

## WHAT IS CLAIMED IS:

1. A ground anchoring apparatus comprising:
  - a first longitudinal body having a central axis;
  - a first retaining member (e.g., collar, wall of the stressing element) rigidly coupled to a portion of the first longitudinal body;
  - a second retaining member movably coupled (e.g., slidably coupled) to the first longitudinal body; and
  - a first set of one or more expanding linkage assemblies, each of the one or more expanding linkage assemblies including:
    - a first linkage member having a first portion and a second portion opposite and spaced apart from the first portion, wherein the first portion of the first linkage member is rotatably coupled to the first retaining member, and
    - a second linkage member having a third portion and a fourth portion opposite and spaced apart from the third portion, wherein the fourth portion of the second linkage member is rotatably coupled to the second retaining member, and wherein the third portion of the second linkage member is rotatably coupled to the second portion of the first linkage member,wherein the first set of one or more expanding linkage assemblies is movable between a collapsed configuration and an expanded configuration, wherein the second retaining member is closer to the first retaining member and the third portion of the second linkage member is further from the central axis in the expanded configuration than in the collapsed configuration.
2. The ground anchoring apparatus of claim 1, further comprising a second longitudinal body having an engagement surface that abuts the second retaining member to move the first set of one or more expanding linkage assemblies from the collapsed configuration to the expanded configuration.
3. The ground anchoring apparatus of claim 2, wherein the second longitudinal body has a proximal end and a distal end opposite and spaced apart from the proximal end, the proximal end of the second longitudinal body defining a central bore extending to the distal end, wherein the central bore is sized such that the first longitudinal body is slidably disposable within the central bore.

4. The ground anchoring apparatus of claim 2, further comprising a jack for causing the second longitudinal body to move toward the first retaining member when the engagement surface of the second longitudinal body abuts the second retaining member.
5. The ground anchoring apparatus of claim 2, further comprising one or more centralizers, wherein each of the one or more centralizers includes a resilient body defining a centralizer opening, wherein the resilient body is biased toward a first centralizer position in which the centralizer opening has a first diameter and the resilient body is urgeable toward a second centralizer position in which the centralizer opening has a second diameter, wherein the second diameter is greater than the first diameter.
6. The ground anchoring apparatus of claim 1, wherein the first longitudinal body has a proximal end and a distal end opposite and spaced apart from the proximal end, wherein the first retaining member is rigidly coupled adjacent the distal end of the first longitudinal body.
7. The ground anchoring apparatus of claim 1, wherein the first portion of the first linkage member is rotatably coupled to the first retaining member by a first hinge, and wherein the fourth portion of the second linkage member is rotatably coupled to the second retaining member by a second hinge.
8. The ground anchoring apparatus of claim 1, wherein each of the one or more second linkage members further includes a linkage cover coupled to the second linkage member, wherein the linkage cover has a width that is greater than a width of the second linkage member.
9. The ground anchoring apparatus of claim 1, wherein the first retaining member and the second retaining member each include:
- an annular body defining an opening sized such that the first longitudinal body is disposable within the opening; and
  - one or more flanges, wherein each of the one or more flanges extends radially from the annular body,

wherein the one or more flanges of the first retaining member are rotatably coupled to the first portion of the first linkage member and the one or more flanges of the second retaining member are rotatably coupled to the fourth portion of the second linkage member of one of the one or more expanding linkage assemblies.

10. A method of using a ground anchoring apparatus, the method comprising:
- disposing a ground anchoring apparatus within a ground opening, the ground anchoring apparatus comprising:
- a first longitudinal body having a central axis;
  - a first retaining member (e.g., collar, wall of the stressing element) rigidly coupled to a portion of the first longitudinal body;
  - a second retaining member movably coupled (e.g., slidably coupled) to the first longitudinal body; and
  - a first set of one or more expanding linkage assemblies, each of the one or more expanding linkage assemblies including:
    - a first linkage member having a first portion and a second portion opposite and spaced apart from the first portion, wherein the first portion of the first linkage member is rotatably coupled to the first retaining member, and
    - a second linkage member having a third portion and a fourth portion opposite and spaced apart from the third portion, wherein the fourth portion of the second linkage member is rotatably coupled to the second retaining member, and wherein the third portion of the second linkage member is rotatably coupled to the second portion of the first linkage member,
- wherein the first set of one or more expanding linkage assemblies is movable between a collapsed configuration and an expanded configuration, wherein the second retaining member is closer to the first retaining member and the third portion of the second linkage member is further from the central axis in the expanded configuration than in the collapsed configuration;
- disposing a backfill within the ground opening; and
- causing the first set of one or more expanding linkage assemblies to move from the collapsed configuration to the expanded configuration.

11. The method of claim 10, further comprising forming the ground opening.
12. The method of claim 10, wherein the ground anchoring system further comprises a second longitudinal body having an engagement surface, wherein causing the first set of one or more expanding linkage assemblies to move from the collapsed configuration to the expanded configuration includes disposing the second longitudinal body within the ground opening and abutting the engagement surface against the second retaining member and moving the first set of one or more expanding linkage assemblies from the collapsed configuration to the expanded configuration.
13. The method of claim 12, wherein the second longitudinal body has a proximal end and a distal end opposite and spaced apart from the proximal end, the proximal end of the second longitudinal body defining a central bore extending to the distal end, wherein the first longitudinal body is slidably disposed within the central bore.
14. The method of claim 12, further comprising removing the second longitudinal body from the ground opening after causing the first set of one or more expanding linkage assemblies to move from the collapsed configuration to the expanded configuration.
15. The method of claim 12, wherein the ground anchoring system further comprises a jack, wherein causing the first set of one or more expanding linkage assemblies to move from the collapsed configuration to the expanded configuration includes using the jack to cause the second longitudinal body to move toward the first retaining member when the engagement surface of the second longitudinal body is abutting the second retaining member.
16. The method of claim 12, wherein the ground anchoring system further comprises one or more centralizers, wherein each of the one or more centralizers includes a resilient body defining a centralizer opening, wherein the first longitudinal body is disposed within the centralizer opening, wherein the resilient body is biased toward a first centralizer position in which the centralizer opening has a first diameter and the resilient body is movable toward a second centralizer position in which the centralizer opening has a second diameter, wherein the second diameter is greater than the first diameter.

17. The method of claim 10, wherein the first longitudinal body has a proximal end and a distal end opposite and spaced apart from the proximal end, wherein the first retaining member is rigidly coupled adjacent the distal end of the first longitudinal body.

18. The method of claim 10, wherein the first portion of the first linkage member is rotatably coupled to the first retaining member by a first hinge, and wherein the fourth portion of the second linkage member is rotatably coupled to the second retaining member by a second hinge.

19. The method of claim 10, wherein each of the one or more second linkage members further include a linkage cover coupled to the second linkage member, wherein the linkage cover has a width that is greater than a width of the second linkage member.

20. The method of claim 10, wherein the first retaining member and the second retaining member each include:

an annular body defining an opening sized such that the first longitudinal body is disposable within the opening; and

one or more flanges, wherein each of the one or more flanges extends radially from the annular body,

wherein the one or more flanges of the first retaining member are rotatably coupled to the first portion of the first linkage member and the one or more flanges of the second retaining member are rotatably coupled to the fourth portion of the second linkage member of one of the one or more expanding linkage assemblies.