

Title (en)
Controlled blocking apparatus of a spring and method thereof

Title (de)
Kontrollierte Sperrvorrichtung einer Feder und Verfahren zu deren.

Title (fr)
Dispositif et procédé de blocage à hauteur contrôlée d'un ressort

Publication
EP 2644714 A1 20131002 (FR)

Application
EP 13161444 A 20130327

Priority
FR 1252958 A 20120330

Abstract (en)
The device comprises a first support (11) configured to hold a first end of a spring (2), a second support (12) configured to hold a second end of the spring, and insertable rests inserted between certain turns of the spring during compression of the spring, where the device compresses the spring and controls its shape during compression. The first and second supports move relative to each other. Each insertable rest is a paddle in a form of a truncated ring or a truncated disk (14), where the truncation allows a turn of the spring to pass through the paddle, and the paddle is helical. The device comprises a first support (11) configured to hold a first end of a spring (2), a second support (12) configured to hold a second end of the spring, and insertable rests inserted between certain turns of the spring during compression of the spring, where the device compresses the spring and controls its shape during compression. The first and second supports move relative to each other. Each insertable rest is a paddle in a form of a truncated ring or a truncated disk (14), where the truncation allows a turn of the spring to pass through the paddle, and the paddle is helical. Each insertable rest is in the form of a star having three branches for co-operating with the spring at three points, and possesses a wedge-shaped profile in which a thickness variation is adjusted to impose curvature on an axis of the spring. Each insertable rest is mounted on a carriage configured to enable the insertable rests to follow the movement of the turns of the spring during compression of the spring. Each carriage co-operates with a stop configured to define an initial position for the carriage. The stop is adjustable to adjust the initial position of the carriage. Each carriage co-operates with a return spring configured to return the carriage towards its initial position. The first support is stationary while the second support is movable and is configured to move towards the first support during the compression. The device further comprises a gripper unit (50) configured to take hold of the spring and to convey it, where the gripper unit is a clamp. An independent claim is included for a controlled setting method for setting a coil spring.

Abstract (fr)
Dispositif et procédé de blocage contrôlé d'un ressort à spire, permettant de bloquer de manière contrôlée un ressort à spire avec une longueur de compression choisie, notamment lorsqu'une compression à spires jointives n'est pas favorable. Selon l'invention, ce dispositif comprend un premier support (11) configuré pour maintenir la première extrémité (2e) du ressort (2) et un deuxième support (12) configuré pour maintenir la deuxième extrémité (2e) du ressort (2), les premier et deuxième supports (11, 12) étant configurés pour se déplacer relativement l'un par rapport à l'autre ; ce dispositif comprenant en outre au moins un appui intercalaire (40) configuré pour s'intercaler entre certaines spires (2s) du ressort (2) lors de la compression.

IPC 8 full level
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Citation (search report)

- [A] EP 0404674 A1 19901227 - ALLEVARD IND SA [FR]
- [A] US 2010283193 A1 20101111 - HUANG CHIA HAO [TW]
- [A] US 2004183243 A1 20040923 - CHEN YEN-MING [TW], et al
- [A] DE 19751215 C1 19981210 - PORSCHE AG [DE]

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