

HANGER LOCK SYSTEM

BACKGROUND

[0001] This section is intended to introduce the reader to various aspects of art that may be related to various aspects of the present invention, which are described and/or claimed below. This discussion is believed to be helpful in providing the reader with background information to facilitate a better understanding of the various aspects of the present invention. Accordingly, it should be understood that these statements are to be read in this light, and not as admissions of prior art.

[0002] In some drilling and production systems, hangers, such as a tubing hanger, may be used to suspend strings of tubing for various flows in and out of a well. Such hangers may be disposed within a wellhead that supports both the hanger and the string. For example, a tubing hanger may be lowered into a wellhead and supported therein. To facilitate the running or lowering process, the tubing hanger may couple to a tubing hanger running tool (THRT). Once the tubing hanger has been lowered into a landed position within the wellhead by the THRT, the tubing hanger may then be locked into position. The THRT may then be disconnected from the tubing hanger and extracted from the wellhead. Unfortunately, wellheads components (e.g., spools) with preformed ledges or landings reduce the size of the bore, which requires either smaller drilling equipment or larger more expensive wellheads with larger bores.

SUMMARY

[0002A] According to a first aspect, there is provided a system, including: a hanger lock system, including: a positive lock system, including: a load ring configured to engage a first tubular; and a lock ring configured to energize the load ring; a tool, including: a first piston configured to couple to a second tubular; a second piston configured to couple to the lock ring to energize the load ring.

[0002B] According to a second aspect, there is provided a system, including: a mineral extraction system, including: a first tubular; a second tubular configured to move axially within the first tubular; a positive lock system, including: a load ring configured to engage the first tubular; and a lock ring configured to energize the load ring; a tool, including: a first piston comprising first threads, wherein first piston couples to the second tubular with the first threads; and a second piston comprising second threads, wherein the second piston couples to the second tubular with the second threads and is configured to couple to the lock ring to energize the load ring.

[0002C] According to a third aspect, there is provided a method, including: lowering a first tubular with a first piston; rotating the first piston in a first direction; rotating a second piston with the first piston; and energizing a positive lock system with the second piston.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] Various features, aspects, and advantages of the present invention will become better understood when the following detailed description is read with reference to the accompanying figures in which like characters represent like parts throughout the figures, wherein:

[0004] FIG. 1 is a block diagram of an embodiment of a mineral extraction system;