

2009

PATENT ATTORNEYS

EXAMINATION

PAPER D

The New Zealand Law and Practice
relating to Preparation of Specifications for New Zealand
Patents

Regulation 158 (1) (d)

Duration: 4 hours (plus 10 minutes for reading)

When considering answers to the questions in this year's examinations, no account is to be taken of any provisions of the Patents Bill, the Trade Marks (International Treaties and Enforcement) Amendment Bill, the Regulatory Improvement Bill (as it relates to amendment of the Designs Act 1953), or any other bill that may be before the New Zealand Parliament.

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Paper D

Notes to Candidates

1. When preparing the provisional specification for question 1, please do not prepare what is commonly known as the title page for the specification.
2. You are to assume that there is no prior art apart from that set out in the questions.
3. Assume that your clients are only interested in protection in New Zealand.

Question 1

Your client has invented a new mousetrap.

Your client had previously been using the humane mousetrap illustrated as "PRIOR ART Q1". That mousetrap is hollow for trapping the animal. The open end closes to prevent exit of the trapped animal when the trap tilts. When the trap is set, the side panels of the trap's rotating door prevent the door from rotating. The panels do this by resting at 14 on the surface on which the trap sits. A mouse travelling the length of the trap causes the door end of the trap to tilt upwards, lifting the side panels, allowing gravity to cause the rotating door to close the trap.

Your client set out to overcome disadvantages of PRIOR ART Q1. He had found that the trap is not suited for use outside. The door must rotate to close the trap. For this to happen, the surface in front of the entrance to the housing must be flat for the door to completely close. Also the trap is difficult to set when the surface is not flat because of the requirement that the surface keep the side panels in position when the trap is set.

Your client's new trap is shown on the sheet labelled "Q1 INVENTION". This trap is also a tilting trap. When the trap tilts, a door drops to trap the animal. The top of the door has an increased thickness and serves as a weight. Movement of the weight on tilting of the trap causes the door to move from the notch on which it rests when the trap is set. The door then drops to close the previously open end. A feature of the new trap is that it can be opened at the far end for ease of baiting.

Your client tells you that his trap is suitable for outdoor use. Also he says that not having a rotating door will probably give the trap a longer life and make it cheaper to manufacture. In addition he tells you that being able to open the trap at both ends is a big advantage.

Draft a provisional specification for your client. You may use the second copy of the drawings of the new trap as part of your answer.

40 marks

Question 2

Your client has invented a wire stripper (see Figures 1-6, "Q2 INVENTION" and "Specific Description for Question 2").

Your client has told you that many wire strippers are known for stripping insulation from the end of wires. Many of these devices are suitable for use in workshops and factories and can accurately remove a measured length of insulation from an insulated wire. However, none of these devices are suitable as hand held devices.

There is a need for a hand held wire stripper that can accurately remove the required amount of insulation. Such a wire stripper would be useful for electricians working on sites where a workshop or factory wire stripper is not available - or where the wire cannot conveniently be brought to such a wire stripper.

Hand held wire strippers are known.

Your client shows you one such wire stripper, the attached "PRIOR ART 2A", that she believes to be the most similar to hers. The wire stripper blades 32 and 34 are on the nose of a pair of pliers. The notched portions 36 and 38 of the blades allow cutting of the insulation without cutting the central wire.

This device cannot be used to remove a predetermined amount of insulation without prior measurement and marking of the insulation. Your client says that it does not appear suited for adaptation for removal of measured lengths of insulation.

The wire stripper of "PRIOR ART 2B" addresses the problem of removing a measured amount of insulation from an insulated wire. The jaw has variably sized stripping notches 26 and 38. On the handle there is a channel 50 and measuring scale for measuring wire from an abutment 54. Prior to removing a measured length of insulation, it is necessary to mark the wire. Your client points out that no such marking is required for her invention.

Your client believes that her wire stripper also may be advantageous over the prior art because the blades can be replaced, increasing the life of the device. She also believes that there is a significant market for a range of the blades with different sized apertures.

Your client has instructed your firm to file an application with a complete specification (and forego the possibility of filing a provisional specification). One of your colleagues has drafted the detailed description of the specification below and prepared the drawings.

Draft the following only for the complete specification:

- (i) a brief description of the background art without referring to drawings
- (ii) an object clause
- (iii) the claims

60 marks

Specific Description for Question 2

The figures illustrate a preferred wire stripper of the invention.

FIG. 1 is a side elevational view of the wire stripper showing the gripping members in the open position.

FIG. 2 is a top plan view of the wire stripper.

FIG. 3 is a sectional view taken along line 3--3 in FIG. 2.

FIG. 4 is a view similar to FIG. 1 and showing the gripping members of the device in the closed position thereof during a cutting operation of the wire insulation.

FIG. 5 is an enlarged fragmentary sectional view of an end portion of the wire stripper showing the position of the cutting elements during a wire penetrating operation.

FIG. 6 is an exploded perspective view of the cutting elements as used in the wire stripper device.

Referring now to the figures, the preferred wire stripper is generally indicated at 10, and as illustrated is of the hand-held type that is designed to strip insulation preferably from small diameter wire. However, as will be described, various diameter wire may be stripped by the device. The wire stripper 10 includes substantially identically formed grip members 12 and 14 that are elongated in shape and configuration and are generally parallel in the position of use. Interconnecting heel portions 16 and 18 of the gripping members 12 and 14, respectively, is a two-part pivot block 20. The heel portions 16 and 18 of the gripping members are pinned to the pivot block 20 by pins 22 and 24,

respectively, the pivot connection providing for limited pivotal movement of the gripping members 12 and 14. In this connection the extreme outer pivotal movement of the gripping members 12 and 14 is illustrated in FIGS. 1 and 3, it being understood that the gripping members 12 and 14 are urged inwardly to a closed position as illustrated in FIG. 4 during a cutting and stripping operation of a wire.

In order to urge the gripping members 12 and 14 to the outer pivoted position as illustrated in FIGS. 1 and 3, a spring 26 is provided and extends into openings 28 and 30 formed in head portions 32 and 34, respectively, of the gripping members 12 and 14. It is seen that the spring 26 normally urges the gripping members 12 and 14 to the outer pivoted position thereof but may be compressed to provide for the inward pivotal movement of the gripping members as required.

In order to provide a guide for a wire to be stripped, a tubular member generally indicated at 36 is provided and extends through an opening in the pivot block 20 and between the heel portions 16 and 18 of the gripping members 12 and 14. The tubular member 36 is frictionally retained in position within the pivot block 20; and as illustrated in FIG. 5, is formed with an enlarged entry passage 38 with which a tapered entry opening 40 communicates. Communicating with the entry passage 38 is a reduced passage 42, the reduced passage 42 extending through the inner end of the tubular member 36. The reduced passage 42 is dimensioned for accommodating the wire to be stripped, and as will be described, the tubular member 36 may be replaced by a similar member in accordance with the diameter of the wire to be stripped.

In order to penetrate the insulation of the wire that is inserted through the tubular member 36, a cutting element assembly generally indicated at 44 is provided and includes opposed cutting elements 46 and 48. As illustrated in FIG. 6, the cutting elements 46 and 48 are substantially identical and are formed in a semi-cylindrical configuration, the outer ends being open, but the inner ends being formed with end walls 50 and 52, respectively, on which

blade edges 54 and 56 are formed. Blade 54 is provided with a notch 58, whereas blade 56 is provided with a notch 60, the notches 58 and 60 being located in opposed relation and normally preventing penetration of the blade edges into the wire strands of the wire during a severing operation of the wire insulation. The gripping members 12 and 14 accommodate the cutting elements 46 and 48 by being formed with corresponding arcuate recesses therein, the cutting element 46 being secured to the heel portion 16 of the gripping member 12 by a pin 62 that extends therethrough, while the cutting element 48 is secured to the heel portion 18 of the gripping member 14 by a pin 64. As shown in FIG. 5, the walls or front edges 50 and 52 of the blade elements 46 and 48 abut against flanges 68 and 70, respectively, that are formed on the gripping members 12 and 14, and the cutting elements are thus positively located in the arcuate recesses as formed in the gripping members. The semi-cylindrical configuration of the cutting elements is such that these elements interfit in enveloping relation around the tubular member 36, and the cutting elements are thereby able to move to a closed position around the tubular member 36 during a cutting and penetrating operation.

Oftentimes it is desirable to exactly remove an end portion of the insulation from a wire, and for this purpose a gauge 72 is provided and includes an elongated body having a slot 74 formed therein to which an upstanding end portion 76 is joined. The upstanding end portion 76 is spaced from the cutting assembly 44 and is located in alignment with the tubular member 36 for receiving the lead-in end of a wire indicated at 77 for engagement therewith. A fastener 78 projects through the slot 74 and is threadably received in a threaded opening 80 formed in the gripping member 14. It is seen that the gauge 72 may be adjusted in position on the gripping member 14 to locate the upstanding end portion 76 a required distance from the blade edges 54 and 56 so as to exactly determine the length of insulation to be stripped from the wire 77. Adjustment of the position of the upstanding end portion 76 is accomplished by loosening the fastener 78 and moving the gauge 72 as required.

In order to prevent the blade edges 54 and 56 from penetrating too deeply

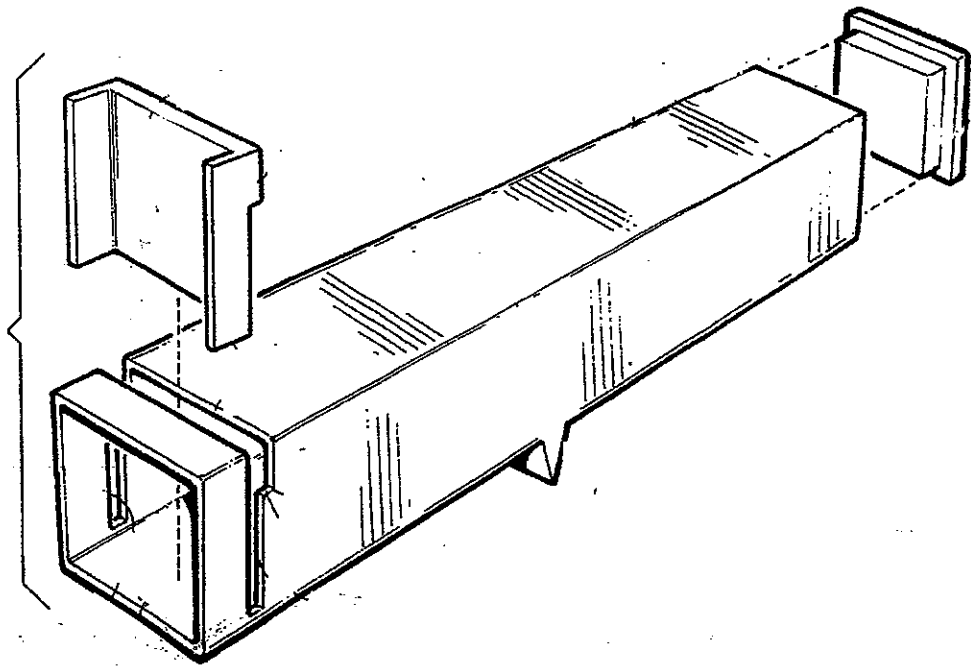
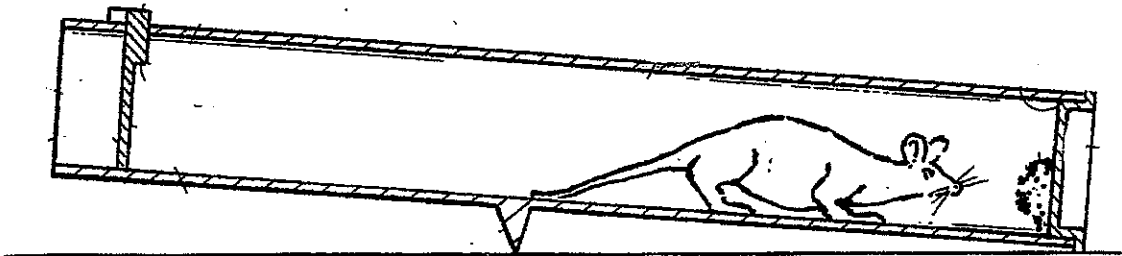
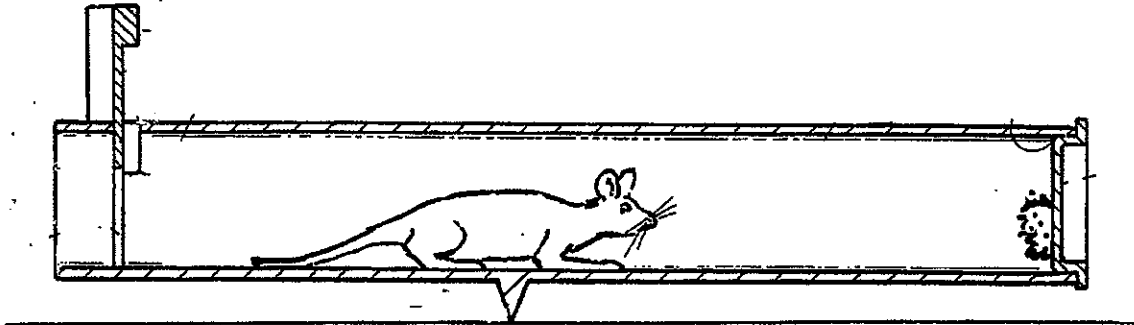
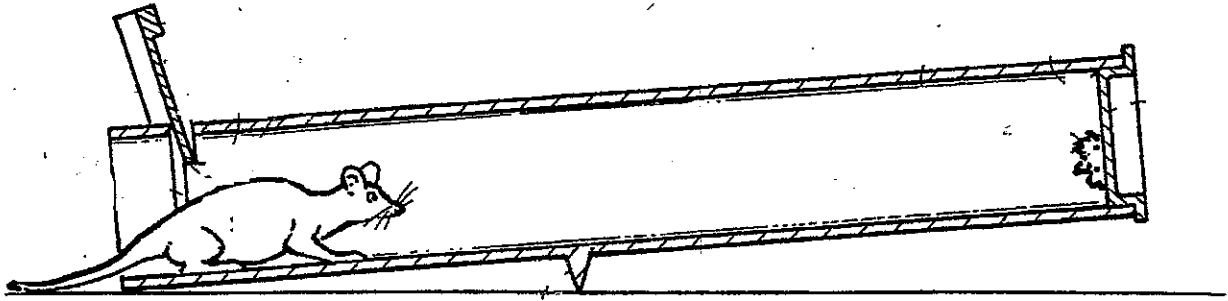
into the insulation of the wire 77, a threaded stop 82 is provided and extends through a threaded opening 84 formed in the head portion 32 of the gripping member 12. The stop 82 is rotated within the threaded opening 84 to move it in or out of the opening so as to project outwardly therefrom for engagement with the opposite surface formed on the head portion 34 of the gripping end member 14 as the gripping members are moved to the closed position thereof. It is seen that when the stop 82 engages the opposite surface of the gripping member 14, it will prevent the gripping members from further closing, and thereby will prevent further penetration of the blade edges 54 and 56 into the insulation of the wire 77.

Sometimes it is desirable to remove the wire 77 after the penetration of the insulation thereof by the blade edges 54 and 56 and before stripping of the insulation therefrom. The insulation can then be easily stripped from the wire 77 by placing the lead-in end of the wire between jaws 86 and 88 as formed on the opposed surfaces of the head portions 32 and 34 of the gripping members. As illustrated in FIGS. 3 and 4, the jaws 86 and 88 are roughened or knurled and firmly grip the insulation when urged into engagement therewith. Pivotal movement of the gripping members 12 and 14 to the closed position thereof will cause the jaws 86 and 88 to firmly engage the insulation, and an outward pull on the wire will easily detach the portion of the insulation to be stripped from the wire after the penetrating or cutting action has been accomplished.

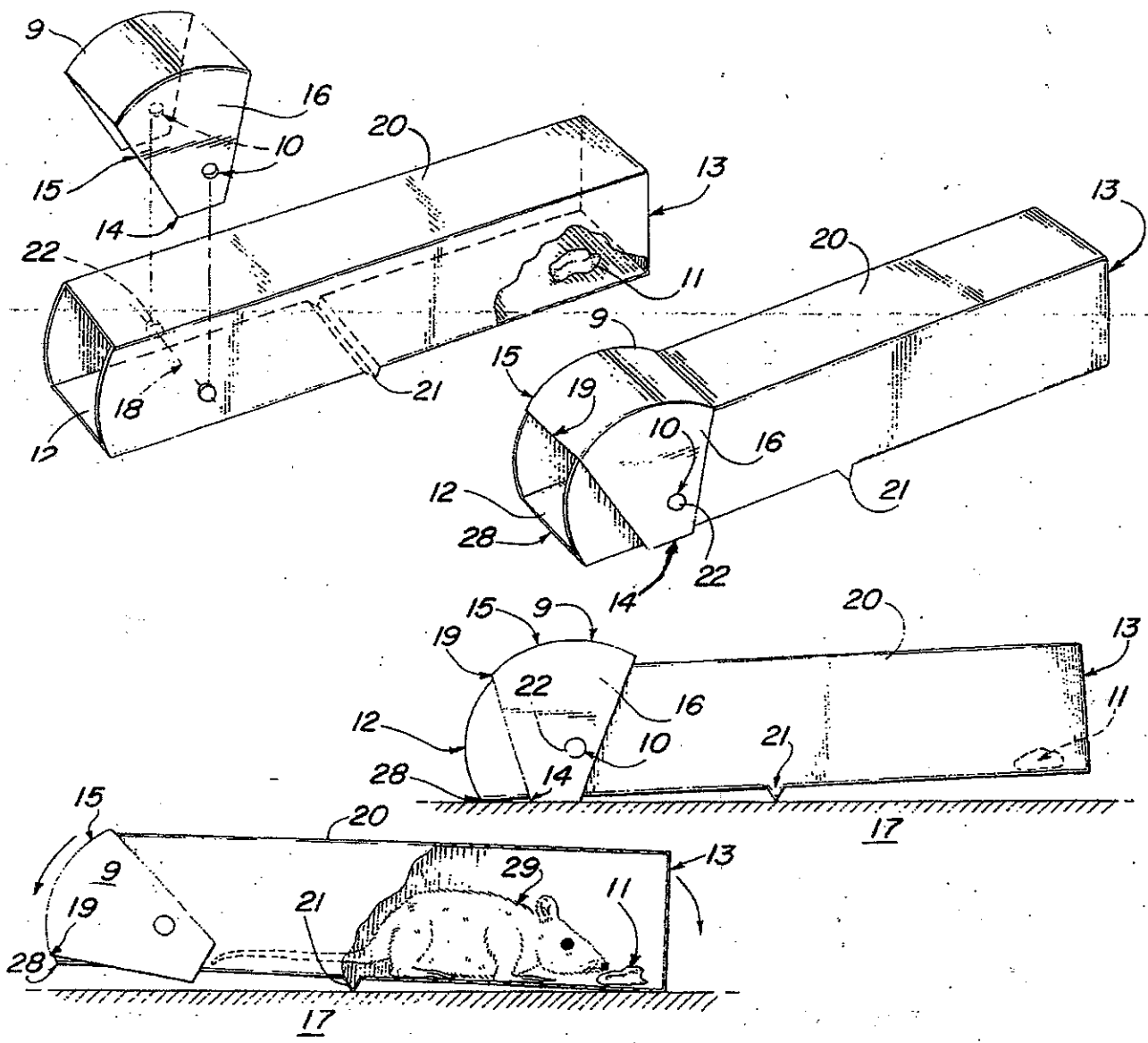
If it is desirable to strip a wire of different diameter, the tubular member 36 and the cutting assembly may be removed from the gripping members and replaced with similar elements of the appropriate size. This is accomplished by removing the pins 62 and 64 and the pivot block 20.

In the use of the device, the wire 77 is threaded through the tubular member 36, the tapered opening 44 providing for easy entry of the lead-in end of the wire 66, the wire projecting through the enlarged entry passage 38 into the reduced passage 42 and then outwardly thereof for contact with the upstanding end portion 76 of the gauge 72. The gripping members 12 and 14

are then pivotally moved to a closed position which carries the cutting elements 46 and 48 therewith, thereby bringing the blade edges 54 and 56 into contact with the insulation of the wire 77 in a cutting or penetrating action. If desired, the gripping members may remain in the closed position, where after the wire 77 is pulled outwardly to strip the end portion of the insulation from the wire. In this connection, the tapered entry 40 enables the wire 66 to be pulled there against at an angle without cutting the wire insulation at that point, this movement further providing additional leverage for extracting the wire in a stripping action. If desired, the wire may be removed from the tubular member prior to the stripping movement by release of the gripping members 12 and 14 from the closed position; and thereafter, the end portion of the wire that has been penetrated can be placed between the jaws 86 and 88, the gripping members closed thereon and the wire pulled outwardly to strip the insulation from the end portion.



Q1 INVENTION



PRIOR ART Q1

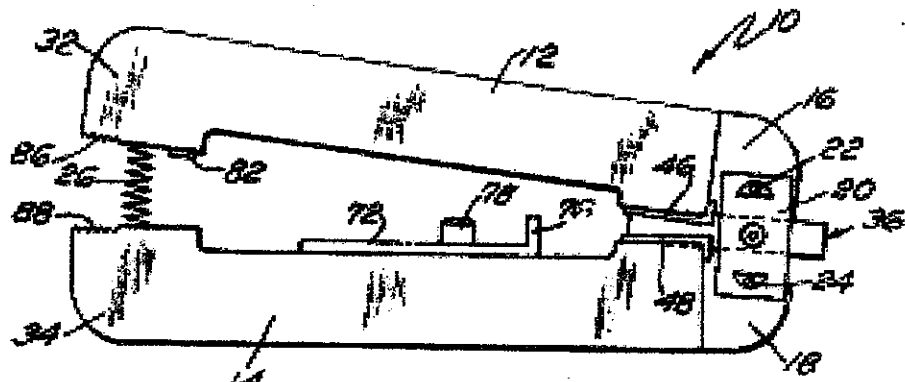


FIG. 1

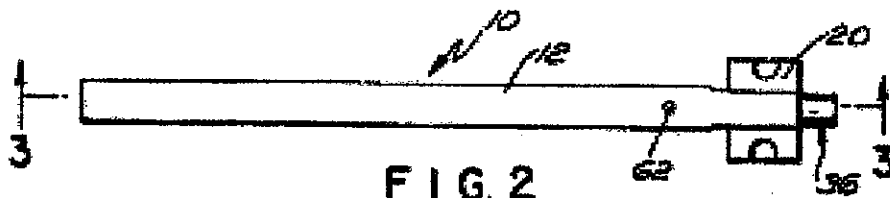


FIG. 2

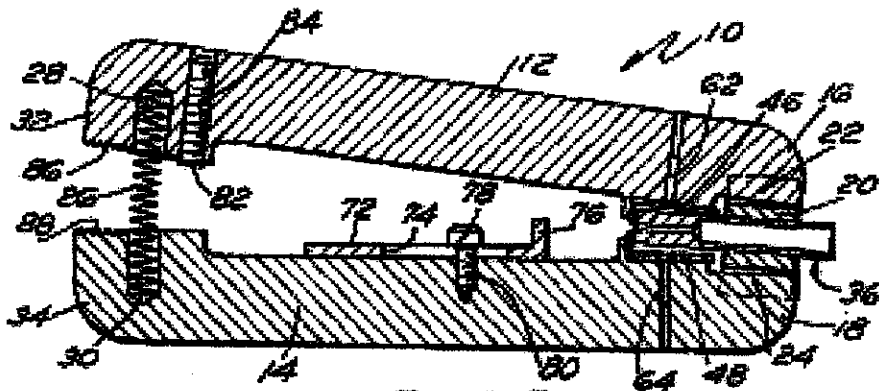


FIG. 3

Q2 INVENTION
(Figures 1-3, continues next page)

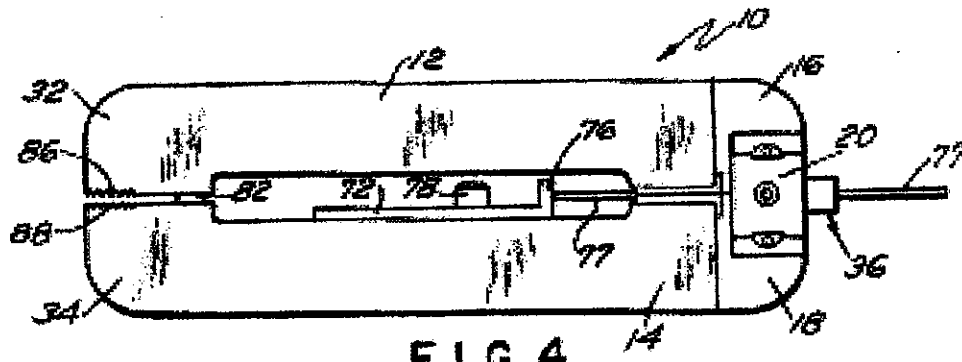


FIG. 4

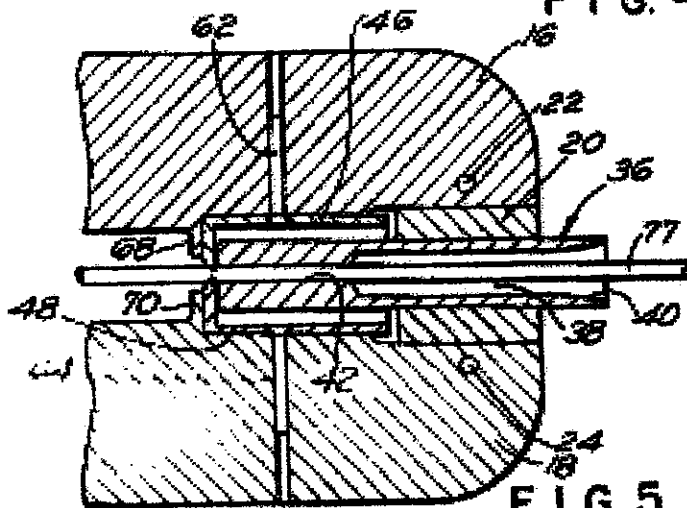


FIG. 5

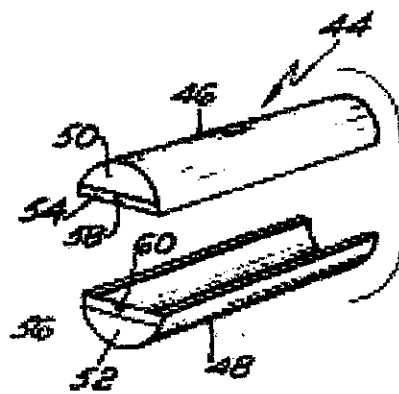
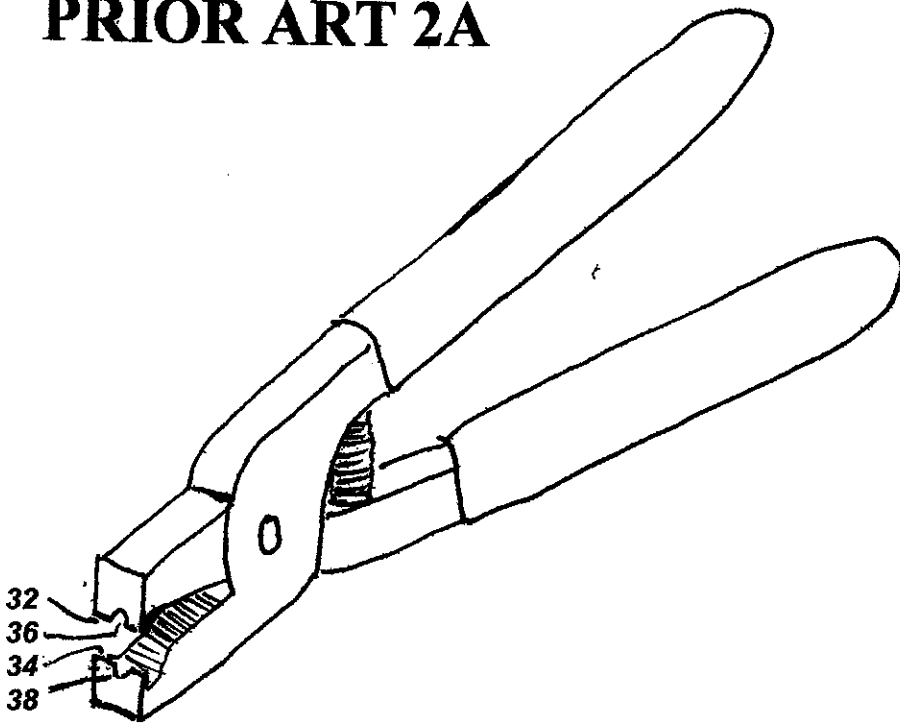


FIG. 6

Q2 INVENTION (Figures 4-6)

PRIOR ART 2A



PRIOR ART 2B

