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CHECK DEVICE FOR HEAVY SPRINGS

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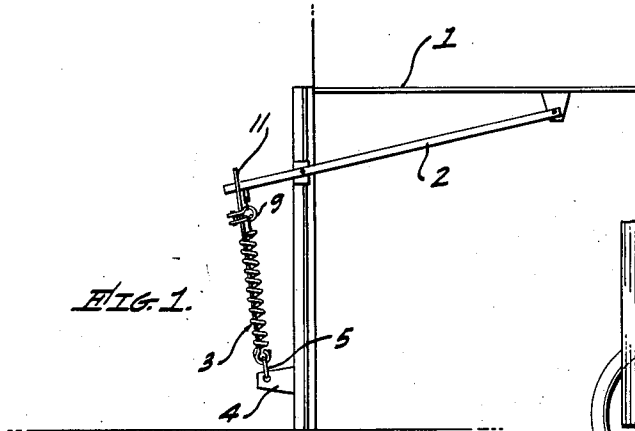


FIG. 1.

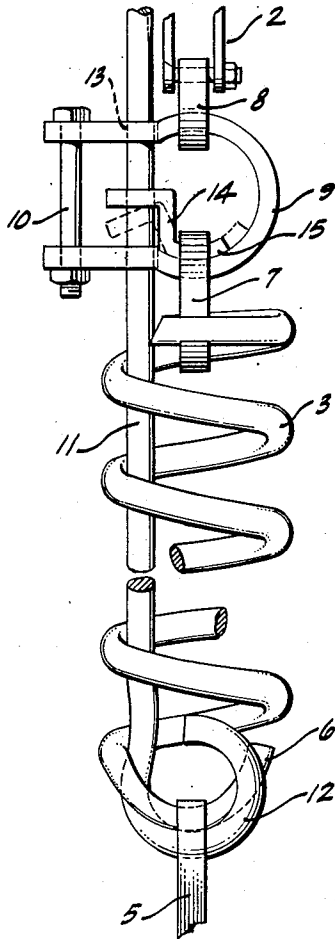


FIG. 2.

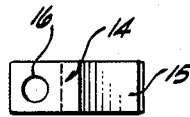


FIG. 4.

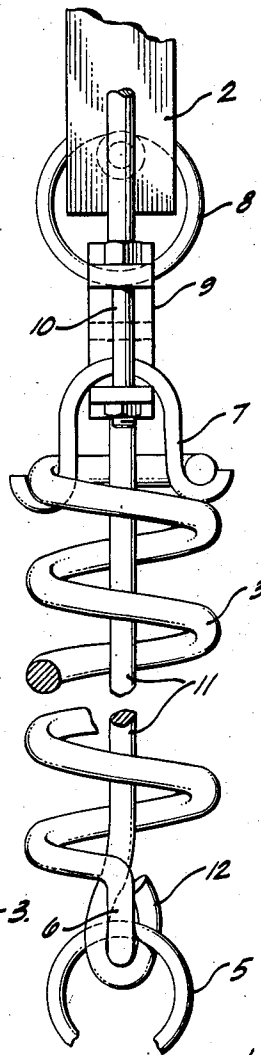


FIG. 3.

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CHECK DEVICE FOR HEAVY SPRINGS

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5 Claims. (Cl. 267-74)

This invention relates to a check device for heavy springs, such as the springs which support an overhead garage door.

An object of my invention is to provide a novel check device which will effectively support a structure to which a heavy spring is attached in event that the spring should accidentally break.

Another object of my invention is to provide a novel check device of the character stated, which will permit the free movement of the spring under normal operation, but will immediately support the load in event that the spring should accidentally break.

Another object of my invention is to provide a novel check device for heavy springs, including a latch mechanism, said latch mechanism being only operable to engage a rod in event that the spring should break.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a diagrammatic side elevation of an overhead door suspension.

Figure 2 is a side elevation of a spring suspension including my invention.

Figure 3 is a view taken at right angles to the view shown in Figure 2.

Figure 4 is a top plan view of the tiltable check latch.

Referring more particularly to the drawing, the numeral 1 indicates an overhead door of the type used on garages and is one place where my invention can be used. The door 1 is supported on a lever 2 which is suitably pivotally attached at one end to the door and at the other end to the framework of the door. A coil spring 3 is secured at one end to a mounting plate 4 which is suitably attached to the door framework, or the like. A ring 5 is attached to the plate 4 and the lower end of the spring 3 is formed with a loop 6 to engage the ring 5. The upper end of the spring 3 is attached to a coupling 7 and this coupling or saddle serves as a means of connecting or attaching the upper end of the spring to the end of the lever 2. A ring 8 is attached to the lever 2 and the connection between the saddle 7 and the ring 8 is accomplished as follows:

A clamp fitting 9 engages both the saddle 7 and the ring 8. The ends of the clamp are preferably connected by a bolt 10. This construction is used in order to easily connect the saddle 7 and the ring 8. One end of the clamp 9 is arcuate as shown, for a purpose to be further described. A rod 11 extends through the entire length of the spring 3 and is substantially longer than the spring. The lower end of the rod is formed as an eye 12 and extends through the ring 5, as shown. The clamp 9 is provided with holes 13 therethrough and the rod 11 extends through these holes. The rod 11 is freely slidable through the holes 13 and, therefore, moves freely with the spring 3, as this spring elongates or contracts. A tiltable check latch 14 is positioned in the clamp 9 and the foot 15 thereof is curved so as to fit in the

curved position of the clamp 9. The saddle 7 bears against the foot 15 and normally holds the check latch in the position shown in full lines in Figure 2. A hole 16 is formed in the latch 14 and this hole is somewhat larger in diameter than the diameter of the rod 11. Thus the rod is freely movable through the latch 14 except when the latch 14 is tilted, and in this event it engages the rod 11 and holds the rod against longitudinal movement through the clamp 9. If the spring 3 should break, weight is taken off of the saddle 7 and the latch 14 would then be free to tilt. This tilting would occur because of the movement of the rod 11 through the latch 14 caused by the door 1 falling, due to the breaking of the spring 3. The moment that the latch 14 starts to tilt it would tightly grip the rod 11 and prevent it from moving longitudinally, which would immediately hold the door from further downward movement, due to the fact that the eye 12 of the rod 11 is attached to ring 5 which is secured to the frame of the door.

While I have only shown one form of tiltable check latch 14, it is evident that other shapes or styles of check latches could be employed which would engage the rod 11 and prevent sliding movement of the rod through the clamp 9 if the spring 3 should break.

Having described my invention, I claim:

1. In a check device for springs, the combination of a spring, means attaching one end of the spring to a fixed element, a movable object, means securing the other end of the spring to the movable object, said last named means including a clamp, means securing one end of the spring to the clamp, a rod, means securing said rod to said one end of the spring, the other end of said rod being slidably mounted in said clamp, tiltable latch means engaging said rod at the end adjacent said clamp, said latch means being engaged by the spring securing means to hold the latch means in nontilting position and allow sliding movement of the rod.

2. In a check device for springs, the combination of a spring, means attaching one end of the spring to a fixed element, a movable object, means securing the other end of the spring to the movable object, said last named means including a clamp, means securing one end of the spring to the clamp, a rod, means securing said rod to said one end of the spring, the other end of said rod being slidably mounted in said clamp, a tiltable check latch positioned in said clamp, said latch having a hole therein through which the rod extends, the spring securing means resting on the latch to hold said latch in nontilting position and allowing sliding movement of the rod through the latch.

3. In a check device for springs, the combination of a spring, means attaching one end of the spring to a fixed element, a movable object, a clamp, a saddle on the other end of the spring, said saddle resting in the clamp, means attaching the clamp to the movable object, a rod, means securing said rod to said one end of the spring, the other end of said rod being slidably mounted in said clamp, a tiltable latch resting in said clamp, said saddle bearing on the tiltable latch to hold said latch in nontilting position, said latch having a hole therein through which the rod extends.

4. In a check device for springs, the combination of a coil spring, means attaching one end of the spring to a fixed element, a movable object, a clamp, means securing said clamp to the movable object, a rod, said rod being positioned within the coil spring, means securing one end of the rod to the fixed end of the spring, said clamp having holes therein through which said rod extends, a tiltable latch means engaging the rod at the end adjacent said clamp, said latch means being connected to the other end of the spring to hold the latch means in nontilting position and allow sliding movement of the rod.

3

5. In a check device for springs, the combination of a coil spring, means attaching one end of the spring to a fixed element, a movable object, a clamp, means securing said clamp to the movable object, a rod, said rod being positioned within the coil spring, means securing one end of the rod to the fixed end of the spring, said clamp having holes therein through which said rod extends, a tiltable latch resting in said clamp, said latch engaging the rod, and the other end of said spring being connected to the latch to hold the latch in nontilting position and allow sliding movement of the rod. 10

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