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(54) Benævnelse: **MANUEL UNDERSTOPPER**

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AT-B- 239 296
CN-A- 1 600 991
CN-A- 101 173 491

Description

The invention relates to a hand tamper for tamping ballast of a track, consisting of a drive motor having hand grips, and a tamping tine barrel which adjoins the drive motor and is equipped with a tamping plate, wherein an imbalance shaft rotatable by the drive motor and connected to an imbalance is mounted in the tamping tine barrel, and wherein a vibration decoupling is arranged between the drive motor and the tamping tine barrel.

A hand tamper of this type is already known according to AT 239 296. By distancing the imbalance from the drive motor or from the hand grips, it was attempted to minimize the effects of the vibration on the operator.

From CN 1600991 A and CN 101173491 A, hand tampers are known which have a vibration decoupling arranged between the drive motor and the tamping tine barrel in each case.

It is the object of the present invention to provide a hand tamper of the kind mentioned at the beginning with which a further reduction of vibrations in the region of the hand grips can be attained.

According to the invention, this object is achieved with a hand tamper of the specified type in that the imbalance shaft is formed of a lower shaft part connected to the imbalance and an upper shaft part connected to a drive shaft, wherein both shaft parts are connected to one another by a vibration damper while forming a common rotation axis.

As a consequence of such a vibration decoupling, in connection with an imbalance spaced from the drive motor, it is possible to significantly reduce a transfer of the vibrations - necessary for the compaction of the ballast - to the hand grips. This results in a significant decrease of strain and fatigue for the operator without impairing the tamping

quality.

Additional advantages of the invention become apparent from the dependent claims and the drawing description.

The invention will be described in more detail below with reference to an embodiment represented in the drawing in which

Fig. 1 is a view of a hand tamper, and Fig. 2 is a cross-section of a vibration decoupling.

A hand tamper 1 visible in Fig. 1 consists essentially of a drive motor 3, connected to hand grips 2, and - adjoining the former - a tamping tine barrel 4 which is connected at a lower end 5 to a tamping plate 6. Mounted inside the tamping tine barrel 4 is an imbalance shaft 8 which is rotatable about a rotation axis 7 by means of the drive motor 3. In the region of the lower end 5 of the tamping tine barrel 4, the imbalance shaft 8 is connected to an imbalance 9 for producing tamping vibrations required for the ballast compaction.

A vibration decoupling 14 is provided between the drive motor 3 and an upper end 10 of the tamping tine barrel 4 lying opposite the tamping plate 6. To that end, the tamping tine barrel 4 has barrel fixing elements 12 at the upper end 10, and the drive motor 3 has motor fixing elements 12. The latter are connected to the barrel fixing elements 11 solely by means of vibration dampers 13.

The hand grip 2 is connected via further vibration dampers 15 to the motor fixing elements 12 as well as to operating devices 16 for controlling the drive motor 3.

As can be seen in Fig. 2, the imbalance shaft 8 is formed of a lower shaft part 17, connected to the imbalance 9, and an upper shaft part 19 connected to a drive shaft 18 of a gearbox or of the drive motor 3. Both shaft parts 17, 19 are connected to one another by a vibration damper 20 while forming a common

rotation axis 7.

Provided between the upper shaft part 19 and the drive shaft 18 is a second vibration damper 22. This is positioned in a damping plane 21 formed by the vibration decoupling 14 and extending perpendicularly to the rotation axis 7. Both vibration dampers 20, 22 are configured as elastic couplings of known design.

In an alternative embodiment, however, it would also be possible to provide a universal joint in place of the two vibration dampers 20, 22, respectively.

Patentkrav

1. Manuel understopper til understopning af ballast til et spor, bestående af en drivmotor (3), der har et håndtag (2), og et sig dertil sluttende stophakkerør (4), der er udstyret med en stopplade (6), i hvilken der er lejret en ubalanceret aksel (8), der kan roteres ved hjælp af drivmotoren (3) og er forbundet med en ubalance (9), hvor der mellem drivmotoren (3) og stophakkerøret (4) er anbragt en svingningsafkobling (14), kendetegnet ved, at den ubalancerede aksel (8) er dannet af en nedre akseldel (17), der er forbundet med ubalancen (9), og en øvre akseldel (19), der er forbundet med en drivaksel (18), hvor begge akseldele (17, 19) under dannelse af en fælles rotationsakse (7) er forbundet med hinanden ved hjælp af en svingningsdæmper.

2. Manuel understopper ifølge krav 1, kendetegnet ved, at der er indrettet en anden svingningsdæmper (22), der er anbragt mellem drivakslen (18) og den øvre akseldel (19).

3. Manuel understopper ifølge krav 2, kendetegnet ved, at den anden svingningsdæmper (22) er positioneret i et dæmpningsplan (21), der er dannet af svingningsafkoblingen (14) og forløber vinkelret på rotationsaksen (7).

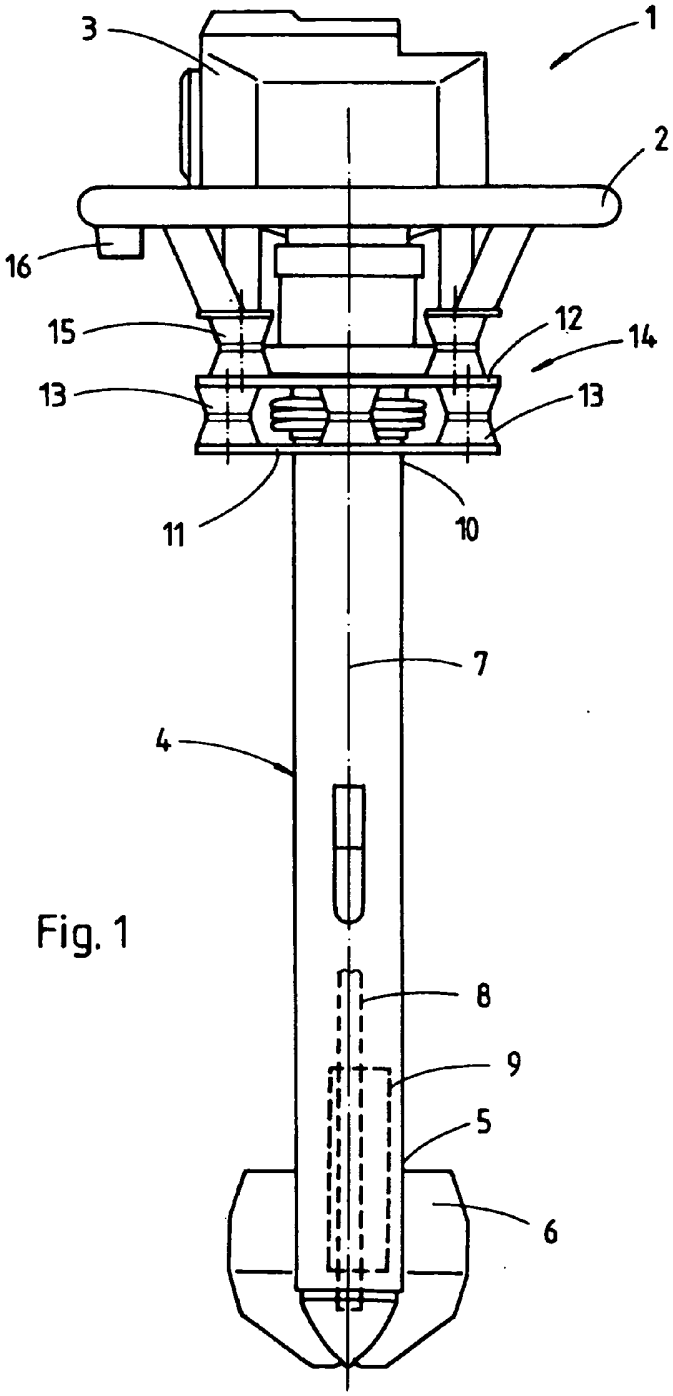

Fig. 1

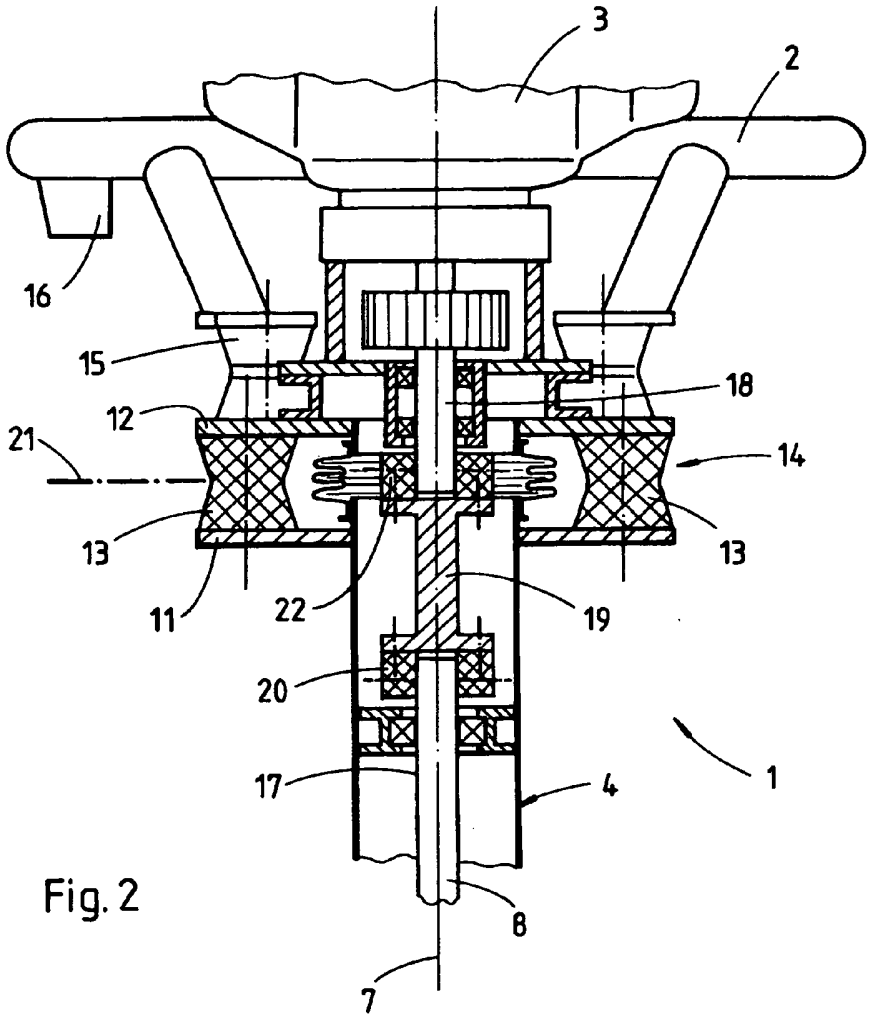

Fig. 2