United States Patent

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[54] **DEVICE FOR APPLYING AND RELEASING PRESSURE**

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[51] **Int. Cl.** **A61f 5/00**

[58] **Field of Search** ..... 128/68, 2.05 N, 69, 60, 61, 128/54, 67, 325, 2 N; 73/80, 81, 141 AB

[56] **References Cited**

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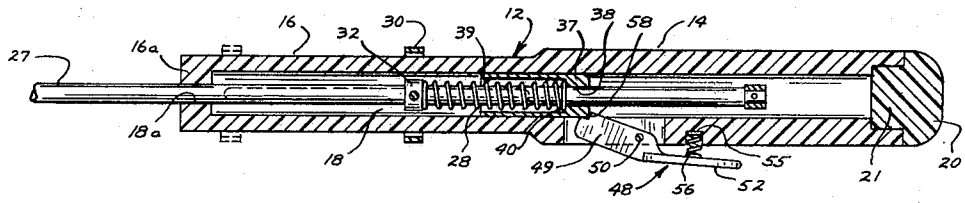
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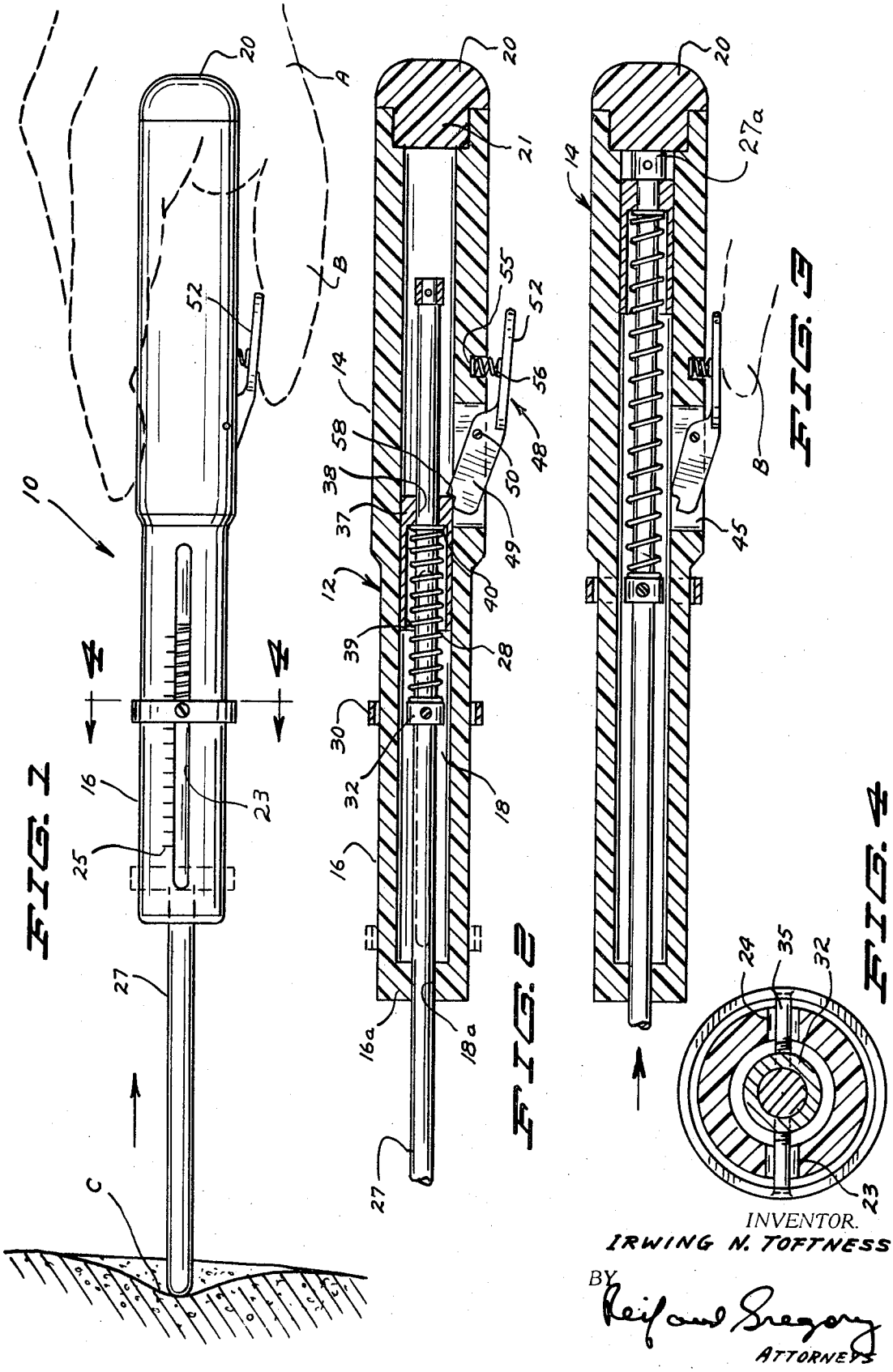
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[57] **ABSTRACT**

A pressure applying and pressure releasing device consisting of a spring pressed rod in connection with a gauge to apply a measured degree of pressure by means of said rod against a given area and said rod has in connection therewith a stop member to hold said rod in its pressure applying position and means to actuate said stop member to release said rod from its pressure applying position.

1 Claim, 4 Drawing Figures




FIG. 1
FIG. 2
FIG. 3
FIG. 4
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DEVICE FOR APPLYING AND RELEASING PRESSURE

BACKGROUND AND SUMMARY OF THE INVENTION

The device herein is used to apply a measured degree of linear pressure to a given area and embodies a gauge for a ready determination of the pressure applied. The device is manually operated. The essential novelty of the device comprises structure therein providing for a quick release of pressure being applied.

A particular application for the device herein is present in the practice of chiropractic wherein in the treatment of a patient, the chiropractor applies pressure to a given specific area of the spinal column for adjustment of vertebrae thereof to relieve a condition causing pressure, as upon a nerve. It is within the practice to apply the pressure for a given period of time and thereafter it is desirable to have the pressure withdrawn from area of its application as quickly as possible. In applying pressure by hand such as finger pressure, it takes on the order of one-tenth of a second for the operator or chiropractor to remove his finger from the body of the patient for a complete release of the pressure applied. The effectiveness of the adjustment made by the chiropractor has been found to have specific correlation to the speed with which the applied pressure can be withdrawn. The body responds to treatment of pressure by a reflex action of muscles, ligaments and surrounding connective tissue upon withdrawal of the pressure. The faster the body is permitted to respond the more effective is its action in returning vertebrae to a corrective position to relieve nerve pressure.

It is a principal object of the invention herein to provide for the removal of the applied pressure in a much faster interval of time than is possible for a manual removal thereof such as by a chiropractor removing his hand from the body of a patient or such as by a chiropractor manually withdrawing a pressure applying device from the body of a patient.

It is another object of the invention herein to provide a device by means of which a measured amount of pressure may be applied to a desired or specific area of a patient and have that pressure removed on the order of one one-hundredth of a second as compared to one-tenth of a second which is approximately the time required for the chiropractor to fully withdraw his hand from the body of the patient.

It is still another object of this invention to provide a device embodying a pressure gauge and a spring loaded pressure applying rod with a stop member in connection therewith whereby said rod may be held in a pressure applying position and said stop member may be very quickly disengaged therefrom for a quick withdrawal of said rod from its pressure applying position.

More generally the invention herein relates to a device comprising a substantially cylindrical housing having a spring loaded pressure applying rod disposed therein and moving axially thereof, means carried by said housing to determine the degree of pressure being applied by said rod, means within said housing holding said rod in a pressure applying position and means in connection with said rod holding means for a quick release of the same from its pressure applying position.

These and other objects and advantages of the invention will be set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to similar parts throughout the several views and in which:

FIG. 1 is a view in side elevation showing the device herein in a pressure applying position;

FIG. 2 is a view similar to FIG. 1 in longitudinal vertical section on a somewhat large scale with a portion broken away;

FIG. 3 is a view similar to FIG. 2 with a portion thereof broken away and showing the device herein in a pressure released position; and

FIg. 4 is a view in vertical cross section on an enlarged scale taken on line 4—4 of FIG. 1 as indicated.

DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to the drawings, the device comprising the invention herein is indicated generally by the reference numeral **10**. Specific details of the device may take on various configurations.

Said device comprises a generally cylindrical housing **12** which is presumably formed as a unitary member of suitable molded plastic material. Said housing is shown having a handle portion **14** of somewhat larger diameter than the remaining barrel portion **16** thereof. Said housing has a central longitudinal passage **18** therethrough of uniform diameter. Said passage **18** is reduced in diameter at its forward end portion **18a** in passing through the forward end **16*a*** of said barrel. At the rearward end of said handle portion **14*a*** is an end cap or plug **20** having a small projecting portion of reduced diameter **21** extending into the said passage **18** to pressfit therein or as may be desired said plug may be fused into said handle portion **14** for a permanent connection therewith.

A pair of elongated somewhat narrow slots **23** and **24** extend through said barrel **16** as indicated in FIGS. **1** and **4**. Indicia **25** will be provided along said slots to indicate various degrees of pressure readings.

Disposed within said passage **18** is a pressure applying member **27** here shown as a cylindrical rod having sufficient length to be disposed the full length of passage **18** and to extend outwardly and forwardly thereof as indicated in FIG. **3**. Carried on a portion of said rod within said housing is a compression means **28** shown here as a compression coil spring and which functions in connection with said pressure applying member.

Disposed about said barrel portion **16** is an annular ring or collar **30**. Carried on said rod is a small annular hub portion **32** in diametrical alignment with said ring **30**. Extending diametrically through said collar **30** and said hub is a pin **35**. Said hub forms a shoulder acting as a stop member for one end of said spring **28**.

Carried within said passage **18** is a retaining means **37** shown here as having a bore **38** of just sufficient size to accommodate said rod **27** and having a counter-bore **39** forwardly thereof a size to receive and retain an end portion of spring **28**. Formed between said bore **38** and said counter-bore **39** is a shoulder **40** forming a stop for the adjacent end portion of said spring **28**. Said sleeve is freely slidable within said passage **18**. Said rod **27** is freely slidable through said sleeve **37**. Secured to the inner end of said rod **27** as by a pin is a collar **27*a*** larger in diameter than said bore **38**.

Provided in said handle portion **14** is a narrow elongated slot **45**. In connection with said slot and pivotal therethrough is a quick releasing stop member **48**. Said stop or trigger member comprises a flat head portion **49** disposed in said slot and is pivotally held therein by a pin **50**. Extending outwardly of said portion **49** is a finger engaging means or handle portion **52** shown here in the form of a flat finger engaging plate member disposed in a plane at right angles to the plane of the portion **49**. Within said handle **14** is a small recess **55** in alignment with said handle portion **52** and the same has disposed therein a portion of a coil spring **56** which bears against the underside of said handle **52** to urge the same into an extended position as shown.

With reference to said stop portion **49**, an inner corner portion **58** thereof is shown cut away forming an annular shoulder or detent adapted to engage and releasably hold the rearward end portion of the sleeve **37**.

OPERATION

The device herein as described is held in operating position as indicated by the phantom view of a hand A in FIG. **1** which is shown grasping the handle portion **14** and having the thumb B overlying the handle **52** of the stop member **48**. At this time there is no thumb pressure being applied to said handle portion **52**. Said stop member **48** and said slots **23** and **24** are disposed circumferentially of the housing **12** relative to each other so that with the stop member portion **52** being positioned at the bottom of the device, as shown, the indicia **25** giving pressure readings is readily seen by the operator.

Next the rod **27** is extended forwardly or outwardly of the barrel **16** to the point where the collar **27***a* moves the sleeve **37** forwardly sufficiently for said sleeve to become engaged by the shoulder **58**. Said spring **56** normally urges said handle portion **52** outwardly sufficiently to have its portion **49** inwardly of said passage **45** whereby said sleeve **37** automatically becomes engaged by said shoulder upon being pulled forwardly thereof. The collar **30** in connection with the hub portion **32** is positioned on said rod **27** with respect to said sleeve **37** and with respect to the compression of the spring **28** so that when said rod **27** is urged inwardly of said passage **18** against the pressure of said spring **28**, as indicated in FIG. **2**, the annular ring **30** will indicate a reading of said indicia **25** which will give a true reading of the pressure which is exerted by said spring and which is being applied against a body C by the rod **27**.

With the device herein used to provide a chiropractic adjustment by the application of pressure to a specific area of a body C, as illustrated, the operator will merely position the tip of the rod **27** at a desired point and with the rod first having been extended into a locked or latched position as described, the operator merely moves the housing forwardly of the rod compressing the spring **28** until the ring **30** indicates the degree of pressure which the operator wishes to apply. The indicia will indicate pressure as in terms of ounces of pressure for purposes herein. No numerical readings with respect to said indicia are here indicated.

The operator holds the device in a steady position for the length of time he desires to apply pressure. When it is desired to release the pressure, it is most beneficial for effective chiropractic adjustment of the patient to have the pressure released instantaneously. With pressure being applied by the hand of the operator and with the release of pressure being dependent upon the backward movement of the operator's hand in withdrawing the instrument, it is estimated that there is required about one-tenth second interval of time for a complete withdrawal of pressure. Here with a mechanical release of pressure by the disengagement of shoulder **58** from the sleeve **37**, regardless of the time interval required for the pressure of the thumb B against the handle **52**, there is no release of pressure until the shoulder **58** is clear of said sleeve and then the spring **28** is being released snaps the rod away from the body C for an instantaneous removal of pressure which is indicated as being on the order of one one-hundredth of a second as compared to a hand withdrawal of the device **10** which would be on the order of one-tenth of a second.

The device herein has proved to be highly satisfactory in use in making a significant contribution to an improvement in the effectiveness of chiropractic adjustment.

It will of course be understood that various changes may be made in form, details arrangement and proportions of the parts without departing from the scope of the invention herein which, generally stated, consists in an apparatus capable of carrying out the objects above set forth, in the parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:

1. A device for applying and releasing pressure, having in combination

a housing including a handle portion,

a rod-like pressure applying member extending partially outwardly of said housing and being movable axially thereof,

a coil spring disposed about said pressure applying member,

said pressure applying member carrying a stop means for said spring at one end of said spring,

a stop means for said spring at the other end thereof comprising an elongated member pivotally secured in said housing on an axis disposed in a direction transversely of the axis of said housing and having a finger engaging portion extending outwardly of said housing and having a spring stopping portion extending inwardly of said housing,

said spring stopping portion being engaged upon said spring being compressed by movement of said pressure applying member inwardly of said housing, and

said outwardly extending portion being engaged for operation by a finger of the hand holding said handle portion for a quick release of said spring.

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