

(19) **DANMARK**

(10) **DK/EP 1860258 T3**



(12) **Oversættelse af
europæisk patentskrift**

**Patent- og
Varemærkestyrelsen**

-
- (51) Int.Cl.: **E 04 H 5/06 (2006.01)**
- (45) Oversættelsen bekendtgjort den: **2014-03-24**
- (80) Dato for Den Europæiske Patentmyndigheds bekendtgørelse om meddelelse af patentet: **2014-01-15**
- (86) Europæisk ansøgning nr.: **07006882.0**
- (86) Europæisk indleveringsdag: **2007-04-02**
- (87) Den europæiske ansøgnings publiceringsdag: **2007-11-28**
- (30) Prioritet: **2006-05-26 DE 202006008537 U**
- (84) Designerede stater: **AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR**
- (73) Patenthaver: **Balzer, Hans, Diepolder Strasse 1, 87700 Memmingen, Tyskland**
- (72) Opfinder: **Balzer, Hans, Diepolder Strasse 1, 87700 Memmingen, Tyskland**
- (74) Fuldmægtig i Danmark: **Chas. Hude A/S, H.C. Andersens Boulevard 33, 1780 København V, Danmark**
- (54) Benævnelse: **Montage- og reparationsgrube**
- (56) Fremdragne publikationer:
AU-A- 5 127 764
DE-C2- 4 345 415
DE-U1- 9 320 679
US-A- 4 284 173

Description

The invention relates to an assembly and repair pit, consisting of a single-part or multi-part cassette made of steel or similar rigid and corrosion-resistant material, which is able to be installed in a recess in the floor, having two longitudinal side walls, end-face walls which are arranged at the ends, and a base, the walls and/or the base each being, at least in part, single-walled or double-walled with a cavity arranged therebetween for receiving hardenable filling material, such as lightweight concrete or the like.

10

Such an assembly and repair pit is known from document DE 4345415 C2 which discloses all the features of the preamble of claim 1.

Such assembly and repair pits are used by workshops or production plants for assembling or repairing motor vehicles, rail vehicles, machines or machine parts. The personnel can operate below the relevant vehicles and machines whilst comfortable standing upright. Conventional assembly and repair pits are typically prepared on site. For this purpose, initially outer and inner facing walls are erected and are then filled with filling material, preferably with concrete. Erecting these facings or producing the conventional assembly and repair pits thus requires, under certain circumstances, long employment of a large number of partly different manual skilled workers on site thus incurring high production costs and long construction times. These disadvantages can be avoided by way of cassettes, which are pre-fabricated by the manufacturer and are made of steel or the like and are inserted on site into a floor recess. Reference is made in this respect, purely by way of example, to DE 93 29 679 U1.

The present case relates to the development of the aforementioned prior art, in particular cassette technology, to the extent that measures are also taken by the manufacturer in order to collect and dispose of water running off from the vehicle via the vehicle tyres.

30

This object is achieved in accordance with the invention by the characterising features of claim 1, advantageous details and embodiments being described in the subordinate claims.

- 5 An essential point of the present invention thus resides in the fact that a water-collection channel, which is covered by a walk-over grating, runs along the upper boundary of each of the longitudinal side walls of the assembly pit. Water flowing or dripping from vehicle tyres can then be collected and disposed of via or through the walk-over grating in the collection channels disposed thereunder.
- 10 For this purpose, the water-collection channels preferably slope in the longitudinal direction towards a water outlet.

This water outlet is connected to an outlet pipe which leads to a water-collection point. An oil separator can also be provided at this location.

- 15 Preferably, the water-collection channel likewise consists of steel or a steel sheet from which the single-part or multi-part pit cassette is also preferably formed.

Adapted to the track width of so-called double tyres of larger lorries, the water-

20 collection channel is formed correspondingly wide and is preferably arranged inside a structural unit which is wider than the side walls. This structural unit is joined, preferably welded, to the upper longitudinal sides of the side walls. The aforementioned structural units also laterally define the pit opening. The structural unit comprising the water-collection channel preferably defines a cavity

25 which can be filled with hardenable filling material. This design is particularly suitable in the case of a double-walled cassette having a cavity arranged between the inner and outer wall, which cavity is likewise used to receive hardenable filling material. Preferably, the aforementioned structural units are connected to the longitudinal side walls such that in a single working step the longitudinal

30 side walls and also the aforementioned structural units are filled with filling material. Concrete, in particular lightweight concrete or synthetic concrete, is preferably used as the filling material.

In a specific embodiment, the structural unit comprising the water-collection channel is approximately trapezoidal in cross-section, the structural unit being positioned with the shorter side of the parallel sides on the upper longitudinal side of the associated longitudinal side wall, and the longer side comprising the
5 walk-over grating.

A preferred embodiment of an assembly and repair pit formed in accordance with the invention will be explained in more detail hereinafter with the aid of the attached drawing, in which:

10 Figure 1 shows a perspective view of an assembly and repair pit in accordance with the invention, viewed diagonally from above, omitting the walk-over gratings covering the water-collection channels; and

Figure 2 shows a cross-section through an assembly pit of figure 1.

15

The assembly and repair pit illustrated in figure 1 is designated by the reference numeral 10. It consists of a multi-part cassette 11 made of steel and comprises two longitudinal side walls 12, end-face walls 13 which are arranged at the ends and a base 14 (see figure 2). In the illustrated embodiment, the longitudinal
20 side walls 12 are each double-walled, wherein a cavity 17 is defined between the inner longitudinal side wall 15 and the outer longitudinal side wall 16 and is used to receive hardenable filling material such as lightweight concrete or the like. In this respect, reference is made to DE 93 20 679 U1 already mentioned in the introduction.

25

The end-face walls 13 are each single-walled. The cassette 11 comprises at both sides of the assembly pit receiving cassettes 18 for the rollers of a brake test bench or the like. These receiving cassettes are an integral component of the two longitudinal side walls 12. This is also a construction known *per se*
30 which can be traced back to the applicant.

Of particular importance in the illustrated embodiment is that a water-collection channel 19 runs along the upper boundary of each of the longitudinal side walls

12 and is covered by a walk-over grating 20 as per figure 2. This walk-over grating is not shown in figure 1. Figure 1 thus allows a view into the two water-collection channels which also laterally define the pit opening 21.

5 The water-collection channels 19 slope, of course, in the longitudinal direction towards a water outlet 22 (see figure 2). The water-collection channels 19 also slope in cross-section, specifically outwards and downwards in each case in the illustrated embodiment.

10 As can be seen in figure 1 and also figure 2, the water-collection channels 19 are each arranged within a structural unit 23 which is wider than the longitudinal side walls 12, which structural units are joined to the upper longitudinal sides of the longitudinal side walls 12 and laterally define the pit opening 21. These structural units 23 preferably consist of a steel sheet and define a cavity 24
15 which can be filled with hardenable filling material just like the cavity 17 of the double-walled longitudinal side walls 12. The cavities 17 and 19 are preferably connected together and are thus formed throughout as a self-contained cavity.

The width of the water-collection channels 19 including the walk-over grating 20
20 corresponds in each case at least approximately to the track width of a vehicle tyre, in particular a double tyre 25 of a lorry or similar vehicle (see figure 2). As a result, it is ensured that even in the case of vehicles with a wide tread track, the water running off via the tyres is collected in the water-collection channels 19.

25

Figure 2 clearly shows that the structural unit 23 comprising the water-collection channel is approximately trapezoidal in cross-section, the structural unit being positioned with the shorter side of the parallel sides on the upper longitudinal side of the associated longitudinal side wall 12 and the longer side of the parallel sides comprising the walk-over grating 20.
30

The water-collection channels along the two longitudinal sides of the assembly pit can thus be prepared by the manufacturer so that in this respect work no

longer has to be carried out on site. The walk-over gratings 20 extend approximately at the level of a workshop floor or the like adjoining the assembly pit, the floor being indicated in figure 2 by the reference numeral 26.

5 For the remainder, the assembly pit is formed in accordance with the prior art which means that a more detailed description in this regard is superfluous. Reference is only made to the fact that the double-walled longitudinal side walls 12 and the structural units 23 positioned thereon are stabilised by perforated walls spaced apart from each other in the longitudinal direction and inserted be-
10 tween the inner and outer walls. These perforated walls are designated in figure 2 by the reference numeral 27.

It is self-evident that the end-face walls 13 can also be allocated water-
collection channels of the aforementioned type and in a corresponding structur-
15 al design.

It is self-evident that the illustrated embodiment is also possible in conjunction with an assembly pit which is formed by a single-walled steel cassette.

20 It may also be mentioned that the assembly pit can be produced from a single-part or multi-part cassette consisting of rigid and corrosion-resistant synthetic material. A concrete design for the cassette is also feasible instead of steel or synthetic material. Ultimately it is crucial that the cassette is water-tight and in particular also oil-tight in order to securely prevent environmental damage.

25

All of the features disclosed in the application documents are claimed as being essential to the invention insofar as they are novel over the prior art individually or in combination.

List of reference numerals

	10	Assembly pit
	11	Cassette
5	12	Longitudinal side wall
	13	End-face wall
	14	Floor
	15	Inner longitudinal side wall
	16	Outer longitudinal side wall
10	17	Cavity
	18	Receiving cassette
	19	Water-collection channel
	20	Walk-over grating
	21	Pit opening
15	22	Water outlet
	23	Structural unit
	24	Cavity
	25	Double tyre
	26	Workshop floor
20	27	Perforated wall

Patentkrav

1. Montage- og reparationsgrube, som består af en i en gulvudtagning ind-
sættelig kassedel (11) af stål eller lignende stift og korrosionsbestandigt materi-
5 ale, hvilken kassedel er opbygget af en eller flere dele med to langsgående
sidevægge (12), ved enden anbragte sidevægge (13) og en bund (14), og hvor
væggene og/eller bunden i det mindste delvis er én- eller dobbeltvæggede med
et der imellem anordnet hulrum (17), som er således udformet, at det kan rum-
me hærdeligt fyldmateriale, såsom letbeton eller lignende,
10 **kendetegnet ved, at**
der langs den øvre begrænsning af de langsgående sidevægge strækker sig en
vandopsamlingsrende (19), som er dækket af en gangrist (20).

2. Grube ifølge krav 1,
15 **kendetegnet ved, at**
vandopsamlingsrenden (19) i længderetningen hælder ned mod et vandafløb
(22).

3. Grube ifølge krav 1 eller 2,
20 **kendetegnet ved, at**
vandopsamlingsrenden (19) er anbragt inden i en byggeenhed (23), som er
bredere end de langsgående sidevægge (12), hvilken byggeenhed (23) er for-
bundet med et øvre kantområde af de langsgående sidevægge (12) og side-
værts afgrænser en grubeåbning (21).
25

4. Grube ifølge et af kravene 1-3,
kendetegnet ved, at
bredden af vandopsamlingsrenden (19), inklusive gangristen (20), i det mindste
nogenlunde svarer til sporbredden af et køretøjsdæk, især et tvillingdæk (25).
30

5. Grube ifølge et af kravene 1-4,
kendetegnet ved, at

en byggeenhed (23), som omfatter vandopsamlingsrenden (19), har et hulrum (24), der kan udfyldes med hærdeligt fyldmateriale.

6. Grube ifølge et af kravene 3-5,

5 kendetegnet ved, at

byggeenheden (23), som omfatter vandopsamlingsrenden (19), set i tværsnit er i hovedsagen trapezformet, og at byggeenheden er således anbragt, at den korte side af de parallelle sider befinder sig ved den øvre begrænsning af vedkommende langsgående sidevæg (12) og er forbundet hermed, medens den

10 lange side af de parallelle sider omfatter gangristen (20).



