

[54] METHOD OF SECURING FITTINGS OR PLATES ONTO CONTAINERS OR CONTAINER PORTIONS AND A MACHINE FOR CARRYING OUT THE METHOD

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[58] Field of Search 29/432.1, 417, 526, 208 D

[57] ABSTRACT

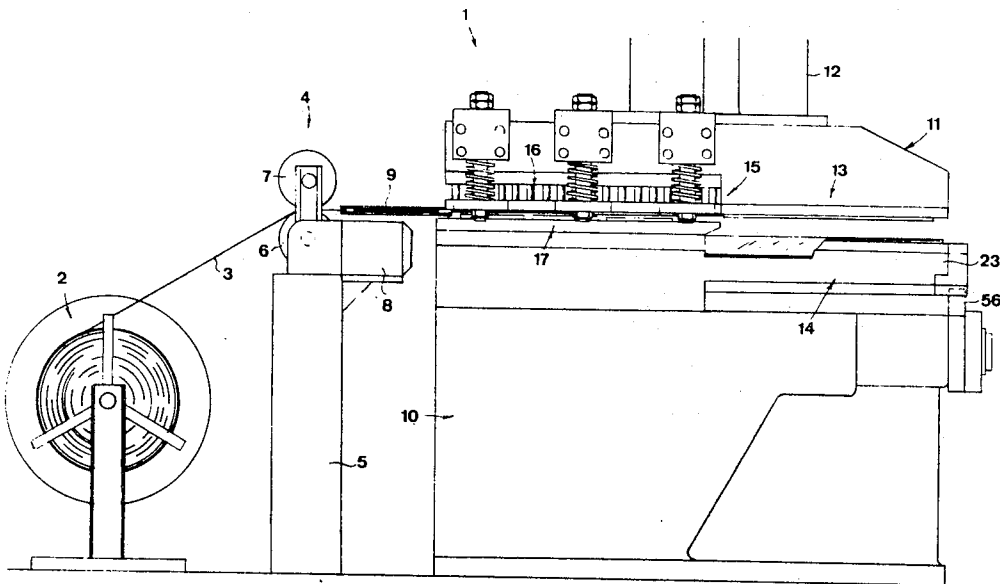
A method and machine for applying securing fittings or plates onto container and container components wherein the plates are formed from a continuous strip of stock by first stamping the strip with the necessary securing tabs, severing the completed fittings or plates from the strip and immediately thereafter directly applying the fittings or plates to the container or container components.

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30 Claims, 6 Drawing Figures



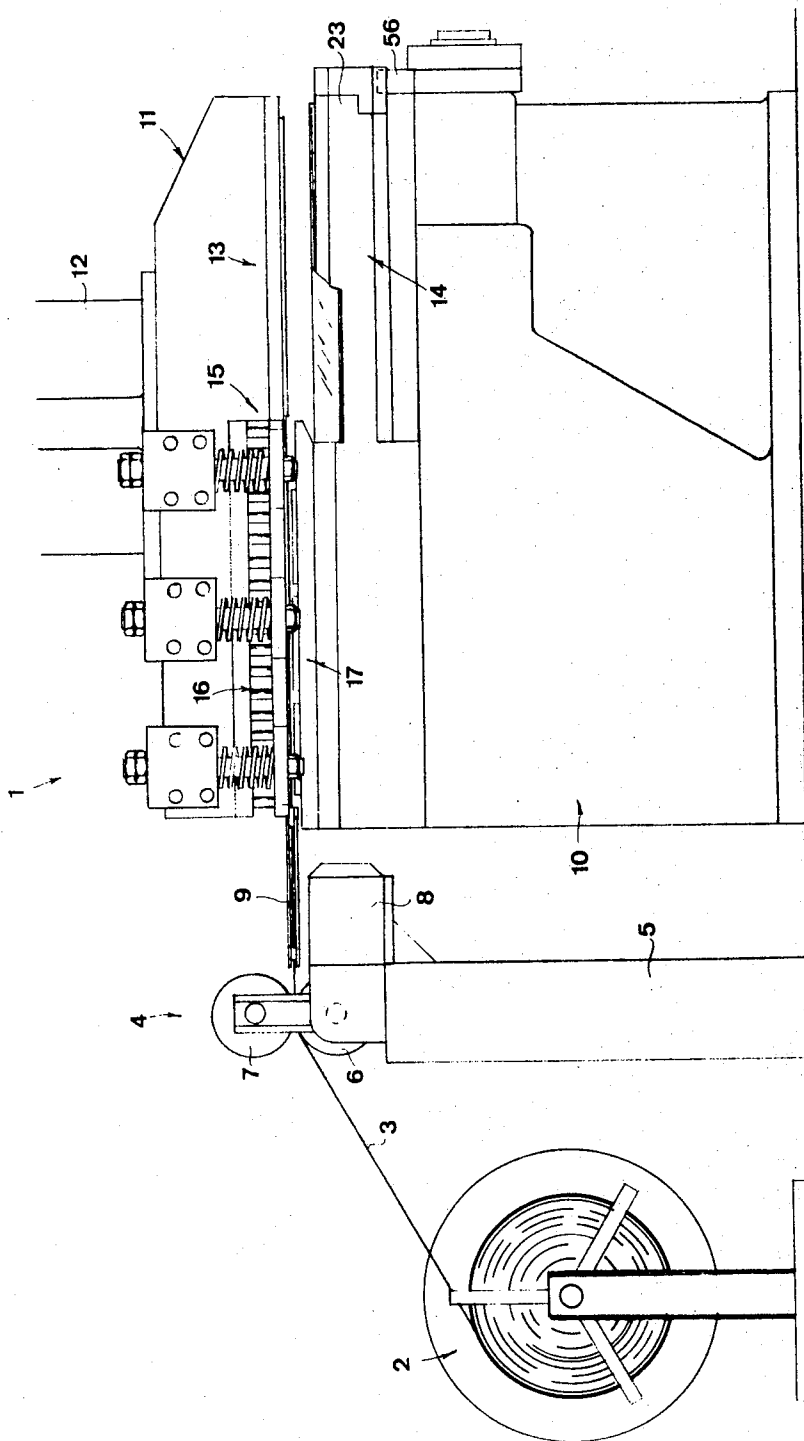
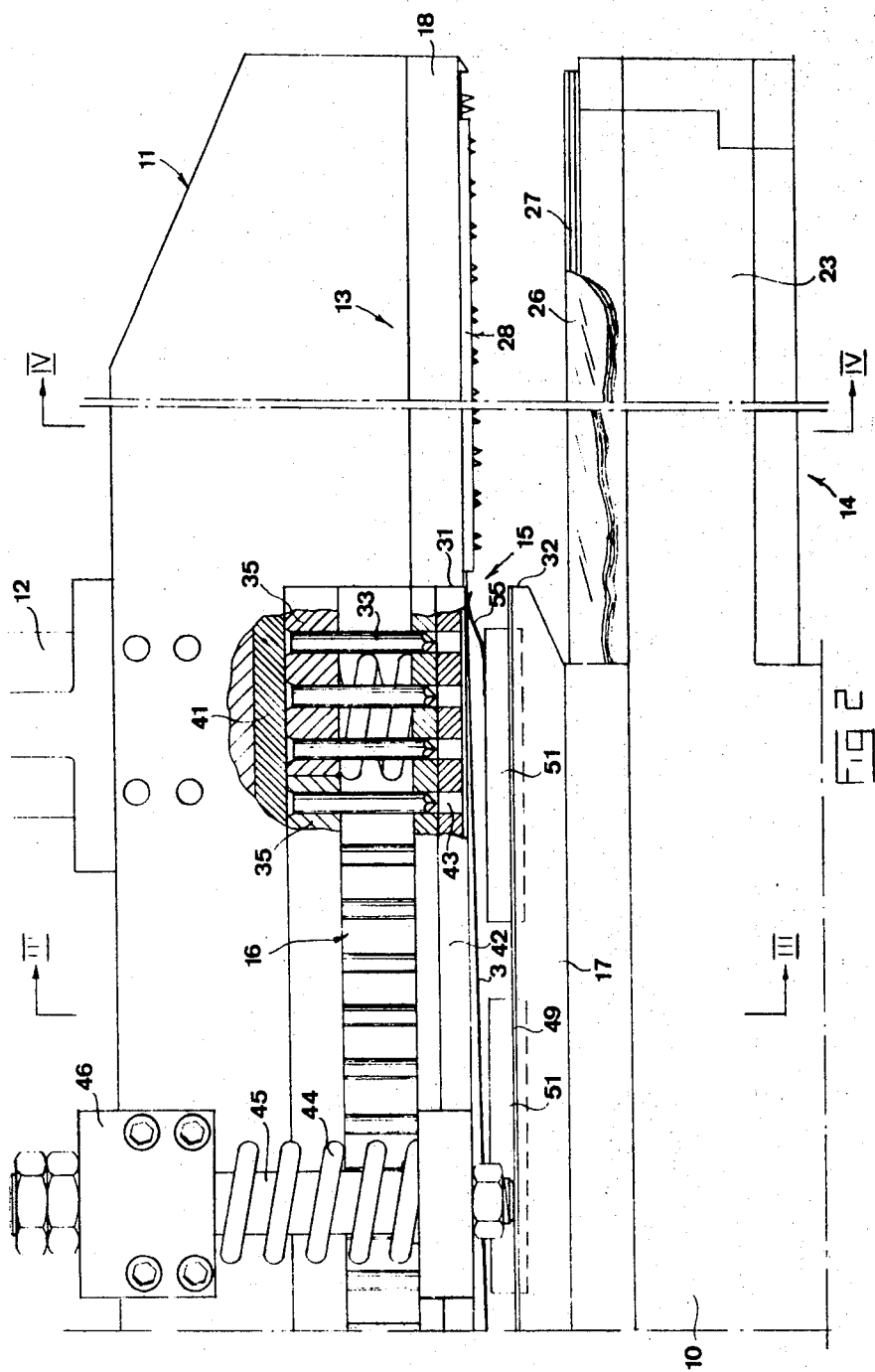


FIG. 1



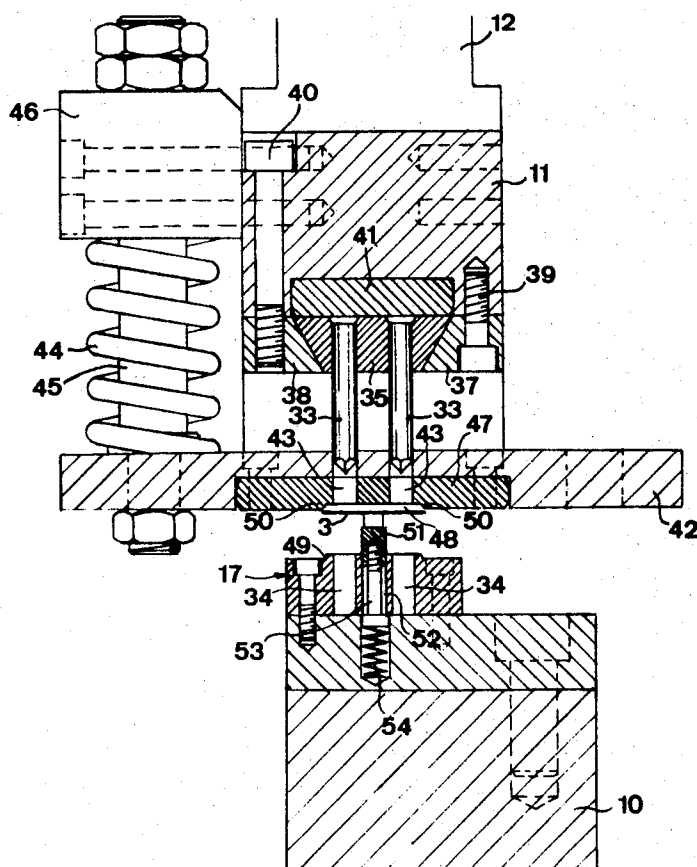


FIG 3

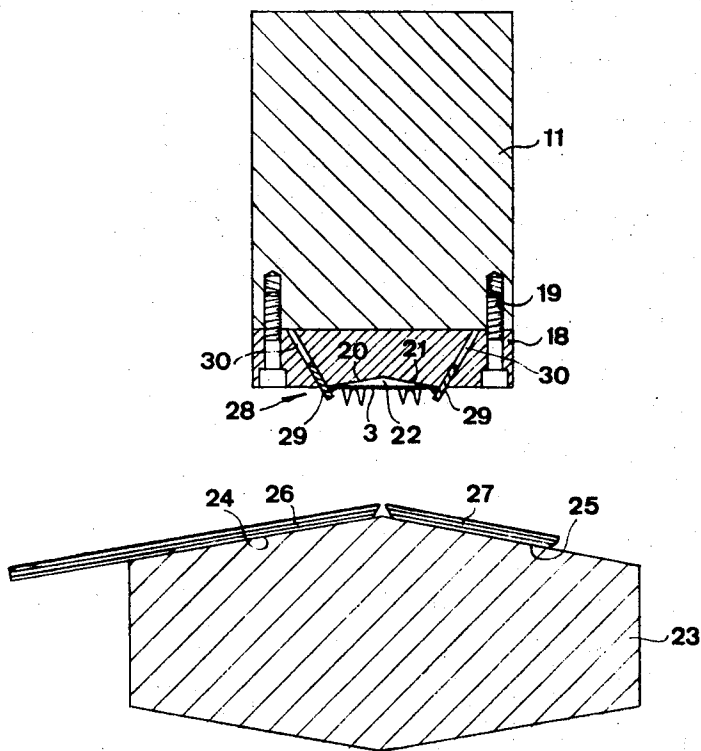
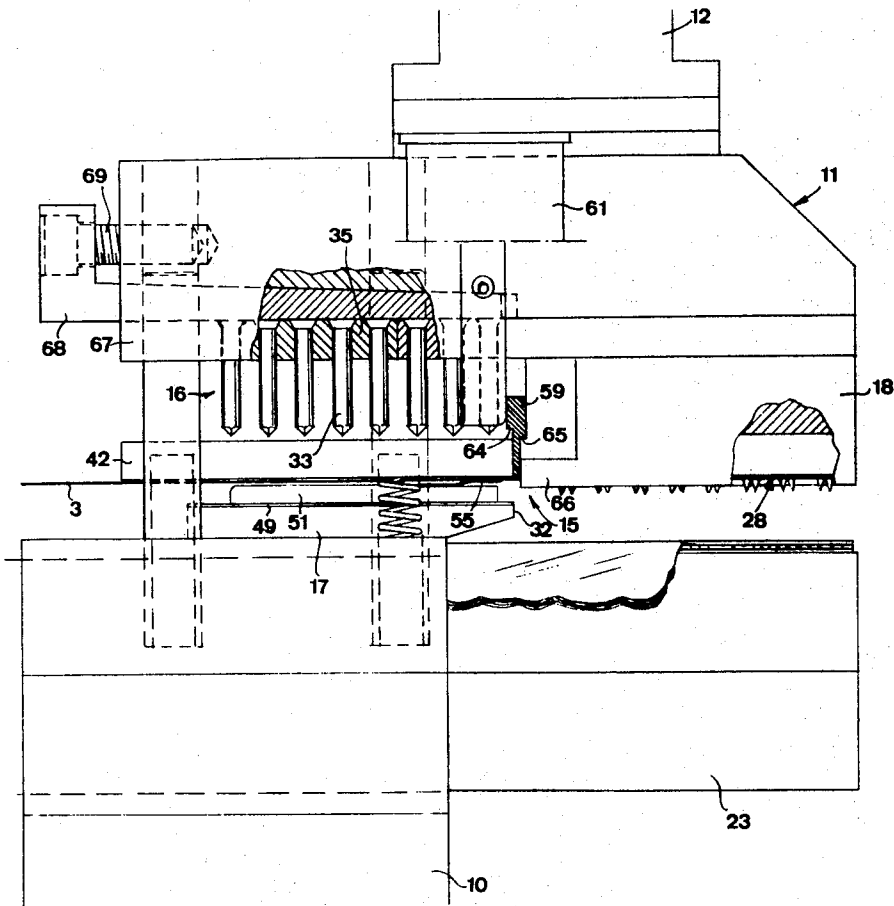


FIG 4



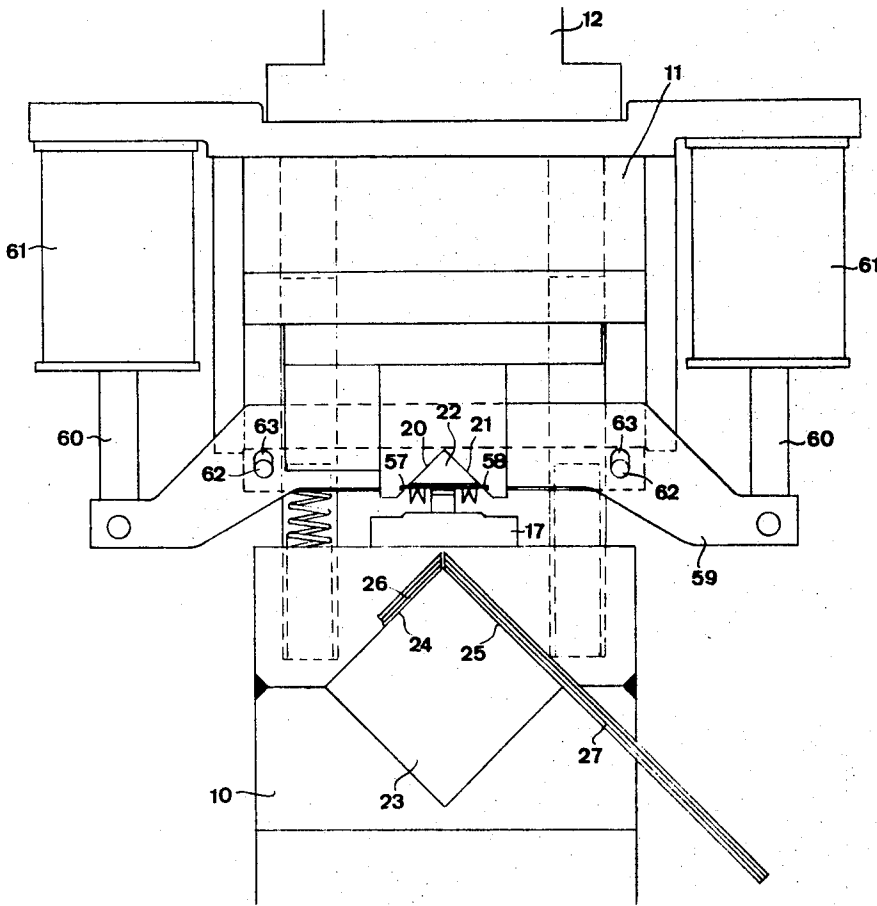


Fig 6

METHOD OF SECURING FITTINGS OR PLATES ONTO CONTAINERS OR CONTAINER PORTIONS AND A MACHINE FOR CARRYING OUT THE METHOD

This invention is related to a method of securing fittings or plates onto containers, for example cases, packings, goods, transport containers or the like or onto parts composing such containers: the method comprising the steps of feeding, in a manner known per se, a strip from a supply; imparting in the strip, by stamping, the plates with the plates having securing tabs which are drivable into the walls of the containers or container portions, and severing the strip while forming a plate of suitable length.

In a prior art, the strip is severed, after the stamping and formation of other work functions in a machine particularly designed for the purpose, into plates of a predetermined length, whereupon the plates are collected and stored to be later applied onto the containers or container portions in another plant or machine. This method has however disadvantages, primarily in that the plates must be transported from one machine to another before application on the containers. This has caused increased transport and handling costs and a need for excessively large plant spaces.

An object of this invention is to remove the above-mentioned disadvantages by a method which is characterized in that the plate is pressed onto the container portions following, preferably immediately following, the method step in which the strip is severed. The plates will thus be directly applied from the strip to the containers thereby eliminating the need for transportation of the plates between different plants or machines.

An additional object of invention is to provide a machine for carrying out the method.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings:

In the drawings:

FIG. 1 is an elevational view of a first embodiment of a machine according to the invention,

FIG. 2 is an enlarged elevational view of a portion of the machine shown in FIG. 1 with parts broken away;

FIG. 3 is a transverse sectional view taken along the line III—III in FIG. 2;

FIG. 4 is a transverse sectional view taken along the line IV—IV in FIG. 2;

FIG. 5 is an enlarged elevational view similar to FIG. 2 of a second embodiment of the machine according to the invention with parts broken away, and

FIG. 6 is an end view of the machine shown in FIG. 5.

The numeral 1 in FIG. 1 designates generally the portion of the machine which performs work on the strip to form plates for clenching onto the container parts. The numeral 2 designates generally a strip supply having a strip 3 which is fed along through a feed station 4 to the strip forming portion 1. The strip supply 2 may consist of a reel having a strip roll of a length of several hundreds of meters. The strip 3 is formed preferably of metals, for example carbon steel, and has a width and a thickness to permit ready working of the strip. Metal

strips 3 may have a width of 3 – 5 cm and a thickness of 0.5 – 1.5 mm. The invention is, however, not limited to forming strips of metals as other materials are conceivable.

5 The feed station 4 includes two rolls 6 and 7 mounted on a column 5, the roll 6 being drivable by means of a motor 8 while the roll 7 resiliently clamps the strip 3 travelling between the rolls. From the feed station 4 to the forming portion 1 of the machine the strip 3 travels through guide means 9, which may consist of two elongate sheet plates spaced from each other by spacers between which the strip is guided.

15 The forming portion 1 of the machine includes a fixed or stationary frame generally designated by the numeral 10 and a tool movable relative to the frame 10 and generally designated by the numeral 11. This tool, in the illustrated embodiment, includes an elongated beam-like body which is vertically movable towards and away from the frame 10 by means of a driving mechanism (not shown in details), as for instance a driving mechanism similar to that used in reciprocating presses. The driving mechanism is generally indicated by the connections 12.

25 According to the invention there is provided on the movable tool 11 press means 13 corresponding to a backing or anvil 14 of frame 10. There is further a shearing means 15 provided on the movable tool 11 and stamping means 16 matching a die 17 in frame 10.

30 FIGS. 2 and 4 show more in detail the tool or press means 13 and the anvil 14. The press means 13 includes a slide plate 18 disposed at or adjacent the discharge end of tool 11 and is in the form of an elongate plate, preferably of hard metal, which is attached to the lower side of tool 11 by bolts or other fastening members 19. The slide plate 18 has on its lower side a V-formed recess defined by two press surfaces 20 and 21. The illustrated angle between the two press surfaces 20 and 21 is about 160°.

40 The anvil 14 includes an arm 23 projecting from the frame 10 and disposed under the slide plate 18. The upper side of arm 23 has, as shown in FIG. 4, two support surfaces 24, 25 disposed at an angle to each other and on which two container walls 26, 27 are supported during a press operation. The angle between the support surfaces 24, 25 is in this case 200°, whence follows that the angle between the press surfaces 20, 21 of the slide 18 together with the angle between the support surfaces 24, 25 make four right angles or angle total of 360°. Also the under side of the arm 23 is V-shaped, the angle between the two lower surfaces of the arm 23 being the same as the angle between the two upper support surfaces 24, 25 thereof.

55 On the under side of the slide 18 is provided a holder or retainer 28 to retain and guide a plate formed from the strip 3 relative to the slide until such time as the formed plate is clenched into the container walls 26, 27. According to a particular embodiment of the invention the retainer 28 is in the form of two retainer bodies 29 inclined relative to each other and movable in slots 30 in the slide plate 18. The retainer bodies 29 are preferably elongated webs retained in the slots 30 by stop members not shown. In FIGS. 2 and 4 the retainer bodies 29 are shown in a first position projecting out of the slide, in which the distance between adjacent portions of the retainer bodies, i.e., the distance between the lower edges of the retainer bodies, is less than the width

of the plate formed from the strip 3. Thereby the plate is retained between the obliquely inwardly extending lower portions of the retainer bodies. As the slide 18 is displaced in a direction towards the backing arm 23 during a press operation and the retainer bodies 29 5 come into contact with the container walls 26 and 27, the retainer bodies will be forced into the slots 30 to a second position in which the distance between the lower edges of the retainer bodies will be greater than the width of the formed plate, upon which the formed 10 plate will be released and permitted to be clenched into the container walls. The retainer bodies 29 may, as shown in FIG. 4, be movable from the second position into the first position by the action of gravity alone, i.e., 15 the fall by their own weight down into the first position in which the strip is retained relative to the slide. Springs, for example helical compression springs, may be positioned in the slots 30 for resiliently urging the retainer bodies into the illustrated first position shown. FIG. 4 shows the retainer bodies 29 disposed immediately 20 adjacent to the V-formed recess 22 in the slide.

The shearing means 15 includes a first edge or rim 31 formed on the slide plate 18 and movable relative to a 25 second edge or rim 32 disposed on the frame 10, preferably on the die 17 thereof, and located in the same vertical plane as the first edge 31. FIG. 2 shows the second edge 32 disposed at a fixed height above the backing arm 23. Accordingly the strip 3 will be severed into a separate plate immediately before the clenching of 30 the plate onto the container portions.

FIGS. 2 and 3 show more particularly the stamping means 16 of the machine. The figures show the stamping means 16 as including a plurality of stamping members 33 detachable or removable individually or by 35 groups and movable into bores 34 of the die 17. The stamping members 33 consist each of a cylindrical pin, the downward ends of which are bevelled and pointed to penetrate the strip and stamp out in the strip, e.g., four 40 securing tabs. The stamping members are disposed in two rows, parallel to each other, to form two rows of securing tabs in the strip. It is possible to arrange the separate stamping members in another manner, for example in staggered configurations or in more than two rows. 45 The stamping members are attached by groups to a number of stamp holders 35. In the embodiment shown, each stamp holder 35 is associated with three pairs of stamping members, it being however possible to provide a greater or lesser number of stamping members on each stamp holder. The stamp holders together 50 with the stamping members are detachably connected to the movable tool 11 in the manner shown in FIG. 3. The faces 36 of the stamp holders are inclined and abut against a pair of faces, inclined in a corresponding manner, of two webs or guides 37 and 38. Each web 37 is 55 fixed to the beam-like body 11 by bolts 39 or other suitable fastening members accessible from the lower side of the beam body 11. The other web 38 is applied to the beam body 11 by means of bolts 40 which are easily accessible from the upper side of the beam body. 60

Between the upper side of the stamp holders and the beam body 11 is provided an adapter 41 which, as well as the stamp holders and the webs 37, 38, is preferably formed of hard metal. When the bolts 39 and 40 are 65 tightened and the webs 37, 38 abut against the beam body 11, the stamp holders 35 are clamped and firmly fixed relative to the beam body 11. When one or more

stamp holders are to be removed the bolts 40 are released to discontinue the clamping action of the web 38 against the stamp holders, whereupon the adapter 41 is removed and the stamp holder in question may be removed or mounted respectively. It is thus possible to adjust the number of stamp holders according to different lengths of the plates produced in the machine. Plates of a maximum length implies the use of a full number of stamping members, and production of plates of a lesser length implies removing a number of stamp holders and stamping members associated thereto in accordance with the length of the plates.

Between the stamping means 16 and the die 17 there is provided a stripper element 42 to remove the strip from the stamping member after the stamping of securing tabs in the strip. This stripper element includes a plate having bores 43 for receiving the stamping members 33, which plate is resiliently urged downwardly relative to the beam body 11 by springs 44, preferably 20 helical compression springs. To guide the stripper plate 42 so as to limit its movement at all times to a vertical direction, there are uprights 45 connected to the plate and fitted for vertical sliding movement in holders or brackets 46 fixed on both sides of the beam body 11. For the sake of simplicity, FIG. 3 shows only one guiding upright 45 and the associated holder 46, although 25 guide means are provided at both sides of the beam body 11. The helical compression springs 44 tend to maintain the stripper plate 42 spaced from the beam body 11, the stamping members 33 taking the position shown in FIGS. 2 - 3, in which the lower portions of the stamping members are not in contact with the strip 3.

On the lower side of the stripper plate, or more specifically in an insert portion 47 of the plate, a depression 48 is formed which is matched by an elevation 49 35 in the die 17. This elevation 49 has a somewhat lesser width than the width of the strip 3. The depression 48 in the insert portion 47 has two more or less inclined side surfaces 50. Obviously, when the elevation 49 in a stamping operation penetrates into the depression 48, the two edge portions of the strip 3 will be bent or inclined relative to the strip. These obliquely bent edge 40 portions of the strip will subsequently, when clenched onto container portions, penetrate into the body of the container portions, thereby preventing the edge portions of the resultant plate from coming loose from the container portions.

The die 17 carries a number of spring bodies 51 50 which serve to maintain the strip 3 at a distance from the upper side of the die, the distance being based on the length of the securing tabs, thereby avoiding the securing tabs from coming into contact with the die after the stamping of the tabs. The spring bodies 51 may be in the form of elongated metal pieces which are movable in milled recesses 52 in the die through the medium of bolts or other members 53, actuated by helical 55 compression springs 54, the springs 54 and the bolts 53 tending to maintain the bodies 51 at a constant position projecting out of the die. On the spring body 51, which is disposed next to the shearing means 15, a guide element 55 is provided in the form of a bent plate spring, serving to guide the stamped strip 3 into the retainer 28 60 of the slide 18.

It will be observed with reference to FIG. 1 that the arm 23, serving as a backing for the press means 13, is of a cantilever type to enable a container body, e.g.,

consisting of four walls to be moved around the arm 23 when clenching at least the last one of the four corner plates holding together the walls in question. Should however the arm 23 be extremely long to permit clenching of long plates, the arm may, as shown in FIG. 1, at its outer end be supported by a support member 56 which is pivotally movable between a rest position out of contact with the arm to permit a disposition of the container frame around the arm and a working position in which the member supports said end of the arm. The operation of the pivotable support member 56 is associated with the operation of the machine to cause the support member to support the arm during the pressing step only, while it otherwise assumes a rest position out of contact with the arm.

The container portions to which the plates are to be clenched consist preferably of some wood material, for example plywood. It is however also possible to use the machine in connection with container portions consisting of another material, for example paper, plastics or combinations of paper, wood and plastic.

The machine described operates in the following manner. From the supply reel 2 the strip 3 is fed stepwise into the forming portion 1 of the machine by means of the feed rolls 6 and 7. By each step the strip is fed along a length corresponding to the length of the intended plate, this length in turn being determined by the dimensions of the container or the container portions to which the plate is to be clenched. When feeding of the strip is performed the movable tool 11 is at a rest position at a maximum level wherein the stamping members are not in contact with the strip. When a feed step is accomplished, the movable tool 11 is caused by means of the driving mechanism to move in a downward direction.

In a first step the first series of securing tabs are stamped out in the strip 3 so that the stamping members 33, when the tool 11 has moved downward a distance to make the stripper plate 42 abut against the die 17, will cut through the strip and enter into the holes 34 of the die, the strip material being cut through by the stamping members and formed into tabs against the walls of the holes 34. In this phase the tool 11 works against the action of the compression springs 44. Just before the stripper plate 42 comes into contact with the die 17 the bending or impression of the edge portions of the strip 3 will be performed, in that the elevation 49 of the die presses the strip into the depression 48 of the stripper plate, the edge portions of the strip adopting the form of the inclined side walls 50 of the depression.

In another step timed independently of the stamping step, the strip 3 is severed forming a separate plate which has thereon securing tabs formed in a preceding stamping operation. The severing of the strip takes place by means of the shearing means 15, the first edge 31 of the slide 18 during the downward movement of the tool passing the second edge 32 to accomplish the severing.

In a third step, following the shearing step, the severed plate will be clenched onto the container portions in question. This operation takes place by means of the slide 18, the retainer of which retains and guides the plate until the slide reaches its lower end position wherein the plate will be clenched onto the container portions by means of the securing tabs.

When the tool 11 after the downward work stroke again moves upwardly the stripper plate 42 will remove the strip 3 out of contact with the stamping members 33, the springs 44 removing the plate 42 and thereby also the strip from the stamping members. At the same time the spring bodies 51 having been depressed during the stamping moment will be moved upward by the springs 54 and maintain the strip 3 at a certain level above the die 17. Thereby the stamped securing tabs will not come into contact with the die, and a lengthwise feeding of the strip may take place notwithstanding the downwardly projecting securing tabs.

When the tool 11 has reached its upper end position, a new length of strip will be fed forwardly and the strip portion having the series of securing tabs stamped out therefrom in the preceding work step will be moved over to the press means 13. Then the process will be repeated, i.e., a new series of securing tabs will be stamped out of the strip, while the strip will be severed to form a plate and the plate disposed in the retainer 28 of the press means 13 will be clenched onto the container portions in question.

The operation of the tool 11 will most preferably be effected by means of manually actuatable control means, the operator applying the container portions 26 and 27 to the backing 14 controlling the movements of the tool.

FIGS. 5 and 6 show an embodiment of a machine which is designed for shorter plates than those of the machine of FIGS. 1-4 and particularly adapted for securing plates onto cases or containers the walls of which may form an angle of 90° to each other. Similar to the machine previously shown, the machine shown in FIGS. 5 and 6 includes a frame 10 and a movable tool 11 which is connected through a connection 12 to a driving mechanism of a suitable kind. On the frame 10 is disposed a projecting arm 23 having two support surfaces 24 and 25 for the container walls 26 and 27. The movable tool 11 has a slide 18, a shearing means 15 and stamping means 16. On the frame 10 is disposed a die 17 for the stamping means. The machine also includes a stripping element 42, a spring body 51 and a guide element 55. On the die 17 is provided an elevation 49 matching a depression in the stripper element 42.

In the embodiment shown in FIGS. 5 and 6 the angle between the two press surfaces 20 and 21 in the V-formed recess 22 in the slide is less than 90°, the angle between the press surfaces being on the order of 85°-89°. Since the two container walls 26 and 27 are disposed at right angles to each other, this will result in the two edge portions of the plate tending, on clenching, to penetrate to a greater extent than the center portion of the plate into the walls 26 and 27.

The retainer to retain and guide the plate relative to the slide 18 in this embodiment is in the form of two opposite grooves 57, 58 in the press surfaces 20, 21 of the recess 22. The distance between these two grooves is greater than the width of the strip 3 but less than the distance between the two edges of the plate after the bending of the plate. Thus the plate will be automatically released from the grooves 57, 58 in conjunction with the clenching of the plate onto the container walls 26, 27.

The shearing means 15 includes a knife or axe 59 connected to the movable tool 11, the knife being operable to shear off the strip 3 against the rim or edge 32

of the die 17. The knife 59 is, as shown in FIG. 6, at its two ends connected to piston rods 60 of two pneumatic piston-cylinder mechanisms 61 which act as springs for the knife 59. The knife is guided vertically by two pins 62 engaging in elongate guide grooves 63 in the knife. On one side of the knife (see FIG. 5) there is a first shoulder 64 which limits the stroke of the knife when the tool 11 moves downward. On the opposite side of the knife a second shoulder 65 is formed to effect the upward movement of the knife by a nose 66 of the slide 18 in the upward motion of the tool.

The separate stamping members 33 are attached in groups in a number of stamp holders 35. These stamp holders which have bevelled side surfaces, are inserted between two guidelike webs 67, only one of which is visible in FIG. 5. The stamp holders are clamped between the guides 67 by L-formed wedge means 68 which have a screw member 69 securable to the tool or the beam body 11. On tightening the screw member 69 the wedge 68 will move to the right in FIG. 5 and clamp the separate stamp holders 35 with the bevelled side surfaces of the stamp holders abutting against the corresponding bevelled side surfaces of the guides 67. Dismounting of one or more stamp holders is made by releasing the screw 69 by a simple manual operation, which will release the wedge means permitting the stamp holders to be removed from the space between the guides 67.

The machine shown in FIGS. 5 and 6 operates, except for the shearing means 15 and retainer 28, in a manner analogous to that of the machine shown in FIGS. 1 - 4.

Control and operation of the different units of the machine may be carried out by electrical, pneumatic or hydraulic means, as desired. Feeding of the strip may be carried out by means of rolls, but it is also possible to provide feeding mechanisms consisting of links or other mechanical elements grasping the strip and feeding the strip in its longitudinal direction.

The advantages of the invention are obvious as the plates may be clenched, immediately following the formation thereof, onto the containers or container portions in question. In this manner the need for special machines for clenched plates is dispensed with. Further any unnecessary transport and handling of separate plates between different stations will be eliminated. Other advantages of the machines formed according to the invention are that the machines can be adapted to plates of different lengths in a simple and limited time consuming operation.

It is understood that the invention is not limited to the embodiments of the machines described and shown in the drawings. It is thus possible to apply the invention, not only to V-formed edge plates of the kind herein referred to but also in connection with other forms of plates, for example lock plates. In such case the stamping means as well as the shearing means and the press means will be modified to provide plates of any desired form.

I claim:

1. A method of securing elements of the type including fittings and plates to container members including containers of the type including cases, packing, goods containers and the like and parts composing such containers said method including the steps of feeding a strip from a supply, forming on the strip securing tabs drivable into the member, and shearing off a length of

the strip having securing tabs thereon thus forming a securing element of a suitable length, said method being characterized by securing the securing element onto the container members in question in timed relation with the method step wherein the strip is shorn off and as part of a continuous step-by-step operation including said feeding, tab forming and shearing steps.

2. A method according to claim 1, characterized in that the securing tabs are formed by stamping out in a first step a first series of securing tabs in the strip, the securing element is formed by shearing off the strip having formed thereon a second series of securing tabs in a second step, and the clenched of said securing element onto the container member in question is effected in a third step, all of said first, second and third steps occurring simultaneously but for different portions of the strip and different securing elements.

3. A method according to claim 2, characterized by carrying out the stamping as well as the shearing and clenched during one and the same unidirectional working stroke in a movable tool comprising a stamp means, a shearing means and a press means.

4. A method according to claim 1 wherein the feeding of the strip from the supply is a stepwise feeding, the strip being by each step fed a length equal to the length of the securing element in question.

5. A method according to claim 1, characterized by the securing element being imparted with a V-formed cross sectional profile in connection with the clenched thereof onto the container member.

6. A method according to claim 1, characterized by turning edge portions of the strip relative to the plane of the strip preferably in connection with the forming of the securing tabs on the strip for penetration into the body.

7. A machine for joining container and like members, said machine including at least means providing a supply of strip, stamp means for stamping securing tabs in the strip, shearing means for severing a predetermined length of the strip having formed thereon securing tabs to form a securing element of a suitable length, said machine being characterized by press means for pressing the formed securing elements onto the container members in connection with the operation of the machine following the formation of the securing element by the severing of the strip through the shearing means.

8. A machine according to claim 7, characterized in that the stamp means as well as the shearing means and the press means are disposed on a movable common tool which is reciprocable towards and away from a cooperative stationary frame of the machine.

9. A machine according to claim 8, characterized in that the movable tool consists of an elongate, beam like body which is movable transverse to its longitudinal extension, preferably vertically.

10. A machine according to claim 8 characterized in that the press means includes a slide mounted on said tool in the vicinity of one end thereof, said slide being movable towards and away from said frame with said tool, and a suitable backing element cooperable with said slide mounted on said frame in the vicinity of one end of the frame.

11. A machine according to claim 1, characterized in that the slide has a V-formed recess formed with two press surfaces, and in that the backing has a V-formed support portion having two support surfaces directed

towards the slide and cooperable with said press surfaces.

12. A machine according to claim 11, characterized in that the angle between the press surfaces of the slide together with the angle between the support surfaces of the support portion forms a total angle of 360°.

13. A machine according to claim 11, characterized in that the angle between the support surfaces is 270° whereas the angle between the press surfaces is less than 90°.

14. A machine according to claim 10, characterized in that a retainer is provided on the slide to retain and guide the sheared off securing element relative to the slide during the time till the clenching of the securing element onto the container member.

15. A machine according to claim 14, characterized in that the retainer includes at least two holder means inclined relative to each other, which are movable in slots in the slide between a first position projecting out of the slide in which the distance between adjacent portions of the holder means is less than the width of the securing element to retain the securing element, and a second position in which the distance between adjacent portions of the holder means is greater than the width of the securing element to release the securing element.

16. A machine according to claim 15, characterized in that the holder means are movable from the second to the first position under the action of gravity.

17. A machine according to claim 15, characterized in that the holder means are movable from the second to the first position under the action of springs.

18. A machine according to claim 15, characterized in that the slide has a V-formed recess formed with two press surfaces, and in that the backing element has a V-formed support portion having two support surfaces and being directed towards the slide, and the holder means are disposed immediately adjacent to the recess.

19. A machine according to claim 14, characterized in that the slide has a V-formed recess formed with two press surfaces, and in that the backing element has a V-formed support portion having two support surfaces and being directed towards the slide, and the retainer consists of two grooves, opposite to each other, in the press surfaces of the recess, the distance between the grooves being greater than the width of the strip prior to its bending but less than the distance between the edges of the securing element after its bending.

20. A machine according to claim 10 characterized in that the backing includes an arm projecting from the frame.

21. A machine according to claim 20, characterized in that a support member is provided at one end of the arm directed away from the frame, said support member being movable between a rest position out of contact with the arm and a working position in which

the support member supports said end of the arm.

22. A machine according to claim 10, characterized in that the shearing means consists of a first edge provided on the slide, said edge being movable relative to a second edge provided on the frame, said second edge being disposed at a distance from the backing element of the press means to sever the strip on the movement of the slide towards the backing element into a plate separated from the strip prior to clenching the plate into the container portions.

23. A machine according to claim 10, characterized in that the shearing means consists of knife means connected to the movable tool, said knife means being adapted to shear off the strip against an edge provided on the frame and spaced from the backing of the press means.

24. A machine according to claim 8, characterized in that the stamping means includes a plurality of stamping members selectively dismountable and matching bores in a die provided on the frame.

25. A machine according to claim 24, characterized by said stamping means including a plurality of stamp holders which each carries a group of said stamping and which are detachably connected to the movable tool, for example by means of clamp means clamping the stamp holders to the tool.

26. A machine according to claim 24, characterized in that a stripper is provided between the stamping means and the die to remove the strip from the stamping members after the stamping of securing tabs in the strip.

27. A machine according to claim 26, characterized in that the stripper consists of a stripper plate having bores for the stamping members, said stripper plate being connected to the movable tool by springs, preferably compression springs, tending to move the stripper plate and the strip in a direction away from the stamping members, the stamping members being movable through said bores against the action of the springs when the stripper plate abuts against the die.

28. A machine according to claim 26, characterized in that the stripper has a depression to which corresponds an elevation in the die, the elevation having a lesser width than the strip to penetrate on stamping into the depression and convert the edge portions of the strip so as to make the same bent relative to a center portion of the strip.

29. A machine according to claim 24, characterized in that at least one spring body is connected to the die to maintain the strip spaced from the upper side of the die and thereby avoid that the securing tabs will come into contact with the die.

30. A machine according to claim 29, characterized in that the spring body disposed next to the shearing means has a guide element, for example a plate spring, for guiding the strip into the retainer of the slide.

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