United States Patent [19]

Bone

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[45] Reissued **July 19, 1977**

[54] **APPARATUS FOR DISPENSING FASTENERS**

[75] Inventor: **Arnold R. Bone**, Needham, Mass.

[73] Assignee: **Dennison Manufacturing Company**, Framingham, Mass.

[21] Appl. No.: **668,095**

[22] Filed: **Mar. 18, 1976**

Related U.S. Patent Documents

Reissue of:

[64] Patent No.: **3,797,722**
Issued: **Mar. 19, 1974**
Appl. No.: **276,118**
Filed: **July 28, 1972**

U.S. Applications:

[63] Continuation-in-part of Ser. No. 169,413, Aug. 5, 1971, Pat. No. 3,759,435.

[51] **Int. Cl.**[2] **B25C 1/00**
[52] **U.S. Cl.** **227/67**; 227/95
[58] **Field of Search** 227/67, 95, 86, 137

[56] **References Cited**

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Primary Examiner—Granville Y. Custer, Jr.
Attorney, Agent, or Firm—George E. Kersey

[57] **ABSTRACT**

Apparatus for dispensing fastener attachment members of the type having a filament with heads on both ends, the device including a casing, a needle projecting from the casing, the needle having a bore through which the fastener attachment member is adapted to be dispensed, a plunger or ejector adapted to force one head of the attachment member through the needle bore, the plunger advanced by the combination of a gear and sliding rack, the sliding rack in the form of a thin plate and in which the attachment members are fed before the needle and in front of the ejector by an indexing wheel advanced by a feed pawl with a slotted hole which allows it to rock in and out of engagement with the indexing wheel as it is moved back and forth.

12 Claims, 39 Drawing Figures

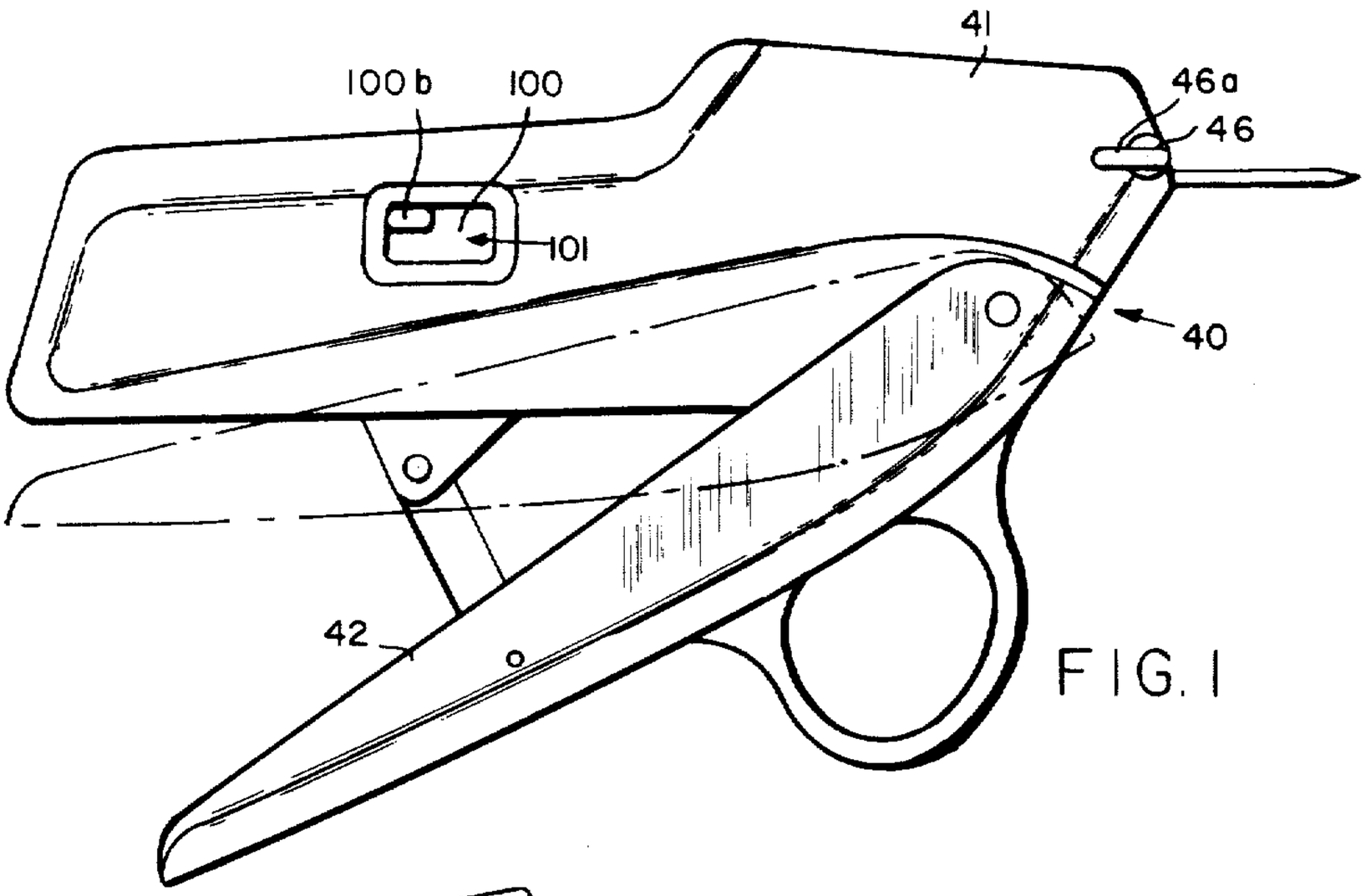


FIG. 1

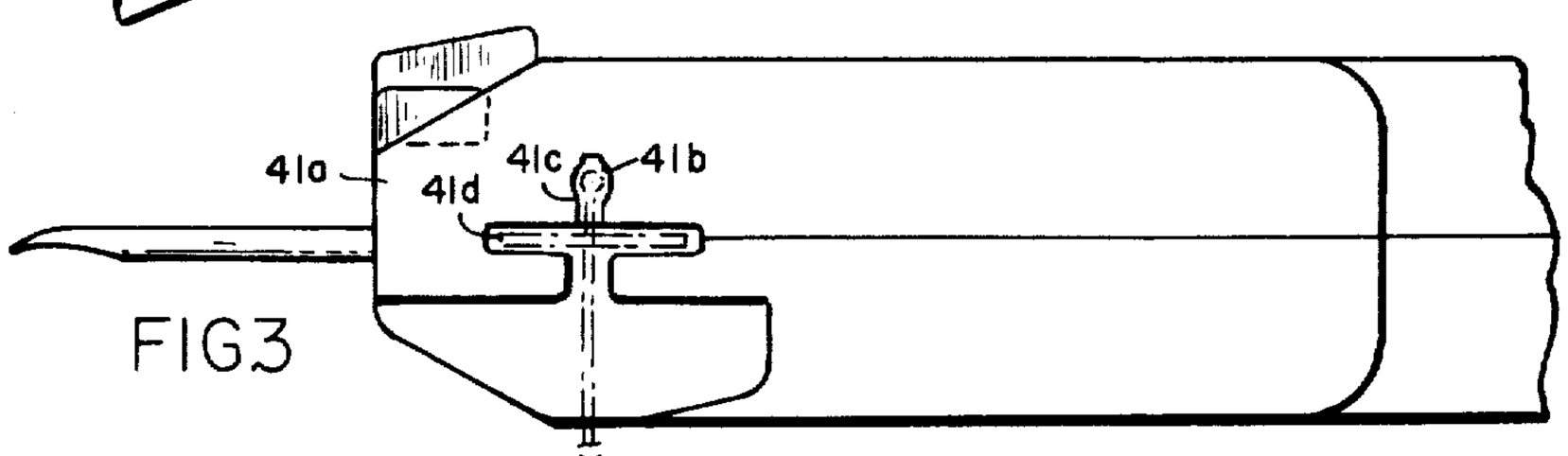


FIG3

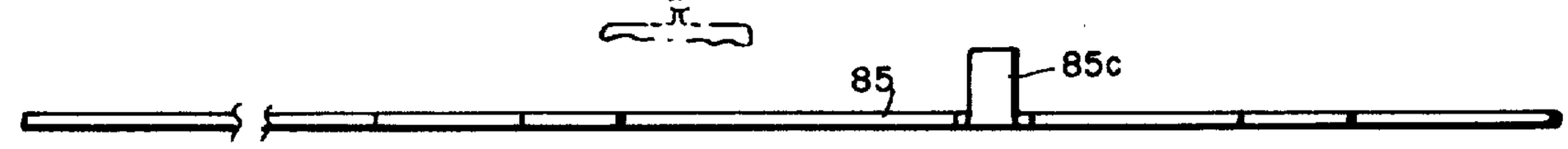


FIG. 12

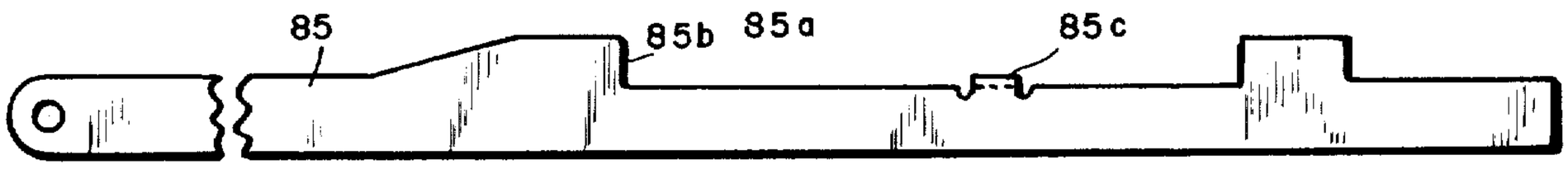


FIG. 11

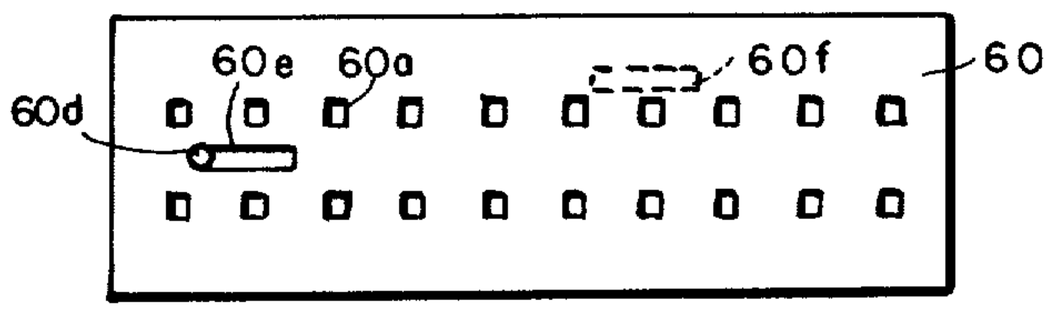


FIG. 8

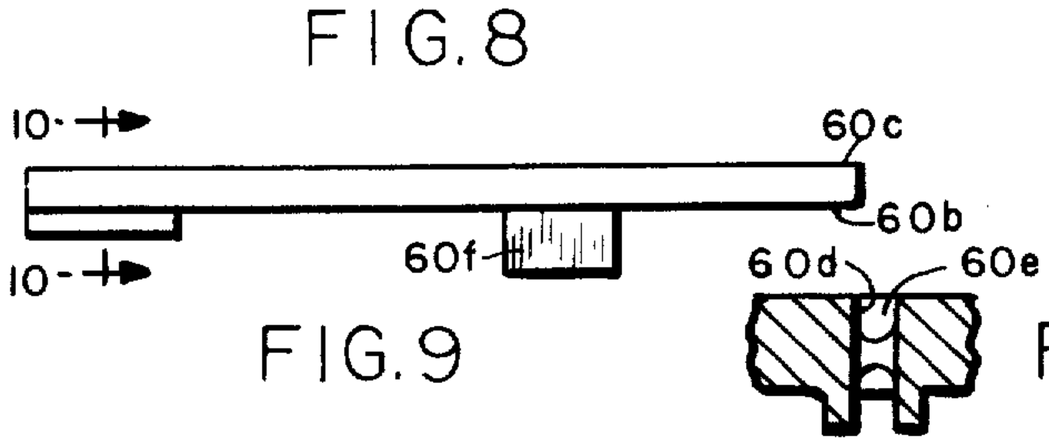


FIG. 9

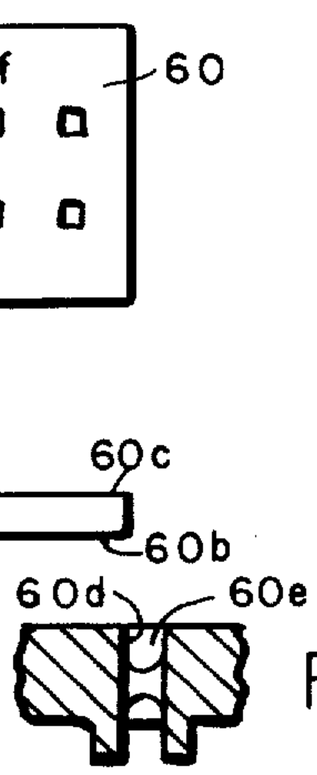


FIG. 10

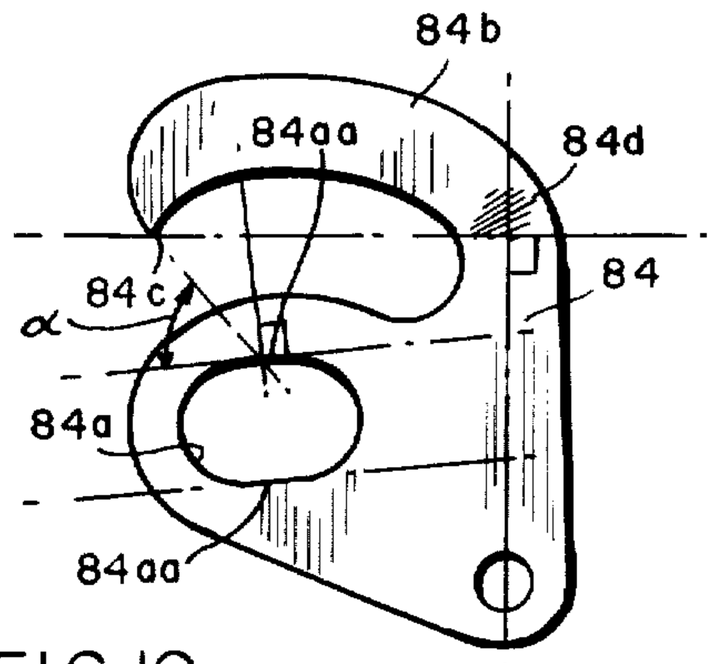


FIG. 16

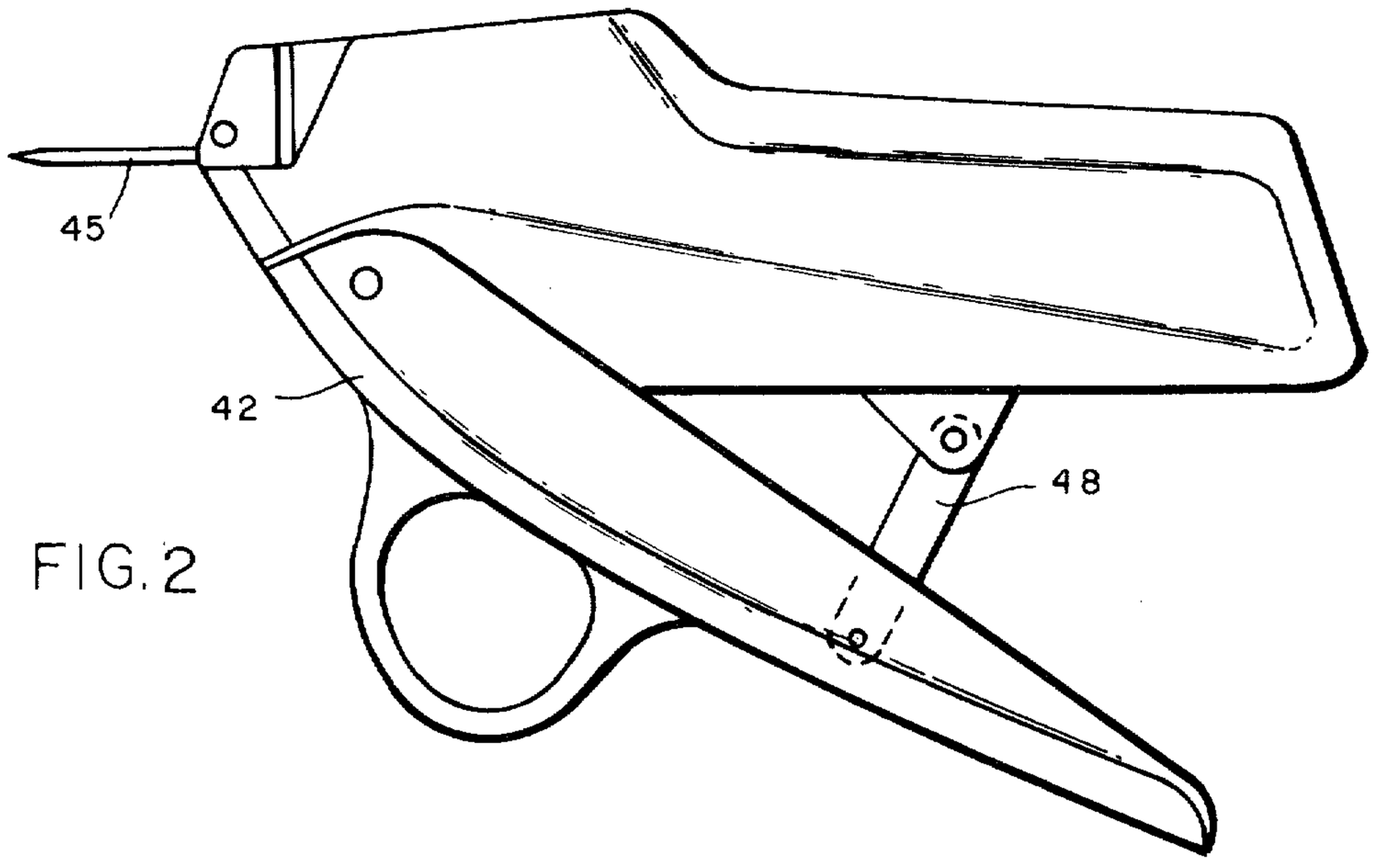


FIG. 2

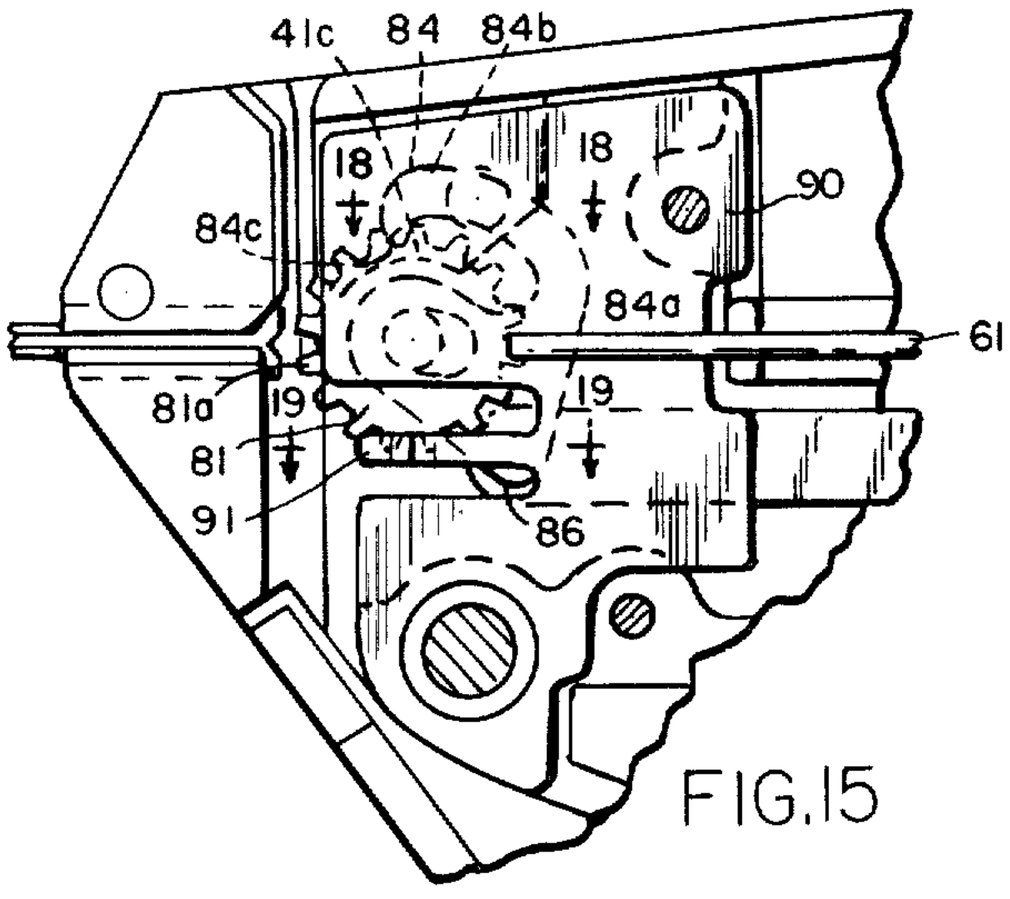
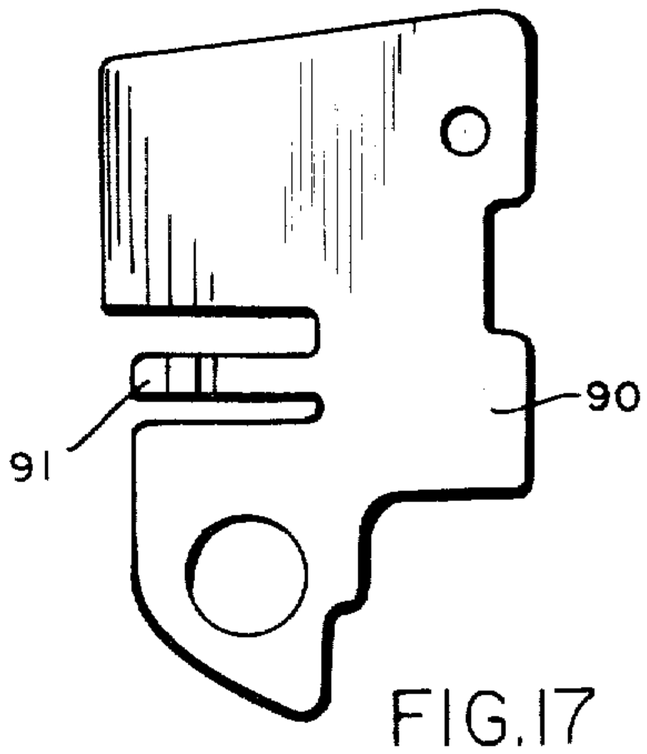


FIG. 15



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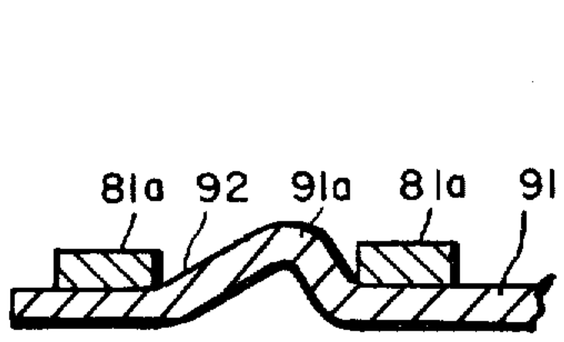


FIG. 19

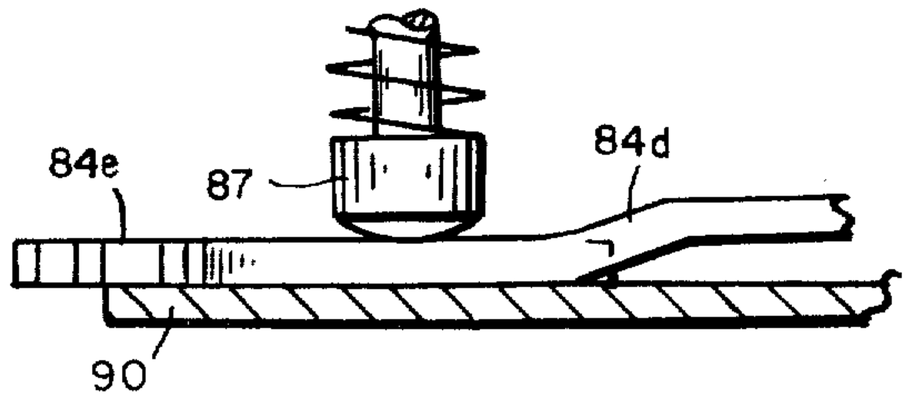
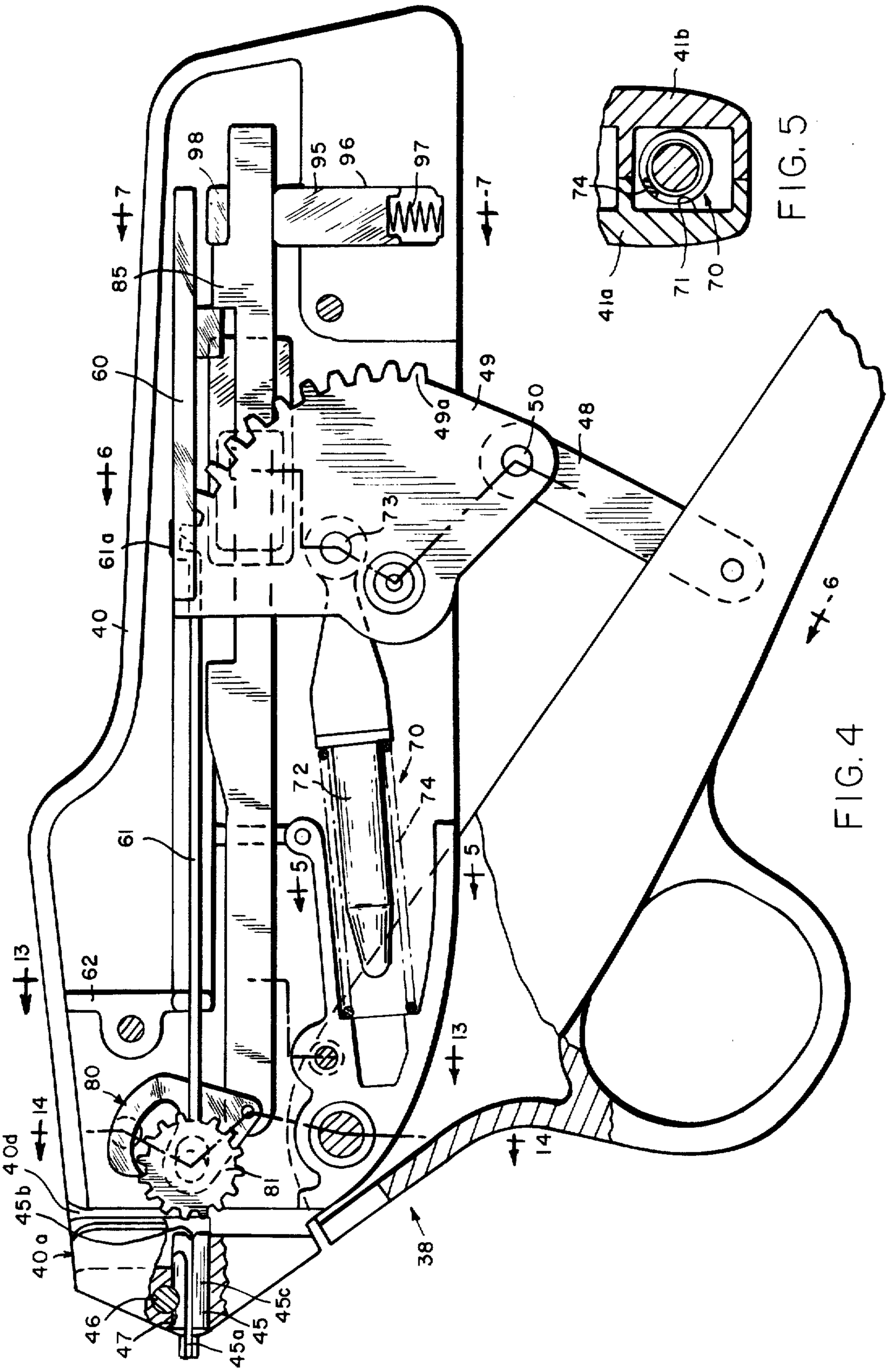


FIG. 18

41b
74
41a
71
70

FIG. 5


98
95
96
97
7
7
85
60
6
49
49a
50
48
61a
73
40
6
72
70
74
5
5
61
13
62
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14
14
40d
45b
40a
46
47
45a
45
45c
81
38

FIG. 4

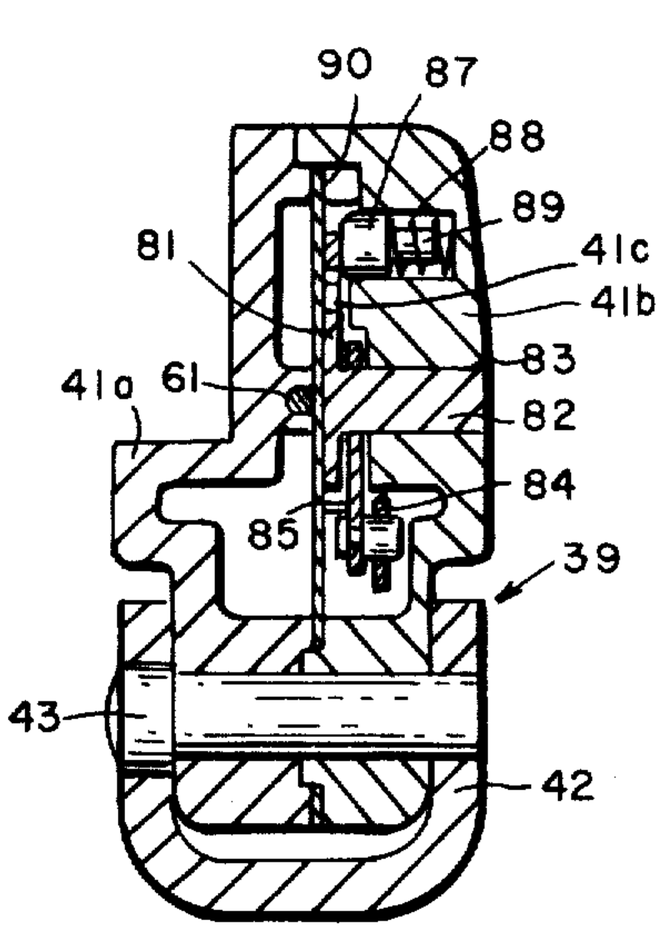

FIG. 14

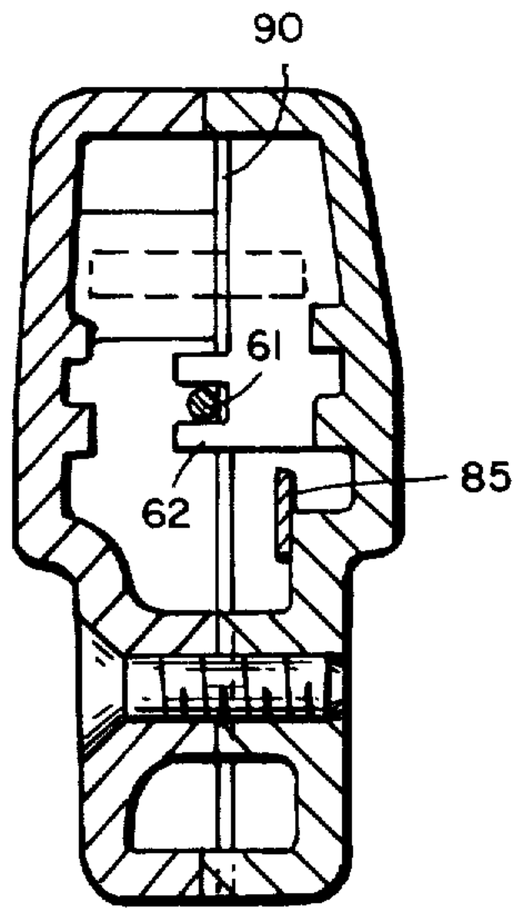

FIG. 13

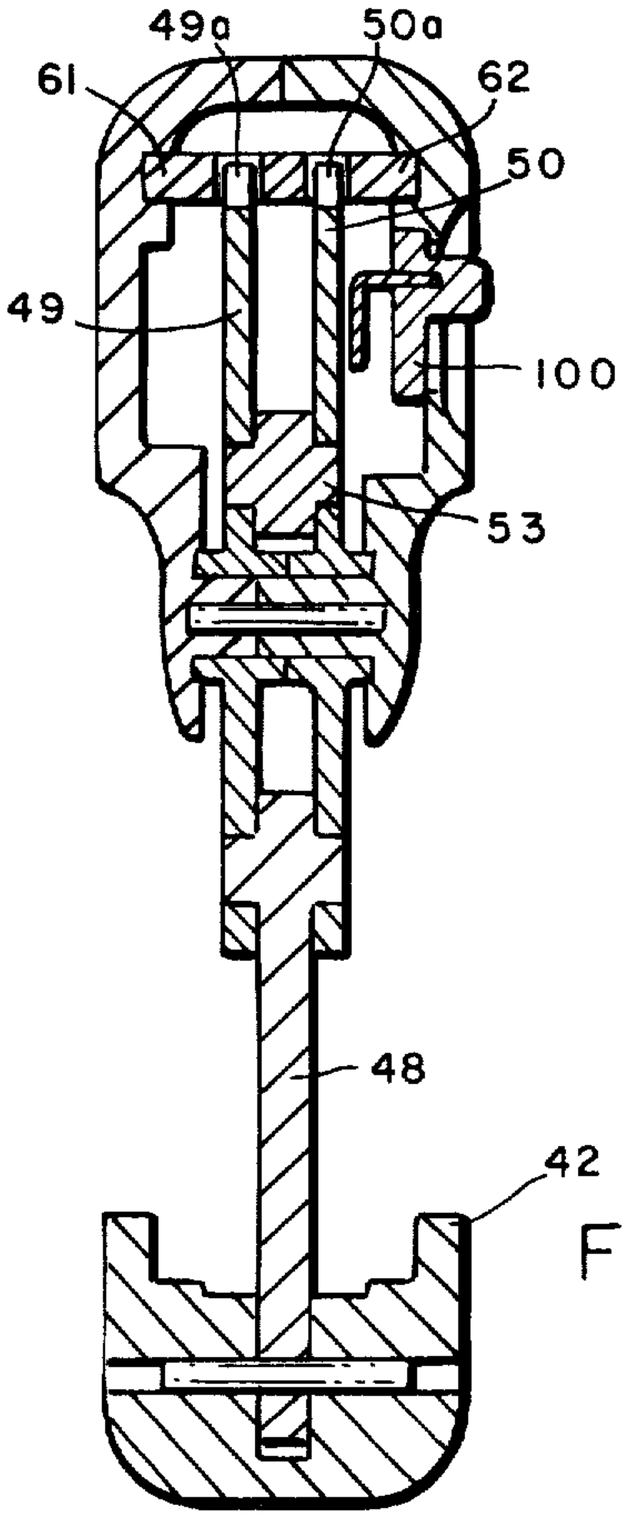

FIG. 6

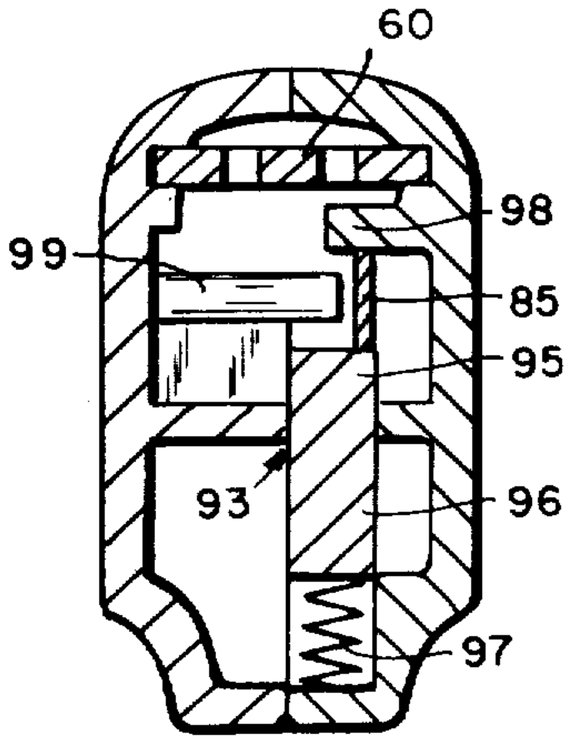

FIG. 7

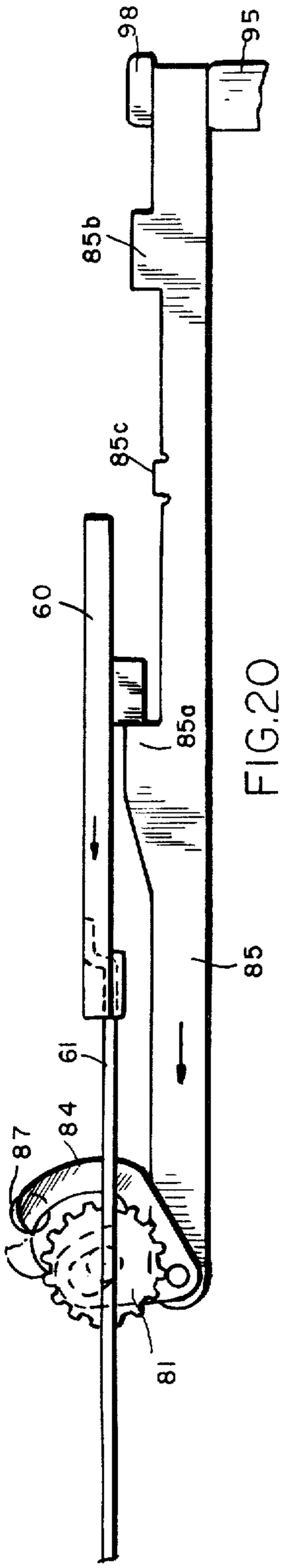

FIG.20

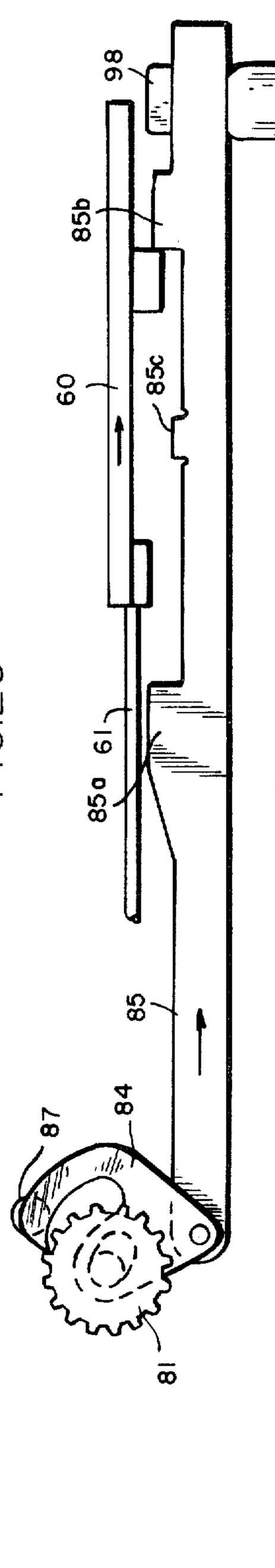

FIG.21

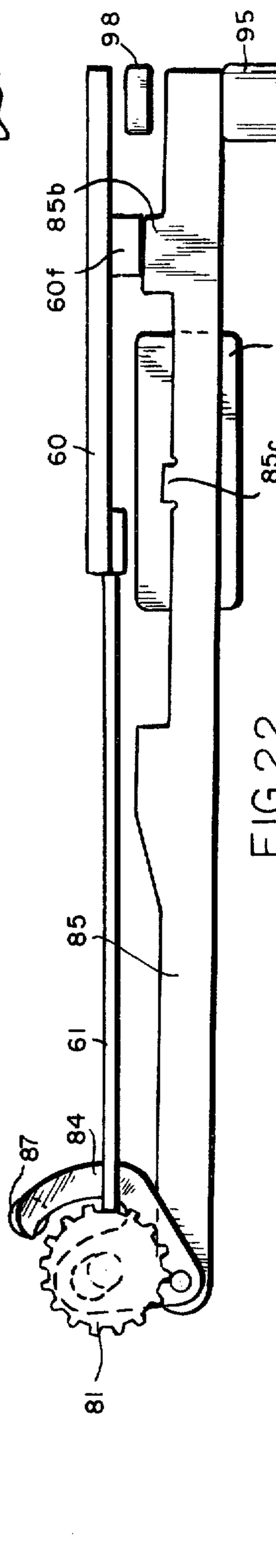

FIG.22

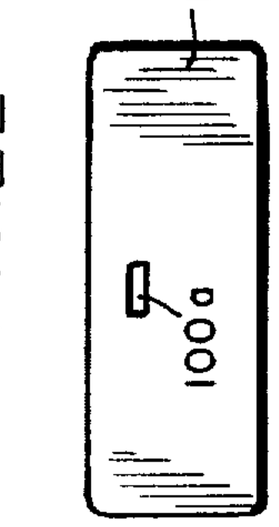

FIG.24

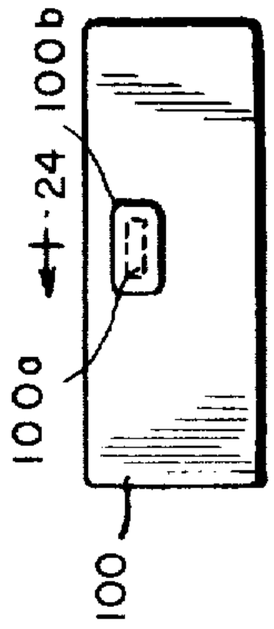

FIG.23

FIG.25

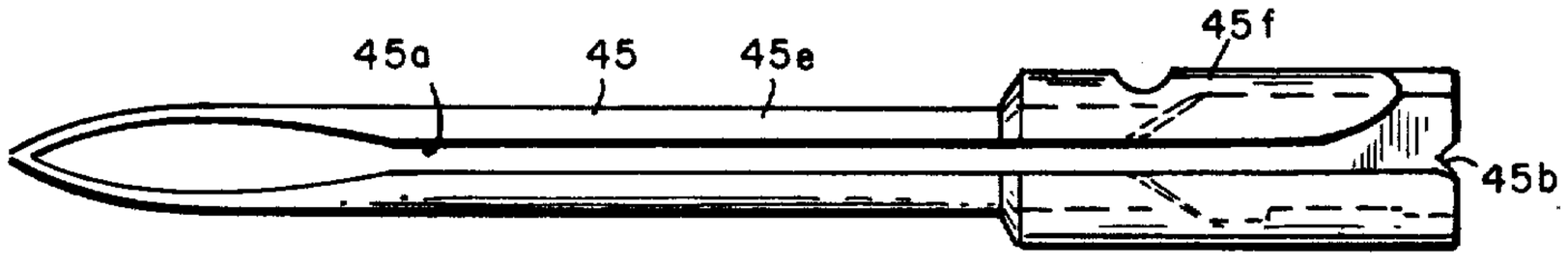

FIG.28

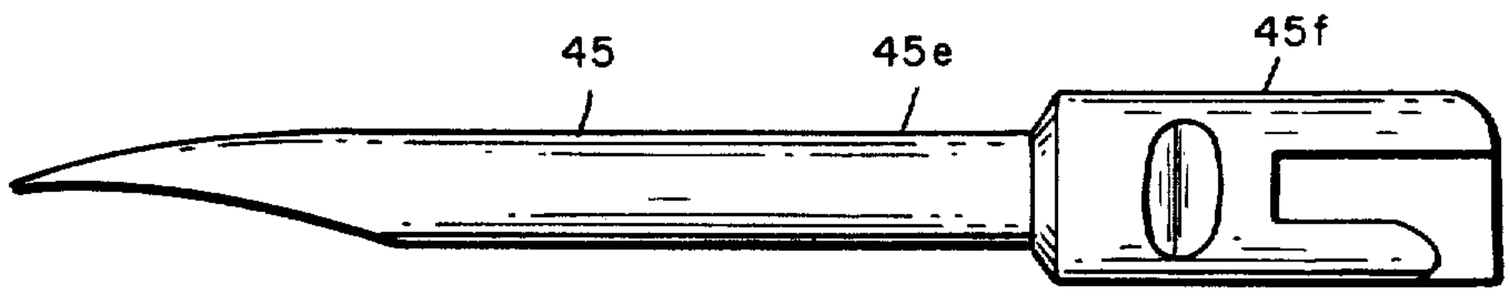

FIG.29

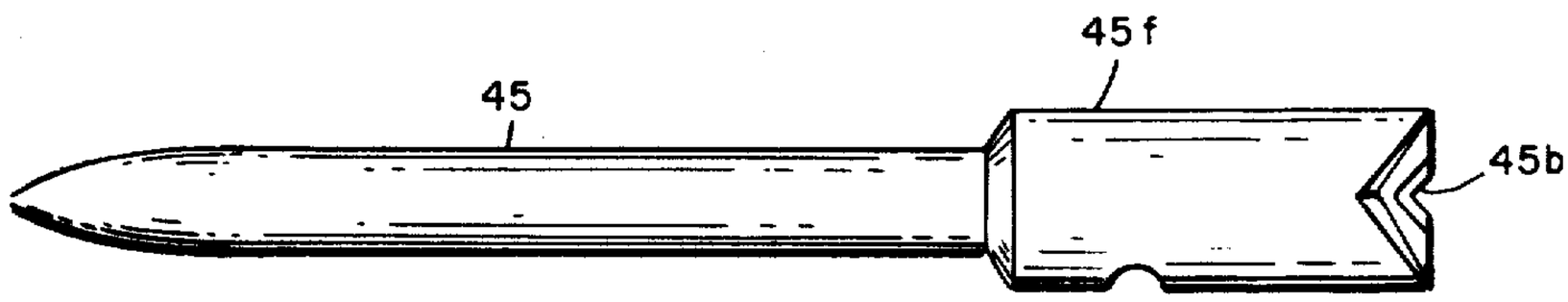

FIG.30

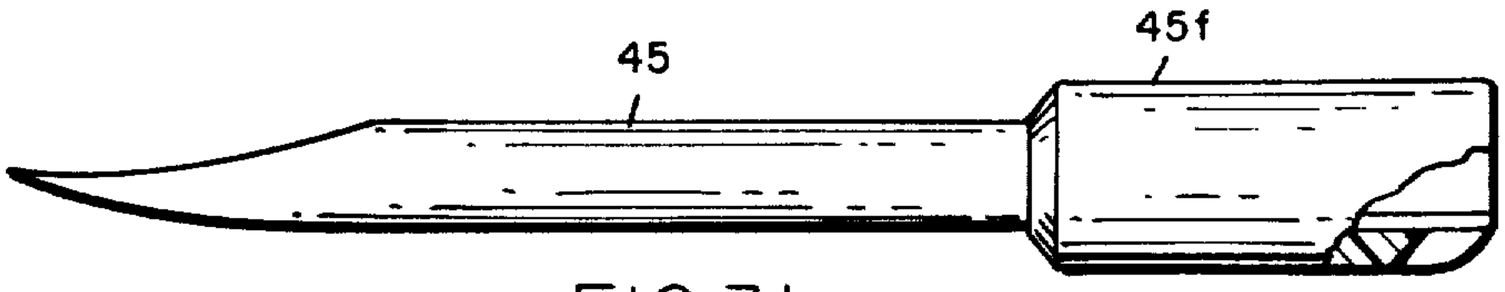

FIG.31

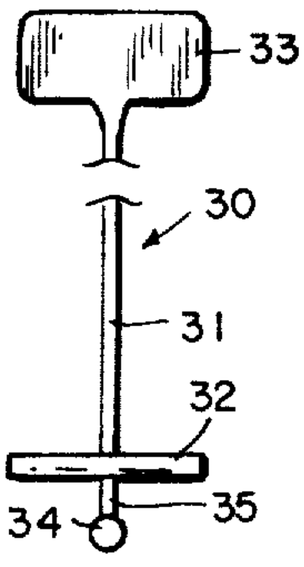

FIG.26

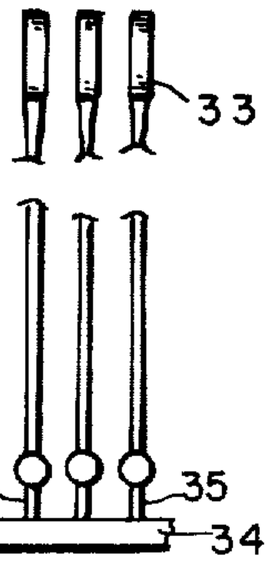

FIG.27

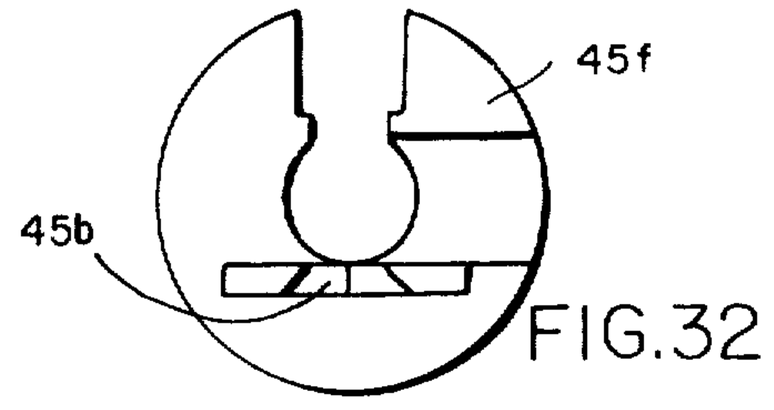

FIG.32

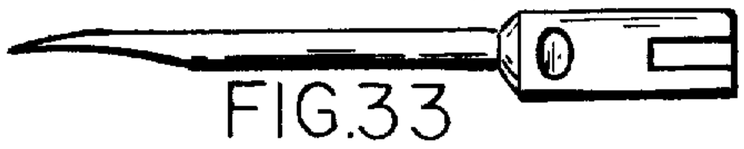

FIG.33

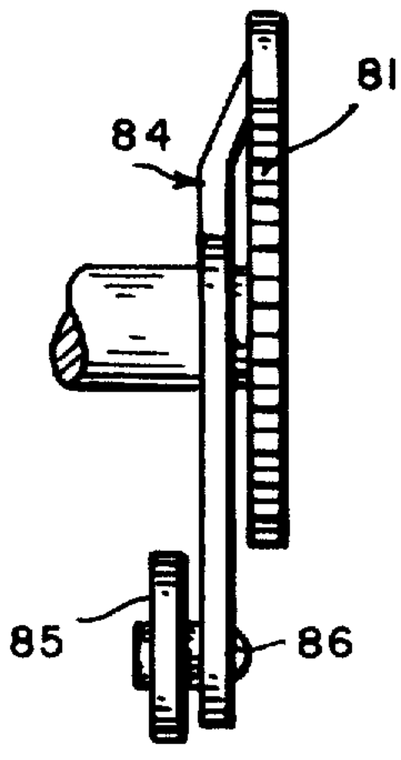

FIG. 34

FIG. 35

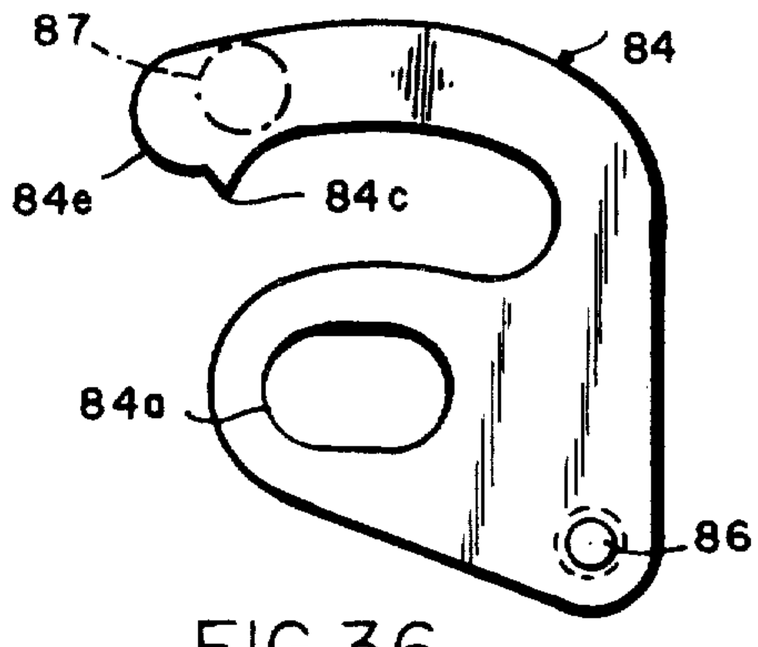

FIG. 36

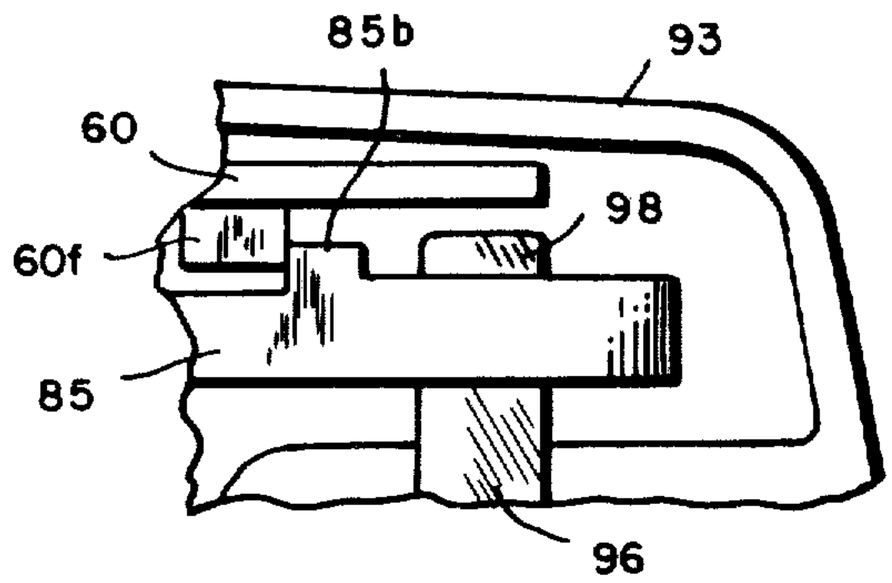

FIG. 37

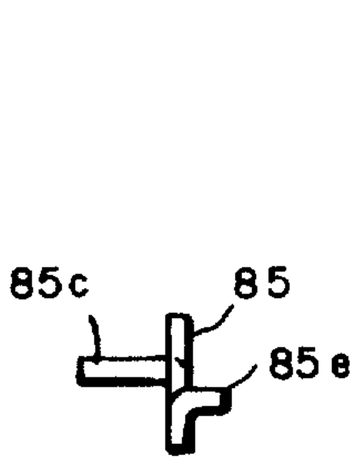

FIG. 38

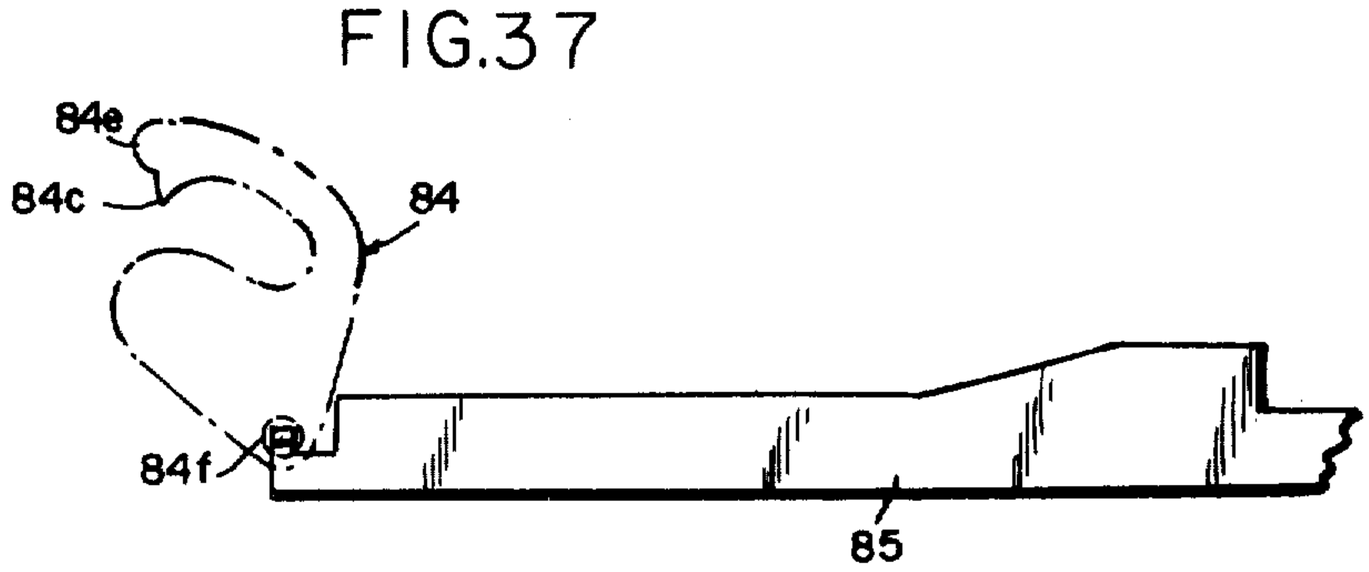

FIG. 39

APPARATUS FOR DISPENSING FASTENERS

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.

This application is a continuation-in-part of U.S. Pat. Application Ser. No. 169,413 filed Aug. 5, 1971, now U.S. Pat. No. 3,759,435 issued Sept. 18, 1973.

BACKGROUND OF THE INVENTION

This invention is directed to a new and improved apparatus for dispensing and inserting fastener attachment members having a filament and heads on either end.

This invention finds particular utility in applications such as anchoring tags to articles of apparel, coupling layers of material together, coupling buttons or the like to coats and other articles of clothing and in many other applications which require that two or more layers of material be held together.

The present invention is in particular an improvement over other devices such as shown in U.S. Pat. No. 3,103,666. In addition, U.S. Pat. Nos. 3,470,834 and 3,494,004 may also be referred to for a description of the state of the art.

For many years, a device such as shown in U.S. Pat. No. 3,103,666 has been sold and has been used quite widely. Although such devices are quite acceptable and reliable, there has developed a need for a new and improved device, or apparatus which would be even more reliable and durable.

SUMMARY OF THE INVENTION

In particular, this invention provides an apparatus which includes a new and improved feed mechanism which maintains a grip on the carrier supporting the fastener attachment member until the attachment member has been delivered into the needle bore of the needle of the apparatus. This features insures against misfeeds and jams and thus provides more reliable operation.

Still another improvement in this apparatus is that it is constructed so that a second feed of an attachment member is prevented from occurring until the previous operation has been fully completed. This too prevents jamming of the apparatus.

The apparatus of this invention also includes a new and improved rack or slide and drive arrangement for moving the ejector to force the attachment member through the needle bore. The rack is constructed so that there are no pockets to collect or retain lint or other foreign materials which could ultimately lead to the apparatus malfunctioning.

Other uses and advantages of the invention will in part be obvious and will in part also be apparent from the description which follows. The invention accordingly comprises the features of construction, combinations of elements, and arrangements of parts which will be exemplified in the construction hereinafter described.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side view of the apparatus according to the invention showing one of the handles of the apparatus in two positions;

FIG. **2** is a view of the opposite side of the apparatus according to the invention;

FIG. **3** is a top view of a portion of the apparatus;

FIG. **4** is a side view of the apparatus with parts broken away and removed to show the operating mechanism of the apparatus;

FIG. **5** is a sectional view taken along line **5—5** of FIG. **4**;

FIG. **6** is a sectional view taken along line **6—6** of FIG. **4**;

FIG. **7** is a sectional view taken along line **7—7** of FIG. **4**;

FIG. **8** is a top view of a slidable slide or rack adapted to be moved back and forth by the movement of the handle according to the invention;

FIG. **9** is a side view of the slide of FIG. **8**;

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

FIG. **11** is a side view of a slidable bar or link according to the invention which is adapted to be moved back and forth by the plate as shown in FIGS. **8** and **9**;

FIG. **12** is a top view of the bar shown in FIG. **11**;

FIG. **13** is a sectional view taken along line **13—13** of FIG. **4**;

FIG. **14** is a sectional view taken along line **14—14** of FIG. **4**;

FIG. **15** is an enlarged side view of the indexing or feed mechanism according to the invention;

FIG. **16** is a side view of the feed pawl shown in FIG. **15**;

FIG. **17** is a view of the plate carrying a detent shown in FIG. **15**;

FIG. **18** is a sectional view taken along line **18—18** of FIG. **15**;

FIG. **19** is a sectional view taken along line **19—19** of FIG. **15**;

FIGS. **20–22** illustrates the operation of the feed mechanism of the invention;

FIG. **23** illustrates in a front view the member for permitting the indexing wheel shown in FIG. **4** to free wheel;

FIG. **24** is a sectional view taken along line **24—24** of FIG. **23**;

FIG. **25** is a back view of the member shown in FIG. **23**;

FIG. **26** is a front view of a fastener attachment member supported by a carrier therefore;

FIG. **27** illustrates in a side view a number of fastener attachment members supported by a carrier therefore;

FIGS. **28–32** illustrates in side view, top view and bottom with parts broken away, and end view respectively of a needle suitable for use in this invention;

FIG. **33** illustrates another needle construction suitable for use in this invention.

FIG. **34** illustrates in a front view taken from the left of FIG. **21** looking towards the right of FIG. **21** the feed mechanisms of the invention;

FIGS. **35** and **36** illustrate in top and side views the preferred construction of the member **84** shown in FIG. **34**;

FIG. **37** illustrates the preferred construction of the member **85** and its at rest position with respect to member **98**; and

FIGS. **38** and **39** illustrate in front and side views the preferred construction of the member **85**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In FIGS. **26** and **27** there is illustrated fastener attachment members suitable for being dispensed by the apparatus of this invention. Attachment members are shown at **30** and include a filament **31** and heads **32** and **33.** (See the aforementioned patents for further details). A carrier **34** with connecting members **35** is provided for coupling the attachment members **30** to the carrier. When the attachment members **30** are disposed through the needle, they are separated from the carrier by cutting the connecting member as will be disclosed hereafter.

Reference should now be had to FIGS. **1–33** for a brief description of the overall apparatus of the invention. The apparatus is shown at **38** and comprises an outer casing or body **40** comprising two halves **41a** and **41b** and a handle **42** pivotly coupled thereto by a coupling means **43.** The body includes a nose portion **40a** in which there is formed guides **40b, 40c** and **40d** for the passage of the fastener attachment members, carrier and coupling members into the apparatus and then for the exiting of carrier and coupling members out of the apparatus after the fastener attachment members have been dispensed.

In the nose **40a** there is mounted a needle **45** having an elongated slot **45a** for the passage of a fastener attachment head **32** therethrough while the filament **31** between heads **32** and **33** projects through the slot **45a.** The needle includes a rear cutting edge **45b** for cutting the coupling members **35** as well as a second slot **45c** for permitting the head of the fastener attachment members to be fed into the apparatus.

The construction of the preferred needles for use in the apparatus are more fully shown in FIGS. **28–33** and will be described later herein.

The needle **45** is locked in place in the nose **41a** by a locking pin **46** which includes a handle **46a** and a slot therein (not shown) to permit the needle **45** mounting portion **45f** to be inserted into a bore **47** provided in the nose **40a.**

In order to force or feed fastener attachment members into the needle slot **45a,** the handle **42** is attached by a pivotally connected member **48** to gear means comprising a pair of gear segments **49** and **50,** each having gear teeth **49a** and **50a** along the top surface thereof. The member **48** is pivotally connected at **51** to the gear segments as shown in FIG. **6.** The gear segments **49** and **50** are in turn pivotally coupled to the body **40** of the apparatus as also shown more particularly in FIG. **6.** At **60** there is provided a slide (see in particular FIGS. **4,6,7** and **8–10**) which is positioned to slide back and forth in the body having guide slots **41d** and **41e** formed therein in the body halves **41a** and **41b** respectively.

The slide **60** has formed therein a plurality of holes **60a** shaped to receive the gear teeth **49a** and **50a.** The holes extend from the bottom surface **60b** to the top surface **60c** and are formed in two rows as shown to receive the gear teeth of the gear segments. In this manner lint or other foreign matter is prevented from clogging the combined operation of the slide and gear segments since the lint will be pushed out of the holes **60a** by the gear teeth. As the gear segments pivot back and forth the slide **60** moves forward and rearward.

The slide **60** also includes a hole **60d** and a cavity **60e** which are constructed to receive an ejector or plunger **61** having an "L" shaped end **61a** (see FIG. **4**). The

ejector end **61a** is supported by the slide for movement therewith to permit the ejector to move back and forth to expel fastener attachment members thrugh the needle.

The ejector **61** is supported at its forward end by a guide member **62** (see FIG. **4** and FIG. **13**) and a separator or cover plate **90** held between the body halves (see FIGS. **13, 14** and **17**).

The rotation of the handle **42** causes the gear segments (see FIG. **4**) to rotate counterclockwise to move the ejector in a timed manner forward to force a head **32** of the fastener attachment member **30** through the needle to dispense it therefrom. As the ejector moves forward it causes the coupling member **35** to be severed by the cutting edge **45b** of the needle. In order to return the ejector rearward again for the next sequence of operations to expel the next one of a plurality of fastener attachment members, there is provided a resilient return means **70** comprising a cavity **71** formed in the body for the movement of a telescoping member **72** therein. The telescoping member **72** is pivotally coupled to the gear segments **49** and **50** at **73** (see FIGS. **4** and **6**) to rotate the cam segments clockwise by the action of resilient biasing means such as a spring **74** positioned in the cavity **71.** Thus after the handle **42** is rotated or closed towards the body and then released, the return means will cause the handle to move away from the body to the extended position shown in FIG. **4.**

The apparatus also includes an indexing mechanism **80** for positioning fastener attachment members one at a time at the rear of the needle in order to be dispensed by the ejector therethrough. The indexing mechanism **80** comprises an indexing wheel or indexing gear **81** supported for rotation by a shaft **82** coupled thereto which in turn is supported by a bore **83** in the body (see FIGS. **4, 14** and **15**).

The indexing gear is positioned in a space between the cover **90** and a shelf **41c** (see FIGS. **14** and **15**) provided in body half **41b.** Clearance exists between the gear **81** and the cover **90** and shelf **41c** so that the wheel can rotate freely.

The gear **81** has a plurality of teeth **81a** mounted along the circumference thereof which are adapted to engage the coupling members **35** to move the carrier **34** and the fastener attachment members through the apparatus. The indexing gear is rotated counterclockwise as shown in FIGS. **4** and **15** by the provision of a pawl **84** which is constructed with a slotted pivot hole **84a** supported by support means such as the shaft **82** coupled to the indexing gear **81.** The pawl **84** is adapted to rock back and forth over the shaft **82** as the result of the movement of drive means such as a link **85** which is pivotally coupled thereto at **86.** The pawl preferably includes a pusher such as a hook-like end **84b** preferably having a pointed tip **84c** to engage one tooth at a time of the indexing gear to rotate it (see FIGS. **4** and **16**).

The pawl end **84b** is preferably provided with a bend at **84d** so that a portion of the pawl will lie against the cover **90** (see FIG. **18**) thus providing a space, or clearance between the pawl and the wheel to provide free movement of the slotted portion of the pawl so the pawl is rocked back and forth. The tip **84c** of the pawl also extends above the wheel teeth **81a** as shown in FIG. **15.** The pawl thus preferably has a portion that is in a parallel plane with the wheel and has another portion which lies within the plane of the wheel. The pawl is held in place by a resiliently biased member **87** which is positioned within a cavity **88** and urged toward the pawl by

a resilient biasing means such as a spring **89** (see FIG. **14**).

The member **87** urges the pawl **84** against the cover **90** to frictionally hold the hook-end portion **84b** against the cover (see FIG. **18**) as the pawl is rocked back and forth on the shaft.

The slot **84a** has parallel upper and lower walls **84aa** which are angularly disposed with respect to point **84c** so that when the pawl is rocked in one direction to the left in FIG. **4**, point **84c** is cammed out of engagement with the indexing wheel and when rocked in an opposite direction point **84c** is cammed into engagement with the indexing wheel. Thus there exists an acute angle "α" between the parallel walls **84aa** and point **84c** as shown to effect the above mentioned camming movement. Pawl **84** (portion **84b**) is frictionally held against cover **90** by plunger **87** and spring **88** (see FIG. **18**) so that when the opposite end of pawl **84** is moved by link **85** the first action that takes place is to move slotted portion **84a** to the end of its travel. Because the sides of the slot are angled with respect to the tip of the pawl **84c** (see FIG. **16**) movement in one direction causes tip **84c** to cam out of engagement with gear **81** (see FIG. **20**) and movement in the other direction causes tip **84c** to cam into engagement with the gear **81.** Further movement of link **85** in the direction which caused engagement will then cause rotation of the gear (see FIG. **21**).

In order to prevent the wheel from rotating as the pawl is rocked back and forth for indexing of the wheel, there is provided on cover member **90** (see FIGS. **15, 17** and **19**) a resilient member **91** extending therefrom which has a projection or detent **91a.**

The detent **91a** is adapted to be positioned in the space **92** between the teeth **81a** (see FIG. **19**) to prevent the wheel from rotating. The detent **91a** is adapted to slide over the side of the teeth **81a** when sufficient force is applied to rotate the wheel, as for example by the action of the pawl **84.** Thus the detent **91a** acts as a stop which can be overriden by the forceable movement of the wheel **81.** The provision of the detent also provides positive control of the carrier for the fastener attachment members.

The drive means to rock the pawl back and forth comprises the link **85** which is mounted in the body **40** and is supported for slidable movement (see FIGS. **7, 11, 12** and **20–22**).

The link **85** includes a cutout **85a** having stop means **85b** at either end of the cutout **85a.** The stop means are adapted to engage a projection **60f** extending downwardly from the slide **60** (see FIGS. **8, 9** and **20–22**). Thus as the slide **60** moves back and forth, the link **85** will be moved therewith to cause the link to slide back and forth to rock the pawl back and forth to index the indexing gear. The link **85** is supported at its rearward end by a member **95** positioned in a cavity **96** (see FIGS. **4** and **7**) formed in the body and which is resiliently biased against the link **85** by a spring **97.** The upward movement of the link **85** is restricted by a projection **98** extending from the body (see FIGS. **4** and **7**), and the sideway movement of the link **85** in one direction is restricted by a pin **99** coupled to the body (see FIG. **7**). The projection **98** may also act as a rear stop for stop **85b** if desired (see FIG. **37** for the preferred construction and relationship between members **85b** and **98**).

The link **85** also includes a projection **85c** extending sideways as shown in FIGS. **11** and **12.** The projection is coupled to release control member **100** (see FIGS. **23–25**, and FIG. **1**) having a bore **100a** into which the projection **85c** extends and is held thereby. The member **100** includes a finger projection **100b** which extends through a window **101** formed in the body (see FIG. **1**).

The downward and sideways movement (to the left of FIG. **22**) of the projection **100b** will cause as shown in FIG. **22** the link **85,** to pull the pawl **84** away from the teeth of the indexing gear **81** and thus permit a carrier **34** with fastener attachment members coupled thereto to be pulled out therefrom by rotating the gear **81** while over-riding the action of the detent **91a.**

Briefly, the operation of the apparatus of the invention is as follows: (1) fastener attachment members and a carrier therefore are fed into the apparatus by inserting the carrier with the fastener attachment members coupled thereto through guides in the nose; (2) the handle **43** is then closed upon the body to move the slide **60** to the left as shown in FIG. **20** to cause the ejector **61** to force a fastener attachment head through the needle while at the same time causing the coupling member to be served by the needle cutting edges **45b;** (3) the movement of the link to the left also rocks the pawl **84** to the right as shown in FIG. **20;** (4) when the handle **42** is released, the resiliently biased member **72** moves towards the right to cause the slide **60** to move rearward thus moving the link **85** to the right; (5) this also causes the ejector to be retracted from the needle and further causes the pawl **84** to be rocked forward to rotate the indexing gear counterclockwise to position the next fastener attachment member into position to be dispensed from the needle.

In FIGS. **28–31** there is shown the preferred construction of the needle **45** shown in FIG. **4.** The needle comprises two parts which are mechanically locked together, one part being shown at **45e** and the mounting portion being shown at **45f.** The mounting portion preferably is constructed of a hard or rigid plastic while the part **45e** is preferably constructed of metal. The needle includes the slot **45a,** the rear cutting edge **45b,** the second slot **45c** as heretofore described. The rear cutting edge is preferably shaped as a "V" with the bottom of the "V" having a small radius of curvature to facilitate cutting of materials such as polyurethane.

In FIG. **33** there is shown a slightly different needle construction. This needle is preferably one piece metal and has the slots and cutting edge as heretofore described. For further reference to the construction of preferred needles useful in the practice of this invention reference may be had to U.S. Patent Application of the same inventor of this application entitled "Fastener Attachment System Needle Constructions" filed in the U.S. Patent Office on June 30, 1971 now copending as U.S. Ser. No. 158,438.

Reference should briefly be had to FIGS. **34–36** which illustrates the most preferred construction of the pawl **84.** The pawl **84** in the construction shown includes a retainer or projection **84c** which extends beyond the tip or point of **84c.** The retainer or projection **84e** is preferably provided to insure that the pawl **84** doesn't slip out of contact with member **87** when it is drawn back when member **85c** is depressed.

Reference should now be had to FIG. **37** which illustrates the most preferred construction of the member **85,** and particularly member **85b** and its at rest condition as illustrated in FIG. **4.** In this Figure the member **85b** is shortened so that it doesn't engage member **98** in any condition and thus member **98** would not act as a stop therefore.

In FIGS. **38** and **39** there is illustrated the now preferred construction of the drive means **85** which is now constructed with a finger or member **85e** formed or bent therefrom and which is positioned within a second hole **84f** provided in the pawl **84.** In this manner the pawl is rocked back and forth with member **85** motion.

I claim:

1. In an apparatus for dispensing fastener attachment members one at a time, said fastener attachment members being coupled to a carrier by a coupling member and which includes a body, a hollow needle having an elongated slot along one side supported by said body and extending therefrom, an ejector supported by the body for driving a head of the fastener attachment member through said needle with a filament of the fastener attachment member coupled to the head projecting through said slot, and an indexing wheel having a plurality of teeth for engaging the coupling members to feed one fastener member at a time into position to be fed through said needle, the improvement comprising an indexing pawl for engaging the teeth of the wheel, one at a time, to advance the wheel to position fastener attachment members into position to be fed through said needle, said pawl having a slotted pivot hole and a tip for engaging the teeth of the wheel, first means supported by the body and passing through the slotted pivot hole to permit the pawl to rock back and forth thereon, and drive means coupled to the pawl for rocking the pawl back and forth to cause said tip to engage said teeth one at a time to advance the indexing wheel, in which said first means comprises a shaft coupled to said indexing wheel which supports it for rotation, in which said pawl is provided with a bend so that a portion of the pawl lies next to the indexing wheel and another portion of the pawl extends above said indexing wheel in order to engage the teeth of said wheel, in which first resilient biasing means to provided to bias said pawl against a cover, said resilient biasing means supported by said body, and in which the pawl includes a projecting retainer portion for engaging the resilient biasing means when the pawl is in one of its possible positions.

2. In an apparatus for dispensing fastener attachment members one at a time, said fastener attachment members being coupled to a carrier by a coupling member and which includes a body, a hollow needle having an elongated slot along one side supported by said body and extending therefrom, an ejector supported by the body for driving a head of the fastener attachment member through said needle with a filament of the fastener attachment member coupled to the head projecting through said slot, and an indexing wheel having a plurality of teeth for engaging the coupling members to feed one fastener member at a time into position to be fed through said needle, the improvement comprising an indexing pawl for engaging the teeth of the wheel, one at a time, to advance the wheel to position fastener attachment members into position to be fed through said needle, said pawl having a slotted pivot hole and a tip for engaging the teeth of the wheel, first means supported by the body and passing through the slotted pivot hole to permit the pawl to rock back and forth thereon, and drive means coupled to the pawl for rocking the pawl back and forth to cause said tip to engage said teeth one at a time to advance the indexing wheel, in which the indexing pawl has a second hole formed therein and in which the drive means is provided with a projecting finger which is positioned within the hole to rock the pawl back and forth.

3. Apparatus for attaching tags using fasteners, each fastener including a bar section and a button section joined by a filament section; said apparatus comprising a body; a tubular guide member extending outwardly of the said body, a bore extending lengthwise of said tubular member and an elongated slot in the side of said tubular member communicating with said bore; an ejector engageable with the bar section of the fastener for driving the bar section through the bore while its filament section extends through the slot; means for operating said ejector; means, including a toothed member, for advancing one fastener at a time until its bar section is in alignment with said bore; a pawl connected to a link having spaced stop means and cooperable with said toothed member; a slide coupled to the operating means and mounted for reciprocal motion within said body; said slide having a portion thereof engageable with said spaced stop means.

4. Apparatus for attaching labels and the like to textiles and similar objects with attachments, each comprising a filament with a cross bar at one end and connected to form an assemblage, the apparatus having (a) a housing for guiding the assemblages and a hollow tube-like projection through which individual members of the assemblage are ejected with their cross bars within the tube and their filaments extending from the tube, (b) an ejector and an actuator coupled thereto, (c) a ratchet wheel rotatably mounted within the housing, (d) means for operating said ratchet wheel in a direction to feed a cross bar into alignment with said hollow tube-like projection, (e) a spring mounted within the housing to inhibit motion of the ratchet wheel in a direction opposite to the direction of feed, (f) a slide operated by said actuator and engageable with the ratchet operating means for moving the latter between two end positions.

5. Apparatus in accordance with claim 4 for dispensing attachments wherein said tube-like projection has an enlarged end for removable insertion into said housing and is provided with a cutting edge over at least a portion of said enlarged end.

6. Apparatus for dispensing attachments comprising a device for receiving and feeding an assemblage of attachments and a needle having an enlarged portion for removable insertion into said device, said needle having a slot to permit individual attachments to be dispensed therethrough, and a cutting edge on said enlarged portion for severing an individual attachment from said assemblage for feeding through said needle.

7. Apparatus for dispensing attachment members, each being formed by a filament with a head at one end and a cross bar at the other end and being moved into position for being dispensed, comprising an ejector, an indexing wheel, a pawl for operation said indexing wheel, an extension for said pawl, a slide mounted for reciprocating motion in said apparatus for engaging said extension to move said pawl discontinuously to two distinctive positions, and means for moving said slide and said ejector.

8. Apparatus in accordance with claim 7 wherein the extension of said pawl has two spaced-apart stops and said slide has a projection which contacts said stops alternatively during operation of the moving means.

9. Apparatus as defined in claim 7 wherein said ejector is connected to said slide, said moving means comprising a gear pivotally mounted in said apparatus to operate said slide, and means pivotally mounted to operate said gear, whereby said gear acts upon said slide to advance said

ejector into position for dispensing said attachment members.

10. Apparatus as defined in claim 7 wherein said attachment members are dispensed through a hollow needle which includes a mounting portion removably recessed in said apparatus.

11. Apparatus as defined in claim 10 wherein the mounting portion is constructed of rigid plastic and the remainder of the needle is constructed of metal.

12. Apparatus as defined in claim 10 wherein said needle includes a cutter in the mounting portion thereof.

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