CLAIMS:

1. A safety apparatus for indicating nut looseness, the apparatus comprising:
   - a base having an outside and an inside;
   - a plurality of inwardly open nut caps rotatably coupled with the base and protruding on the outside of the base; and
   - a nut rotation indicator coupled with each nut cap and configured to rotate therewith,
   - each nut rotation indicator extending radially from its nut cap at the inside of the base;

characterised in that the apparatus includes:

   - a plurality of alert holes in the base and respectively positioned proximate to the nut caps, wherein a rotation of the nut cap causes a portion of the rotation indicator to become exposed through the alert hole and
   - a formation extending inwards of the base to limit rotation of the nut caps in nut loosening direction with the indicators exposed through the alert holes.

2. The safety apparatus of claim 1, wherein the base is made at least in part of a Nylon based material and/or of a material compatible with vacuum metallization and/or of a corrosion resistant material.

3. The safety apparatus of claim 1 or claim 2, wherein the nut cap is press fit with the base and configured to freely rotate within the base.

4. The safety apparatus of claim 1, claim 2 or claim 3, wherein at least a portion of the nut rotation indicator comprises a fluorescent indicator configured to be visible via alert hole.

5. The safety apparatus of any preceding claim, wherein the base is configured to seal substantially against a nut supporting surface of a device, preferably a wheel rim.

6. The safety apparatus of any preceding claim, wherein the nut cap comprises tapered internal splines and a rim at the inside of the base, the indicator extending radially from the rim.

7. The safety apparatus of any preceding claim, wherein the nut cap is configured to form a partial vacuum seal around the corresponding nut.

8. The safety apparatus of any preceding claim, wherein the formation comprises a first retention wall configured to restrict the rotation of the nut cap and the indicator, preferably by restricting rotational movement of the indicator.

9. The safety apparatus of any preceding claim, wherein the base comprises a circular-shaped base or a ring-shaped base further comprising a second retention wall interior relative to the first retention wall, preferably with the width of the ring-shaped base being at least 2 inches.

10. The safety apparatus of claim 9, wherein the ring-shaped base comprises a first stop near a midline of the base.

11. The safety apparatus of any preceding claim, including an electronic sensor for example a temperature sensor, a rotation counter, a balance monitor, an accelerometer a vibration monitor, a strain or stress gauge, a torque sensor, a torsion sensor, an RFID tag, a video camera or other sensor.

12. The safety apparatus of claim 11, where in the electronic sensor is comprised in a nut cap.

13. The safety apparatus of claim 11 or claim 12, including means for communicating digital nut data through a screen or speaker on the apparatus itself or at another location communicatively connected to the apparatus.

14. A safety apparatus for indicating nut looseness, the apparatus comprising:

- a base having a first wall, a retention wall, and a plurality of nut caps rotatably coupled therewith, each nut cap having a nut rotation indicator;

characterised in that:

- the base is ring shaped base has a plurality of alert holes , the alert holes being eccentric from the nut caps and the nut rotation indicators extending to the alert holes allowing at least a portion of each nut rotation indicator to be viewed through a corresponding alert hole and
- wherein the first and second walls are retention walls and the nut rotation indicators and one of the first and second retention walls are so arranged that the nut caps are stopped in the nut loosening direction by abutment of the indicators with the wall with the indicators visible through the alert holes.

15. The safety apparatus of claim 11, wherein the plurality of alert holes comprises at least four alert holes and preferably at least ten alert holes.

CLAIMS:

1. A safety apparatus comprising:
    - a base having a top portion and bottom portion;
    - a nut cap rotatably coupled with the base and protruding from the top portion of the base;
    - a nut rotation indicator coupled with the nut cap and configured to rotate with the nut cap, the nut rotation indicator positioned under the bottom portion of the base; and
    - an alert hole in the base and positioned proximate to the nut cap, wherein a rotation of the nut cap causes a portion of the rotation indicator to become exposed through the alert hole.

2. The safety apparatus of claim 1, wherein the base is made at least in part of a Nylon based material.

3. The safety apparatus of claim 1, wherein the base comprises a material compatible with vacuum metallization.

4. The safety apparatus of claim 1, wherein the base comprises of a corrosion resistant material.

5. The safety apparatus of claim 1, wherein the nut cap is press fit with the base and configured to freely rotate within the base.

6. The safety apparatus of claim 1, wherein at least a portion of the nut rotation indicator comprises a fluorescent indicator configured to be visible via alert hole.

7. The safety apparatus of claim 1, wherein the base is configured substantially seal against a nut supporting surface of a device.

8. The safety apparatus of claim 7 wherein the nut supporting surface comprises a wheel rim.

9. The safety apparatus of claim 1, wherein the nut cap comprises tapered internal splines.

10. The safety apparatus of claim 9, wherein the nut cap is configured to form a partial vacuum seal around the corresponding nut.

11. The safety apparatus of claim 1, wherein the base comprises a first retention wall configured to restrict the rotation of the nut cap.

12. The apparatus of claim 11, wherein the retention wall is configured to restrict rotational movement of the indicator.

13. The safety apparatus of claim 12, wherein the base comprises a circular-shaped base.

14. The safety apparatus of claim 13, wherein the base comprises a ring-shaped base further comprising a second retention wall interior relative to the first retention wall.

15. The safety apparatus of claim 14, wherein a width of the ring-shaped base is at least 2 inches.

16. The safety apparatus of claim 14, wherein the ring-shaped base comprises a first stop near a midline of the base.

17. A safety apparatus comprising:

- a ring-shaped base having a first retention wall, a second retention wall, and a plurality of alert holes;
- wherein each of the plurality of alert holes has a corresponding nut cap having a nut rotation indicator;
- wherein at least one nut cap is rotatably coupled with the ring-shaped base in a manner allowing at least a portion of its nut rotation indicator to be viewed through a corresponding alert hole.

18. The safety apparatus of claim 17, wherein the ring-shaped base comprises a material compatible with vacuum metallization.

19. The safety apparatus of claim 18, wherein the plurality of alert holes comprises at least four alert holes.

20. The safety apparatus of claim 18, wherein the plurality of alert holes comprises at least ten alert holes.

21. The safety apparatus of claim 18, wherein the nut rotation indicator is integral with the nut cap.