United States Patent [19]

Lindsey

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[54] **PULLING OVER MECHANISM**

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[73] Assignee: **International Shoe Machine Corporation**, Nashua, N.H.

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[21] Appl. No.: **672,921**

Related U.S. Patent Documents

Reissue of:

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Issued: **Sept. 2, 1975**
Appl. No.: **505,412**
Filed: **Sept. 12, 1974**

[52] **U.S. Cl.** **12/14.5**
[51] **Int. Cl.²** **A43D 23/00**
[58] **Field of Search** 12/14.5, 9–11.3

[56] **References Cited**

UNITED STATES PATENTS

3,233,261	2/1966	Kamborian et al.	12/14.5
3,579,693	5/1971	Robinson	12/14.5
3,715,767	2/1973	Muhlbach et al.	12/14.5

FOREIGN PATENTS OR APPLICATIONS

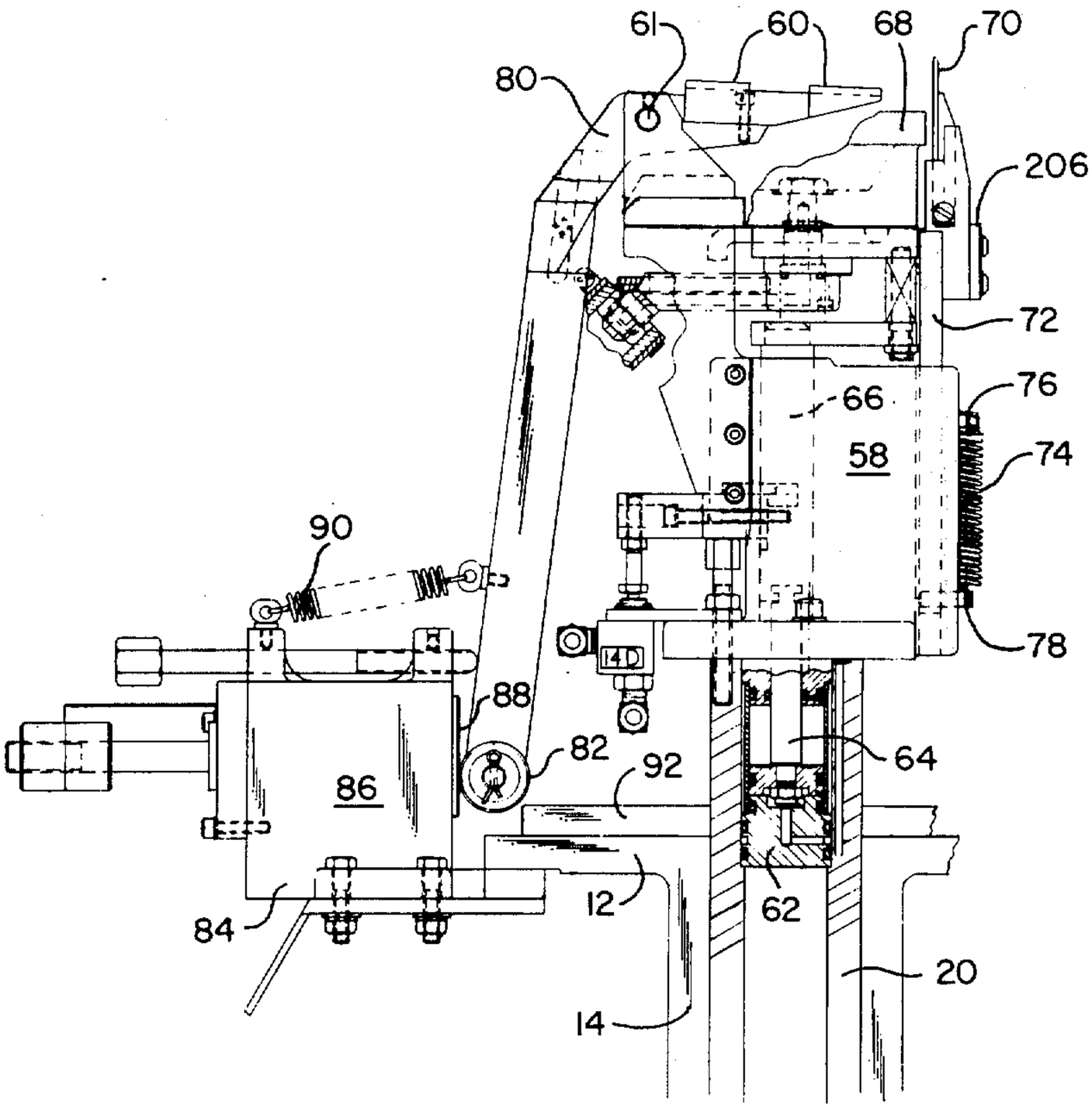
456,885	3/1973	Australia	12/14.5
1,357,899	6/1974	United Kingdom	12/14.5

Primary Examiner—Patrick D. Lawson
Attorney, Agent, or Firm—Albert Gordon

[57] **ABSTRACT**

A pulling over mechanism for stretching about a last toe portion of an upper that is mounted on the last preparatory to wiping the margin of the toe portion of the upper against an insole that is located on the last bottom. The mechanism includes pincers jaws that are caused to grip the upper margin under relatively light force while the last is raised to allow the upper margin to slip between the pincers jaws. After the last has completed its rise, the pincers jaws are caused to grip the upper margin under relatively heavy force so as to preclude slippage of the margin between the pincers jaws if the pincers should be lowered to relocate the stretched upper on the last.

6 Claims, 15 Drawing Figures



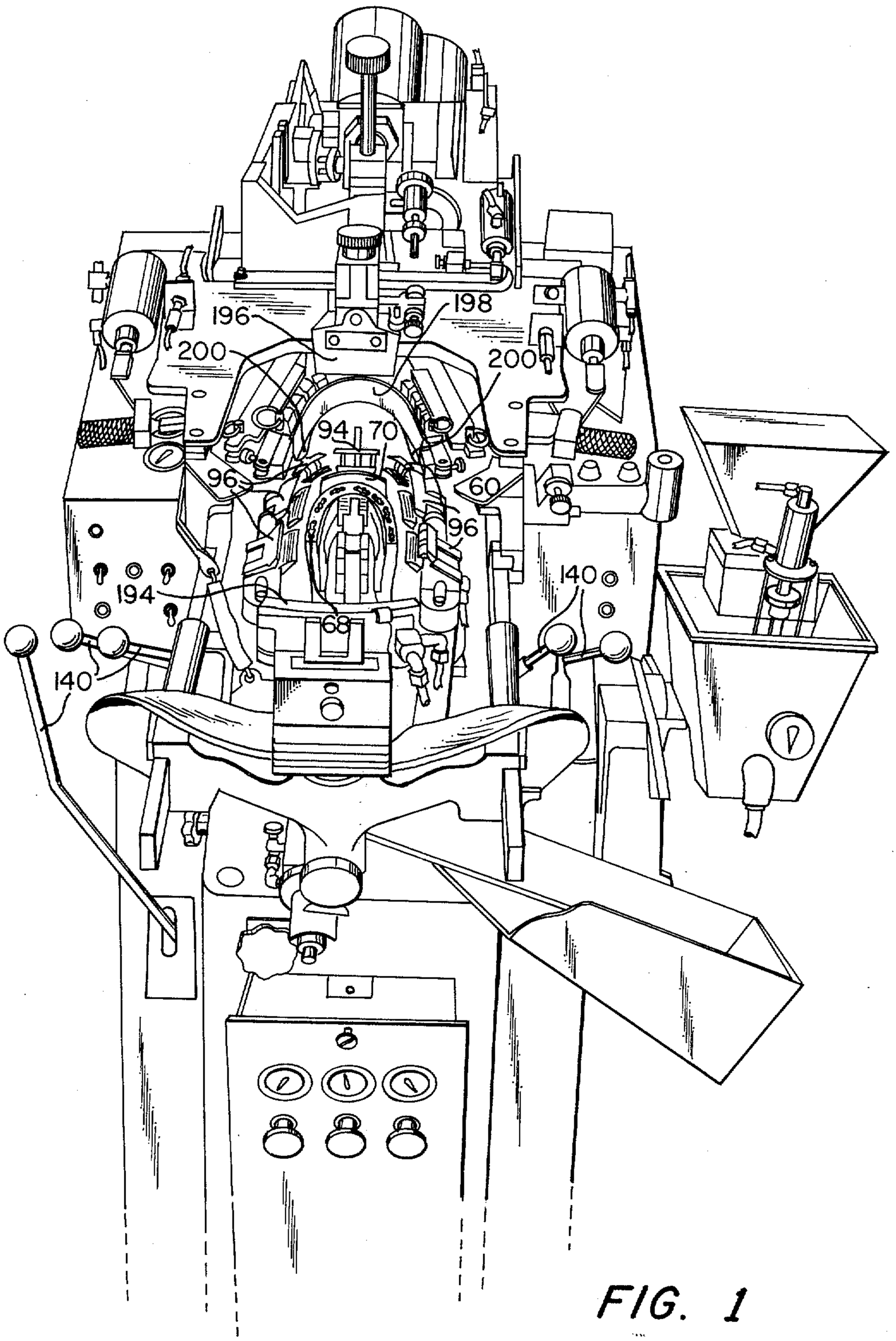


FIG. 1

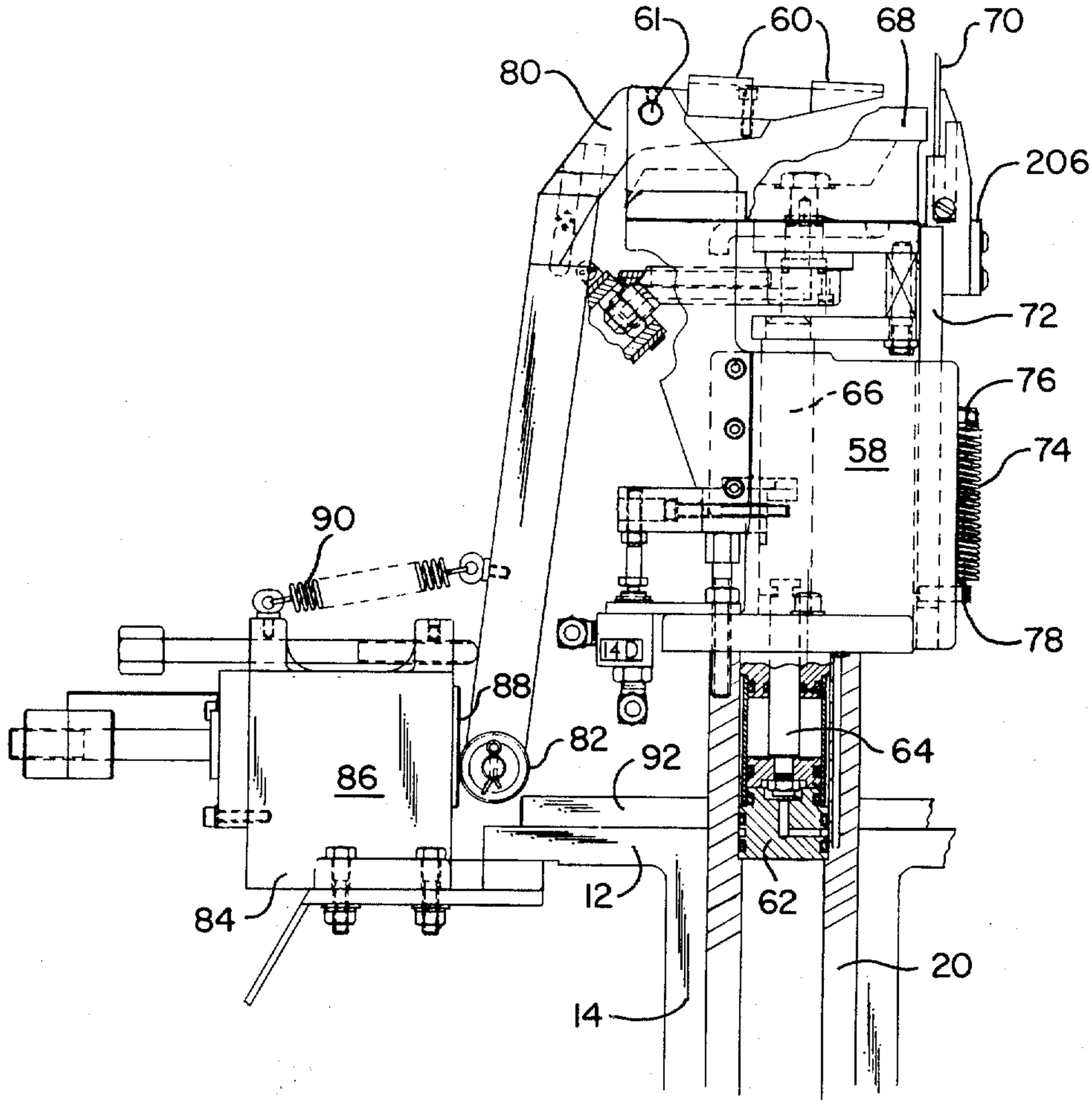

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FIG. 2

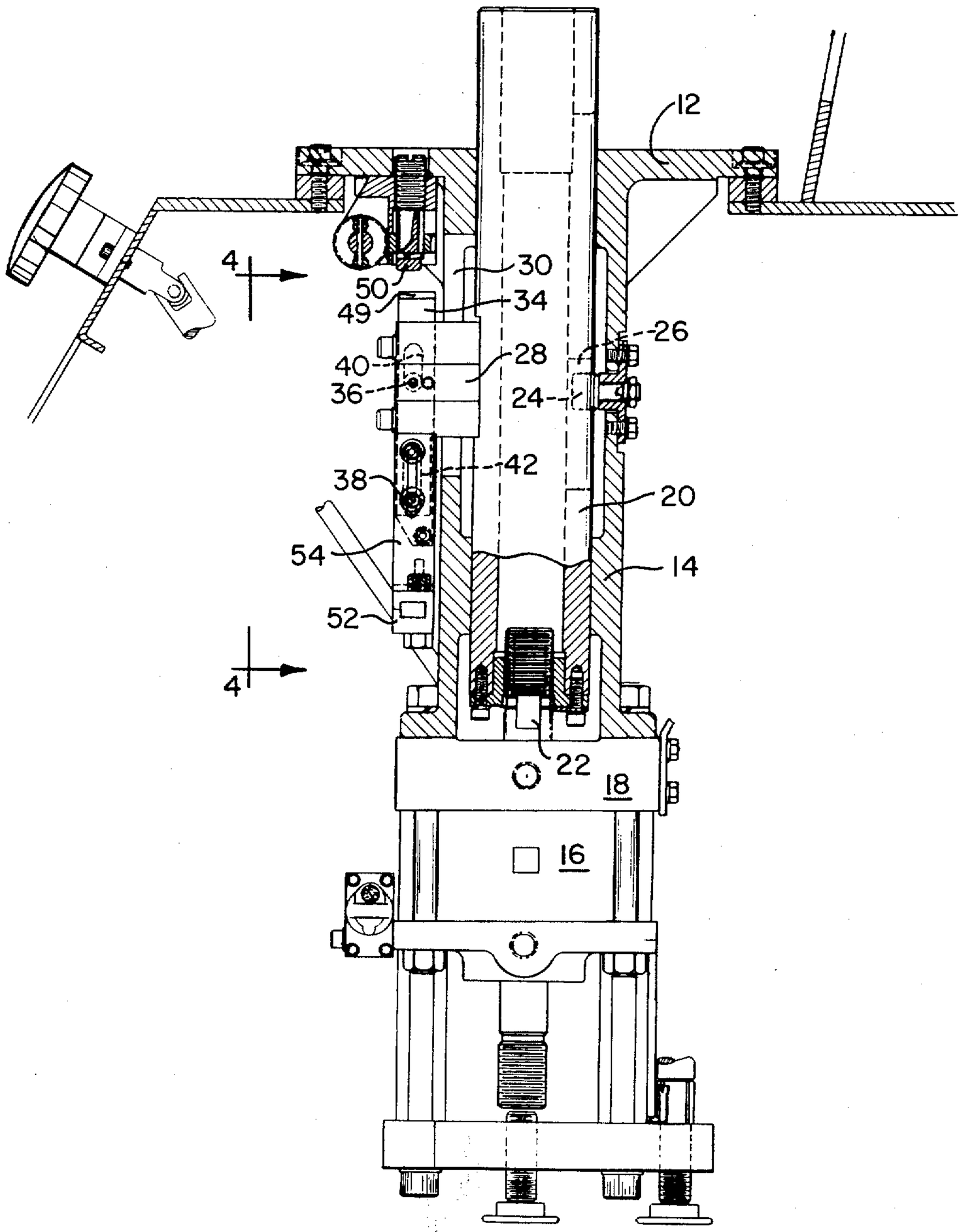

FIG. 3

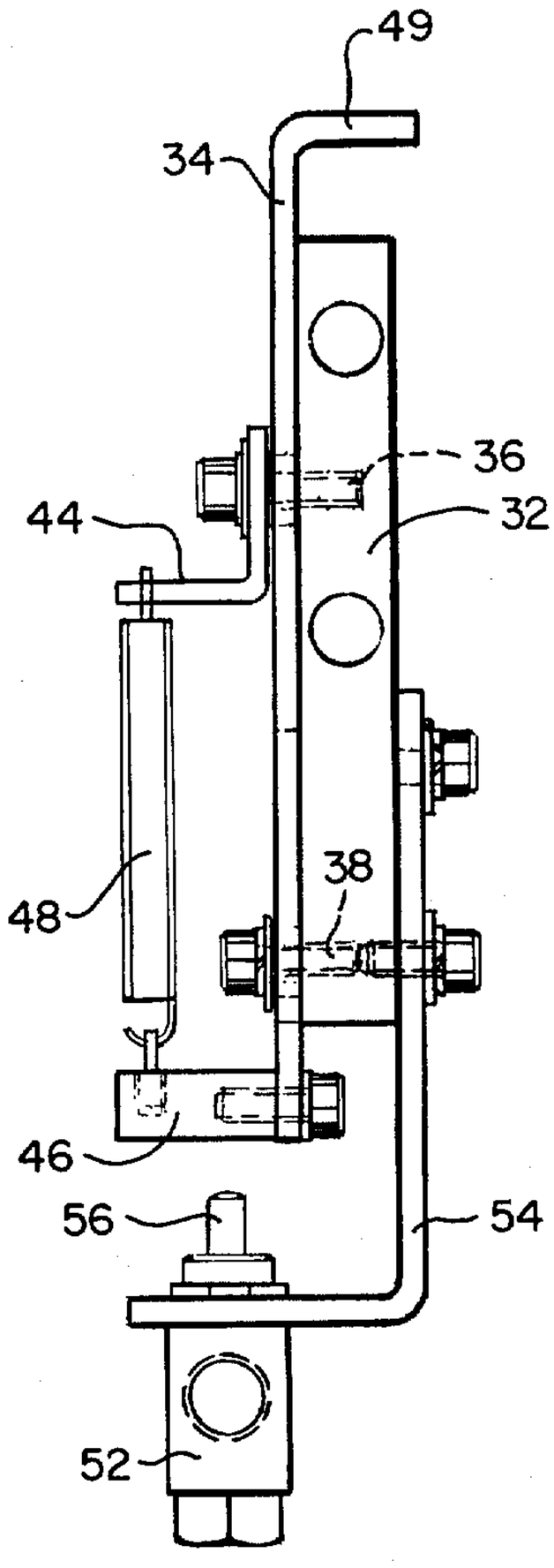

FIG. 4

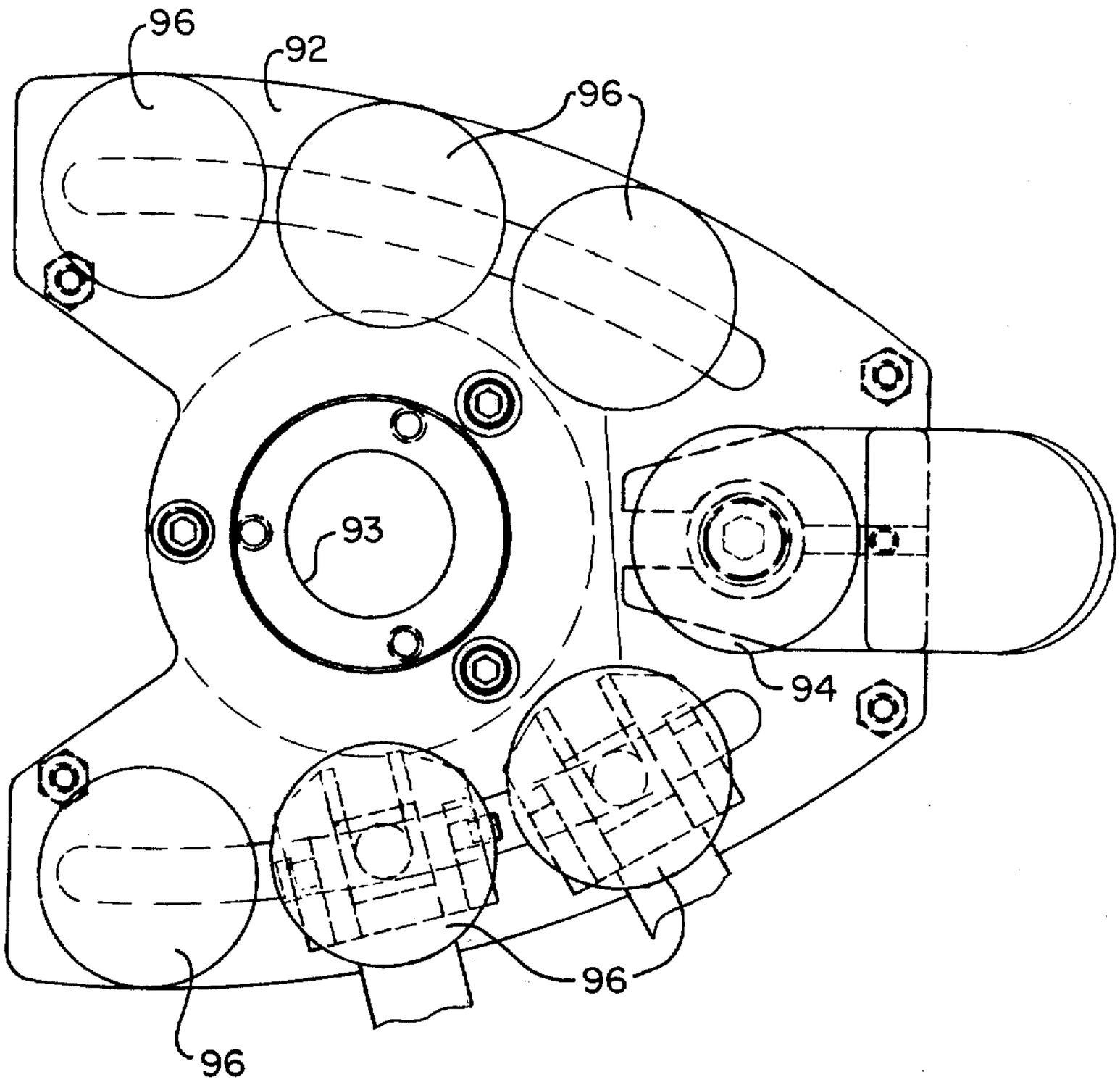

FIG. 5

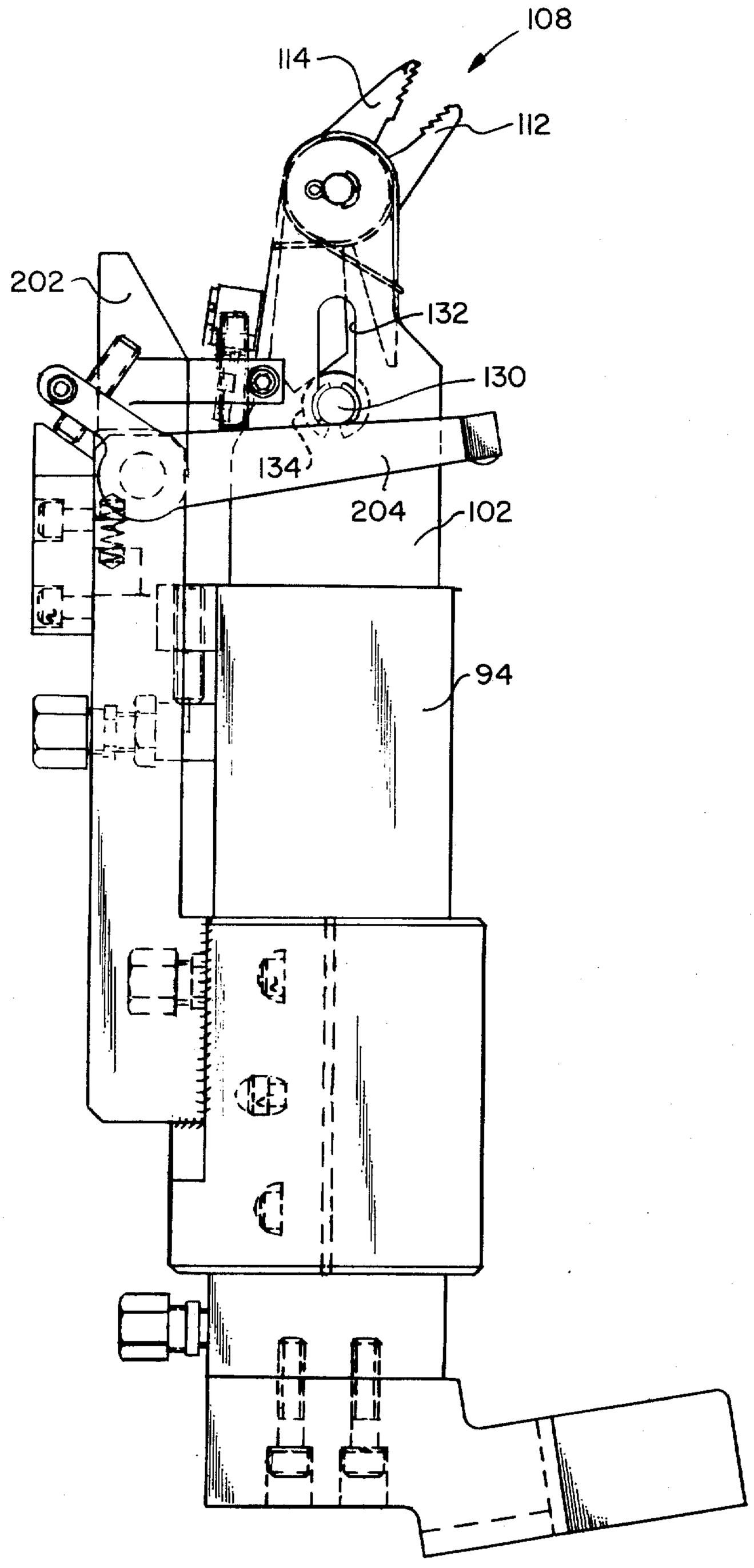

FIG. 6

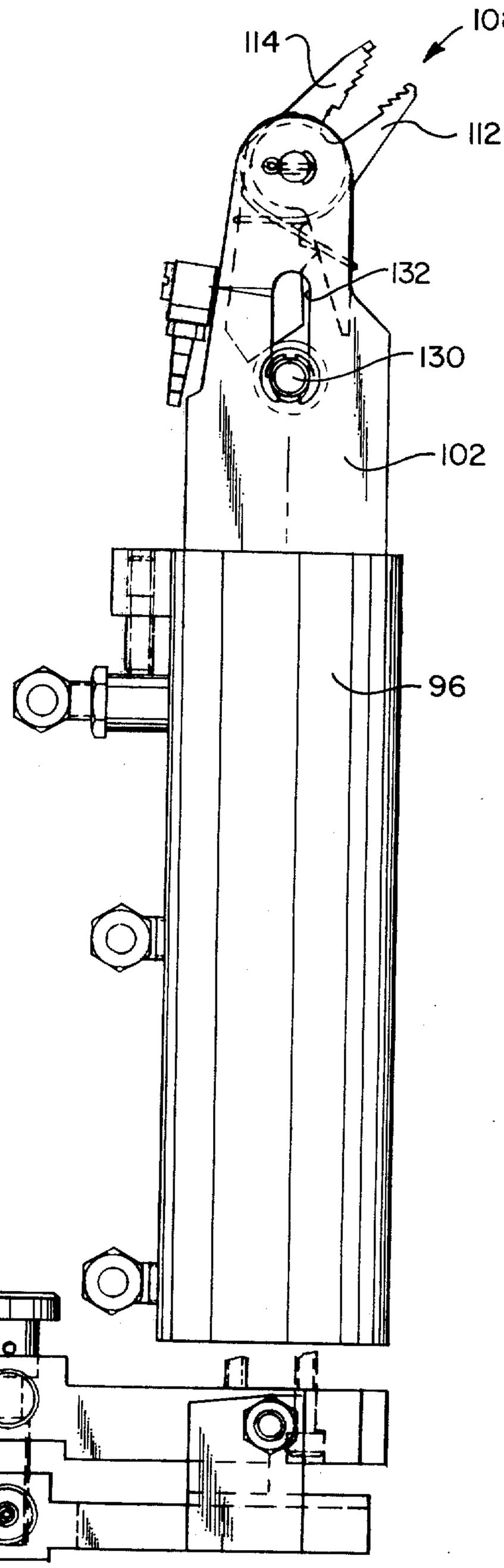

FIG. 7

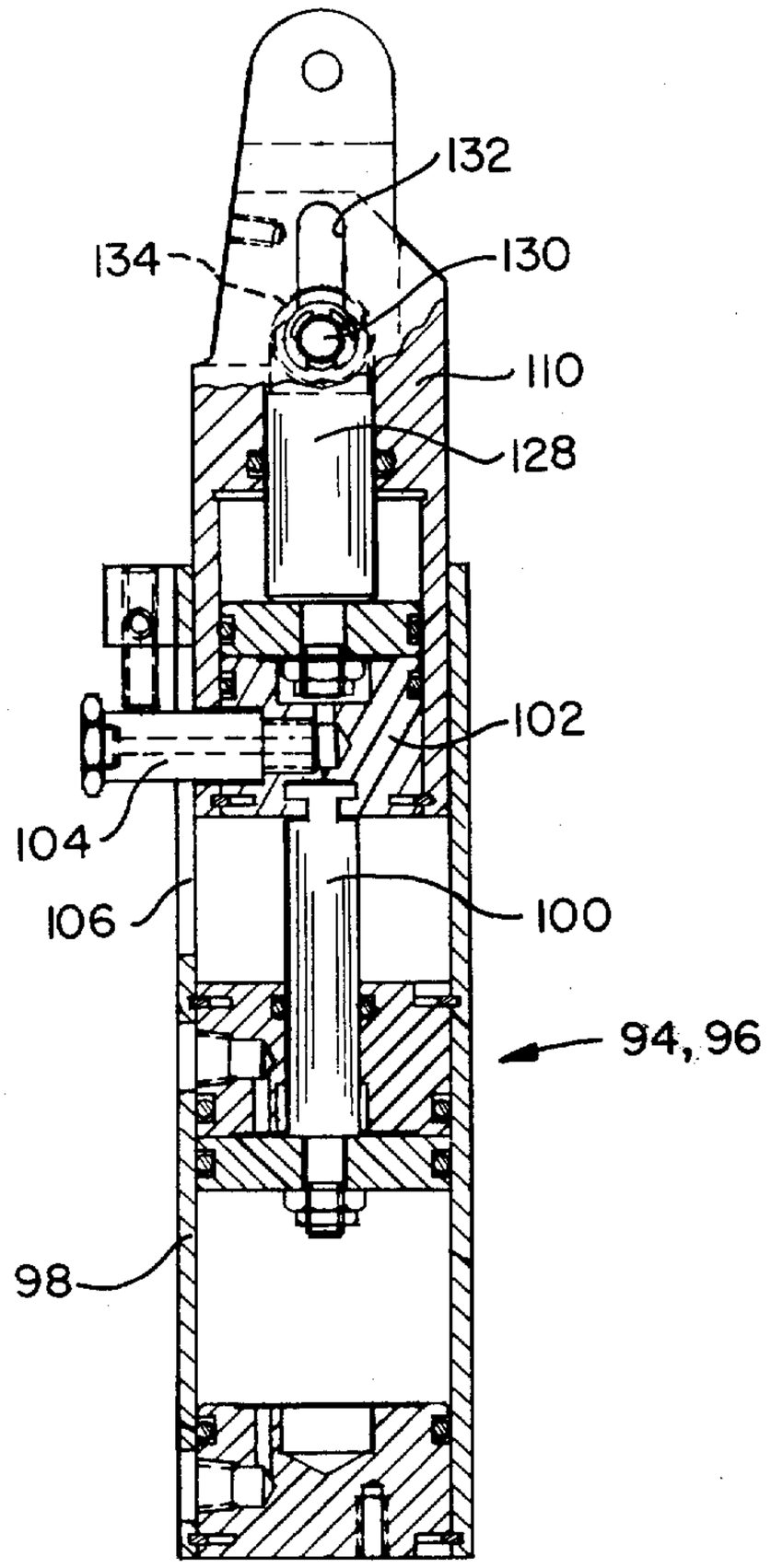

FIG. 8

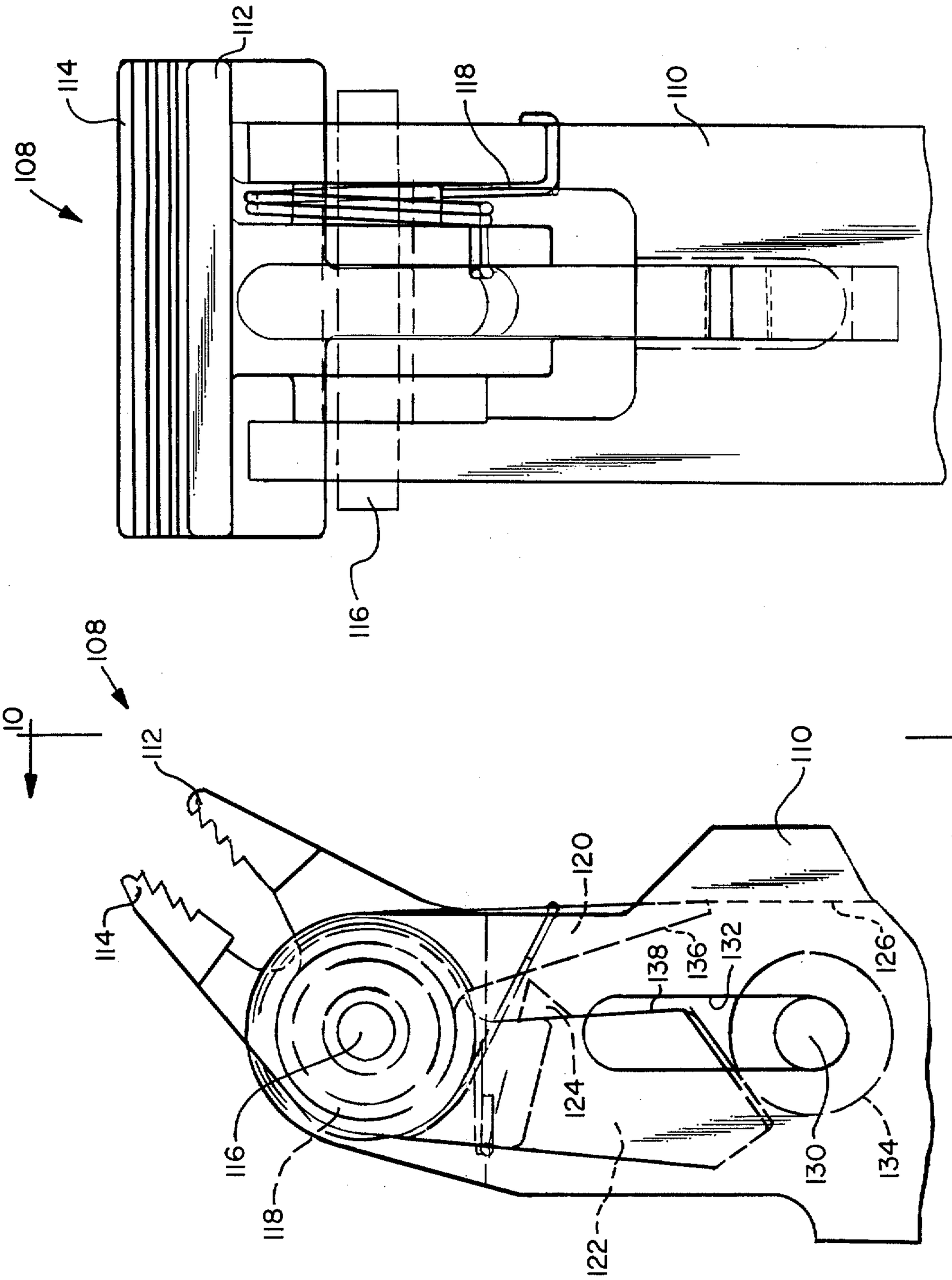
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FIG. 10

FIG. 9

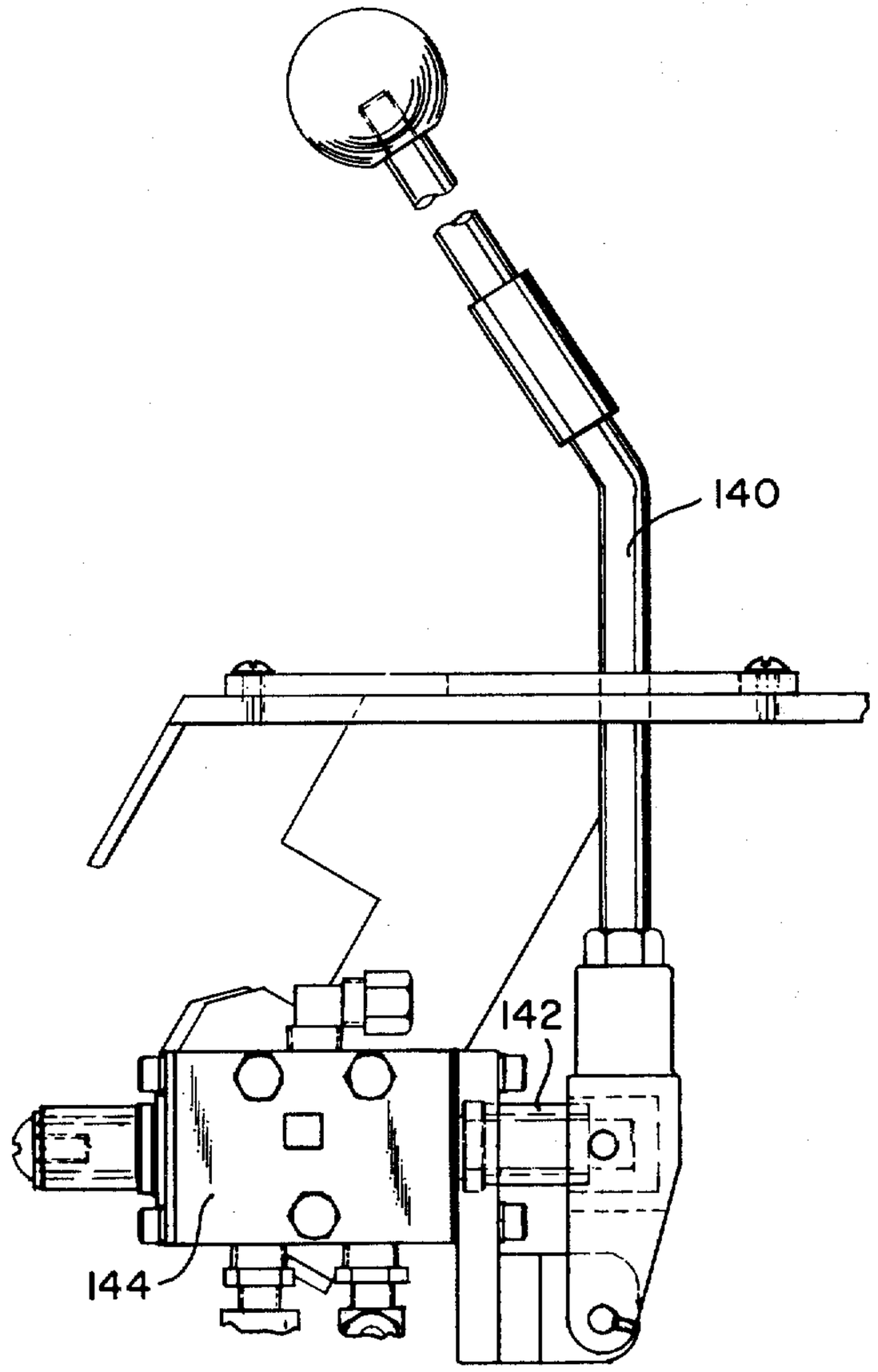

FIG. 11

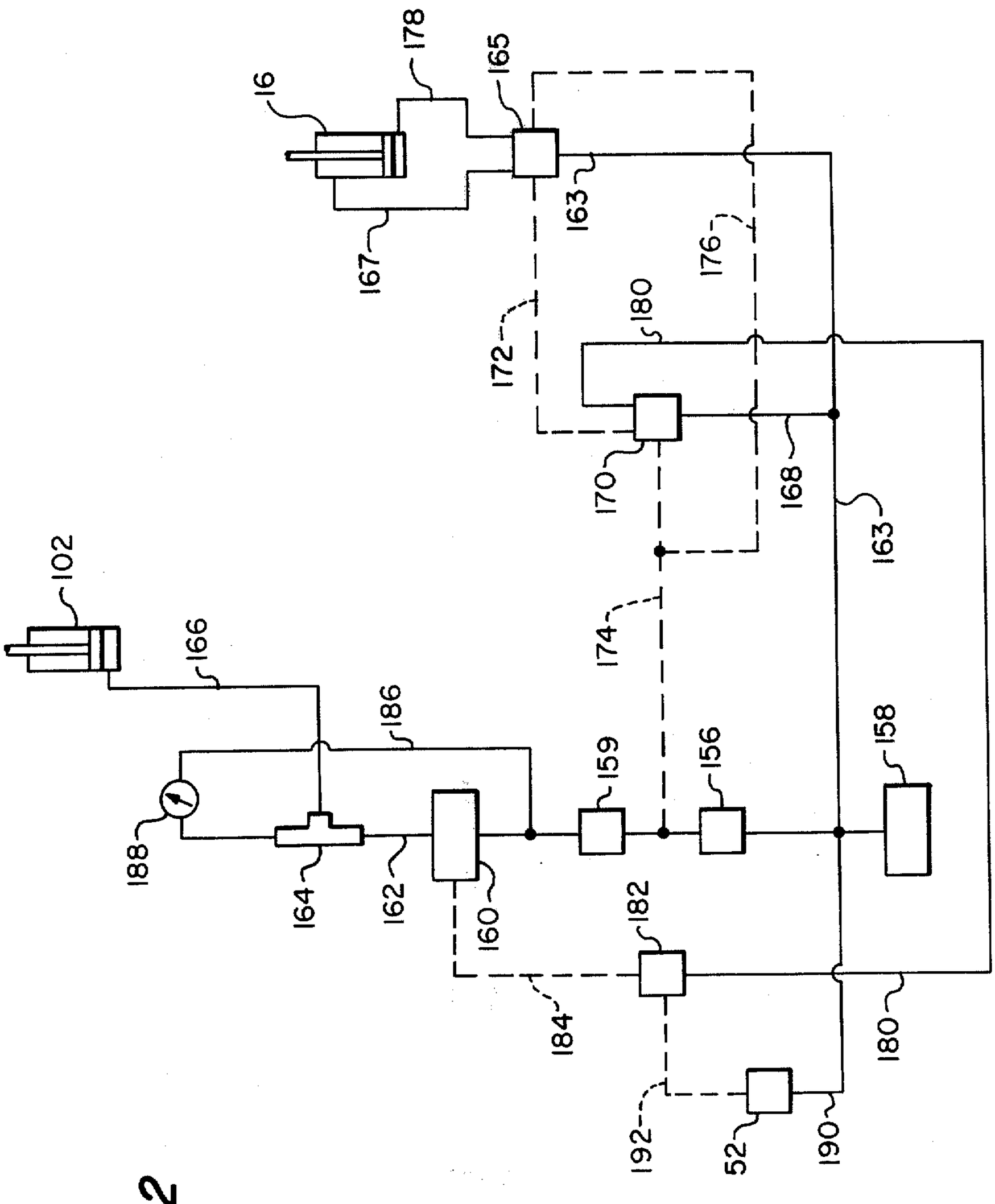
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FIG. 12

FIG. 13

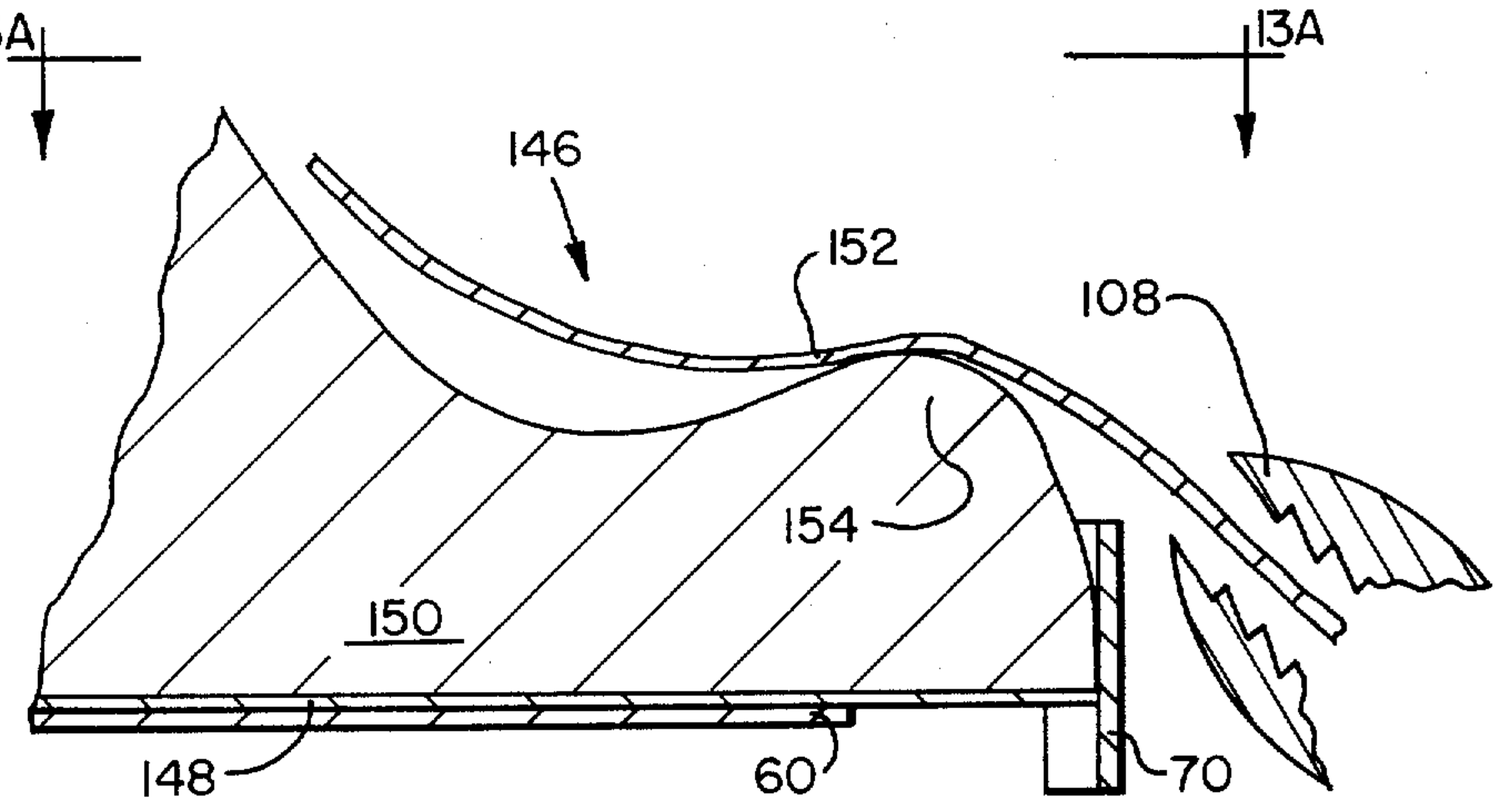


FIG. 13A

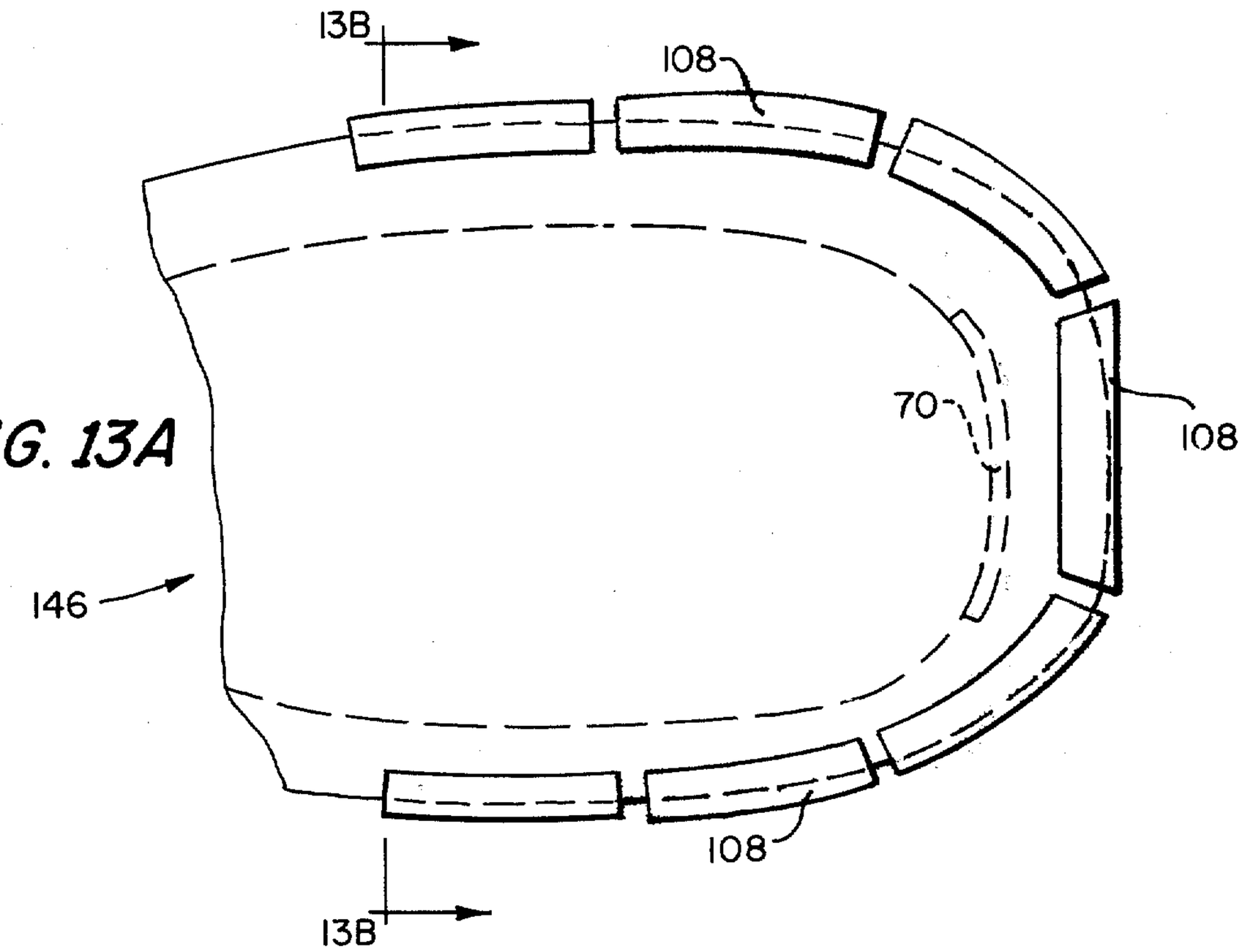
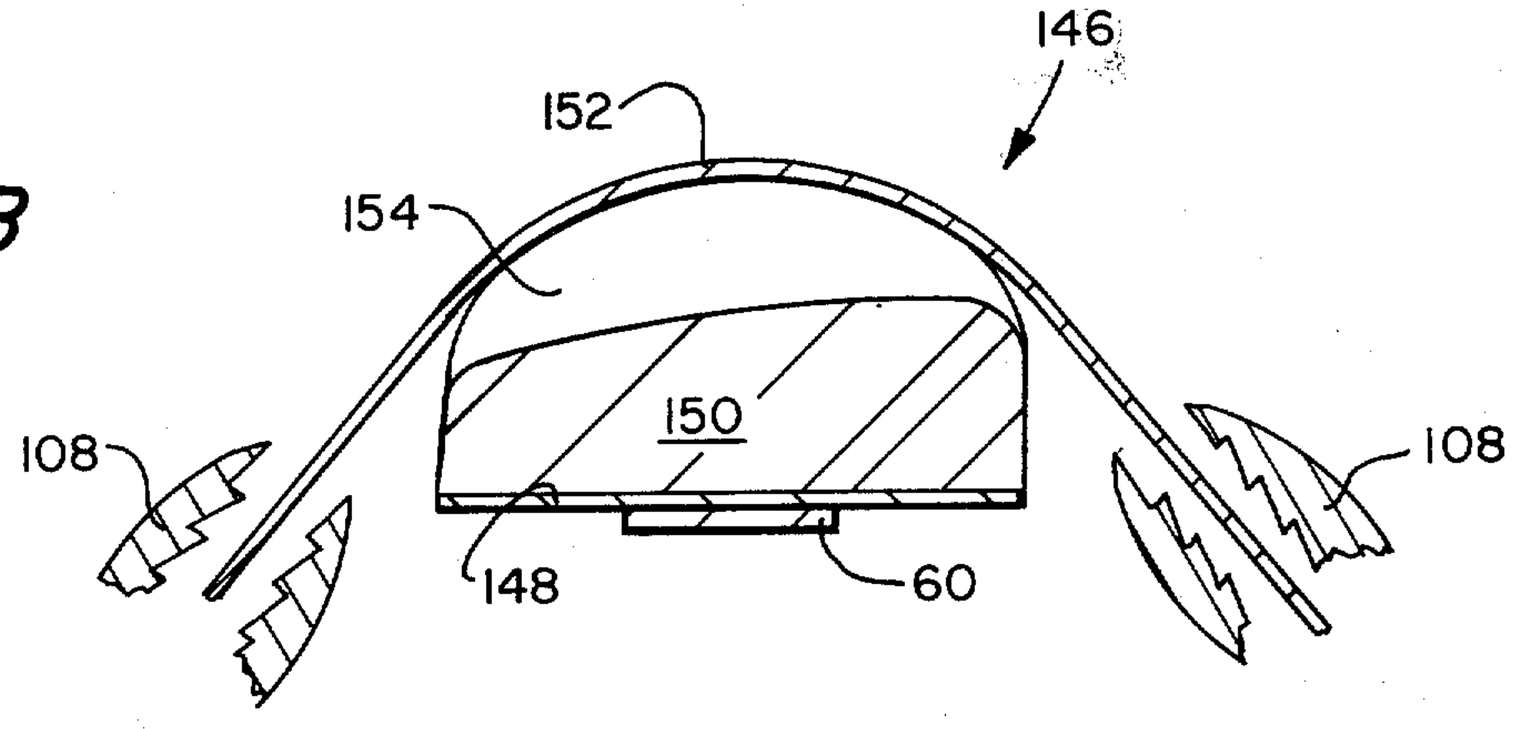


FIG. 13B



PULLING OVER MECHANISM

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

BACKGROUND OF THE INVENTION

In the toe lasting of shoes, wherein a shoe assembly is provided that comprises a last having an upper mounted thereon and an insole located on its bottom, it is standard practice to stretch the upper about the toe portion of the last by means of pincers jaws that grip the upper margin while the shoe assembly is supported on a support and the support is raised from a lower support position to an upper position. It is also known practice, after the support has completed its rise, to impart, if desired, downward movement to the pincers jaws to thereby relocate the stretched upper about the last if the stretched upper is not properly located at the completion of the rise of the shoe assembly.

With the recent introduction of knob nose shoes having a knob projecting upwardly of the toe portion of the vamp of the upper, greater stresses have been imparted to the portion of the upper stretched about the knob during the rise of the shoe assembly while the upper margin is gripped between the pincers jaws. At times, this has caused a tearing or rupturing of that part of the upper which is bearing against the knob. In order to alleviate this problem, the force applied to the upper margin by the pincers has been reduced so as to permit some slippage of the upper margin between the pincers jaws during the rise of the shoe assembly. However, when this pincers force is so reduced, the upper also undesirably tends to slip between the pincers jaws if the pincers jaws are lowered, subsequent to the rise of the shoe assembly, for the purpose of relocating the stretched upper about the last.

SUMMARY OF THE INVENTION

This invention solves the problem of tearing or rupturing the upper of knob nose shoes during the rise of the shoe assembly while the upper margin is gripped by the pincers jaws to stretch the upper about the last while enabling the stretched upper to be relocated on the last by a downward movement of the pincers after the shoe assembly has completed its rise. This is accomplished by providing mechanism that imparts a relatively light gripping force by the pincers jaws to the upper margin during the rise of the shoe assembly so as to permit slippage of the upper margin between the pincers jaws during this rise and that imparts a relatively heavy gripping force by the pincers jaws to the upper margin after the shoe assembly has completed its rise so that the pincers may be lowered to relocate the stretched upper on the last between the pincers jaws.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a view of a pulling over and toe lasting machine incorporating the invention;

FIG. **2** is an elevation of a shoe assembly support;

FIG. **3** is an elevation of a toe post;

FIG. **4** is a view taken on the line **4—4** of FIG. **3**;

FIG. **5** is a plan view of a pincers base;

FIG. **6** is an elevation of a toe pincers assembly;

FIG. **7** is an elevation of a side pincers assembly;

FIG. **8** is a partially sectional elevation of a pincers assembly;

FIG. **9** is an elevation of a pincers;

FIG. **10** is a view taken on line **10—10** of FIG. **9**;

FIG. **11** is a view of a valve actuating machanism;

FIG. **12** is a circuit diagram of a portion of the machine control;

FIG. **13** is a representation of a shoe assembly in the machine;

FIG. **13A** is a view taken on the line **13A—13A** of FIG. **13**; and

FIG. **13B** is a view taken on the line **13B—13B** of FIG. **13A**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. **2** and **3**, the machine frame incorporates a base plate **12** that has a sleeve **14** extending downwardly therefrom. For convenience of operation, the machine is inclined about 30° from the horizontal. However, parts extending in the direction of the plate **12** will be referred to as extending horizontally and parts extending in the direction of the sleeve **14** will be referred to as extending vertically. The operator is intended to be located in front of the machine as seen in FIG. **1**, and a direction extending toward the operator will be referred to as "forward" while a direction extending away from the operator will be referred to as "rearward".

An air operated motor **16** is secured to a cap **18** at the bottom of the sleeve **14** and a hollow toe post **20** is secured to the piston rod **22** of the motor **16** to extend vertically and be slidable within the sleeve **14.** A roller **24,** bolted to the sleeve **14,** is received in a vertical slot **26** in the post **20** to preclude rotation of the post about the axis of the sleeve.

Referring to FIGS. **3** and **4,** a block **28** extends laterally of the post **20** through a slot **30** in the sleeve **14** and a plate **32** is affixed to the block **28.** A strip **34** is mounted to the plate **32** for vertical movement by means that includes studs **36** and **38** affixed to the plate **32** that respectively extend through vertical slots **40** and **42** in the strip **34.** A flange **44** that is rigid with the plate **32** is mounted to the stud **36.** A pin **46** is rigidly mounted to the bottom of the strip **34.** A tension spring **48** extending between and connected to the flange **44** and the pin **46** yieldably urges the strip **34** upwardly to the extent permitted by the slots **40** and **42.** A flange **49** at the top of the strip **34** is below and in vertical registry with a stud **50** that is mounted to the plate **12.** A valve **52** is mounted to a flange **54** that is secured to the plate **32.** The actuator **56** of the valve **52** is below and in vertical registry with the pin **46.**

As shown in FIG. **2,** a mount **58** is secured to the top of the toe post **20** and an insole rest **60** is pivoted to the top of the mount **58** by a pivot pin **61.**

An air actuated motor **62** is seated within the hollow of the toe post **20** near its top. The piston rod **64** of the motor **62** extends upwardly of the motor **62** and is connected to a post **66.** The top of the post **66** is secured to a U-shaped cement applicator **68** (see FIG. **1**) that extends about the insole rest **60.**

A toe bar **70,** located rearwardly of the applicator **68** and the insole rest **60,** is connected to a post **72** that is mounted for heightwise movement in the mount **58.** The toe bar **70** is yieldably urged upwardly by a tension spring **74** that is connected to and extends between a pin **76** anchored to the mount **58** and a pin **78** anchored to the post **72.**

The pivot pin **61** pivotally supports a lever **80** intermediate its ends. The back of the lever **80** is secured to the insole rest **60** and the front of the lever **80,** which extends downwardly of the pivot pin **61,** has a roller **82** mounted thereto. A bracket **84** is connected to a plate **12** and an air operated motor **86** is mounted to the bracket **84.** The roller **82** is yieldably urged against the piston rod **88** of the motor **86** by a tension spring **90** that is mounted to and extends between the motor **86** and the lever **80.**

A pincers base **92** (FIGS. **2** and **5**) is anchored to the top of the base plate **12.** The base **92** has a opening **93** that slidably receives the toe post **20.** A toe pincers assembly **94** is mounted to and extends upwardly of the rear end of the pincers base **92** and three side pincers assemblies **96** are mounted to and extend upwardly of the pincers base **92** rearwardly of the toe pincers assembly **94** on each side of the toe pincers assembly **94.** The rear-most side pincers assemblies **96** closest to the toe pincers assembly **94** are corner pincers assemblies, the forwardmost side pincers **[96]** assemblies *96* furthermost from the toe pincers assembly **94** are ball pincers assemblies and the side pincers assemblies **96** between the corner pincers assemblies and the ball pincers assemblies are forepart pincers assemblies.

Referring to FIGS. **8–10,** each pincers assembly comprises an air actuated motor **98.** The piston rod **100** of each motor **98** has an air actuated motor **102** connected thereto that is slidably mounted in its associated motor **98.** An inlet pipe **104** of each motor **102** rides in a slot **106** formed in its associated motor **98** to preclude rotation of the motors **102** with respect to the motors **98.** A pincers **108** is mounted to the top **110** of each motor **102.** Each pincers **108** has an inner pincers jaw **112** and an outer pincers jaw **114,** both jaws being pivoted to a motor top **110** by a pivot pin **116.** A coil spring **118** extending between the motor top **110** and the outer jaw **114** acts to yieldably urge the outer jaw **114** counterclockwise as seen in FIG. **9** about the axis of the pivot pin **116.** The jaws **112** and **114** respectively have legs **120** and **122** that depend downwardly of the pivot pin **116.** The outward movement of the jaw **114** by the spring **118** causes the leg **122** to swing counterclockwise (FIG. **9**) with a prong **124** on the leg **122** engaging the leg **120** to thus swing the inner jaw **112** counterclockwise until the leg **120** abuts a wall **126** of the motor top **110.** In this position, the jaws **112** and **114** are spaced from each other as indicated in FIG. **9.**

The piston rod **128** of each motor **102** has a pin **130** mounted to its top that is slidable in slots **132** in the motor top **110.** A cam roll **134** is mounted on the pin **130** and is movable, as described below, between facing cam follower surfaces **136** and **138** on the jaw legs **120** and **122** in response to upward movement of the piston rod **128.**

As shown in FIGS. **1** and **11,** five handles **140** are pivotally mounted to the machine frame and each handle **140** is connected to the valve spool **142** of a valve **144,** the valves **144** also being mounted to the machine frame.

In the idle condition of the machine: the piston rod **22** is retracted into the motor **16** so that the insole rest **60** is in a lowered position with the flange **49** located spacedly above the stud **50** and the valve actuator **56** located spacedly below the pin **46;** the piston rod **64** is retracted into the motor **62** so that the cement applicator **68** is at a lower level than the insole rest **60** as shown in FIG. **2;** the piston rod **88** is retracted into the

motor **86;** the piston rods **100** are projected upwardly of the motors **98** so that the motors **102** and the pincers **108** are in upper positions with respect to the pincers plate **92;** and the piston rods **128** are retracted into the motors **102** so that the cam rolls **134** are located spacedly below the cam follower surfaces **136, 138,** as indicated in FIG. **9,** thus enabling the springs **118** to maintain the pincers jaws **112** in the open positions indicated in FIG. **9.**

Referring to FIGS. **13, 13A** and **13B,** a shoe assembly **146** is presented bottom-down to the machine. The shoe assembly **146** comprises a shoe insole **148** located on the bottom of a last **150** and a shoe upper **152** draped over the last. The top of the toe end of the last has an upwardly projecting knob **154.** The insole **148** is placed by the operator against the insole rest **60,** which thus constitutes a shoe assembly support, and the toe end of the last **150** is caused to bear against the toe bar **70.** At this time, with the machine in its idle condition, all of the pincers **108** are located above the insole **148** and the margin of the upper **152** is inserted between the open jaws of all of the pincers.

FIG. **12** schematically illustrates a portion of the pneumatic control circuit of the machine. The control for the motor **102** shown in this figure is illustrative of the controls for the motors **102** for the toe pincers assembly **94** and for those side pincers assemblies **96** that consist of the corner pincers assemblies and the forepart pincers assemblies.

After the upper margin has been inserted between the open jaws of all of the pincers **108,** the jaws **112, 114** of all of the pincers assemblies are caused to grip the upper margin under a relatively heavy gripping force. With respect to all of the pincers assemblies, except the ball pincers assemblies, this is caused by shifting a valve **156** which enables pressurized air to pass under full line pressure from a source **158** through the valve **156,** a valve **159,** a spring return valve **160,** a line **162,** a shuttle valve **164** and a line **166** to the head end of a motor **102** to actuate the motor **102** to raise its piston rod **128.** The rise of the piston rod **128** raises the cam roll **134,** which acts as a pincers closing member, so as to cause the cam roll **134** to move between the cam follower surfaces **136** and **138** and swing the jaw leg **122** away from the jaw leg **120** to thereby swing the jaw **114** against the jaw **112** with the relatively high force imparted by the full line pressure of the air in the line **166** to thereby cause the jaws **112, 114** to close and grip the upper margin. During the rise of the cam roll **134** between the cam follower surfaces **136, 138,** the cam follower surfaces are upwardly convergent and the cam roll moves upwardly between the cam follower surfaces under the yieldable force of pressurized air until it meets resistance to movement caused by the gripping action of the jaws **112, 114.**

The motor **16** is retained in its idle position by pressurized air passing from the source **158** through a line **163,** a valve **165** and a line **167** to the rod end of the motor **16.** The valve **165** is maintained in position to enable the pressurized air to flow through it to the rod end of the motor **16** by pressurized air flowing from the source **158,** the line **163,** a line **168,** a valve **170** and a pilot line **172** to the left side of the valve **165.** The aforementioned shifting of the valve **156** enables pressurized air to flow from the valve **156** through a pilot line **174** to the valve **170** to shift the valve **170** and thus cut off the flow of pressurized air to the valve **165** through the pilot line **172.** The shifting of the valve **156**

also enables pressurized air to flow from the line **174** through a pilot line **176** to the right side of the valve **165** to thereby shift the valve **165.** The shifting of the valve **165** cuts off the flow of pressurized air in the line **167** and enables pressurized air to flow from the valve **165** through a line **178** to the blind end of the motor **16** to thus actuate the motor **16** to raise its piston rod **16** and the parts, including the toe post **20** and the insole rest **60,** mounted to the piston rod **16.**

The shifting of the valve **170** also enables pressurized air to flow from the valve **170** through a line **180,** a valve **182** and a pilot line **184** to the valve **160** to shift the valve **160** and thus cut off the flow of high pressure air flowing under full line pressure to the motor **102** through the line **162.** With this cutting off of the flow of high pressure air to the motor **102,** air under relatively low pressure flows to the motor **102** from the valve **159** through a line **186,** a pressure regulator **188** set at the relatively low pressure, the shuttle valve **164** and the line **166.**

As the toe post **20** completes its rise, the flange **49** engages the stud **50** to thereby lower the strip **34** relative to the plate **32** which causes the pin **46** to engage the actuator **56** and thus shift and open the valve **52.** The opening of the valve **52** enables pressurized air to flow from the source **158** through a line **190,** the valve **52** and a pilot line **192** to the valve **182** to shift the valve **182** to closed position and thus cut off the flow of pressurized air through the pilot line **184** to the valve **160** thereby enabling the return spring of the valve **160** to return this valve to open position. The opening of the valve **160** enables air under the relatively high full line pressure to again flow to the motor **102** through the line **162,** the shuttle valve **164** and the line **166.**

From the foregoing it can be seen that the upper margin is gripped by the stationary pincers **108** of the toe, corner and forepart pincers assemblies during the rise of the [show] *shoe* assembly **146,** this rise being caused by the actuation of the motor **16** to raise the insole rest **60.** The ball pincers assemblies may be forced downwardly under relatively low pressure to force the pincers **108** of these pincers assemblies downwardly during the rise of the shoe assembly. This rise causes the upper **152** to be stretched tightly about the vamp of the last **150.** This stretching effect is enhanced by actuating the motor **86** to project its piston rod **88** to thereby swing the insole rest **60,** together with the shoe assembly **146,** counterclockwise as seen in FIG. **2** about the axis of the pivot pin **61.** This stretching effect may also be enhanced by actuating the motors **98** of the ball pincers assemblies **96** to move their piston rods **100,** together with their pincers **108** downwardly during the upward movement of the shoe assembly **146.** The relatively low pressure imparted by the motors **102** of the toe pincers assembly **94,** the corner pincers assembly **96** and the forepart pincers assemblies **96** to the piston rods **128** during the rise of the shoe assembly **146** lessens the upwardly directed force applied by the cam rolls **134** to the upwardly convergent follower surfaces **136, 138** of the pincers **108** of these pincers assemblies to thereby relax to some extend the gripping force applied against the margin of the upper **152** by the jaws **112, 114** of these pincers assemblies thereby enabling the upper margin to slip to some extent between these jaws during the rise of the shoe assembly. As stated above the last **150** of the shoe assembly **146** operated on by this machine has an upwardly projecting knob **154** at its toe end. This knob creates a stress of the upper **152** being stretched about the last **150** during the rise of the shoe assembly **146** while the upper margin is being gripped by the pincers **108** of the toe pincers assembly, the corner pincers assemblies and the forepart pincers assemblies, which stress could tear or rupture the upper. By enabling the upper margin to slip between the pincers jaws during the rise of the shoe assembly, this tearing or rupturing of the upper is avoided. When the shoe assembly **146** has completed its rise, the pincers **108** of all of the pincers assemblies **94, 96** are gripping the upper margin firmly under the relatively heavy force imparted by the high pressure of the motors **102** so that the upper margin cannot slip between the pincers jaws **112, 114** during the below described relocation of the upper **152** on the last **150.**

The motors **98** of the toe pincers assembly, the corner pincers assemblies and the forepart pincers assemblies are maintained in their idle positions with the piston rods **100** of these assemblies projected upwardly of their motors **98** by pressurized air passing from the source to these motors through certain of the valves **144.** Should the operator find that the stretched upper **152** is not properly located on or stretched about the last **150,** he may move an appropriate handle **140** to shift the associated valve **144** which will actuate the associated motor **98** to retract its piston rod **100** downwardly and thereby force the associated pincers **108** downwardly while the pincers is firmly gripping the upper margin under the relatively heavy force. Others of the valves **144** are connected to the ball pincers assemblies in the manner shown in U.S. Pat. No. 3,233,261 so that the associated handles **140** may so actuate the motors **98** of the ball pincers assemblies as to either relieve the downwardly directed force imparted to the upper by the pincers **108** of these assemblies by the associated motors **98** or to increase these downwardly directed forces. In this manner, the stretched upper **152,** if it is found to be desirable, may be relocated on the last **150.**

The sequence of the remainder of the machine cycle is generally similar to that of the machine disclosed in British Patent specification No. 1,341,967. Referring to FIG. **1,** a heel clamp **194** is brought to bear against the heel end of the shoe assembly **146,** a toe hold-down **196** is brought to bear against the top of the vamp of the shoe assembly **146,** the motor **62** is actuated to raise the cement applicator **68** against the insole **148** and cement is extruded from the cement applicator onto the insole, and a slide plate (not shown) which carries a toe pad **198** and toe wipers **200** is caused to move forwardly to a position wherein the toe pad clamps the toe portion of the upper **152** against the last **150.** During the forward movement of the slide plate, an arm **202** of a bell crank that is mounted to the toe pincers assembly **94** is swing clockwise as seen in FIG. **6** to swing an arm **204** of this bell crank downwardly. The downwardly moving arm **204** engages a ledge **206** (FIG. **2**) mounted to the toe bar **70** to thus move the toe bar and the post **72** downwardly against the force of the spring **74** to prevent the toe bar from interfering with the toe wipers **200** during the below described wiping stroke. This is followed by a forward and inward movement of the toe wipers with respect to the now stationary slide plate in a wiping stroke to cause the toe wipers to wipe the toe portion of the margin of the upper **152** against the insole **148** and bond the upper margin to the insole by means of the cement. Prior to the completion of the wiping stroke, all of the motors

102 are actuated to open all of the pincers 108 to enable the pincers to release the upper margin, the motor 62 is actuated to lower the cement applicator 68 and the motor 16 is actuated to lower the insole rest 60. At the completion of the wiping stroke the wiped toe portion of the shoe assembly 146 is supported by the toe wipers 200 and increased pressure is applied by the toe hold-down 196 against the top of the shoe assembly 146 to thereby provide a relatively heavy bedding pressure between the now wiped-in upper margin and the toe wipers 200. After the bedding pressure has been applied for a predetermined time interval, the machine parts are caused to be returned to their idle positions and the shoe assembly 146 is released from the machine.

I claim:

1. A pulling over mechanism comprising: a support, mounted for heightwise movement between lower and upper support positions, for supporting bottom-down a shoe assembly that includes a last having an upper mounted thereon; a pincers formed of a pair of jaws that are closable towards each other from an open position wherein the jaws are spaced from each other; means mounting the pincers for heightwise movement; pincers closing means operable to impart closing movement to the pincers jaws under a variable force; means retaining the pincers in an upper pincers position; means initially retaining the support in said lower support position; means thereafter raising the support from said lower support position to said upper support position to thereby raise the shoe assembly; means, effective during said rise of the support, to cause the pincers closing means to impart closing movement to the pincers jaws under a relatively light force against the margin of the upper which is inserted between the jaws; control means, effective *no earlier than as the support completes its rise to* [when the support has arrived at] said upper support position, to cause the pincers closing means to impart closing movement to the pincers jaws under a relatively heavy force; and means [thereafter] enabling the pincers to be lowered from said upper pincers position *when the support is in said upper support position*.

2. The mechanism as defined in claim 1 further comprising: means responsive to the arrival of the support at said upper support position to operate said control means.

3. The mechanism as defined in claim 2 further comprising: a post, to which the support is secured, mounted for heightwise movement; means initially retaining the post in a lower position to thereby retain the support in said lower support position; means for raising the post to thereby raise the support to said upper support position; means mounting said control means to said post for heightwise movement therewith; an actuator, located in registry with the control means above the control means, mounted to the post for heightwise movement; means yieldably urging the actuator upwardly with respect to the post; and a stud so fixedly located above the actuator in registry with the actuator as to lower the actuator with respect to the post and thus cause the actuator to actuate the control means when the post has raised the support to said upper support position.

4. A pulling over mechanism comprising: a support, mounted for heightwise movement between lower and upper support positions, for supporting bottom-down a shoe assembly that includes a last having an upper mounted thereon; a pincers base; a first motor, mounted to said pincers base, having a first rod that is movable heightwise in response to actuation of said first motor; a second motor, connected to said first rod, having a second rod that is movable heightwise in response to actuation of said second motor; a pincers, mounted to said second motor, formed of a pair of jaws that are closable towards each other from an open position wherein the jaws are spaced from each other; a pincers closing member connected to the second rod; said pincers jaws and said pincers closing member being so constructed and arranged as to cause the pincers closing member to close the jaws, in response to the raising of the second rod, an amount that is proportional to the elevation of the pincers closing member by the second rod; means causing the first motor to raise the first rod to thereby retain the pincers in an upper pincers position; means initially retaining the support in said lower support position; means thereafter raising the support from said lower support position to said upper support position to thereby raise the shoe assembly; means, effective during said rise of the support, to cause the second motor to move the second rod upwardly under relatively low pressure to thereby cause the pincers closing member to impart closing movement to the pincers jaws under a relatively light force against the margin of the upper which is inserted between the jaws; control means, effective *no earlier than as the support complete its rise to* [when the support has arrived at] said upper support position, to cause the second motor to move the second rod upwardly under relatively heavy pressure to thereby cause the pincers closing member to impart closing movement to the pincers jaws under a relatively heavy force; and means [thereafter] enabling the first motor to be actuated to lower the first rod and thereby lower the pincers from said upper pincers position *when the support is in said upper support position*.

5. The mechanism as defined in claim 4 further comprising: means responsive to the arrival of the support at said upper support position to operate said control means.

6. The mechanism as defined in claim 5 further comprising: a post, to which the support is secured, mounted for heightwise movement; means initially retaining the post in a lower position to thereby retain the support in said lower support position; means for raising the post to thereby raise the support to said upper support position; means mounting said control means to said post for heightwise movement therewith; an actuator, located in registry with the control means above the control means, mounted to the post for heightwise movement; means yieldably urging the actuator upwardly with respect to the post; and a stud so fixedly located above the actuator in registry with the actuator as to lower the actuator with respect to the post and thus cause the actuator to actuate the control means when the post has raised the support to said upper support position.

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