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Bauerkemper

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[54] **HAND TOOL FOR JOINING OBJECTS**

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[73] Assignee: **Thomas & Betts Corporation,** Raritan, N.J.

[21] Appl. No.: **48,134**

[22] Filed: **Jun. 13, 1979**

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Reissue of:

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Issued: **Jan. 31, 1978**
Appl. No.: **735,008**
Filed: **Oct. 22, 1976**

[51] **Int. Cl.**[3] **H01R 43/04**

[52] **U.S. Cl.** **29/749;** 29/268; 29/751; 29/758; 81/363; 81/373

[58] **Field of Search** 29/566.4, 566.3, 747, 29/749, 750, 751, 758, 268; 81/362, 363, 355, 373, 375

[56] **References Cited**

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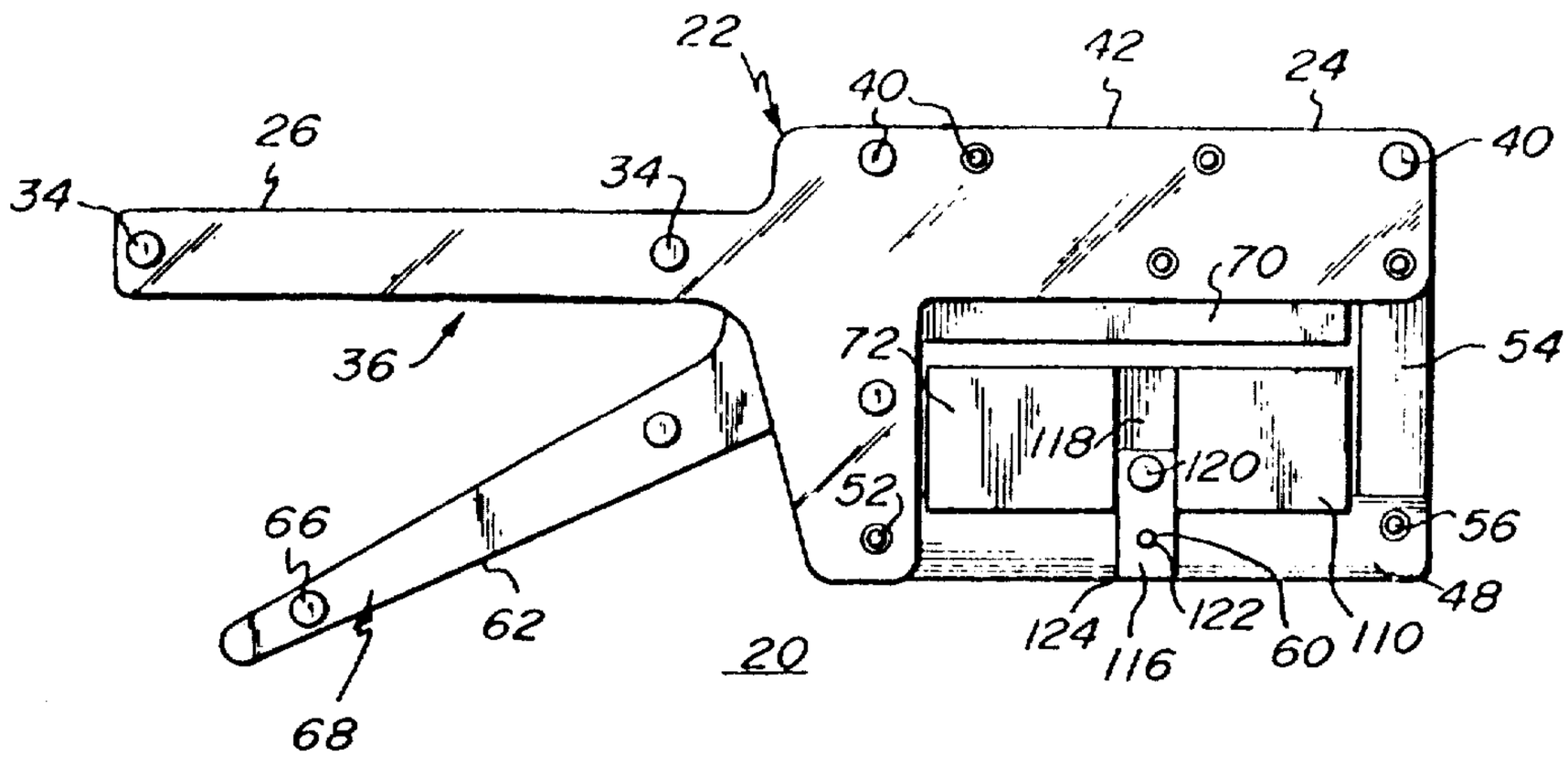
Primary Examiner—Carl E. Hall
Attorney, Agent, or Firm—Robert M. Rodrick; Jesse Woldman

[57] **ABSTRACT**

A hand tool for assembling two or more articles along an extended plane. Arcuate motion of a movable handle is converted to axial movement of a presser plate to assemble the articles placed on an aligned platen. The movable handle controls a drive bar which is coupled to the tool frame by pivotally movable links which move the drive bar in two orthogonal directions and to the presser plate [to move it in two orthogonal directions] by means of pivotally movable links coupled to the drive bar. The [movements along one orthogonal axis cancel one another and the movements along the other orthogonal axis are cumulative whereby the] presser plate is moved only in the direction of the platen.

20 Claims, 15 Drawing Figures



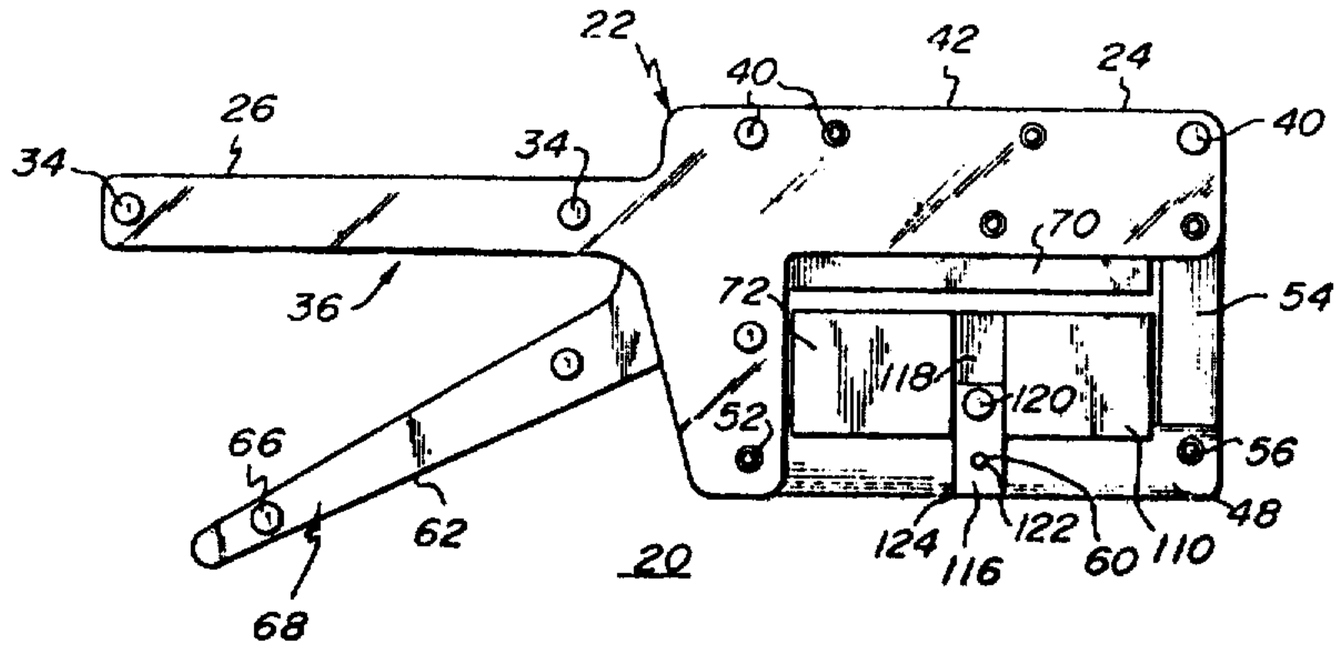


FIG. 1

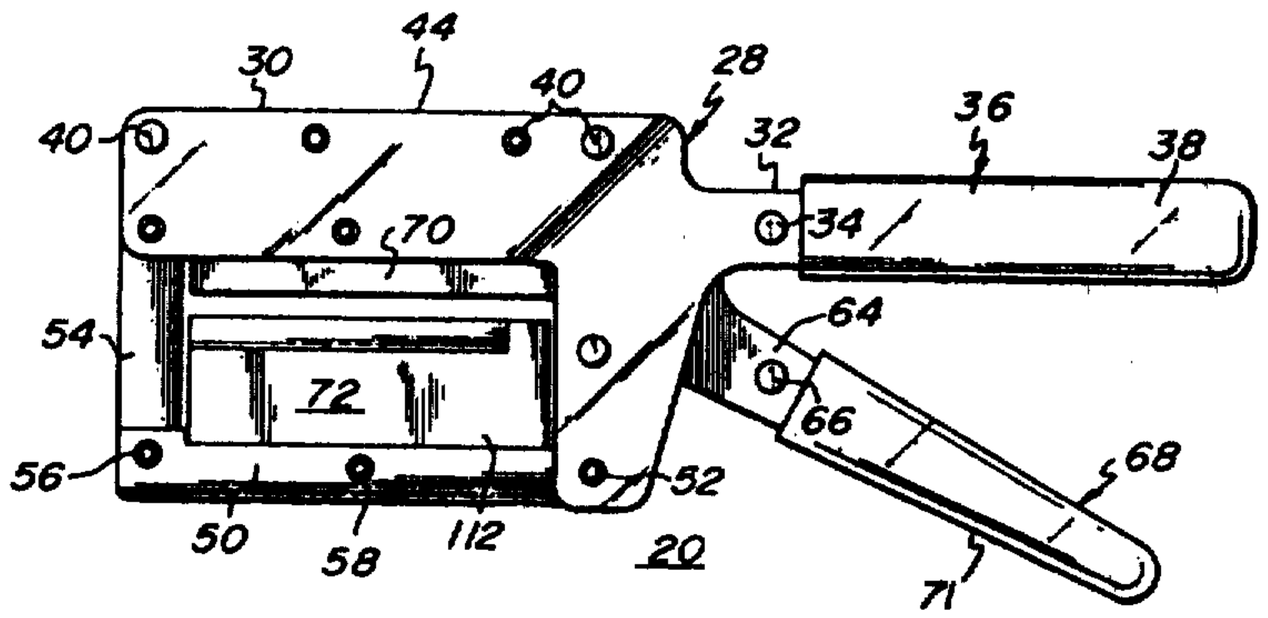


FIG. 2

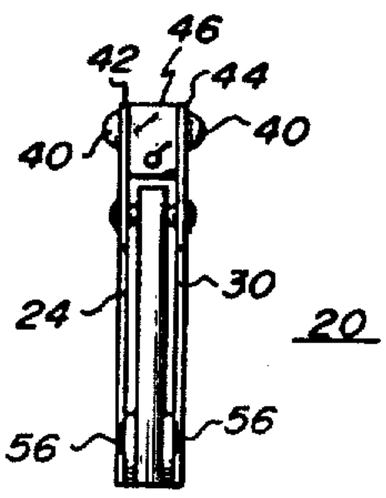


FIG. 3

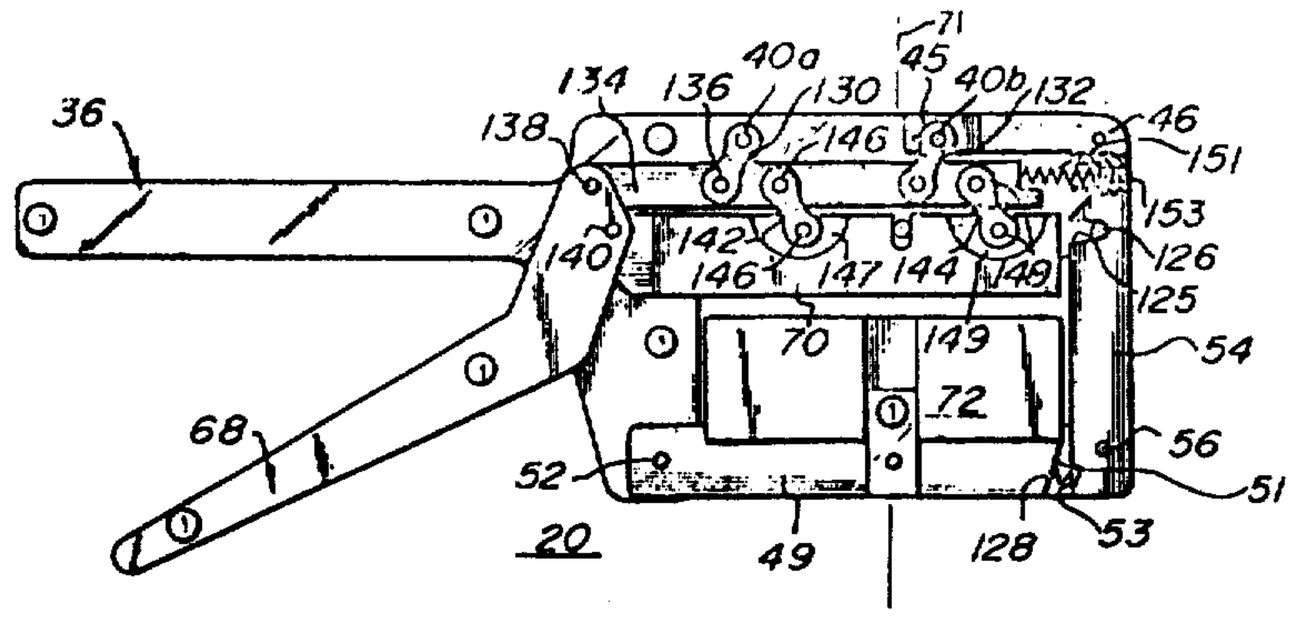


FIG. 4

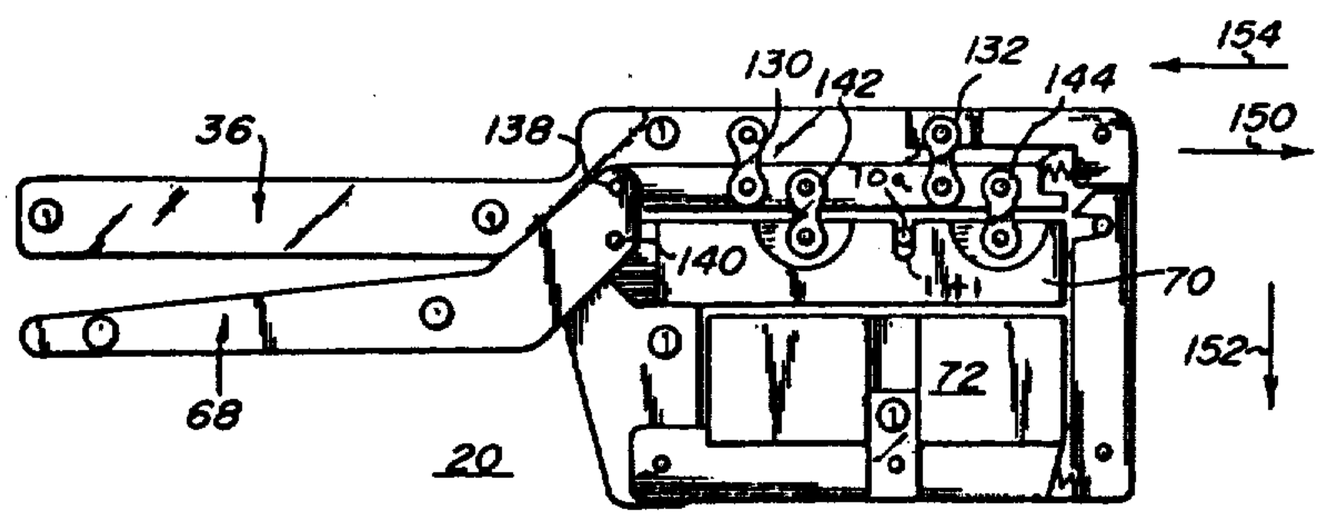


FIG. 5

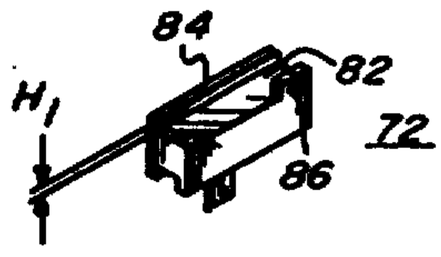


FIG. 6

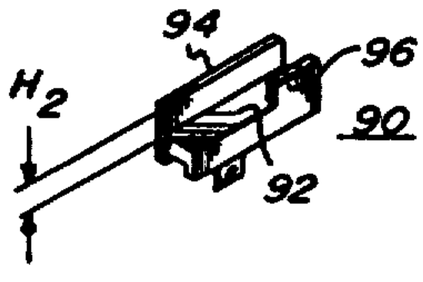


FIG. 7

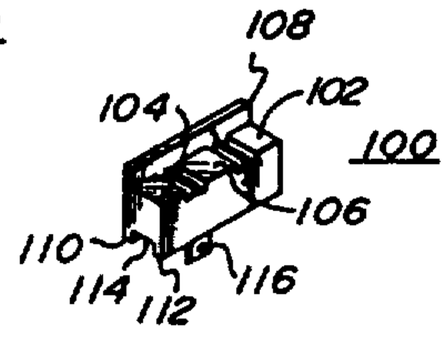


FIG. 8

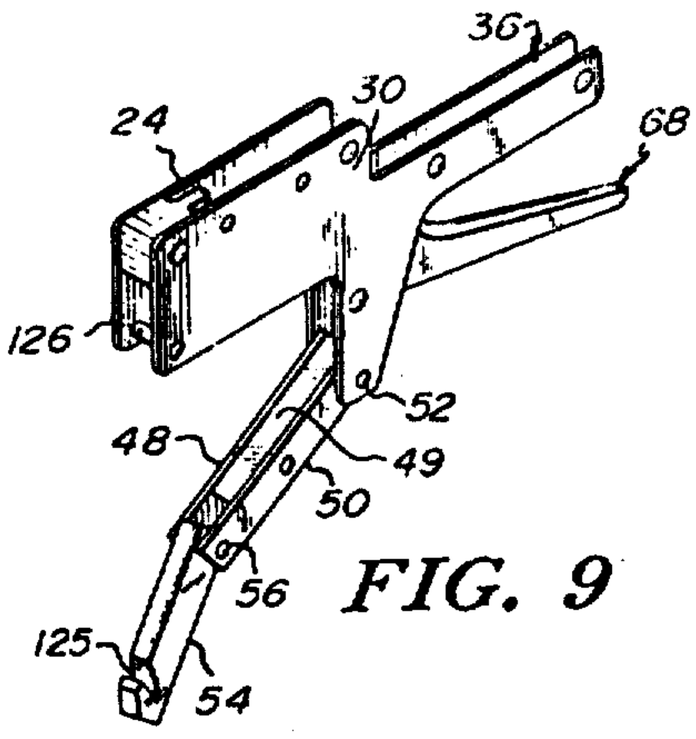


FIG. 9

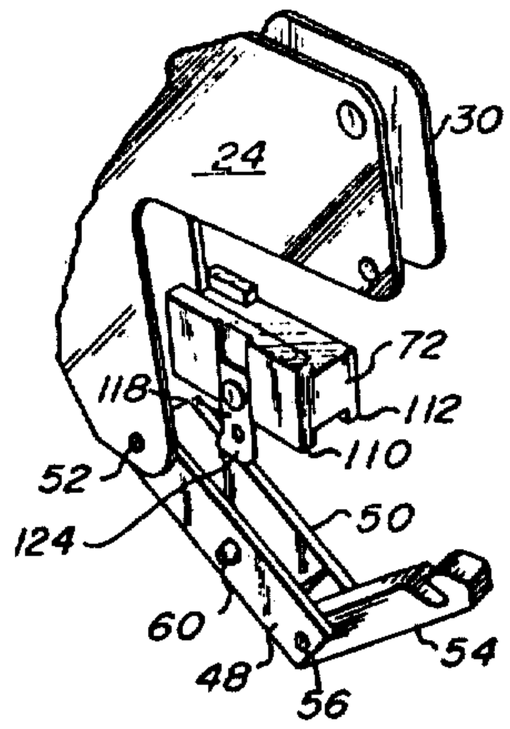


FIG. 10

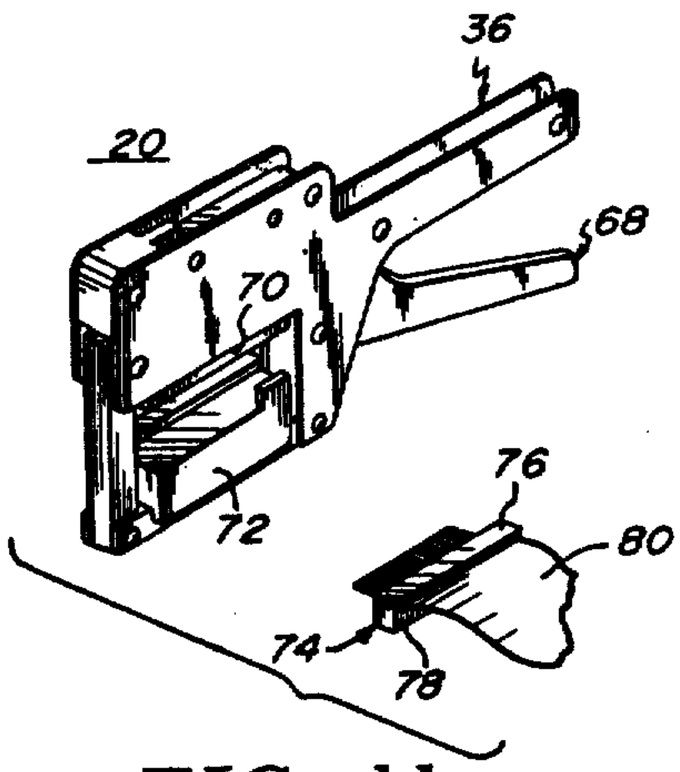


FIG. 11

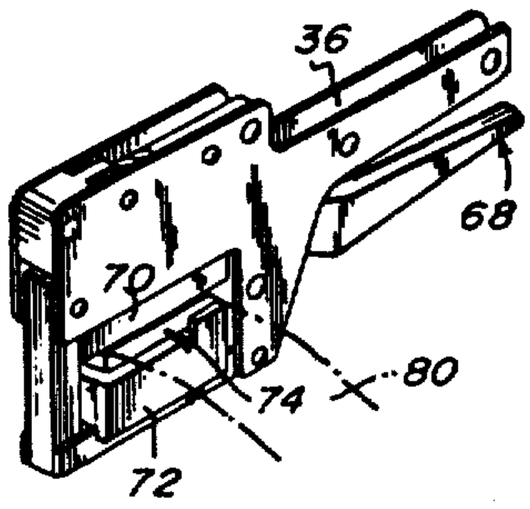


FIG. 12

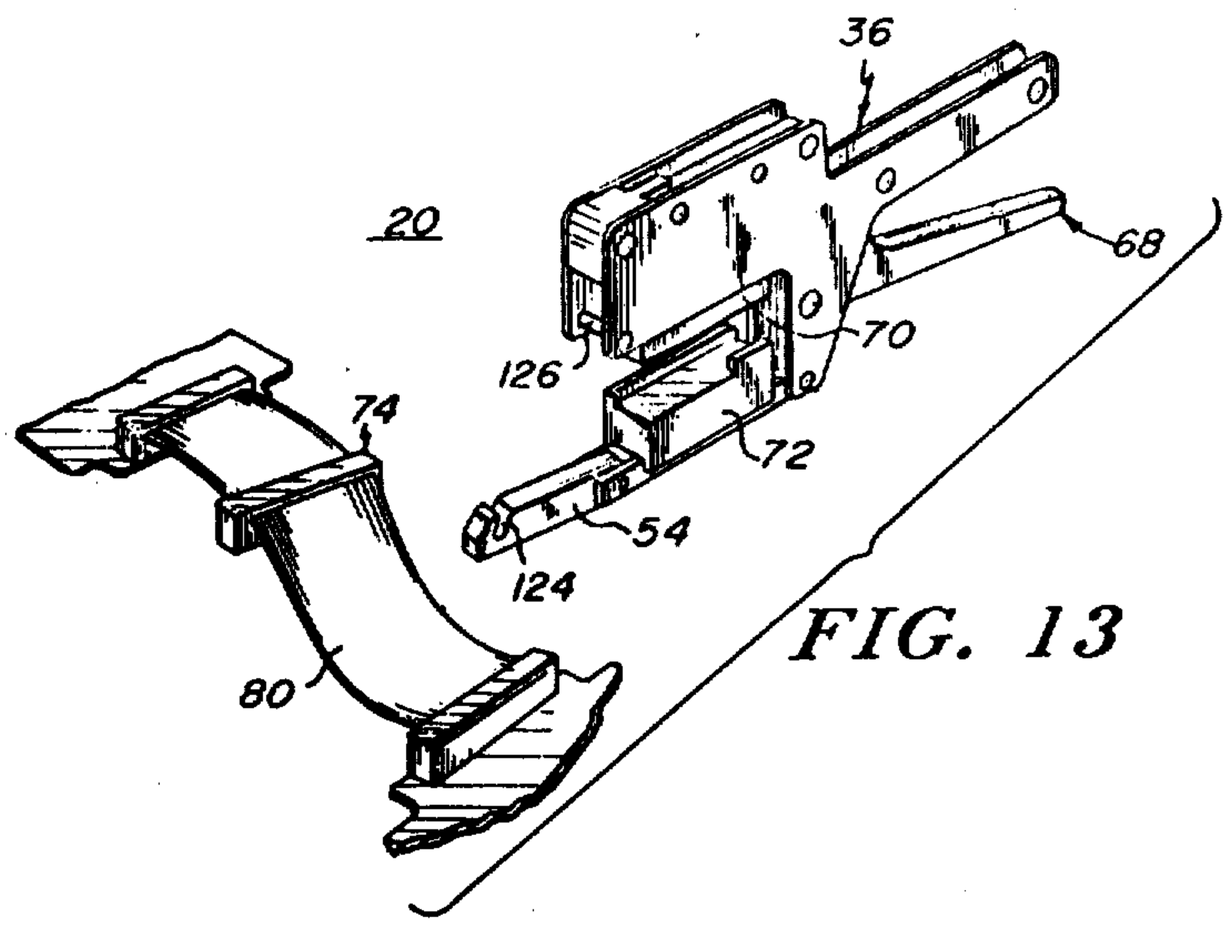


FIG. 13

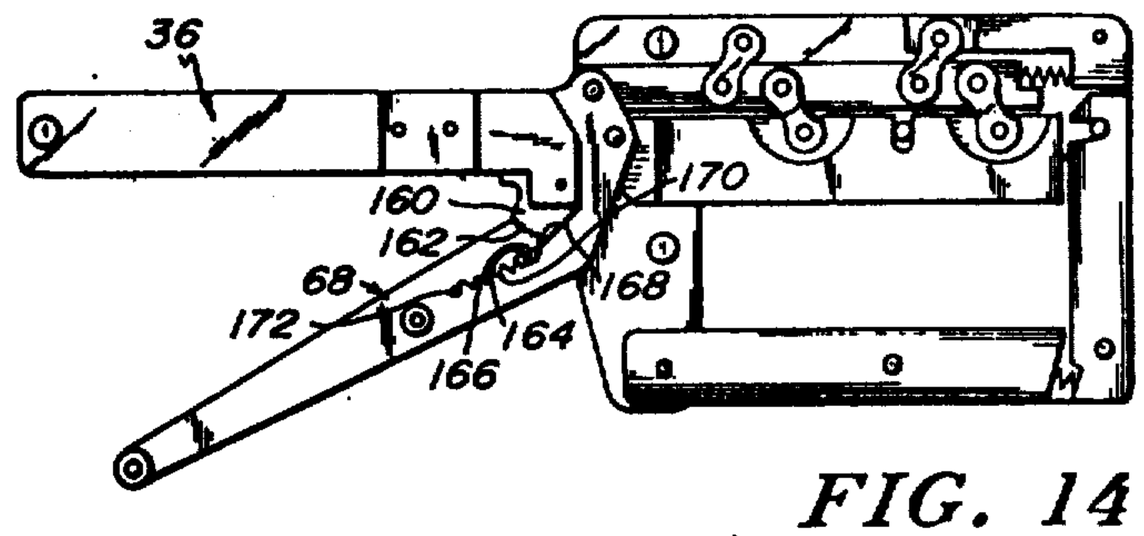


FIG. 14

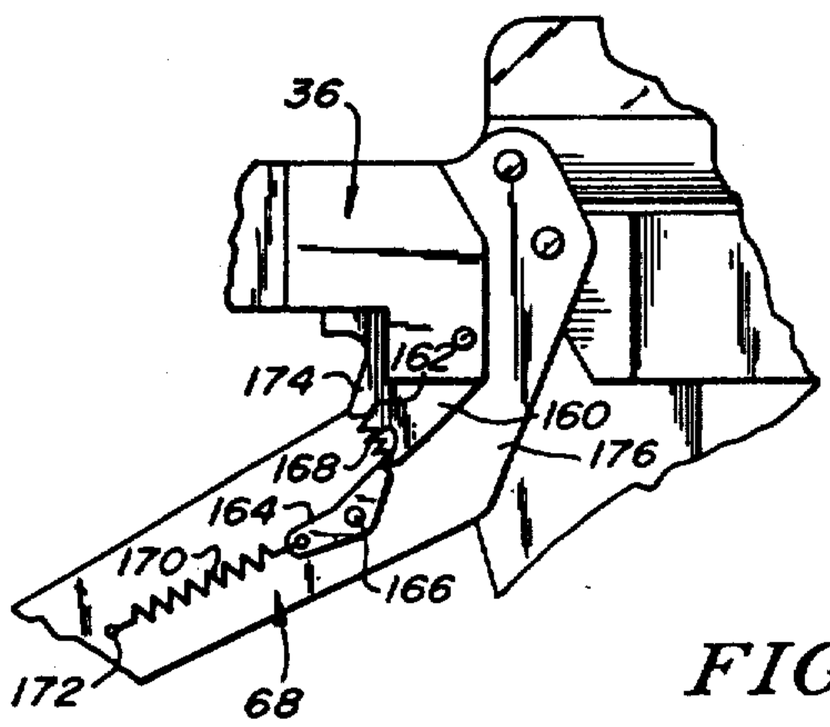


FIG. 15

HAND TOOL FOR JOINING OBJECTS

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

1. Field of the Invention

The invention applies to hand tools for assembling two or more articles along an extended plane and, more particularly, to a hand tool for assembling a multi-contact connector to a multi-conductor cable in one operation and applying a uniform compressive force.

2. Description of the Prior Art

Prior art tools for assembling a multi-contact connector (e.g., 50 to 60 contacts) to a multi-conductor cable (e.g., 50 to 60 conductors) fall into two categories; (1) cantilevered jaw hand tools, or (2) arbor type presses. The cantilevered jaw hand tools were scissor-like having a pair of extended parallel jaws extending from the handle pivot to the free ends of the jaws. The compressive force, which the jaws could apply to objects to be assembled, depended upon the location of any assembly point with respect to the pivot. If the center of the jaw length was to have the correct assembly force, then those points closer to the pivot received forces in excess of that desired while those points closer to the jaw free ends received insufficient forces. Also, because of the large forces required to make the assembly and the resistive forces of the connector and cable, the hand tool has to be able to withstand the resulting deflective forces. To do this, the tool parts had to be strong resulting in a large, heavy and bulky tool not readily usable.

The arbor type press also had to be strong enough to withstand the resistive forces and, accordingly, was large, heavy and bulky. Additionally, the press required a table, or other flat surface sufficiently strong to support the press and permit the desired assembly. All of these elements made field installation, or repairs, very difficult.

SUMMARY OF THE INVENTION

The present invention overcomes the difficulties noted above by providing a hand tool which is light in weight, easily held and used and able to assemble items with uniform installation forces while requiring that the operator expend a small amount of handle force. The tool converts the arcuately applied handle forces to axially applied compression forces via pivoting links. The movable handle of the tool operates a drive bar which is connected by pivotable links to the tool frame to move the drive bar in two orthogonal directions. The movable handle also drives the presser plate, coupled also to the drive bar, to move the presser plate [in two orthogonal directions. The movements provided in a plane perpendicular to the axis of closure of the presser plate are opposite in direction and cancel one another out and thereby eliminate any movement of the presser plate in such direction. The other movements provided are both along the axis of closure of the presser plate and in the same direction thus combining the two movements].

The tool has a top frame member and a lower frame member connected at both ends to eliminate the cantilevered action above described. A platen matched to the connector cable assembly is coupled to the bottom

frame member and the presser bar is coupled to the upper frame member so that the axially applied force is applied equally along the entire connector length. The connection of the upper and lower frame members at one end is selectively disengaged to permit the platen to be changed when desired and to permit the tool and a connector to be applied in mid span of the cable run. It is an object of this invention to provide a novel hand tool.

It is another object of this invention to provide a novel tool for the assembly of two objects.

It is a further object of this invention to provide a novel compression tool capable of applying a uniform compression force along the entire length of the tool's compression area.

It is still a further object of this invention to provide a novel compression tool wherein arcuate movement of the handle member is translated into axial movement of a presser plate.

It is yet another object of this invention to provide a novel compression tool wherein arcuate movement of the handle member is translated into axial movement of a presser plate through pivotal links.

It is still another object of this invention to provide a novel compression tool wherein the platen may be changed to match the objects to be compressed.

It is yet another object of this invention to provide a novel compression tool wherein one end member may be selectively opened to permit easy interchange of the platens and to permit midspan connection to a through cable.

Other objects and features of the invention will be pointed out in the accompanying drawings, which disclose by way of example, the principles of the invention, and the best mode which has been contemplated for carrying them out.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings in which similar elements are given similar reference characters:

FIG. **1** is a left side elevation of a tool constructed in accordance with the concepts of the invention.

FIG. **2** is a right side elevation of the tool of FIG. **1**.

FIG. **3** is a front elevation of the tool of FIG. **1** with the platen and presser plate removed.

FIG. **4** is a left side elevational, partially in section, of the tool, as in FIG. **1** with a face plate removed and fragmented to show the interval details thereof.

FIG. **5** is a left side elevational view similar to FIG. **4** showing the tool details in the condition at the completion of an operation.

FIG. **6** is a right front prospective view of the platen of the tool of FIG. **1**.

FIG. **7** is a right front prospective view of a further platen for use with the tool of FIG. **1**.

FIG. **8** is a right front prospective view of still a further platen for use with the tool of FIG. **1**.

FIG. **9** is a right prospective view of the tool of FIG. **1** with the platen removed and the tool in an open condition.

FIG. **10** is a fragmentary left front prospective view of the tool of FIG. **1** with the tool in an open condition and indicating the manner of installation of a platen on the tool.

FIG. **11** is a right front prospective view of the tool of FIG. **1** showing the positioning of the tool parts prepar-

atory to receiving a connector partially assembled to a flat cable.

FIG. **12** is a right front prospective view of the tool of FIG. **11** in operation to assemble the connector to the flat cable.

FIG. **13** is a right front prospective view of the tool of FIG. **1** in an open condition for receipt of a connector and flat cable to terminate the cable midspan.

FIG. **14** is a right side elevation, with face plate removed, showing a modified tool constructed according to the concepts of the invention.

FIG. **15** is a fragmentary side elevation, greatly enlarged showing the full stroke compelling mechanism of the tool of FIG. **14**.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now to FIGS. **1**, **2** and **3**, a tool **20** constructed in accordance with the concepts of the invention is shown. A left face plate **22** (see FIG. **1**) has a frame portion **24** and a fixed handle portion **26**. Right face plate **28** (see FIG. **2**) similarly has a frame portion **30** and a fixed handle portion **32**. The fixed handle portions **26**, **32** are fastened together by fasteners such as **34** spaced along their lengths. Fixed handle portions **26**, **32** are spaced apart by spacers (not shown) to form a unitary fixed handle **36**, and may have a grip **38** placed thereover to make handling and use of tool **20** easier. The frame portions **24**, **30** are also fastened to one another by fasteners **40** and held in spaced apart relationship adjacent the top edges **42**, **44**, respectively, thereof, by spacers (not shown) and a nose piece **46** (see FIG. **3**). A left insert **48** (see FIG. **1**) and a right insert **50** (see FIG. **2**) are assembled to one another with a spacer **49** (see FIG. **4**) therebetween and to the heel of left frame portion **24** and the heel of right frame portion **30** by the pivot pin **52**. A latch bar **54** is placed between inserts **48**, **50** and the bar **54** and inserts **48**, **50** are joined by pivot pin **56** (see FIG. **3**). The latch bar **54**, as will be described in more detail below, is free to pivot about pivot pin **56**. Pin **58** also holds inserts **48**, **50** and the spacer **49** together. In addition, pin **58**, adjacent insert **48** is contoured to a conical shape to act as the platen retaining pin **60** to be described in greater detail below.

Left movable handle member **62** (see FIG. **1**) is assembled to right movable handle member **64** (see FIG. **2**) by means of fasteners **66** and held in spaced apart relationship by spacers (not shown) to form a unitary handle **68** which may also have thereon a grip **71**. Movable handle **68** is pivoted adjacent one end, as will be described below, and is permitted to move arcuately towards and away from fixed handle **36**. The position of movable handle **68** shown in FIGS. **1** and **2** is the initial or static position. A presser plate **70** is coupled to movable handle **68** and is caused to be moved axially toward and away from inserts **48**, **50** as will be described below. A platen **72** is positioned on inserts **48**, **50**. As shown in FIG. **11**, a connector **74** having a top portion **76** and a bottom portion **78** loosely coupled together with a flat cable **80** placed therebetween is placed in tool **20** so that the bottom portion **78** rests on platen **72**. The movable handle **68** is then operated towards fixed handle **36** causing the presser plate **70** to move axially towards platen **72** and cause the connector **74** to close and its contacts (not shown) to engage the conductors of the flat cable **80** as is shown in FIG. **12**.

The platen **72** of FIGS. **1** and **2** is better shown in FIG. **6**. The platen **72** is formed so that proper support can be given to a connector to be joined to a cable. Thus, in FIG. **6**, platen **72** has a horizontal surface **82** upon which a connector base portion can be placed. Two upstanding retaining walls **84**, **86** extending upwardly from surface **82** support the connector against lateral movement out of contact with the platen **72**. The retaining wall **84** extends the length of platen **72** but retaining wall **86** is shorter to provide access to the connector for the flat cable **80** to be assembled to the connector **74** as is shown in FIGS. **11** and **12**. The platen can be modified as required to match any desired connector, cable or connector-cable arrangement. In FIG. **7**, the platen **90** has a horizontal surface **92** with upstanding retaining walls **94**, **96** between which the connector is placed. As with platen **72** the wall **94** extends the length of the platen **90** while wall **96** is a partial wall. Platen **90** is arranged to work with a connector of greater height than was platen **72**. As a result, to be able to handle a taller connector, the surface **92** is positioned further below the top surface of wall **94**, as shown by the distance identified as H_2 in FIG. **7**, than surface **82** is below the top surface of wall **84** as shown by the distance identified as H_1 in FIG. **6**. Platen **100** as shown in FIG. **8** is another form which is intended to assemble a cable to a connector having exposed contacts extending from its bottom surface. Horizontal surface **102** is provided with a number of slots **104** to receive the extending contacts while the lands **106** between the slots **104** support the connector. A single upstanding retaining wall **108** is provided. Although three different platen arrangements are shown, it should be understood that any shaped platen can be used consistent with the tool size and connector-cable arrangement.

To hold the platen in place, each of the platens are fitted with further retaining walls **110**, **112** which provide therebetween a recess **114** as is shown in FIG. **8**. The base of recess **114** is arranged to be supported by the tops of inserts **48**, **50** and the spacer therebetween. The wall **110** extends along the outer surface of insert **48** (see FIG. **1**) while wall **112** extends along the outer surface of insert **50** (see FIG. **2**). A flexible platen retaining member **116** is fixed within a recess **118** (see FIG. **1**) in one side of the platen **100** which extends into retaining wall **110** of FIG. **8**. The member **116** is fixed to the platen **72** by fastener **120** and has an aperture **122** therein to receive the platen retaining pin **60** and thus retain the platen **72** on the inserts **48**, **50**. The member **116** is contoured such that free end **124** (see FIG. **10**) can be deflected by the operator's finger or by contact with pin **60** as the platen **72** is installed or removed. FIG. **10** shows the latch bar **54** disengaged with the inserts **48**, **50** rotated about pivot pin **52** to facilitate the placement and engagement of the platen **72** with the tool **20**.

The latch bar **54**, has a slot **125** adjacent its free end (see FIG. **9**) and is arranged to receive pin **126** therein. Latch bar **54** is urged by compression spring **128** (see FIG. **4**) between end **51** of spacer **49** and the tapered portion **53** of latch bar **54** in a counterclockwise direction assuring engagement of pin **126** by slot **125**. Thus, when it is required to insert or remove a platen such as **72**, the latch bar **54** is rotated away from the pin **126** to disengage slot **125** from pin **126** and permit the inserts **48**, **50** and latch bar **54** to rotate exposing the upper surfaces of inserts **48**, **50** and spacer **49** as is shown in FIG. **9**. This ability to rotate the entire platen area away from the tool face plates **22**, **28** also permits the tool **20** to be used for midspan joints. In the FIGS. **11** and **12**, a connector **74** was coupled to the very end of flat cable

80. To use a tool limited to such types of joints would mean that once terminated the flat cable could not be tapped unless all previous connectors were removed and the tap connector and tool passed along the entire cable length from one end to the tap location or the flat cable would have to be cut thus interrupting service on the cable, and each cable end coupled to connectors and the connectors jumpered. In the instant invention, tool **20** can be opened as above set forth with respect to FIGS. **4** and **9** and a connector **74** and a flat cable **80** entered into the platen **72** area through the location normally occupied by latch bar **54** as shown in FIG. **13**.

Turning now to FIGS. **4** and **5**, the manner of operation of the tool **20** will be set forth. Two pairs of links **130**, **132**, are coupled at one end by the fasteners **40a**, **40b** that hold the face plates **22**, **28** together. Only one of each pair of links **130**, **132** is visible in each of the FIGS. **4** and **5**. The actual arrangement for the pair of links **130** is face plate **22**, link **130**, a spacer, the second link **130** and the face plate **28**. Links **132** are arranged similarly except that a reduced width portion **45** of nose piece **46** takes the place of the spacers. The opposite ends of links **130**, **132** are connected to a drive bar **134** by means of pivot pins **136**. Drive bar **134** is connected by means of pivot pin **138** to the movable handle **68**. In addition, a pivot pin **140** connects movable handle **68** to presser plate **70**. Links **142**, **144** are coupled by pivot pins **146**, **148** respectively to drive bar **134**. In addition, the links **142**, **144** are coupled to presser plate **70** by pivot pins **146**, **148**. The effect of this arrangement of links is to convert the arcuate motion of the movable handle **68** towards the fixed handle **36** into axial movement along axis **71**, of presser plate **70** towards platen **72** using the pivotal movement of links **130**, **132**, **142**, **144**.

As the movable handle **68** is moved to fixed handle **36**, the drive bar **134** undergoes two movements. Considering pivot pin **140** to be fixed, merely for an understanding of the tool **20** operation the drive bar **134** is moved in the direction of arrow **150** and at the same time is moved downwardly in the direction of arrow **152**. These movements are caused by the straightening of the links **130**, **132** to the positions shown in FIG. **5** which places the drive bar **134** to the right and below the position it occupied as shown in FIG. **4**. [Now assuming that pivot pin **138** is fixed, the pivot pin **140** causes the presser plate **70** to move to the left in the direction of arrow **154** and downwardly in the direction of arrow **152**. The net effect of the rightward movement (in direction of arrow **150**) of drive bar **134** and the leftward movement (in direction of arrow **154**) is to retain the presser plate **70** in its desired horizontal position.] *In the course of movement of drive bar 134, links 142 and 144 are caused to assume dispositions also shown in FIG. 5, presser plate 70 being constrained against movement in directions 150 and 154 by a guide comprised of pin 141 and presser plate slot 70a. Presser plate 70 is accordingly driven downwardly in the direction of arrow 152.* Since the movement of drive bar **134** and presser plate **70** are both downward (in direction of arrow **152**) they are cumulative and together provide the movement of presser plate **70** necessary to assemble the connector and cable. Although for the purposes of the description, the pivots **138** and **140** have been assumed alternately fixed, the actual pivot point is phantom point at a location different from both. It is merely the connection of links **130**, **132** to the face plates **22**, **28** by pins **40a** and **40b** that keeps the movable handle **68** in the tool **20**.

To decrease the size of the tool **20** the links **142**, **144** are coupled to presser plate **70** within recesses **147**, **149**. The initial position of the drive bar **134** is set by a compression spring **151** coupled to drive bar **134** at one end and to nose piece **46** on the other. The initial position of compression spring **151** is set by an adjustable stop **153** in the face of nose piece **46**. As drive bar **134** moves to the left in the direction of arrow **154** (see FIG. **5**), pivot pin **138** causes movable handle **36** to move to its open position as in FIG. **4** and pivot pin **140** causes presser plate **70** to move to the right in the direction of arrow **150**. The pivoting of the links **130**, **132**, **142**, **144** raises the presser plate **70** to its original position and the tool **20** is available for a further termination.

In order to assure that the proper connection between a connector and cable is made and to avoid the possibility that an operator may open the tool **20** before a proper connection is made a device known as a full stroke compelling mechanism is employed. This mechanism is engaged when more than a minimum travel of movable handle **68** towards fixed handle **36** has taken place. Once the mechanism is engaged, it is only possible to open the tool **20** after a specified travel of movable handle **68** has taken place. This assures a good connection each time. Turning to FIGS. **14** and **15**, a full stroke compelling mechanism is shown. Coupled to fixed handle **36** is a plate **160** with a number of recesses **162** thereon. A pawl **164** is mounted to movable handle **68** by a pivot pin **166**. The pawl **164** has a nose portion **168** arranged to engage the recesses **162**. The pawl **164** is coupled by tension spring **170** to a fixed pin **172** mounted on movable handle **68**. Once nose **168** of pawl **164** engages the first recess **162** pawl **164** cannot be disengaged from plate **160** until the rear clearance area **174** of plate **160** is reached at which time spring **170** will rotate pawl **164** counterclockwise about pivot pin **166** disengaging the nose **168** from the recesses **162** and allowing the pawl **164** to pass over the recesses without engagement as the movable handle **68** is moved to the open position.

If it is desired to use this tool as a cutting tool, presser plate **70** could take the form of a cutting blade and platen **72** be used as an anvil, or both presser plate **70** and platen **72** could both take the form of blades.

While there have been shown and described and pointed out the fundamental novel features of the invention as applied to the preferred embodiments, it will be understood that various omissions and substitutions and changes of the form and details of the devices illustrated and in their operation may be made by those skilled in the art, without departing from the spirit of the invention.

I claim:

1. A hand tool for joining two or more objects together comprising: a frame member having a first end portion, a second end portion and an intermediate portion therebetween; a movable support member having first and second ends, said first end pivotally coupled to said intermediate portion of said frame member to permit movement of said support member second end with respect to said frame member second end portion; a latch bar pivotally coupled to said second end of said support member and releasably coupled to said frame member second end portion to prevent relative movement of said support member with respect to said frame member; handle means having first and second ends, [said second end of said handle means pivotally coupled to said intermediate portion of said frame mem-

ber;] presser plate means; first coupling means coupled to said presser plate means and said frame member between said intermediate portion and said second end portion; and second coupling means coupling said presser plate *means* to said second end of said handle means; the arcuate movement of said first end of said handle means towards said first end portion of said frame member driving said presser plate *means* axially towards said support member.

2. A tool as defined in claim 1, wherein said first coupling means comprises pivotally mounted links.

3. A tool as defined in claim 1, wherein said first coupling means comprises a plurality of pivotally mounted link pairs.

4. A tool as defined in claim 1, wherein said first coupling means comprises a drive bar and pivotally mounted links.

5. A tool as defined in claim 1, wherein said first coupling means comprising a drive bar and a plurality of pivotally mounted links.

6. A tool as defined in claim 1, wherein said first coupling means comprises a drive bar and first links each having a first end and a second end, said first ends of each of said first links pivotally mounted to said frame member and said second ends of each of said first links pivotally mounted to said drive bar.

7. A tool as defined in claim 1, wherein said first coupling means comprises a drive bar *and a presser plate*; first links each having a first end and a second end, said first ends of each of said first links pivotally mounted to said frame member and said second ends of each of said first links pivotally mounted to said drive bar; and second links each having a third end and a fourth end, said third ends of each of said second links pivotally mounted to said drive bar and each of said fourth ends of said second links pivotally mounted to said presser plate.

8. A tool as defined in claim 1 wherein *said presser plate means comprises a presser plate;*said second coupling means comprises a pivoted connection between said second end of said handle means and said presser plate.

9. A tool as defined in claim 1, wherein said first coupling means comprises a drive bar *and a presser plate* and first links each having a first and a second end, said first ends of each of said first links pivotally mounted to said frame member and said second ends of each first links pivotally mounted to said drive bar; and said second coupling means comprising a pivotal connection between said second end of said handle means and said presser plate.

10. A tool as defined in claim 1, wherein said first coupling means comprises a drive bar *and a presser plate*; first links having first and second ends, said first ends of each of said first links pivotally mounted to said frame member and said second ends of each of said first links pivotally mounted to said drive bar; second links each having a third and a fourth end, said third ends of each of said second links pivotally mounted to said drive bar and each of said fourth ends of said second links pivotally mounted to said presser plate; and said second coupling means comprising a pivotal connection between said second end of said handle means and said presser plate.

11. A tool as defined in claim 1, further comprising a platen selectively installable to said support member, said platen configured to accept and support the objects to be joined.

12. A tool as defined in claim 1, further comprising a resilient member urging said latch bar into a locking condition with said second end portion of said frame member.

13. A hand tool for joining two or more objects together comprising: a frame member having a first end portion, a second end portion and an intermediate portion therebetween; a support member having first and second ends, said first end coupled to said intermediate portion and said second end coupled to said second end portion; handle means having first and second ends [said second end of said handle means pivotally coupled to said intermediate portion of said frame member]; *a* presser plate [means]; first coupling means coupled to said presser plate means and said frame member between said intermediate portion and said second end portion; said first coupling means comprising a drive bar; first links having first and second ends, said first ends of each of said first links pivotally mounted to said frame member and said second ends of each of said first links pivotally mounted to said drive bar; second links each having a third and a fourth end, said third ends of each of said second links pivotally mounted to said drive bar and each of said fourth ends of said second links pivotally mounted to said presser plate; and second coupling means coupling said presser plate to said second end of said handle means; said second coupling means comprising a pivotal connection between said second end of said handle means and said presser plate and a pivotal connection between said second end of said handle means and said drive bar; the arcuate movement of said first end of said handle means towards said first end portion of said frame member driving said presser plate axially towards said support member.

[14. A tool as defined in claim 13, wherein the arcuate movement of said first end of said handle means towards said first end portion of said frame member tending to drive said presser plate in a first direction and said drive bar in an opposite direction.]

[15. A tool as defined in claim 13, wherein the arcuate movement of said first end of said handle means towards said first end portion of said frame member tending to drive said presser plate in a first direction and said drive bar in an opposite direction, the movements of said presser plate and said drive bar being substantially equal in magnitude and cancelling any movement of said presser plate in a plane perpendicular to the axis of movement of the presser plate towards the support member.]

[16. A tool as defined in claim 13, wherein the arcuate movement of said first end of said handle means towards said first end portion of said frame member tending to drive said presser plate in a first direction along the axis of movement of the presser plate towards the support member and along an axis perpendicular to said axis of movement and said drive bar in said first direction and along an axis perpendicular to said axis of movement and opposite in direction to the movement of said presser plate; the movements of said presser plate and said drive bar being substantially equal in magnitude cancelling any movement of said presser plate in a plane perpendicular to the axis of movement of the presser plate towards the support member; and the movements of said presser plate and said drive bar being in the same direction along said axis, said presser plate is moved a distance equal to the total movement along said axis of said presser plate and said drive bar.]

17. A tool for joining objects together, comprising:

(a) a frame member having a first end portion, a second end portion and an intermediate portion therebetween;

(b) drive bar means for receiving actuating force applied to said tool at said frame member first end portion;

(c) first coupling means for interconnecting said drive bar means to said frame member intermediate portion and for displacing said drive bar means along first and second mutually orthogonal axes upon such application of actuating force to said drive bar means;

(d) compression means in said frame member for controlling the position of said drive bar means;

(e) presser plate means for engaging said objects;

(f) guide means for constraining movement of said presser plate means to movement along said first axis; and

(g) second coupling means for interconnecting said presser plate means to said drive bar means for imparting such first axis movement to said presser plate means in the course of such displacement of said drive bar means along said first and second axes.

18. The tool as defined in claim 17 including means for adjusting said compression means to provide for variation in such positioning of said drive bar means.

19. The tool as defined in claim 17 wherein said drive bar means comprises drive bar having first and second ends, said drive bar defining at said first end a pivotal connection for such actuating force receipt, said compression means comprising a spring member disposed between said drive bar second end and said frame member second end portion.

20. The tool as defined in claim 19 wherein said first coupling means comprises links pivotally connected to said frame member intermediate portion and to said drive bar and wherein said second coupling means comprises links pivotally connected to said drive bar and said presser plate means.

21. The tool as defined in claim 20 wherein said links of said first coupling means and said links of said second coupling means have respective different attitudes with respect to said first axis in the absence of application of actuating force to said drive bar means.

22. The tool as defined in claim 17 further including a support member having first and second ends, said first end pivotally coupled to said intermediate portion of said frame member and said second end releasably coupled to said second end portion of said frame member, and platen means supported by said support member for engaging said objects.

23. The tool as defined in claim 22 wherein said platen means is releasably secured to said support member.

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