CLAIMS

1. An apparatus comprising:

a crane having a hoisting line; and

an anti-two-block sensing device installed about the hoisting line, the anti-two-block sensing device including: an upper chandelier;

a lower trigger assembly suspended from the upper chandelier and configured to be actuated toward the upper chandelier, the lower trigger assembly including one or more target, the lower trigger assembly including two or more plates each having a hoisting line aperture and a slot that allows transverse installation of the plate about the hoisting line, wherein the two or more plates are positioned such that their slots are offset from one another and the two or more plates cooperate to fully surround the hoisting line; and

a detector positioned to sense the one or more target when the lower trigger assembly is not actuated toward the upper chandelier.

2. The apparatus of claim 1, wherein the lower trigger assembly is configured to move the one or more target away from the detector when the hoisting line is raised to a predetermined position, so that the detector does not sense the target when the hoisting line is raised at least to the predetermined position.

3. The apparatus of claim 1, wherein the upper chandelier includes upper and lower plates each having a hoisting line aperture and a slot that allows transverse installation of the plates about the hoisting line, wherein the upper and lower plates of the upper chandelier are positioned such that their slots are offset from one another and the upper and lower plates cooperate to fully surround the hoisting line.

4. The apparatus of claim 3, wherein at least one of the upper plate or lower plate of the upper chandelier includes a key received in the slot of the other of the upper plate or lower plate.

5. The apparatus of claim 1, wherein the two plates of the lower trigger assembly are fastened together and coupled to the upper chandelier via fasteners installed through the two plates.

6. The apparatus of claim 1, wherein the lower trigger assembly is suspended from the upper chandelier by a link positioning the one or more target within a sensing area of the detector.

7. The apparatus of claim 6, wherein the link is coupled to move with the lower trigger assembly relative to the upper chandelier such that the detector is able to detect movement of the lower trigger assembly through detection of movement of the target of the link out of the sensing area of the detector.

8. The apparatus of claim 1, wherein the anti-two-block sensing device includes a cap mounted on the upper chandelier, the cap comprising a plurality of interlocking shell segments.

9. The apparatus of claim 8, wherein the detector is installed in the cap.

10. The apparatus of claim 8, wherein the plurality of interlocking shell segments include two identical half shells.

11. The apparatus of claim 1, wherein the anti-two-block sensing device includes a cap mounted on the upper chandelier, the cap comprising a first half shell having a first male protrusion and a first female pocket and a second half shell having a second male protrusion and a second female pocket, the first female pocket shaped to receive the second male protrusion, the second female pocket shaped to receive the first male protrusion, the second half shell being identical to the first half shell.

12. An apparatus comprising:

an anti-two-block sensing device configured to be installed in a hoisting system to facilitate prevention of two-blocking in the hoisting system, the anti-two-block sensing device including:

a main body,

a trigger device movably coupled to the main body by a link, and

a proximity sensor positioned to detect a target coupled to move with the trigger device, wherein the anti-two-block sensing device is configured to sense the target when the trigger device is not actuated toward the main body, and configured to not sense the target when the trigger device is actuated toward the main body.

13. The apparatus of claim 12, wherein the anti-two-block sensing device includes an aperture for receiving a hoisting line of the hoisting system.

14. The apparatus of claim 12, comprising the hoisting system.

15. The apparatus of claim 14, wherein a hoisting line of the hoisting system extends through the anti-two-block sensing device, an actuator is coupled to the hoisting line, and the actuator and the trigger device are positioned so as to allow the actuator to contact and move the trigger device in a manner that causes the proximity sensor to detect movement of the target coupled to the trigger device.

16. The apparatus of claim 14, wherein the hoisting system includes a crane and the anti-two-block sensing device is suspended from a boom of the crane.

17. The apparatus of claim 12, wherein the anti-two-block sensing device is configured to detect an improper adjustment or malfunction of the proximity sensor in response to the proximity sensor not sensing the target when the trigger device is not actuated toward the main body.

18. A method comprising:

moving a hoisting line through an anti-two-block sensing device including a main body and a trigger suspended from the main body via a link;

continually sensing a target portion of the link with a proximity sensor of the anti-two-block sensing device while moving the hoisting line through the anti-two-block sensing device until the trigger is driven toward the main body so as to cause the target portion to move away from the proximity sensor;

determining that the proximity sensor does not sense the target portion of the link in response to the trigger being moved toward the main body; and

stopping movement of the hoisting line in response to determining that the proximity sensor does not sense the target portion of the link.

19. The method of claim 18, wherein continually sensing a target portion of the link with a proximity sensor of the anti-two-block sensing device includes continually sensing the target portion of the link with the proximity sensor positioned on an opposite side of the main body from the trigger.

20. The method of claim 18, wherein continually sensing a target portion of the link with a proximity sensor of the anti-two-block sensing device includes continually sensing the target portion of the link with the proximity sensor installed in a cap mounted on the main body.

21. The method of claim 18, wherein moving the hoisting line through the anti-two-block sensing device includes reeling in the hoisting line until an actuator coupled to the hoisting line drives the trigger toward the main body so as to cause the link to move upwardly with respect to the main body.

22. The method of claim 18, further comprising determining that an improper adjustment or malfunction of the anti-two-block sensing device has occurred in response to the proximity sensor not sensing the one or more target while the trigger is not actuated.

23. The method of claim 18, further comprising determining that an improper adjustment or malfunction has occurred in response to the proximity sensor sensing the one or more target while the trigger is actuated.