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(54) **EXTENDED RANGE SPIDER**

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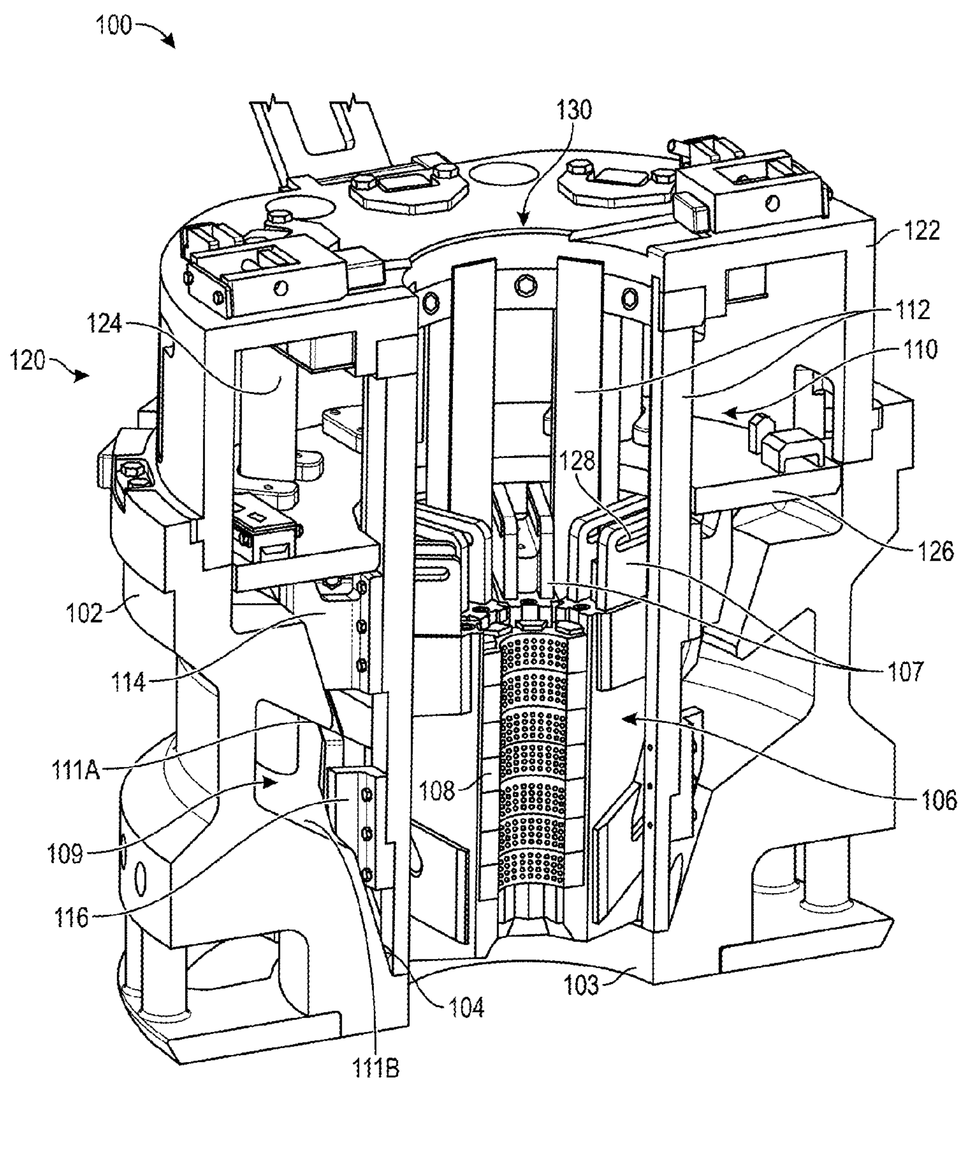
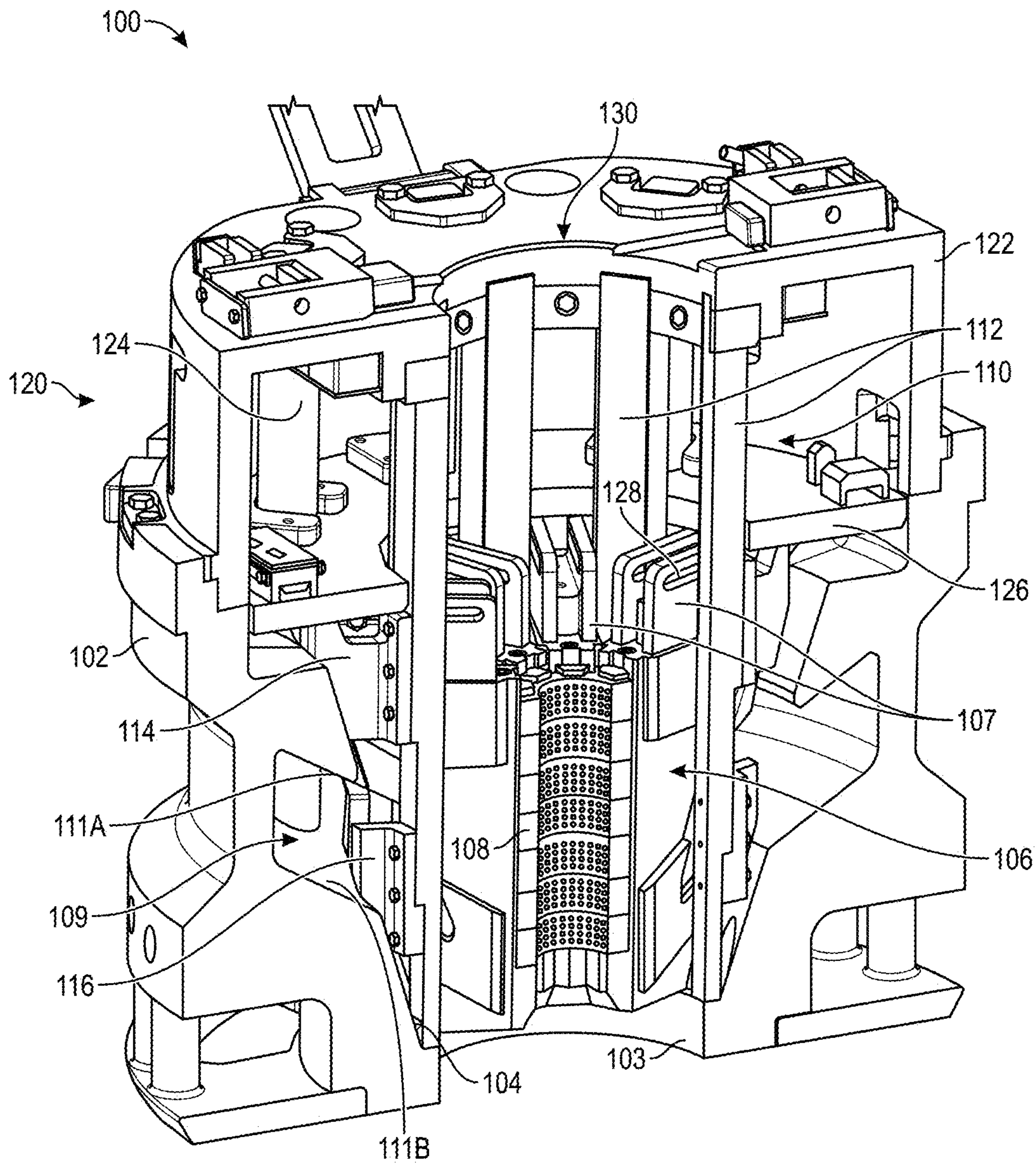
(57) **ABSTRACT**

An apparatus for supporting an oilfield tubular includes a body defining a tapered bowl and a pocket formed in the body, a cage extending axially through the body, wherein guides are attached to the cage, a slips assembly including slips configured to engage a tubular received in the body. The slips extend radially through the cage and engage the guides, and are movable between a retracted configuration in which the slips are received at least partially within the pocket and an extended position in which the slips slide against the tapered bowl. The apparatus also includes a lifting assembly coupled to the slips and configured to apply a linear, axially-directed force to the slips. The slips are guided to move radially and axially in response to the linear, axially-directed force by the guides.




100
130
122
124
112
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126
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107
114
111A
108
106
109
116
104
103
111B

FIG. 1

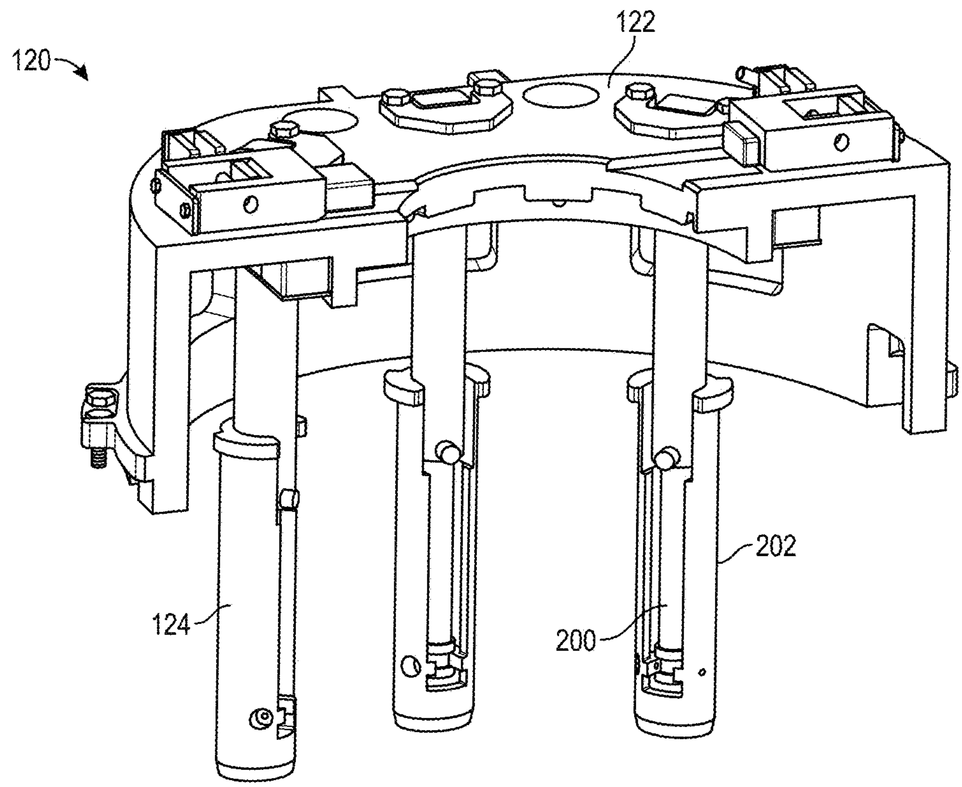

FIG. 2

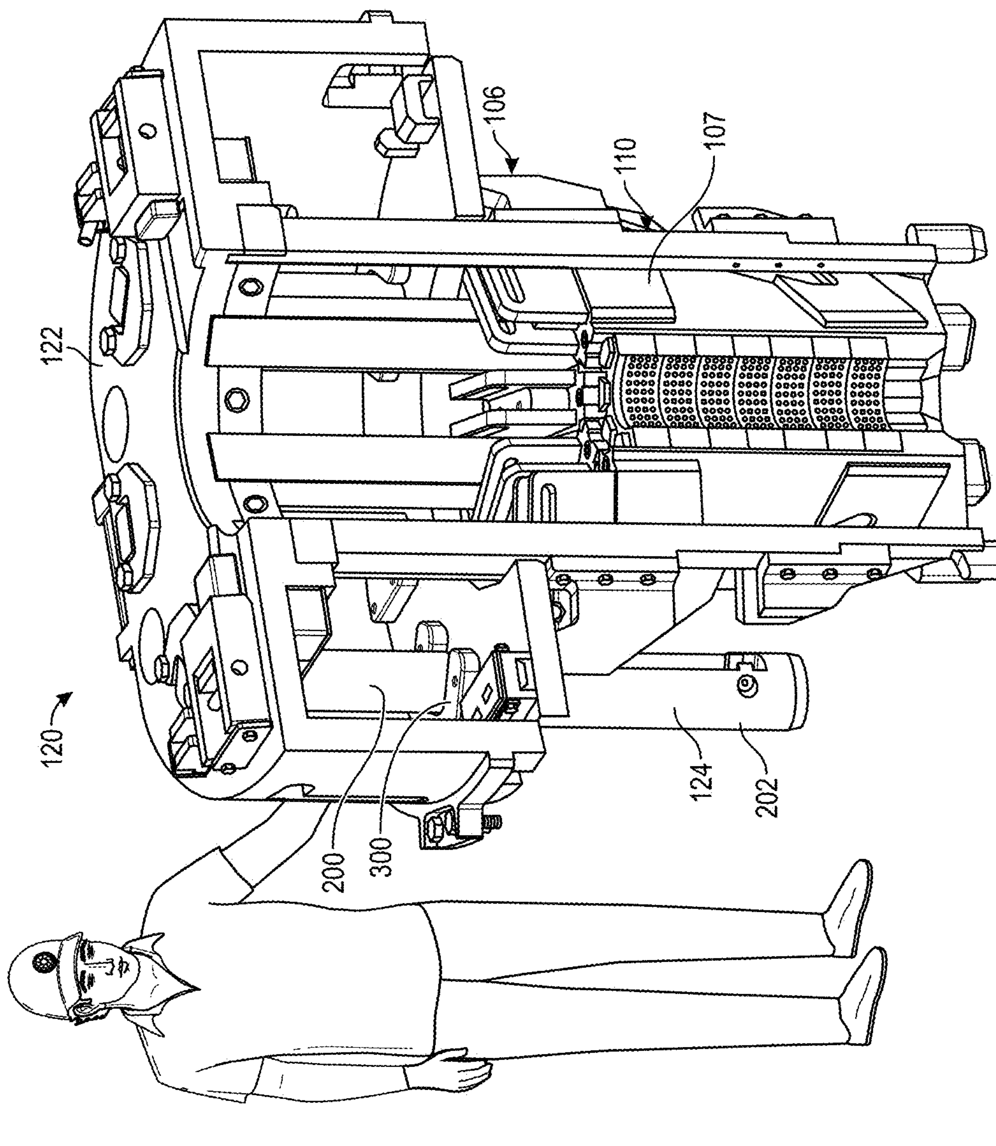

FIG. 3

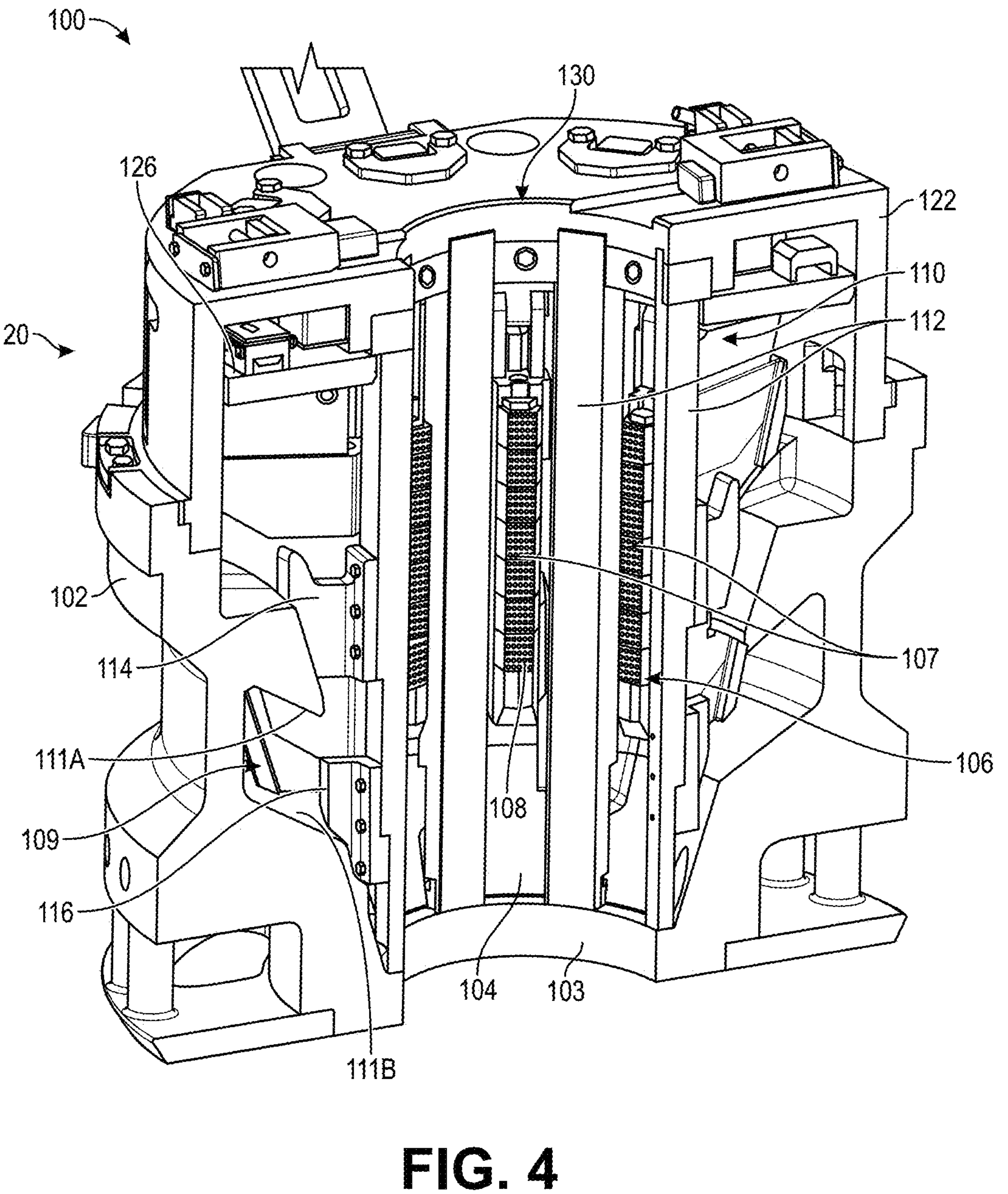
100
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FIG. 4

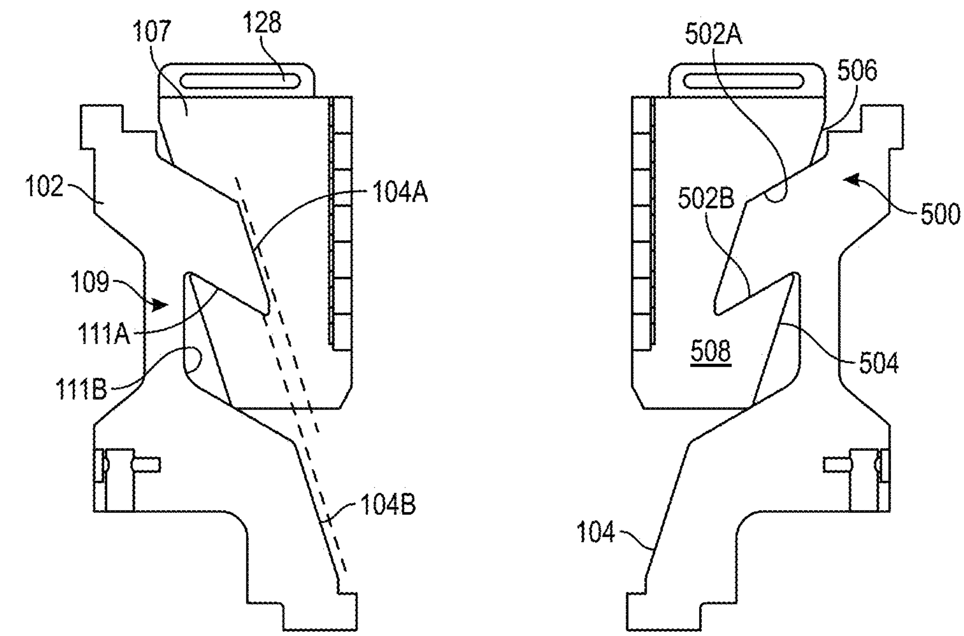

107
128
102
104A
109
111A
111B
104B
502A
506
502B
500
508
504
104

FIG. 5A

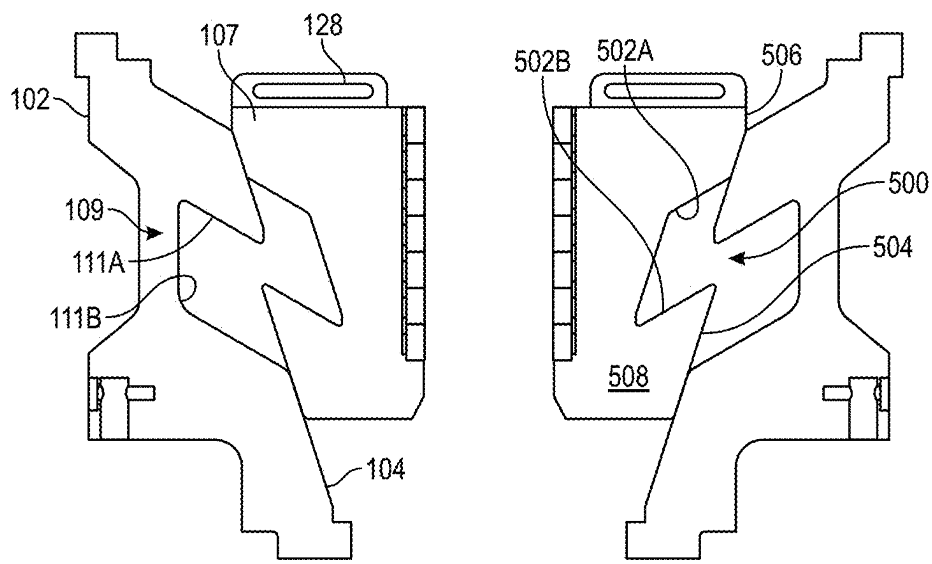

107
128
102
109
111A
111B
104
502B
502A
506
500
504
508

FIG. 5B

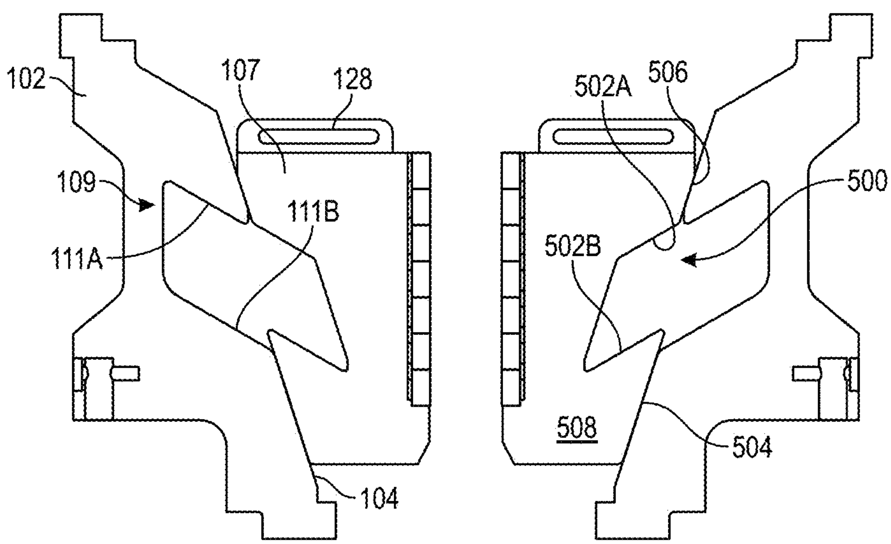


FIG. 5C

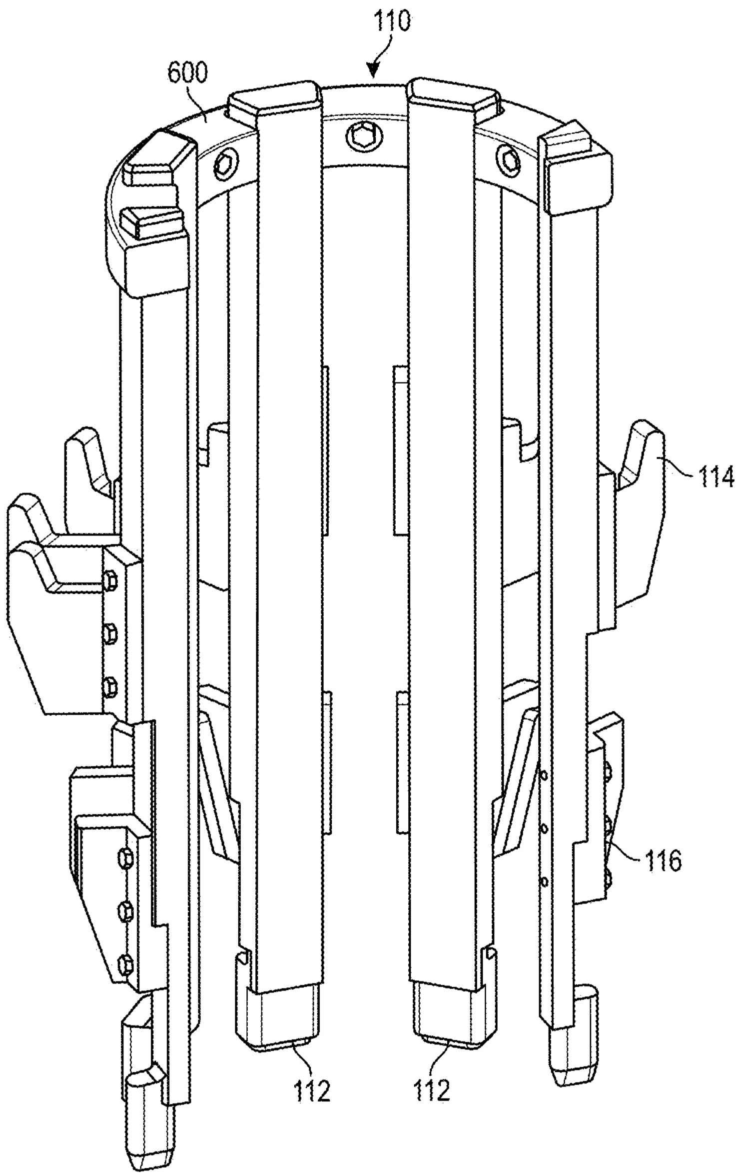


FIG. 6

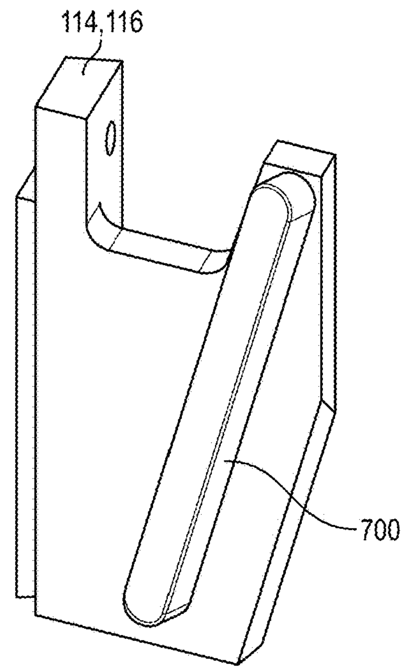


FIG. 7

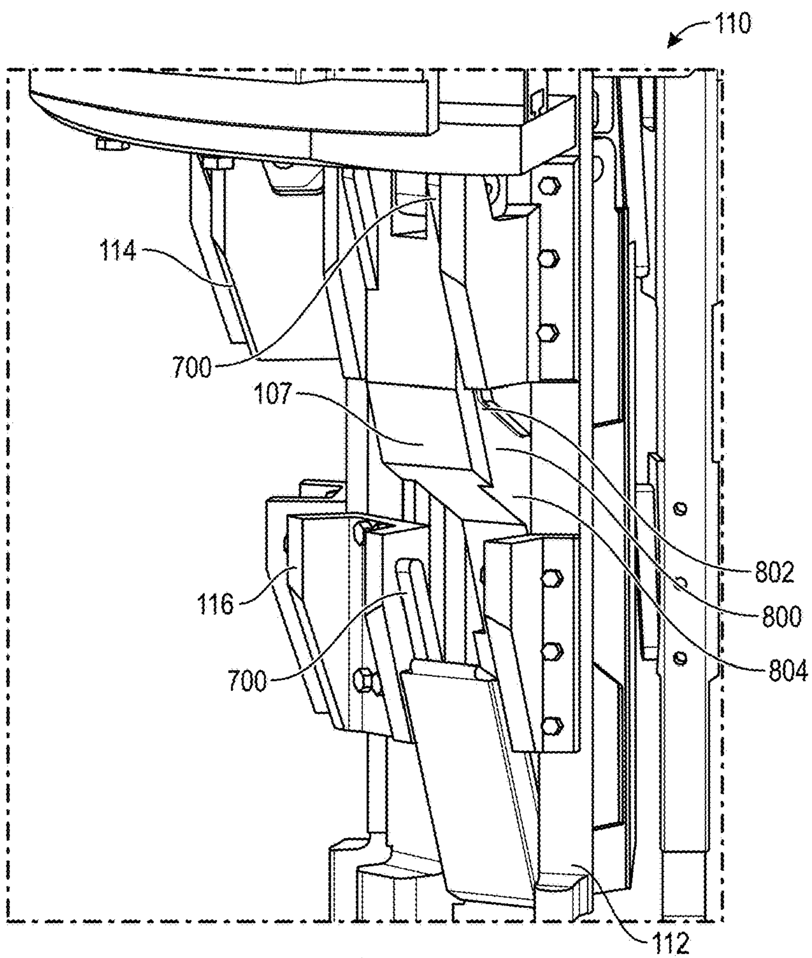
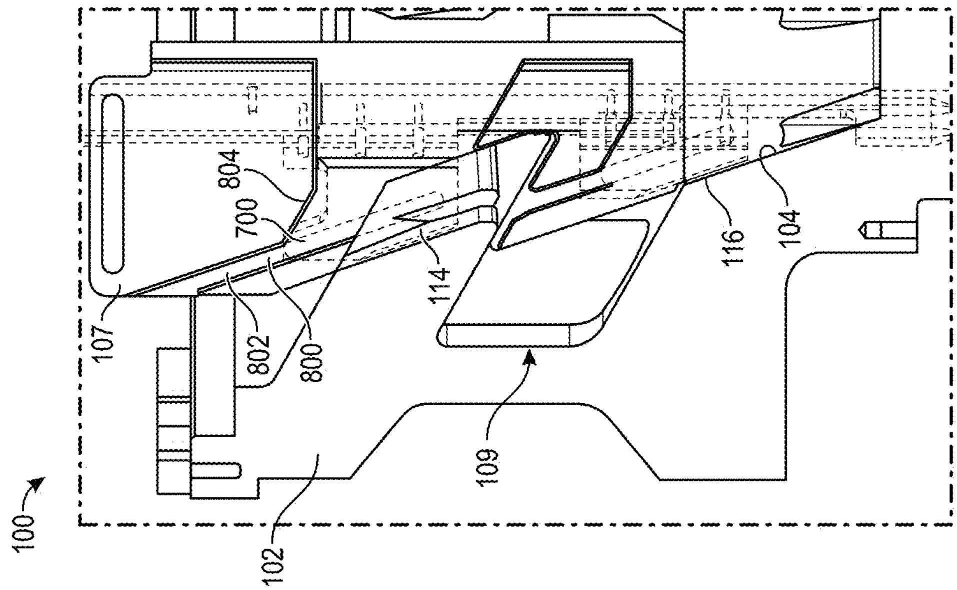


FIG. 8


100
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107
802
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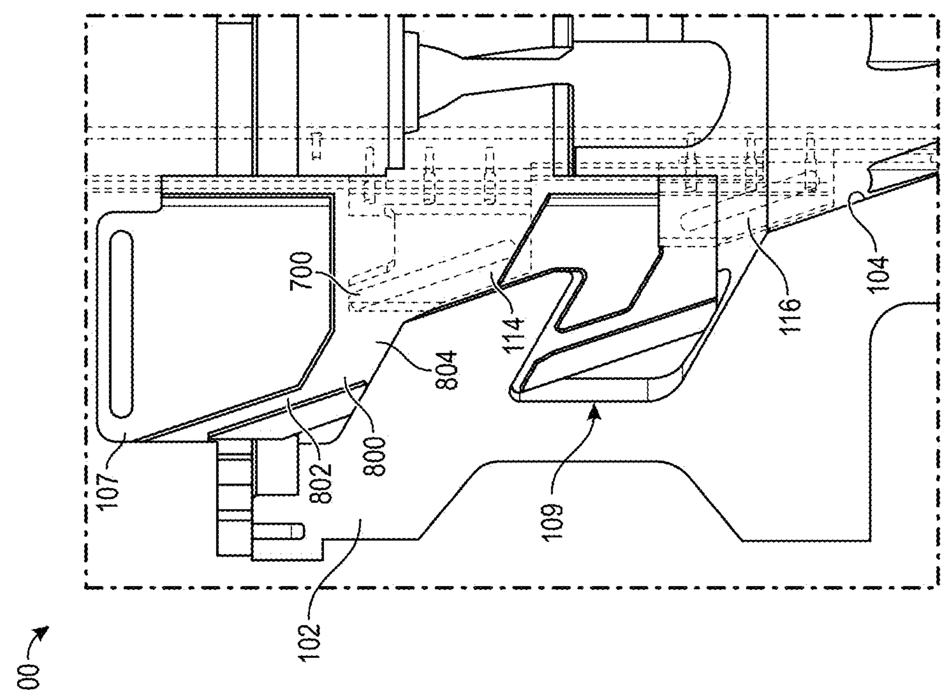
700
804
114
116
104

FIG. 9B


100
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804
700
114
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116
104

FIG. 9A

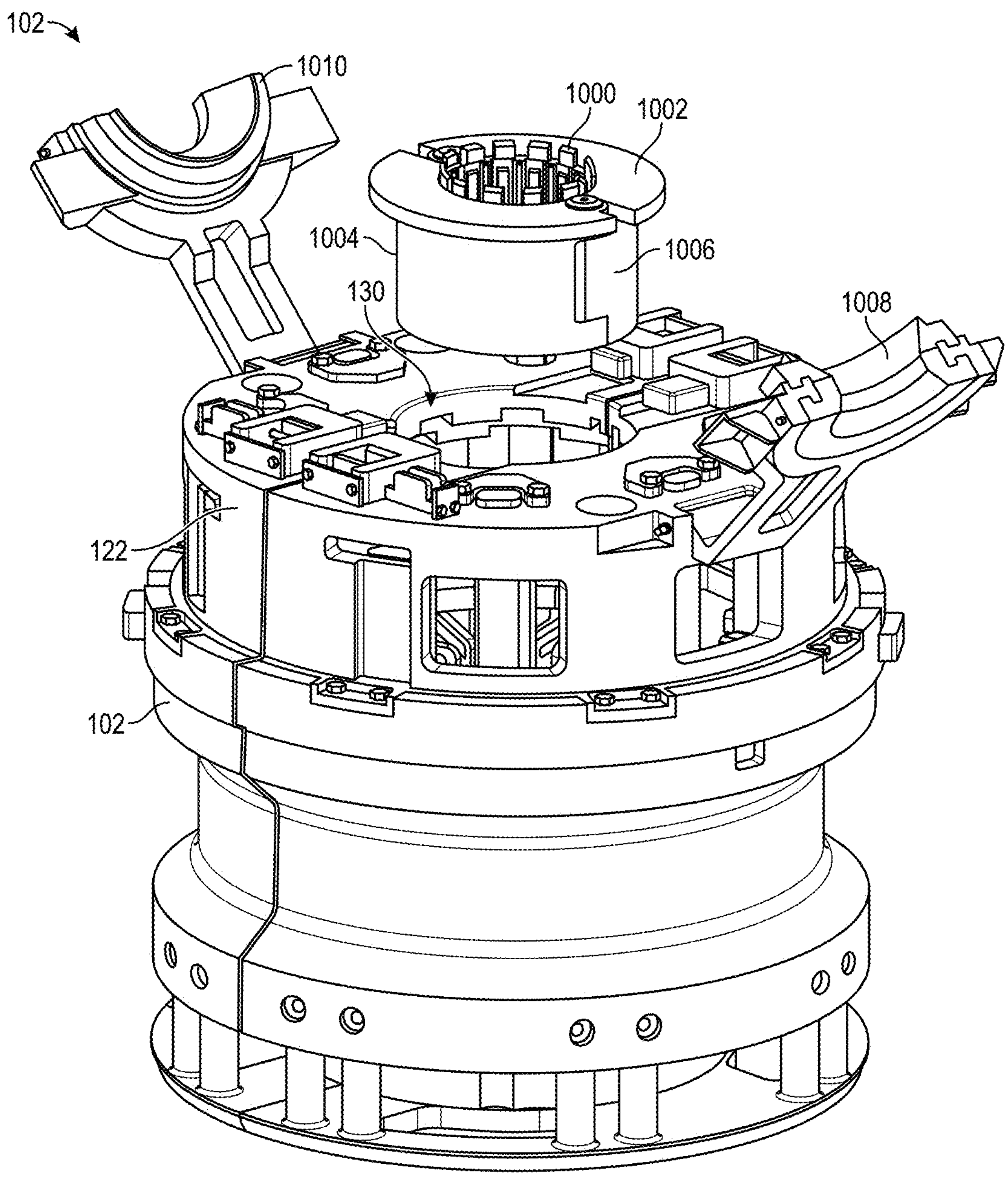

FIG. 10

EXTENDED RANGE SPIDER

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This patent application claims priority to U.S. Provisional Patent Application No. 63/551,822, filed on Feb. 9, 2024, which is incorporated by reference.

BACKGROUND

[0002] Spiders are tubular gripping devices that are used in some drilling rigs in the oilfield. Generally, casing, drill pipe, or another "add-on" tubular (e.g., a stand of two or more pipe joints that are threaded together) is suspended from an elevator or another device that lifts the tubular into place above a string of previously-run tubulars. The add-on tubular is then threaded into and thereby secured to the previously-run tubular string, such that it becomes part of the tubular string. The tubular string is then lowered into the well (which may or may not involve advancing a drill bit, float equipment, and/or other equipment, depending on the application) and the process is repeated.

[0003] While the add-on tubular is being secured to the previously-run string, the string is supported at or near the drill floor. One device that may be used to support the string is a "spider." The spider may provide "slips" or other tubular-engaging members. These tubular-engaging devices transfer the weight of the string to the spider, which in turn transfers the weight to the rig floor. Generally, a spider can be engaged or disengaged, e.g., by actuating hydraulic cylinders to lift or press down on the slips, driving them into engagement with the tubular or retracting them away from the tubular. Thus, the spider can be used with the elevator to hand-off the weight of the string when the string is able to be supported from the elevator via the add-on tubular, and then re-engage and support the string when the elevator has lowered the add-on tubular into the well.

[0004] Spiders generally operate with a limited range of tubular diameters. That is, the slips are limited as to how far they may travel radially to retract or engage. Thus, a given spider configuration may operate for a certain range of tubular sizes, and if a differently sized tubular is to be gripped, the spider may need to be reconfigured or switched out. Reconfiguration may include changing out the slips and/or inserts for a different size of slips/inserts, and this process is time consuming. Further, there may be instances where tools, collars, etc., generally members with larger outer diameters than the nominal diameter of the tubular string, are to be run into the well, through the spider. The spider is constrained by its inner diameter and may not easily admit such larger members to pass through, and may thus need to be temporarily removed or otherwise reconfigured. Such reconfiguration processes can represent non-productive time for the drilling rig.

SUMMARY

[0005] An apparatus for supporting an oilfield tubular includes a body defining a tapered bowl and a pocket formed in the body, a cage extending axially through the body, wherein guides are attached to the cage, a slips assembly including slips configured to engage a tubular received in the body. The slips extend radially through the cage and engage the guides, and are movable between a retracted configuration in which the slips are received at least partially within the pocket and an extended position in which the slips slide against the tapered bowl. The apparatus also includes a lifting assembly coupled to the slips and configured to apply a linear, axially-directed force to the slips. The slips are guided to move radially and axially in response to the linear, axially-directed force by the guides.

[0006] In another embodiment, the apparatus includes a body defining a tapered bowl and a pocket. The body defines two or more fast-tapered surfaces that intersect the tapered bowl. The apparatus also includes a cage extending axially through the body. The cage includes a plurality of axially-extending rails disposed at angular intervals. A plurality of guides are attached to the cage. The apparatus also includes a slips assembly including a plurality of slips that are configured to engage the oilfield tubular when the oilfield tubular is received in the body. The slips extend radially through the cage and engage the guides. The slips are positioned between circumferentially adjacent rails of the plurality of axially-extending rails. The slips are movable between a retracted position in which the slips are received at least partially within the pocket and an extended position in which the slips slide against the tapered bowl. The slips each include two or more fast-tapered surfaces configured to engage the fast-tapered surfaces of the body. The slips also each include a primary tapered surface configured to engage the tapered bowl. The slips define a groove configured to receive a guide feature of at least one of the guides. The guide feature received into the groove constrains movement of the slips. The groove has a first portion that facilitates movement of the slips along the tapered bowl, and a second portion that facilitates movement of the slips primarily radially into the pocket. The apparatus also includes a lifting assembly coupled to the slips and configured to apply a linear, axially-directed force to the slips. The guides cause the slips to move radially and axially in response to the linear, axially-directed force. The lifting assembly includes a plurality of cylinders coupled to a timing ring that is connected to the slips. The slips are coupled to the timing ring via a radially-extending slot. The cylinders are at least partially received into the body and through the timing ring. The cylinders are configured to press the timing ring toward the body by extending. The cylinders extend through the timing ring and are configured to pull the timing ring away from the body by compressing. The lifting assembly also includes a cover coupled to the body and defining a top opening therethrough. The cylinders are coupled to the cover, such that extending the cylinders drives the timing ring away from the cover.

[0007] A method for supporting an oilfield tubular is also disclosed. The method includes receiving the oilfield tubular into a body. The body defines a tapered bowl and a pocket. A cage extends axially through the body. Guides are attached to the cage. The method also includes engaging the oilfield tubular with a slips assembly. The slips assembly includes slips that extend radially through the cage and engage the guides. The method also includes actuating the slips between a retracted position and an extended position. The slips are received at least partially within the pocket in the retracted position, and the slips slide against the tapered bowl in the extended position. The method also includes applying a linear, axially-directed force to the slips using a lifting assembly. The lifting assembly is coupled to the slips. The guides cause the slips to move radially and axially in response to the linear, axially-directed force.

[0008] The foregoing summary is intended merely to introduce a subset of the features more fully described in the following detailed description. Accordingly, this summary should not be considered limiting.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The accompanying drawing, which is incorporated in and constitutes a part of this specification, illustrates an embodiment of the present teachings and together with the description, serves to explain the principles of the present teachings. In the figures:

[0010] FIG. **1** illustrates a perspective, sectional view of a spider in an engaging position, according to an example.

[0011] FIG. **2** illustrates a perspective, sectional view of a lifting assembly of the spider, according to an example.

[0012] FIG. **3** illustrates a perspective, sectional view of the lifting assembly engaging a slips assembly via a timing ring of the spider, according to an example.

[0013] FIG. **4** illustrates a perspective, sectional view of the spider in a retracted position, according to an example.

[0014] FIGS. **5**A, **5**B, and **5**C illustrate a simplified, side view of the slips and a spider body of the spider, with the slips in a retracted position, an intermediate position, and an extended position, respectively, according to an example.

[0015] FIG. **6** illustrates a perspective, sectional view of a cage of the spider, according to an example.

[0016] FIG. **7** illustrates a perspective view of a slips guide of the spider, according to an example.

[0017] FIG. **8** illustrates a perspective view of the slips engaging the slips guide members and extending through the cage, according to an example.

[0018] FIGS. **9**A and **9**B illustrate side, perspective views of the slips in the retracted and intermediate positions, respectively, showing the slips sliding along the slips guides and through the cage, according to an example.

[0019] FIG. **10** illustrates a perspective view of an adapter bushing that is positionable within and supportable on the spider for engaging smaller-diameter pipe than the slips can reach, according to an example.

[0020] It should be noted that some details of the figure have been simplified and are drawn to facilitate understanding of the embodiments rather than to maintain strict structural accuracy, detail, and scale.

DETAILED DESCRIPTION

[0021] Reference will now be made in detail to embodiments of the present teachings, examples of which are illustrated in the accompanying drawing. In the drawings, like reference numerals have been used throughout to designate identical elements, where convenient. The following description is merely a representative example of such teachings.

[0022] FIG. **1** illustrates a perspective, sectional view of a spider **100** in an engaging position, according to an embodiment. The spider **100** is an example of an apparatus that is configured to support an oilfield tubular (e.g., casing, liner, drill pipe, etc.), generally at or near a rig floor. The spider **100** generally includes a spider body **102**. The spider body **102** may define an opening **103** therethrough and a tapered inner surface or "bowl" **104**. A slips assembly **106** including several slips **107** may be positioned in the spider body **102**. The slips **107** may be generally arcuate segments that can slide axially, as well as radially inward and outward, relative to the spider body **102** and move circumferentially closer together or farther apart.

[0023] The spider body **102** may also include a pocket **109**, into which the slips **107** may be drawn when retracted, as will be described in greater detail below. The pocket **109** may be at least partially defined by fast-tapered surfaces **111**A, **111**B that intersect and extend outward from the tapered bowl **104**. The fast-tapered surfaces **111**A, **111**B may be tapered to a greater angle, relative to an axial centerline, than the tapered bowl **104**. These fast-tapered surfaces **111**A, **111**B are referred to as "fast" because their taper angle results in the slips **107** moving radially outward over a short axial distance, as compared to the slips **107** riding along the tapered bowl **104**. In at least some examples, the fast-tapered surfaces **111**A, **111**B may extend parallel to one another.

[0024] An insert **108** may be coupled to the radial inside of the slips assembly **106** and may be configured to engage a tubular extending through the spider **100**. The insert **108** may provide teeth, wickers, high-friction surfaces, or other gripping features for engaging the tubular.

[0025] The slips assembly **106** may extend through and be movable radially and axially with respect to a cage **110**. As shown in the engaging position of FIG. **1**, the slips **107** may extend through and inward of the cage **110**. In a retracted position, discussed below, the slips **107** may be positioned radially outward of the cage **110**. The cage **110** may be stationary with respect to the spider body **102**, and the slips **107** may move with respect to both the spider body **102** and the cage **110**. In a specific example, the cage **110** may include bars **112** that extend axially within the spider **100**. The bars **112** may be separated apart at angular intervals so as to provide space for the slips **107** to move therethrough. Slips guide members, e.g., upper and lower guide members **114**, **116**, may be coupled to the cage **110** and may provide ridges, rails, rollers, grooves, or other guiding features for engagement with the slips **107**. The guide members **114**, **116** may be stationary with respect to and fixed to the bars **112** of the cage **110**. The guide members **114**, **116** may also extend radially outward from the cage **110**.

[0026] The spider **100** may also include a lifting assembly **120**. The lifting assembly **120** includes a cover **122**, two or more actuators **124**, and a timing ring **126**. The cover **122** may be coupled to and extend upward from the spider body **102**. The actuators **124** may be at least partially recessed into the spider body **102**, e.g., positioned radially adjacent to the tapered bowl **104**, e.g., rather than extending upward through the cover **122**. The actuators **124** may be coupled with the cover **122**. The actuators **124** may be configured to raise/lower the timing ring **126**, such that the timing ring moves between the cover **122** and spider body **102**.

[0027] The timing ring **126** may be coupled to the slips **107** via a radially-extending slot **128** formed in the slips **107**, which permits a range of radial positions of the slips **107** relative to the timing ring **126**. The cover **122** may also form an opening **130** through which a tubular may be received. In at least some embodiments, the cage **110** may be coupled to the cover **122** and extend through the timing ring **126**, as shown.

[0028] FIG. **2** illustrates a perspective, sectional view of the lifting assembly **120**, according to an example. The lifting assembly **120**, as noted above, includes the cover **122** and the actuators **124**. The actuators **124** may extend through the timing ring **126** (FIG. **1**) and be received at least partially into the spider body **102** (FIG. **1**). For example, as shown, the actuators **124** may include cylindrical guides **200** in which an extensible hydraulic cylinder **202** (or any other kind of cylinder or other actuator) is at least partially positioned. One end of the cylinder **202** may be coupled to the bottom of the cylindrical guide **200**, while the other end may be coupled to the cover **122**.

[0029] As noted above with reference to FIG. **1**, the cover **122** may be coupled to the spider body **102**, and may generally not be displaceable therefrom by operation of the cylinder **202**. The cylindrical guides **200**, which may be received into holes formed in the spider body **102**, may be permitted a range of linear motion therein. Accordingly, extending the hydraulic cylinder **202** may push cylindrical guide **200** away from the cover **122**.

[0030] Referring now to FIG. **3**, there is shown an additional, perspective, sectional view of the lifting assembly **120**, now shown coupled to the cage **110** and the slips assembly **106**, according to an example. As shown, the cylindrical guide **200** may be coupled to the timing ring **126**. In particular, collars **300** may be provided that couple the cylindrical guide **200** to the timing ring **126**. Accordingly, pushing the cylindrical guide **200** away from the cover **122** drives the timing ring **126** downwards. Further, retracting the cylinder **202** may draw the cylindrical guide **200**, and thus the timing ring **126**, toward the cover **122**. The timing ring **126** is coupled to the slips assembly **106**, such that axial (upward/downward) movement of the timing ring **126** relative to the spider body **102** results in both axial and radial (inward/outward) movement of the slips **107** of the slips assembly **106**. The orientation of the actuators **124** may be such that the timing ring **126** is driven downward (toward the spider body **102**) by extension of the cylinders **202**. As such, the extension of the cylinders **202** may cause the slips **107** to engage the tubular. Such extension may provide for greater gripping force than would retraction movement of the cylinder **202**. Further, the length of the cylinder **202** that is provided for the stroke is at least partially within the spider body **102**, and thus the overall height of the spider **100** may be conserved.

[0031] FIG. **4** illustrates a perspective, sectional view of the spider **100** in a retracted position, according to an example. In this position, the slips **107** have moved outwards partially through the cage **110** and at least partially into the pocket **109**. As compared to FIG. **1**, it can be seen that the timing ring **126** has been driven upward, away from the spider body **102**, and toward the top of the cover **122**. This, in turn, drives the slips **107** upwards relative to the spider body **102** (and, specifically, the bowl **104**). As such, the insert **108** is now at its farthest point away from the centerline of the spider **100** available and may be, for example, outward of at least a portion of the cage **110**. Thus, in this position, the spider **100** provides maximum clearance therethrough, while the cage **110** provides a generally cylindrical guide through the spider body **102**. Tools, tubulars, etc., that are run through the spider **100** (e.g., through the top opening **130**) in this position may avoid colliding with or abrading against the inserts **108**, the lifting assembly **120**, or other internal components of the spider **100**, as the cage **110** may prevent such contact.

[0032] FIGS. **5**A, **5**B, and **5**C illustrate simplified, side views of the slips **107** of the slips assembly **106** (e.g., FIG. **1**) and the spider body **102**, in the retracted position, an intermediate position, and an engaging position, respectively, according to an example. Referring to FIG. **5**A, the slips **107** define a receiving cavity **500**, as well as fast-tapered surfaces **502**A, **502**B. The slips **107** also define primary tapers **504**, **506**. The cavity **500** is defined, in this example, axially between the primary tapers **504**, **506**. The fast-tapered surfaces **502**A, **502**B each intersect a separate one of the primary tapers **504**, **506**.

[0033] In the retracted position of FIG. **5**A (also shown in FIG. **1**), the slips **107** are received at least partially into the pocket **109**. Specifically, the pocket **109** has the fast-tapered surfaces **111**A, **111**B defining part of the pocket **109** (e.g., axial upper and lower walls thereof). A lower portion **508** of the slips **107** may be received into the pocket **109** and slide along the fast-tapered surface **111**B until the fast-tapered surface **502**B engages the fast-tapered surface **111**A. This may serve as an upper end range for axial movement of the slips **107**, and may secure the radial position, as well, as the fast-tapered surface **111**B and the fast-tapered surface **502**A may form an undercut engagement, as shown.

[0034] FIG. **5**A also shows another feature of the tapered bowl **104**, referring to the two dashed lines extending along upper and lower surfaces **104**A, **104**B thereof. The upper and lower surfaces **104**A, **104**B may be defined on either axial side of the pocket **109** and may extend axially therefrom. The upper and lower surfaces **104**A, **104**B may be offset with respect to one another. Accordingly, while, in some examples, the upper and lower surfaces **104**A, **104**B may extend at a generally constant angle, the lower surface **104**B may be shifted radially inwards, as compared to a continuous trajectory defined by the upper surface **104**A. This shifted position may facilitate the slips **107** being forced into the pocket **109** by upward axial movement. For example, the primary taper **504** may catch on the fast tapered surface **111**A and be forced into the pocket **109** by upward movement of the slips **107**, rather than being permitted to slide along the upper surface **104**A.

[0035] Proceeding to FIG. **5**B, by extending the actuators **124** (e.g., FIG. **1**) the timing ring **126** (FIG. **1**) and thus the slips **107** are pressed downwards relative to the spider body **102**. The tapers of the spider body **102** and the slips **107**, thus wedge the slips **107** radially inwards. The slips **107** are connected to the timing ring **126** (e.g., FIG. **1**) by the slot **128**, which permits the slips **107** to slide radially inwards while being driven downwards. The relatively large angle of the fast-tapered surfaces **111**A, **111**B results in a relatively large radial inward movement over a relatively short axial downward movement, as compared to movements along the main bowl **104**. Thus, the slips **107** are driven out of the pocket **109** and into the intermediate position of FIG. **5**B. In this position, the primary tapers **504**, **506** engage and slide against the bowl **104**.

[0036] Continued downward movement of the timing ring **126** connected to the slips **107** causes the primary tapers **504**, **506** of the slips **107** slide along the bowl **104**, which is complementarily tapered, as mentioned above. Further, the slot **128** connection with the timing ring **126** continues to permit radially-inward movement of the slips **107**. Accordingly, the slips **107** slide both axially downwards and radially inwards. The relatively small taper angle of the bowl **104**, as compared to the fast-tapered surfaces **111**A, **111**B of the pocket **109**, results in the downward travel causing proportionally less radial inward movement, as proceeding from the intermediate position of FIG. **5**B to the engaging position of FIG. **5**C.

[0037] In the engaging position of FIG. **5**C, the slips **107** have been pressed axially downward to extend radially inward. In some examples, the illustrated position may represent a fully extended position, but in others, the slips **107** may be configured to slide further in the bowl **104**. However, the engaging position of the slips **107**, in general, may be any position in which the primary tapers **504**, **506** engage (e.g., slide on) the bowl **104** (above and below the pocket **109**), such that the slips **107** are engageable with a variety of different sizes of tubulars.

[0038] FIG. **6** illustrates a perspective, sectional view of the cage **110**, according to an example. As shown, the cage **110** includes the bars **112** and the guide members **114**, **116** coupled thereto. The cage **110** may also include an upper ring **600** that may connect the upper axial extents of the bars **112** together. The lower axial extents of the bars **112** may be secured directly to the spider body **102** (e.g., FIG. **1**) or a lower ring in some examples. Circumferentially adjacent bars **112** may guide the individual slips **107** along at least a portion of their movement between the engaging and retracted positions discussed above. In particular, each bar **112** may be connected to two each of the guide members **114**, **116**. As shown in FIG. **7**, each guide member **114**, **116** may include a guide feature **700** (e.g., a rail). The guide feature **700** may be received into a groove formed in the slips **107**, as will be discussed in greater detail below, to restrict the movement of the slips **107**, so as to translate the axial movement of the timing ring **126** into radial movement of the slips **107**.

[0039] FIG. **8** illustrates another perspective view of a section of the cage **110**, the guide members **114**, **116**, and one of the slips **107**, according to an example. In this view, grooves **800** are visible on one circumferential side of the slip **107**. A mirror image of the visible groove **800** may be formed in the other circumferential side of the slip **107**. Further, a continuous and/or two or more of the grooves **800** may be provided near the top and bottom of the slip **107**, so as to engage with guide features (e.g., rails) **700** of the upper and lower guide members **114**, **116**.

[0040] The grooves **800** may be configured to receive the guide features **700** of the guide members **114**, **116**, as shown. The grooves **800** may thus be shaped to permit travel of the slip **107** relative to the guide members **114**, **116**, particularly the guide feature **700** thereof. For example, a first portion **802** of the groove **800** may correspond to travel that is along the orientation of the elongated guide feature **700** (e.g., generally narrow), and a second portion **804** may correspond to travel that is primarily lateral to the guide feature **700**. The guide feature **700** may be received in the first portion **802** when the slips **107** are traveling between the intermediate position and the engaging position (e.g., along the bowl **104** of FIG. **1**), while the guide feature **700** may be received in the second portion when the slips **107** are traveling between the intermediate position and the retracted position (e.g., into/out of the pocket **109** of FIG. **1**).

[0041] The combination of the guide feature **700**, the grooves **800**, and the geometry of the timing ring **126** and the surfaces of the spider body **102** may result in the simultaneous axial and radial movement of the slips assembly **106**, e.g., without requiring springs or other biasing members.

[0042] FIGS. **9**A and **9**B illustrate side, sectional views of the spider **100**, showing the cage **110** as translucent for purposes of illustration, according to an example. FIG. **9**A shows the slip **107** in a retracted position, and FIG. **9**B shows the slip **107** in an intermediate position. As can be seen, the guide features **700** of the upper and lower guide members **114**, **116** are received into the first portion **802** of the groove **800** when the slips **107** move from the retracted position (in the pocket **109**, as shown in FIG. **9**A) toward the intermediate position (FIG. **9**B). As shown specifically in FIG. **9**A, the guide feature **700** slides against the slip **107**, between the second portions **804** of the two grooves **800** therein, which facilitates the primarily radial movement of the slip **107** relative to the pocket **109**, driven by axial movement of the timing ring **126** (e.g., FIG. **1**).

[0043] FIG. **10** illustrates a perspective view of the spider **100** with an adapter bushing **1000** being inserted into the top opening **130**, according to an example. As shown, the adapter bushing **1000**, which may include a shoulder, slips, or any other tubular engaging structure, may be received into the top opening **130**, thereby substantially avoiding a large increase in height of the spider **100**. The adapter bushing **1000** may include a main body **1001** and a flange **1002** that extends outward from the main body **1001** and may set against the top of the cover **122** and be supported thereby. The adapter bushing **1000** may further include two or more arcuate body sections **1004**, **1006**, which may be hinged, pinned, or otherwise connected together and positioned around a tubular.

[0044] In some examples, the spider **100** may include a tube guide, which may be formed of two or more arcuate members **1008**, **1010** that are connected to the cover **122** via arms **1012**. The tube guide may be removed (e.g., rotated away from) the top opening **130**, as shown, to permit access for the adapter bushing **1000** into the top opening **130**.

[0045] The adapter bushing **1000** may be particularly useful for converting a spider **100** configured for casing to be used with smaller-diameter drill pipe. Such drill pipe may be too small in diameter to be gripped by the slips assembly **106** (e.g., FIG. **1**). The adapter bushing **1000** may thus be quickly received into place in the top opening **130**, avoiding having to switch out the spider **100** with another component to work with the drill pipe.

[0046] As used herein, the terms "inner" and "outer"; "up" and "down"; "upper" and "lower"; "upward" and "downward"; "above" and "below"; "inward" and "outward"; "uphole" and "downhole"; and other like terms as used herein refer to relative positions to one another and are not intended to denote a particular direction or spatial orientation. The terms "couple," "coupled," "connect," "connection," "connected," "in connection with," and "connecting" refer to "in direct connection with" or "in connection with via one or more intermediate elements or members."

[0047] While the present teachings have been illustrated with respect to one or more implementations, alterations and/or modifications may be made to the illustrated examples without departing from the spirit and scope of the appended claims. In addition, while a particular feature of the present teachings may have been disclosed with respect to only one of several implementations, such feature may be combined with one or more other features of the other implementations as may be desired and advantageous for any given or particular function. Furthermore, to the extent that the terms "including," "includes," "having," "has," "with," or variants thereof are used in either the detailed description and the claims, such terms are intended to be inclusive in a manner similar to the term "comprising." Further, in the discussion and claims herein, the term "about" indicates that the value listed may be somewhat altered, as long as the alteration does not result in nonconformance of the process or structure to the illustrated embodiment.

[0048] Other embodiments of the present teachings will be apparent to those skilled in the art from consideration of the specification and practice of the present teachings disclosed herein. It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the present teachings being indicated by the following claims.

What is claimed is:

1. An apparatus for supporting an oilfield tubular, the apparatus comprising:
- a body defining a tapered bowl and a pocket;
- a cage extending axially through the body, wherein guides are attached to the cage;
- a slips assembly comprising slips configured to engage the oilfield tubular received in the body, wherein the slips extend radially through the cage and engage the guides, the slips being movable between a retracted position in which the slips are received at least partially within the pocket and an extended position in which the slips slide against the tapered bowl; and
- a lifting assembly coupled to the slips and configured to apply a linear, axially-directed force to the slips, wherein the guides cause the slips to move radially and axially in response to the linear, axially-directed force.

2. The apparatus of claim **1**, wherein the body defines two or more fast-tapered surfaces that intersect the tapered bowl, wherein the slips each comprise two or more fast-tapered surfaces configured to engage the fast-tapered surfaces of the body, and wherein the slips each comprise a primary tapered surface configured to engage the tapered bowl.

3. The apparatus of claim **1**, wherein the slips each comprise a groove configured to receive a guide feature of at least one of the guides, and wherein the guide feature received into the groove constrains movement of the slips.

4. The apparatus of claim **3**, wherein the groove has a first portion that facilitates movement of the slips along the tapered bowl, and a second portion that facilitates movement of the slips primarily radially into the pocket.

5. The apparatus of claim **3**, wherein the guide feature comprises an elongated ridge, and wherein the elongated ridge constrains movement of the slip relative to the guide feature.

6. The apparatus of claim **1**, wherein the cage comprises a plurality of axially-extending rails disposed at angular intervals, and wherein the slips are positioned between circumferentially adjacent rails of the plurality of axially-extending rails.

7. The apparatus of claim **1**, wherein the lifting assembly comprises a plurality of cylinders coupled to a timing ring that is connected to the slips, and wherein the cylinders are configured to press the timing ring toward the body by extending.

8. The apparatus of claim **7**, wherein the cylinders extend through the timing ring and are configured to pull the timing ring away from the body by compressing.

9. The apparatus of claim **7**, wherein the cylinders are at least partially received into the body and through the timing ring.

10. The apparatus of claim **7**, wherein the lifting assembly further comprises a cover coupled to the body and defining a top opening therethrough, and wherein the cylinders are coupled to the cover, such that extending the cylinders drives the timing ring away from the cover.

11. The apparatus of claim **7**, wherein the slips are coupled to the timing ring via a radially-extending slot.

12. The apparatus of claim **1**, further comprising an adapter bushing, wherein the lifting assembly further comprises a cover coupled to the body and defining a top opening therethrough, and wherein the adapter bushing is receivable at least partially into the top opening and within the cage.

13. The apparatus of claim **1**, wherein the tapered bowl extends on either axial side of the pocket.

14. The apparatus of claim **1**, wherein the slips engage with the body in the pocket to prevent upward movement of the slips in the retracted position.

15. The apparatus of claim **1**, wherein the slips in the retracted position do not extend radially inward of the cage.

16. An apparatus for supporting an oilfield tubular, the apparatus comprising:
- a body defining a tapered bowl and a pocket, wherein the body defines two or more fast-tapered surfaces that intersect the tapered bowl;
- a cage extending axially through the body, wherein the cage comprises a plurality of axially-extending rails disposed at angular intervals, and wherein a plurality of guides are attached to the cage;
- a slips assembly comprising a plurality of slips configured to engage the oilfield tubular when the oilfield tubular is received in the body, wherein the slips extend radially through the cage and engage the guides, wherein the slips are positioned between circumferentially adjacent rails of the plurality of axially-extending rails, wherein the slips are movable between a retracted position in which the slips are received at least partially within the pocket and an extended position in which the slips slide against the tapered bowl, wherein the slips each define a groove configured to receive a guide feature of at least one of the guides, wherein the guide feature received into the groove constrains movement of the slips, wherein the groove has a first portion that facilitates movement of the slips along the tapered bowl, and a second portion that facilitates movement of the slips primarily radially into the pocket, and wherein the slips each comprise:
  - two or more fast-tapered surfaces configured to engage the fast-tapered surfaces of the body; and
  - a primary tapered surface configured to engage the tapered bowl;
- a lifting assembly coupled to the slips and configured to apply a linear, axially-directed force to the slips, wherein the guides cause the slips to move radially and axially in response to the linear, axially-directed force, and wherein the lifting assembly comprises:
  - a plurality of cylinders coupled to a timing ring that is connected to the slips, wherein the slips are coupled to the timing ring via a radially-extending slot, wherein the cylinders are at least partially received into the body and through the timing ring, wherein the cylinders are configured to press the timing ring toward the body by extending, and wherein the cylinders extend through the timing ring and are configured to pull the timing ring away from the body by compressing; and

a cover coupled to the body and defining a top opening therethrough, wherein the cylinders are coupled to the cover, such that extending the cylinders drives the timing ring away from the cover.

17. A method for supporting an oilfield tubular, the method comprising:

receiving the oilfield tubular into a body, wherein the body defines a tapered bowl and a pocket, wherein a cage extends axially through the body, and wherein guides are attached to the cage;

engaging the oilfield tubular with a slips assembly, wherein the slips assembly comprises slips that extend radially through the cage and engage the guides;

actuating the slips between a retracted position and an extended position, wherein the slips are received at least partially within the pocket in the retracted position, and wherein the slips slide against the tapered bowl in the extended position; and

applying a linear, axially-directed force to the slips using a lifting assembly, wherein the lifting assembly is coupled to the slips, and wherein the guides cause the slips to move radially and axially in response to the linear, axially-directed force.

18. The method of claim **17**, further comprising engaging fast-tapered surfaces of the body with two or more fast-tapered surfaces of the slips.

19. The method of claim **17**, further comprising engaging the tapered bowl with a primary tapered surface of the slips.

20. The method of claim **17**, further comprising receiving a guide feature of at least one of the guides into a groove in at least one of the slips, which constrains movement of the slips, wherein the groove has a first portion that facilitates movement of the slips along the tapered bowl, and a second portion that facilitates movement of the slips primarily radially into the pocket.

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