second end 250, and an elongated portion 252 extending therebetween. The first end 248 of the first portion 246 of the arm 244 can be generally cylindrical and can be rotatably mounted within a portion of the transverse member 242 of the bridge. A motor (not shown) can be disposed within the first end 248 of the first portion 246 of the arm 244. The motor can be a servomotor, a stepper motor, or the like. Further, actuating the motor may cause the arm 244 to rotate around an axis 254, passing through a center of the first end 248 of the first portion 246 of the arm 244, that may be generally perpendicular to the first and second portions 238, 240 of the bridge 232. The second end 250 of the first portion 246 of the arm 244 can be formed with a bore 256 extending substantially perpendicularly therethrough. Further, the second end 250 of the first portion 246 of the arm 244 can include a slot 258 extending therethrough at least partially along the length of the elongated portion 252 of the first portion 246 of the arm 244.

The articulating arm 244 can also include a second portion 260 having a first end 262, a second end 264, and an elongated portion 266 extending therebetween. The elongated portion 266 can include an offset disc-shaped portion 268 located centrally along the elongated portion 266 of the second portion 260 of the arm 244. The offset disc-shaped portion 268 has a center that is spaced apart a distance, D, from the longitudinal axis of the elongated portion 266 of the second portion 260 of the articulating arm 244. The offset disc-shaped portion 268 of the second portion 260 of the arm 244 is configured to fit into and rotate within the bore 256 formed in the second end 250 of the first portion 246 of the arm 244. The slot 258 formed in the second end 250 of the first portion of the arm 244 can allow the second portion 260 of the arm 244 to rotate nearly 180° with respect to the first portion 246 of the arm 244 and can allow the second portion 260 of the arm 244 to be rotated nearly parallel to the first portion 246 of the arm 244.

In a particular aspect, a motor (not shown) can be disposed within the offset disc-shaped portion 268 of the second portion 260 of the articulating arm 244. The motor can be a servomotor, a stepper motor, or the like. Further, actuating the motor can cause the second portion 260 of the articulating arm 244 to rotate with respect to the first portion 246 of the articulating arm 244 around an axis 270, passing through a center of the offset disc-shaped portion 268 of the second portion 260 of the articulating arm 244, that is generally perpendicular to the first and second portions 238, 240 of the bridge 232.

As further shown in the figures, the HTHS 230 can include a first gripper 280 attached to, or disposed on, the first end 262 of the second portion 260 of the articulating arm 244. Further, the HTHS 230 can include a second gripper 282 attached to, or disposed on,

CLAIMS

1. A system for conducting subterranean operations comprising:

a tubular storage area;

a well center area; and

a robotic arm configured to move tubulars, the robotic arm comprising:

a base coupled to a rig floor and configured to traverse a distance between the well center area toward the tubular storage area, and

characterized in that: an articulating arm comprises a first portion, a second portion and a third portion,

wherein the first portion is configured to rotate relative to the base about a first axis that is substantially perpendicular to the rig floor,

wherein the second portion is configured to rotate relative to the first portion about a second axis that is parallel with the rig floor,

wherein the third portion is configured to rotate relative to the second portion about a third axis that is perpendicular to the second axis,

wherein the articulating arm is configured to support an entire weight of the tubular,

wherein the robotic arm comprises a gripper coupled to the third portion, and

wherein the gripper is configured to grip the tubular and spin the tubular about a longitudinal axis of the tubular.

2. The system of claim 1, wherein the robotic arm is coupled to a track on the rig floor and the robotic arm is configured to traverse the distance between the tubular storage area and well center area on the track.

3. The system of claim 1, further comprising a tubular handling system in the tubular storage area, wherein the robotic arm and the tubular handling system are configured to interact and exchange objects.

4. The system of claim 3, wherein the robotic arm is configured to exchange a sub-type tubular with the tubular handling system in the tubular storage area.

5. The system of claim 4, wherein the gripper is configured to hold a sub-type tubular and pass the sub-type tubular to a gripper of the tubular handling system in the tubular storage area.

6. The system of claim 1, wherein the robotic arm is configured for automated movement without external commands.

7. A method for conducting subterranean operations comprising:

engaging a tubular with a gripper of a robotic arm, the robotic arm comprising a base and an articulating arm, with the articulating arm comprising a first portion, a second portion, a third portion, and the gripper, wherein the first portion is rotationally coupled to the base, the second portion is rotationally coupled to the first portion; the third portion is rotationally coupled to the second portion, and the gripper is coupled to the third portion;

rotating the first portion relative to the base about a first axis that is perpendicular to a rig floor;

rotating the second portion relative to the first portion about a second axis that is parallel to the rig floor;

rotating the third portion relative to the second portion about a third axis that is perpendicular to the second axis;

moving a tubular between a well center area and a tubular storage area by the robotic arm, wherein the robotic arm is configured to traverse at least a portion of a distance between the well center area and the tubular storage area;

carrying an entire weight of the tubular while rotating the first portion about the first axis; and

spinning the tubular, via the gripper, about a longitudinal axis of the tubular.

8. The method of claim 7, wherein moving includes engaging the tubular in the well center area.

9. The method of claim 7, wherein moving includes engaging the tubular in the tubular storage area.

10. The method of claim 7, wherein moving includes engaging the tubular near the tubular storage area.

11. The method of any one of claims 7, 8, and 9, wherein engaging includes gripping the tubular with the gripper of the robotic arm to support the entire weight of the tubular in the gripper.

12. The system of claim 1, further comprising a pipe storage system in the tubular storage area, the pipe storage system comprising:

a plurality of pipe storage arms;

a plurality of pipe storage bays established between adjacent pipe storage arms,

a plurality of protrusions extending from the pipe storage arms into each pipe storage bay, the plurality of protrusions establishing a plurality of channels, wherein each channel is established between a pair of adjacent protrusions; and

a plurality of latches, wherein the latches are movable from between a retracted position in which the latches are retracted to establish a series of first pipe storage openings between opposing channels and an extended position in which the latches extend into the pipe storage bay to establish a series of second pipe storage openings between opposing protrusions.

13. The pipe storage system of claim 12, wherein the latches move substantially in unison.

14. The pipe storage system of claim 13, wherein the first pipe storage openings are larger than the second pipe storage openings.

15. The pipe storage system of claim 12, wherein the latches are mechanically actuated or electrically actuated.