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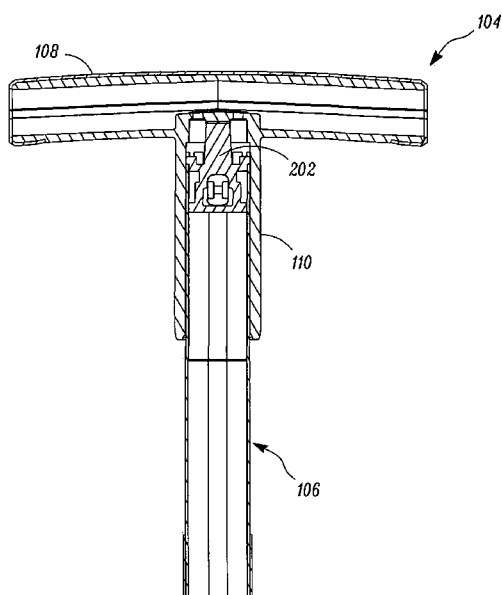


FIG. 2A

(57) Abstract: A hand-held outdoor tool (100, 600, 700) includes at least one working implement (102, 602a, 602b, 702a, 702b) and at least one handle (106, 604a, 604b, 704a, 704b). Further, a shock-absorbing member (202, 608, 706) is provided adjacent to the handle (106, 604a, 604b, 704a, 704b). Moreover, the shock-absorbing member (202, 608, 706) comprises at least one resilient part (204, 610, 708), the resilient part (204, 610, 708) being made of a material having values of specific parameters (C1, C2, R) measured according to standard tests.

SHOCK ABSORBING MEMBER FOR AN OUTDOOR TOOL

Technical field

The present invention relates to a hand-held outdoor tool, and more particularly to a shock-absorbing member to absorb vibrations during operation of the hand-held outdoor tool.

Background

Hand-held outdoor tools for example, but not limited to, spade, shovels, snow shovels, loppers, hedge clippers, and secateurs are widely used for landscape and/or lawn maintenance. Typically, an outdoor tool includes a handle and a grip member which may allow an operator to hold and manipulate the outdoor tool during operation. During operation, shocks and/or vibrations may be transmitted to the operator via the handle.

Various solutions have been proposed in the art to reduce shocks and/or vibrations transmitted to the operator. These solutions include an elastomeric member (E.g., rubber), a spring mechanism, a hydraulic/pneumatic dampening mechanism, or the like provided between the grip member and the handle. These solutions may provide a substantial reduction in shocks and vibration experienced by the operator during the operation. However, in the absence of any substantial shocks or vibrations, there might be a relative movement, between the grip member and the handle, providing a negative feedback to the operator that the grip member is not properly secured to the handle.

In light of the foregoing, there is a need for an improved shock-absorbing member to be used in outdoor tools.

Summary

In view of the above, it is an objective to solve or at least reduce the problems discussed above. In particular, an objective is to provide an improved shock-absorbing member for an outdoor tool.

The objective is achieved with a novel hand-held outdoor tool according to claim 1. The outdoor tool includes at least one working implement and at least one handle

connected to the at least one working implement. Further, a shock-absorbing member is provided adjacent to the at least one handle, the shock-absorbing member being adapted to absorb vibrations during operation of the outdoor tool. Moreover, the shock-absorbing member includes at least one resilient part. The at least one resilient part is made of a material having a compression set, measured according to ISO 815-1 at a temperature of about 40°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%. Further, the material has a compression set, measured according to ISO 815-2 at a temperature of about -10°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%. Moreover, the material has a rebound resilience, measured according to DIN 53512 at a temperature of about 23°C, less than 25%, preferably less than 20%. Additionally, according to claim 2, the material of the at least one resilient part exhibits a change in the parameters less than 5%, and preferably less than 2%, when subjected to ageing at a temperature of about 70°C according to DIN 53508. Such parameters of the material ensure that the resilient part has high resistance to permanent deformation when subjected to compression at various temperatures. Moreover, the material also dissipates a high amount of energy when subjected to impact, thereby improving shock absorption by the resilient part. Moreover, the various advantageous parameters of the material undergo low change due to ageing. This improves the working life of the resilient part.

According to claim 3, the outdoor tool further comprises a grip member attached to the at least one handle and the shock-absorbing member is provided between the handle and the grip member. Further, according to claim 4, the handle and the grip member are slidably connected.

According to claim 5, the shock-absorbing member further includes a body part which is attached to the handle while the resilient part rests against an inner surface of the grip member.

According to claim 6, the resilient part includes a hole which extends along a longitudinal axis while the body part includes a through hole which extends substantially transverse to the longitudinal axis. Further, according to claim 7, the handle has a cylindrical shape with slots in substantial alignment with the through hole in the body

part. Moreover, a fastening member extends into the through hole and the slots to attach the body part to the handle.

According to claim 8, the grip member includes a protruding member extending into the hole of the resilient part, the protruding member having one or more ribs contacting the resilient long the circumference of the hole. The protruding member is adapted to maintain an optimal tension between the grip member and the handle despite dimensional changes of the shock-absorbing member.

According to claim 9, a spring is provided between the grip member and the shock-absorbing member. The spring is adapted to maintain an optimal tension between the grip member and the handle despite dimensional changes of the shock-absorbing member.

According to claim 10, the outdoor tool is a spade. Alternatively, according to claim 11, the outdoor tool is a snow shovel.

According to claim 12, the hand-held outdoor tool includes two working implements and at least one handle connected to the each of the working implements. Further, the shock-absorbing member is provided between the handles, the shock-absorbing member including one or more resilient parts.

According to claim 13, the outdoor tool is a hedge clipper. Alternatively, according to claims 14 and 15, the outdoor tool is one of a secateur or a pruning lopper.

Brief description of the drawings

FIG. 1 illustrates a hand-held outdoor tool, according to an embodiment of the present invention;

FIG. 2A illustrates a sectional view of a grip member and a handle of the outdoor tool, according to an embodiment of the present invention;

FIG. 2B illustrates a sectional perspective view of the grip member and the handle of the outdoor tool, according to the embodiment of FIG. 2A;

FIG. 2C illustrates a sectional perspective view of the grip member and the handle of the outdoor tool with a shock-absorbing member in deformed condition, according to the embodiment of FIGS. 2A and 2B;

FIG. 3A illustrates a perspective view of the shock-absorbing member, according to an embodiment of the present invention;

FIG. 3B illustrates a sectional view of the shock-absorbing member, according to the embodiment of FIG. 3A;

FIG. 4 illustrates a sectional view of the grip member and the handle of the outdoor tool with a spring provided between the grip member and the shock-absorbing member, according to an embodiment of the present invention;

FIG. 5A illustrates a sectional view of the grip member and the handle of the outdoor tool, according to another embodiment of the present invention;

FIG. 5B another sectional view of the grip member and the handle of the outdoor tool, according to the embodiment of FIG. 5A;

FIG. 5C illustrates a sectional view of the grip member and the handle of the outdoor tool with the shock-absorbing member in a shrunken condition, according to the embodiment of the FIGS. 5A and 5B;

FIG. 6 illustrates the hand-held outdoor tool, according to another embodiment of the present invention; and

FIG. 7 illustrates the hand-held outdoor tool, according to yet another embodiment of the present invention.

Description of embodiments

The present invention will be described more fully hereinafter with reference to the accompanying drawings, in which example embodiments of the invention incorporating one or more aspects of the present invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. For example, one or more aspects of the present invention can be utilized in other embodiments and even other types of devices. In the drawings, like numbers refer to like elements.

FIG. 1 illustrates a hand-held outdoor tool **100** (hereinafter referred to as “the outdoor tool **100**”), according to an embodiment of the present invention. Though the

outdoor tool **100** shown in FIG. 1 is a spade, the outdoor tool **100** may be a snow shovel, a hedge clipper (shown in FIG. 6), secateur (shown in FIG. 7), a lopper, a branch pruner, or the like. Further, the outdoor tool **100** may be of any shape or configuration within the scope of the present invention.

As illustrated in FIG. 1, the outdoor tool **100** includes a working implement **102**, a grip member **104**, and a handle **106** attached to both the working implement **102** and the grip member **104**. The handle **106** may be of substantially cylindrical shape and extend along a longitudinal axis **L** of the outdoor tool **100**. However, the handle **106** may have any other shape or cross-section within the scope of the present invention. The working implement **102**, embodied as a blade, may be permanently attached to the handle **106** via a mechanical joint, such as rivets, nails, bolts, or the like. In another embodiment of the present invention, the working implement **102** may include a socket into which an end of the handle **106** can be inserted. The working implement **102** may also be detachably secured to the handle **106** such that other types of working implements may be attached to the handle **106**. Alternatively, the working implement **102** and the handle **106** may be manufactured as an integral component made of a similar material via one or more processes, such as, moulding.

The working implement **102** may be made of a metal or a reinforced composite while the handle **106** may be made of plastic or wood. The working implement **102** may be movable relative to the handle **106** for better ergonomics during operation. Further, the handle **106** may include multiple telescopic members such that its length is adjustable.

As illustrated in FIG. 1, the grip member **104** includes an upper portion **108** and a lower portion **110**. The lower portion **110** of the grip member **104** extends along the longitudinal axis **L** and the upper portion **108** extends along a transverse direction **T** substantially perpendicular to the longitudinal axis **L**. During usage of the outdoor tool **100**, shocks and/or vibrations may be transmitted from the working implement **102** to the grip member **104** via the handle **106**. In an embodiment of the present invention, a shock absorbing member (described with reference to FIGS. 2A, 2B, 3A and 3B) is provided between the grip member **104** and the handle **106** to substantially reduce or dampen the shocks and/or vibrations to the grip member **104**.

FIGS. 2A and 2B illustrate sectional views of the grip member 104 and the handle 106 with a shock-absorbing member 202 provided between them, according to an embodiment of the present invention. The upper portion 108 and the lower portion 110 of the grip member 104 may be made of plastic and integrally formed together by moulding process. Further, the lower portion 110 of the grip member 104 is slidably connected to a portion of the handle 106 to allow a relative movement. Moreover, as illustrated in FIG. 2B, the upper portion 108 may also include multiple grooves 112 and a cushioning pad 114 of a soft or a resilient material to provide a better grip to an operator during usage. In various another embodiments of the present invention, the upper portion 108 may have a curved or “D-shaped” structure.

In an embodiment of the present invention, the shock-absorbing member 202 includes a resilient part 204 and a body part 206. The resilient part 204 rests against an inner surface 208 of the grip member 104 and the body part 206 is attached with the handle 106. The body part 206 may include a through hole 210 and a corresponding slot 212 is provided in the handle 106, such that during assembly the through hole 210 and the slot 212 may be substantially aligned. A fastening member 214 may extend into the through hole 210 and the slot 212 to attach the body part 206 to the handle 106. Further, another slot (not shown) is provided in the lower portion 110 of the grip member 104 to permit a limited movement of the body part 206 and the handle 106 relative to the lower portion 110.

FIG. 2C illustrate a sectional view of the grip member 104, the handle 106 with the shock-absorbing member 202 in a deformed condition, according to an embodiment of the present invention. The deformed condition of the shock-absorbing member 202 may occur during operation of the outdoor tool 100 when a user grasps the grip member 104 and applies a downward force with the working implement 102 held against a working surface. As a result, the lower portion 110 grip member 104 and handle 106 slide towards each other. Normally the fastening member 214 rests against a lower end of the slot 212, as illustrated in FIG. 2B. However, due to the sliding, the fastening member 214 comes into contact with an upper end of the slot 212, and restricts further sliding between the grip member 104 and the handle 106. Moreover, as shown in FIG. 2C, the resilient part 204 deforms as the inner surface 208 of the grip member 104 forces against the

resilient part **204**. The deformed condition of the resilient part **204**, as illustrated in FIG. **2C**, is purely exemplary in nature and the resilient part **204** may deform in any other manner depending on the extent of sliding between the grip member **104** and the handle **106**. The resilient part **204** may frequently switch between a normal condition and a deformed condition during usage as the grip member **104** and the handle **106** slide relative to each other in varying degrees. Shocks transmitted from the working implement **102** to the handle **106** during usage may be substantially absorbed by the resilient part **204**, thereby isolating the grip member **104** from the shocks. This may improve operation of the outdoor tool **100**, and usage experience for the user.

FIG. **3A** illustrates a perspective view of the shock-absorbing member **202** as illustrated in FIGS. **2A** and **2B**. In a preferred embodiment of the present invention the shock-absorbing member **202** is formed integrally using a resilient material showing the mechanical properties as needed with the resilient part **204**. As illustrated in FIG. **3A**, the through hole **210** in the body part **206** may have a first large rectangular cross-section **302** and a second smaller cross-section **304**. During assembly, the fastening member **214** may slide into the through hole **210** and fits closely within the second smaller cross-section **304**. The body part **206** may also include one or more cut-out sections **306** to reduce weight of the body part **206** the also decrease a contact surface area with the inner surface of the handle **106**. Moreover, two projections **308a** and **308b** are provided on the body part **206** to support the body part **206** along a peripheral edge of the handle **106**. The projections **308a** and **308b** may further strengthen the attachment of the body part **206** with the handle **106** in addition to the fastening member **214**. FIG. **3B** illustrates a plane view of the shock-absorbing member **202** as illustrated in FIG. **3A**. In an embodiment of the present invention, a first diametrical width **D1** of the body part **206** is substantially equal to an internal diameter of the handle **106** to provide a clearance fit for easy sliding and removal of the shock-absorbing member **202**. Further a second diametrical width **D2** of the projections **308a** and **308b** is substantially equal to an external diameter of the handle **106**. In an alternative embodiment of the present invention, the body part **206** is made of plastic or a composite material by a moulding or a casting process.

Referring again to FIG. **3A**, the resilient part **204** have a substantially cylindrical shape and attached to the body part **206** using a suitable technique known in the art, for

example, adhesives, moulding or by using mechanical means. A diametrical width **D3** (shown in FIG. **3B**) of the resilient part **204** may range from about 50% to about 80% of the second diametrical width **D2**. Moreover, a hole **310** is provided on the resilient part **204** such that the shock absorbing properties of the resilient part are governed by the choosing a suitable size of the hole **310**.

In an embodiment of the present invention, the resilient part **204** may be made of a material having a compression set (**C1**), measured according to ISO 815-1 at a temperature of about 40°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%. Further, the material has a compression set **C2**, measured according to ISO 815-2 at a temperature of about -10°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%. The compression sets **C1** and **C2**, measured according to ISO 815-1 and ISO 815-2, are indicative of a permanent deformation remaining in a specimen made of the material after being subjected to compression for a specific duration and temperature. The tests according to ISO 815-1 are conducted at ambient or elevated temperatures (about 40°C in this embodiment), while the tests according to ISO 815-2 are conducted at low temperatures (about -10°C in this embodiment). The shape and dimensions of the specimen, testing equipment, and other testing parameters are substantially same for ISO 815-1 and ISO 815-2. The most preferable value of 6% for both compression sets **C1** and **C2** indicates that the material of the resilient part **204** has a high resistance to permanent deformation when subjected to compression forces for a long duration. Thus, the resilient part **204** undergoes minimal permanent deformation over prolonged usage of the outdoor tool **100**. Consequently, the shock-absorbing member **202** has a long working life.

Moreover, the material of the resilient part **204** has a rebound resilience **R**, measured according to DIN 53512 at a temperature of about 23°C, less than 25%, preferably less than 20%. The rebound resilience **R** is a measure of energy dissipated as heat by the material when subjected to impact. A lower value of the rebound resilience **R** indicates a higher dissipation of energy. Thus, the rebound resilience **R** of the material being less than 20 % means that the material dissipates a substantial amount of energy. Consequently, the resilient part **204** has improved damping properties as the resilient part

204 absorbs and dissipates a significant fraction of the energy from shocks and vibrations.

In an embodiment of the present invention, the material of the resilient part **204** exhibits a change **Z** in the parameters **C1**, **C2** and **R** less than 5%, and preferably less than 2%, when subjected to ageing at a temperature of about 70°C according to DIN 53508. DIN 53508 relates to standard methods for subjecting a specimen to artificial ageing. Specific parameters of the specimen are measured before and after the ageing process. The change **Z** in the parameters is indicative of the change in various parameters of the material of the specimen with time. The material of the resilient part **204** exhibits a low change in the parameters **C1**, **C2** and **R**. This means that the resilient part **204** retains its advantageous properties even after prolonged usage.

FIG. 4 illustrates a sectional view of the grip member **104**, the handle **106** and the shock-absorbing member **202** with a spring **402** provided between the grip member **104** and the shock-absorbing member **202**, according to an embodiment of the present invention. One end of the spring **402** is biased against the inner surface **208** of the grip member **104** while the other end is biased against the body **206** of the shock-absorbing member **202**. The shock-absorbing member **202** may undergo dimensional changes due to prolonged usage. In some cases, the shock-absorbing member **202** may shrink. Due to shrinkage, the resilient part **204** may not be in contact with the inner surface **208** of the grip member **104** in a normal state. As a result, the grip member **104** may appear to be loosely mounted on the handle **106**, thereby providing a negative feedback to a user. However, the spring **402** maintains a proper tension between the grip member **104** and the handle **106** irrespective of any dimensional changes of the shock-absorbing member **202**. Further, the spring **402** is not adapted to absorb shocks during usage of the outdoor tool **100**.

FIGS. 5A-5C illustrate sectional views of the grip member **104**, the handle **106** and the shock-absorbing member **202**, according to another embodiment of the present invention. As illustrated in FIGS. 5A-5C, the grip member **104** includes a protruding member **502** which extends from the inner surface **208** of the grip member **104** into the hole **310** of the resilient part **204**. Further, as illustrated in FIG. 5B, the protruding member **502** includes ribs **504** which contact the resilient part **204**. In the embodiment, as

illustrated in FIG. 5B, there are four ribs **504** oriented at about 90 degrees to each other. However, the protruding member **502** may include any number of ribs **504** oriented at any angle relative to each other. The ribs **504** of the protruding member **502** are adapted to contact the shock absorbing member **202** irrespective of any dimensional changes of the shock absorbing member **202**. As illustrated in FIG. 5C, the protruding member **502** maintains contact between the grip member **104** and the shock-absorbing member **202** although the shock-absorbing member **202** has shrunk and the resilient part **204** is not in contact with the inner surface **208** of the grip member **104**. Thus, the protruding member **502** maintains an optimum tension between the grip member **104** and the handle **106**.

FIG. 6 illustrates a hedge clipper **600**, according to an embodiment of the present invention. The hedge clipper **600** includes a pair of working implements **602a** and **602b**. The working implements **602a** and **602b** may be cutting blades made of metal or metallic alloy and coated with a corrosion resistance layer. The hedge clipper **600** further includes a pair of handles **604a** and **604b** for manually operating the hedge clipper **600**. The handles **604a** and **604b** may include suitable soft grip portions **606** to provide an additional comfort to a user during operation. In an embodiment of the present invention, a shock-absorbing member **608** is provided between the handles **604a** and **604b**. The shock-absorbing member **608** absorbs vibrations and unwanted shocks during the operation of the hedge clipper **600**. Further, the shock-absorbing member **608** may include one or more resilient parts **610**. In an embodiment of the present invention, the resilient parts **610** may be made of a material having a compression set **C1**, measured according to ISO 815-1 at a temperature of about 40°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%. Further, the material of the resilient parts **610** has a compression set **C2**, measured according to ISO 815-2 at a temperature of about -10°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%. Moreover, the material of the resilient parts **610** has a rebound resilience **R**, measured according to DIN 53512 at a temperature of about 23°C, less than 25%, preferably less than 20%. In an embodiment of the present invention, the material of the resilient parts **610** exhibits a change **Z** in the parameters **C1**, **C2** and **R** less than 5%, and preferably less than 2%, when subjected to ageing at a temperature of about 70°C according to DIN 53508.

FIG. 7 illustrates a secateur **700**, according to an embodiment of the present invention. The secateur **700** includes a pair of working implements **702a** and **702b**. The working implements **702a** and **702b** may be cutting blades made of metal or metallic alloy and coated with a corrosion resistance layer. The secateur **700** further includes a pair of handles **704a** and **704b** for manually operating the secateur **700**. In an embodiment of the present invention, a shock-absorbing member **706** is provided between the handles **704a** and **704b**. The shock-absorbing member **706** absorbs vibrations and unwanted shocks during the operation of the secateur **700**. Further, the shock-absorbing member **706** may include one or more resilient parts **708**. In an embodiment of the present invention, the resilient parts **708** may be made of a material having a compression set **C1**, measured according to ISO 815-1 at a temperature of about 40°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%. Further, the material of the resilient parts **708** has a compression set **C2**, measured according to ISO 815-2 at a temperature of about -10°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%. Moreover, the material of the resilient parts **708** has a rebound resilience **R**, measured according to DIN 53512 at a temperature of about 23°C, less than 25%, preferably less than 20%. In an embodiment of the present invention, the material of the resilient parts **708** exhibits a change **Z** in the parameters **C1**, **C2** and **R** less than 5%, and preferably less than 2%, when subjected to ageing at a temperature of about 70°C according to DIN 53508.

It may be apparent to a person ordinarily skilled in the art that the details of the shock-absorbing members **202**, **608** and **706**, as described with reference to FIGS. **3A**, **3B**, **6**, and **7** are purely exemplary in nature, and the shock-absorbing members **202**, **608** and **706** may be any other shape, configuration or dimensions within the scope of the present invention. For example, the shock-absorbing members **202**, **608** and **706** may have a rectangular, an elliptical, and a polygonal or any other cross-sectional area instead of the circular or oval cross-section as shown.

In the drawings and specification, there have been disclosed preferred embodiments and examples of the invention and, although specific terms are employed,

they are used in a generic and descriptive sense only and not for the purpose of limitation, the scope of the invention being set forth in the following claims.

Although the out-door tools described with the aforementioned embodiments do work in a most advantageous manner employing a shock absorbing member as described with the characterizing part of claim one, it becomes obvious from this description to the one skilled in the art that the outdoor tools' specific mechanical design (as in particular described within the sub claims) will also show advantageous effects when being used with out-door tools that employ conventional shock absorbing members as for example natural rubber or rubber like plastics.

CLAIMS

1. A hand-held outdoor tool (100, 600, 700), comprising:
 - at least one working implement (102, 602a, 602b, 702a, 702b);
 - at least one handle (106, 604a, 604b, 704a, 704b) connected to the at least one working implement (102, 602a, 602b, 702a, 702b);
 - a shock-absorbing member (202, 608, 706) provided adjacent to the at least one handle (106, 604a, 604b, 704a, 704b), the shock-absorbing member (202, 608, 706) being adapted to absorb vibrations during operation of the outdoor tool (100, 600, 700);

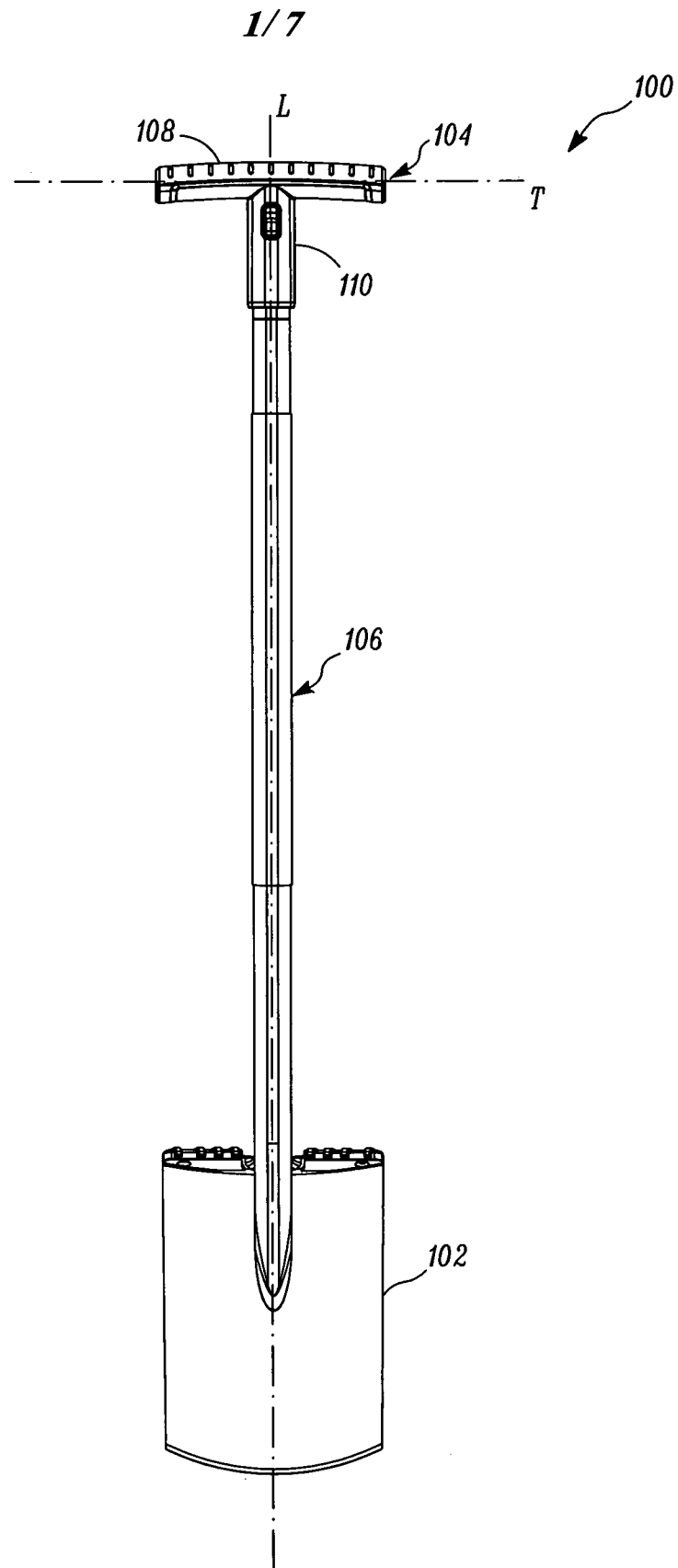
characterized in that,

 - the shock-absorbing member (202, 608, 706) comprises at least one resilient part (204, 610, 708), the at least one resilient part (204, 610, 708) being made of a material having:
 - a compression set (C1), measured according to ISO 815-1 at a temperature of about 40°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%,
 - a compression set (C2), measured according to ISO 815-2 at a temperature of about -10°C, less than 20%, preferably less than or equal to 10%, and most preferably less than or equal to 6%,
 - a rebound resilience (R), measured according to DIN 53512 at a temperature of about 23°C, less than 25%, preferably less than 20%.
2. A hand-held outdoor tool (100, 600, 700) according to claim 1, wherein the material of the at least one resilient part (204, 610, 708) exhibits a change (Z) in the parameters (C1, C2, R) less than 5%, and preferably less than 2%, when subjected to ageing at a temperature of about 70°C according to DIN 53508.
3. A hand-held outdoor tool (100) according to claims 1 or 2, wherein the hand-held outdoor tool (100) further comprises a grip member (104) attached to the at least

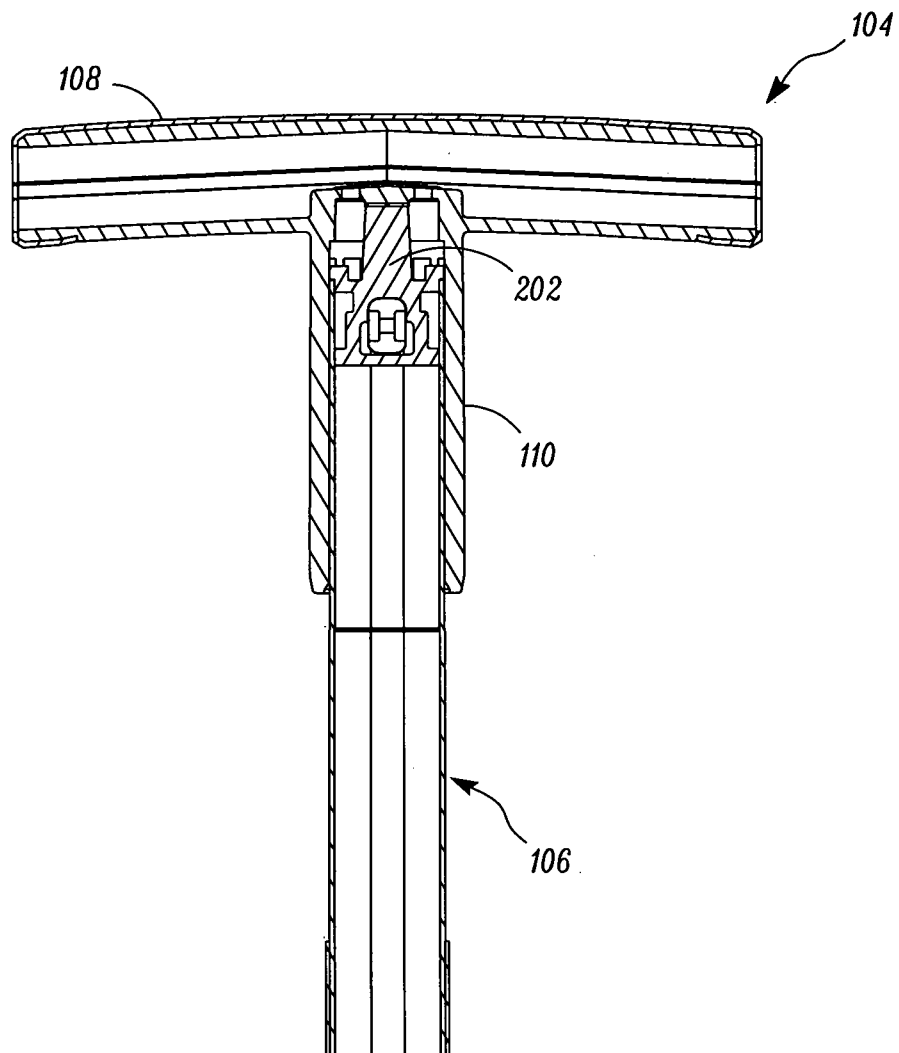
one handle (106), and the shock-absorbing member (202) is provided between the handle (106) and the grip member (104).

4. A hand-held outdoor tool (100) according to claim 3, the handle (106) and the grip member (104) are slidably connected.
5. A hand-held outdoor tool (100) according to claim 4, wherein the shock-absorbing member (202) further comprises a body part (206), the body part (206) is attached to the handle (106) and the resilient part (204) rests against an inner surface (208) of the grip member (104).
6. A hand-held outdoor tool (100) according to claim 5, wherein the resilient part (204) comprises a hole (310) extending substantially along a longitudinal axis (L) and the body part (206) comprises a through hole (210) extending substantially transverse (T) to the longitudinal axis (L).
7. A hand-held outdoor tool (100) according to claims 6, wherein the handle (106) comprises a cylindrical shape with slots (212) in substantial alignment with the through hole (210) in the body part (206), and a fastening member (214) extending into the through hole (210) and the slots (212) to attach the body part to the handle (106).
8. A hand-held outdoor tool (100) according to claim 6, wherein the grip member (104) comprises a protruding member (502) extending into the hole (310) of the resilient part (204), the protruding member (502) having one or more ribs (504) contacting the resilient part (204).
9. A hand-held outdoor tool (100) according to claim 4, a spring (402) is provided between the grip member (104) and shock-absorbing member (202).

10. A hand-held outdoor tool (100) according to any of the preceding claims comprises a spade.
11. A hand-held outdoor tool (100) according to any of the preceding claims comprises a snow shovel.
12. A hand-held outdoor tool (600, 700) according to claims 1 or 2, wherein the hand-held outdoor tool (600, 700) comprises:
 - two working implements (602a, 602b, 702a, 702b);
 - at least one handle (604a, 604b, 704a, 704b) connected to the each of the working implements; and
 - the shock-absorbing member (608, 706) provided between the handles (602a, 602b, 702a, 702b), the shock-absorbing member (608, 706) comprising one or more resilient parts (610, 708).
13. A hand-held outdoor tool (600) according to claim 12 comprises a hedge clipper.
14. A hand-held outdoor tool (700) according to claim 12 comprises a secateur.
15. A hand-held outdoor tool according to claim 12 comprises a pruning lopper.

*FIG. 1*

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*FIG. 2A*

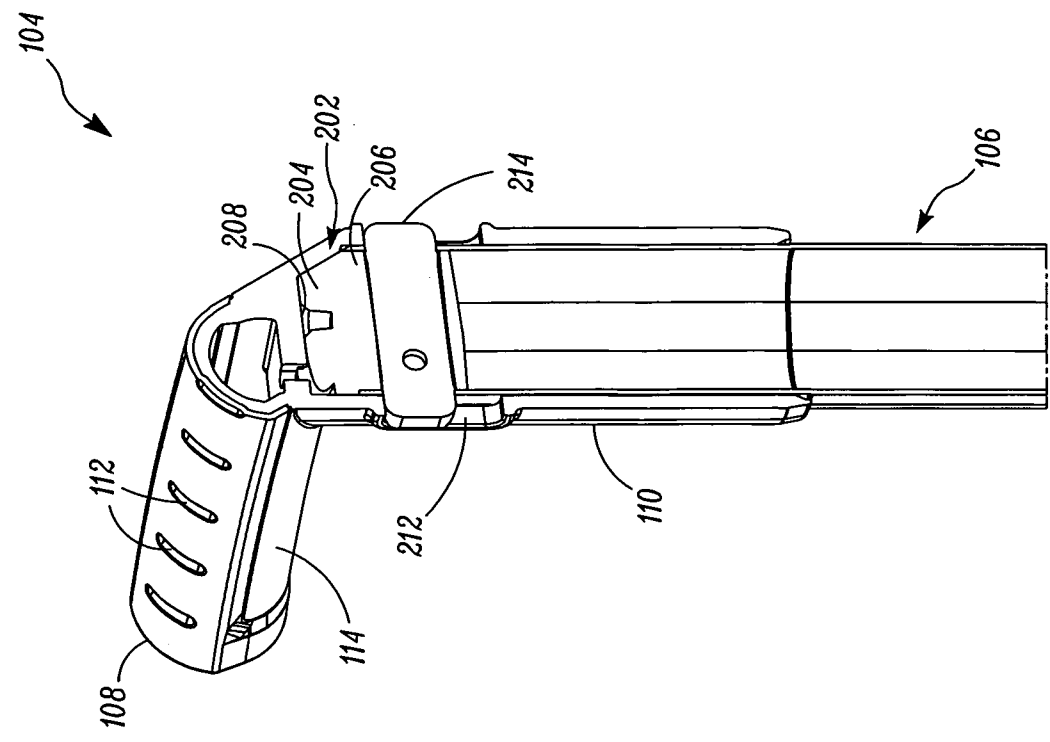


FIG. 2C

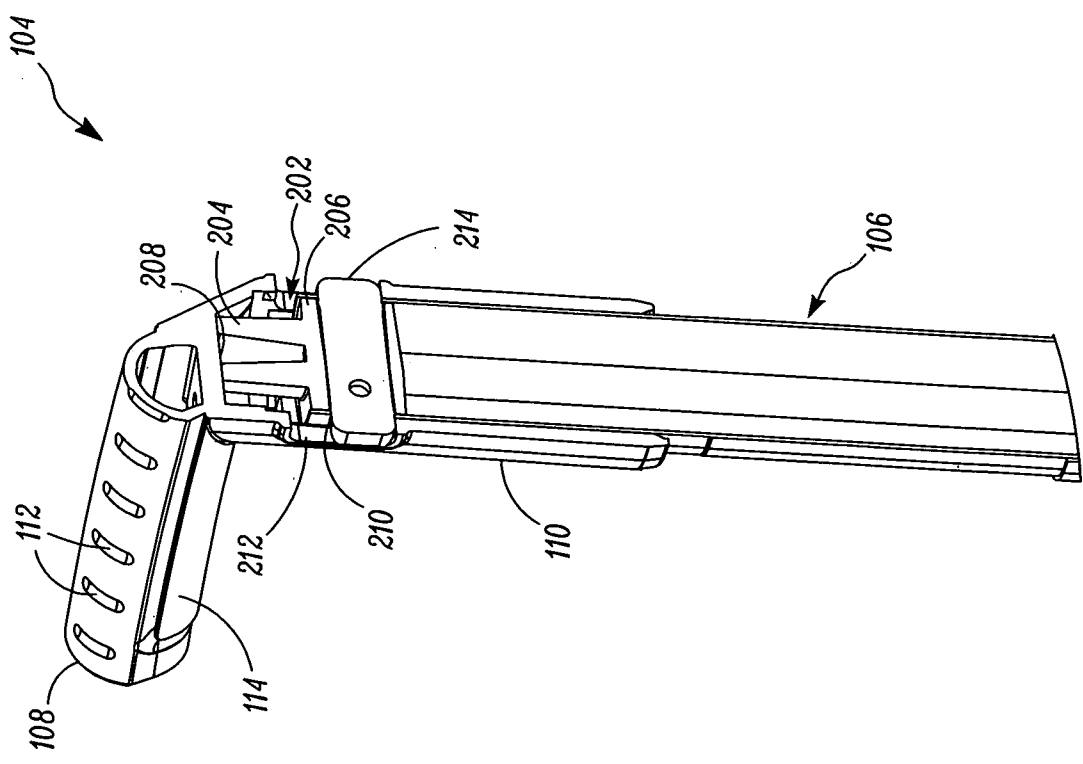


FIG. 2B

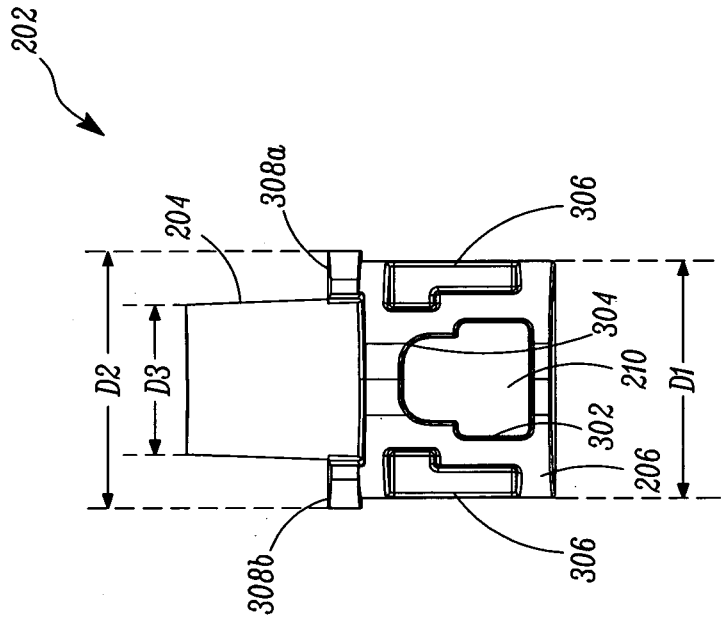


FIG. 3B

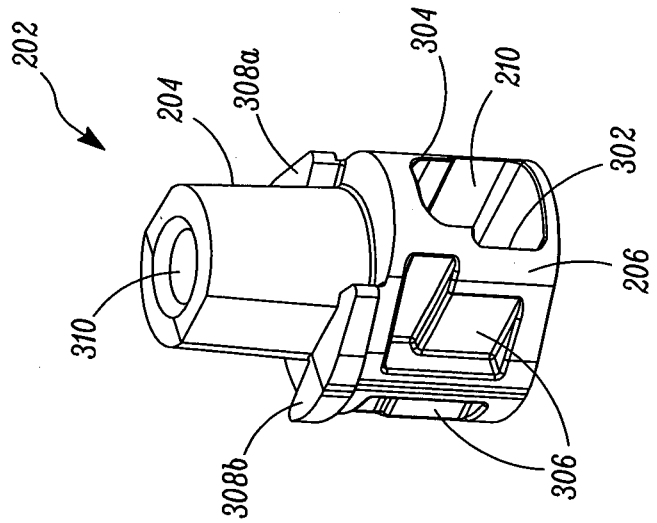


FIG. 3A

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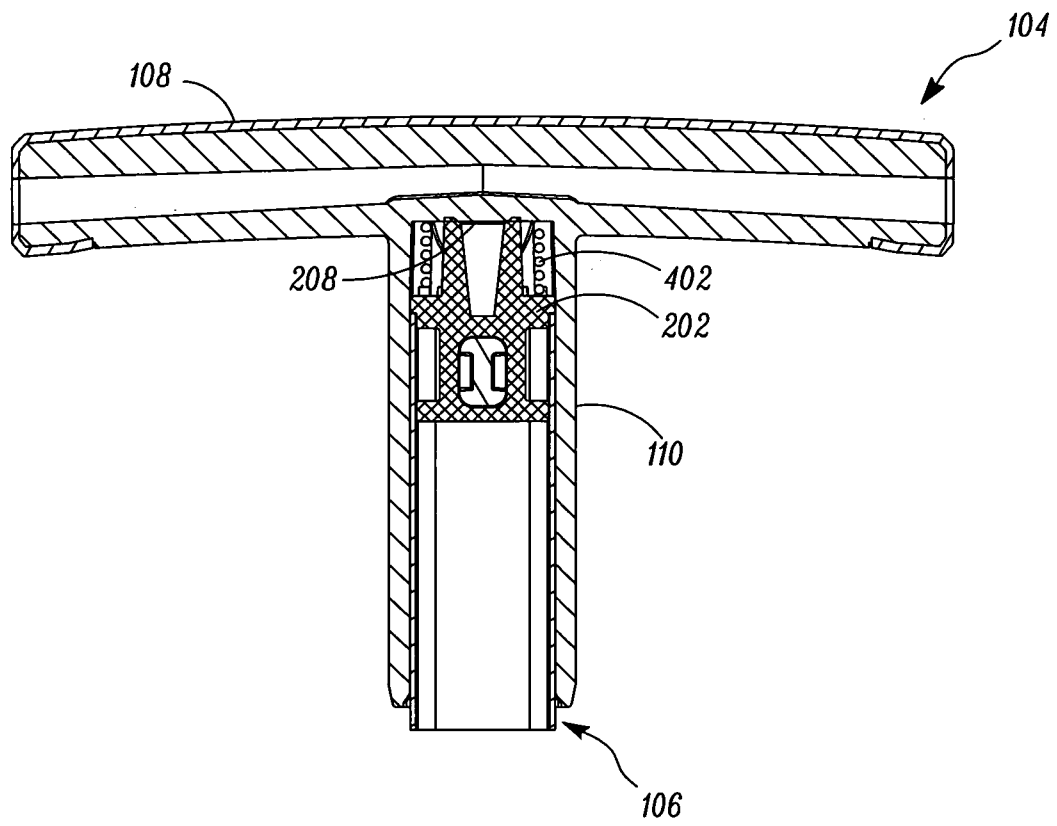


FIG. 4

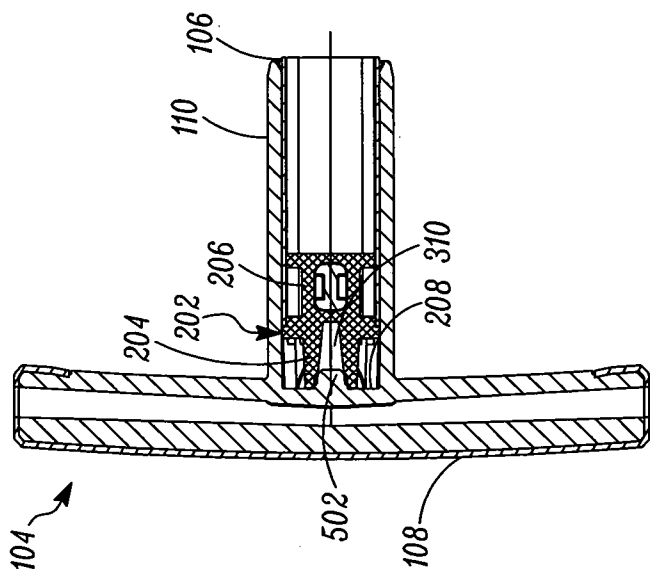


FIG. 5A

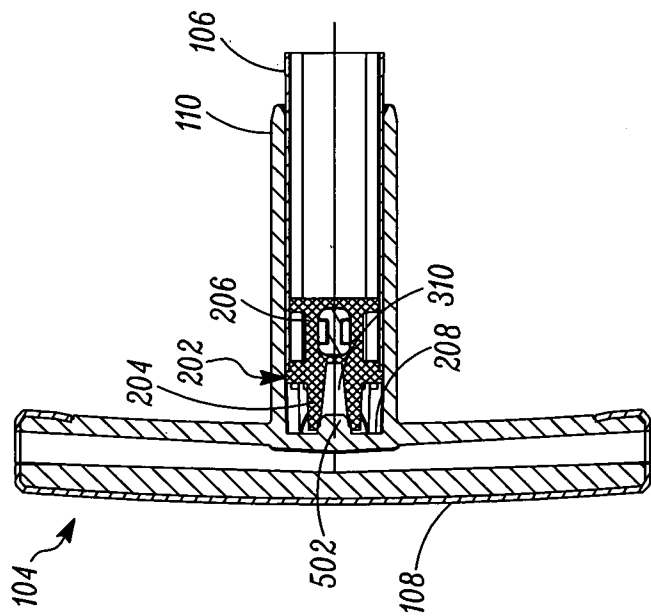


FIG. 5C

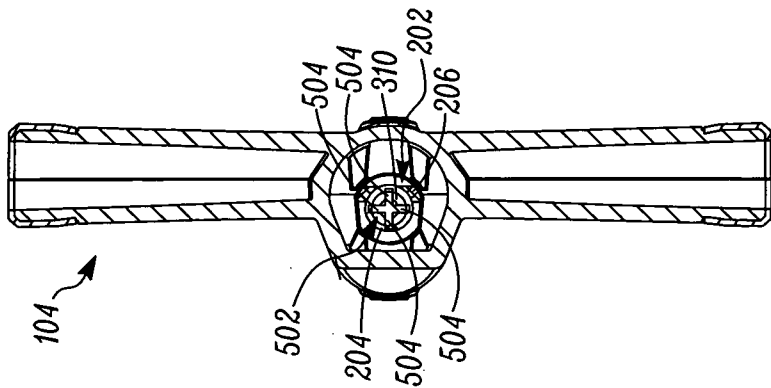


FIG. 5B

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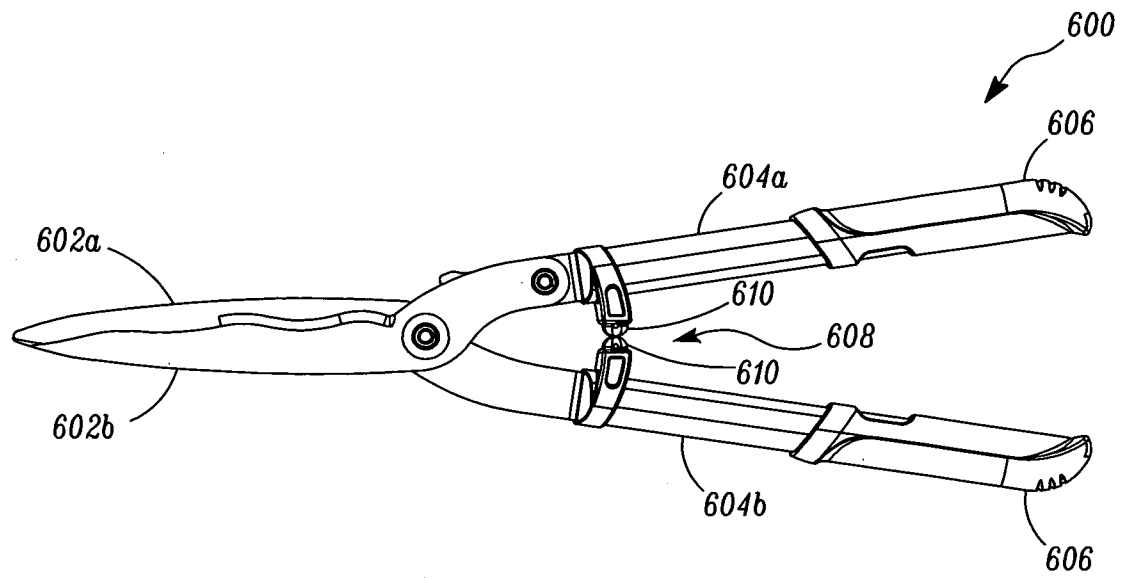


FIG. 6

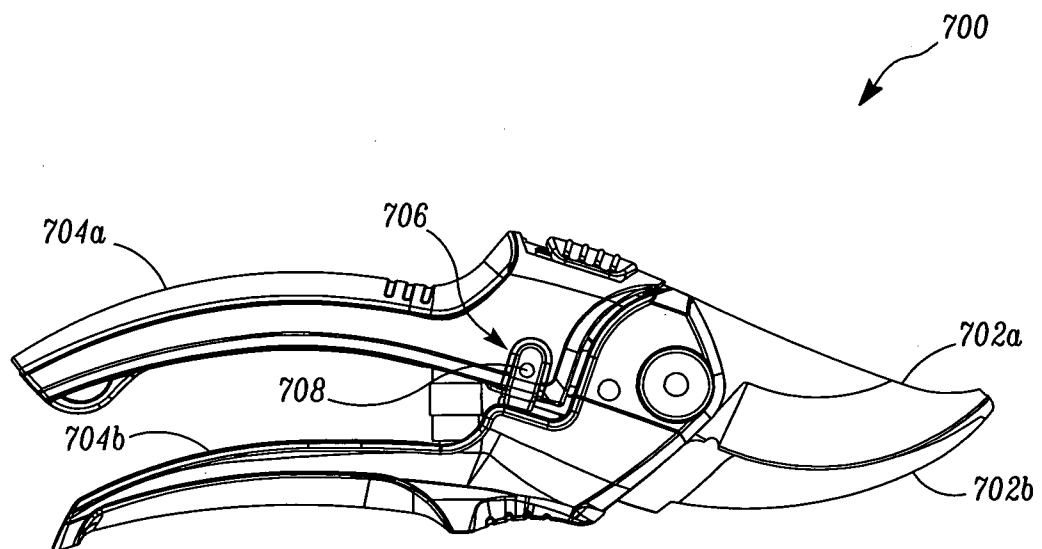


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2011/002732

A. CLASSIFICATION OF SUBJECT MATTER
INV. B25G1/01
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A01B B25G A01G E02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7 118 145 B1 (ROSINE LYLE A [US] ET AL) 10 October 2006 (2006-10-10) column 3, line 18 - line 56 claims; figures -----	1-8,10, 11
X	US 2010/269648 A1 (FENSTEMAKER DANIEL P [US]) 28 October 2010 (2010-10-28) abstract page 2, paragraph 27 page 3, paragraph 36 claims; figures -----	1,10-15
X	US 2011/061249 A1 (MA MAN FOR [HK] ET AL) 17 March 2011 (2011-03-17) abstract page 5, paragraph 84 page 6, paragraph 93 claims; figures -----	1,12-15
	-/-	



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

21 February 2012

Date of mailing of the international search report

01/03/2012

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2011/002732

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 420 273 A2 (DOW CHEMICAL CO [US]) 3 April 1991 (1991-04-03) tables 1b-7b -----	1,2
A	US 4 346 205 A (HILES MAURICE A F) 24 August 1982 (1982-08-24) abstract tables column 8, line 26 - line 36 claims; figures -----	1,2

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2011/002732

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