(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 743 155 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
18.06.2014 Bulletin 2014/25

(51) Int Cl.:
B61L 5/10 *(2006.01)*

(21) Application number: **13466034.9**

(22) Date of filing: **10.12.2013**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **13.12.2012 CZ 201227171 U**

(71) Applicant: **DT-Vyhybkárna a strojírna, a.s.**
797 11 Prostejov (CZ)

(72) Inventor: **Bayer, Petr**
798 14 Olsany u Prostejova (CZ)

(74) Representative: **Holasova, Hana**
Krizova 4
CZ-603 00 Brno (CZ)

(54) **Double-sided stabilizer for movable frog**

(57) Double-sided stabilizer, where is used a double-reversing joint spring mechanism (5) with its hinge (8) of the central joints (7) to be movably connected - so as to reach the pressure - with the toe (2) of the frog (1) or tongues (3, 3') of the switch (4).

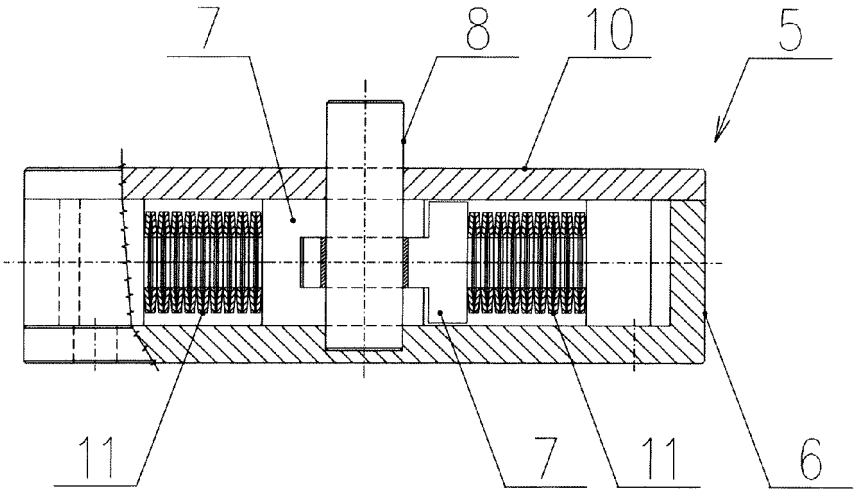

Fig. 1

EP 2 743 155 A2

Description

Technical Field

[0001] The technical solution concerns the double-sided stabilizer designed for creeping the toe of the frog or tongues of the switch of end positions.

Contemporary State of the Art

[0002] The currently known and used devices for pushing the toes of frogs or tongues of switches usually contain one spring, stabilizing only one end position of the toe or tongue. But the power characteristics of the single-spring pushing devices is less suitable, as when moving the toe or the tongue it is necessary to overcome higher resistance power that the proper functional creeping power. Another known and used type of creeping devices is the double-acting creeper designed for assemblage to the cross-ties. But due to its large dimensions and weight, the creeper can be used only for creeping of the tongues of switches. More, additional assemblage on switch structures is nearly impossible.

Technical Solution Base

[0003] The task of the technical solution is to create a double-sided stabilizer for creeping the toes of frogs and tongues of the switch to end positions that would eliminate to the maximal possible extent the disadvantages of the technical solution and that would allow assemblage directly on the frog or stock rail and transfer of power to the toe of the frog or tongues of the switch without necessity of current structures adjustments. This can be reached by a double-sided stabilizer according to this technical solution, based mainly on the fact that there is used a double-reversing joint spring mechanism, the central joints bolt is - after reaching the pressure - movably connected with the toe of the frog or tongue of the switch.

[0004] In consideration of simple assemblage it is advantageous for the case of the double-reversing joint spring mechanism to be placed on a beam, fixed by clamp joints to the footings of wing rails and its central joint is inserted to the hole of the tenon, to the recession of which fits the footing of the frog toe.

[0005] Due to the same reason it is advantageous when the case of the double-reversing joint spring mechanism is fixed by a clamp joint to the footing of the stock rail and the central joint bolt is connected via a pulley and a clamp joint with the footing of one tongue and via a rod connected on one side by a joint with the body of the clamp joint of one tongue and on the other side with a screw joint to the body of the clamp joint of the other tongue footing.

Drawings Description in Brief

[0006] Other advantages can be seen from the description of samples shown in enclosed drawings, where Fig. 1 shows cross section and Fig. 2 shows a ground plan of the double-reversing joint spring mechanism, Fig. 3 shows a cross section of the railway frog equipped with a double-sided stabilizer for stabilization of end positions of the movable toe, Fig. 4 shows a cross section of the railway switch equipped with a double-sided stabilizer of end positions of the tongue and Fig. 5 shows a ground plan view according to Fig. 4 without rails.

Technical Solution Sample Description

[0007] As it can be seen in Fig. 1, 2 and 3, as the stabilizer of end positions of the toe 2 of the frog 1 or tongues 3, 3' of the switch 4 there is used a double-reversing joint spring mechanism 5 containing a pair of central joints 7 in a case 6 placed on a common hinge 8 passing through a prolonged hole 9 in the cover 10. Springs 11 fall back on joints 7 and they are placed on swinging rests 12 placed in the case 6 on opposite sides of the prolonged hole 9.

[0008] The case 6 is detachably placed at the frog 1 on the beam 13 fixed in the ends to the footings 14 of wing rails 15 using clamp joints 16 equipped with regulation screws 17. The hinge 8 passes through the cover 10 and it is movably connected with the toe 2 of the frog 1 using the hole 31 in the tenon 18, to the recession 19 of which fits the footing 20 of the toe 2 of the frog u, as can be seen in Fig. 3.

[0009] In version for control of tongues 3 of the switch 4 according to Fig. 4 and 5, the double-reversing joint spring mechanism 5 with the case 6 is connected using the clamp joint 21 on the stock rail 22 and hinge 8 of central joints 7 is connected using a pulley 23 and the body with the clamping joint 24 with the footing of one tongue 3, using the joint 27 and rod 29 and the body with the clamping joint 28 with the footing of the second tongue 3' in such a way that one body with the clamping joint 24 is connected to the pulley 23 using an adjustable screw connection 26 and the other body with the clamping joint 28 is connected to the rod 29 by an adjustable screw connection 30.

[0010] When shifting the switch, the hinge 8 of the central joints 7 is drifted by the toe 2 of the frog 1 from one end position A to the other end position B via the neutral position. In the course of the movement, the springs 11 are maximally pushed in neutral position and after passing the neutral position, the springs 11 creep the toe 2 of the frog 1 up to the other end position. Analogically, tongues 3, 3' of the switch 4 are displaced.

Industrial Applicability

[0011] The technical solution can be used in railway and city rail transport.

Claims

1. Double-sided stabilizer, **characterised by** the fact that there is used a double-reversing joint spring mechanism (5) with its hinge (8) of the central joints (7) to be movably connected - so as to reach the pressure - with the toe (2) of the frog (1) or tongues (3, 3 ') of the switch (4).

2. Double-sided stabilizer according to claim 1, **characterised by** the fact that the case (6) of the double-reversing joint spring mechanism (5) is placed on the beam (13) fixed by clamping joints (16) to the footings (14) of wing rails (15) and the central joint (7) is inserted into the hole (31) of the tenon (18), to the recession (19) of which fits the footing (20) of the toe (2) of the frog (1).

3. Double-sided stabilizer according to claim 1, **characterised by** the fact that the case (6) of the double-reversing joint spring mechanism (5) is fixed by a clamping joint (21) to the footing of the stock rail (22) and the hinge (8) of the central joint (7) is connected via the pulley (23) and the clamping joint (24) with the footing of one tongue (3) and via rod (29) it is connected on one end by the joint (27) with the body of the clamping joint (24) and on the other end with a screw joint (30) with the clamping joint (28) of the footing of the second tongue (3').

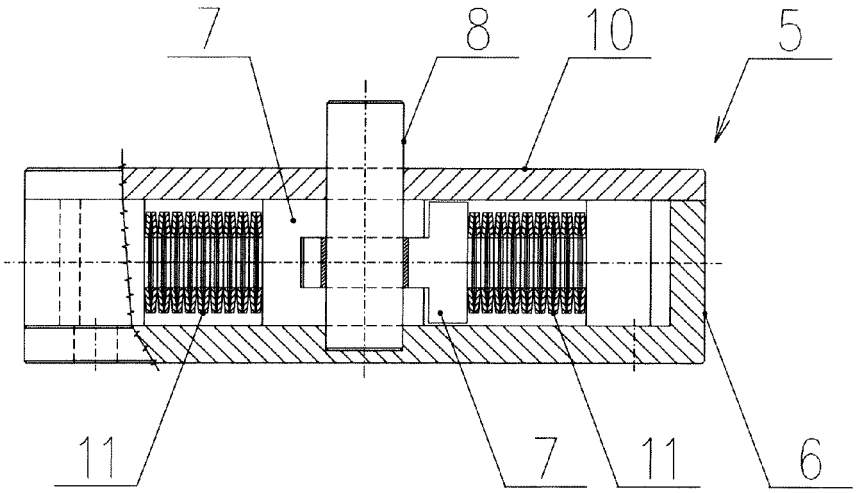
7
8
10
5
11
7
11
6

Fig. 1

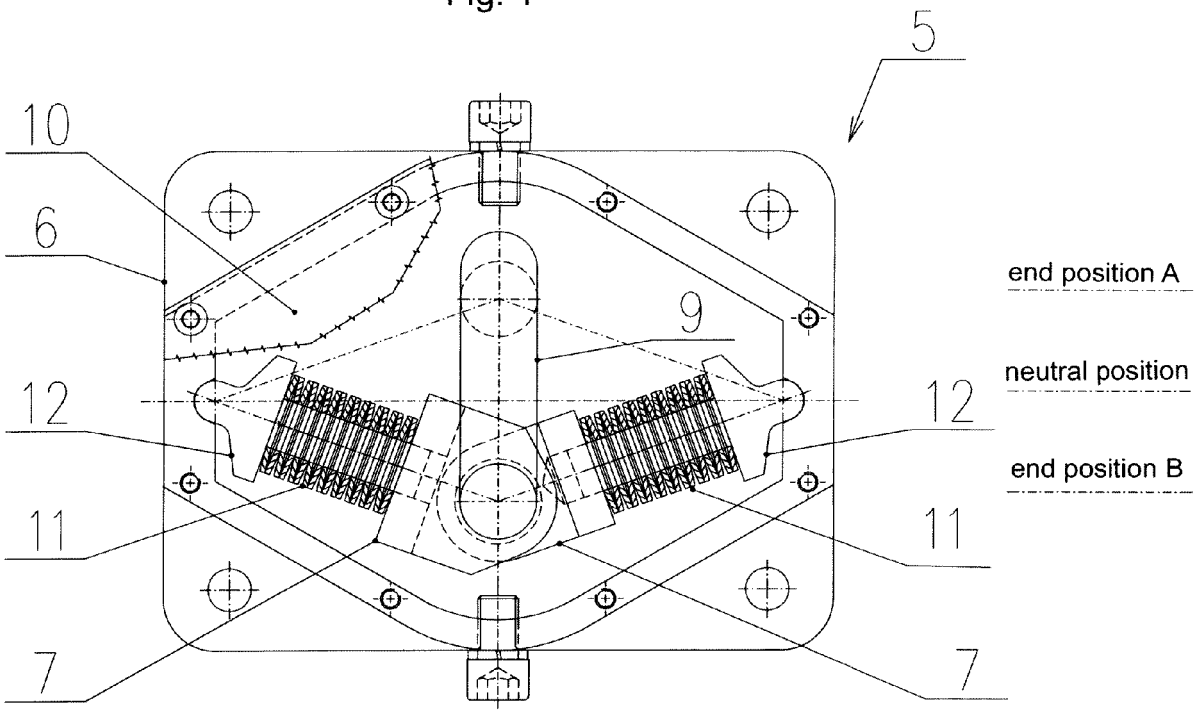
5
10
6
9
12
12
11
11
7
7
end position A
neutral position
end position B

Fig. 2

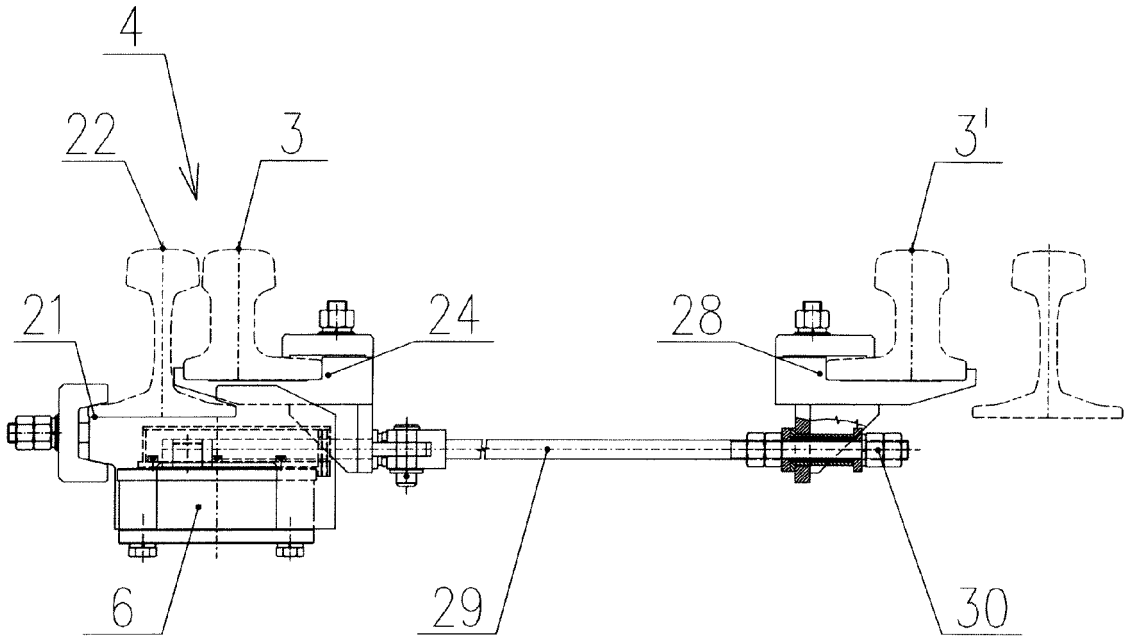

Fig. 4

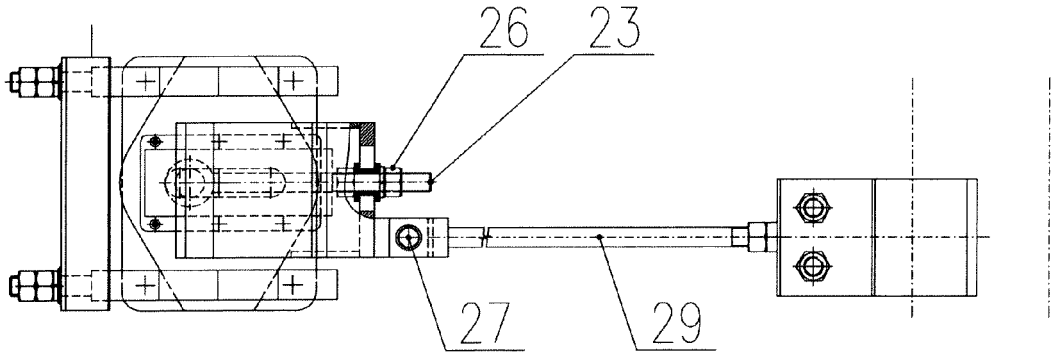

Fig. 5

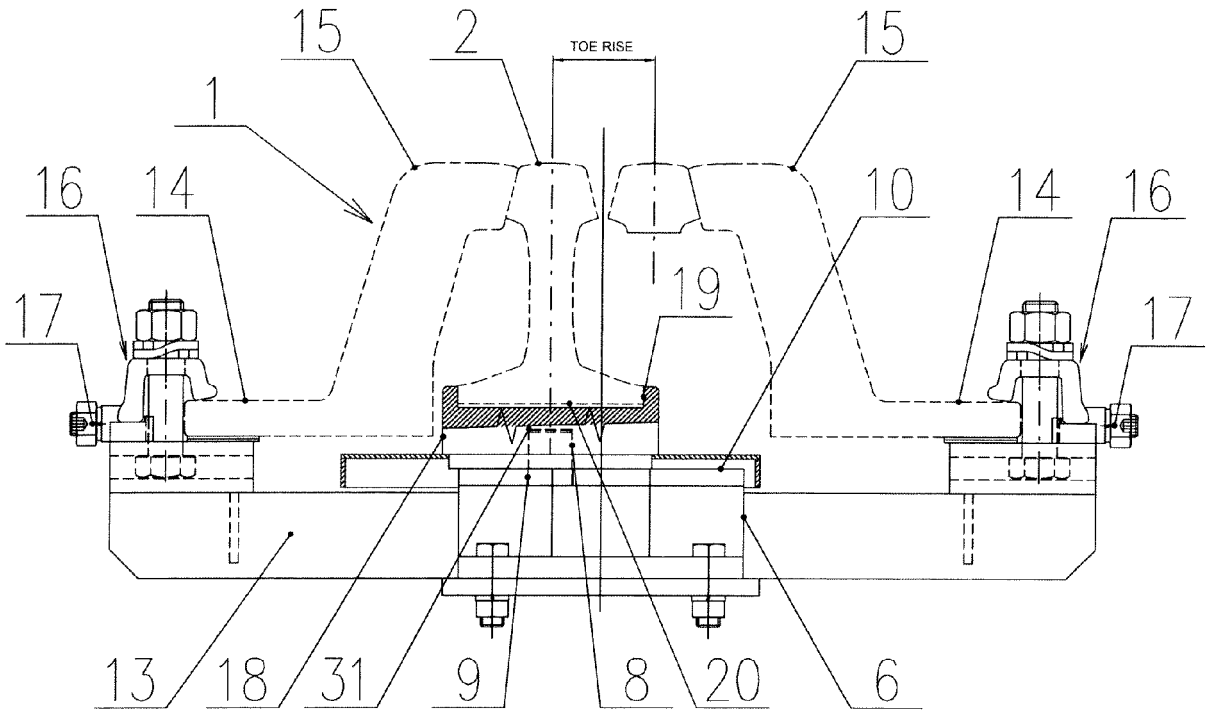

Fig. 3