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### Motor vehicle transmission with a torque converter

#### Abstract

A motor vehicle transmission (1) includes a transmission housing (2) with torque converter (4) accommodated in the transmission housing (2) and a first oil guide device (9) positioned at an axial side of the torque converter (4). A housing wall (11) of the transmission housing (2) encloses the torque converter (4) radially outwardly at least in sections and has an inner surface (17) with an inner diameter configured such that a gap (13) defined by the inner surface (17) of the housing wall (11) and an outer surface (39) of the torque converter (4) is configured to convey oil from a first area (15) of the motor vehicle transmission (1) into a second area (16) of the motor vehicle transmission (1) during a rotary movement of the torque converter (4). The second area (16) is arranged above the first area (15) in an installed position of the motor vehicle transmission (1).

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## Background/Summary

### CROSS-REFERENCE TO RELATED APPLICATION

(1) The present application is related and has right of priority to German Patent Application No. DE102022204508.4 filed on May 9, 2022, which is incorporated by reference in its entirety for all purposes.

## FIELD OF THE INVENTION

(2) The invention relates generally to a motor vehicle transmission with a torque converter.

## BACKGROUND

(3) DE 10 2014 118 485 A1 discloses a motor vehicle transmission with a torque converter. The motor vehicle transmission includes a front module having an electric machine and a clutch, and a gearbox arranged behind the front module, wherein a torque converter is arranged between the gearbox and the front module. The arrangement made up of a front module, a gearbox, and a torque converter from DE 10 2014 118 485 A1 provides a modular hybrid motor-vehicle transmission. A guide device for oil is arranged between the torque converter and a housing of the transmission. This guide device for oil is trough-like or pot-like and has a base and two lateral walls, which are spaced apart from each other in an axial direction. The bottom of this oil guide device and the torque converter define a cavity or a gap through which oil can be conveyed during a rotary movement of the torque converter and, in fact, conveyed in the direction of a scraper window of the oil guide device. Due to the fact that the base of the oil guide device is arranged between a housing wall of the transmission housing and the torque converter as viewed in a radial direction, a greater amount of installation space is required as viewed in a radial direction.

## SUMMARY OF THE INVENTION

(4) On the basis thereof, example aspects of the invention provide a new type of motor vehicle transmission with a torque converter, which requires less installation space. According to example aspects of the invention, a housing wall of the transmission housing enclosing the torque converter radially outwardly at least partially or in sections has an inner surface with an inner diameter, which is designed such that a gap defined by the inner surface of this housing wall and an outer surface of the torque converter is configured to convey oil from a first area of the motor vehicle transmission into a second area of the motor vehicle transmission during a rotary movement of the torque converter, wherein the second area of the motor vehicle transmission is arranged above the first area in an installed position of the motor vehicle transmission in the motor vehicle.

(5) In the motor vehicle transmission according to example aspects of the invention, the gap for conveying the oil during a rotary movement of the torque converter is directly defined by the inner surface of the housing wall of the transmission housing, which encloses the torque converter radially outwardly at least partially or in sections as viewed in a radial direction, and the outer surface of the torque converter. There is no base of an oil guide device arranged between the housing wall of the transmission housing and the torque converter. As a result, the radial installation space requirement of the motor vehicle transmission can be reduced.

(6) Preferably, the first oil guide device is formed as an oil collecting plate, which has at least one first through-hole, via which the first oil guide device guides oil in the direction of the torque converter, and which has at least one second through-hole in the second area of the motor vehicle transmission, via which the first oil guide device guides oil away from the torque converter, the oil being conveyable during the rotary movement of the torque converter via the gap defined by the inner surface of the housing wall and the outer surface of the torque converter.

(7) The first oil guide device is arranged exclusively at an axial side of the torque converter, wherein, as viewed in an axial direction, the first oil guide device formed as an oil collecting plate has the at least one first through-hole for guiding the oil in the direction of the torque converter and also the at least one second through-hole for guiding the oil in the opposite direction away from the torque converter.

(8) Preferably, the motor vehicle transmission has a second oil guide device, which is arranged upstream from the housing wall delimiting the gap radially outwardly relative to an oil flow through the gap caused by a rotary movement of the torque converter, wherein the second oil guide device and the first oil guide device are separate assemblies, and wherein the second oil guide device forms a housing wall of the transmission housing and closes an opening in the transmission housing in the first area of the motor vehicle transmission. The second oil guide device extends the

housing wall enclosing the torque converter radially outwardly at least partially or in sections upstream from the housing wall as viewed in the circumferential direction.

(9) The second oil guide device closes an opening in the transmission and, in this way, forms a housing wall of the transmission. As a result, it is possible to further reduce the radial installation space requirement of the transmission.

(10) The second oil guide device is preferably made of plastic and has a smaller thickness than the housing wall of the transmission, which adjoins the second oil guide device and is preferably made of a metal material. As a result, the through-hole can be covered by the second oil guide device without colliding with an outer contour of a pump and/or of a pump motor of the motor vehicle transmission, in order to prevent oil from flowing out of a transmission chamber accommodating the torque converter via this opening in the direction of the pump or the pump motor.

(11) Preferably, the motor vehicle transmission has a third oil guide device, which is arranged downstream from the housing wall delimiting the gap radially outwardly relative to an oil flow through the gap caused by a rotary movement of the torque converter, wherein the third oil guide device is arranged in the second area of the motor vehicle transmission, and wherein, preferably, the gap enlarges upstream from the third oil guide device relative to an oil flow through the gap caused by a rotary movement of the torque converter. The third oil guide device, in interaction with the first oil guide device, enables an orderly discharge of the oil from the gap in the direction of an oil pan.

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## Description

### BRIEF DESCRIPTION OF THE DRAWINGS

(1) Exemplary embodiments of the invention are explained in greater detail with reference to the drawings, without being limited thereto, wherein:

(2) FIG. 1 shows a view from the front onto a motor vehicle transmission, namely onto a transmission housing and a torque converter accommodated in the transmission housing,

(3) FIG. 2 shows a cross-section of FIG. 1 in a radial cutting plane through the torque converter;

(4) FIG. 3 shows the view from FIG. 1 without a torque converter;

(5) FIG. 4 shows a perspective view of FIG. 3 obliquely from above;

(6) FIG. 5 shows a perspective view of FIG. 3 obliquely from below;

(7) FIG. 6 shows a cutout portion from another perspective view of FIG. 3 obliquely from below;

(8) FIG. 7 shows a perspective view of a first oil guide device from the front;

(9) FIG. 8 shows a perspective view of the first oil guide device from the back;

(10) FIG. 9 shows a perspective view of a second oil guide device from above;

(11) FIG. 10 shows a perspective view of the second oil guide device from below; and

(12) FIG. 11 shows a perspective view of a third oil guide device.

### DETAILED DESCRIPTION

(13) Reference will now be made to embodiments of the invention, one or more examples of which are shown in the drawings. Each embodiment is provided by way of explanation of the invention, and not as a limitation of the invention. For example, features illustrated or described as part of one embodiment can be combined with another embodiment to yield still another embodiment. It is intended that the present invention include these and other modifications and variations to the embodiments described herein.

(14) Example aspects of invention relate to a motor vehicle transmission of a motor vehicle, more particularly to a hybrid motor-vehicle transmission of a hybrid vehicle.

(15) FIGS. 1 through 6 each show a different view of a motor vehicle transmission 1 according to example aspects of the invention. FIGS. 7 through 11 each show a different view of different oil guide devices of the motor vehicle transmission 1.

(16) The motor vehicle transmission **1** according to example aspects of the invention has a transmission housing **2**. The transmission housing **2** is preferably made of a metal material. The transmission housing **2** defines a hollow space, which is subdivided into multiple transmission chambers, wherein the transmission chambers are used for accommodating assemblies of the motor vehicle transmission **1**. FIGS. **1** through **6** each show a different view from the front onto the transmission housing **2** and a first transmission chamber **3**, which is defined by the transmission housing **2** and in which at least a torque converter **4** and, in the case of a hybrid transmission, also an electric machine having a separating clutch (not shown) are arranged.

(17) As is shown in FIG. **2**, an oil pan **5** adjoins the transmission housing **2** underneath the transmission housing **2**, the oil pan **5** defining, together with the transmission housing **2**, a second transmission chamber **6** in which, more particularly, an oil pump (not shown) is arranged with an oil pump motor **7** and electronic assemblies **8** for the open-loop and/or closed-loop control of the operation of the transmission, such as, for example, of the oil pump motor **7**.

(18) In FIGS. **1** through **6**, a further transmission chamber is formed behind the first transmission chamber **3**, which is used at least for accommodating the torque converter **4** and, in the case of a hybrid transmission, also for accommodating an electric machine and a separating clutch, the further transmission chamber accommodating the actual gearbox of the motor vehicle transmission **1**, i.e., friction-locking shift elements and/or form-locking shift elements, which provide different gears and, therefore, ratios of the motor vehicle transmission **1** depending on shift position.

(19) The first transmission chamber **3** of the transmission housing **2**, which is used for accommodating the torque converter **4**, and the third transmission chamber (not visible) of the transmission housing **2**, which is formed behind the first transmission chamber **3** and is used for accommodating the actual gearbox, are typically separated from each other, more particularly by an oil supply system. Such an oil supply system is not visible in the figures.

(20) Rather, a first oil guide device **9** is shown in FIGS. **3** through **6**, which, in the viewing direction from the front onto the motor vehicle transmission **1**, is positioned in front of the oil supply system and, therefore, conceals the oil supply system in the representations from FIGS. **3** through **6**. FIGS. **7**, **8** show the first oil guide device **9** alone, namely in the viewing direction from the front in FIG. **7** and in the viewing direction from the back in FIG. **8**.

(21) The first oil guide device **9** is formed as an oil collecting plate and positioned at an axial side of the torque converter **4** and, in fact, between the torque converter **4** and the non-visible oil supply system as viewed in an axial direction.

(22) The first oil guide device **9** influences an oil flow in the direction of the torque converter **4**, wherein the first oil guide device **9** has at least one first through-hole **10**, via which oil can be guided starting from the oil supply system (not shown) in the direction of the torque converter **4**, and wherein the first oil guide device **9** has at least one second through-hole **36**, via which the first oil guide device **9** can discharge oil from the torque converter **4** and, in fact, in the direction of the oil pan **5**.

(23) The transmission housing **2** has a housing wall **11**, which encompasses the torque converter **4** radially outwardly partially or in sections. This housing wall **11** has an inner surface **12** with an inner diameter, which is designed such that a gap **13** defined by the inner surface **12** of this housing wall **11** and an outer surface **39** of the torque converter **4** is configured such that oil is conveyed through the gap **13** as a result of a rotary movement of the torque converter **4**, which is visualized in FIG. **1** by an arrow **14**.

(24) During the rotary movement **14** of the torque converter **4**, oil is conveyed from a first area **15** of the motor vehicle transmission **1**, namely from a first area **15** of the first transmission chamber **3** of the motor vehicle transmission **1**, in the direction of a second area **16** of the first transmission chamber **3** of the motor vehicle transmission **1**, wherein this second area **16** is arranged above the first area **15** in the installed position of the motor vehicle transmission **1** in the motor vehicle.

(25) The first area **15** of the first transmission chamber **3** of the transmission housing **2** of the motor

vehicle transmission **1** forms a type of oil sump within the first transmission chamber **3**.

(26) The at least one second through-hole **36** of the first oil guide device **9** is arranged in the second area **16**. Oil can be discharged from the torque converter **4** and, therefore, from the first transmission chamber **3**, via the second through-hole **36** of the first oil guide device **9**.

(27) The first oil guide device **9**, which is formed as an oil collecting plate and is best shown in FIGS. **7** and **8**, has a central through-hole **17**, through which an input shaft **18** extends in a mounted condition. This central through-hole **17** is used, more particularly, for centering the first oil guide device **9**.

(28) At a back side (see FIG. **8**) facing away from the torque converter **4**, the first oil guide device **9** has ribs **20**, which define a flow channel **19** via which oil can be guided in the direction of the oil pan **5**, the oil passing from the front side of the first oil guide device **9** in the direction of the back side of the first oil guide device **9** via the at least one through-hole **36**.

(29) Further ribs **21** are formed at this back side of the first oil guide device **9**, which prevent this oil from spilling over onto an assembly of the transmission, more particularly an intermediate gear, which is positioned in the area of the ribs **21**.

(30) Mounting bolts **23** extend through openings **22** in the first oil guide device **9** and are used for mounting the first oil guide device **9**, which is formed as an oil collecting plate, at the oil supply system positioned behind the oil guide device **9**.

(31) The motor vehicle transmission **1** also has a second oil guide device **24**, which is arranged upstream from the housing wall **11** of the transmission housing **2** delimiting the gap **13** radially outwardly relative to an oil flow through the gap **13** caused by the rotary movement **14** of the torque converter **4**. This second oil guide device **24** and the first oil guide device **9** are formed as separate assemblies.

(32) The second oil guide device **24** closes an opening **25** in the transmission housing **2**, which is formed adjacent to the housing wall **11**. Through this opening **25**, the first transmission chamber **3** for accommodating the torque converter **4** is connected to the second transmission chamber **6** for accommodating the oil pump, the oil pump motor **7**, and the electronic assemblies **8**, wherein the second oil guide device **24** closes this opening **25**.

(33) The second oil guide device **24** therefore prevents oil, which collects in the first area **15** of the first transmission chamber **3** of the transmission housing **2**, from flowing into the second transmission chamber **6** via the opening **25** and, in this way, entering the area of the pump motor **7** and the electronic assemblies **8**.

(34) The second oil guide device **24** forms a housing wall in the first area **15** of the motor vehicle transmission **1**, the housing wall adjoining the housing wall **11** delimiting the gap **13** radially outwardly and, in fact, upstream from the housing wall **11** relative to the oil flow through the gap **13**. The second oil guide device **24** is arranged upstream from the housing wall **11** as viewed in the flow direction of the oil.

(35) While the housing wall **11** of the transmission housing **2** is preferably made of a metal material, the second oil guide device **24** is made of a plastic. The thickness of the housing wall provided by the second oil guide device **24** is thinner than the thickness of the housing wall **11** such that, more particularly, the pump motor **7** can extend, partially or in sections, into the opening **25** to be closed.

(36) FIG. **9** shows a view of the top side **26** of the second oil guide device **24**. FIG. **10** shows a view of an underside **40** of the second oil guide device **24**. The top side **26** of the second oil guide device **24**, together with the outer surface of the torque converter **4**, defines a gap **38**, which is arranged upstream from the gap **13** defined by the housing wall **11** in the direction of the oil flow caused by the rotation **14** of the torque converter **4**. As is shown best in FIGS. **4** and **9**, the top side **26** of the second oil guide device **24** is contoured such that an inner diameter of the inner surface of the second oil guide device **24** becomes continuously smaller in an upstream area in the direction of the oil flow caused by the rotary movement **14** of the torque converter **4** as the gap **38** between the

second oil guide device **24** and the torque converter **4** becomes smaller. In a downstream area of the second oil guide device **24**, the inner diameter at the top side **26** and, therefore, the inner surface of the second oil guide device **24** are approximately constant, wherein the inner diameter at a downstream edge **27** of the second oil guide device **24** is maximally as great as the inner diameter at the adjoining edge **28** of the housing wall **11**. The second oil guide device **24** is clipped together with the transmission housing **2** via mounting clips **29**, thereby closing the opening **25**.

(37) The motor vehicle transmission **1** includes a third oil guide device **30** in addition to the first oil guide device **9** and the second oil guide device **24**. The third oil guide device **30** is arranged downstream from the housing wall **11** delimiting the gap **13** radially outwardly relative to the oil flow through the gap **13** caused by the rotary movement **14** of the torque converter **4**, and, in fact, in the second area **16** in which the first oil guide device **9** has the at least one second through-hole **36**.

(38) FIG. **11** shows the third oil guide device **30** in a perspective isolated view, wherein a flange **31** of the third oil guide device **30** adjoins a flange **32** of the first oil guide device **9**. As viewed from the front, the third oil guide device **30** is therefore positioned axially in front of the first oil guide device **9** and protrudes into a free space between the torque converter **4** and the transmission housing **2**.

(39) In the exemplary embodiment shown, the third oil guide device **30** is designed as an assembly that is separate from the first oil guide device **9**. It is also possible that the third oil guide device **30** is an integral part of the first oil guide device **9**.

(40) The third oil guide device **30** has an opening **33** through which oil can exit the gap **13** and enter the third oil guide device **30** in order to then be guided via the at least one second through-hole **36** of the first oil guide device **9** from the front side of the first oil guide device **9** to the back side of the first oil guide device **9** and discharged in the direction of the oil pan **5** via the channel **19**. The third oil guide device **30** can also be referred to as an oil scraper.

(41) As is best shown in FIG. **6**, the inner diameter of the inner surface **12** of the housing wall **11** becomes larger directly upstream from the third oil guide device **30** such that the gap **13** between the housing wall **11** and the torque converter **4** (not shown in FIG. **6**) also becomes larger. As a result, a particularly advantageous pass-over of the oil, which has been conveyed through the gap **13**, out of the gap **13** into the third oil guide device **30**, namely into the opening **33** in the third oil guide device **30**, is enabled. As shown in FIG. **6**, the opening **33** is positioned at that side of the third oil guide device that faces the wall **11**, i.e., at an edge of the third oil guide device **30** situated upstream relative to the oil flow.

(42) The section of the gap **13**, in which the gap **13** enlarges directly upstream from the opening **33** of the third oil guide device **30**, can also be provided or delimited radially outwardly by the third oil guide device **30**. In this case, the third oil guide device **30** is then extended in the circumferential direction and the housing wall **11** is correspondingly shortened.

(43) In the installation position of the motor vehicle transmission in the motor vehicle, an enveloping circle extends around the torque converter **4**, the enveloping circle having a zero degree ( $0^\circ$ ) angle position and a three hundred and sixty degree ( $360^\circ$ ) angle position at the top and a one hundred and eighty ( $180^\circ$ ) angle position at the bottom, as shown in FIG. **3**.

(44) The first area **15** of the motor vehicle transmission **1**, namely of the first transmission chamber **3** of the transmission housing **2** of the motor vehicle transmission **1**, is arranged around the  $180^\circ$  angle position.

(45) The gap **13** between the inner surface **12** of the housing wall **11** and the outer surface of the torque converter **4** extends at least partially or in sections between the one hundred and eighty ( $180^\circ$ ) angle position and the three hundred and sixty degree ( $360^\circ$ ) angle position.

(46) As mentioned above, the second oil guide device **24** is arranged upstream from the housing wall **11** and the third oil guide device **30** is arranged downstream from the housing wall **11** as viewed in the oil flow direction through the gap **13**.

(47) In the preferred exemplary embodiment shown, the housing wall **11** delimiting the gap **13** radially outwardly has the upstream edge **28** and, therefore, the second oil guide device **24** has the downstream edge **27**, downstream from the one hundred and eighty (180°) angle position, wherein these edges **27**, **28** enclose a first angular range  $\beta$  with the one hundred and eighty (180°) angle position. This first angular range  $\beta$  is between twenty degrees (20°) and seventy degrees (70°) or between thirty degrees (30°) and sixty degrees (60°) or between forty degrees (40°) and fifty degrees (50°). The edges **27**, **28** are slanted with respect to the axial direction (see FIG. 3). Therefore, the angle  $\beta$  changes along the edges **27**, **28**.

(48) As mentioned above, the third oil guide device **30** is arranged in the second area **16** of the first transmission chamber **3** of the transmission housing **2** of the motor vehicle transmission **1**. The upstream edge of the third oil guide device **30**, at which the opening **33** is formed, is arranged downstream from the zero degree (0°) angle position or the three hundred and sixty degree (360°) angle position and encloses a second angular range  $\alpha$  with the zero degree (0°) angle position and the three hundred and sixty degree (360°) angle position. The second angular range  $\alpha$  is between five degrees (5°) and thirty degrees (30°) or between ten degrees (10°) and twenty degrees (20°).

(49) As has also been mentioned above, the gap **30** between the inner surface **12** of the housing wall **11** and the outer surface **39** of the torque converter **4** expands directly upstream from the opening **33** in the third oil guide device **30**, wherein this expansion of the radial gap **13** in the exemplary embodiment shown according to FIG. 3 takes place upstream from the zero degree (0°) angle position and, therefore, upstream from the three hundred and sixty degree (360°) angle position. The beginning of this expansion of the gap **13** encloses a third angular range  $\gamma$  with the three hundred and sixty degree (360°) angle position and, therefore, the zero degree (0°) angle position, the third angular range  $\gamma$  being between 5° and ten degrees (10°) or between ten degrees (10°) and fifteen degrees (15°).

(50) As mentioned above, the first transmission chamber **3** of the transmission housing **2** accommodates not only the torque converter **4**, but also an electric machine having a separating clutch. FIGS. 4 and 5 show an oil line **34**, which is used for supplying the electric machine and the separating clutch with oil. The wall **11** of the transmission housing **2** is interrupted at that position at which this oil line **34** extends.

(51) The figures also show high voltage terminals **35** for the electrical contacting of the electric machine.

(52) With the aid of example aspects of the invention, a particularly installation space-saving structural embodiment of a motor vehicle transmission **1** can be provided.

(53) Modifications and variations can be made to the embodiments illustrated or described herein without departing from the scope and spirit of the invention as set forth in the appended claims. In the claims, reference characters corresponding to elements recited in the detailed description and the drawings may be recited. Such reference characters are enclosed within parentheses and are provided as an aid for reference to example embodiments described in the detailed description and the drawings. Such reference characters are provided for convenience only and have no effect on the scope of the claims. In particular, such reference characters are not intended to limit the claims to the particular example embodiments described in the detailed description and the drawings.

#### REFERENCE CHARACTERS

(54) **1** motor vehicle transmission **2** transmission housing **3** first housing chamber **4** torque converter **5** oil pan **6** second housing chamber **7** pump motor **8** electronic assembly **9** first oil guide device **10** through-hole **11** housing wall **12** inner surface **13** gap **14** direction of rotation **15** first area **16** second area **17** through-hole **18** input shaft **19** flow channel **20** rib **21** rib **22** opening **23** mounting bolt **24** second oil guide device **25** opening **26** top side **27** edge **28** edge **29** mounting clip **30** third oil guide device **31** flange **32** flange **33** opening **34** oil line **35** high voltage terminals **36** through-hole **37** underside **38** gap **39** outer surface **40** underside



## Claims

1. A motor vehicle transmission (1), comprising: a transmission housing (2), the transmission housing (2) having a housing wall (11) comprising an inner surface (17); a torque converter (4) accommodated in the transmission housing (2), the housing wall (11) of the transmission housing (2) enclosing the torque converter (4) radially outwardly at least in sections, an inner diameter of the inner surface (17) of the housing wall (11) being configured such that a gap (13) defined by the inner surface (17) of the housing wall (11) and an outer surface (39) of the torque converter (4) in a radial direction is configured to convey oil from a first area (15) of the motor vehicle transmission (1) into a second area (16) of the motor vehicle transmission (1) during rotary movement of the torque converter (4), the second area (16) of the motor vehicle transmission (1) being arranged above the first area (15) in an installed position of the motor vehicle transmission (1); and a first oil guide device (9), the first oil guide device (9) being positioned exclusively outside of the gap (13) and at an axial side of the torque converter (4), the first oil guide device (9) being configured to influence an oil flow in a direction of the torque converter (4).
2. The motor vehicle transmission of claim 1, wherein the first oil guide device (9) is formed as an oil collecting plate.
3. The motor vehicle transmission of claim 1, wherein: the first oil guide device (9) comprises at least one first through-hole (10) via which the first oil guide device (9) guides oil in the direction of the torque converter (4); and the first oil guide device (9) comprises at least one second through-hole (36) in the second area (16) of the motor vehicle transmission (1) via which the first oil guide device (9) guides oil away from the torque converter (4), the oil being conveyable during the rotary movement of the torque converter (4) via the gap (13) defined by the inner surface of the housing wall (11) and the outer surface of the torque converter (4).
4. The motor vehicle transmission of claim 1, further comprising a second oil guide device (24) arranged upstream from the housing wall (11) relative to an oil flow through the gap (13) caused by the rotary movement of the torque converter (4).
5. The motor vehicle transmission of claim 4, wherein the second oil guide device (24) and the first oil guide device (9) are formed of discrete pieces of material.
6. The motor vehicle transmission of claim 4, wherein: the second oil guide device (24) closes an opening (25) in the transmission housing (2) and separates a first housing chamber (3) accommodating the torque converter (4) from a second housing chamber (6) accommodating an oil pump and a pump motor (7) and electronic components (8); and wherein the second housing chamber (6) is arranged below the first housing chamber (3) in the installed position of the motor vehicle transmission (1).
7. The motor vehicle transmission of claim 4, wherein the second oil guide device (24) forms a housing wall in the first area (15) of the motor vehicle transmission (1).
8. The motor vehicle transmission of claim 4, wherein the second oil guide device (24) comprises an inner surface with an inner diameter, the inner diameter of the inner surface of the second oil guide device (24) decreasing at least in sections as viewed in a direction of the oil flow caused by the rotary movement of the torque converter (4) as a gap (38) between the second oil guide device (24) and the torque converter (4) decreases.
9. The motor vehicle transmission of claim 8, wherein the inner diameter of the second oil guide device (24) adjacent to the inner diameter of the housing wall (11) is maximally as great as or less than the inner diameter of the housing wall (11).
10. The motor vehicle transmission of claim 1, further comprising a third oil guide device (30) arranged downstream from the housing wall (11) relative to the oil flow through the gap (13) caused by the rotary movement of the torque converter (4).
11. The motor vehicle transmission of claim 10, wherein the third oil guide device (30) and the first

oil guide device (9) are formed of discrete pieces of material.

12. The motor vehicle transmission of claim 10, wherein the third oil guide device (30) is integrally formed with the first oil guide device (9).

13. The motor vehicle transmission of claim 10, wherein the third oil guide device (30) is arranged in the second area (16) of the motor vehicle transmission.

14. The motor vehicle transmission of claim 10, wherein the gap (13) increases upstream from the third oil guide device (24) relative to the oil flow through the gap (13) caused by the rotary movement of the torque converter (4).

15. The motor vehicle transmission of claim 1, further comprising: a second oil guide device (24) arranged upstream from the housing wall (11) relative to an oil flow through the gap (13) caused by the rotary movement of the torque converter (4); and a third oil guide device (30) arranged downstream from the housing wall (11) relative to the oil flow through the gap (13) caused by the rotary movement of the torque converter (4), wherein an enveloping circle extending around the torque converter (4) in the installed position of the motor vehicle transmission (1) has a 0° angle position at a top of the enveloping circle and a 180° angle position at a bottom of the enveloping circle, wherein the housing wall (11) comprises an upstream edge from the 180° angle position, the upstream edge of the housing wall (11) enclosing a first angular range between 20° and 70° from the 180° angle position, the second oil guide device (24) covering at least the first angular range, and wherein the third oil guide device (30) comprises an upstream edge from the 0° angle position, the upstream edge of the third oil guide device (30) enclosing a second angular range between 5° and 30° with the 0° angle position.

16. A motor vehicle transmission (1), comprising: a transmission housing (2), the transmission housing (2) having a housing wall (11) comprising an inner surface (17); a torque converter (4) accommodated in the transmission housing (2), the housing wall (11) of the transmission housing (2) enclosing the torque converter (4) radially outwardly at least in sections, an inner diameter of the inner surface (17) of the housing wall (11) being configured such that a gap (13) defined by the inner surface (17) of the housing wall (11) and an outer surface (39) of the torque converter (4) is configured to convey oil from a first area (15) of the motor vehicle transmission (1) into a second area (16) of the motor vehicle transmission (1) during rotary movement of the torque converter (4), with the second area (16) of the motor vehicle transmission (1) being arranged above the first area (15) in an installed position of the motor vehicle transmission (1); a first oil guide device (9) positioned at an axial side of the torque converter (4) and configured to influence an oil flow in a direction of the torque converter (4); and a second oil guide device (24) arranged upstream from the housing wall (11) relative to an oil flow through the gap (13) caused by the rotary movement of the torque converter (4), the second oil guide device (24) comprising an inner surface with an inner diameter, the inner diameter of the inner surface of the second oil guide device (24) decreasing at least in sections as viewed in a direction of the oil flow caused by the rotary movement of the torque converter (4) as a gap (38) between the second oil guide device (24) and the torque converter (4) decreases.

17. A motor vehicle transmission (1), comprising: a transmission housing (2), the transmission housing (2) having a housing wall (11) comprising an inner surface (17); a torque converter (4) accommodated in the transmission housing (2), the housing wall (11) of the transmission housing (2) enclosing the torque converter (4) radially outwardly at least in sections, an inner diameter of the inner surface (17) of the housing wall (11) being configured such that a gap (13) defined by the inner surface (17) of the housing wall (11) and an outer surface (39) of the torque converter (4) is configured to convey oil from a first area (15) of the motor vehicle transmission (1) into a second area (16) of the motor vehicle transmission (1) during rotary movement of the torque converter (4), with the second area (16) of the motor vehicle transmission (1) being arranged above the first area (15) in an installed position of the motor vehicle transmission (1); a first oil guide device (9) positioned at an axial side of the torque converter (4) and configured to influence an oil flow in a

direction of the torque converter (4); and a third oil guide device (30) arranged downstream from the housing wall (11) relative to the oil flow through the gap (13) caused by the rotary movement of the torque converter (4), the gap (13) increasing upstream from the third oil guide device (24) relative to the oil flow through the gap (13) caused by the rotary movement of the torque converter (4).

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