

(19)



(11)

EP 3 626 575 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
25.03.2020 Bulletin 2020/13

(51) Int Cl.:
B61L 5/02 ^(2006.01) **B61L 5/10** ^(2006.01)
E01B 7/02 ^(2006.01)

(21) Application number: **19199072.0**

(22) Date of filing: **23.09.2019**

(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
Designated Validation States:
KH MA MD TN

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(30) Priority: **24.09.2018 CZ 20180501**

(54) RAIL SWITCH WITH BLADE AND LUG FIXED TO THE BLADE

(57) The invention concerns the rail switch with blade (1) and lug (2), where the lug (2) is manufactured as a separate part connected to the blade (1) of rail switches with screws (3), wherein the upper part of the lug (2) is equipped with a milled mechanical lock to be placed on

the body of the blade (1) and the lug (2) is equipped with a hole to grip the corresponding drive rod. To grip drive rods, in the horizontal version the lugs (2) are equipped with extra holes for plugs, whereas in the vertical version the lugs (2) are equipped with cross grooves.

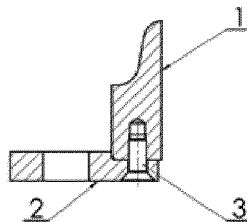


Fig. 4

EP 3 626 575 A1

Description

Field of the invention

[0001] This invention concerns the rail switch, especially lugs of the switch blade. Rail switches are used for track development, the traffic direction is given by the blade operated with driving rods connected to blade lugs that transfer the tensile force from the drive rod to the blade.

Background of the Invention

[0002] Nowadays lugs for blades of rail switches are either manufactured as individual parts that are welded on the blade or they are components of semi-finished blades.

[0003] One important disadvantage of these methods is longer time required by both welding and semi-finished blades processing.

[0004] The most serious disadvantages are especially thermal alternation of the basic blade material during the necessary pre-heating, thermal shape alternation, longer assembly time, more extensive straightening, need of high-quality welds and their subsequent 100% quality check.

[0005] The lug as a component of the semi-finished blade has several disadvantages, e.g. need of bigger semi-finished plates, uneven surface, more complicated fastening and machining, longer machining time, sometimes also twisting during jig machining and subsequent jig straightening.

Summary of the invention

[0006] The summary of this invention is to make the lug for blades of rail switches to be manufactured as a separate part. This part has two lugs and a central stringer or a lug for the main drive rod and shoulder aligned with the blade at the control drive rod. The main advantage of this solution is its possibility to be used in both horizontal and vertical position according to the rail switch parameters. In addition to this, the horizontal version needs holes for plugs to grip driver rods, whereas the vertical version requires cross grooves. There is a milled mechanical lock at the upper side of the lug. The lugs have holes to grip screws to the blade. The surfaces fitting to the blade have a small clearance for centering with screws. The central stringer is plugged behind the lunge web - forms the mechanical lock. There is a hole in each lug to grip the corresponding drive rod. One advantage is that the lug can be manufactured from any economically suitable material with appropriate strength. The separation of the lug production decreases costs for the semi-finished steel blade. The lug can be disassembled, so you can change just the worn or damaged lugs and blades. A simple arrangement for gripping drive rods according to the customer needs is another advantage. The

assembly and disassembly is very easy. Due to the mechanical lock you do not have to check screw joints.

Brief description of the drawings

[0007] The screwed lug of the blade for the rail switch (as described in this technical solution) will be disclosed at the specific application using the attached drawing, where the Fig. 1 stands for the right side view, the Fig. 2 for the ground plan, the Fig. 3 for the left side view, the Fig. 4 for the section through plane A-A and the Fig. 5 for the section through plane B-B.

Description of the Preferred Embodiments

[0008] One possible application of this invention is the part that consists of two lugs 2 and a central stringer or a lug 2 for the main drive rod and shoulder aligned with the blade 1 at the control drive rod.

[0009] In addition to this, the horizontal version needs holes for plugs to grip driver rods, whereas the vertical version requires cross grooves. There is a milled mechanical lock at the upper side of the lug 2. The lugs 2 have holes to grip screws 3 to the blade 1. The surfaces fitting to the blade 1 have a small clearance for centering with screws 3. The central stringer is plugged behind the blade web 1-forms the mechanical lock. There is a hole in each lug 2 to grip the corresponding drive rod. One advantage is that the lug 2 can be manufactured from any economically suitable material with appropriate strength. The separation of the lug 2 production decreases costs for the semi-finished steel blade 1. The lug 2 can be disassembled, so you can change just the worn or damaged lugs 2 and blades 1.

[0010] A simple arrangement for gripping drive rods according to the customer needs is another advantage. The assembly and disassembly is very easy. Due to the mechanical lock you do not have to check screw joints.

[0011] The solution with mounted lug 2 can be used e.g. for replaceable blades 1 from abrasion-resistant materials. In that case lugs 2 are made of common steel.

Industrial Applicability

[0012] The technical solution will be used in railway transport, especially at switches with a big number of movements, where the material wears away rapidly.

Claims

1. A rail switch with blade and lug **characterized in that** a lug (2) is manufactured as a separated part connected to a blade (1) of rail switches with screws (3), wherein an upper part of the lug (2) is equipped with a milled mechanical lock to be placed on the body of the blade (1) and the lug (2) is equipped with a hole to grip the corresponding drive rod.

2. The rail switch according to the claim 1 **characterized in that** in the horizontal version the lugs (2) are equipped with extra holes for plugs to grip drive rods.
3. The rail switch according to the claim 1 **characterized in that** in the vertical version the lugs (2) are equipped with cross grooves to grip drive rods.
4. The rail switch according to any preceding claim **characterized in that** surfaces of the lug (2) fitting to the blade (1) have a minimal clearance for centering with screws (3).

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Fig. 1



Fig. 2

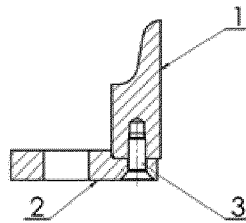


Fig. 4



Fig. 5

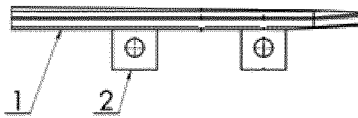


Fig. 3



EUROPEAN SEARCH REPORT

Application Number
EP 19 19 9072

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 13 February 2020	Examiner Massalski, Matthias
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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The members are as contained in the European Patent Office EDP file on
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