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5 The invention relates to an overload test device for conveyor cars on a track-bound small conveyor system, according to the preamble of claim 1.

10 Especially with small conveyor systems, there is the problem that conveyor cars may be overloaded, resulting, on the one hand, in damage to the conveyor system, and on the other hand, in disturbances of the conveying operation. An overload test device of the above kind is known from DE-PS 590 880, in which, the rail section adjoining a rail track, is pivotably mounted at right angles to the direction of the rail, and supported on the other side on a spring means. This construction has the disadvantage that, when the conveyor car is more heavily loaded, the end portion of the rail section supported on the spring means forms a vertical step with the adjoining rail track, thereby endangering the operational safety of the conveyor.

15 Furthermore, the result of the weighing is greatly affected by the stopping position of the conveyor car on the rail section and therefore by the spacing thereof from the spring means, so that there is no certainty that the measured results are correct.

20 The invention has the object of providing an overload test device of the above kind which is able to overcome the above disadvantages.

25 According to the invention, the object is achieved by the characterising features of claim 1, since the operation of the small conveyor is least affected by the spring deflection of the rail section and the weighing result is not dependent on the stopping position.

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35 With help of the overload test device it is possible to determine the load of a conveyor car, and the overload test device may be constructed such that it stops the operation when the conveyor truck is overloaded or even prevents the conveyor car from

starting to move. Such an overload test device is suitably arranged at a station at which the conveyor car is loaded. However, it is also possible to arrange such an overload test device either individually or
5 additionally in the path of a small conveyor system. It is of advantage here that the overload test device is very effective without requiring a large spring deflection so that the operation of the small conveyor system is not affected or only slightly by the
10 installation of the overload test device.

Advantageous embodiments of the overload test device are described in claims 2 to 6.

The spring means may be constructed in many different ways. It may contain helical springs, torsion
15 springs or the like and a construction according to claim 2 is of particular advantage. In the construction according to claim 3, the use of a leaf spring allows a particularly simple electrical detection of the spring deflection. The electrical data can then be evaluated
20 for measuring and/or switching purposes.

A further construction, according to claim 4, is of special advantage. Here, the displacement path or spring deflection of the rail section may be kept especially small while providing a larger circuit path
25 for evaluation. A particularly simple and operationally safe solution is cited in claim 5.

The overload test device may, for example, simply be used for measuring purposes, in order to load a conveyor car with a certain amount of a material. In a
30 construction as cited in claim 6, its preferred object, however, is to prevent a conveyor car from moving off when overloaded.

Embodiments of the subject of the invention are described more fully hereinafter with reference to the
35 drawings, in which are shown:

Figure 1 a railtrack in section, with an overload test device in plan view;

Figure 2 the railtrack as shown in Figure 1, in side view;

5 Figure 3 the overload test device in section along III-III as shown in Figure 2;

Figure 4 the overload test device as shown in Figure 2, in section along IV-IV.

10 The overload test device has a rail section 2 which is arranged between the rail portions 4, 6 of a rail track. The rail section is connected via hinges 10 on a longitudinal side 8 to a fixed support means 12. In the examples shown, the support means 12 has a longitudinal
15 carrier 14 which extends over the entire length of the overload test device and to which transverse supports 16 are secured, each of which carry a rail portion 4, 6 of the rail track, via blocks 18. The blocks 18 also serve to arrange bolts 20 of the hinges 10.

20 The rail section 2, which is movably mounted via hinges 10, has a length which is greater than the wheel base of a conveyor car (not shown) of the small conveyor system. On the freely movable longitudinal side 22, the rail section 2 is supported on a leaf spring 26 of a
25 spring means 27, by means of a support member 24. At the end 28 remote from the supporting end, the leaf spring 26 is fixedly connected to the support means 12. For this, the latter also has a transverse support 30 and a hollow bearing block 32. At the free end 34 the
30 spring deflection F_1 is delimited by a stop 36 secured to the transverse support 30. In order to increase the small spring deflection F_1 of e.g. 1 mm to a value which can be determined more easily, a transmission device 38 is provided which consists of an arm 42 that is mounted
35 on the stop 36, via a hinge 40, and engages in the hollow bearing block 32, by means of its free end. The arm 42 is connected to the leaf spring 26 via an

adjustable coupling member 44, and increases the spring deflection F_1 at the free end of the arm 42, for example five times to a spring deflection F_2 . If an overloaded conveyor truck happens to be on the rail section with
5 the overload test device, the arm 42 actuates a switching member 46 of an indicating and/or switching device 48 which stops the overloaded conveyor truck from moving off.

Many other embodiments of the overload test device
10 are possible. Instead of the leaf spring there may, for example, be a further pivotable arm which may be supported on the stop 36 via a leaf spring. A construction is also feasible in which instead of using the leaf spring or helical spring, the bolts 20 of the
15 hinges 10 are in the form of torsion rods, the torsional moment of which can be evaluated for the overload test. Instead of using switch 8, a wire strain gauge, may, for example, be bonded to the leaf spring 26, whose flexure-dependent resistance may be evaluated in a corresponding
20 indicating and/or switching device.



Claims

1. An overload test device for conveyor cars on a track-bound small conveyor system, in which, in the rail track, a rail section (2), whose length is greater than the wheel base of a conveyor car, is pivotably connected on one side (8) to a fixed support device (12), and on the other side (22) is freely movable and supported on a spring means (27) which is connected to an indicating and/or switching device (48), characterised in that the rail section (2) is pivotably mounted on a longitudinal side (8), said rail section preferably being connected to adjoining rail portions (4, 6).
2. An overload test device according to claim 1, characterised in that the spring means (27) has a leaf spring (26) which is held at one end.
3. An overload test device according to claim 2, characterised in that the indicating and/or switching device (48) has at least one wire strain gauge connected to the leaf spring (26).
4. An overload test device according to one of claims 1 to 2, characterised in that the spring means (27) has a transmission device (38) for increasing the spring deflection (F_1).
5. An overload test device according to claim 4, characterised in that the leaf spring (26) is connected to an arm (42) which is mounted at one end thereof, via a coupling member (44), which is preferably adjustable, the free end (44) of said arm cooperating with a switching member (46) of an indicating and/or switching device (48).
6. An overload test device according to one of claims 1 to 5, characterised in that it is arranged at a stopping station and prevents a conveyor car from



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departing when overloaded.