Jan. 24, 1956 L. D. BALDWIN 2,731,743

PRESSING MACHINE

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Fig. 1.

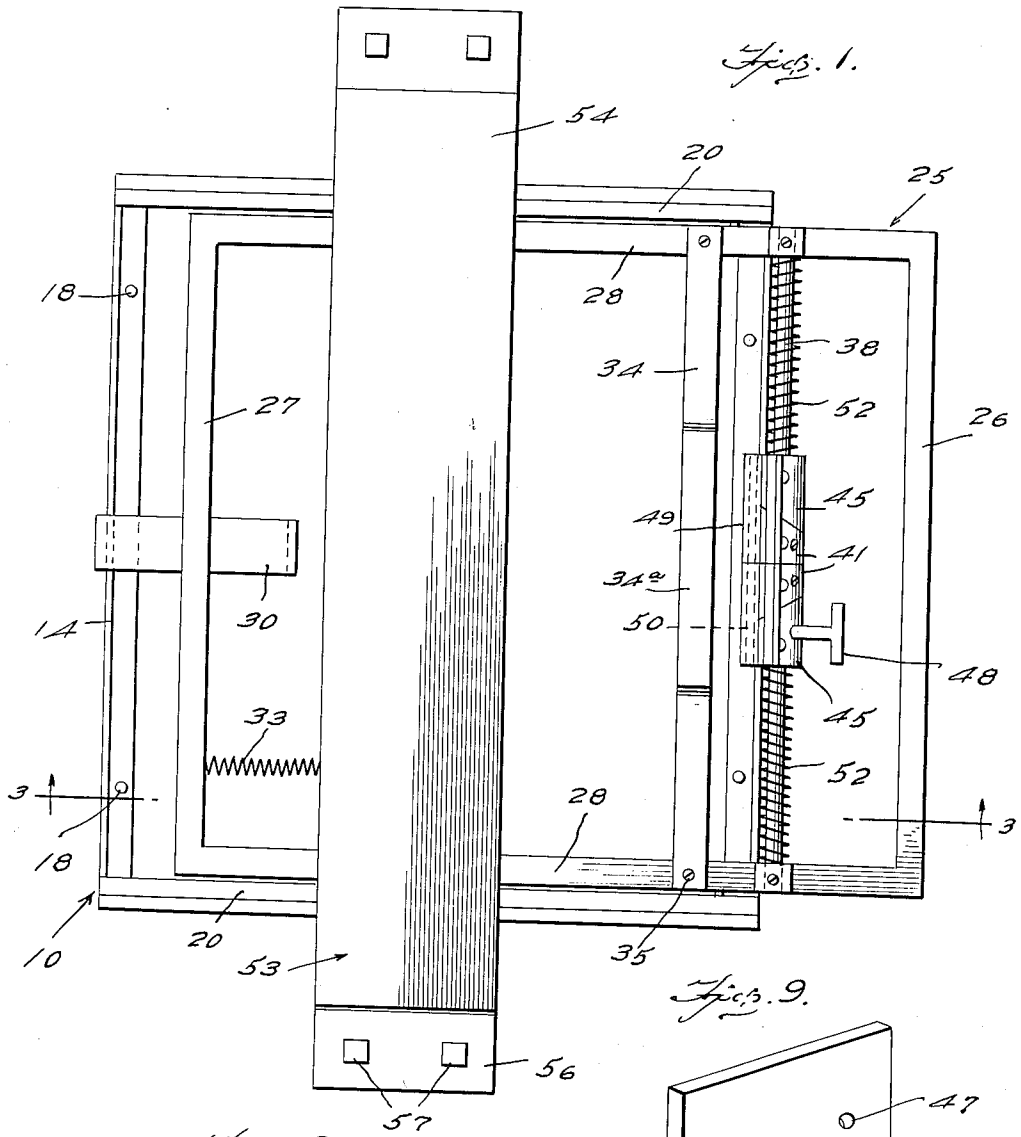


Fig. 9.

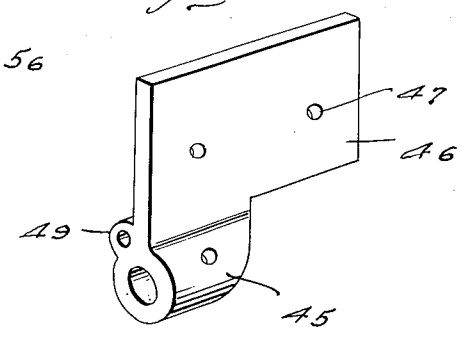
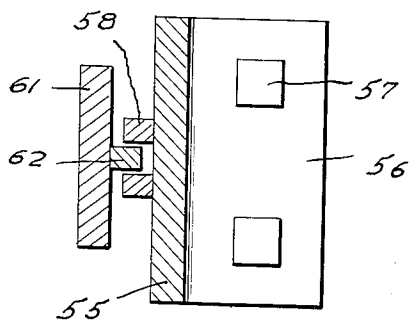


Fig. 8.



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Fig. 2.

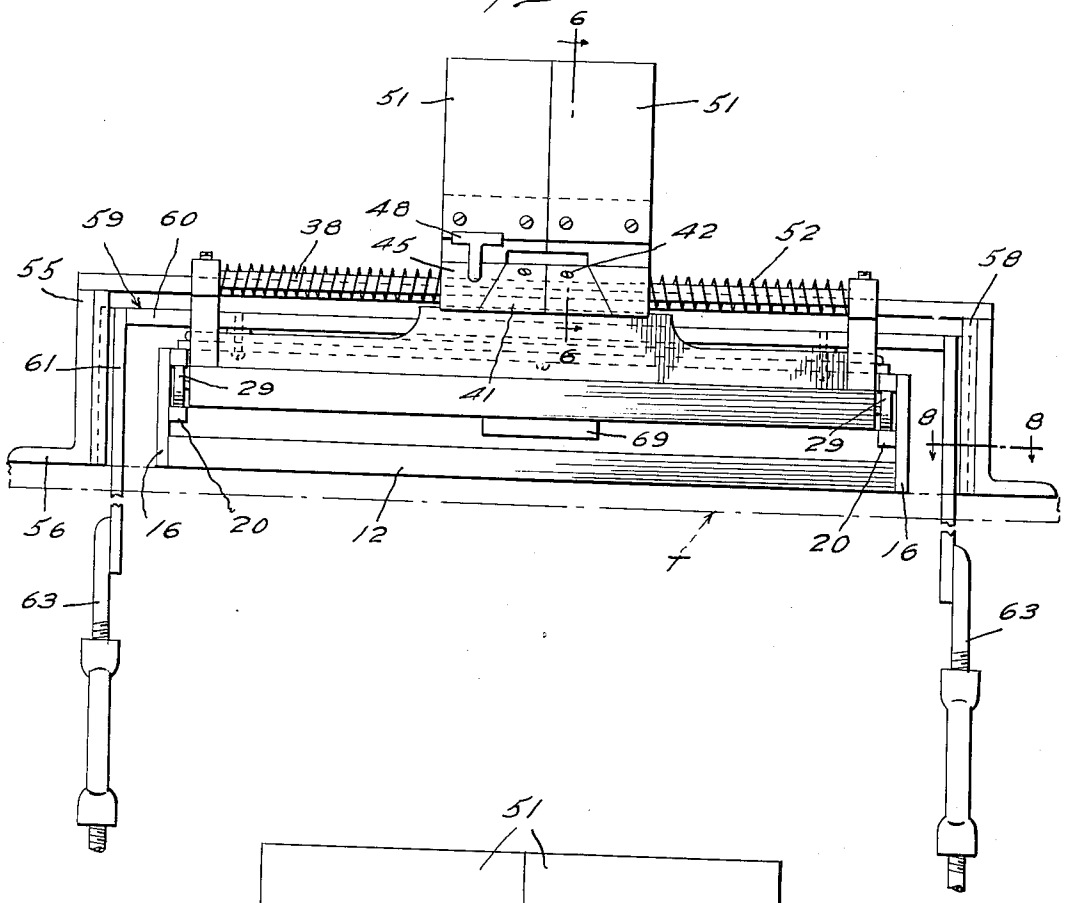


Fig. 7.

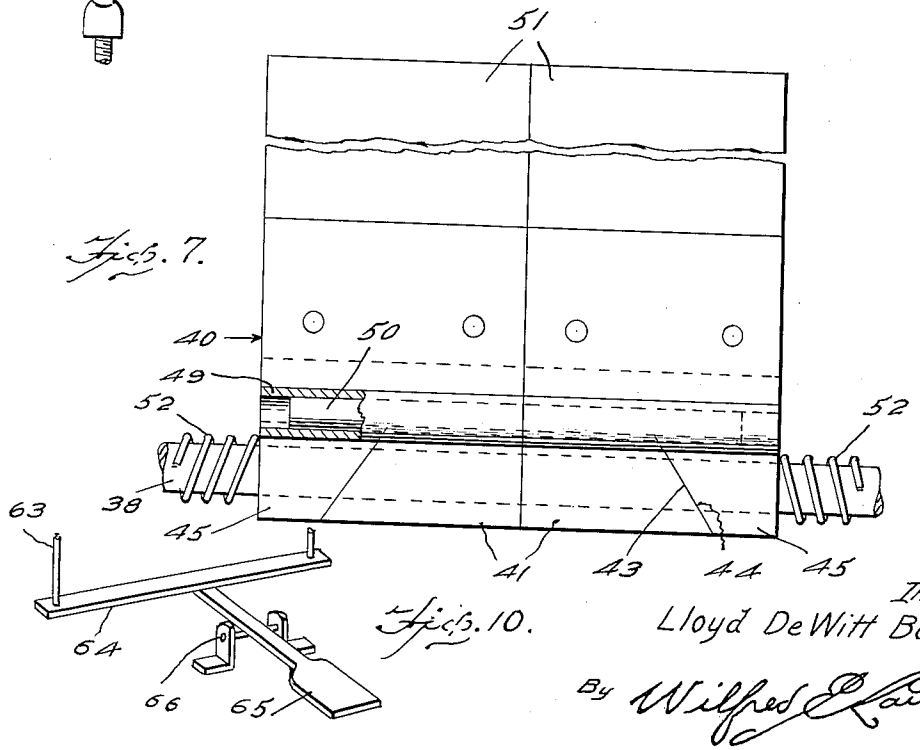


Fig. 10.

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Fig. 3.

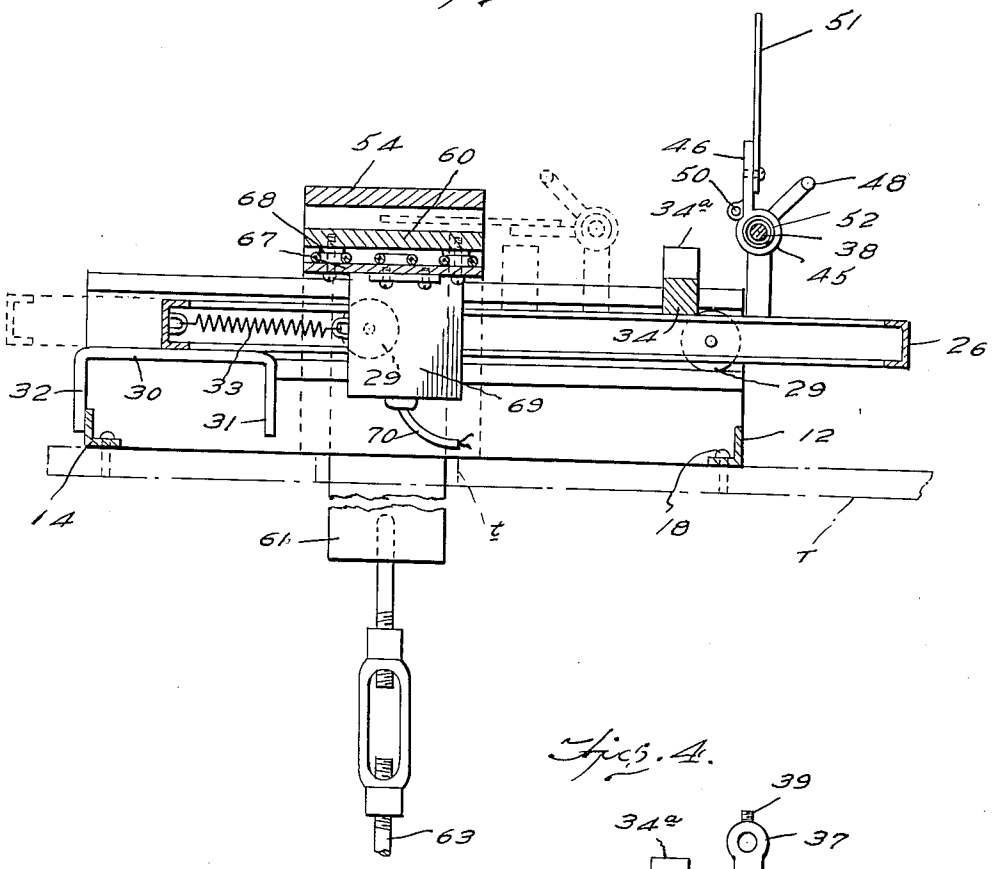


Fig. 4.

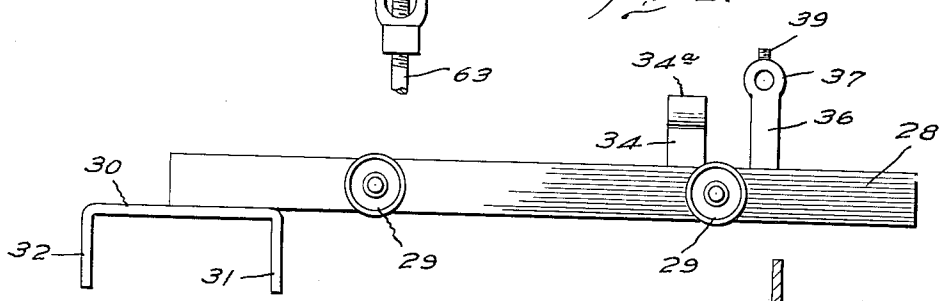


Fig. 5.

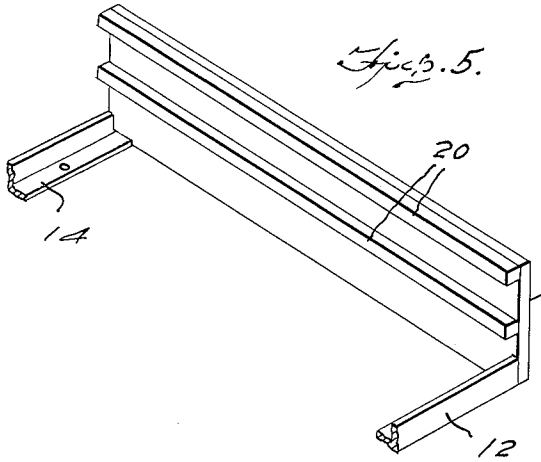
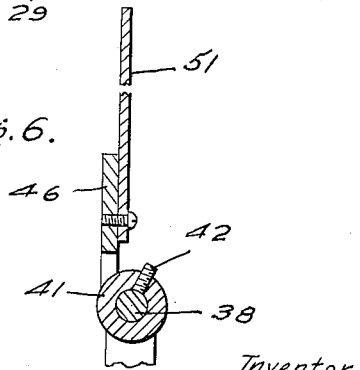


Fig. 6.



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United States Patent Office 2,731,743 Patented Jan. 24, 1956

2,731,743

PRESSING MACHINE

Lloyd D. Baldwin, Tupelo, Miss.

Application May 27, 1953, Serial No. 357,697

6 Claims. (Cl. 38—12)

This invention relates generally to improvements in pressing machines and is directed particularly to an improved machine for pressing collars, cuffs, lapels or other folded articles of cloth.

A principal object of the present invention is to provide a simple but efficient machine by means of which folded cloth material can be easily and quickly pressed, such, for example, as the cuffs of men's trousers, the machine having as a particular novel feature thereof a means for spreading the end of the trouser leg at the cuff, so as to hold the material flat and form front and back creases while the pressing operation is being carried out.

Another object of the invention is to provide in a machine of the above described character, a novel holding die for the material, which can be adjusted to accommodate trouser legs or cuffs of different widths.

A still further object of the invention is to provide in a machine of the character stated, a pair of cooperating die plates which occupy a common plane and which are designed to be inserted into the bottom of a trouser's leg, with means for effecting the separation of the die plates so as to stretch the material into a flat condition preparatory for presentation to the pressing element of the machine.

Other objects and advantages of the invention will become apparent as the description of the same proceeds and the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of the specification, with the understanding, however, that the invention is not to be limited to the exact details of construction shown and described since obvious modifications will occur to a person skilled in the art.

In the drawings:

Figure 1 is a view in top plan of a machine constructed in accordance with the present invention.

Figure 2 is a view in front elevation of the same.

Figure 3 is a longitudinal section taken substantially on the line 3—3 of Figure 1.

Figure 4 is a view in side elevation of the carriage frame per se.

Figure 5 is a view in perspective of the inner side of one side of the body frame showing the carriage frame guide tracks.

Figure 6 is a detailed section taken substantially on the line 6—6 of Figure 2.

Figure 7 is a view partly in elevation and partly in section of the rear sides of the die plates and carrying means therefor or, the sides of such plates opposite from the sides shown in Figure 2.

Figure 8 is a sectional view taken substantially on the line 8—8 of Figure 2.

Figure 9 is a view in perspective of the die plate holders.

Figure 10 is a view in perspective of a treadle structure for actuating the machine.

Referring now more particularly to the drawings the reference character T designates in Figures 2 and 3 the broken line representation of a portion of a suitable supporting structure such as a table top or the like upon

which the present machine may be mounted and to which it may be secured.

The machine which is designed to be placed upon the table or other support comprises a rectangular body frame which is generally designated **10** and which is made up of the front and back transversely extending angle iron beams **12** and **14** respectively which rigidly join together the longitudinal side walls **16**.

The transverse beams **12** and **14** are designed to be bolted or screwed to the supporting table structure as indicated at **18**. However, any other suitable means may be provided for securing the machine to the supporting structure.

Secured longitudinally of the inner face of each side wall **16** are the vertically spaced track or guide rails **20**, the lower one of which is a substantial elevation above the horizontal plane of the beams **12** and **14** as shown.

Designed for reciprocal movement between the side walls **16** is the rectangular carriage frame which is generally designated **25** and which comprises the front and back transverse bars **26** and **27** respectively and the longitudinal side bars **28** which connect the front and back bars.

Each of the side bars **28** carries a pair or more of rollers **29** upon its outer side and these rollers are of a diameter to position between the adjacent pair of track rails **20** as is clearly shown in Figures 2 and 3, resting upon the lower ones of the rails so that the carriage frame may be easily shifted backwardly and forwardly.

At the transverse center of the back bar **27** the carriage has secured to the under side thereof the movement limiting yoke **30** which has the downwardly directed front and rear fingers **31** and **32** respectively which are of sufficient length to have their lower ends lie below the top edge of the back cross beam **14** as shown in Figure 3 and a portion of this cross beam lies between the stop fingers so that upon forward movement of the carriage frame finger **32** will contact the beam **14** and limit such forward movement and upon backward movement the front or forward finger **31** will contact the beam and limit the backward movement of the carriage.

The carriage **25** is designed to be moved rearwardly by hand and in such rearward movement tension is applied to a return spring **33**, which has one end secured to the back bar **27** while the forward end is secured to a fixed part of the machine, as shown in Figure 3 and hereinafter described.

Adjacent to the forward bar **26** the carriage has secured transversely thereacross, a rail **34**, the ends of which rest upon the tops of the side bars **28** and are secured thereto in any suitable manner as by means of screws **35**.

The rail **34** is elevated through a portion of the central part thereof as indicated at **34a** to provide a stop for the hereinafter described die holders and spreaders.

Between the rail **34** and the front bar **26** of the carriage, each of the side bars **28** has secured thereto the upstanding collar post **36** which carries a collar **37** upon its top end and extending transversely of the carriage frame is a shaft **38** which has its ends engaging in the opposite collars **37** and secured by screws **39**.

The shaft **38** is secured against rotation by the set screws **39** and supports at its center or midway between its ends, the die holder and spreader unit which is generally designated **40**.

The unit **40** comprises two inner sleeves **41**, mounted upon the shaft **38** and secured thereto for desired adjustment thereon relative to one another, by set screws **42**.

The inner sleeves **41** have the oppositely directed inclined camming surfaces or faces **43**, each of which cooperates with a correspondingly sloped or inclined camming surface **44** formed upon the end of an outer cam sleeve **45**, which is also mounted upon the shaft **38** and is intended to turn thereon.

Each of the outer cam sleeves 45 has formed integral therewith a wing plate 46 which constitutes a die holder. These wing plates 46 lie in a common plane and are vertically disposed under normal conditions, that is, when a pressing operation is not being carried out.

Each of the wing plates 46 has a pair of screw openings 47 therethrough and one of such plates has connected therewith a handle member 48 which is secured in the outer cam sleeve 45 to which the wing plate is attached.

Extending across the back of each of the wing plates 46 is a sleeve 49. These sleeves 49 are in alignment and have extending therethrough a coupling pin 50 by which the wing plates are connected together so that when rotary motion is given to one outer cam sleeve by means of the handle 48, like motion will be imparted to the other outer cam sleeve 45, as will be readily apparent.

Secured to each of the wing plates 46 is an elongate die plate 51. These die plates like the wing plates, lie in a common plane at all times and turn about the shaft simultaneously and may also be separated or moved apart on the shaft by means of the contacting camming faces 43 and 44 of the adjacent sleeves 41 and 45.

At opposite sides of the unit 40 the shaft 38 carries a coil spring 52 which bears at one end against the collar 37 while its opposite or inner end bears against the adjacent outer cam sleeve 45. These springs 52 constantly urge the outer cam sleeves toward one another so as to maintain the camming faces 43 and 44 of the inner and outer cam sleeves, in contact.

Disposed transversely of the machine is an elongate bridge structure which is generally designated 53 and which comprises the long flat top member 54, the ends of which are secured to a supporting upright 55 from the bottom of which extends outwardly the flange 56 which rests upon and is secured to the supporting table T by bolts 57 or in any other suitable manner.

Each of the uprights or standards 55 of the bridge structure has secured to its surface the spaced parallel vertical guides 58.

Lying beneath the top member of the bridge 53 and between the standards 55 is the pressing unit which is generally designated 59 and which comprises the top press plate 60, each end of which is joined to a vertical side member or leg 61, which is in spaced opposed relation with a standard 55. Each of the side members or legs 61 carries upon its outer side the vertical rib 62, which slidably engages between the adjacent pair of guides 58.

The supporting table or surface T is provided with suitable openings or slot *t* through which the ends of the lower legs 61 extend and each of these legs is connected by a suitable, adjustable thrust rod 63 with any suitable type of treadle structure by means of which an operator can effect the elevation of the pressing unit 59.

A suitable treadle operating means for the press unit may be as illustrated in Figure 10, where there is provided a lower bar member 64 to each end of which a push rod 63 is attached, supported on the forward end of pedal 65, which may be suitably pivotally supported on the underlying floor surface as indicated at 66. This structure has been illustrated and described merely to show one possible means by which an operator can effect the raising and lowering of the press unit and accordingly it is understood that the invention is not limited to the use of this particular means of operating the press unit, as, obviously, other means may be made use of.

Secured along the under side of the press unit plate 60 is a heater-carrying plate 67, upon the top of which are secured suitable electric heating coils 68. As shown in Figure 3 the plate 67 is spaced from the press plate 60 so that the heating coils do not come in direct contact with the press plate, but the latter plate will receive suitable heat from the coils to effect the desired pressing operation.

Upon the under side of the heating coil carrying plate 67 is secured a suitable electrical junction block 69 into which electric current carrying conductors 70 extend from a suitable source and wherein the desired connections are made with the heating coils 68.

From the foregoing it will be seen that when the handle or lever 48 is released the thrust action of the springs 52 against the outer ends of the outer cam sleeves will cause the inclined inner ends of the sleeves to be pressed against the inclined surfaces 43 of the fixed inner cam sleeves 41 and the spreader plates will thus be automatically raised to a vertical position as shown in Figures 1, 2 and 3. When in this position the cuffs or other material pieces are engaged over the two adjacent die plates 51 and the operator, by grasping the lever 48, then swings the die plate supporting wings 46, and the plates 51 carried thereby, forwardly and downwardly to the horizontal position illustrated in dotted lines in Figure 3. The height of the posts 36 is such that when the die plates 51 are turned down to the horizontal position they will be at the proper elevation to move under the top member 54 of the bridge, between the latter and the press plate 60. Thus the top member 51 also becomes a press plate but it is not directly heated like the plate 60. The operator by then pressing down upon the back end of the pedal 65, effects the raising of the press unit 59 to thus move the plate 60 upwardly toward the top member 54 and compress the material, carried on the die plates 51, between the plates 60 and the top plate member 54 of the bridge 53.

The spring 33 is here illustrated, Figure 3, as having one end attached to the bar 27 and the other end attached to the junction box 69 which, while it moves vertically slightly with the pressing unit, does not move horizontally and thus when the carriage 25 is pushed rearwardly by the operator to enter the spreader die plates 51 between the plate 60 and the member 54, the spring 33 will be placed under tension and when the operator releases the carriage 25 the spring will move the carriage forwardly to the position in which it is shown in Figure 3, which movement is limited by the stop finger 32.

The rest 34*a* is in position to be engaged by the wing plates 46 when the unit 40 is swung forwardly and downwardly so as to stop the plates 51 in the desired horizontal position, as will be readily apparent.

From the foregoing it will be apparent that there is provided by the present invention, a relatively simple but highly efficient machine by means of which cuffs, such as those at the bottoms of trouser legs, lapels, and other flaps or turned pieces of material, may be easily and quickly pressed and when the machine is used for pressing trouser cuffs it will be seen that when the plates 51 are spread apart they will stretch the trouser leg and the edges of the plates will form the desired front and rear creases.

Where a wide spread between the plates 51 may be desired, the set screws 42 can be loosened and the inner cam sleeves separated the desired distance and then resecured.

I claim:

1. A pressing machine of the character stated comprising a supporting frame, a carriage mounted on said frame for horizontal rectilinear movement, means carried by the carriage for supporting a piece of material in a prescribed position for pressing, a pair of opposed press plates mounted on said frame in spaced relation one above the other, said material supporting means being adapted to be positioned to introduce the material between said plates when said carriage is moved in one direction, means for moving one of said plates into and out of pressing relation with the other plate, and means for heating one of the plates.

2. The invention according to claim 1, wherein said means for supporting a piece of material comprises a flat unit over which the material is placed, and means supporting the unit on the carriage for movement from a

position in a vertical plane to a position in a horizontal plane for its passage between said plates upon movement of the carriage in the said one direction.

3. The invention according to claim 1, wherein said means for supporting a piece of material comprises a thin flat rectangular plate having a non-working position in which it is disposed in a vertical plane extending across the path of movement of the carriage, and a pivotal support for said flat plate by which the flat plate may be swung rearwardly and downwardly on an axis extending across said path to a horizontal position.

4. The invention according to claim 1, wherein said means for supporting a piece of material comprises a pair of thin flat plates positioned in edge to edge relation and having a non-working position in which they are disposed in a vertical plane extending across the path of movement of the carriage, a pivotal supporting means for the flat plates by which the same may be swung as a unit about an axis extending across said path to a horizontal rearwardly directed position, and means for effecting a separation of said flat plates simultaneously with the swinging thereof.

5. A pressing machine of the character stated comprising a body structure having two spaced parallel side members, a carriage disposed between said side members, tracks supporting the carriage on the side members for rectilinear movement, a shaft supported on and disposed transversely of the carriage, means carried by the shaft for supporting a piece of material in a prescribed position for pressing, said means comprising a pair of thin flat plates, sleeves secured to said plates and encircling the shaft for turning movement thereon whereby the same may be swung from an upright position to a rearwardly directed horizontal position, a pair of horizontal vertically spaced press plates, means supporting one press plate for movement relative to the other, said material supporting plates when in said horizontal position being at an elevation to be shifted by movement of the carriage

rearwardly into position between said press plates, means for moving said one press plate toward and away from the other, and means for heating one of the press plates.

6. A pressing machine of the character stated comprising a body structure having two spaced parallel side members, a carriage disposed between said side members, tracks supporting the carriage on the side members for rectilinear movement, a shaft supported on and disposed transversely of the carriage, means carried by the shaft for supporting a piece of material in a prescribed position for pressing, said means comprising two thin flat plates, a pair of sleeves, each sleeve being connected with one plate, said sleeves encircling and being rotatable on the shaft and said plates being in edge opposed relation, a pair of collars fixed to the shaft between the sleeves, each collar and a sleeve adjacent thereto having contacting camming faces whereby the sleeves and plates will be separated when the sleeves are turned on the shaft, means coupling the plates for unitary turning, spring means on the shaft and engaging the sleeves at their remote ends to urge the sleeves toward the collars, means for effecting rotation of the sleeves in one direction to turn the plates rearwardly and downwardly to a rearwardly directed horizontal position, a pair of horizontal vertically spaced press plates, means supporting one press plate for movement relative to the other, said material supporting plates when in said horizontal position being at an elevation to be shifted by movement of the frame rearwardly into position between said press plates, means for moving said one press plate toward and away from the other, and means for heating one of the press plates.

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