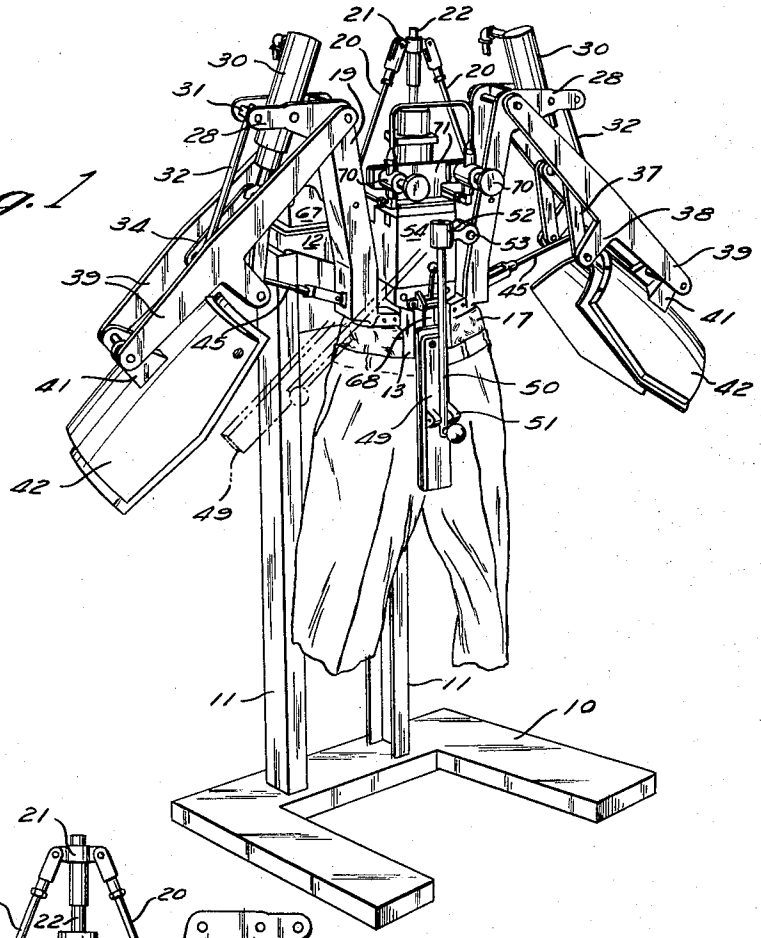
Oct. 18, 1960 S. ROSENTHAL ET AL 2,956,714

PRESSING MACHINE

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Fig. 1



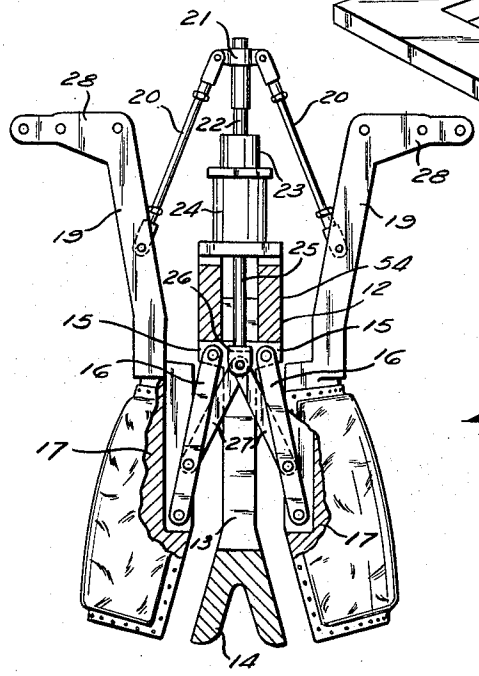


Fig. 3

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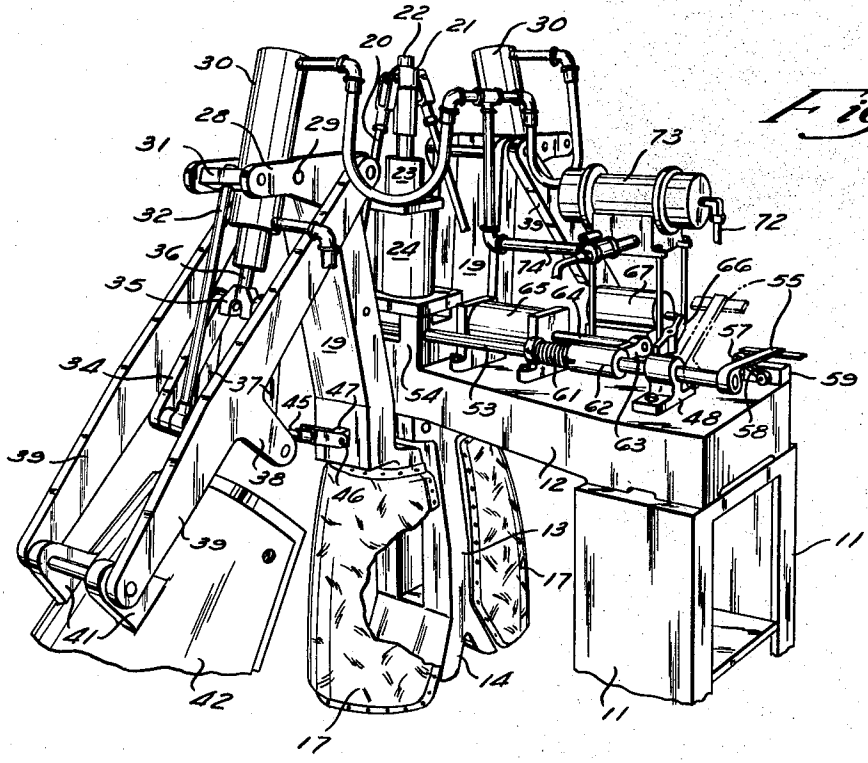


Fig. 2

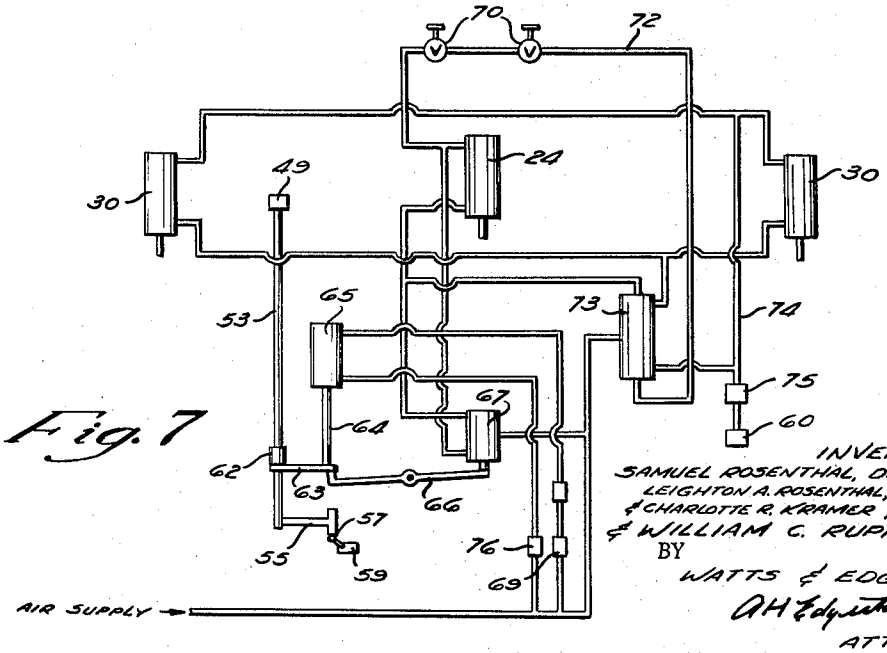


Fig. 7

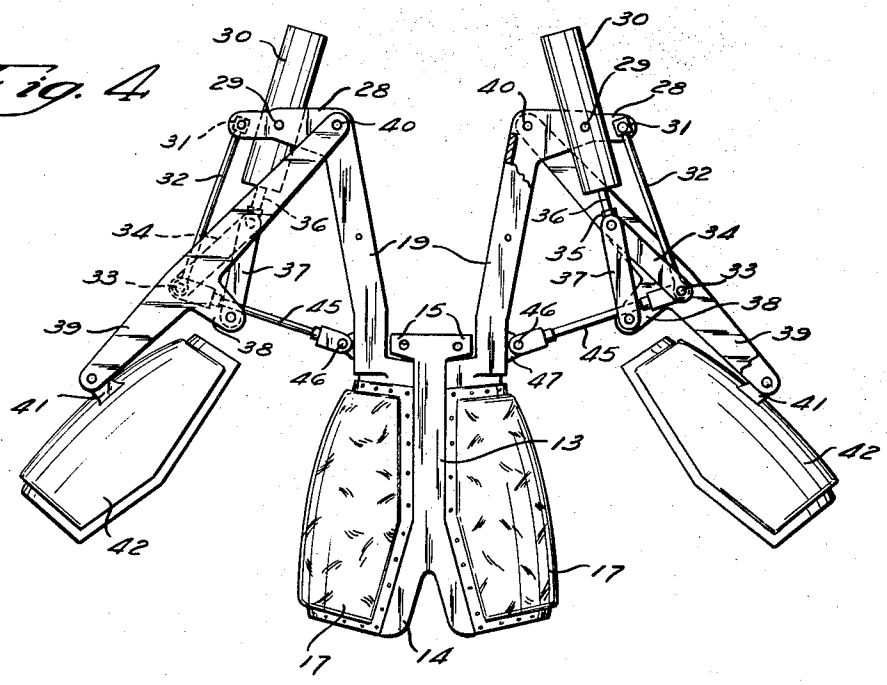
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PRESSING MACHINE

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Fig. 4



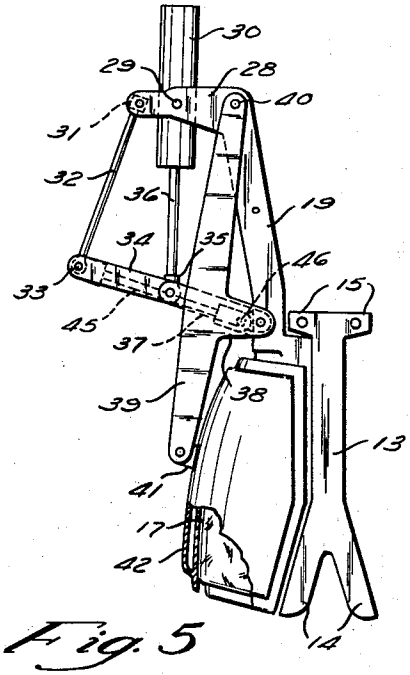


Fig. 5

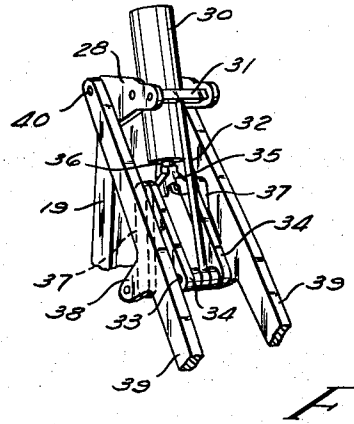


Fig. 6

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United States Patent Office 2,956,714 Patented Oct. 18, 1960

2,956,714

PRESSING MACHINE

Samuel Rosenthal, deceased, late of Shaker Heights, Ohio, by Leighton A. Rosenthal, 2923 Glengary Road, and Charlotte R. Kramer, 18101 Shaker Blvd., executor and executrix, both of Shaker Heights, Ohio, and William C. Rupp, Parma, Ohio; said Rupp assignor to the estate of Samuel Rosenthal

Filed Jan. 7, 1959, Ser. No. 785,492

5 Claims. (Cl. 223—74)

This invention relates broadly to pressing machines, and more specifically to improvements in machines for pressing the upper portion of a pair of washable work pants.

The invention further pertains to certain structural refinements and functional advantages over a prior Patent No. 2,845,205, entitled "Pressing Machine," issued July 29, 1958, to Samuel Rosenthal (deceased).

One of the objects of the invention is to provide an expansible arbor for supporting the hip portion of the pants in a position for pressing without undue strain on the material thereof.

Another object of the invention is to provide a machine which is designed for automatic sequential operation after the operator places a garment thereon and trips a pair of valves to initiate the operative pressing cycle.

Another object of the invention is to provide a distensible arbor comprising a pair of opposed bucks having a pair of pressing shoes suspended therefrom, the assembly being constructed for the initial independent actuation of the bucks and the simultaneous actuation of the bucks and shoes in their released or inoperative position.

A further object of the invention is to provide a machine which is sturdy of structure, economic of manufacture, and designed to facilitate the operation thereof with ease and dispatch.

Other objects and advantages more or less ancillary to the foregoing, and the manner in which all the various objects are realized, will appear in the following description, which considered in connection with the accompanying drawings, sets forth the preferred embodiment of the invention.

Referring to the drawings:

Fig. 1 is a view in perspective of the forward face of the machine;

Fig. 2 is a perspective view of the rearward upper portion of the machine shown in Fig. 1;

Fig. 3 is a front elevational view of a fragmentary portion of the operating mechanism for the expansive bucks that support the garment;

Fig. 4 is a front elevational view of the linkage assembly for the pressing shoes shown in their open or inoperative position;

Fig. 5 is a similar view of one of the shoes illustrated in its actuated or closed position;

Fig. 6 is a detail view, in perspective, illustrating the structural form and arrangement of the piston cylinder assembly and associated parts for one of the pressing shoes; and

Fig. 7 is a piping diagram for the compressed fluid used to effect the operation of the various piston cylinder assemblies embodied in the machine.

Referring first to Fig. 1, the pressing machine comprises a base **10** having a pair of spaced vertical channel irons **11** thereon constituting a column and a horizontal arm **12** protruding forwardly from the top thereof and serving as a table for the support of the cylinder and

valve control mechanisms therefor. The forward end of the arm **12** is provided with a subtended plate **13** having a divergent lower end portion **14** (Fig. 3), and a pair of lateral ears **15** in the top thereof for the pivotal support of a pair of links **16** pivotally connected to bucks **17** on either side of the plate **13**. The bucks are hollow, the inner face thereof being contoured for intimate engagement with sides of the plate **13** and the divergent end portion **14** thereof. The outer faces of the bucks are curved outwardly, and the upper ends thereof terminate in arms **19** bent outwardly at obtuse angles adjacent their lower ends. The central portions of the arms **19** are pivotally connected to links **20** fulcrumed on a collar **21** on a post **22** secured in a boss **23** in a cylinder head **24**. The piston rod **25** for the piston in the cylinder **24** is provided with a clevis **26** for the support of a pair of links **27** pivoted, respectively, to the links **16**. The upper ends of the arms **19** are formed with outwardly directed bifurcated ears **28**, each pair of each having trunnions **29** therein for the pivotal support of cylinders **30**. The ears further support a bar **31** of rectangular cross section, the outer ends of which are fulcrumed on pintles in their outer ends. The bar is rigidly connected intermediate its ends to a rod **32** having an eye in the lower end thereof which is journaled on a pin **33** in a pair of spaced links **34** pivotally connected to a clevis **35** on the end of the piston rod **36** for the piston in the cylinder **30**. The clevis **35** is also pivoted to a second pair of spaced links **37**, pivoted in turn, to a lug **38** subtended from a pair of arms **39** mounted on pins **40** in the upper ends of the arms **19** and fulcrumed in bosses **41** on the outer faces of a pair of hollow shoes **42** contoured for intimate engagement with the outer faces of the bucks **17**. The fulcrum pins **33** for the links **34** further carry a yoked rod **45** pivoted on pins **46** in bosses **47** adjacent the lower ends of the arms **19**.

The outer faces of the bucks **17** are covered with a fabric pad, and the outer walls of the hollow shoes **42** are drilled and tapped for pipe fittings coupled with flexible hose sections (not shown) that communicate with a source of steam.

As illustrated in Fig. 1, a pair of pants is mounted on the bucks **17**, the fly thereof being closed by the operator, then held in a smooth flat position by a superposed pants fly pressing plate **49**. The plate is provided with a rod **50** mounted in bosses **51** on the outer face thereof, and the upper end of the rod is secured for lateral swinging movement on a coupling **52** fulcrumed on a lateral shaft **53** which is guided in a rectangular block **54** on the top of the arm **12**. The outer end of the shaft **53** is journaled in a bearing block **48** and the free end thereof carries a finger **55** having a cross plate on the end thereof which engages a roller **57** on an arm **58** of a limit switch **59** wired to an electric timer **60**. The rotative movement of the pressing plate **49** winds a torsion spring **61** telescopically engaged with the shaft **53** and anchored on a fixed collar and a sleeve **62** on the shaft **53**. The sleeve **62** is formed with an arm **63** thereon which is rigidly connected to a piston rod **64** on a piston in a cylinder **65** to effect lateral movement of the fly plate **49**. The arm **63** further engages a cam lever **66** that actuates a plunger in a valve **67**.

The operation of the machine will be described in its order of actuation. The first operation is performed by the machine operator who places the pants on the bucks **17** under a spring clip **68** for the temporary support thereof. The operator then swings the pressing plate **49** into its vertical position over the fly. The adjustment of the plate effects the rotation of the shaft **53**, the finger **65** thereon closes the limit switch **59** and energizes a solenoid **69** which effects the entry of compressed air into

the cylinder 65 and the movement of the pressing plate 49 against the pants fly. Such adjustment also actuates the cam lever 66 and cam valve 67 which causes compressed air to flow into the upper end of the cylinder 24 and the consequent distention of the bucks 17.

The operator next presses the valve plungers 70 mounted on a plate 71 superjacent the forward end of the arm 12. These valves control the passage of pressure fluid through a line 72 which shifts a pilot valve 73 (Fig. 7) to provide pressure through a line 74 to the upper end of the cylinders 30, thus actuating the piston therein and operation of the linkage associated with the arms 39 and shoes 42. A pressure switch 75 is mounted in the line 74 which initiates the operation of the electric timer 60 and holds the shoes 42 in their operative position a predetermined period of time. When the operative period of the timer expires, the solenoid valve 69 is closed and a solenoid valve 76 is opened, thus shifting the valves of the cylinders and the reverse movement of the pistons therein. This operation effects the withdrawal of the shoes 42 from the bucks 17, the retraction of the bucks, the withdrawal of the pressing plate 49 from the garment, and the rotation thereof. Thereafter, the pants may be removed from the bucks and a new cycle of operation may be initiated.

The linkage for the shoes 42 develops a compressive pressure effort on the garment of approximately one thousand pounds (1000 lbs.) while the expansion effort applied to the bucks does not exceed thirty pounds (30 lbs.) which safeguards damage to the garment without limitation to the high pressure pressing effort on the shoes.

Although the foregoing description is necessarily of a detailed character, in order that the invention may be completely set forth, it is to be understood that the specific terminology is not intended to be restrictive or confining, and that various rearrangements of parts and modifications of detail may be resorted to without departing from the scope or spirit of the invention as herein claimed.

What is claimed is:

1. A machine for pressing the upper portion of a pair of work pants from the crotch to the waistband, comprising a stationary column, a pair of opposed bucks supported thereon, an arm extension on the upper end of each buck, a link pivoted at one end to the central portion of the wall of each buck and at their opposed end to said stationary column, a piston cylinder assembly on the top of said column, secondary links pivotally connected at one end to the piston rod of said piston cylinder assembly and at their opposed ends to the central portions of the first named links, a stationary vertical post on said column, a collar slidably mounted thereon, third links pivoted at one end to said collar and at their opposed ends to said arm extensions on said bucks, a pair of hollow heated shoes movable into engagement with a pair of pants supported on said bucks, laterally spaced arms pivotally connected at one end to the outer faces of said shoes and pivoted at their opposed ends to said arm extensions of said bucks, lugs on said arm extensions normal thereto and intermediate the ends thereof, second piston cylinder assemblies pivotally connected to the upper ends of said arm extensions of said bucks, links pivoted at one end to the piston rod of said second piston cylinder assembly and pivoted at their opposed ends to said lugs, link rods pivotally connected to the ends of said buck arm extensions, yoked rods pivotally connected at one end to said buck arm extensions and at their opposed ends to said link rods whereby said shoes will swing away from said buck when said piston in said second piston cylinder assembly is retracted and swung towards said buck when said piston in said second piston cylinder assembly is distended, a lateral arm on said stationary column, a rotative and reciprocative shaft mounted on said arm, a rod depending therefrom, a fly pressing plate pivotally mounted on said rod, a torsion spring telescopically engaged with said shaft, a sleeve on said shaft connected to said spring, an arm on said sleeve, a third piston cylinder assembly adjacent said arm on said sleeve, a valve adjacent said arm for the operation of said valve, operative connections between said valve and said third piston cylinder assembly for retracting said fly pressing plate, a second valve on said lateral arm of said column, a cam lever adjacent said arm on said sleeve operatively connected with said second valve to actuate the first named piston cylinder assembly and the movement of said bucks, and valve plungers mounted on said lateral arm of said column operatively connected with said second named piston cylinder assembly for actuation of said hollow heated shoes.

2. A pressing machine as set forth in claim 1, which includes a pressure fluid valve coupled with the second named piston cylinder assembly, an electric timer switch controlled thereby, and a solenoid valve controlled by said timer switch for controlling the actuation of the second named piston cylinder assembly.

3. A pressing machine as set forth in claim 1, which includes a limit switch on the fly pressing plate shaft, a solenoid valve controlled thereby, a valve controlled by said solenoid, said solenoid connected to the third piston cylinder assembly for the retraction of said fly pressing plate.

4. A machine for pressing the upper portion of a pair of work pants from the crotch to the waistband, comprising a stationary column, a pair of opposed bucks supported thereby, arms on the upper ends of said bucks, links pivoted to the central portions of said bucks and to said stationary column, a ram on said column, secondary links pivotally connected to the piston rod of said ram and to the central portions of the first named links, a vertical post on said column, a collar slidably mounted, third links pivoted to said collar and to said arms on said bucks, opposed heated shoes movable into engagement with said bucks, spaced arms pivotally connected to said shoes and pivoted to said arms on said bucks, lugs normal to the arms and intermediate the ends thereof, second rams pivotally connected to the upper ends of said arms of said bucks, links pivoted at one end to the piston rod of rams and to said lugs, secondary links pivotally connected to the piston rod of said second rams, link rods pivotally connected to said buck arms, yoked rods pivotally connected to said buck arms and to said link rods whereby said shoes will swing away from said buck when the piston in the second ram is retracted and swing the shoes towards said buck when said piston in the second ram is distended, a lateral arm on said stationary column, a rotative and reciprocative shaft mounted on said arm, a fly pressing plate mounted on said shaft, a third ram adjacent said shaft, a valve adjacent said arm operatively connected thereto, the piston in said third ram being adapted to retract said fly pressing plate upon actuation of said valve and plunger, valves on said lateral arm of said column operatively connected with said second named ram to actuate the movement of shoes.

5. A pressing machine as set forth in claim 4, including a valve, a control arm therefor on the fly pressing plate shaft, and means connected thereto for distending the bucks.

References Cited in the file of this patent

UNITED STATES PATENTS

2,834,523	Maxwell et al.	May 13, 1958
2,845,205	Rosenthal	July 29, 1958