CLAIMS

1. A system for conducting subterranean operations comprising:

an elevator configured to move a tubular, the elevator comprising:

a housing defining a central bore configured to receive the tubular therein; and

a first latch comprising a first jaw with a first lock, the first jaw configured to be rotated between an engaged position and a disengaged position,

wherein the first lock engages a portion of the housing when the first jaw is in the engaged position,

wherein the first jaw comprises a lateral portion and an attachment portion,

wherein the lateral portion mates with the attachment portion forming an overlap between the lateral portion and the attachment portion, and

wherein the first lock extends through the overlap.

2. The system of claim 1, wherein the lateral portion comprises a first protrusion along an end and the attachment portion comprises a first recess along an end, wherein the first protrusion is received by the first recess and forms the overlap.

3. The system of claim 2, wherein the first lock rotated to a first position allows insertion of the first protrusion in the first recess or removal of the first protrusion from the first recess.

4. The system of claim 3, wherein the first lock rotated to a second position allows movement of the first protrusion within the first recess and retains the first protrusion within the first recess.

5. The system of claim 4, wherein the attachment portion is rotatably attached to the housing, wherein rotation of the attachment portion rotates the lateral portion, and wherein lateral movement of the lateral portion causes lateral movement of the first protrusion in the first recess, which prevents lateral movement of the attachment portion in response to the lateral movement of the first protrusion.

6. The system of claim 1, further comprising:

a spacer ring disposed between the first latch and the housing and a circular weight sensor disposed between the spacer ring and the housing, wherein the portion of the housing is adjacent the spacer ring.

7. The system of claim 6, wherein the first latch engages the spacer ring and the first lock engages the portion of the housing when the first latch is in the engaged position.

8. The system of claim 7, wherein the spacer ring transfers weight from the first latch to the housing through the spacer ring and the circular weight sensor, when the first latch is in the

engaged position, and wherein the first lock transfers a rotational force applied to the first jaw to the portion of the housing, when the first latch is in the engaged position.

9. The system of claim 8, further comprising a second latch comprising a second jaw with a second lock, the second jaw configured to be rotated between an engaged position and a disengaged position, wherein the second lock engages the first lock when the second jaw is in the engaged position.

10. The system of claim 9, wherein the second latch transfers weight to the housing through the first latch, the spacer ring, and the circular weight sensor, when the first latch and the second latch are in the engaged positions, and wherein the second lock transfers a rotational force applied to the second jaw through the first lock and to the portion of the housing, when the first latch and the second latch are in the engaged positions.

11. The system of claim 1, further comprising:

a first shaft disposed in the housing, with a first cam attached to one end of the first shaft and a first lever attached to an opposite end of the first shaft; and

a spacer ring at least partially surrounding a central axis of the central bore, the spacer ring having a first recess configured to receive the first cam,

wherein the first lever is configured to engage the first jaw when the first jaw is rotated to the engaged position.

12. The system of claim 11, wherein engagement of the first lever rotates the first cam into engagement with the first recess, such that removal of the spacer ring from the housing is prevented when the first jaw is in the engaged position.

13. The system of claim 1, further comprising a circular weight sensor surrounding the central bore, wherein a weight of the tubular is transferred to the circular weight sensor, which measures a pressure that is proportional to the weight of the tubular.

14. The system of claim 13, wherein the measured pressure is communicated to a controller that is configured to determine the weight of the tubular in response to the measured pressure.

15. The system of claim 13, wherein the circular weight sensor comprises:

a support ring;

an engagement ring slidably attached to the support ring;

a sealed chamber disposed between the support ring and the engagement ring;

a reservoir in pressure communication with the sealed chamber; and a pressure sensor in pressure communication with the reservoir.