the mechanism. The resultant load on the bearings themselves is also varied by changing from a bell crank to a T-shaped member.

Lever 88 may be provided with a bearing 89 whereby the links connecting the lever with the operating lever 57^a may be shifted to convert the lever, for all mechanical purposes, into a bell crank. The adjustment of the connection between the lever and the rocking abutment member is the same as that heretofore described.

While it is thought that the use of the machine will be clear from the foregoing description, a brief résumé will be given.

It is to be assumed that the iron has been moved free of the board or buck, or to the position shown in Fig. 1, and swung to the right hand end of the board. The operator then secures a proper lay of the goods upon the ironing board or buck and by placing his foot upon the treadle 61 brings the iron into contact with the work and advances the iron lengthwise of the buck while still retaining it in contact with the goods. It will, as above noted, be appreciated that as soon as pressure is applied a thrust is imposed upon the rollers, as above indicated, but since the whole system is engaged with rolling surfaces it will readily be seen that it is possible to move the bar 22 outwardly or inwardly with ease.

If at any portion along the seam being pressed

it is desired to exert a heavier pressure, this can be done by increasing the force applied to the treadle 61, or if it be desired to lock the iron at such point the force applied to the treadle is further increased until the latch 64 engages the roller 63 on the treadle 61.

The terms "buck" or "ironing board" as appearing herein are to be treated as the equivalent of any supporting surface. The members 75 and 76 are to be treated as the equivalent of any flexible elements for transmitting heating medium to and from the iron, such for instance as electric cables (or cable) for supplying electrical energy.

What is claimed is:

1. In an ironing machine, the combination of a buck; an iron; an arm to which the iron is attached; a head through which the arm is freely movable; a vertically movable support for said head; and means for raising and lowering said support, said means comprising a bell crank having one arm connected to the support aforesaid, means pivotally attached to the bell crank adjacent its angle to draw the crank downwardly, and means attached to a fixed portion of the machine connected to the second arm of the bell crank to vary the angular position of the same about its pivotal attachment aforesaid.

2. A structure as set forth in claim 1, wherein the means for drawing the bell crank downwardly includes an operator operated lever.

3. A structure as set forth in claim 1, wherein the means for drawing the bell crank downwardly includes an operator operated lever, and a latch for locking the lever in pressing position.

4. In an ironing machine, the combination of a buck; an iron; an iron supporting arm; a head through which the arm is freely movable; a column secured to and extending downwardly from said head; a sleeve surrounding said column and in which the column is free to turn; a fixed support in which the sleeve is mounted for endwise movement; and means for drawing the sleeve and column downwardly.

5. A machine as set forth in claim 4, wherein means is provided for normally raising the column.

6. A machine as set forth in claim 4, wherein the sleeve is provided with flattened faces upon opposite sides and bearing rollers are interposed between said faces and the fixed support in thrust relation.

7. In an ironing machine, the combination of a fixed frame; a vertically disposed hollow column mounted thereon; a buck mounted upon the frame; an iron; a supporting arm for the iron; a head through which said arm extends and is freely movable; a column secured to the head and extending downwardly through the hollow column aforesaid; means for supporting the column secured to the head and permitting rotation and vertical movement thereof with reference to the hollow column; operator operated means for drawing said head supporting column downwardly; and means attached to a fixed portion of the frame and under the control of the operator for adjusting the effective range of movement of said operator operated means.

8. In an ironing machine, the combination of a buck; an iron; a support for the iron movable both laterally and vertically with reference to the buck; an elbow lever, one arm whereof is pivotally secured to said supporting means; a pivotal support attached to the other end of the elbow lever for causing said lever to move in a fixed path; means under the control of the operator and at-

tached to a fixed portion of the machine for adjusting the position of said pivotal support; and operator operated means connected to the lever intermediate its ends for drawing the lever downwardly and thereby imparting a downward movement to the iron supporting means.

9. A structure as set forth in claim 8, wherein the pivotal support comprises a rod adjustably connected to the elbow lever at one end and to a pivoted abutment carried by a fixed portion of the machine at its other end.

10. An ironing machine as set forth in claim 8, wherein the pivotal support for the elbow lever comprises a shackle pivotally secured to the elbow lever; a rod threaded into said shackle for adjustment with reference thereto; a rocking bar pivotally mounted in a fixed portion of the machine; and means for turning said rod and preventing endwise movement thereof with reference to the rocking bar.

11. In an ironing machine, the combination of a fixed frame; a buck mounted thereon; an iron; a bar for supporting the iron; a head by which the bar is supported and through which it is freely movable; a fixed hollow column secured to the frame of the machine; a hollow sleeve mounted for endwise movement in said column; a pair of oppositely disposed rollers carried by the column and bearing upon flattened faces formed upon the sleeve and in thrust relation to pressing action of the iron; a supporting rod secured to the head and mounted for rotation in the sleeve; a shackle at the lower end of said sleeve; and means for drawing the shackle and allied parts downwardly.

12. A structure as set forth in claim 11, wherein the means for drawing the shackle and allied parts downwardly comprises an elbow lever, one arm whereof is pivotally attached to the shackle; a rod adjustably connected to the other arm of the elbow lever; a rocking support for the opposite end of the bar for holding the same against endwise movement said support being mounted upon a fixed portion of the machine; and operator operated means for applying a downward pull upon the elbow lever.

13. An ironing machine as set forth in claim 11, wherein the means for drawing the head supporting bar downwardly comprises an elbow lever, one arm whereof is pivotally attached to the shackle; a rod adjustably connected to the other arm of the elbow lever; a rocking support for the opposite end of the bar for holding the same against endwise movement said support being carried by a fixed portion of the machine; a foot operated lever; linkage means extending from said foot operated lever to the elbow lever; and a lock for holding said foot operated lever in its full depressed position.

14. In an ironing machine, the combination of a fixed frame; a buck mounted thereon; an iron; a supporting bar for the iron; a head through which said bar extends; a hollow column secured to the frame beneath said head; a sleeve mounted in said column and movable longitudinally therein, said sleeve being provided with a flat face at the rear upper end thereof and a flat face at the lower forward end thereof; rollers supported by the hollow column aforesaid and bearing upon the flattened faces and

acting when the iron is in pressing relation to the buck to resist thrust; a rod secured at its upper end to the head and extending downwardly through the sleeve and free to be rotated therein; and operator operated means connected to said rod for drawing said rod downwardly to cause a pressing action between the iron and the buck.

15. A machine as set forth in claim 14, wherein the operator operated means includes manually adjustable means secured to a portion of the fixed frame for varying the effective movement of said operator operated means and consequently the movement of the iron.

16. In an ironing machine, the combination of a main frame; a buck thereon; an iron; a laterally extending iron supporting bar attached to the iron; a head through which the bar is movable endwise; a vertically disposed hollow column fixed to the frame; a sleeve mounted for endwise movement in the column; a rod or column secured to the head and extending downwardly through the sleeve, said rod being rotatable within the sleeve; a thrust bearing at each end of the sleeve; and means for drawing the sleeve and associated elements downwardly to effect a pressing action by the iron.

17. A machine as set forth in claim 16, wherein the means for effecting the pressing action comprises a shackle extending downwardly from the lower end of the sleeve; a lever, one end whereof is pivoted to the shackle and the opposite end whereof is pivoted to a rocking abutment; and means likewise pivotally connected to the lever for drawing the shackle and allied parts downwardly.

18. In an ironing machine, the combination of a main frame; a buck thereon; an iron; a head piece mounted for rotative and up and down movement with reference to the main frame; an iron supporting bar mounted for endwise movement with reference to the head piece; a rod secured to and extending upwardly from the head piece, the rod at its upper end extending forwardly toward the iron; and at least one flexible element supported by the forwardly extending portion of the rod for transmitting a heating medium to the iron.

19. A machine as set forth in claim 18, wherein a cover is provided for the head piece and is secured in place with reference thereto by the means for securing the rod to the head piece.

20. A machine as set forth in claim 18, wherein the supporting means between the rod and the flexible element comprises a ring attached to a spring secured to the rod.

21. In an ironing machine the combination of an iron; means for supporting and affording said iron a swinging and a raising and lowering movement; at least one flexible element for conducting a heating medium to the iron; and a support for said flexible element, said support extending upwardly above the iron and movable therewith, both laterally and vertically.

22. An ironing machine as set forth in claim 1, wherein the means which is connected to the second arm of the bell crank is manually adjustable.

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