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(54) **DOWNHOLE WELL TOOL WITH GROOVE**

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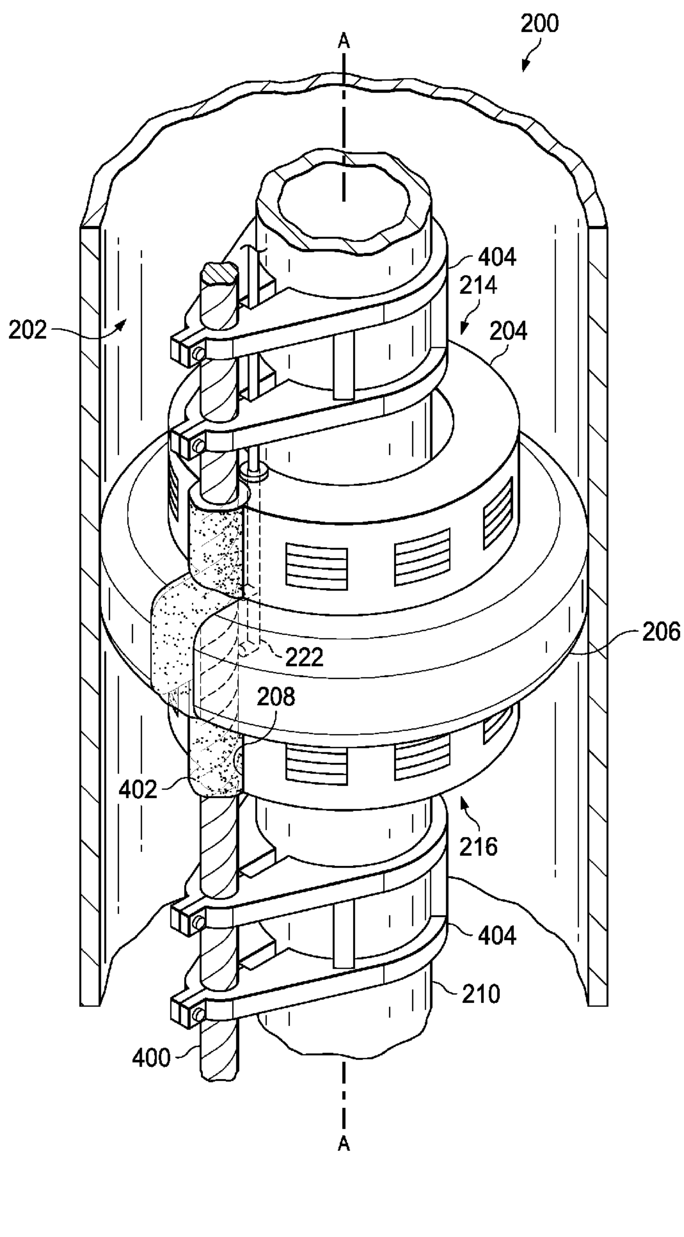
(57) **ABSTRACT**

A downhole well tool includes a tool body attached to a well string, a sealing packer element partially circumscribing the tool body from a first circumferential end to a second circumferential end, a side groove formed at least partially in the tool body and positioned between the first circumferential end and the second circumferential end of the sealing packer element, and a fluid conduit disposed within the tool body and extending to the side groove. The sealing packer element expands and seals against an inner wall of a wellbore. The side groove forms a channel in an exterior surface of the tool body between the first circumferential end and the second circumferential end of the sealing packer element, and the fluid conduit includes at least one nozzle positioned at the side groove, where the fluid conduit flows a fluid into the channel of the side groove.



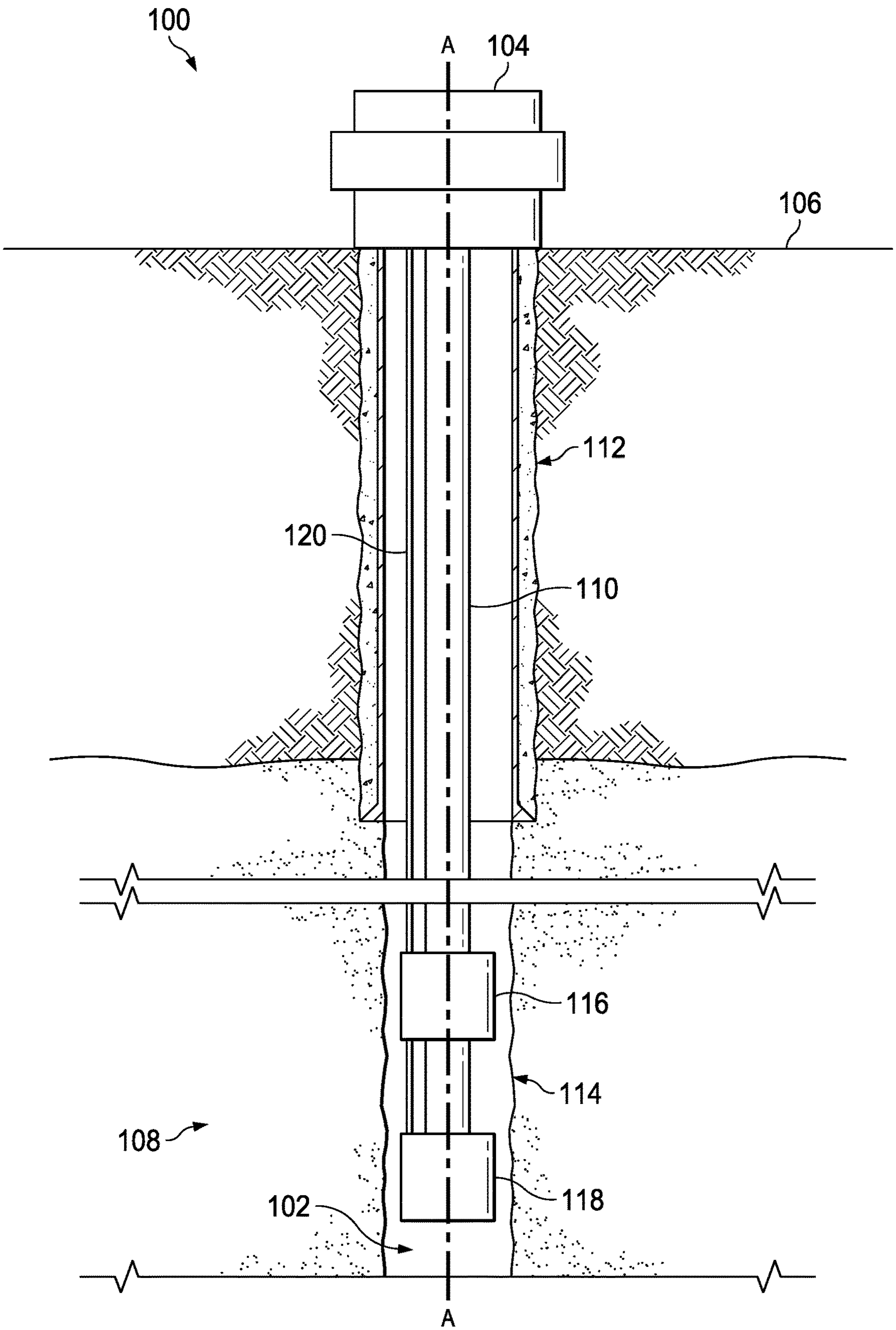


FIG. 1

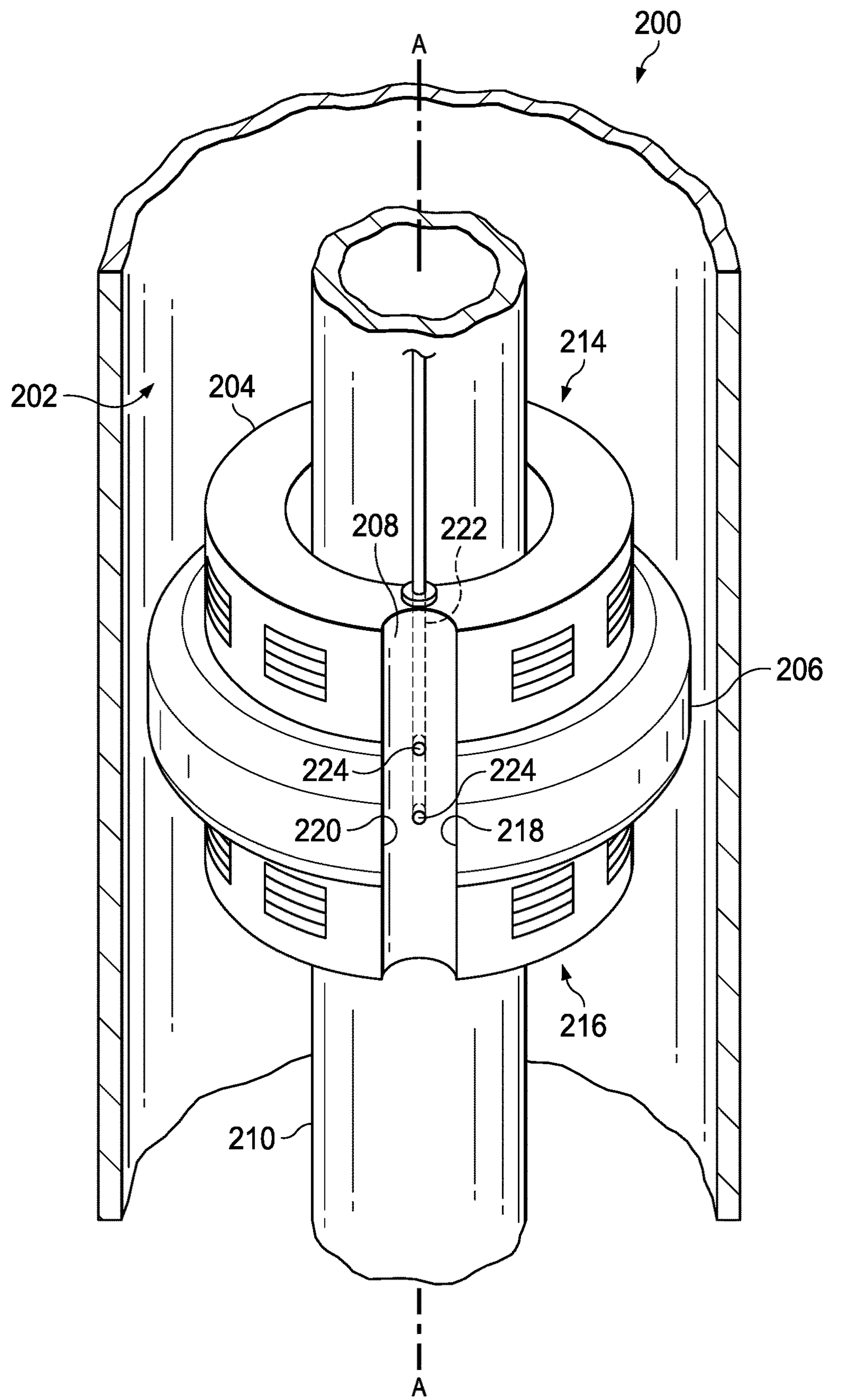


FIG. 2

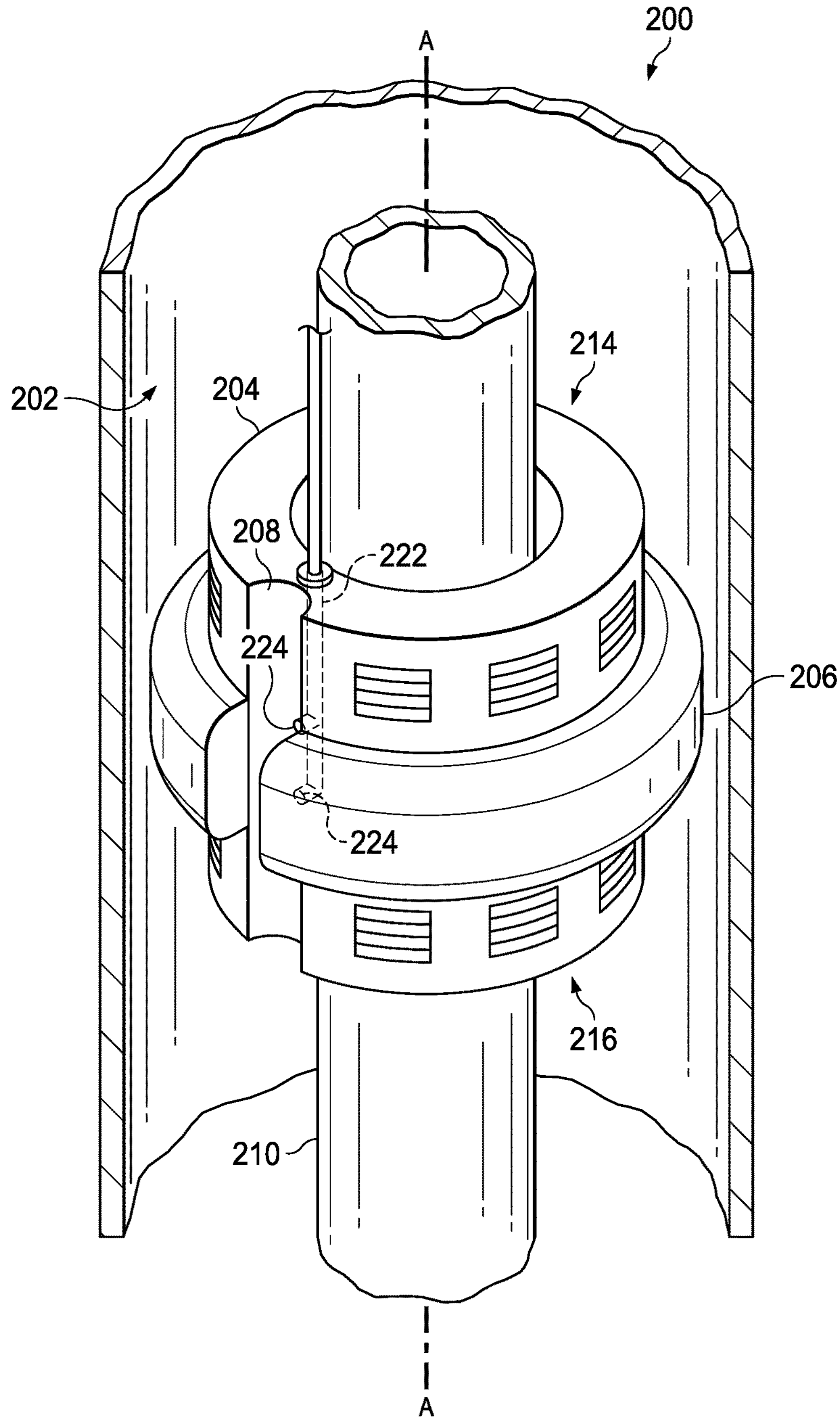


FIG. 3

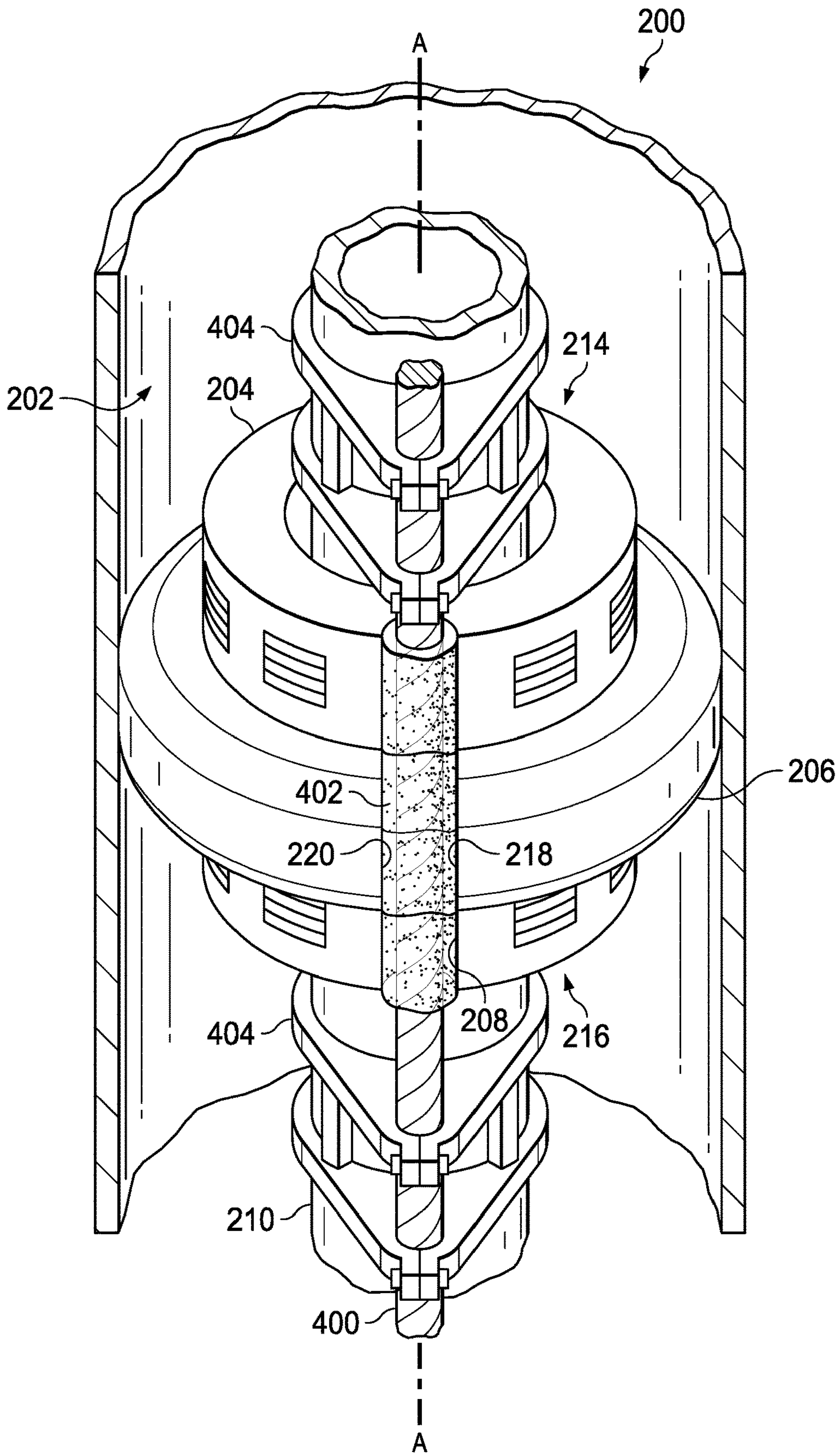


FIG. 4

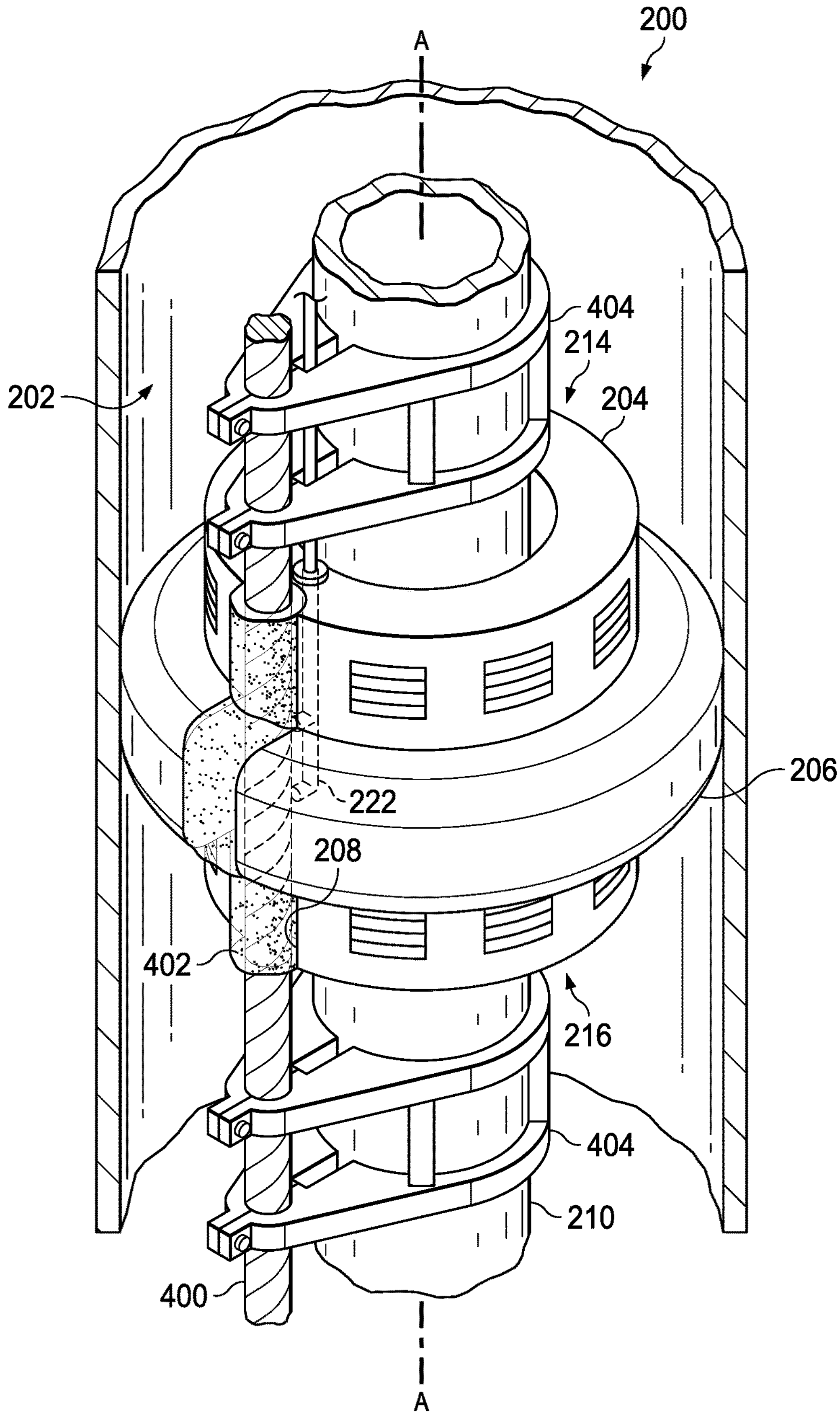


FIG. 5

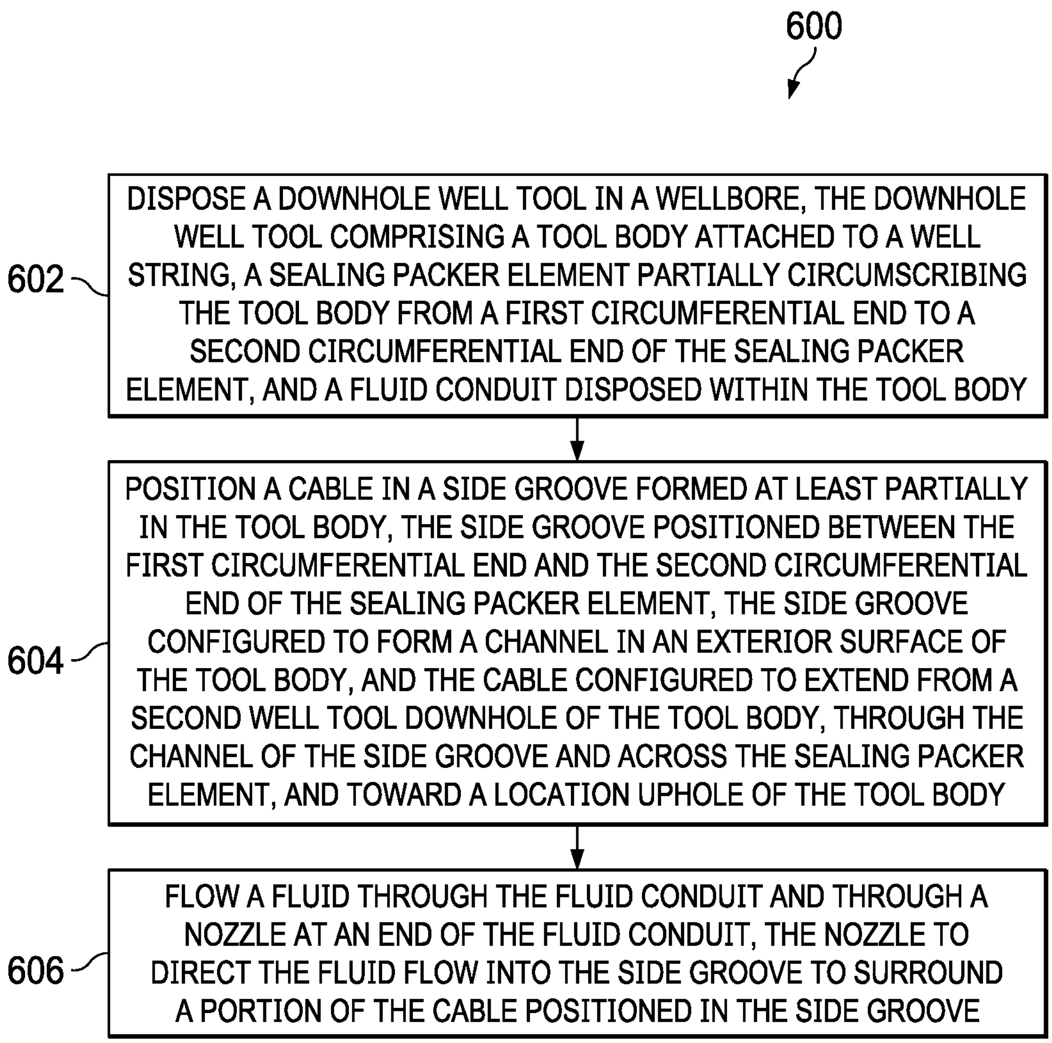

600
602
DISPOSE A DOWNHOLE WELL TOOL IN A WELLBORE, THE DOWNHOLE WELL TOOL COMPRISING A TOOL BODY ATTACHED TO A WELL STRING, A SEALING PACKER ELEMENT PARTIALLY CIRCUMSCRIBING THE TOOL BODY FROM A FIRST CIRCUMFERENTIAL END TO A SECOND CIRCUMFERENTIAL END OF THE SEALING PACKER ELEMENT, AND A FLUID CONDUIT DISPOSED WITHIN THE TOOL BODY
604
POSITION A CABLE IN A SIDE GROOVE FORMED AT LEAST PARTIALLY IN THE TOOL BODY, THE SIDE GROOVE POSITIONED BETWEEN THE FIRST CIRCUMFERENTIAL END AND THE SECOND CIRCUMFERENTIAL END OF THE SEALING PACKER ELEMENT, THE SIDE GROOVE CONFIGURED TO FORM A CHANNEL IN AN EXTERIOR SURFACE OF THE TOOL BODY, AND THE CABLE CONFIGURED TO EXTEND FROM A SECOND WELL TOOL DOWNHOLE OF THE TOOL BODY, THROUGH THE CHANNEL OF THE SIDE GROOVE AND ACROSS THE SEALING PACKER ELEMENT, AND TOWARD A LOCATION UPHOLE OF THE TOOL BODY
606
FLOW A FLUID THROUGH THE FLUID CONDUIT AND THROUGH A NOZZLE AT AN END OF THE FLUID CONDUIT, THE NOZZLE TO DIRECT THE FLUID FLOW INTO THE SIDE GROOVE TO SURROUND A PORTION OF THE CABLE POSITIONED IN THE SIDE GROOVE

FIG. 6

DOWNHOLE WELL TOOL WITH GROOVE

TECHNICAL FIELD

[0001] This disclosure relates to downhole well tools that seal against a wellbore wall.

BACKGROUND

[0002] In the oil and gas industries, some downhole well tools include sealing packers to seal against a wall of a wellbore. In order to run a cable past a set packer from a tool downhole of the packer to uphole of the packer, the cable is spliced and penetrates the tool body of the packer and then runs uphole, for example, for connection to a tophole power source or communications source.

SUMMARY

[0003] This disclosure describes a downhole well tool with a side groove.

[0004] Some aspects of the disclosure encompass a downhole well tool. The downhole well tool includes a tool body to attach to a well string, a sealing packer element partially circumscribing the tool body from a first circumferential end to a second circumferential end of the sealing packer element, a side groove formed at least partially in the tool body and positioned between the first circumferential end and the second circumferential end of the sealing packer element, and a fluid conduit disposed within the tool body and extending to the side groove. The sealing packer element expands and seals against an inner wall of a wellbore, the side groove forms a channel in an exterior surface of the tool body between the first circumferential end and the second circumferential end of the sealing packer element, and the fluid conduit includes at least one nozzle positioned at the side groove, where the fluid conduit flows a fluid into the channel of the side groove.

[0005] This, and other aspects, can include one or more of the following features. The downhole well tool can further include a cable positioned within the channel of the side groove, where the cable extends from a well tool downhole of the tool body, through the channel of the side groove and across the sealing packer element, and to a location uphole of the tool body. The sealing packer element can be an electric submersible pump packer, the cable can be an electric submersible pump cable, and the downhole well tool can connect to an electric submersible pump positioned downhole of the sealing packer element. The cable can include at least one of a power cable, a communications cable, or a hydraulic cable. The downhole well tool can further include a clamp to secure the cable to the well string. The clamp can be a first clamp positioned downhole of the sealing packer element and configured to secure the cable downhole of the sealing packer element, and the downhole well tool can further include a second clamp positioned uphole of the sealing packer element, where the second clamp is configured to secure the cable to the well string uphole of the sealing packer element. The at least one nozzle includes a plurality of nozzles fluidly connected to the fluid conduit, and the plurality of nozzles are distributed along the side groove. The plurality of nozzles can be distributed in a linear pattern along a longitudinal length of the side groove. The plurality of nozzles can be evenly distributed in the linear pattern. The sealing packer element can include a partial ring shape with a split, where the first circumferential end and the second circumferential end define the split. The sealing packer element can be radially expandable and configured to radially expand from a first, radially retracted position to a second, radially expanded position of the sealing packer element. The sealing packer element can include an inflatable packer configured to inflate from the first, radially retracted position to the second, radially expanded position. The sealing packer element can include a swellable packer configured to swell from the first, radially retracted position to the second, radially expanded position. The side groove can include a semicircular concave profile in the tool body. The side groove can be oriented substantially vertically and parallel to a longitudinal axis of the tool body. The side groove can be oriented substantially linearly along a length of the side groove between an uphole end and a downhole end of the side groove.

[0006] Some aspects of the disclosure encompass a method, including disposing a downhole well tool in a wellbore, where the downhole well tool includes a tool body attached to a well string, a sealing packer element partially circumscribing the tool body from a first circumferential end to a second circumferential end of the sealing packer element, and a fluid conduit disposed within the tool body. The method includes positioning a cable in a side groove formed at least partially in the tool body, the side groove positioned between the first circumferential end and the second circumferential end of the sealing packer element, the side groove configured to form a channel in an exterior surface of the tool body, and the cable configured to extend from a second well tool downhole of the tool body, through the channel of the side groove and across the sealing packer element, and toward a location uphole of the tool body. The method further includes flowing a fluid through the fluid conduit and through a nozzle at an end of the fluid conduit, the nozzle to direct the fluid flow into the side groove to surround a portion of the cable positioned in the side groove.

[0007] This, and other aspects, can include one or more of the following features. The method can include radially expanding the sealing packer element from a first, radially retracted position to a second, radially expanded position to engage and seal against a wall of the wellbore. The fluid can be a sealing resin, and flowing the fluid through the fluid conduit and through the nozzle can include flowing the sealing resin out of the nozzle and around the portion of the cable to fluidly seal the side groove. The method can further include pressure testing an annulus of the wellbore where the sealing resin is disposed around the portion of the cable. The downhole well tool can include an electric submersible pump packer, the cable can include an electric submersible pump cable, and the second well tool can include an electric submersible pump, and positioning the cable in the side groove can include extending the cable from the electric submersible pump, through the side groove of the electric submersible pump packer, and toward a surface location of the wellbore. The method can further include clamping the cable to the well string with a first clamp positioned downhole of the sealing packer element and with a second clamp positioned uphole of the sealing packer element.

[0008] In certain aspects, a downhole well system includes a first downhole tool, including a tool body attached to a well string, a sealing packer element partially circumscribing the tool body from a first circumferential end to a second circumferential end of the sealing packer element, the sealing packer element configured to expand and seal against an inner wall of a wellbore, and a side groove formed at least partially in the tool body and positioned between the first circumferential end and second circumferential end of the sealing packer element, where the side groove is configured to form a channel in an exterior surface of the tool body between the first circumferential end and the second circumferential end of the sealing packer element. The downhole well system also includes a second downhole tool configured to be disposed downhole of the first downhole tool, and a cable connected to the second downhole tool and extending toward the first downhole tool. The cable is positioned within the channel of the side groove between the first circumferential end and the second circumferential end of the sealing packer element, and the cable is configured to further extend to a location uphole of the tool body.

[0009] This, and other aspects, can include one or more of the following features. The first downhole tool can include a fluid conduit disposed within the tool body and extending to the side groove, where the fluid conduit includes at least one nozzle positioned at the side groove, and the fluid conduit configured to flow a fluid into the channel of the side groove.

[0010] The details of one or more implementations of the subject matter described in this disclosure are set forth in the accompanying drawings and the description below. Other features, aspects, and advantages of the subject matter will become apparent from the description, the drawings, and the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. **1** is a schematic partial cross-sectional side view of an example well system including two example well tools.

[0012] FIG. **2** is a schematic partial cross-sectional front view of an example well tool disposed in a wellbore **202**.

[0013] FIG. **3** is a schematic partial cross-sectional perspective view of the example well tool of FIG. **2**.

[0014] FIG. **4** is a schematic partial cross-sectional front view of an example well tool with a cable.

[0015] FIG. **5** is a schematic partial cross-sectional perspective view of the example well tool of FIG. **4**.

[0016] FIG. **6** is a flowchart describing an example method for sealing a wellbore with a downhole well tool.

[0017] Like reference numbers and designations in the various drawings indicate like elements.

DETAILED DESCRIPTION

[0018] This disclosure describes a downhole well tool that includes a sealing packer with a side groove that is substantially or completely vertically oriented on the side of the well tool and sealing packer. The side groove allows passage of a cable across the sealing packer without disrupting the perimeter seal between the sealing packer element and a wall of the wellbore, casing, or other tubing, and without squeezing the cable against the wall by the sealing packer. The side groove splits the circumference of the sealing packer element such that the sealing packer does not form a complete ring around the tool body of the downhole well tool. In some instances, the side groove is formed at least partially in the tool body of the downhole well tool that is radially inward of the sealing packer element, such that inner surfaces that form the side groove include a grooved portion of the tool body and circumferential end surfaces of the sealing packer element that are adjacent to the grooved portion of the tool body.

[0019] The cable can include a power cable, an electrical cable, a communications cable, a hydraulic cable, or another type of cable that extends from a location downhole of the sealing packer to another location uphole of the sealing packer. For example, the sealing packer can include a packer element for an electric submersible pump (ESP), and the cable can be an ESP cable that connects to an ESP unit that is positioned downhole of the sealing packer. The side groove is formed in the downhole well tool such that the side groove is present in instances where the sealing packer is substantially or fully expanded, for example, when the sealing packer is engaged with the wall of the wellbore, casing, or other tubular. The side groove is sized to completely or partially fit a continuous portion of the cable within the side groove along an entire longitudinal length of the side groove (for example, the length from a downhole end to an uphole end of the groove). The side groove can include a semicircular profile or a different shaped profile in the outer surface of the body of the downhole well tool that allows passage of the cable within the groove and longitudinally across the sealing packer element. The side groove allows for passage of the cable across the sealing element, even in instances where the sealing element is expanded to engage and seal against the inner wall of the wellbore, casing, or other tubing.

[0020] In some instances, a fluid conduit (or control line) extends within the body of the downhole well tool, and includes one or more nozzles (such as one-way nozzles) that are disposed within or on the side groove, and the nozzle(s) is fluidly connected to the side groove to deliver a fluid (for example, a sealing resin) to the space, or channel, defined by the side groove. The fluid is introduced to the side groove, flows around the cable portion that is disposed within the side groove to occupy the space within the side groove that surrounds the cable portion, and in some instances, partially or completely solidifies within the side groove to hold the cable in place within the side groove and to fluidly seal the side groove from fluid flow through the side groove and across the sealing packer. In certain instances, a well string that supports the downhole well tool and second downhole tool (for example, the ESP) includes one or more cable clamps to hold the cable in place relative to the well string, such as against or radially offset from the well string. For example, a first clamp holds the cable against an exterior surface of the well string at a location that is uphole of the sealing packer, and a second cable clamp holds the cable against an exterior surface of the well string at a location that is downhole of the sealing packer.

[0021] Conventional sealing packers for ESPs include a packer penetrator that requires a manual splice of the ESP cable, which leaves the cable vulnerable to hydrocarbons, heat, voltage stress, and conductive fluids. From the ESP unit, a conventional ESP cable is spliced and fed through the ESP packer, and spliced at another location. These splices can be subject to human error, can be time consuming to perform, and are vulnerable to electrical shorts. In the downhole well tool of the present disclosure, the cable is not required to be spliced, and ensures continuity of the cable while maintaining the sealing functionality of the sealing packer. The cable is passed through the side groove at the sealing packer, and can extend all the way to a surface location in one continuous line while maintaining the functionality of the sealing packer.

[0022] FIG. **1** is a schematic partial cross-sectional side view of an example well system **100** that includes a substantially cylindrical wellbore **102** extending from a well head **104** at a surface **106** downward into the Earth into one or more subterranean zones of interest **108** (one shown). The example well system **100** includes a vertical well, with the wellbore **102** extending substantially vertically from the surface **106** to the subterranean zone **108**. The concepts herein, however, are applicable to many other different configurations of wells, including horizontal, slanted, or otherwise deviated wells. A well string **110** is shown as having been lowered from the surface **106** into the wellbore **102**. In certain instances, after some or all of the wellbore **102** is drilled, a portion of the wellbore **102** is lined with lengths of tubing, called casing **112**. The wellbore **102** can be drilled in stages, and the casing **112** may be installed between stages. The casing **112** can include a series of jointed lengths of tubing coupled together end-to-end or a continuous (for example, not jointed) coiled tubing. The casing **112** forms the cased section of the wellbore **102**. In some examples, the well system **100** excludes casings, such as casing **112**, and the wellbore **102** is at least partially or entirely open bore. The section(s) of the wellbore **102** exposed to the adjacent formation (for example, without casing or other permanent completion) form the open hole section **114** of the wellbore **102**.

[0023] In the example well system **100** of FIG. **1**, the well string **110** connects to and supports a first downhole well tool **116** and a second downhole well tool **118** that is further downhole than the first downhole well tool **116**. The first downhole well tool **116** and the second downhole well tool **118** can interact with fluids or other components within the wellbore **102**, and can take the form of packer tools, pumps, drill bits, testing tools, production tools, or other well tools. In some instances, the first downhole well tool **116** is a sealing packer tool with a packer element that selectively seals against an inner wall of the wellbore **102** or casing **112**, and the second downhole well tool **118** is an ESP. A cable **120** extends from the second downhole well tool **118** to the first downhole well tool **116** and further to the well head **104** at the surface **106** of the well. The cable **120** can include a power cable, a communications cable, an electrical cable, a hydraulic cable, a combination of these cables, or a different type of cable that is disposed in the annulus of the wellbore **102** and extends partially or entirely to the well head **104** or other surface location. The cable **120** is positioned along a groove (not shown) in a radially exterior surface of the first downhole well tool **116**. The example sealing packer tool can seal against a wall of the wellbore **102**, the example ESP can pump fluid uphole through the well string, and the cable **120** can provide power, control, communication, or a combination of these features to or from the surface of the well, from which the cable **120** extends.

[0024] The well string **110** can take a variety of different forms, for example, based on the type of tools that encompass the first downhole well tool **116** and the second downhole well tool **118**. In some implementations, the well string **110** is a production string, a testing string, a drill string, a wireline, a completion string, or another type of tubing string. Though the example well system **100** of FIG. **1** shows two downhole well tools (**116** and **118**), the number of downhole well tools can vary. For example, the well system **100** can include additional well tools uphole of, downhole of, or between the first downhole well tool **116** and second downhole well tool **118**. The well tools **116** and **118** are rugged enough to withstand the harsh wellbore environment and to be included on an active well string **110**.

[0025] FIG. **2** is a schematic front view of an example well tool **200** disposed in a wellbore **202**, and FIG. **3** is a schematic partial cross-sectional side view of the example well tool **200** disposed in the wellbore **202**. The example well tool **200** can be used in the example well system **100** of FIG. **1**, such as the first downhole well tool **116** within wellbore **102** of FIG. **1**. The example well tool **200** includes a tool body **204**, a sealing packer element **206** that partially circumscribes the tool body **204**, and a side groove **208** formed partially in an exterior surface of the tool body **204**. The tool body **204** attaches to and is carried on a well string **210** disposed in the wellbore **202**. The tool body **204** is rigid, substantially cylindrical, and is positioned about a central longitudinal axis A-A. The tool body **204** has a first, uphole longitudinal end **214** and a second, downhole longitudinal end **216**, and connects to tubing of the well string **210** on the first longitudinal end **214**, the second longitudinal end **216**, or both. In some examples, the tool body **204** includes threading or other connection structures to engage and connect to tubing or other well tools at the first longitudinal end **214**, second longitudinal end **216**, or both.

[0026] The sealing packer element **206** is radially expandable to engage and seal against an inner wall of the wellbore **202**. The inner wall can be the inner surface of an open bore portion of the wellbore **202**, an inner surface of a casing, or an inner surface of another tubing. The sealing packer element **206** can expand from a first, radially retracted position (as depicted in FIGS. **2** and **3**) to a second, radially expanded position (as depicted in FIGS. **4** and **5**, described later). In the first position of the sealing packer element **206**, the example well tool **200** can be run into and moved freely in the longitudinal direction within the wellbore **202**. In the second position of the sealing packer element **206**, the sealing packer element **206** is radially expanded to engage and fluidly seal against the inner wall of the wellbore **202**, for example, to effectively plug (substantially or completely) the wellbore **202** from fluid flow across the sealing packer element **206**.

[0027] In the example well tool **200** of FIGS. **2** and **3**, a circumference of the sealing packer element **206** is split at a location proximate to the side groove **208**, such that the sealing packer element **206** partially circumscribes the tool body **204** from a first circumferential end **218**, around the tool body **204**, and to a second circumferential end **220** of the sealing packer element **206**. In some examples, the sealing packer element **206** has a partial ring shape with a split, where the first circumferential end **218** and the second circumferential end **220** define the edges of the split. The split in the circumference of the sealing packer element **206** exposes the side groove **208** in the tool body **204** to an open space of the wellbore **202**. In other words, the side groove **208** is positioned between the first circumferential end **218** and the second circumferential end **220** of the sealing packer element **206**, and forms a channel in an exterior surface of the grooved tool body **204** and in the space between the first circumferential end **218** and second circumferential end **220** of the sealing packer element **206**.

[0028] The example well tool **200** includes a fluid conduit **222** that is disposed within the tool body **204** and extends to the side groove **208**, for example, to deliver and selectively flow a fluid into the side groove **208**. The fluid conduit **222** can include a machined fluid pathway within the tool body **204**, an embedded tubing in the tool body **204**, or another type of fluid pathway capable of directing and flowing a fluid from a fluid source to the side groove **208**. The fluid conduit **222** includes at least one nozzle **224** (two shown) in an exterior surface of the tool body **204** that defines the side groove **208**. The nozzles **224** are flush with the exterior surface of the tool body **204**, or set radially inward from the exterior surface of the tool body **204**, so that the nozzles **224** do not extend beyond the exterior surface and into the space defined by the side groove **208**. The nozzles **224** control the flow direction of the fluid into the side groove from the fluid conduit **222**. In some examples, the nozzles **224** include passive one-way check valves, active control nozzles, or another type of nozzle that can selectively flow a fluid out of the fluid conduit **222** and into the side groove **208**.

[0029] The example well tool **200** depicts two nozzles **224** oriented vertically along the side groove **208**; however, the number, position, and orientation of the nozzle(s) **224** can vary. For example, the fluid conduit **222** can include only one nozzle, two nozzles, or three or more nozzles, and each of the nozzles **224** can be fluidly connected to the same fluid conduit **222** (for example, to deliver the same fluid to the side groove **208**) or to multiple, respective, discrete fluid conduits (for example, to deliver two or more types of fluids to the side groove **208**). In some examples, the nozzles **224** can be centered in the side groove **208** and vertically oriented in a linear pattern along a vertical longitudinal length of the side groove **208** in an even distribution. In certain implementations, the nozzles **224** can be distributed along the surface of the side groove **208** in an irregular pattern that includes nozzles that are centered, left-side oriented, right-side oriented, a combination of these, or otherwise distributed in the side groove **208**. The orientation and distribution of the nozzles **224** can be chosen based on a desired flow pattern of fluid from the nozzles **224** into the side groove **208**.

[0030] The fluid conduit **222** fluidly connects to a fluid source located at the well tool **200**, proximate to the well tool **200**, or at a remote location away from the well tool **200** and connected by an extension of the fluid conduit **222** or control line. In the example well tool **200** of FIGS. **2** and **3**, the fluid conduit **222** connects to a fluid source (not shown) positioned at a top surface of the wellbore **202** with a dedicated extension of the fluid conduit **222** that extends from the tool body **204** uphole into the annulus of the wellbore **202** and to the fluid source at the top surface of the wellbore **202**. The extension of the fluid conduit **222** that resides in the annulus of the wellbore **202** is rugged enough to withstand the caustic fluids and harsh environment of the wellbore **202**. In some instances, the extension of the fluid conduit **222** resides within the well string **210**, such that it is protected from the wellbore **202** environment as the fluid conduit **222** extension extends between the tool body **204** and the fluid source. In certain instances, the fluid source is disposed within or on the example well tool **200**, within the well string **210** (uphole or downhole of the tool body **204**), or in another location that is proximate to the example well tool **200**. In some instances, a pump connects to the fluid conduit **222** to pump the fluid through the fluid conduit **222** and out of the nozzles **224**. In some examples, the pump is located at the well surface, though this location can vary.

[0031] The side groove **208** is sized and shaped to receive a cable (described later) that resides in the side groove **208** and extends between a first location downhole of the well tool **200** to a second location uphole of the well tool **200**. The example well tool **200** of FIG. **2** shows the groove as substantially or exactly linear, oriented substantially or exactly vertically, and having a longitudinal length between an uphole end and downhole end of the side groove that is substantially longer (for example, at least four times longer) than a width of the side groove along a circumference of the tool body **204**. For example, the side groove **208** is oriented substantially vertically and parallel to the longitudinal axis A-A of the tool body **204**, and the side groove **208** is substantially linear along its length between an uphole end and a downhole end of the side groove **208**. However, the size, shape, and orientation of the side groove **208** can vary. In some instances, the side groove is oriented at an angle away from the vertical, includes a curved shape along its length, or a combination of these, for example, to accommodate a coiled cable or an otherwise curved cable residing in the side groove **208**. In certain instances, the side groove **208** can be wider or narrower, for example, to better accommodate a different sized cable in the side groove.

[0032] FIGS. **2** and **3** show the example well tool **200** without a cable, and show the sealing packer element **206** in the first, radially retracted position. FIGS. **4** and **5** are a schematic front view and a schematic partial cross-sectional side view, respectively, of the example well tool **200** with the sealing packer element **206** in the second, radially expanded position, and including a cable **400** that resides in the side groove **208** and extends across the sealing packer element **206**. The cable **400** is positioned within the channel of the side groove **208** and extends in an uphole direction from a second well tool (not shown) that is positioned downhole of the tool body **204** of the example well tool **200**, through the channel of the side groove **208** and across the sealing packer element **206**, and toward a location uphole of the tool body **204**. The cable **400** can include a power cable, a communications cable, a hydraulic cable, an electrical cable, a combination of these, or another type of cable that extends from a location downhole of the sealing packer element **206** to another location uphole of the sealing packer element **206**. The cable **400** resides primarily in the annulus of the wellbore **202** between the second well tool downhole of the tool body **204** and another location uphole of the tool body **204**, such as the well head of the wellbore **202**. In some examples, the well tool **200** is a packer tool for an ESP, the cable **400** is an ESP power cable that connects to an ESP unit that is positioned downhole of the sealing packer element **206**, and the cable **400** extends from the ESP unit, across the sealing packer element **206** of the packer tool, and to a surface of the wellbore **202** for connection to a power source.

[0033] In some implementations, the sealing packer element **206** includes an inflatable packer that inflates from the first position to the second position, a swellable packer that swells from the first position to the second position, a hydraulic actuated packer that actuates from the first position to the second position, or another type of expandable packer element.

[0034] The side groove **208** is formed in the example well tool **200** such that the side groove **208** is present in instances where the sealing packer element **206** is substantially or fully expanded, for example, when the sealing packer element **206** is engaged with the wall of the wellbore **202**, casing, or other tubular. FIGS. **4** and **5** depict the sealing packer element **206** in the second, expanded position where the sealing packer element **206** is sealingly engaged with the wall of the wellbore **202**. The side groove **208** is sized to completely or substantially fit a continuous portion of the cable **400** within the side groove **208** along an entire longitudinal length of the side groove **208** (for example, the length from the downhole end to the uphole end of the groove **208**), to allow passage of the cable **400** across the example well tool **200** without disrupting the normal sealing operation of the sealing packer element **206** of the example well tool **200**. The side groove **208** includes a semicircular concave profile in the outer surface of the tool body **204** of the example well tool **200** to substantially match the shape of the cable **400**, and allows passage of the cable **400** within the side groove **208** and longitudinally across the sealing packer element **206** between its circumferential ends **218** and **220**. The profile of the side groove **208** can vary, for example, to match a different shape of a cable that can reside in the side groove **208**. For example, the side groove **208** can include a triangular profile, a squared profile, a deeper or shallower curved shape relative to a semicircular profile, or another profile shape. The side groove **208** allows for passage of the cable **400** across the sealing packer element **206**, even in instances where the sealing packer element **206** is expanded to engage and seal against the inner wall of the wellbore **202**, casing, or other tubing.

[0035] As shown in the example well tool **200** of FIGS. **2**-**5**, the side groove **208** forms the circumferential break in the sealing packer element **206**. During operation of the example well tool **200**, the sealing packer element **206** expands from the first, radially retracted position (as in FIGS. **2** and **3**) to the second, radially expanded position (as in FIGS. **4** and **5**) to substantially or completely engage and seal against the inner wall of the wellbore **202**. In order to complete the fluid seal in the wellbore **202** by the sealing packer element **206** when the sealing packer element **206** is in the second, expanded position against the wall of the wellbore **202**, the side groove **208** receives a sealing resin **402** or other sealing fluid from the fluid conduit **222** through the nozzles **224**. As depicted in the example well tool **200** of FIGS. **4** and **5**, the sealing resin **402** flows into, fills, and plugs the channel defined by the side groove **208** between the circumferential ends **218** and **220** of the sealing packer element **206**. The sealing resin **402** from the nozzles **224** flows around and envelops the portion of the cable **400** that resides in the side groove **208** in order to fluidly seal the side groove **208** with the cable **400** disposed within the channel of the side groove **208**. For example, as the sealing resin **402** hardens, solidifies, or otherwise sets in the side groove **208**, the sealing resin **402** completes the fluid seal and pressure seal in the wellbore **202** across the sealing packer element **206**.

[0036] In certain instances, a volume of the side groove **208** is known, and a volume of the portion of the cable **400** within the side groove **208** is known, so the fluid conduit **222** delivers a known displacement volume of the sealing resin **402** to the side groove **208**, for example, to ensure there is a sufficient quantity of the sealing resin **402** introduced to the side groove **208** to sufficiently envelop the portion of the cable **400** and seal the side groove **208**. The sealing resin **402** can have a density substantially equivalent to (or greater than) the weight of existing fluid in the wellbore **202**, such that the sealing resin **402** that is pumped or otherwise introduced to the side groove **208** will displace the existing fluid and stay suspended in the side groove **208** to seal around the cable **400**. In some implementations, the annulus of the wellbore **202** can be pressure tested from the top surface of the wellbore **202** to determine the effectiveness of the seal provided by the sealing packer element **206** and sealing resin **402** in the side groove **208**.

[0037] In some instances, the distance between a radially outer surface of the tool body **204** (not including the sealing packer element **206**) and the wellbore wall is less than the diameter of the cable **400**. The side groove **208** allows the cable **400** to reside adjacent to the tool body **204** so that the example well tool **200** can be run downhole with the cable **400** positioned in the side groove **208** with sufficient distance tolerance between the wellbore wall and the cable **400**. In certain implementations, the side groove **208** may be defined by the split in the sealing packer element **206** without an inset groove (or other surface alteration) in the outer surface of the tool body **204** adjacent to the circumferential break in the sealing packer element **206**. For example, in instances where the cable **400** has a diameter that is less than a distance between the radially outer surface of the tool body **204** (not including the sealing packer element **206**) and the wellbore wall, the side groove **208** can be defined by the circumferential ends **218** and **220** of the sealing packer element **206** and the portion of the unaltered, cylindrical exterior surface of the tool body **204** that is between the circumferential ends **218** and **220** of the sealing packer element **206**.

[0038] In some implementations, as depicted in FIGS. **4** and **5**, cable clamps **404** (two shown) hold and secure the cable **400** in place on the well string **210**. For example, a first of the clamps **404** can hold the cable **400** against, or radially offset from, an exterior surface of the well string **210** at a location that is uphole of the sealing packer element **206**, and a second of the clamps **404** can hold the cable **400** against, or radially offset from, the exterior surface of the well string **210** at a second location that is downhole of the sealing packer element **206**. The example well tool **200** of FIGS. **4** and **5** show two clamps **404** on the well string **210**, one clamp positioned just uphole of the example well tool **200** and another clamp positioned just downhole of the example well tool **200**. However, the number and location of these clamps **404** can vary. For example, the well string **210** can carry just one clamp **404**, positioned either uphole or downhole of the example well tool **200**, or the well string **210** can carry three or more clamps distributed along the well string **210** to secure the cable relative to the well string **210** as the cable extends toward a top surface of the wellbore **202**.

[0039] FIG. **6** is a flowchart describing an example method **600** for sealing a wellbore, for example, performed by the example well tool **200** in the wellbore **202** of FIGS. **2** to **5**. At **602**, a downhole well tool is disposed in a wellbore. The downhole well tool includes a tool body attached to a well string, a sealing packer element partially circumscribing the tool body from a first circumferential end to a second circumferential end of the sealing packer element, and a fluid conduit disposed within the tool body. At **604**, a cable is positioned in a side groove formed at least partially in the tool body. The side groove is positioned between the first circumferential end and the second circumferential end of the sealing packer element, and the side groove forms a channel in an exterior surface of the tool body. The cable extends from a second well tool downhole of the tool body, through the channel of the side groove and across the sealing packer element, and toward a location uphole of the tool body. At **606**, a fluid flows through the fluid conduit and through a nozzle at an end of the fluid conduit. The nozzle directs the fluid flow into the side groove to surround a portion of the cable positioned in the side groove. In some implementations, the sealing packer element is radially expanded from a first, radially retracted position to a second, radially expanded position to engage and seal against a wall of the wellbore. In certain implementations, the fluid is a sealing resin, and flowing the fluid through the fluid conduit and through the nozzle includes flowing the sealing resin out of the nozzle and around the portion of the cable to fluidly seal the side groove. In some examples, the annulus of the wellbore is pressure tested after the sealing resin is disposed around the portion of the cable. The downhole well tool can include an ESP packer, the cable can include an ESP power cable, and the second well tool can include an ESP. In certain examples, the cable is clamped to the well string with one or more clamps positioned uphole, downhole, or both uphole and downhole of the sealing packer element.

[0040] A number of implementations have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the disclosure.

1. A downhole well tool, comprising:

a tool body configured to attach to a well string;

a sealing packer element partially circumscribing the tool body from a first circumferential end to a second circumferential end of the sealing packer element, the sealing packer element configured to expand and seal against an inner wall of a wellbore;

a side groove formed at least partially in the tool body and positioned between the first circumferential end and the second circumferential end of the sealing packer element, the side groove configured to form a channel in an exterior surface of the tool body between the first circumferential end and the second circumferential end of the sealing packer element; and

a fluid conduit disposed within the tool body and extending to the side groove, the fluid conduit comprising at least one nozzle positioned at the side groove, the fluid conduit configured to flow a fluid into the channel of the side groove.

2. The downhole well tool of claim **1**, further comprising a cable positioned within the channel of the side groove and configured to extend from a well tool downhole of the tool body, through the channel of the side groove and across the sealing packer element, and to a location uphole of the tool body.

3. The downhole well tool of claim **2**, wherein the sealing packer element is an electric submersible pump packer, the cable is an electric submersible pump cable, and the downhole well tool is configured to connect to an electric submersible pump positioned downhole of the sealing packer element.

4. The downhole well tool of claim **2**, wherein the cable comprises at least one of a power cable, a communications cable, or a hydraulic cable.

5. The downhole well tool of claim **2**, further comprising a clamp configured to secure the cable to the well string.

6. The downhole well tool of claim **5**, wherein the clamp is a first clamp positioned downhole of the sealing packer element and configured to secure the cable downhole of the sealing packer element, the downhole well tool further comprising a second clamp positioned uphole of the sealing packer element, the second clamp configured to secure the cable to the well string uphole of the sealing packer element.

7. The downhole well tool of claim **1**, wherein the at least one nozzle comprises a plurality of nozzles fluidly connected to the fluid conduit, and the plurality of nozzles are distributed along the side groove.

8. The downhole well tool of claim **7**, wherein the plurality of nozzles are distributed in a linear pattern along a longitudinal length of the side groove.

9. The downhole well tool of claim **8**, wherein the plurality of nozzles are evenly distributed in the linear pattern.

10. The downhole well tool of claim **1**, wherein the sealing packer element comprises a partial ring shape with a split, wherein the first circumferential end and the second circumferential end define the split.

11. The downhole well tool of claim **1**, wherein the sealing packer element is radially expandable and configured to radially expand from a first, radially retracted position to a second, radially expanded position of the sealing packer element.

12. The downhole well tool of claim **11**, wherein the sealing packer element comprises an inflatable packer configured to inflate from the first, radially retracted position to the second, radially expanded position.

13. The downhole well tool of claim **11**, wherein the sealing packer element comprises a swellable packer configured to swell from the first, radially retracted position to the second, radially expanded position.

14. The downhole well tool of claim **1**, wherein the side groove comprises a semicircular concave profile in the tool body.

15. The downhole well tool of claim **1**, wherein the side groove is oriented substantially vertically and parallel to a longitudinal axis of the tool body.

16. The downhole well tool of claim **1**, wherein the side groove is oriented substantially linearly along a length of the side groove between an uphole end and a downhole end of the side groove.

17. A method, comprising:

disposing a downhole well tool in a wellbore, the downhole well tool comprising a tool body attached to a well string, a sealing packer element partially circumscribing the tool body from a first circumferential end to a second circumferential end of the sealing packer element, and a fluid conduit disposed within the tool body;

positioning a cable in a side groove formed at least partially in the tool body, the side groove positioned between the first circumferential end and the second circumferential end of the sealing packer element, the side groove configured to form a channel in an exterior surface of the tool body, and the cable configured to extend from a second well tool downhole of the tool body, through the channel of the side groove and across the sealing packer element, and toward a location uphole of the tool body; and

flowing a fluid through the fluid conduit and through a nozzle at an end of the fluid conduit, the nozzle to direct the fluid flow into the side groove to surround a portion of the cable positioned in the side groove.

18. The method of claim **17**, comprising radially expanding the sealing packer element from a first, radially retracted position to a second, radially expanded position to engage and seal against a wall of the wellbore.

19. The method of claim **17**, wherein the fluid is a sealing resin, and flowing the fluid through the fluid conduit and through the nozzle comprises flowing the sealing resin out of the nozzle and around the portion of the cable to fluidly seal the side groove.

20. The method of claim **19**, further comprising pressure testing an annulus of the wellbore where the sealing resin is disposed around the portion of the cable.

21. The method of claim **17**, wherein the downhole well tool comprises an electric submersible pump packer, the cable comprises an electric submersible pump cable, and the second well tool comprises an electric submersible pump, and wherein positioning the cable in the side groove comprises extending the cable from the electric submersible pump, through the side groove of the electric submersible pump packer, and toward a surface location of the wellbore.

22. The method of claim **17**, further comprising clamping the cable to the well string with a first clamp positioned downhole of the sealing packer element and with a second clamp positioned uphole of the sealing packer element.

23. A downhole well system, comprising:

a first downhole tool, comprising:

a tool body attached to a well string;

a sealing packer element partially circumscribing the tool body from a first circumferential end to a second circumferential end of the sealing packer element, the sealing packer element configured to expand and seal against an inner wall of a wellbore; and

a side groove formed at least partially in the tool body and positioned between the first circumferential end and second circumferential end of the sealing packer element, the side groove configured to form a channel in an exterior surface of the tool body between the first circumferential end and the second circumferential end of the sealing packer element; and

a second downhole tool configured to be disposed downhole of the first downhole tool; and

a cable connected to the second downhole tool and extending toward the first downhole tool, the cable being positioned within the channel of the side groove between the first circumferential end and the second circumferential end of the sealing packer element, the cable configured to further extend to a location uphole of the tool body.

24. The downhole well system of claim **23**, wherein the first downhole tool further comprises a fluid conduit disposed within the tool body and extending to the side groove, the fluid conduit comprising at least one nozzle positioned at the side groove, the fluid conduit configured to flow a fluid into the channel of the side groove.

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