(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 4 563 770 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
04.06.2025 Bulletin 2025/23

(21) Application number: **24216496.0**

(22) Date of filing: **29.11.2024**

(51) International Patent Classification (IPC):
E04G 21/24 *(2006.01)* ***E04G 21/30*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
E04G 21/243; E04G 21/30

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
GE KH MA MD TN

(30) Priority: **30.11.2023 US 202363604551 P**

(71) Applicant: **Garland Industries, Inc.**
Independence, Ohio 44131 (US)

(72) Inventor: **HANSON, Matthew**
Chagrin Falls, 44023 (US)

(74) Representative: **Grosse Schumacher Knauer von Hirschhausen**
Patent- und Rechtsanwälte
Schloss Schellenberg - Backhaus
Renteilichtung 1
45134 Essen (DE)

(54) EXTENSION POLE

(57) The present disclosure is directed to a partition system that is used to separate portions of a building or room, and wherein the partition system includes a collapsible and extendable extension pole (10). The present disclosure is also directed to a method for using a partition system to separate portions of a building or room, and further to a method of storing and using a collapsible and extendable extension pole (10) with a partition system.

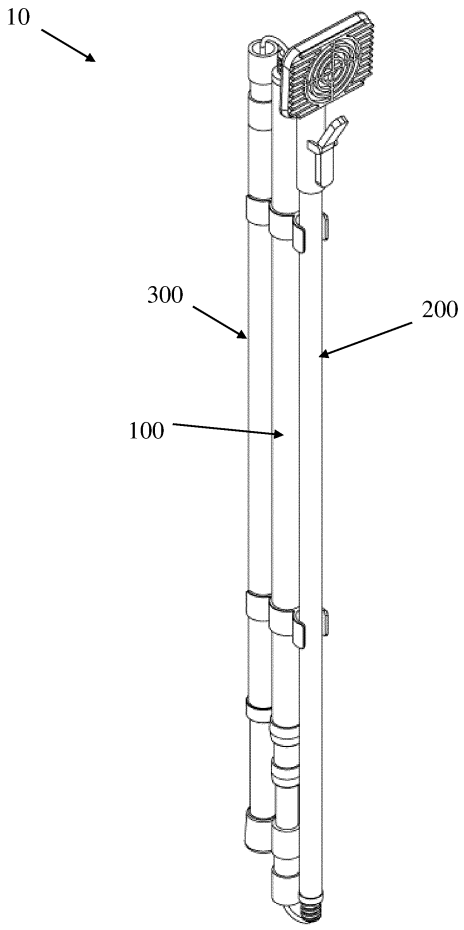

FIG. 1

EP 4 563 770 A1

Description

REFERENCED APPLICATIONS

[0001] The present application claims priority to United States Provisional Application Serial No. 63/604,551 filed November 30, 2023, which is incorporated herein by reference.

FIELD OF DISCLOSURE

[0002] The present disclosure is directed to partition systems that are used to separate portions of a building or room, particularly to an extension pole that is used in a partition system, and more particularly to a collapsible and extendable extension pole according to the preamble of claim 1 that is used in a partition system to a partition system according to the preamble of claim 14, and to a method of forming a partition wall according to the preamble of claim 15.

BACKGROUND OF DISCLOSURE

[0003] Partition systems are commonly used to form a barrier to dirt, paint spray, dust, noise, light, odors, and the like. Partition systems can be used in construction zones to maintain a clear region outside the partitioned zone. The partition systems are typically formed of one or more poles that support a barrier material such plastic sheeting, fabric sheeting, or the like to a ceiling, wall, etc. However, other arrangements such as tape, nails, tacks, etc., can also or alternatively be used to support the barrier material. An opening can optionally be formed in the barrier material to allow access to the partitioned zone. Such opening can be cut or otherwise formed in the barrier material. A zipper, magnet closure arrangement, hook and loop fastener arrangement, snaps and the like can be used to enable the opening in the barrier material to be opened and closed.

[0004] Several extensions poles have been developed to supporting a barrier system (See US Patent Nos. 4,794,974; 4,708,189; 5,308,280; 5,924,469; 7,658,219; 8,857,499; 10,689,865; 10,781,597; 11,530,542; US Publication Nos. 2021/0404198 and 2022/0081963, all of which are incorporated herein by reference). Although many of the prior art extension poles can be successfully used to provide temporary support for a barrier material, these extension poles are bulky and inconvenient to store, take up significant shelf-space in retail stores, and can be difficult and/or inconvenient to store and/or transport.

[0005] In view of the current state of the art, there is required a barrier system that includes one or more extension poles that overcome the above stated deficiencies.

SUMMARY OF DISCLOSURE

[0006] The present disclosure is directed to a partition system that is used to separate portions of a building or room, and wherein the partition system includes a collapsible and extendable extension pole. The present disclosure is also directed to a method for using a partition system to separate portions of a building or room, and further to a method of storing and using a collapsible and extendable extension pole with a partition system. The partition system in accordance with the present disclosure can be used in construction zones, room, etc., to form a barrier to dirt, paint spray, dust, noise, light, odors, and the like. The partition system can be configured for use as a temporary or permanent barrier.

[0007] In one non-limiting aspect of the present disclosure, there is provided a partition system that includes a) one or more specially configured collapsible and extendable extension poles, b) a barrier material (e.g., plastic sheeting, fabric sheeting, composite material sheeting, etc.), and c) an optional opening arrangement (e.g., zipper, magnet closure arrangement, hook and loop fastener arrangement, snaps, etc.) that can be used to form an openable and closable opening in the barrier material. The use of one or more extension poles to support a barrier material in a room or construction zone to form a temporary or permanent barrier is known in the art as described in the prior art references incorporated herein, thus will not be described in detail herein. Likewise, the use of an opening arrangement to form an openable and closable opening in a barrier material is also known in the art as described in the prior art references incorporated herein, thus will not be described in detail herein. The specially configured collapsible and extendable extension pole in accordance with the present disclosure addresses the deficiencies of prior art extension poles regarding the shelf-space, storage, and/or transport issues associated with such prior art extension poles. In one non-limiting embodiment, the collapsible and extendable extension pole includes a) a plurality of pole sections, b) a pole section connection arrangement, c) an optional barrier material connection arrangement, d) an optional grip pad, e) an optional compression base portion, f) an optional non-slip foot arrangement, g) one or more optional pole clip arrangements, and/or g) one or more optional tether arrangements.

[0008] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the plurality of pole sections of the collapsible and extendable extension pole includes a) a main pole body section, and b) one or both of a removable top pole section and a removable bottom pole section. The main pole section can be a single pole section or include one or more telescoping sections (e.g., 1-10 telescoping sections and all values and ranges therebetween). In one non-limiting embodiment, the main pole section includes two pole sections that are arranged in a telescoping configuration. In an-

other non-limiting embodiment, the main pole section includes three pole sections that are arranged in a telescoping configuration. As can be appreciated, the main pole section can be formed of more than three telescoping sections. When the main pole body section is formed of a single pole section, the single pole section is generally 1-25 ft. (and all values and ranges therebetween); however, other lengths can be used. When the main pole body section is formed of two or more pole sections, each of the pole sections is generally 0.25-15 ft. (and all values and ranges therebetween); however, other lengths can be used.

In one non-limiting configuration, the main pole section includes two or more pole sections, and the length of each of the pole sections is 0.5-8 feet. In another non-limiting configuration, the main pole section includes two or more pole sections, and the length of each of the pole sections is 2-5 feet. In another non-limiting configuration, the main pole section includes two or more pole sections, and the length of each of the pole sections is 2.5-4 feet. When the main pole body section is formed of two or more pole sections, the length of two or more pole sections can be the same, or two or more of the pole sections can be different lengths. The cross-sectional shape and size of each of the pole sections of the main pole section can be constant along 50-100% of the longitudinal length of the pole section; however, this is not required. The cross-sectional shape of two or more of the pole sections of the main pole section can be same along 50-100% of the longitudinal length of the pole section; however, this is not required. The cross-sectional size of two or more of the pole sections of the main pole section can be different along 50-100% of the longitudinal length of the pole section; however, this is not required. In one non-limiting configurations, each of the one or more pole sections of the main pole section have a tubular shape along 70-100% of the longitudinal length of each of the pole sections, and the cross-sectional shape and area of each of the pole sections, when the main pole section includes two or more pole sections, is selected so that the pole sections can be telescopically fitted together so that pole section can be telescopically extended and collapsed with respect to one another. When the main pole section includes two or more pole sections, the main pole section can be configured to provide most or all of the height/longitudinal length adjustment to the collapsible and extendable extension pole that is required; however, this is not required.

[0009] In accordance with another and/or alternative non-limiting aspect of the present disclosure, when the main pole section includes two or more pole sections, one or more of the pole sections optionally includes a releasable locking arrangement that allows a user to releasably lock two pole sections relative to one another in position once the two telescoping pole sections have been expanded or contracted in a desired position with respect to one another. Many such locking arrangements are well known in the art with regard to telescoping poles (e.g., internal twist action telescopic pole locking system, internal push button telescopic pole locking system, external twist action telescopic pole clamping system, clamp arrangement, cable or pin locking arrangement, etc.), thus will note be further described herein. In another non-limiting embodiment, the releasable locking arrangement inhibits or prevents full separation of two telescoping pole sections from one another.

[0010] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the outer surface of one or more of the pole sections of the main pole section can optionally include a gripping surface/structures (e.g., rough surface, grooved surface, ribbed surface, polymer- or rubber-coated surface, collar, outer sleeve, etc.) to facilitate in the gripping of one or more of the pole sections. The number, size, configuration and material of the one or more gripping surfaces/structures are non-limiting. In one non-limiting arrangement, one or more gripping surface/structures can be located at the top edge, top edge portion, bottom edge and/or bottom edge portion of one or more of the pole sections.

[0011] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the top portion of the main pole section can optionally include a) an optional barrier material connection arrangement, b) an optional pole clip arrangement, c) an optional grip pad, d) an optional compressible top portion, e) an optional male fitting, f) an optional threaded connection arrangement, g) an optional tether connection arrangement, i) an optional outer gripping surface, and/or j) an optional pole clip arrangement.

[0012] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the top or top portion of the main pole section optionally includes an optional barrier material connection arrangement, an optional pole clip arrangement, and/or an optional grip pad. The optional barrier material connection arrangement, optional pole clip arrangement, and/or optional grip pad can be configured to facilitate in temporarily or permanently connect a portion of the barrier material to the top or top portion of the main pole section. The configuration of the optional barrier material connection arrangement, optional pole clip arrangement, and/or optional grip pad is non-limiting (e.g., clip, clamp, adhesive surface, hooks, prongs, straps, hook and look fasteners, sleeve clamp, rough pad surface, needle or nail surface, use of a cord or wire or rubber band or bungee cord, hook and loop fastener, mushroom connectors, etc.). Non-limiting connection arrangements that can be used are disclosed in US 5,924,469; US 7,658,219; US 8,857,499; US 10,689,865; US 10,781,597; US 11,530,542; and US Publication Nos. 2021/0404198 and 2022/0081963, all of which are incorporated herein by reference. The optional barrier material connection arrangement, the optional grip pad, and/or the optional pole clip arrangement can optionally be removably detachable to the top portion of the main pole section; however, this is not required. The optional barrier material connection arrangement, the

optional grip pad, and/or the optional pole clip arrangement can optionally be pivotally and/or rotatably connected, or rigidly connected to the top or top portion of the main pole section. The optional barrier material connection arrangement, the optional grip pad, and/or the optional pole clip arrangement can optionally be partially or fully removably connected to the top or top portion of the main pole section, or permanently connected to the top or top portion of the main pole section. In one non-limiting arrangement, the top or top portion of the main pole section includes a grip pad and/or a pole clip arrangement to facilitate in permanently or temporarily securing the barrier material to the top or top portion of the main pole section.

[0013] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the top or top portion of the main pole section optionally includes an optional compressible top portion. The structure of the optional compressible top portion is non-limiting. In one non-limiting embodiment, the optional compression top portion is configured to be spring biased (e.g., mechanical spring, air spring, etc.) in an extended position. The optional compression top portion is configured to be compressible so as to reduce the longitudinal length of the optional compression top portion, and when the compression force is reduced or eliminated, the optional compression top portion is biased to move toward the extended position. For example, when the optional compression top portion is partially or fully compressed so that the top of the optional compression top portion engages a top structure (e.g., ceiling, ceiling beam, top of a door frame, top of a room entrance, etc.), and when the bottom or bottom portion of the main pole section or other portion of the collapsible and extendable extension pole is positioned on or above a base structure (e.g., floor, structure on a floor, etc.), the bias of the optional compression top portion to move toward the extended position results in the facilitating in maintaining the collapsible and extendable extension pole in position. The structure of the optional compression top portion is non-limiting. Non-limiting compression arrangements disclosed in US 5,924,469; US 7,658,219; US 8,857,499; US 10,689,865; US 10,781,597; US 11,530,542; and US Publication Nos. 2021/0404198 and 2022/0081963 can optionally be used. In one non-limiting configuration, the biasing arrangement of the optional compression top portion is a spring arrangement and the spring arrangement is configured to compress 0.5-10 inches (and all values and ranges therebetween) such that the longitudinal length of the pole section that includes the optional compression top portion has a variable longitudinal length of up to 10 inches (0.001-10 inches and all values and ranges therebetween) due to the compression of the optional compression top portion. As such, if the pole section had a longitudinal length of 42 inches when the optional compression top portion is not in a compressed state, the pole section will have a longitudinal length of 38 inches when the spring of the optional compression top portion is compressed about 4 inches. The optional compressible top portion can optionally be removably detachable to the top or top portion of the main pole section; however, this is not required. The optional compressible top portion can optionally be removably detachable to the top or top portion of the main pole section; however, this is not required. The optional compressible top portion can optionally be partially or fully removably connected to the top or top portion of the main pole section, or permanently connected to the top or top portion of the main pole section.

[0014] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the bottom or bottom portion of the main pole section can optionally include a compression base portion. In one non-limiting embodiment, the bottom or bottom portion of the main pole section optionally includes an optional compression base portion. The structure of the optional compression base portion is non-limiting. In one non-limiting embodiment, the optional compression base portion is configured to be spring biased (e.g., mechanical spring, air spring, etc.) in an extended position. The optional compression base portion is configured to be compressible so as to reduce the longitudinal length of the optional compression base portion, and when the compression force is reduced or eliminated, the optional compression base portion is biased to move toward the extended position. For example, when the optional compression base portion is partially or fully compressed so that the top of the collapsible and extendable extension pole engages a top structure (e.g., ceiling, ceiling beam, top of a door frame, top of a room entrance, etc.), and when the bottom of the optional compression base portion is positioned on or above a base structure (e.g., floor, structure on a floor, etc.), the bias of the optional compression base portion to move toward the extended position results in the facilitating in maintaining the collapsible and extendable extension pole in position. The structure of the optional compression base portion is non-limiting. Non-limiting compression arrangements disclosed in US 5,924,469; US 7,658,219; US 8,857,499; US 10,689,865; US 10,781,597; US 11,530,542; and US Publication Nos. 2021/0404198 and 2022/0081963 can optionally be used. In one non-limiting configuration, the biasing arrangement of the optional compression base portion is a spring arrangement and the spring arrangement is configured to compress 0.5-10 inches (and all values and ranges therebetween) such that the longitudinal length of the pole section that includes the optional compression base portion has a variable longitudinal length of up to 10 inches (0.001-10 inches and all values and ranges therebetween) due to the compression of the optional compression base portion. As such, if the pole section had a longitudinal length of 42 inches when the optional compression base portion is not in a compressed state, the pole section will have a longitudinal length of 38 inches when the spring of the optional compression base portion is compressed about 4 inches.

The optional compression base portion can optionally be removably detachable to the bottom or bottom portion of the main pole section; however, this is not required. The optional compression base portion can optionally be removably detachable to the bottom or bottom portion of the main pole section; however, this is not required. The optional compression base portion can optionally be partially or fully removably connected to the bottom or bottom portion of the main pole section, or permanently connected to the bottom or bottom portion of the main pole section.

[0015] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the bottom or bottom portion of the main pole section can optionally include an optional non-slip foot arrangement. The configuration of the optional non-slip foot arrangement is non-limiting (e.g., polymer, plastic or rubber sleeve fitted to the bottom or bottom portion of the main pole section; a grip pad that is rigidly or movable connected to the bottom or bottom portion of the main pole section, etc.). In one non-limiting configuration, the optional non-slip foot arrangement is a partially or fully polymer, plastic or rubber sleeve that is permanently or removably fitted to the bottom or bottom portion of the main pole section. The size and configuration of the sleeve is non-limiting. In one non-limiting configuration, the sleeve has a larger cross-sectional area at the bottom portion of the sleeve than compared to the top portion of the sleeve. In another non-limiting configuration, the sleeve has one or more gripping structures on the bottom of the sleeve (e.g., one or more ribs or raised portions, etc.).

[0016] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the top or top portion of the main pole section can optionally include an optional non-slip arrangement. The configuration of the optional non-slip arrangement is non-limiting (e.g., polymer, plastic or rubber sleeve fitted to the top or portion of the main pole section, etc.). In one non-limiting configuration, the optional non-slip arrangement is partially or fully a polymer, plastic or rubber sleeve that is permanently or removably fitted to the top or top portion of the main pole section. The size and configuration of the sleeve is non-limiting. In one non-limiting configuration, the sleeve has a larger cross-sectional area at the top portion of the sleeve than compared to the bottom portion of the sleeve. In another non-limiting configuration, the sleeve has one or more gripping structures on the top of the sleeve (e.g., one or more ribs or raised portions, etc.).

[0017] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the main pole section can optionally include one or more optional outer gripping surfaces used to facilitate in the gripping of one or more portions of the main pole section. The number, shape, configuration, location on the main pole section, and/or material of the one or more optional outer gripping surfaces is non-limiting. For example, the type of gripping surface is non-limiting (e.g., rough surface, grooved surface, ribbed surface, polymer- or rubber-coated surface, plastic or rubber sleeve, etc.). In one non-limiting configuration, the one or more optional outer gripping surfaces are located at or near the top and/or bottom of the main pole section. In another non-limiting configuration, the one or more optional outer gripping surfaces are located at or near the top and/or bottom of one or more of the pole sections of the main pole section when the main pole section include two or more pole sections. In another non-limiting configuration, the one or more optional outer gripping surfaces are partially or fully formed of a polymer, plastic or rubber material.

[0018] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the top portion of the main pole section can optionally include an optional male fitting, an optional threaded connection arrangement, an optional tether connection arrangement, and/or an optional pole clip arrangement. When the collapsible and extendable extension pole includes an optional top pole section and/or an optional bottom pole section that is configured to be permanently or detachably connected to the main pole section, the optional male fitting, an optional threaded connection arrangement, an optional tether connection arrangement, and/or an optional pole clip arrangement can be used in association with the optional top pole section and/or the optional bottom pole section. In one non-limiting embodiment, a top or top portion of the main pole section or a bottom portion of the optional top pole section includes an optional male fitting or an optional threaded connection arrangement to permanently or detachably connect an optional top pole section to the main pole section. In one non-limiting configuration, the top or top portion of the main pole section includes an optional male fitting that is configured such that at least a portion of the male fitting is telescopically received in the optional top pole section. The connection formed by the male fitting can be a friction connection and/or can include a clip or other type of arrangement to secure the top pole section to the main pole section. In another non-limiting configuration, the bottom or bottom portion of the top pole section includes an optional male fitting that is configured such that at least a portion of the male fitting is telescopically received in the top of the main pole section. In another non-limiting configuration, the bottom or bottom portion of the top pole section and the top or top portion of the main pole section includes an optional threaded connection arrangement to secure the top pole section to the main pole section. As can be appreciated, other types of connection arrangement can be used to secure the top pole section to the main pole section (e.g., clamp, rivet, pin, adhesive, screw, nail, bracket, clip, threading, push button spring, etc.).

[0019] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the top portion of the main pole section can optionally include an optional tether connection arrangement. When the collapsible and extendable extension pole includes an optional top pole section and/or an optional bottom pole

section that is configured to be permanently or detachably connected to the main pole section, an optional tether connection arrangement can be used to maintain the connection of the optional top pole section and/or the optional bottom pole section to the main pole section when the optional top pole section and/or the optional bottom pole section are not connected to the main pole section along the longitudinal central axis of the main pole section (e.g., maintain the connection of the optional top pole section and/or the optional bottom pole section to the main pole section when the optional top pole section and/or the optional bottom pole section are in the storage configuration, etc.). The configuration of the tether arrangement is non-limiting. The tether arrangement can be releasably or permanently connected to the top or top portion and/or bottom or bottom portion of the main pole section. The tether arrangement can be releasably or permanently connected to the top or top portion of the optional bottom pole section and/or the bottom or bottom portion of the optional top pole section. The tether arrangement can be formed of a cord, elastic cord, band, wire, strap, tubing, etc. The material used to form the tether arrangement is non-limiting (e.g. metal, plastic, composite material, fibers, polymer material, elastic material, etc.). Generally, the tether arrangement includes a flexible component that allows the top pole section and/or bottom pole section to move and/or be repositioned relative to the main pole section when the optional top pole section and/or the optional bottom pole section are not connected to the main pole section along the longitudinal central axis of the main pole section. In another non-limiting configuration, the tether arrangement includes an elastic material and the length of the tether arrangement can be selected to cause the bottom of the top pole section and/or the top of the bottom pole section to be drawn toward the main pole section when the top pole section and/or the bottom pole section and the main pole section are positioned generally parallel to one another in the unassembled or storage configuration. Such drawing action can facilitate in maintaining a compact orientation of the top pole section and/or bottom pole section relative to the main pole section when the collapsible and extendable extension pole is in the collapsible or storage position. As can be appreciated, a spring arrangement could be optionally connected to one or both ends of the tether to create the drawing together effect as an alternative or in additional use of an elastic material for the tether. The tether can also be optionally configured to draw together the top pole section and/or bottom pole section relative to the main pole section when the top pole section and/or bottom pole section is connected to the main pole section.

[0020] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the main pole section can optionally include one or more pole clip arrangements. The one or more pole clip arrangements are configured to detachably secure the top pole section and/or bottom pole section to the main pole section when the optional top pole section and/or the optional bottom pole section are not connected to the main pole section along the longitudinal central axis of the main pole section. In one non-limiting configuration, one or more pole clip arrangements are configured to detachably secure the top pole section and/or bottom pole section to the main pole section when the optional top pole section and/or the optional bottom pole section are not connected to the main pole section along the longitudinal central axis of the main pole section, and wherein the longitudinal axis of the main pole section is parallel or generally parallel (e.g., 0.001-5° off parallel and all values and ranges therebetween) to the longitudinal axis of the top pole section and/or bottom pole section that is detachably connected to the main pole section. The configuration of the one or more pole clip arrangements are non-limiting. In one non-limiting configuration, each of the pole clip arrangements includes a flexible C-shaped or U-shaped structure that is configured to receive a portion of the body of the top pole section and/or bottom pole section.

[0021] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the collapsible and extendable extension pole includes a top pole section that is connected (e.g., permanently connected, releasably connected) to the top or top portion of the main pole section. The top pole section can include a) an optional barrier material connection arrangement, b) an optional pole clip arrangement, c) an optional grip pad, d) an optional compressible portion, e) an optional male fitting, f) an optional threaded connection arrangement, g) an optional tether connection arrangement, i) an optional outer gripping surface, and/or j) an optional pole clip arrangement. These structures have been previously discussed above with respect to the main pole section. All of these previously discussed structures for the main pole section can be used on the top pole section. As such, the structure and function of such structures will not be repeated herein. In one non-limiting configuration, the bottom portion of the top pole section is configured to be telescopically received into the top portion of the main pole section. In another non-limiting configuration, top portion of the main pole section is configured to be telescopically received into the bottom portion of the top pole section. In another non-limiting configuration, a male filling and/or threaded connection arrangement located on the top portion of the main pole section or the bottom portion of the top pole section is used to facilitate in the connection (e.g., permanently connected, releasably connected) of the top pole section to the top or top portion of the main pole section. As can be appreciated, other or additional connection arrangements can be used to connect (e.g., permanently connect, releasably connect) the top pole section to the top or top portion of the main pole section (e.g., clamp, rivet, pin, adhesive, screw, nail, bracket, clip, push button spring, etc.). In another non-limiting configuration, the longitudinal length of the top pole section is the same or less than a longitudinal length

of the main pole section. In another non-limiting configuration, 60-100% (and all values and ranges therebetween) of the longitudinal length of the top pole section has a tubular-shaped body that has the same shape as 60-100% (and all values and ranges therebetween) of the longitudinal length of the main pole section. In another non-limiting configuration, 60-100% (and all values and ranges therebetween) of the longitudinal length of the top pole section has a tubular-shaped body that has a cross-sectional area that is the same or less as 25-100% (and all values and ranges therebetween) of the longitudinal length of the main pole section. As can be appreciated, the body of the top pole section can have a non-circular shape (e.g., square, rectangular, polygonal, oval, etc.). In another non-limiting configuration, the longitudinal length of the top pole section can be longer, the same, or shorter than a longitudinal length of the main pole section when in the fully collapsed position or when the main pole section is formed of a single pole section.

[0022] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the collapsible and extendable extension pole includes a bottom pole section that is connected (e.g., permanently connected, releasably connected) to the bottom or bottom portion of the main pole section. The bottom pole section can include a) an optional male fitting, b) an optional tether arrangement, c) an optional outer gripping surface, d) an optional threaded connection arrangement, e) an optional compressible portion, f) an optional non-slip foot arrangement, and/or g) an optional pole clip arrangement. These structures have been previously discussed above with respect to the main pole section. All of these previously discussed structures for the main pole section can be used on the top pole section. As such, the structure and function of such structures will not be repeated herein. In one non-limiting configuration, the top portion of the bottom pole section is configured to be telescopically received into the bottom portion of the main pole section. In another non-limiting configuration, bottom portion of the main pole section is configured to be telescopically received into the top portion of the bottom pole section. In another non-limiting configuration, a male filling and/or threaded connection arrangement located on the bottom portion of the main pole section or the top portion of the bottom pole section is used to facilitate in the connection (e.g., permanently connected, releasably connected) of the bottom pole section to the bottom or bottom portion of the main pole section. As can be appreciated, other or additional connection arrangements can be used to connect (e.g., permanently connect, releasably connect) the bottom pole section to the bottom or bottom portion of the main pole section (e.g., clamp, rivet, pin, adhesive, screw, nail, bracket, clip, twist lock, push button spring, etc.). In another non-limiting configuration, the longitudinal length of the bottom pole section is the same or less than a longitudinal length of the main pole section. In another non-limiting configuration, 60-100% (and all values and ranges therebetween) of the longitudinal length of the bottom pole section has a tubular-shaped body that has the same shape as 60-100% (and all values and ranges therebetween) of the longitudinal length of the main pole section. In another non-limiting configuration, 60-100% (and all values and ranges therebetween) of the longitudinal length of the bottom pole section has a tubular-shaped body that has a cross-sectional area that is the same or less as 25-100% (and all values and ranges therebetween) of the longitudinal length of the main pole section. As can be appreciated, the body of the bottom pole section can have a non-circular shape (e.g., square, rectangular, polygonal, oval, etc.). In another non-limiting configuration, the longitudinal length of the bottom pole section can be longer, the same, or shorter than a longitudinal length of the main pole section when in the fully collapsed position or when the main pole section is formed of a single pole section.

[0023] In accordance with another and/or alternative non-limiting aspect of the present disclosure, the collapsible and extendable extension pole is configured to have a collapsible configuration for easy storage or transport and/or have a size that is small enough for shelf display of the collapsible and extendable extension pole in the collapsed state. Prior art extension poles that are used for rooms having 8-15 ft. (2.4m - 4.6m) ceilings are typically 5-8 ft. (1.5m - 2.4m) in length in a collapsible state. As such, these long poles can be difficult to transport and store. Also, when such extension poles are displayed in a retail store, the long length of the extension poles limits the ability of a retailer to display such extension poles in a standard shelf display, thus requiring such extension poles to be placed in special, non-standard displays for retail sale. The collapsible and extendable extension pole is configured to have a significantly smaller collapsible profile as compared to standard extension poles. The collapsible and extendable extension pole includes a main pole body section and one or both of a removable top pole section and a removable bottom pole section. The main pole body section is typically formed of 2-4 telescopically arranged pole sections that enables the main pole body section to have an adjustable longitudinal length. In one non-limiting configuration, each of the pole sections of the main pole body section has a maximum longitudinal length of no more than 48 in. (122cm), and typically no more than 40 inches (102 cm) (e.g., 20-40 in.) (51cm - 102cm). In another non-limiting configuration, the main pole body section in the collapsed state has a maximum longitudinal length of no more than 48 inches (122 cm), and typically no more than 40 in (102 cm). In another non-limiting configuration, the longitudinal length of the removable top pole section and/or the removable bottom pole section is equal to or less than the longitudinal length the main pole body section in the collapsed state. In another non-limiting configuration, the longitudinal length of the collapsible and extendable extension pole in the collapsed and stored state is no more than 48 inches (122 cm) (e.g., 20-48 inches (51 - 122 cm) and all values and ranges

therebetween), and typically no more than 40 inches (102 cm). In one non-limiting configuration, the collapsible and extendable extension pole has a) a maximum longitudinal length in the collapsed and stored state of 48 inches (122 cm) (e.g., 25-48 in. (64 - 122 cm) and all values and ranges therebetween), b) a main body section that is formed of a plurality of pole sections (e.g., 2-6 pole sections and all values and ranges therebetween) that are telescopically connected together, and wherein the maximum longitudinal length of each pole section is 20-48 in. (51 - 122 cm) (and all values and ranges therebetween), and wherein the maximum longitudinal length of the a main body section in the collapsed position is 48 in. (122 cm) (e.g., 25-48 in. (64 - 122 cm) and all values and ranges therebetween), and wherein the main body section is expandable from 21-275 inches (53 cm - 699 cm) (and all values and ranges therebetween), and c) a removable top pole section and/or a removable bottom pole section that are removably connectable to the main body section, and wherein each of the removable top pole section and/or the removable bottom pole section have a longitudinal length that is less than the maximum longitudinal length of the a main body section in the collapsed position and wherein the maximum longitudinal length of the collapsible and extendable extension pole in the fully assembled and expanded state is 369 in. (937 cm) (e.g., 70-369 in. (178 cm - 937 cm) and all values and ranges therebetween). In another non-limiting configuration, the collapsible and extendable extension pole has a) a maximum longitudinal length in the collapsed and stored state of 36 inches (91 cm), b) a main body section that is formed of 2-3 pole sections that are telescopically connected together, and wherein the maximum longitudinal length of each pole section is 20-35 in. (51 cm-99 cm), and wherein the maximum longitudinal length of the a main body section in the collapsed position is 36 in. (91 cm), and wherein the main body section is expandable from 20-104 in. (51 cm - 264 cm) (and all values and ranges therebetween), and c) a removable top pole section and a removable bottom pole section that are removably connectable to the main body section, and wherein each of the removable top pole section and the removable bottom pole section have a longitudinal length that is less than the maximum longitudinal length of the a main body section in the collapsed position, and wherein the maximum longitudinal length of the collapsible and extendable extension pole in the fully assembled and expanded state is 174 in. (442 cm) (e.g., 70-174 in. (178 - 442 cm) and all values and ranges therebetween). The size of the collapsible and extendable extension pole in the collapsed and stored state in accordance with the present disclosure allows for a) easy storage of the collapsible and extendable extension pole collapsible and extendable extension pole when in the stored state, b) convenient transport of the collapsible and extendable extension pole due to the smaller size in the stored state, c) allows for the collapsible and extendable extension pole to be placed on a standard shelf for retain sale when in the stored state, and d) a carrying case can be used to place the collapsible and extendable extension pole in the carrying case when the collapsible and extendable extension pole is in the stored state.

[0024] In another non-limiting aspect of the present disclosure, there is provided a collapsible and expandable extension pole for use in partition systems, wherein the extension pole includes a main pole section, a first pole section that is distinct from the main pole section, and a first tether that is configured to connected together and optionally draw together the main pole section and the first pole section such that the first pole section removably connects to the main pole section.

[0025] In another non-limiting aspect of the present disclosure, the main pole section includes a plurality of pole sections that are arranged in a telescoping configuration. In one non-limiting embodiment aspects of the present disclosure, a female fitting is formed on a first end of the main pole section, a male fitting is formed on a first end of the first pole section, and the male fitting removably engages the female fitting.

[0026] In another non-limiting aspect of the present disclosure, the first pole section includes a grip pad pivotally coupled to a second end of the first pole section, wherein the grip pad is configured to receive a partition material.

[0027] In another non-limiting aspect of the present disclosure, the extension pole further includes a second pole section that is distinct from the main pole section and the first pole section, and wherein there is provided a second tether that is configured to connected together and optionally draw together the main pole section and the second pole section such that the second pole section removably connects to the main pole section. In one non-limiting embodiment of the present disclosure, a male fitting is formed on a second end of the main pole section, a female fitting is formed on a first end of the second pole section, and the male fitting removably engages the female fitting.

[0028] In another non-limiting aspect of the present disclosure, the second pole section includes a compressible portion that is configured to partially or fully compress the second pole section when a second end of the second pole section engages a structure, and wherein the compressible portion includes a biasing member, and wherein there is optionally provided a rod that is telescopically received in a body of the second pole section.

[0029] In another non-limiting aspect of the present disclosure, the main pole section further includes at least one fastener that is configured to releasably connect a body of the first pole section to the main pole section when the extension pole is in a fully collapsed configuration, and wherein the first pole section is substantially parallel with the main pole section when the extension pole is in the fully collapsed configuration.

[0030] In another non-limiting aspect of the present disclosure, the main pole section further includes at least one fastener that is configured to releasably connect a

body of the first pole section to the main pole section when the extension pole is in a fully collapsed configuration, and the at least one fastener is configured to releasably connect a body of the second pole section to the main pole section when the extension pole is in the fully collapsed configuration, and wherein the first, second, and main pole sections are substantially parallel when the extension pole is in the fully collapsed configuration.

[0031] In another non-limiting aspect of the present disclosure, the first and/or second tethers, when used, can be formed of or include a cord, an elastic cord, a wire, a strap, or combinations thereof.

[0032] In another non-limiting aspect of the present disclosure, there is provided a partition system, and wherein the partition system includes at least one collapsible and expandable extension pole that is configured to support at least one partition material, and wherein the at least one extension pole includes a main pole section that is partially or fully formed of a plurality of pole sections that are arranged in a telescoping configuration, and wherein there is provided a first pole section that is distinct from the main pole section, and a first tether that is configured to connected and optionally draw together the main pole section and the first pole section such that the first pole section removably connects to the main pole section.

[0033] In another non-limiting aspect of the present disclosure, there is provided a female fitting that is formed on a first end of the main pole section, a male fitting that is formed on a first end of the first pole section, and the male fitting that removably engages the female fitting.

[0034] In another non-limiting aspect of the present disclosure, the second pole section includes a compressible portion that is configured to partially or fully compress the second pole section when a second end of the second pole section engages a structure, and wherein the compressible portion includes a biasing member, and optionally a rod that is telescopically received in a body of the second pole section.

[0035] In another non-limiting aspect of the present disclosure, the main pole section further includes at least one fastener that is configured to releasably connect a body of the first pole section to the main pole section when the extension pole is in a fully collapsed configuration, and wherein the first pole section is substantially parallel with the main pole section when the extension pole is in the fully collapsed configuration and the first pole section is connected to the main pole section by the at least one fastener.

[0036] In another non-limiting aspect of the present disclosure, the main pole section further includes at least one fastener that is configured to releasably connect a body of the first pole section to the main pole section when the extension pole is in a fully collapsed configuration, and the at least one fastener releasably connect a body of the second pole section to the main pole section when the extension pole is in the fully collapsed configuration, and wherein the first, second, and main pole sections are substantially parallel when the extension pole is in the fully collapsed configuration.

[0037] In one non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole for use in partition systems wherein the extension pole includes a) a main pole section; b) a first pole section that is distinct from the main pole section; and c) a first tether that is configured to connect together said main pole section and said first pole section such that said first pole section is configured to removably connect to the main pole section.

[0038] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the first tether includes an elastic material that is configured to draw together the first pole section to the main pole section.

[0039] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the main pole section includes a plurality of pole sections that are arranged in a telescoping configuration.

[0040] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the main pole section includes a locking arrangement that is configured to releasably lock the pole sections of the main pole section in position relative to one another during use of the main pole section.

[0041] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the first pole section and/or the second pole section are absent telescoping sections.

[0042] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein a) a female fitting is formed on a first end of the main pole section; b) a male fitting is formed on a first end of the first pole section; and c) the male fitting removably engages the female fitting.

[0043] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the first pole section includes a grip pad that is pivotally coupled to a second end of the first pole section, and wherein the grip pad is configured to receive a partition material.

[0044] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole including a) a second pole section that is distinct from the main pole section and the first pole section; and b) a second tether that is configured to connect together the main pole section and the second pole section such that the second pole section is configured to removably connect to the main pole section.

[0045] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the second tether includes an elastic material that is configured to draw together the second pole section to the main pole section.

[0046] In another non-limiting object of the present

disclosure is the provision of a collapsible and expandable extension pole wherein a) a male fitting is formed on a second end of the main pole section; b) a female fitting is formed on a first end of the second pole section; and c) the male fitting removably engages said female fitting.

[0047] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the second pole section includes a compressible portion that is configured to partially or fully compress the compressible portion when a second end of the second pole section engages a structure.

[0048] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the second pole section includes a compressible portion that includes a) a biasing member; and b) a rod that is telescopically received in a body of the second pole section.

[0049] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the second pole section further includes at least one fastener that is configured to releasably connect a body of the first pole section to the main pole section when the extension pole is in a fully collapsed configuration, and wherein the first pole section is substantially parallel the main pole section when the extension pole is in the fully collapsed configuration and is connected to the main pole section by the at least one fastener.

[0050] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the main pole section further includes at least one fastener that is configured to a) releasably connect a body of the first pole section to the main pole section when the extension pole is in a fully collapsed configuration; and b) releasably connect a body of the second pole section to the main pole section when the extension pole is in said fully collapsed configuration; and wherein the first, second, and main pole sections are substantially parallel when the extension pole is in said fully collapsed configuration and the first and second pole sections are connected by the at least one fastener to the main pole section.

[0051] In another non-limiting object of the present disclosure is the provision of a collapsible and expandable extension pole wherein the first and second tethers are formed of a cord, an elastic cord, a wire, a strap, or combinations thereof.

[0052] In another non-limiting object of the present disclosure is the provision of a partition system, the partition system comprising a) at least one collapsible and expandable extension pole comprising: i) a main pole section; ii) a first pole section that is distinct from the main pole section; and iii) a first tether that is configured to connect together said main pole section and said first pole section such that said first pole section is configured to removably connect to the main pole section; and b) at least one partition material that is at least partially supported by the at least one extension pole to form a partition wall.

[0053] These and other objects and advantages will become apparent to those skilled in the art upon reading and following the description taken together with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0054] Non-limiting and non-exhaustive embodiments are described with reference to the following drawings, wherein like labels refer to like parts throughout the various views unless otherwise specified. The sizes and relative positions of elements in the drawings are not necessarily drawn to scale. For example, the shapes of various elements are selected, enlarged, and positioned to improve drawing legibility. The particular shapes of the elements as drawn have been selected for ease of recognition in the drawings. Reference may now be made to the drawings, which illustrate various embodiments that the disclosure may take in physical form and in certain parts and arrangement of parts wherein:

FIG. 1 is a front perspective view of a non-limiting, exemplary extension pole in accordance with one non-limiting implementation of the present disclosure, showing the extension pole in a fully collapsed configuration.

FIG. 2 is a rear perspective view of the extension pole of FIG. 1.

FIG. 3 is a side view of the extension pole of FIG. 1.

FIG. 4 is a front perspective view of the extension pole of FIG. 1, showing the extension pole in a partially open and/or closed configuration.

FIG. 5 is a rear perspective view of the extension pole of FIG. 4.

FIG. 6 is a side view of the extension pole of FIG. 4.

FIG. 7 depicts the extension pole of FIG. 1 in a partially extended configuration.

FIG. 8 depicts the extension pole of FIG. 1 in a fully extended configuration.

FIGS. 9A-9C depict the transition of the extension pole of FIG. 1 from the fully collapsed configuration to the fully extended configuration, wherein FIG. 9A depicts the disclosed extension pole in the fully collapsed configuration, wherein FIG. 9B depicts the disclosed extension pole in the partially extended configuration, and wherein FIG. 9C depicts the disclosed extension pole in the fully extended configuration.

FIGS. 10A-10B depict an exemplary, non-limiting compressible portion configured for use with the extension pole of FIG. 1, wherein FIG. 10A depicts the compressible portion in a non-compressed configuration, and wherein FIG. 10B is a partial cross-sectional view of FIG. 10A.

FIG. 11A depicts the compressible portion of FIG.

10A in a fully compressed configuration, and wherein FIG. 11B is a partial cross-sectional view of FIG. 11A. FIG. 12 depicts an exemplary, non-limiting partition system comprising the extension pole of FIG. 1.

DETAILED DESCRIPTION OF NON-LIMITING EMBODIMENTS

[0055] A more complete understanding of the articles/devices, processes and components disclosed herein can be obtained by reference to the accompanying drawings. These figures are merely schematic representations based on convenience and the ease of demonstrating the present disclosure, and are, therefore, not intended to indicate relative size and dimensions of the devices or components thereof and/or to define or limit the scope of the exemplary embodiments.

[0056] Although specific terms are used in the following description for the sake of clarity, these terms are intended to refer only to the particular structure of the embodiments selected for illustration in the drawings and are not intended to define or limit the scope of the disclosure. In the drawings and the following description below, it is to be understood that like numeric designations refer to components of like function.

[0057] The singular forms "a," "an," and "the" include plural referents unless the context clearly dictates otherwise.

[0058] As used in the specification and in the claims, the term "comprising" may include the embodiments "consisting of" and "consisting essentially of." The terms "comprise(s)," "include(s)," "having," "has," "can," "contain(s)," and variants thereof, as used herein, are intended to be open-ended transitional phrases, terms, or words that require the presence of the named ingredients/steps and permit the presence of other ingredients/steps. However, such description should be construed as also describing compositions or processes as "consisting of" and "consisting essentially of" the enumerated ingredients/steps, which allows the presence of only the named ingredients/steps, along with any unavoidable impurities that might result therefrom, and excludes other ingredients/steps.

[0059] Numerical values in the specification and claims of this application should be understood to include numerical values which are the same when reduced to the same number of significant figures and numerical values which differ from the stated value by less than the experimental error of conventional measurement technique of the type described in the present application to determine the value.

[0060] All ranges disclosed herein are inclusive of the recited endpoint and independently combinable (for example, the range of "from 2 grams to 10 grams" is inclusive of the endpoints, 2 grams and 10 grams, and all the intermediate values).

[0061] The terms "about" and "approximately" can be used to include any numerical value that can vary without changing the basic function of that value. When used with a range, "about" and "approximately" also disclose the range defined by the absolute values of the two endpoints, e.g., "about 2 to about 4" also discloses the range "from 2 to 4." Generally, the terms "about" and "approximately" may refer to plus or minus 10% of the indicated number.

[0062] Percentages of elements should be assumed to be percent by weight of the stated element, unless expressly stated otherwise.

[0063] Although the operations of exemplary embodiments of the disclosed method may be described in a particular, sequential order for convenient presentation, it should be understood that disclosed embodiments can encompass an order of operations other than the particular, sequential order disclosed. For example, operations described sequentially may in some cases be rearranged or performed concurrently. Further, descriptions and disclosures provided in association with one particular embodiment are not limited to that embodiment, and may be applied to any embodiment disclosed.

[0064] For the sake of simplicity, the attached figures may not show the various ways (readily discernable, based on this disclosure, by one of ordinary skill in the art) in which the disclosed system, method and apparatus can be used in combination with other systems, methods and apparatuses. Additionally, the description sometimes uses terms such as "produce" and "provide" to describe the disclosed method. These terms are abstractions of the actual operations that can be performed. The actual operations that correspond to these terms can vary depending on the particular implementation and are, based on this disclosure, readily discernible by one of ordinary skill in the art.

[0065] Referring now to the drawings wherein the showings are for the purpose of illustrating non-limiting embodiments of the disclosure only and not for the purpose of limiting same, FIGS. 1-12 illustrate a non-limiting embodiment of a collapsible and extendable extension pole in accordance with the present disclosure.

[0066] The present disclosure is directed to a partition system that is used to separate portions of a building or room, and wherein the partition system includes a collapsible and extendable extension pole. The present disclosure is also directed to a method for using a partition system to separate portions of a building or room, and further to a method of storing and using a collapsible and extendable extension pole with a partition system. The partition system in accordance with the present disclosure can be in construction zones, room, etc., to form a barrier to dirt, paint spray, dust, noise, light, odors, and the like. The partition system can be configured for a temporary or permanent barrier. The partition system includes the use of a) one or more specially configured collapsible and extendable extension poles, b) a barrier material (e.g., plastic sheeting, fabric sheeting, composite material sheeting, etc.), and c) an optional opening arrangement (e.g., zipper, magnet closure arrangement,

hook and loop fastener arrangement, snaps, etc.) that can be used to form an openable and closable opening in the barrier material. The use of extension poles to support a barrier material in a room or construction zone to form a temporary or permanent barrier is known in the art as described in the prior art references incorporated herein, thus will not be described in detail herein. Likewise, the use of an opening arrangement to form an openable and closable opening in a barrier material is also known in the art as described in the prior art references incorporated herein, thus will not be described in detail herein. The specially configured collapsible and extendable extension pole in accordance with the present disclosure addresses the deficiencies of prior art extension poles regarding the shelf-space, storage, and/or transport issues associated with such prior art extension poles. In one non-limiting embodiment, the collapsible and extendable extension pole includes a) a plurality of pole sections, b) an optional barrier material connection arrangement, c) an optional grip pad, d) an optional compression base portion, e) an optional non-slip foot arrangement, f) one or more optional pole clip arrangements, and/or g) one or more optional tether arrangements. One non-limiting extendable extension pole in accordance with the present disclosure is illustrated and described in FIGS. 1-12.

[0067] FIG. 1 is a front perspective view of a non-limiting, exemplary extension pole in accordance with one non-limiting implementation of the present disclosure, showing the extension pole in a fully collapsed configuration. FIG. 2 is a rear perspective view of the extension pole of FIG. 1. FIG. 3 is a side view of the extension pole of FIG. 1. FIG. 4 is a front perspective view of the extension pole of FIG. 1, showing the extension pole in a partially open and/or closed configuration. FIG. 5 is a rear perspective view of the extension pole of FIG. 4. FIG. 6 is a side view of the extension pole of FIG. 4. FIG. 7 depicts the extension pole of FIG. 1 in a partially extended configuration. FIG. 8 depicts the extension pole of FIG. 1 in a fully extended configuration. FIGS. 9A-9C depict the transition of the extension pole of FIG. 1 from the fully collapsed configuration to the fully extended configuration, wherein FIG. 9A depicts the disclosed extension pole in the fully collapsed configuration, wherein FIG. 9B depicts the disclosed extension pole in the partially extended configuration, and wherein FIG. 9C depicts the disclosed extension pole in the fully extended configuration. FIGS. 10A-10B depict an exemplary, non-limiting compressible portion configured for use with the extension pole of FIG. 1, wherein FIG. 10A depicts the compressible portion in a non-compressed configuration, and wherein FIG. 10B is a partial cross-sectional view of FIG. 10A. FIG. 11A depicts the compressible portion of FIG. 10A in a fully compressed configuration, and wherein FIG. 11B is a partial cross-sectional view of FIG. 11A. FIG. 12 depicts an exemplary, non-limiting partition system comprising the extension pole of FIG. 1.

[0068] With reference to FIGS. 1-12, there is provided an extension pole 10 that is configured for use within a partition system 75 (see FIG. 12), and wherein the extension pole 10 includes a main pole section 100, a removable top pole section 200, and a removable bottom pole section 300. The main pole section 100 is formed of a plurality of pole sections 11 0a, 11 0b, 110c that are arranged in a telescoping configuration. Each of the pole sections 110a, 110b, 110c have a tubular body 112a, 112b, 112c, respectively. The cross-sectional shape and area of each of the pole sections 110a, 110b, 110c is selected so that the pole sections 110a, 110b, 110c can be telescopically fitted together, and so that the pole section 110a, 110b, 110c can be telescopically extended and collapsed. The main pole section 100 section is configured to provide most (e.g., 80-99.99% and all values and ranges therebetween) or all of the height/longitudinal length adjustment to the collapsible and extendable extension pole 10, as illustrated in FIGS. 9A-9C. The pole sections 110a, 110b, 110c can optionally include a grip and/or grip surface 140 (e.g., rough surface, grooved surface, ribbed surface, polymer- or rubber-coated surface, etc.) to facilitate in the gripping of one or more of the pole sections 110a, 110b, 110c. The main pole section 100 further includes a first end 120 and a second end 130, wherein a female fitting 125 is formed at the first end 120 and a male fitting 135 is formed at the second end 130. The main pole section 100 typically includes a securing arrangement (e.g., e.g., clamp, rivet, pin, adhesive, screw, nail, bracket, clip, twist lock, push button spring, internal twist action telescopic pole locking system, internal push button telescopic pole locking system, external twist action telescopic pole clamping system, clamp arrangement, cable or pin locking arrangement, etc.) that is configured to releasably secure the pole sections 110a, 110b, 110c in position relative to one another after the desired positioning of the pole sections 110a, 110b, 110c relative to one another (e.g., the extending of the pole sections 110a, 110b, 110c relative to one another) is obtained.

[0069] The main pole section 100 optionally includes at least one pole clip 150 that is configured to releasably connect the top pole section 200 and/or bottom pole section 300 to the main pole section 100 when the extension pole 10 is in a partially or fully collapsed configuration. As illustrated in FIGS. 1-3, the main pole section 100 is in the fully collapsed position which the top pole section 200 and bottom pole section 300 are releasably connected to the main pole section 100; however, it will be appreciated that the top pole section 200 and/or bottom pole section 300 can be releasably connected to the main pole section 100 while the main pole section 100 is not in the fully collapsed position. Such releasable connection by the pole clip 150 facilitates in maintaining a compact orientation when the collapsible and extendable extension pole 10 is in the compact and collapsed orientation, as illustrated in FIGS. 1-3. As can be appreciated, the at least one pole clip 150 can also or alternatively be positioned on the top pole section 200 and/or

the bottom pole section 300. The material used to form the at least one pole clip 150 is non-limiting (e.g., plastic, metal, composite material, etc.). In the present non-limiting embodiment, the pole clip 150 includes a flexible or bendable bracket that can releasably fit about a portion or all of the main pole section 100.

[0070] Still referring to FIGS. 1-12, the removable top pole section 200 includes a tubular body 210 that has the same shape and circular cross-sectional size as the first end 120 of the main pole section 100. The top pole section 200 includes a first end 220 and a second end 230, wherein a male fitting 225 is formed at the first end 220. A grip pad 240 is pivotally coupled to the second end 230. Upper surface 242 of the grip pad 240 can include a smooth surface, a non-smooth surface, and/or an adhesive surface to a) facilitate in forming a non-slip or reduced slip interface between the upper surface 242 of the grip pad 240 and a ceiling, wall, or other structure with which the upper surface 242 engages when the collapsible and extendable extension pole 10 is installed, and/or b) facilitate in forming a non-slip or reduced slip interface between the upper surface 242 of the grip pad 240 and the barrier/partition material 50 when the collapsible and extendable extension pole 10 is installed (see for example FIG. 12). In the present non-limiting embodiment, the grip pad 240 has a generally square or rectangular shape and formed of a plastic or rubber material.

[0071] The top pole section 200 further includes a barrier material clip 250 that is connected thereto by a sleeve clamp arrangement 260. The barrier material clip 250 is configured to removably connect the barrier material 50 to the removable top pole section 200 (see for example FIG. 12). The barrier material clip 250 can include a spring-loaded pivoting arm that biases the pivoting arm in the closed position. As can be appreciated, the barrier material clip 250 can have other and/or additional configurations. The material used to make the barrier material clip 250 is non-limiting (e.g., plastic, metal, etc.). The barrier material clip 250 can be connected to the removable top pole section by any number of arrangements (e.g., adhesive, screw, nail, pin, rivet, clamp, bracket, clip, etc.). Many types of barrier material connection arrangements that can be used are illustrated and described in the prior art references that are incorporated herein.

[0072] Still referring to FIGS. 1-12, the male fitting 225 that is formed on top pole section 200 is configured to engage the female fitting 125 on the main pole section 100 to form a releasable connection between the removable top pole section 200 and the main pole section 100. As such, the male fitting 225 allows the removable top pole section 200 to be connected and disconnected from the main pole section 100. The male fitting 225 has a size and shape that facilitates in the insertion of the male fitting 225 into the female fitting 125. The male fitting 225 can optionally include a tapered region that is configured to further facilitate in the insertion of the male fitting 225 into the female fitting 125 of the main pole section 100. As can be appreciated, the first end 120 of the main pole section 100 could optionally include a male fitting (similar to that of the male fitting 225) such that the male fitting would be inserted into a female fitting (similar to the female fitting 125) formed on the first end 220 of the top pole section 200 (e.g., a reverse configuration to what is illustrated in FIGS. 1-8). The shape, size, and materials used to form the male fitting 225 are non-limiting.

[0073] Still referring to FIGS. 1-12, a first tether 500a forms a connection between the removable top pole section 200 and main pole section 100. The first tether 500a can be formed of a cord, elastic cord, wire, strap, etc. The material used to form the first tether 500a is non-limiting (e.g. metal, plastic, composite material, elastic material, etc.). The first tether 500a can be permanently or removably connected to the removable top pole section 200 and/or main pole section 100. In one non-limiting embodiment, the first tether 500a is optionally formed of an elastic material that is permanently connected to the removable top pole section 200 and main pole section 100. The elastic material, when used, and length of the first tether 500a can be selected to cause the first end 220 of the removable top pole section 200 to be drawn toward the first end 120 of the main pole section 100 when the removable top pole section 200 and the main pole section 100 are positioned generally parallel to one another, as illustrated in FIGS. 1-3; however, this is not required. Such drawing action facilitates in maintaining a compact orientation of the removable top pole section 200 relative to the main pole section 100 when the collapsible and extendable extension pole 10 is in the compact and collapsed orientation, as illustrated in FIGS. 1-3. As can be appreciated, a spring arrangement could be connected to one or both ends of the first tether 500a to create the drawing together effect as an alternative or in additional use of an elastic material for the first tether 500a. The first tether 500a can also be configured to draw together the removable top pole section 200 relative to the main pole section 100 when the removable top pole section 200 is removably connected to the main pole section 100. As can be appreciated, the tether can be formed of a non-elastic material.

[0074] With further reference to FIGS. 1-12, the removable bottom pole section 300 includes a tubular body 310 that has the same shape and circular cross-sectional size as the second end 130 of the main pole section 100. The removable bottom pole section 300 includes a first end 320, a second end 330, and a compressible portion 350. The first end 320 includes a female fitting 325 formed thereon that is configured to receive the male fitting 135 of the main pole section 100 and form a releasable connection between the removable bottom pole section 300 and the main pole section 100. As such, the female fitting 325 allows the removable bottom pole section 300 to be connected and disconnected from the main pole section 100. The female fitting 325 has a size and shape that facilitates in the insertion of the male fitting

135 into the female fitting 325. The male fitting 135 can optionally include tapered region that is configured to further facilitate in the insertion of the male fitting 135 into the female fitting 325. As can be appreciated, the first end 320 of the bottom pole section 300 could optionally include a male fitting (similar to the male fitting 135) such that the male fitting would be inserted into a female fitting (similar to the female fitting 325) formed on the second end 130 of the main pole section 100 (e.g., a reverse configuration to what is illustrated in FIGS. 1-8). The shape, size, and materials used to form the male fitting 135 are non-limiting.

[0075] A second tether 500b forms a connection between the removable bottom pole section 300 and main pole section 100. The second tether 500b can be formed of a cord, elastic cord, wire, strap, etc. The material used to form the second tether 500b is non-limiting (e.g. metal, plastic, composite material, elastic material, etc.). The second tether 500b can be permanently or removably connected to the removable bottom pole section 300 and/or main pole section 100. In the present non-limiting embodiment, the second tether 500b is optionally formed of an elastic material that is permanently connected to the removable bottom pole section 300 and main pole section 100. The elastic material, when used, and length of the second tether 500b can be selected to cause the first end 320 of the removable bottom pole section 300 to be drawn toward the second end 130 of the main pole section 100 when the removable bottom pole section 300 and the main pole section 100 are positioned generally parallel to one another, as illustrated in FIGS. 1-3. Such drawing action facilitates in maintaining a compact orientation of the removable bottom pole section 300 relative to the main pole section 100 when the collapsible and extendable extension pole 10 is in the compact and collapsed orientation, as illustrated in FIGS. 1-3. As can be appreciated, a spring arrangement could be connected to one or both ends of the second tether 500b to create the drawing together effect as an alternative or in additional use of an elastic material for second tether 500b. The second tether 500b can also be configured to optionally draw together the removable bottom pole section 300 relative to the main pole section 100 when the removable bottom pole section 300 is removably connected to the main pole section 100. As can be appreciated, the tether can be formed of a non-elastic material.

[0076] With specific reference to FIGS. 10A-10B and 11A-11B, the bottom pole section 300 further includes a compressible portion 350 that is configured to be biased downwardly (e.g., biased in an extended position). The compressible portion 350 is configured to partially or fully compress when the removable bottom pole section 300 or the optional non-slip foot 335 on the second end 330 of the removable bottom pole section 300 engages a floor or other structure during the installation of the collapsible and extendable extension pole 10. Such compression portion 350 facilitates in securing the collapsible and extendable extension pole 10 in position during installation of the collapsible and extendable extension pole 10. The compressible portion 350 comprises a spring or similar type of biasing member (e.g., spring) 352, a rod 354 that is telescopically received in the tubular body 310, and a stop 356. The spring 352 is disposed between the rod 354 and the stop 356. As can be appreciated, the tubular body 310 can alternatively be configured to be telescopically received in the rod 354 of the compressible portion 350.

[0077] In one non-limiting configuration, the spring or similar type of biasing member 352 is configured to compress 0.5-10 in. (1.3 cm - 25 cm) (and all values and ranges therebetween) such that the longitudinal length of the removable bottom pole section 300 has a variable longitudinal length of up to 10 in. (25 cm) (0.001-10 in. (0.00254 cm - 25.4 cm) and all values and ranges therebetween) due to the compression of the compressible portion 350. As such, if the removable bottom pole section 300 had a longitudinal length of 42 inches (107 cm) when the compressible portion 350 was not in a compressed state, the removable bottom pole section 300 would have a longitudinal length of 38 inches (97 cm) when the spring 352 of the compressible portion 350 was compressed about 4 inches (10 cm).

[0078] As can be appreciated, the removable top pole section 200 could optionally include a compression portion similar to the compression portion 350 described and illustrated with respect to the bottom pole section 300, the difference being that the compression portion in the top pole section 200 would be biased upwardly.

[0079] A non-slip foot 335 can optionally be used that is coupled to the rod 354. The non-slip foot 335 is generally formed of a non-slip material (e.g., plastic, rubber, etc.). The size and shape of the non-slip foot 335 are non-limiting. The non-slip foot 335 is configured to inhibit or prevent movement or slipping of the removable bottom pole section 300 on a floor or other surface once the collapsible and extendable extension pole 10 has been installed. The bottom pole section 300 optionally includes one or more grips 340 (e.g., rough surface, grooved surface, ribbed surface, polymer- or rubber-coated surface, etc.) to facilitate in the gripping of the removable bottom pole section 300.

[0080] The disclosed main pole section 100 can be formed of a single pole section, or can be formed of a plurality of telescoping sections as disclosed in the Figures 1-12. It can be appreciated that the disclosed main pole section 100 can be formed of two telescoping pole sections or more than three telescoping sections (e.g., 4-10 telescoping pole sections and all values and ranges therebetween). The length of each of the pole sections 110a, 110b, 110c can be 0.5-8 feet (0.15 m - 2.44 m) (and all values and ranges therebetween). In one non-limiting configuration, the length of each of the pole sections 110a, 110b, 110c of the main pole body section 100 is 2-5 feet (0.6 m - 1.5 m), and typically 2.5-4 feet (0.8 m - 1.2 m). The pole sections 110a, 110b, 110c can have the same or a different longitudinal length. When the main

pole section 100 is formed of two or pole sections, the length of the pole sections can be the same or different.

[0081] One or more of the pole sections 110a, 110b, 110c can optionally include a releasable locking arrangement that allows a user to releasably lock two pole sections relative to one another in position once the two telescoping poles have been expanded or contracted in a desired position with respect to one another. Such a locking arrangement is well known in the art with regard to telescoping poles, thus will note be further described herein.

[0082] The disclosed main pole section 100, top pole section 200, and bottom pole section 300 include tubular shaped bodies; however, it can be appreciated that the bodies of the main, top, and bottom pole sections 100, 200, 300 can have a non-circular shape (e.g., square, rectangular, polygonal, oval, etc.).

[0083] It is to be appreciated that the disclosed extension pole can be formed of: (i) top pole section 200 releasably coupled to main pole section 100; (ii) bottom pole section 300 releasably coupled to main pole section 100; or (iii) top pole section 200 and bottom pole section 300 releasably coupled to main pole section 100, as illustrated in Figures 1-12. It is also to be appreciated that any of the above mentioned components of the extension pole 10 can be used with any of the possible extension pole configurations mentioned in this paragraph. For example, if the extension pole is formed only of top pole section 200 releasably coupled to main pole section 100, the second end 130 of main pole section 100 could be configured to include a compression portion similar to compression portion 350 and/or a non-slip foot similar to foot 335.

[0084] The disclosed collapsible and extendable extension pole 10 is configured to have a collapsible configuration for easy storage or transport and/or have a size that is small enough for shelf display of the collapsible and extendable extension pole 10 in the collapsed state. Prior art extension poles that are used for rooms having 8-15 ft. (2.4 m - 4.6 m) ceilings are typically 5-8 in. (13 cm - 20 cm) in length in a collapsible state. As such, these long poles can be difficult to transport and store. Also, when such extension poles are displayed in a retail store, the long length of the extension poles limits the ability of a retailer to display such extension poles in a standard shelf display, thus requiring such extension poles to be placed in special, non-standard displays for retail sale. The disclosed extension pole 10 is configured to have a significantly smaller collapsible profile as compared to standard extension poles.

[0085] The disclosed main pole section is typically formed of 2-4 telescopically arranged pole sections that enables the main pole body section to have an adjustable longitudinal length. In one non-limiting configuration, each of the disclosed pole sections of the main pole body section have a maximum longitudinal length of no more than 48 inches (122 cm), and typically no more than 40 inches (102 cm) (e.g., 20-40 in.) (51-102 cm). In another non-limiting configuration, the disclosed main pole body section in the collapsed state has a maximum longitudinal length of no more than 48 inches (122 cm), and typically no more than 40 inches (102 cm).

[0086] In other non-limiting configurations, the removable top pole section 200 and a removable bottom pole section 300 is equal to or less than the longitudinal length the main pole section 100 in the collapsed state (see FIGS. 1-3). In another non-limiting configuration, the longitudinal length of the collapsible and extendable extension pole 10 in the collapsed and stored state is no more than 48 inches (122 cm) (e.g., 20-48 inches (51-122 cm) and all values and ranges therebetween), and typically no more than 40 inches (102 cm).

[0087] In one non-limiting configuration, the collapsible and extendable extension pole 10 has a) a maximum longitudinal length in the collapsed and stored state of 48 inches (122 cm) (e.g., 25-48 in. (64 cm - 122 cm) and all values and ranges therebetween), b) a main pole section 100 that is formed of a plurality of pole sections 110a, 110b, 110c that are telescopically connected together, and wherein the maximum longitudinal length of each pole section 110a, 110b, 110c is 20-47 inches (51 cm - 119 cm) (and all values and ranges therebetween), and wherein the maximum longitudinal length of the main pole section 100 in the collapsed position is 48 inches (122 cm) (e.g., 25-48 in. (64 cm - 122 cm) and all values and ranges therebetween), and wherein the main pole section 100 is expandable from 20-275 inches (51 cm - 699 cm) (and all values and ranges therebetween), and c) a removable top pole section 200 and a removable bottom pole section 300 that are removably connectable to the main pole section 100, and wherein each of the removable top pole section 200 and the removable bottom pole section 300 have a longitudinal length that is less than the maximum longitudinal length of the main pole section 100 in the collapsed position and wherein the maximum longitudinal length of the collapsible and extendable extension pole 10 in the fully assembled and expanded state is 369 inches (937 cm) (e.g., 70-369 in. (178 cm - 937 cm) and all values and ranges therebetween).

[0088] In another non-limiting configuration, the collapsible and extendable extension pole 10 has a) a maximum longitudinal length in the collapsed and stored state of 36 inches (91 cm), b) a main pole section 100 that is formed of pole section 110a, 110b, 110c that are telescopically connected together, and wherein the maximum longitudinal length of each pole section 110a, 110b, 110c is 20-35 inches, and wherein the maximum longitudinal length of the main pole section 100 in the collapsed position is 36 inches (91 cm), and wherein the main pole section 100 is expandable from 20-104 inches (51 cm - 264 cm) (and all values and ranges therebetween), and c) a removable top pole section 200 and a removable bottom pole section 300 that are removably connectable to the main pole section 100, and wherein each of the removable top pole section 200 and the

removable bottom pole section 300 have a longitudinal length that is less than the maximum longitudinal length of the main pole section 100 in the collapsed position, and wherein the maximum longitudinal length of the collapsible and extendable extension pole 10 in the fully assembled and expanded state is 174 inches (442 cm) (e.g., 70-174 in. (178 - 442 cm) and all values and ranges therebetween).

[0089] The size of the disclosed collapsible and extendable extension pole in the collapsed and stored state in accordance with the present disclosure allows for a) easy storage of the collapsible and extendable extension pole collapsible and extendable extension pole when in the stored state, b) convenient transport of the collapsible and extendable extension pole due to the smaller size in the stored state, c) allows for the collapsible and extendable extension pole to be placed on a standard shelf for retain sale when in the stored state, and d) a carrying case can be used to place the collapsible and extendable extension pole in the carrying case when the collapsible and extendable extension pole is in the stored state.

[0090] In accordance with one non-limiting aspect of the present disclosure, the collapsible and extendable extension pole includes a removable bottom pole section. The removable bottom section can include a) an optional bottom male fitting, b) an optional bottom tether arrangement, c) an optional outer gripping surface, d) an optional compressible bottom portion, e) an optional non-slip foot arrangement, and/or f) an optional pole clip arrangement. As illustrated in FIGS. 1-3, the removable bottom pole section has a tubular-shaped body that has the same shape and circular cross-sectional size as the bottom pole section of the main pole section; however, it can be appreciated that the body of the removable bottom pole section can have a non-circular shape (e.g., square, rectangular, polygonal, oval, etc.) and/or can have a larger or smaller cross-sectional shape as compared to the bottom pole section of the main pole section. The longitudinal length of the removable bottom pole section can be longer, the same, or shorter than a longitudinal length of the main pole section when in the fully collapsed position or when the main pole section is formed of a single pole section. As illustrated in FIG. 1, the longitudinal length of the removable bottom pole section is shorter than the longitudinal length of the main pole section when in the fully collapsed position. In one non-limiting embodiment, the removable bottom pole section includes a bottom male fitting. The bottom male fitting is configured to form a releasable connection between the top portion of the removable bottom pole section and the bottom portion of the main pole section so that a releasable connection is formed between the removable bottom pole section and the main pole section. As such, the bottom male fitting allows the removable bottom pole section to be connected and disconnected from the main pole section. As illustrated in FIGS. 1-2, the bottom male fitting has a size and shape to facilitate in the insertion of the bottom male fitting into the opening in the bottom of the main pole section. The bottom male fitting can optionally include a tapered region that is configured to further facilitate in the insertion of the bottom male fitting into the opening in the bottom of the main pole section. As can be appreciated, the bottom of the main pole section can optionally include the bottom male fitting such that the bottom male fitting is configured to be inserted into an opening in the top of the removable bottom pole section (e.g., a reverse configuration to what is illustrated in FIG. 1). The shape, size, and materials used to form the bottom male fitting are non-limiting. The bottom male fitting can optionally be permanently secured to the removable bottom pole section. Further features of the bottom male fitting are described in FIG. 2. In another non-limiting embodiment, the removable bottom pole section includes a bottom tether arrangement. The bottom tether arrangement forms a connection between the removable bottom pole section and main pole section. The bottom tether arrangement can be formed of a cord, elastic cord, wire, strap, etc. The material used to form the bottom tether arrangement is non-limiting (e.g. metal, plastic, composite material, elastic material, etc.). The bottom tether arrangement can be permanently or removably connected to the removable bottom pole section and/or main pole section. As illustrated in FIGS. 1-2, the bottom tether arrangement is formed of an elastic material that is permanently connected to the removable bottom pole section and main pole section. The elastic material and length of the bottom tether arrangement can be selected to cause the top of the removable bottom pole section to be drawn toward the bottom of the main pole section when the removable bottom pole section and the main pole section are positioned generally parallel to one another as illustrated in FIG. 1. Such drawing action facilitates in maintaining a compact orientation of the removable bottom pole section relative to the main pole section when the collapsible and extendable extension pole is in the compact and collapsed orientation as illustrated in FIG. 1. As can be appreciated, a spring arrangement could be connected to one or both ends of the tether to create the drawing together effect as an alternative or additional use of an elastic material for the tether. The tether can also be configured to draw together the removable bottom pole section relative to the main pole section when the removable bottom pole section is removably connected to the mail pole section. Further details of the tether are described in FIG. 2. In another non-limiting embodiment, the removable bottom pole section includes an outer gripping surface to facilitate in the handling/gripping of the removable bottom pole section. The type of gripping surface is non-limiting (e.g., rough surface, grooved surface, ribbed surface, polymer- or rubber-coated surface, etc.). In another non-limiting embodiment, the removable bottom pole section includes a main bottom body and a compressible bottom portion. The compressible bottom portion is configured to be biased downwardly. Such biasing can be by a spring arrangement or other type

of biasing arrangement. One non-limiting arrangement is illustrated in FIG. 4. In one non-limiting configuration, the biasing arrangement is a spring arrangement that is configured to compress 0.5-10 in. (and all values and ranges therebetween) such that the longitudinal length of the removable bottom pole section has a variable longitudinal length of up to 10 in. (0.001-10 in. and all values and ranges therebetween) due to the compression of the compressible bottom portion. As such, if the removable bottom pole section had a longitudinal length of 42 in. when the compressible bottom portion was not in a compressed state, the removable bottom pole section would have a longitudinal length of 38 in. when the spring of the compressible bottom portion was compressed about 4 in. The removable bottom pole section is configured to partially or fully compress when the bottom of the removable bottom pole section or the optional non-slip foot arrangement on the bottom portion of the removable bottom pole section engages a floor or other structure during the installation of the collapsible and extendable extension pole. Such compression arrangement facilitates in securing the collapsible and extendable extension pole in position during installation of the collapsible and extendable extension pole. The optional non-slip foot arrangement can optionally be connected to the bottom end portion of the compressible bottom portion. In one non-limiting configuration, the compressible bottom portion is a tubular member that is telescopically received in a tubular portion of the main bottom body. The size, length, and shape of the compressible bottom portion and the main bottom body are non-limiting. As can be appreciated, the main bottom body can alternatively be configured to be telescopically received in the compressible bottom portion. Further details of the compressible bottom portion are described in FIG. 4. In another non-limiting embodiment, the removable bottom pole section includes a non-slip foot arrangement. The non-slip foot arrangement is positioned on the bottom portion of the removable bottom pole section. The non-slip foot arrangement is generally formed of a non-slip material (e.g., plastic, rubber, etc.). The size and shape of the non-slip foot arrangement are non-limiting. The non-slip foot arrangement is configured to inhibit or prevent movement or slipping of the bottom of the removable bottom pole section on a floor or other surface once the collapsible and extendable extension pole has been installed. In another non-limiting embodiment, the removable bottom pole section includes a pole clip arrangement. The pole clip arrangement is used to releasably connect the body of the removable bottom pole section to the main pole section when the removable bottom pole section and the main pole section are position generally parallel to one another as illustrated in FIG. 1. Such releasable connection by the pole clip arrangement facilitates in maintaining a compact orientation of the removable bottom pole section relative to the main pole section when the collapsible and extendable extension pole is in the compact and collapsed orientation as illustrated in FIG. 1. As can be appreciated, the pole clip arrangement can also or alternatively be positioned on the main pole section. The material used to form the pole clip arrangement is non-limiting (e.g., plastic, metal, composite material, etc.). As illustrated in FIG. 1, the pole clip arrangement includes a flexible or bendable bracket that can releasably fit about a portion or all of the body of the main pole section. As can be appreciated, the pole clip arrangement can have other configurations. As illustrated in FIG. 1, the pole clip arrangement is configured to connect to the top portion of the main pole section; however, this is not required. As can also be appreciated, more than one pole clip arrangement can be positioned on the removable bottom pole section and/or main pole section. Further details about the pole clips are described in FIG. 2.

[0091] In accordance with one non-limiting aspect of the present disclosure, the collapsible and extendable extension pole is configured to have a collapsible configuration for easy storage or transport and/or have a size that is small enough for shelf display of the collapsible and extendable extension pole in the collapsed state. Prior art extension poles that are used for rooms having 8-15 ft. (2.4 m - 4.6 m) ceilings are typically 5-8 in. (13 cm - 20 cm) in length in a collapsible state. As such, these long poles can be difficult to transport and store. Also, when such extension poles are displayed in a retail store, the long length of the extension poles limits the ability of a retailer to display such extension poles in a standard shelf display, thus requiring such extension poles to be placed in special, non-standard displays for retail sale. The collapsible and extendable extension pole is configured to have a significantly smaller collapsible profile as compared to standard extension poles. The collapsible and extendable extension pole includes a main pole body section and one or both of a removable top pole section and a removable bottom pole section. The main pole body section is typically formed of 2-4 telescopically arranged pole sections that enables the main pole body section to have an adjustable longitudinal length. In one non-limiting configuration, each of the pole sections of the main pole body section have a maximum longitudinal length of no more than 48 in. (122 cm), and typically no more than 40 inches (102 cm) (e.g., 20-40 in. (51 cm - 102 cm)). In another non-limiting configuration, the main pole body section in the collapsed state has a maximum longitudinal length of no more than 48 inches (122 cm), and typically no more than 40 in (102 cm). In another non-limiting configuration, the longitudinal length of the removable top pole section and a removable bottom pole section is equal to or less than the longitudinal length the main pole body section in the collapsed state. In another non-limiting configuration, the longitudinal length of the collapsible and extendable extension pole in the collapsed and stored state is no more than 48 inches (122 cm) (e.g., 20-48 inches (51 - 122 cm) and all values and ranges therebetween), and typically no more than 40 inches (102 cm). In one non-limiting configuration, the collapsible and extendable extension pole has a) a max-

imum longitudinal length in the collapsed and stored state of 48 inches (122 cm) (e.g., 25-48 in. (64 cm - 122 cm) and all values and ranges therebetween), b) a main body section that is formed of a plurality of pole sections (e.g., 2-6 pole sections and all values and ranges therebetween) that are telescopically connected together, and wherein the maximum longitudinal length of each pole section is 20-47 in. (51 - 102 cm) (and all values and ranges therebetween), and wherein the maximum longitudinal length of the a main body section in the collapsed position is 48 in. (122 cm) (e.g., 25-48 in. (64 - 122 cm) and all values and ranges therebetween), and wherein the main body section is expandable from 20-275 inches (51 cm - 699 cm) (and all values and ranges therebetween), and c) a removable top pole section and a removable bottom pole section that are removably connectable to the main body section, and wherein each of the removable top pole section and the removable bottom pole section have a longitudinal length that is less than the maximum longitudinal length of the a main body section in the collapsed position and wherein the maximum longitudinal length of the collapsible and extendable extension pole in the fully assembled and expanded state is 369 in. (937 cm) (e.g., 70-369 in. (178 - 937 cm) and all values and ranges therebetween). In another non-limiting configuration, the collapsible and extendable extension pole has a) a maximum longitudinal length in the collapsed and stored state of 36 inches, b) a main body section that is formed of 2-3 pole sections that are telescopically connected together, and wherein the maximum longitudinal length of each pole section is 20-35 in. (51 cm - 99 cm), and wherein the maximum longitudinal length of the a main body section in the collapsed position is 36 in. (91 cm), and wherein the main body section is expandable from 20-104 in. (51 cm - 264 cm) (and all values and ranges therebetween), and c) a removable top pole section and a removable bottom pole section that are removably connectable to the main body section, and wherein each of the removable top pole section and the removable bottom pole section have a longitudinal length that is less than the maximum longitudinal length of the a main body section in the collapsed position, and wherein the maximum longitudinal length of the collapsible and extendable extension pole in the fully assembled and expanded state is 174 in. (442 cm) (e.g., 70-174 in. (178 - 442 cm) and all values and ranges therebetween). The size of the collapsible and extendable extension pole in the collapsed and stored state in accordance with the present disclosure allows for a) easy storage of the collapsible and extendable extension pole collapsible and extendable extension pole when in the stored state, b) convenient transport of the collapsible and extendable extension pole due to the smaller size in the stored state, c) allows for the collapsible and extendable extension pole to be placed on a standard shelf for retain sale when in the stored state, and d) a carrying case can be used to place the collapsible and extendable extension pole in the carrying case when the collapsible and extendable extension pole is in the stored state.

[0092] It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained, and since certain changes may be made in the constructions set forth without departing from the spirit and scope of the disclosure, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. The disclosure has been described with reference to preferred and alternate embodiments. Modifications and alterations will become apparent to those skilled in the art upon reading and understanding the detailed discussion of the disclosure provided herein. This disclosure is intended to include all such modifications and alterations insofar as they come within the scope of the present disclosure. It is also to be understood that the following claims are intended to cover all of the generic and specific features of the disclosure herein described and all statements of the scope of the disclosure, which, as a matter of language, might be said to fall therebetween.

Claims

1. A collapsible and expandable extension pole (10) for use in partition systems; said extension pole (10) comprising:

(a) a main pole section (10);
(b) a first pole section (200) that is distinct from the main pole section (100);

characterized by:
(c) a first tether (500a) that is configured to connect together said main pole section (100) and said first pole section (200) such that said first pole section (200) is configured to removably connect to the main pole section (100).

2. The extension pole as defined in claim 1, wherein said first tether (500a) includes an elastic material that is configured to draw together said first pole section (200) to said main pole section (100).

3. The extension pole as defined in claim 1 or 2, wherein the main pole section (100) comprises a plurality of pole sections (1 10a, 1 10b, 1 10c) that are arranged in a telescoping configuration; said main pole section (100) includes locking arrangement that are configured to releasably lock said pole sections (110a, 110b, 110c) of said main pole section in position relative to one another during use of said main pole section (100).

4. The extension pole as defined in any one of claims 1-3, wherein:

(a) a female fitting (125) is formed on a first end (120) of said main pole section (100);
(b) a male fitting (225) is formed on a first end of said first pole section (200); and
(c) said male fitting (225) removably engages said female fitting (125).

5. The extension pole as defined in any one of claims 1-4, wherein said first pole section (200) includes a grip pad (240) that is pivotally coupled to a second end of said first pole section (200), and wherein said grip pad (240) is configured to receive a partition material.

6. The extension pole as defined in any one of claims 1-5, further comprising:

(a) a second pole section (300) that is distinct from said main pole section (100) and said first pole section (200); and
(b) a second tether (500b) that is configured to connect together said main pole section (100) and said second pole section (300) such that said second pole section (300) is configured to removably connect to said main pole section (100).

7. The extension pole as defined in any one of claims 1-6, wherein said second tether (500b) includes an elastic material that is configured to draw together said second pole section (300) to said main pole section (100).

8. The extension pole as defined in claim 6 or 7, wherein:

(a) a male fitting (135) is formed on a second end of said main pole section (100);
(b) a female fitting (320) is formed on a first end of said second pole section (300); and
(c) said male fitting (135) removably engages said female fitting (320).

9. The extension pole as defined in any one of claims 6-8, wherein said second pole section (300) includes a compressible portion (350) that is configured to partially or fully compress said compressible portion (350) when a second end of said second pole section (300) engages a structure, and wherein said compressible portion (350) includes a) a biasing member; and b) a rod (354) that is telescopically received in a body (310) of the second pole section (300).

10. The extension pole as defined in any one of claims 1-9, wherein said main pole section (100) further includes at least one fastener that is configured to releasably connect a body of said first pole section (200) to said main pole section (100) when said extension pole is in a fully collapsed configuration, and wherein said first pole section (200) is substantially parallel said the main pole section (100) when said extension pole is in said fully collapsed configuration and is connected to the main pole section (100) by the at least one fastener (150).

11. The extension pole as defined in any one of claims 6-10, wherein said main pole section (100) further includes at least one fastener (150) that is configured to a) releasably connect a body of said first pole section (200) to said main pole section (100) when said extension pole (10) is in a fully collapsed configuration; and b) releasably connect a body of said second pole section (300) to said main pole section (100) when said extension pole (10) is in said fully collapsed configuration; and wherein said first, second, and main pole sections (200, 300, 100) are substantially parallel when said extension pole (10) is in said fully collapsed configuration and the first and second pole sections (200, 300) are connected to the main pole section (100) by the at least one fastener (150).

12. The extension pole as defined in any one of claims 6-11, wherein said first and second tethers (500a, 500b) are formed of a cord, an elastic cord, a wire, a strap, or combinations thereof.

13. The extension pole as defined in any one of claims 1-12, wherein the main pole section (100) includes a plurality of pole sections (100a, 110b, 110c) that are arranged in a telescoping configuration; said main pole section (100) includes a locking arrangement that is configured to releasably lock said pole sections (110a, 110b, 110c) of said main pole section (100) in position relative to one another during use of said main pole section (100); said first pole section and/or said second pole section (300) are absent telescoping sections.

14. A partition system comprising:

(a) an extension pole (10); and
(b) at least one partition material that is at least partially supported by said at least one extension pole (10) to form a partition wall,

characterized in that the extension pole (10) is an extension pole (10) as defined in any one of claims 1-13.

15. A method for forming a partition wall comprising:

(a) providing an extension pole (10);
(b) providing a partition material;
(c) at least partially supporting said partition material by said extension pole (10) in a struc-

ture to form a partition wall in said structure,

characterized in that the extension pole (10) is an extension pole (10) as defined in any one of claims 1-13.

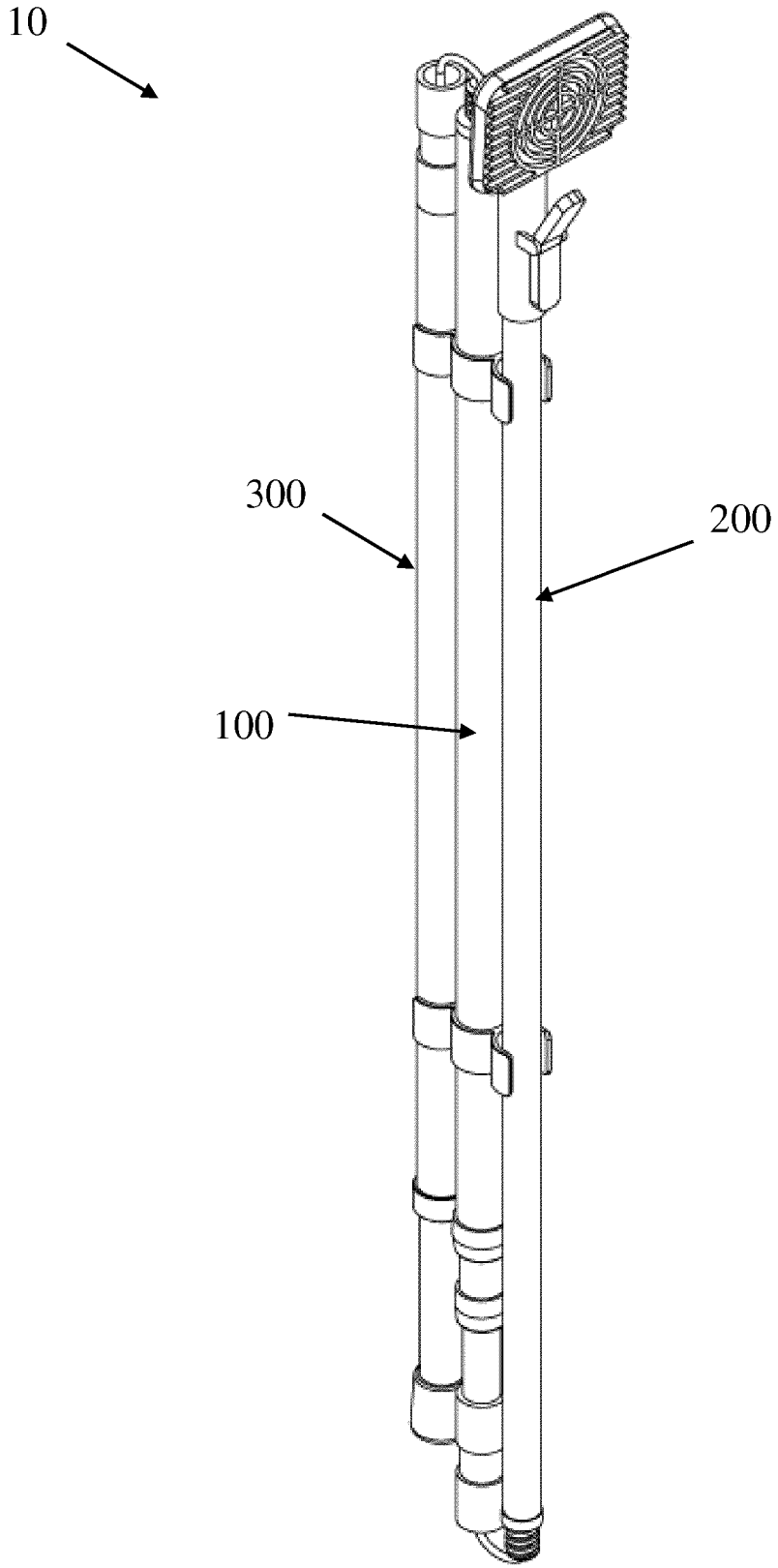

FIG. 1

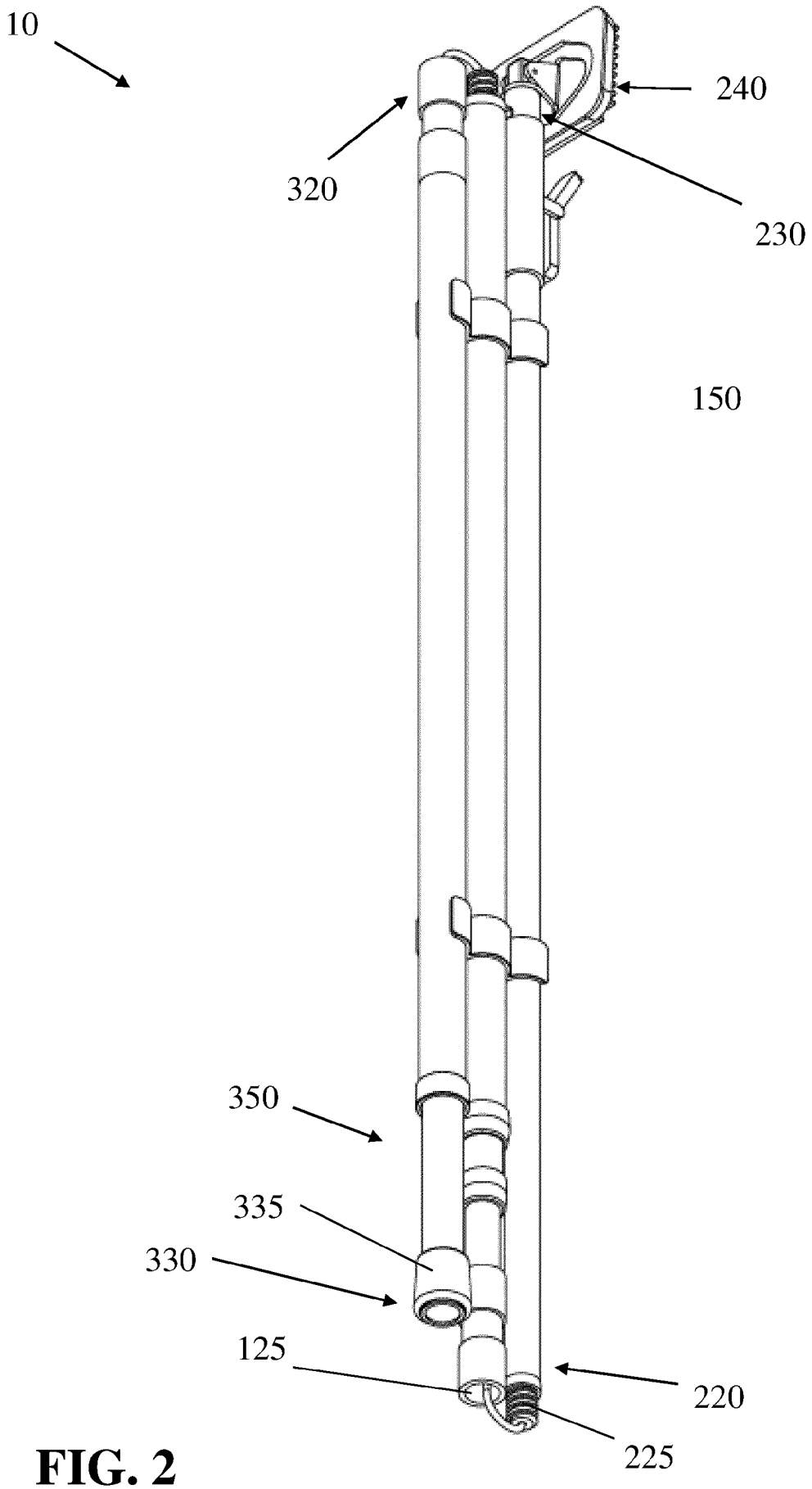

FIG. 2

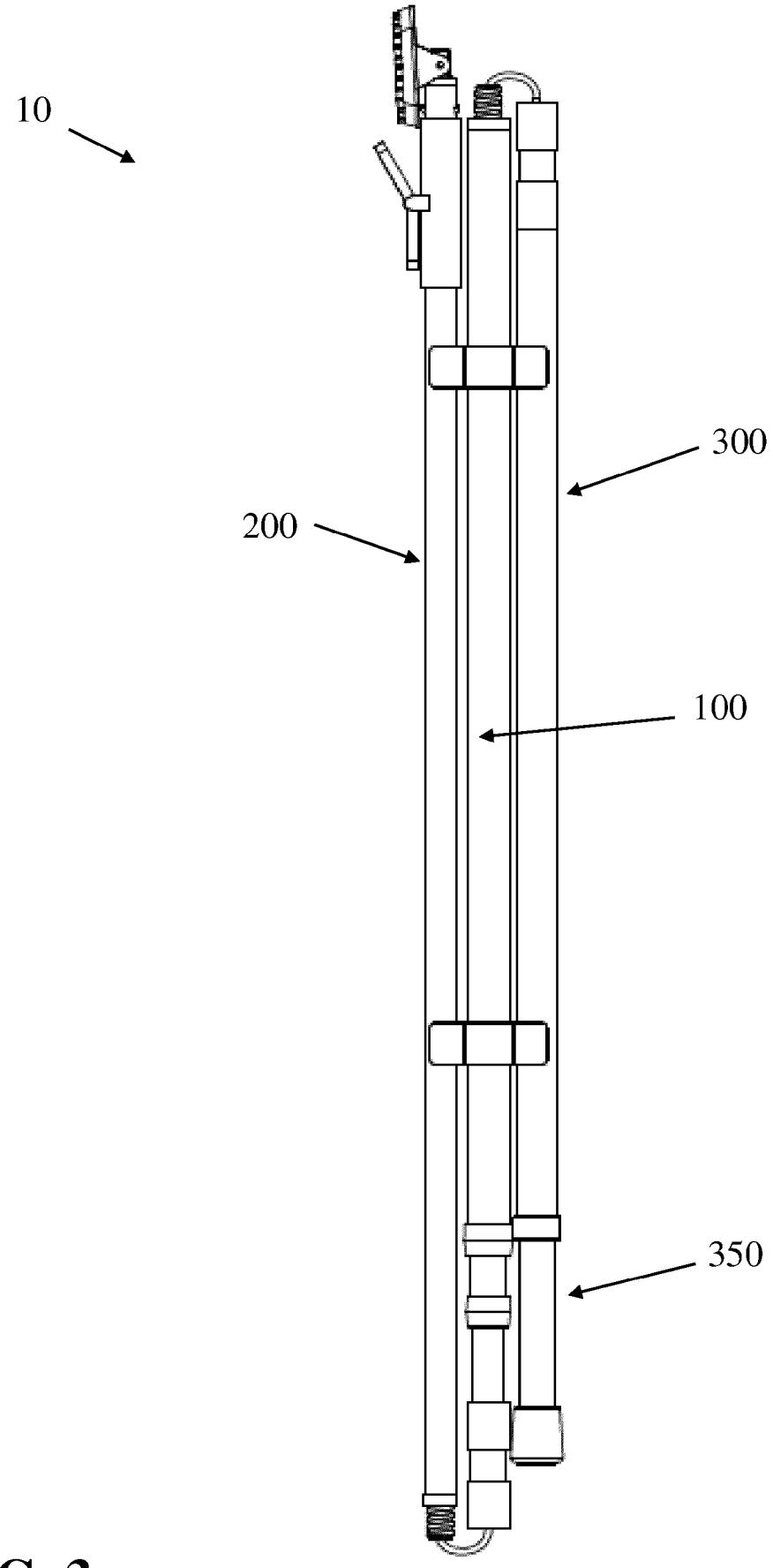

FIG. 3

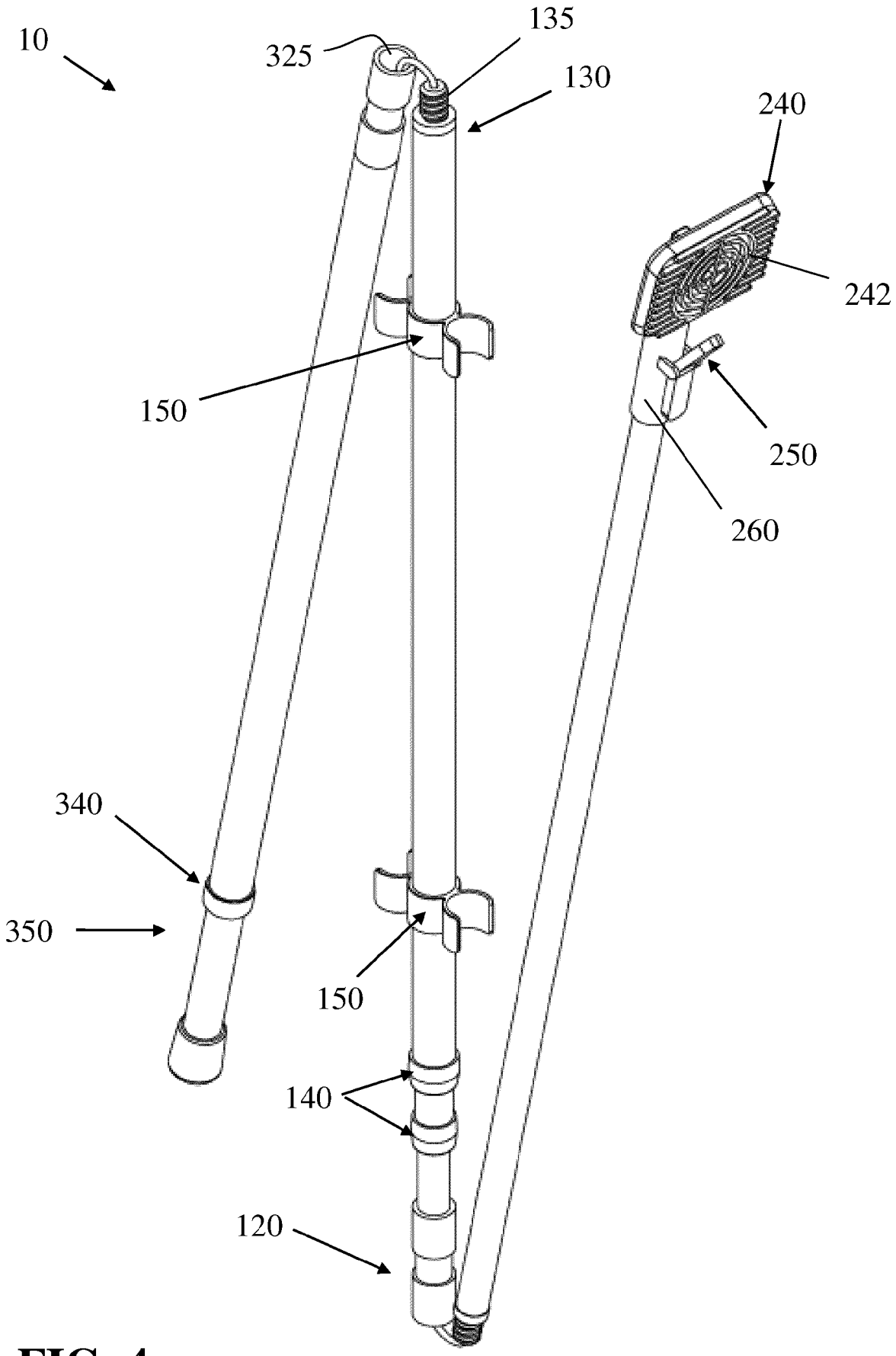

FIG. 4

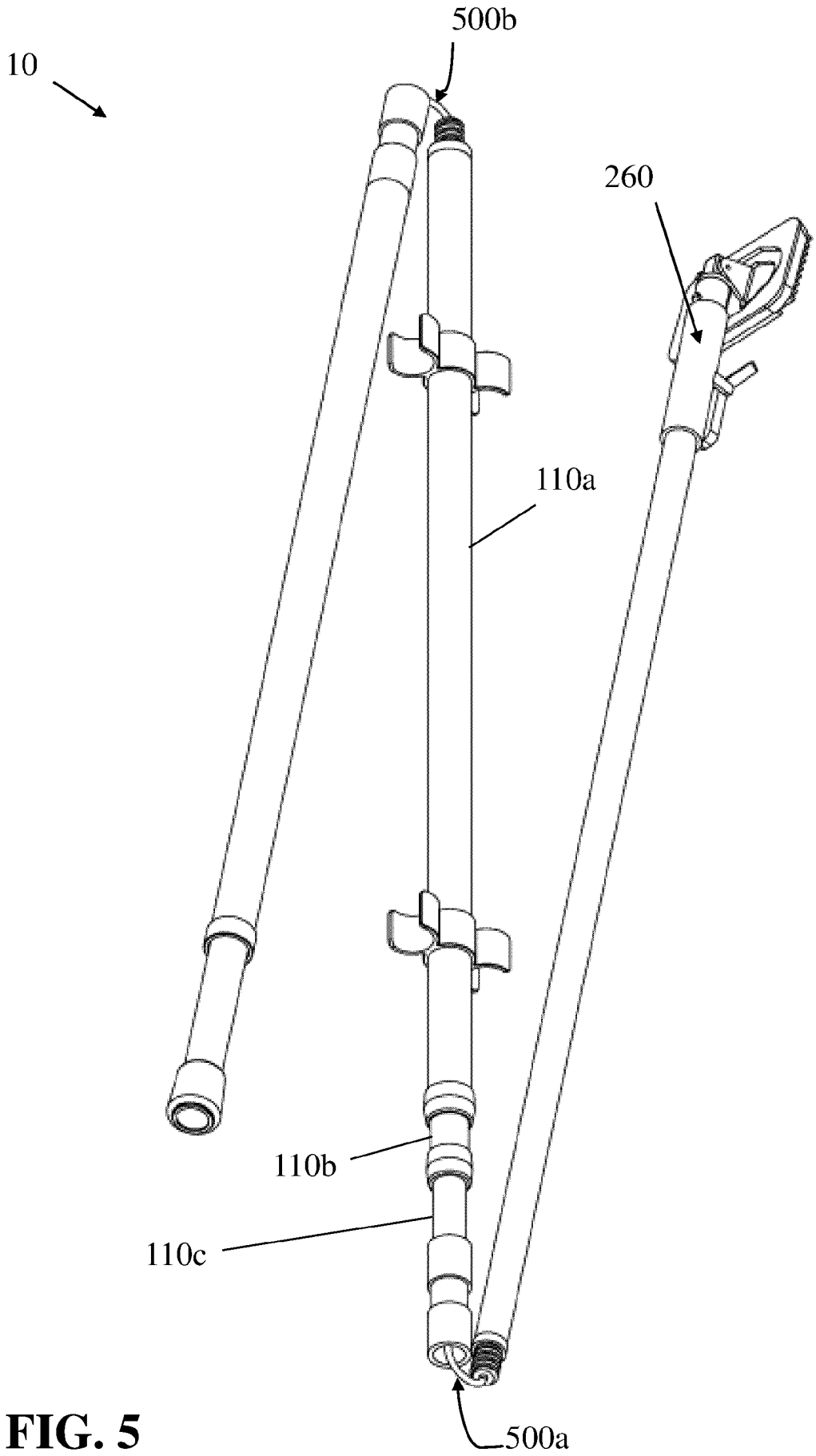

FIG. 5

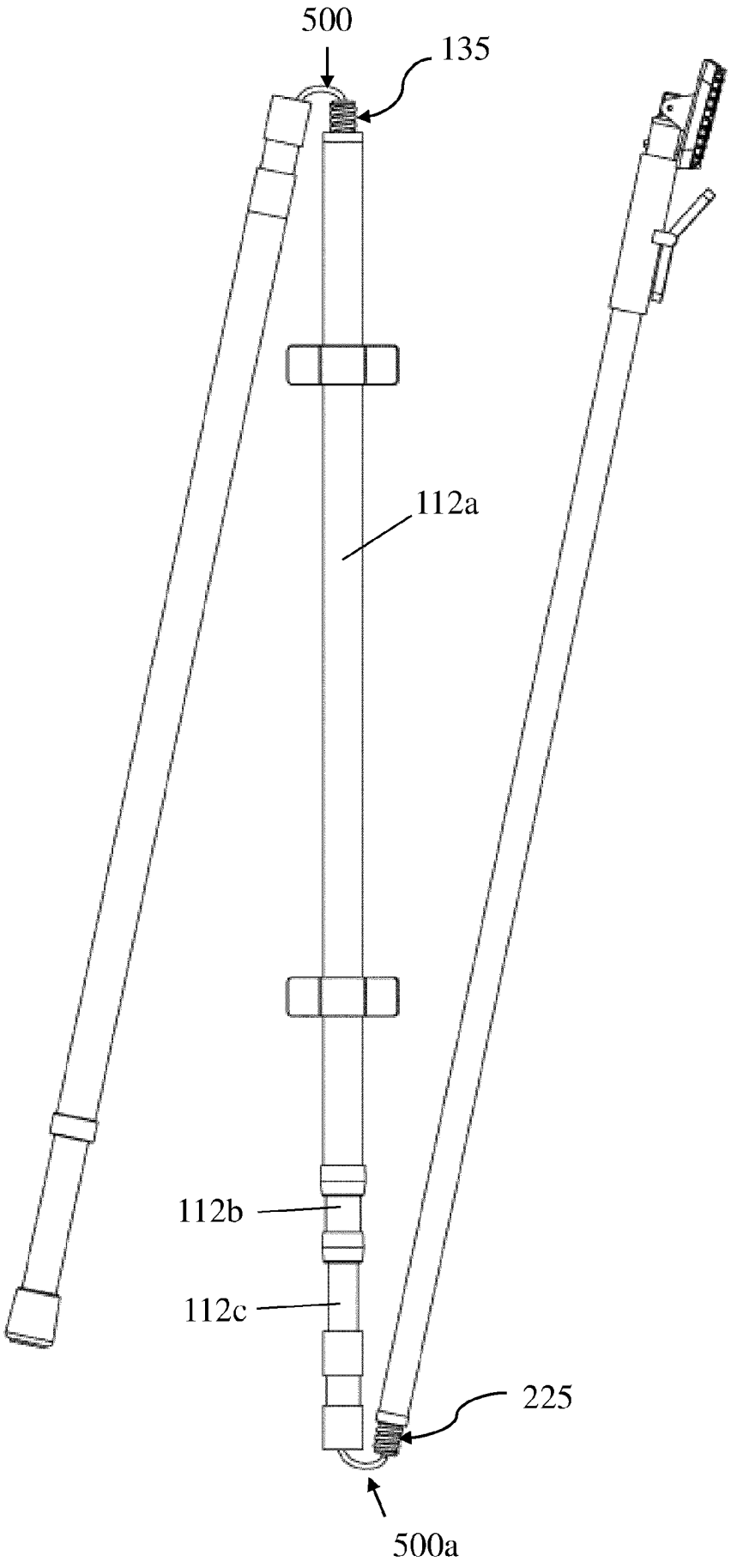

FIG. 6

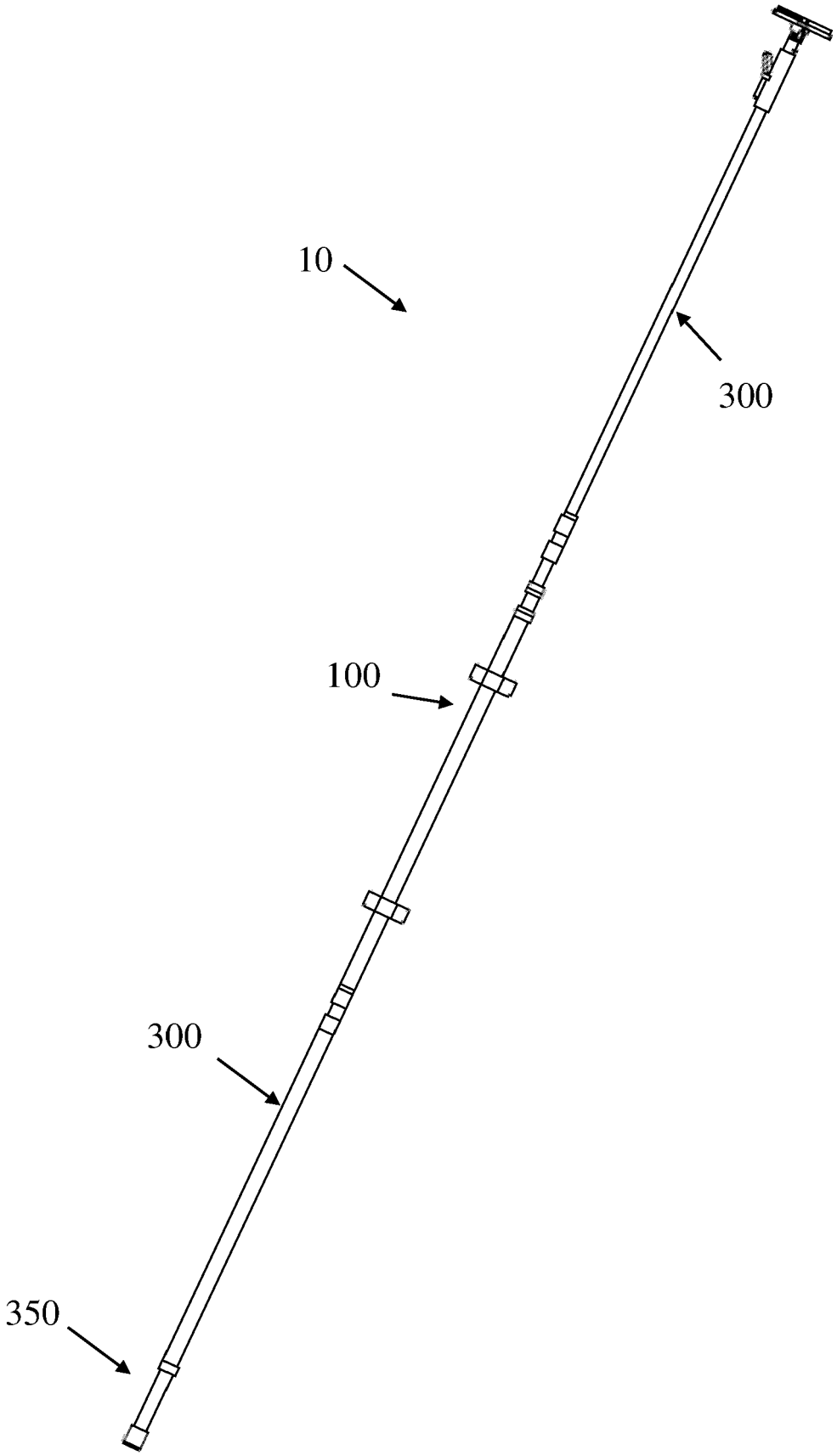

FIG. 7

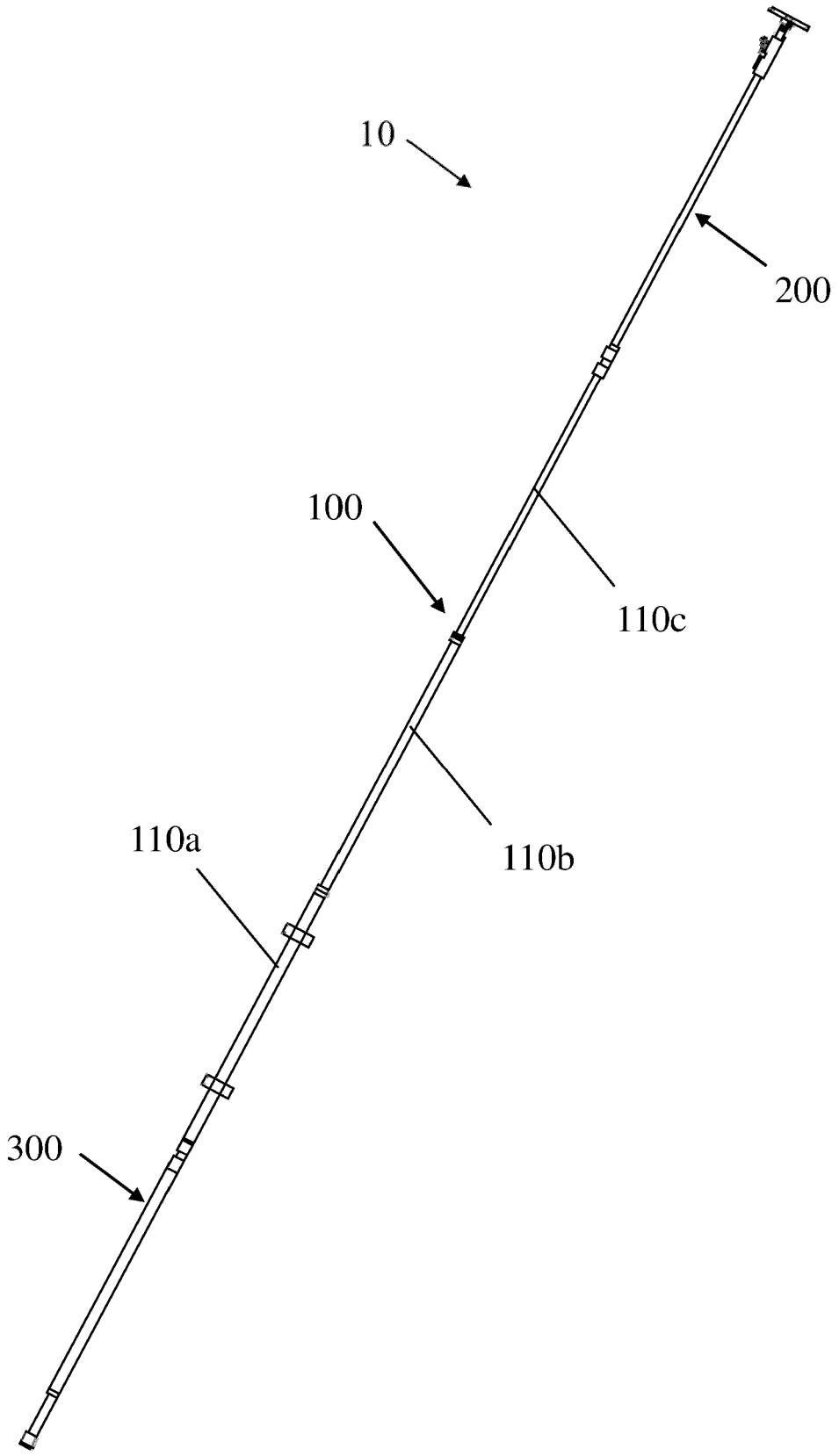

FIG. 8

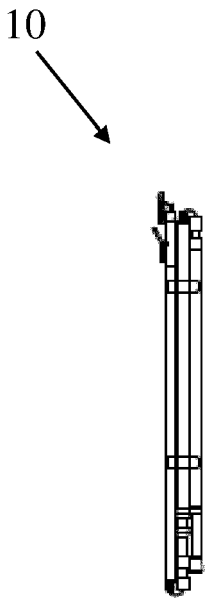

FIG. 9A

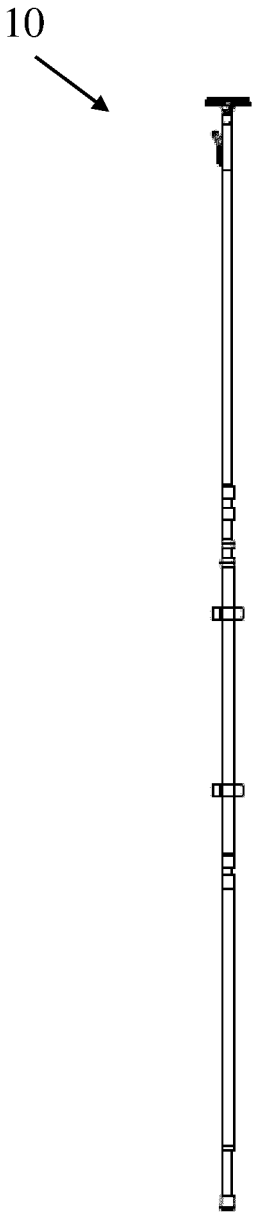

FIG. 9B

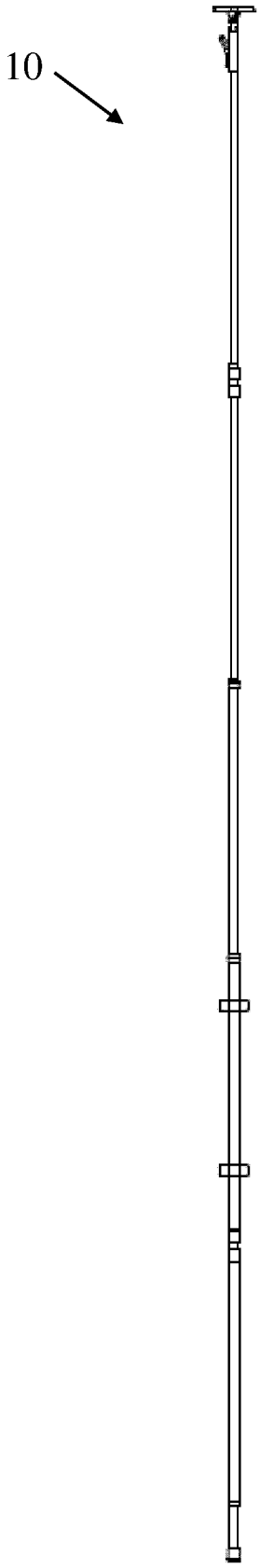

FIG. 9C

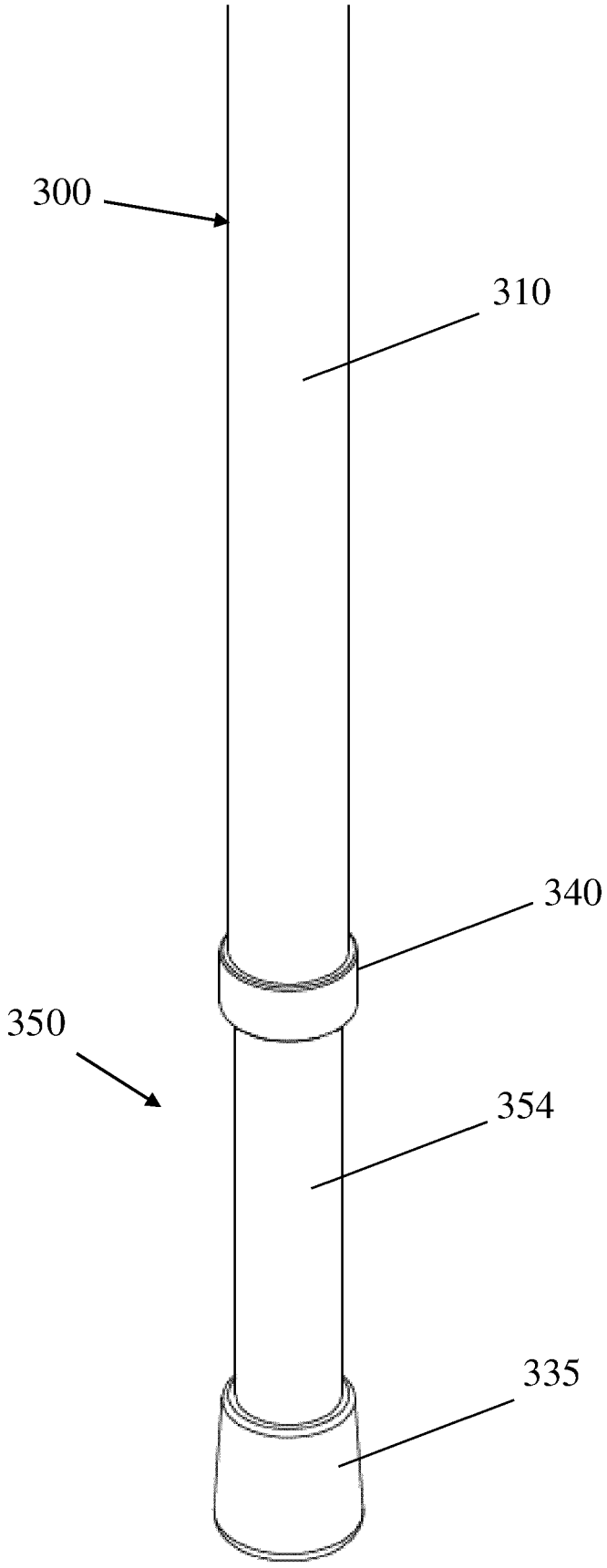

FIG. 10A

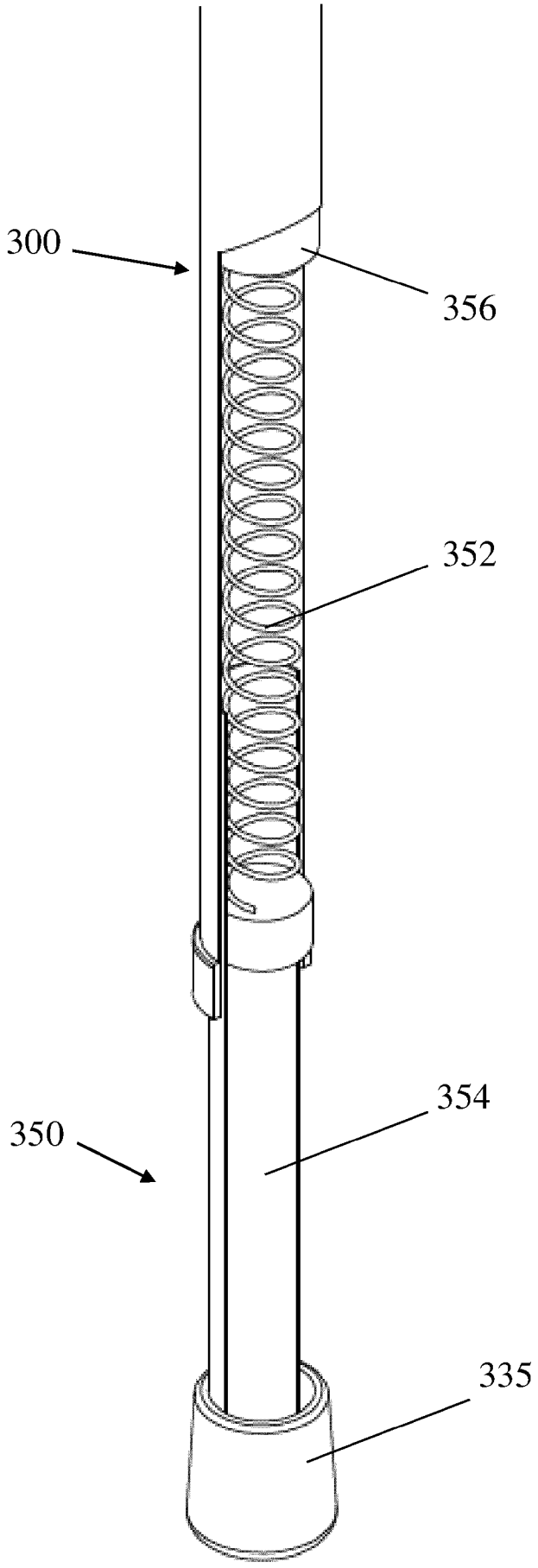

FIG. 10B

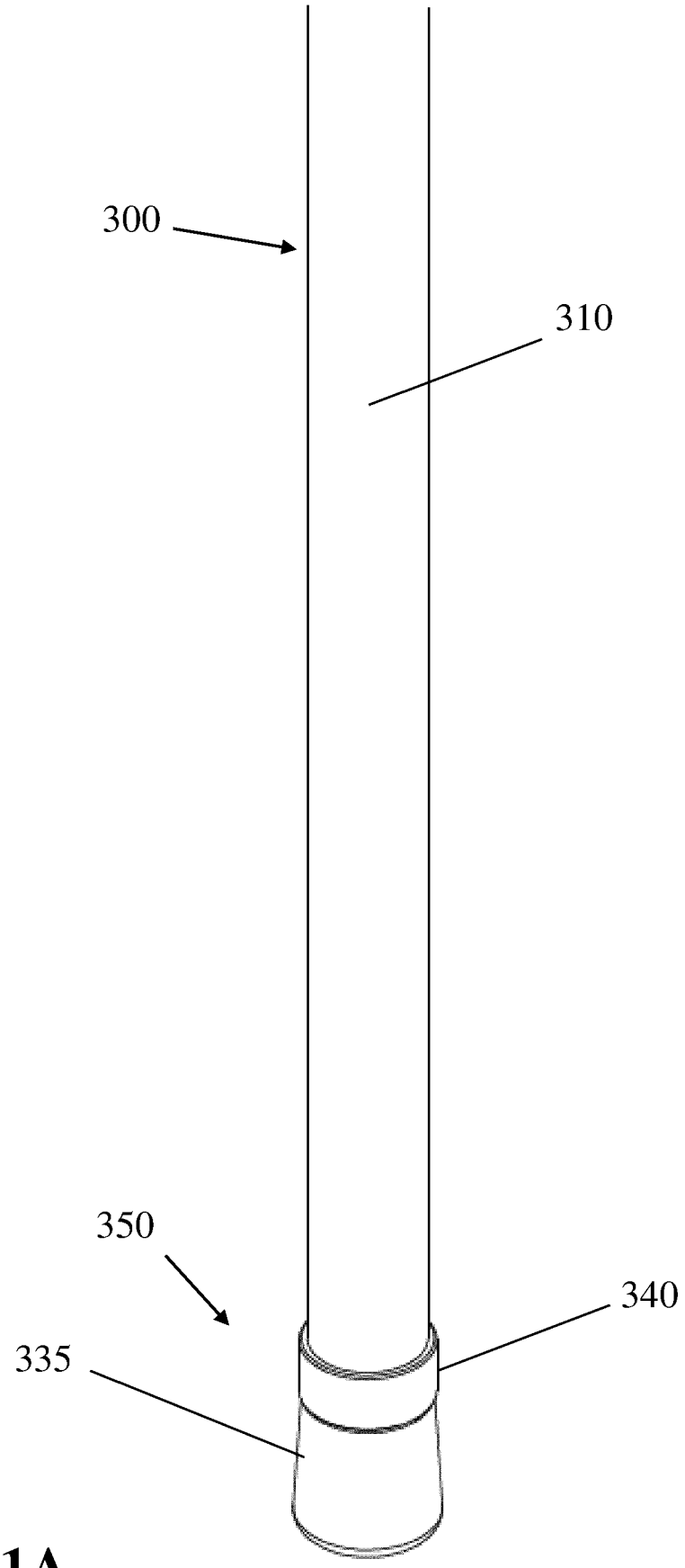

FIG. 11A

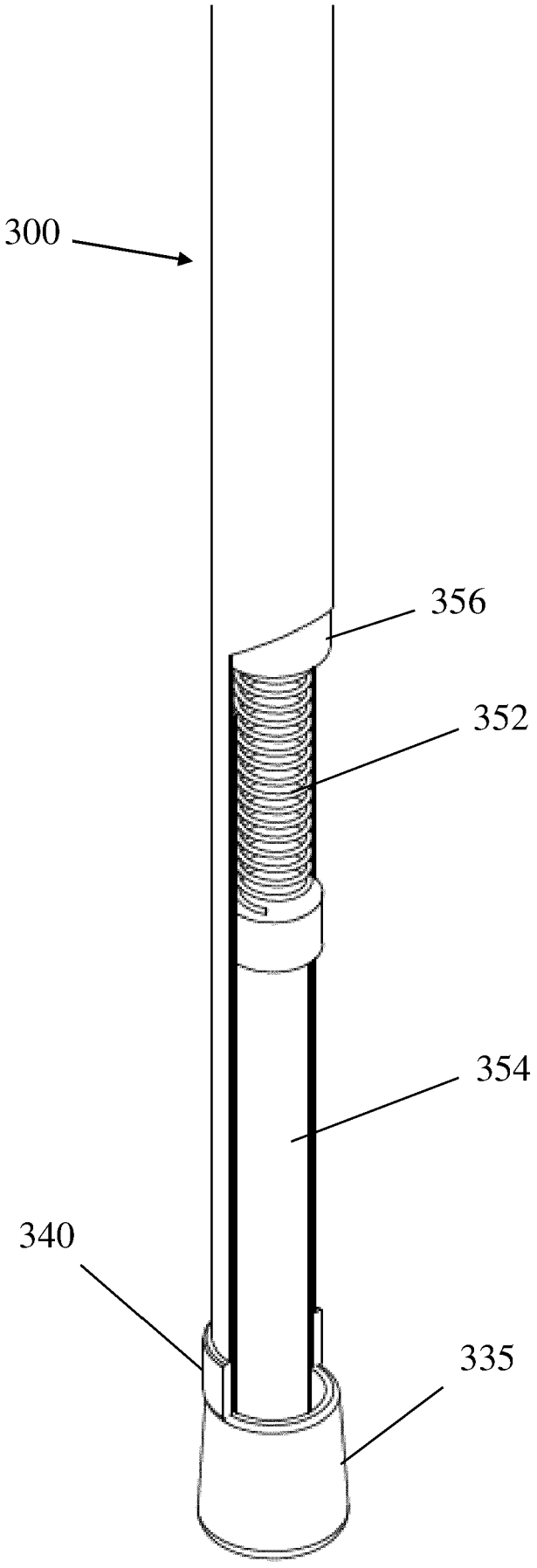

FIG. 11B

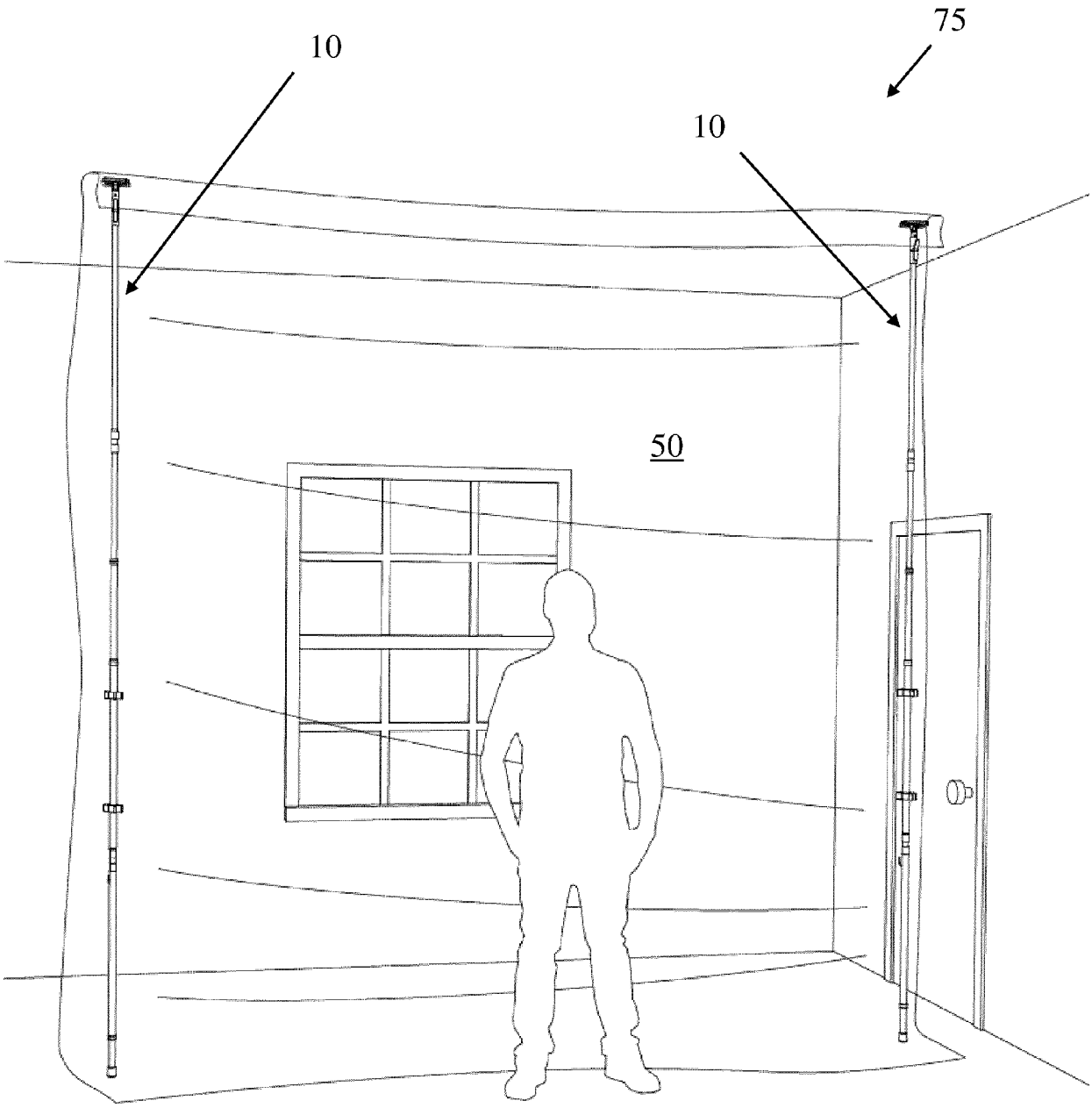

FIG. 12

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 24 21 6496

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	GB 2 458 628 A (WANG DIFEI [GB]) 30 September 2009 (2009-09-30) * claim 1; figures 1-22 *	1-4,6-8, 10-15	INV. E04G21/24 E04G21/30
X	DE 202 11 381 U1 (LENHART KLAUS [DE]) 4 December 2003 (2003-12-04) * claims 1-3; figures 1-5 *	1-4,6-8, 10-13	
X	EP 4 099 866 B1 (LEKISPORT AG [CH]) 4 October 2023 (2023-10-04) * paragraph [0042]; claim 8; figures 1-12 *	1-4,6-13	
X	WO 2011/048028 A1 (STOKES CONALL [IE]) 28 April 2011 (2011-04-28) * figures 1-4 *	1,2,4	
X	US 5 924 469 A (WHITTEMORE JEFFREY [US]) 20 July 1999 (1999-07-20) * figures 1-9c *	1-15	
A	WO 2018/154107 A1 (HELD WOLFGANG [AT]) 30 August 2018 (2018-08-30) * figure 1 *	10,11	TECHNICAL FIELDS SEARCHED (IPC) E04G E04H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	24 March 2025	Baumgärtel, Tim

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 24 21 6496

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-03-2025

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2458628 A	30-09-2009	NONE	
DE 20211381 U1	04-12-2003	NONE	
EP 4099866 B1	04-10-2023	CA 3166869 A1	12-08-2021
		CN 115066192 A	16-09-2022
		EP 4099866 A1	14-12-2022
		JP 2023513511 A	31-03-2023
		KR 20220136401 A	07-10-2022
		US 2023128362 A1	27-04-2023
		WO 2021156220 A1	12-08-2021
WO 2011048028 A1	28-04-2011	NONE	
US 5924469 A	20-07-1999	AU 4827397 A	22-05-1998
		CA 2271645 A1	07-05-1998
		DE 69735194 T2	02-11-2006
		EP 0953092 A1	03-11-1999
		HK 1023610 A1	15-09-2000
		JP 3832772 B2	11-10-2006
		JP 2001503487 A	13-03-2001
		US 5924469 A	20-07-1999
		US 6209615 B1	03-04-2001
		US 6321823 B1	27-11-2001
		US 2002011316 A1	31-01-2002
		US 2003070773 A1	17-04-2003
		US 2004200585 A1	14-10-2004
		US 2005284591 A1	29-12-2005
		US 2006272785 A1	07-12-2006
		US 2008006374 A1	10-01-2008
		US 2009071614 A1	19-03-2009
		US 2010301000 A1	02-12-2010
		WO 9819027 A1	07-05-1998
WO 2018154107 A1	30-08-2018	DE 212018000165 U1	28-10-2019
		WO 2018154107 A1	30-08-2018

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 63604551 **[0001]**
- US 4794974 A **[0004]**
- US 4708189 A **[0004]**
- US 5308280 A **[0004]**
- US 5924469 A **[0004] [0012] [0013] [0014]**
- US 7658219 B **[0004] [0012] [0013] [0014]**
- US 8857499 B **[0004] [0012] [0013] [0014]**
- US 10689865 B **[0004] [0012] [0013] [0014]**
- US 10781597 B **[0004] [0012] [0013] [0014]**
- US 11530542 B **[0004] [0012] [0013] [0014]**
- US 20210404198 A **[0004] [0012] [0013] [0014]**
- US 20220081963 A **[0004] [0012] [0013] [0014]**