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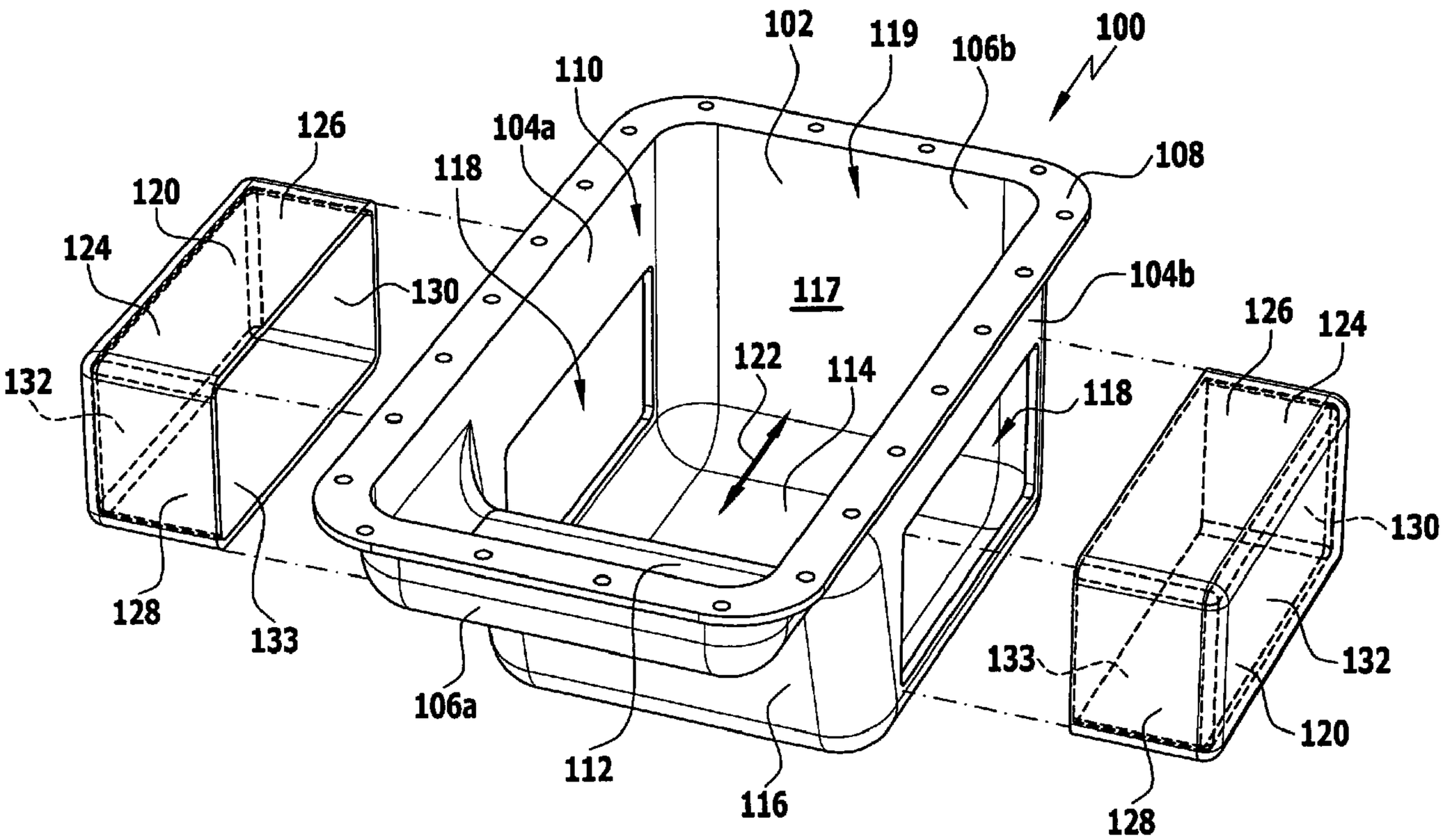


(57) Abrégé/Abstract:
In order to produce an oil sump comprising a base body with a main oil chamber and a wall which is adaptable in a particularly simple manner to the differing oil collecting volumes that may be required in any particular case, it is proposed that the oil sump should comprise at least one auxiliary oil chamber and that the wall should have at least one through opening by means of which the auxiliary oil chamber is connected to the main oil chamber of the base body.

Abstract

In order to produce an oil sump comprising a base body with a main oil chamber and a wall which is adaptable in a particularly simple manner to the differing oil collecting volumes that may be required in any particular case, it is proposed that the oil sump should comprise at least one auxiliary oil chamber and that the wall should have at least one through opening by means of which the auxiliary oil chamber is connected to the main oil chamber of the base body.

Oil sump

The present invention relates to an oil sump which comprises a base body with a main oil chamber and a wall.

Such oil sumps for mounting on an internal combustion engine are known from the state of the art.

In the case of the known oil sumps, the base body of the oil sump is dimensioned in such a way that the oil collecting volume thereof corresponds to that which is needed for the particular application.

The object of the present invention is to produce an oil sump of the type mentioned hereinabove which is adaptable in a particularly simple manner to the differing oil collecting volumes that are needed in any particular case.

In accordance with the invention, this object is achieved in the case of an oil sump comprising a base body with a main oil chamber and a wall, wherein the oil sump comprises at least one auxiliary oil chamber and the wall of the base body has at least one through opening by means of which the auxiliary oil chamber is connected to the main oil chamber of the base body.

Due to the additional oil collecting volume that has been made available in the interior of the auxiliary oil chamber which is connected by the through opening in the wall to the oil collecting volume in the interior of the base body, the oil sump in accordance with the invention has a larger oil collecting volume than would be the case for an oil sump that is formed by the base body alone.

By suitable selection of the size of the auxiliary oil chamber or by the provision of a plurality of auxiliary oil chambers, the total oil collecting volume of the oil sump can be adapted to any particular application without any need for the base body, and in particular the mounting flange by means of which the oil sump is connected to an internal combustion engine, to be modified for this purpose.

The oil sump in accordance with the invention can thus be adapted in a particularly simple manner to the different situations arising when it is being installed and also to the space available in any particular engine compartment.

It is also conceivable for a pre-existing oil sump to be provided with an auxiliary oil chamber at a later date if a larger oil collecting volume is needed.

The through opening that is provided in the wall of the base body is closed by the auxiliary oil chamber.

Preferably, at least a part of a wall of at least one auxiliary oil chamber is manufactured separately from the base body and is subsequently connected to the base body.

Here, the part of the wall of the auxiliary oil chamber that is manufactured separately from the base body may comprise a cover wall of the auxiliary oil chamber and/or at least a part of a front end face wall of the auxiliary oil chamber and/or at least a part of a rear end face wall of the auxiliary oil chamber and/or a side wall of the auxiliary oil chamber located opposite the through opening and/or a bottom wall of the auxiliary oil chamber.

In particular, provision may be made for the entire wall of the auxiliary oil chamber to be manufactured separately from the base body and for it to be connected subsequently to the base body.

The auxiliary oil chamber can be connected to the base body in a cohesive manner, for example, by a sticking or welding process.

It has proved to be particularly expedient if the auxiliary oil chamber is connected to the base body by a friction welding process.

The design of the oil sump in accordance with the invention is particularly flexible if the wall of the base body has at least two through openings by means of which an auxiliary oil chamber is connected to the main oil chamber of the base body.

Here, the through openings can be formed in mutually opposite wall sections of the wall of the base body.

Furthermore, provision may be made for the at least two auxiliary oil chambers to be formed such as to be substantially mutually symmetrical with respect to a longitudinal centre plane of the oil sump.

Should the base body of the oil sump also be formed such as to be substantially symmetrical with respect to this longitudinal centre plane, then the entire oil sump will be substantially mirror-symmetrical with respect to its longitudinal centre plane in this case.

In principle, the base body of the oil sump can be formed from any suitable material.

Preferably, provision is made for the base body of the oil sump to be formed from a thermoplastically workable synthetic material, from polyamide for example.

In principle, the at least one auxiliary oil chamber could also be formed from any suitable material.

Preferably, at least a part of a wall of at least one auxiliary oil chamber is formed from a thermoplastically workable synthetic material, from polyamide for example.

It is particularly expedient, if a wall of at least one auxiliary oil chamber is formed from the same material as the base body of the oil sump.

The through opening, which is closed by the auxiliary oil chamber, can be formed into the wall of the base body during the process of manufacturing the base body.

As an alternative thereto particularly when expanding an existing oil sump at a later date, provision may also be made for the base body to be manufactured initially without the through opening in its wall and then for the at least one through opening to be

separated out from the wall of the base body, and in particular, to be cut out or punched out.

In order to strengthen the wall of the base body of the oil sump and also stabilise the oil flow throughout the entire oil collecting volume of the oil sump, provision may be made for a reinforcement wall incorporating at least one oil passage opening to be arranged in at least one through opening. This reinforcement wall can also serve as a surge plate for stabilising the movement of the oil in the oil sump.

In particular, provision may be made for the reinforcement wall to have at least two oil passage openings.

In order to keep the total overall height of the oil sump as low as possible, it is expedient if at least one auxiliary oil chamber is arranged laterally beside the main oil chamber.

In particular, provision may be made for the auxiliary oil chamber to project neither downwardly nor upwardly beyond the main oil chamber of the oil sump.

In a special embodiment of the oil sump in accordance with the invention, provision is made for at least one part of a wall of

at least one auxiliary oil chamber to be formed in one piece manner with the base body.

Here, the part of the wall of the auxiliary oil chamber that is formed in one piece manner with the base body may be a bottom wall of the auxiliary oil chamber and/or at least a part of a front end face wall of the auxiliary oil chamber and/or at least a part of a rear end face wall of the auxiliary oil chamber and/or a side wall of the auxiliary oil chamber which is located opposite the through opening.

In a preferred embodiment of the oil sump in accordance with the invention, provision is made for at least a part of a wall of at least one auxiliary oil chamber to be manufactured separately from the base body and to be connected subsequently to the base body, wherein at least another part of the wall of this auxiliary oil chamber is formed in one piece manner with the base body.

It is particularly expedient here, if the part of the wall that is manufactured separately from the base body comprises a cover wall of the auxiliary oil chamber.

Preferably the part of the wall that is manufactured separately from the base body comprises just one cover wall of the

auxiliary oil chamber since, in this case, the connecting line between the part of the wall that is manufactured separately from the base body and the part of the wall that is formed in one piece manner with the base body runs over substantially the entire length thereof close to the upper end of the auxiliary oil chamber so that the oil contained in the auxiliary oil chamber never reaches this connecting line or does so on only rare occasions. The advantage obtained thereby is that the connecting line between the part of the wall that is manufactured separately from the base body and the part of the wall that is manufactured in one piece manner with the base body is not subjected to the oil contained in the oil sump or at least this happens on only rare occasions, this having an expedient effect upon the longevity and reliability of the seal along the connecting line.

Furthermore, it is expedient if at least one connector of the oil sump, the presence and/or position of which on the oil sump varies in dependence on the type of motor vehicle with which the oil sump is intended to be used, is provided on a part of the wall of at least one auxiliary oil chamber that is manufactured separately from the base body.

It is possible here to use one and the same base body of the oil sump for different types of motor vehicle and then, in

dependence on the particular type of motor vehicle, to supplement this base body with a part of the wall which incorporates the relevant connector and which is manufactured separately from the base body and is dependent on the type of motor vehicle.

Thus, for example, provision may be made for the part of the wall that is manufactured separately from the base body to be provided with a connector for an oil filler line.

As an alternative or in addition thereto, provision may be made for a connector for an oil level sensor to be arranged on the part of the wall that is manufactured separately from the base body.

Furthermore, as an alternative or in addition thereto, provision may be made for a connector for an oil dipstick guide means and/or for an oil suction line to be arranged on the part of the wall that is manufactured separately from the base body.

In particular here, provision may be made for the connector for an oil dipstick guide means and/or for an oil suction line to comprise an adaptor which is formed in one piece manner with the wall and is used for mounting a tube that is at least partially disposed in the interior of the auxiliary oil chamber.

Here, for example, the adaptor can have a profile, e.g. of saw-tooth shape as seen in a longitudinal sectional view, which digs into the tube that is being mounted on the adaptor during the process of mounting the tube so that, after the tube has been pushed onto the adaptor (or after the tube has been pushed into the adaptor if the shaping is provided on the inner wall of the adaptor), the tube will be held captive in interlocked manner on the connector for the oil dipstick guide means and/or for the oil suction line.

Further features and advantages of the invention form the subject matter of the following description and the graphical illustration of an exemplary embodiment.

In the drawings:

Fig. 1 shows a schematic perspective illustration of a base body of an oil sump, the wall of which has two mutually opposite through openings, and two auxiliary oil chambers that are manufactured separately from the base body before the auxiliary oil chambers have been fixed to the base body;

Fig. 2 a schematic perspective illustration of the base body with the auxiliary oil chambers fixed thereto;

Fig. 3 a schematic perspective illustration of a base body in a second embodiment of an oil sump, the wall of which has two mutually opposite through openings in each of which there is arranged a reinforcement wall incorporating two oil passage openings, and two auxiliary oil chambers that are manufactured separately from the base body before the auxiliary oil chambers have been fixed to the base body;

Fig. 4 a schematic perspective illustration of a base body in a third embodiment of an oil sump which is formed in one piece manner with the bottom walls and with parts of the front and rear end face walls of two auxiliary oil chambers, and two auxiliary oil chamber wall parts which are manufactured separately from the base body and which each comprise a cover wall, a side wall and parts of a front end face wall and a rear end face wall of the respective auxiliary oil chamber, before the auxiliary oil chamber wall parts have been fixed to the base body;

Fig. 5 a schematic perspective illustration of the base body in the third embodiment of an oil sump with the auxiliary oil chamber wall parts fixed thereto;

Fig. 6 a schematic perspective illustration of a base body of a fourth embodiment of an oil sump which is formed in one piece manner with bottom walls, front end face walls, rear end face walls and side walls of two auxiliary oil chambers, and auxiliary oil chamber wall parts which are fixed to the base body and each comprise a cover wall of the respective auxiliary oil chamber;

Fig. 7 a schematic perspective illustration of a base body in a fifth embodiment of an oil sump which is formed in one piece manner with bottom walls, front end face walls, rear end face walls and side walls of two auxiliary oil chambers, and auxiliary oil chamber wall parts which are fixed to the base body and each comprise a cover wall of the respective auxiliary oil chamber, wherein a cover wall of an auxiliary oil chamber is provided with a connector for an oil filler line, with a connector for an oil dipstick guide means and with a connector for a level sensor;

Fig. 8 a schematic perspective illustration of the auxiliary oil chamber wall part depicted in Fig. 7, which is provided with a connector for an oil filler line, with a connector for an oil dipstick guide means and with a connector for a level sensor; and

Fig. 9 a schematic vertical section through the connector for an oil dipstick guide means of the auxiliary oil chamber wall part depicted in Fig. 8.

Similar or functionally equivalent elements are designated by the same reference symbols in each of the Figures.

An oil sump which bears the general reference 100 and is illustrated in Figs. 1 and 2 comprises a trough-like base body 102 which, for its part, comprises two mutually opposite longitudinal side walls 104a, 104b that extend substantially parallel to each other, two transverse side walls 106a, 106b that connect the longitudinal side walls together, a mounting flange 108 which is carried by the longitudinal side walls 104a, 104b and the transverse side walls 106a, 106b and is in the form of a peripheral ring along the upper edge of the side walls 104a, 104b, 106a and 106b, an access opening 110 which is surrounded by the mounting flange 108, an upper bottom section 112 which is arranged closer to the access opening 110, a lower bottom section

114 which is arranged further away from the access opening 110 and a sloping middle bottom section 116 which connects the upper bottom section 112 to the lower bottom section 114.

The side walls 104a, 104b, 106a and 106b and also the bottom sections 112, 114 and 116 enclose an interior space 117 of the base body 102 which forms a main oil collecting chamber 119.

Two substantially congruent mutually aligned through openings 118 are formed in the mutually opposed longitudinal side walls 104a, 104b.

The base body 102 is made from a suitable thermoplastically workable material by means of an injection moulding process, from polyamide for example.

By appropriate design of the injection mould, the through openings 118 are pre-formed in the wall of the base body 102 during the injection moulding process used for the production of the base body 102.

As an alternative thereto, provision could also be made for the base body 102 to be manufactured initially in an injection moulding process but without the through openings 118 in its wall, the through openings 118 being subsequently separated out

from the longitudinal side walls 104a, 104b, in particular, being cut out or punched out.

Furthermore, the oil sump 100 comprises two substantially parallelepipedal auxiliary oil chambers 120 which are each open on the sides thereof facing the base body 102 of the oil sump 100.

The auxiliary oil chambers 120 are made of a thermoplastically workable synthetic material, for example polyamide, in an injection moulding process.

In particular, the auxiliary oil chambers 120 can be made of the same thermoplastically mouldable synthetic material as the base body 102.

The auxiliary oil chambers 120 are placed on the outer surface of the respectively associated longitudinal side wall 104a and 104b in such a way that they surround the through opening 118 that is arranged in the respective longitudinal side wall 104a, 104b and form lateral cheeks on the wall of the base body 102.

Thereafter, the auxiliary oil chambers 120 are connected in a cohesive manner to the base body 102, for example, by friction

welding along a peripherally extending friction welding edge 123.

Due to the auxiliary oil chambers 120, the oil sump 100 that is built up in this way from the base body 102 and the two auxiliary oil chambers 120 has a larger oil collecting volume than would an oil sump that had been formed (without the through openings 118) solely from the base body 102.

By suitable choice of the size of the auxiliary oil chambers 120, the total oil collecting volume of the oil sump 100 can be adapted to any particular application without the base body 102 and, in particular, the mounting flange 108 by means of which the oil sump 100 is connected to a combustion engine, having to be modified for this purpose.

Preferably, the auxiliary oil chambers 120 are formed such as to be mutually mirror-symmetrical so that the entire oil sump 100 is then substantially mirror-symmetrical with respect to the vertical longitudinal centre plane thereof which runs in the longitudinal direction 122 of the base body 102

The wall 124 of each auxiliary oil chamber 120 comprises a cover wall 126, a front end face wall 128, a rear end face wall 130 located opposite the front end face wall 128, a side wall 132

that is located opposite the through opening 118 and connects the two end face walls 128 and 130 together and a bottom wall 133.

In the case of the first embodiment of an oil sump 100 which is illustrated in Figs. 1 and 2, the wall 124 of each auxiliary oil chamber 120 is formed in one piece manner, manufactured separately from the base body 102 and connected subsequently to the base body 102.

A second embodiment of an oil sump 100 that is illustrated in Fig. 3 differs from the first embodiment illustrated in Figs. 1 and 2 in that the through openings 118 in the longitudinal side walls 104a, 104b of the base body 102 are each closed by a reinforcement wall 134, wherein at least one oil passage opening 136, preferably several such oil passage openings 136, and in particular two such oil passage openings 136 are provided in each reinforcement wall 134 in order to connect the oil collecting volume in the respectively associated auxiliary oil chamber 120 to the oil collecting volume of the main oil collecting chamber 119 in the interior 117 of the base body 102.

The reinforcement walls 134 serve to strengthen the respective longitudinal side walls 104a and 104b of the base body 102 and to

stabilise the oil flow in the entire oil collecting volume of the oil sump 100.

In all other respects, the second embodiment of an oil sump 100 that is illustrated in Fig. 3 corresponds in regard to the construction, functioning and manner of manufacture thereof with the first embodiment illustrated in Figs. 1 and 2, and to this extent, reference is made to the preceding description thereof.

A third embodiment of an oil sump 100 that is illustrated in Figs. 4 and 5 differs from the second embodiment illustrated in Fig. 3 in that the wall 124 of each auxiliary oil chamber 120 is not formed in one piece manner, but rather, each wall 124 is composed of a first wall part 138 that is formed in one piece manner with the base body 102 and a complementary second wall part 140 that is manufactured separately from the base body 102 and is subsequently connected to the first wall part 138.

Here, the first wall part 138 that is formed in one piece manner with the base body 102 comprises the bottom wall 133 as well as the half 142 of the front end face wall 128 adjacent to the bottom wall 133 and to the longitudinal side wall 104a or 104b of the base body 102 and also the corresponding half 144 of the rear end face wall 144 of the wall 124 of the respective auxiliary oil chamber 120, whilst the second wall part 140 that was

manufactured separately from the base body 102 comprises the cover wall 126, the side wall 132, the half 146 of the front end face wall 128 which borders on the cover wall 126 and the side wall 132 and the corresponding half 148 of the rear end face wall 130.

The base body 102 is manufactured together with the first wall parts 138 from a suitable thermoplastically workable material, for example polyamide, by means of an injection moulding process.

The second wall parts 140 are made of a thermoplastically workable synthetic material, for example polyamide, in an injection moulding process.

In particular, the second wall part 140 can be made of the same thermoplastically mouldable synthetic material as the base body 102 incorporating the first wall parts 138.

The second wall parts 140 are placed on the outer surface of the respectively associated longitudinal side wall 104a and 104b and on the edge of the respectively associated first wall part 138 in such a way that they supplement the respective first wall part 138 to form a complete auxiliary oil chamber 120 and,

together with the respective first wall part 138, form lateral cheeks on the wall of the base body 102.

Thereafter, the second wall parts 140 of the auxiliary oil chambers 120 are connected in a cohesive manner to the base body 102 and to the first wall parts 138, by means of a friction welding process for example.

In all other respects, the third embodiment of an oil sump 100 that is illustrated in Figs. 4 and 5 corresponds in regard to the construction, functioning and manner of manufacture thereof with the second embodiment illustrated in Fig. 3, and to this extent, reference is made to the preceding description thereof.

A fourth embodiment of an oil sump 100 that is illustrated in Fig. 6 differs from the third embodiment illustrated in Figs. 4 and 5 in that the second wall parts 140 of the auxiliary oil chambers 120 that were manufactured separately from the base body 102 and subsequently connected to the base body 102 consist substantially of just the cover wall 126 of the wall 124 of the respective auxiliary oil chamber 120.

In this embodiment, the first wall parts 138 that were formed in one piece manner with the base body 102 each comprise the bottom wall 133, the front end face wall 128, the rear end face wall

130 and the side wall 132 of the wall 124 of the respective auxiliary oil chamber 120 that is located opposite the respective through opening 118.

In all other respects, the fourth embodiment of an oil sump 100 that is illustrated in Fig. 6 corresponds in regard to the construction, functioning and manner of manufacture thereof with the third embodiment illustrated in Figs. 4 and 5, and to this extent, reference is made to the preceding description thereof.

A fifth embodiment of an oil sump 100 that is illustrated in Figs. 7 to 9 differs from the fourth embodiment illustrated in Fig. 6 in that one of the second wall parts 140 of the auxiliary oil chambers 120 manufactured separately from the base body 102 and subsequently connected to the base body 102 is provided with a connector 150 for a (not illustrated) oil filler line, with a connector 152 for an oil dipstick guide means 153 and with a connector 154 for a level sensor 156.

The connector 150 for the oil filler line is in the form of a through-hole which goes through the cover wall 126 of this second wall part 140a and it is provided with an internal thread into which a complementary external thread of the oil filler line can be screwed.

The connector 154 for the oil level sensor 156 is likewise in the form of a through-opening which goes through the cover wall 126 of the second wall part 140a and it is provided with an internal thread into which a complementary external thread of the substantially rod-shaped oil level sensor 156 is screwed. Here, a lower section 158 of the oil level sensor 156 extends into the interior 162 of the auxiliary oil chamber 120 that is filled with oil, whilst an upper section 160 of the oil level sensor 156 extends out of the connector 154 into the exterior 168 of the auxiliary oil chamber 120 and the oil sump 100.

The connector 152 for the oil dipstick guide means 153 is illustrated in detail in Fig. 9 in the form of a vertical longitudinal sectional view and it comprises a substantially hollow cylindrical adaptor 164 which extends into the interior 162 of the auxiliary oil chamber 120 and is used for mounting an internal tube 166 of the oil dipstick guide means 153 that is arranged in the interior 162 of the auxiliary oil chamber 120 and a likewise substantially hollow cylindrical adaptor 170 which extends into the exterior 168 of the auxiliary oil chamber 120 and is used for mounting an external tube 172 of the oil dipstick guide means 153 that is arranged in the exterior 168.

The inner surface of the peripheral wall of the adaptor 170 for the external tube 172 is chamfered at the free end of the

adaptor 170 so that the interior of the adaptor 170 widens out towards the free end 174 of the adaptor 170.

On the outer surface thereof, the adaptor 170 is provided with a peripheral annular projection 176 which holds the lower end of the external pipe 172 that has been pushed onto the adaptor 170 in frictional and/or interlocking manner.

The adaptor 164 for the internal tube 166 is provided on the outer surface thereof with a saw tooth profile or a fir tree profile which digs into the inner surface of the peripheral wall of the internal tube 166 when the internal tube 166 is pushed onto the adaptor 164 during the process of mounting the internal tube 166 on the second wall part 140a.

After the projections 178 of this saw tooth profile or fir tree profile that have a saw-tooth-like appearance in longitudinal section have embedded themselves in the peripheral wall of the internal tube 166, the internal tube 166 is held captive on the cover wall 126 of the second wall part 140a in interlocking manner.

The interiors of the adaptor 164 for the internal tube 166 and the adaptor 170 for the external tube 172 are connected to one another so that a (not illustrated) oil dipstick can be inserted

from the exterior 168 of the auxiliary oil chamber 120 through the external tube 172 and the connector 152 for the oil dipstick guide means 153 into the internal tube 166 which is at least partially filled with oil when the oil sump 100 is operational.

After the oil dipstick has been withdrawn from the oil dipstick guide means 153, the oil dipstick guide means 153 can also be used for sucking oil out from the interior 162 of the auxiliary oil chamber 120 and from the interior 117 of the base body 102 of the oil sump 100 which is connected thereto.

The adaptor 164 and the adaptor 170 of the connector 152 for the oil dipstick guide means 153 are formed in one piece manner with the cover wall 126 of the second wall part 140a.

In particular, provision may be made for the connector 152 for the oil dipstick guide means 153 to be moulded on the cover wall 126 of the second wall part 140a.

In all other respects, the fifth embodiment of an oil sump 100 that is illustrated Figs. 7 to 9 corresponds in regard to the construction, functioning and manner of manufacture thereof with the fourth embodiment illustrated in Fig. 6, and to this extent, reference is made to the preceding description thereof.

What is claimed is:

1. An oil sump comprising a base body with a main oil chamber and a wall,

wherein the oil sump comprises at least one auxiliary oil chamber,

wherein the wall has at least one through opening by means of which the auxiliary oil chamber is connected to the main oil chamber of the base body,

wherein at least a first part of a wall of at least one auxiliary oil chamber has been manufactured separately from the base body and subsequently connected to the base body,

wherein at least one auxiliary oil chamber is arranged laterally beside the main oil chamber and at least one through opening is formed in a longitudinal side wall of the main oil chamber, and wherein

at least a second part of a wall of at least one auxiliary oil chamber is formed in one piece manner with the base body, and the second part of the wall that is formed in one piece manner with the base body comprises a bottom wall of the auxiliary oil chamber.

2. An oil sump in accordance with Claim 1, wherein the first part of the wall manufactured separately from the base body comprises a cover wall of the auxiliary oil chamber.

3. An oil sump in accordance with either of the Claims 1 or 2, wherein the first part of the wall manufactured separately from the base body comprises at least a part of a front end face wall and/or at least a part of a rear end face wall of the auxiliary oil chamber.

4. An oil sump in accordance with any of the Claims 1 to 3, wherein the first part of the wall manufactured separately from the base body comprises a side wall of the auxiliary oil chamber that is located opposite the through opening.

5. An oil sump in accordance with any of the Claims 1 to 4, wherein the first part of the wall of at least one auxiliary oil chamber is connected to the base body by a substance-to-substance bond.

6. An oil sump in accordance with any of the Claims 1 to 5, wherein the first part of the wall of at least one auxiliary oil chamber is connected to the base body by a welding process.

7. An oil sump in accordance with Claim 6, wherein the first part of the wall of the at least one auxiliary chamber is connected to the base body by means of a friction welding process.

8. An oil sump in accordance with any of the Claims 1 to 7, wherein the wall of the base body has at least two through openings by means of which a respective auxiliary oil chamber is connected to the main oil chamber of the base body.

9. An oil sump in accordance with Claim 8, wherein the through openings are formed in mutually opposite wall sections of the wall of the base body.

10. An oil sump in accordance with either of the Claims 8 or 9, wherein the at least two auxiliary oil chambers are substantially mutually symmetrical with respect to a longitudinal centre plane of the oil sump.

11. An oil sump in accordance with any of the Claims 1 to 10, wherein the base body of the oil sump is formed from a thermoplastically workable synthetic material.

12. An oil sump in accordance with any of the Claims 1 to 11, wherein the first part of the wall of at least one auxiliary oil chamber is formed from a thermoplastically workable synthetic material.

13. An oil sump in accordance with any of the Claims 1 to 12, wherein the first part of the wall of at least one auxiliary oil chamber is formed from the same material as the base body of the oil sump.

14. An oil sump in accordance with any of the Claims 1 to 13, wherein at least one through opening is formed into the wall of the base body.

15. An oil sump in accordance with any of the Claims 1 to 14, wherein at least one through opening is separated out from the wall of the base body.

16. An oil sump in accordance with any of the Claims 1 to 15, wherein a reinforcement wall incorporating at least one oil passage opening is arranged in at least one through opening.

17. An oil sump in accordance with Claim 16, wherein the reinforcement wall has at least two oil passage openings.

18. An oil sump in accordance with any of the Claims 1 to 17, wherein the second part of the wall that is formed in one piece manner with the base body comprises at least a part of

a front end face wall and/or at least a part of a rear end face wall of the auxiliary oil chamber.

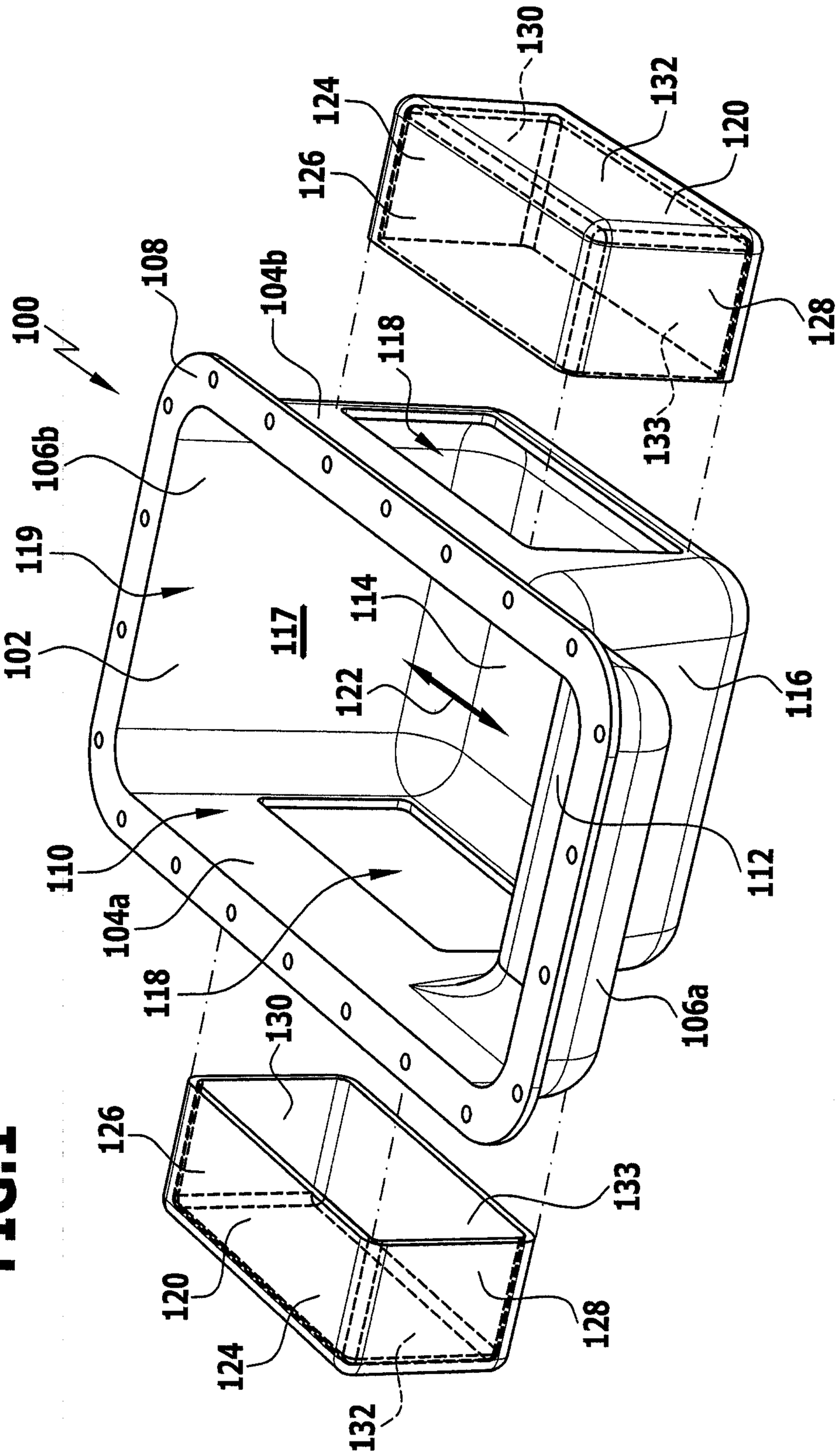
19. An oil sump in accordance with any of the Claims 1 to 17, wherein the second part of the wall that is formed in one piece manner with the base body comprises a side wall of the auxiliary oil chamber which is located opposite the through opening.

20. An oil sump in accordance with any of the Claims 1 to 19, wherein a connector for an oil filler line is provided on the first part of the wall that is manufactured separately from the base body.

21. An oil sump in accordance with any of the Claims 1 to 19, wherein a connector for an oil level sensor is arranged on the first part of the wall that is manufactured separately from the base body.

22. An oil sump in accordance with any of the Claims 1 to 20, wherein a connector for an oil dipstick guide means and/or for an oil suction line is arranged on the first part of the wall that is manufactured separately from the base body.

23. An oil sump in accordance with Claim 21, wherein the connector for an oil dipstick guide means and/or for an oil suction line comprises an adaptor that is formed in one piece manner with the wall and is used for mounting a tube that is at least partially disposed in the interior of the auxiliary oil chamber.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104b
106a
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133

FIG.1

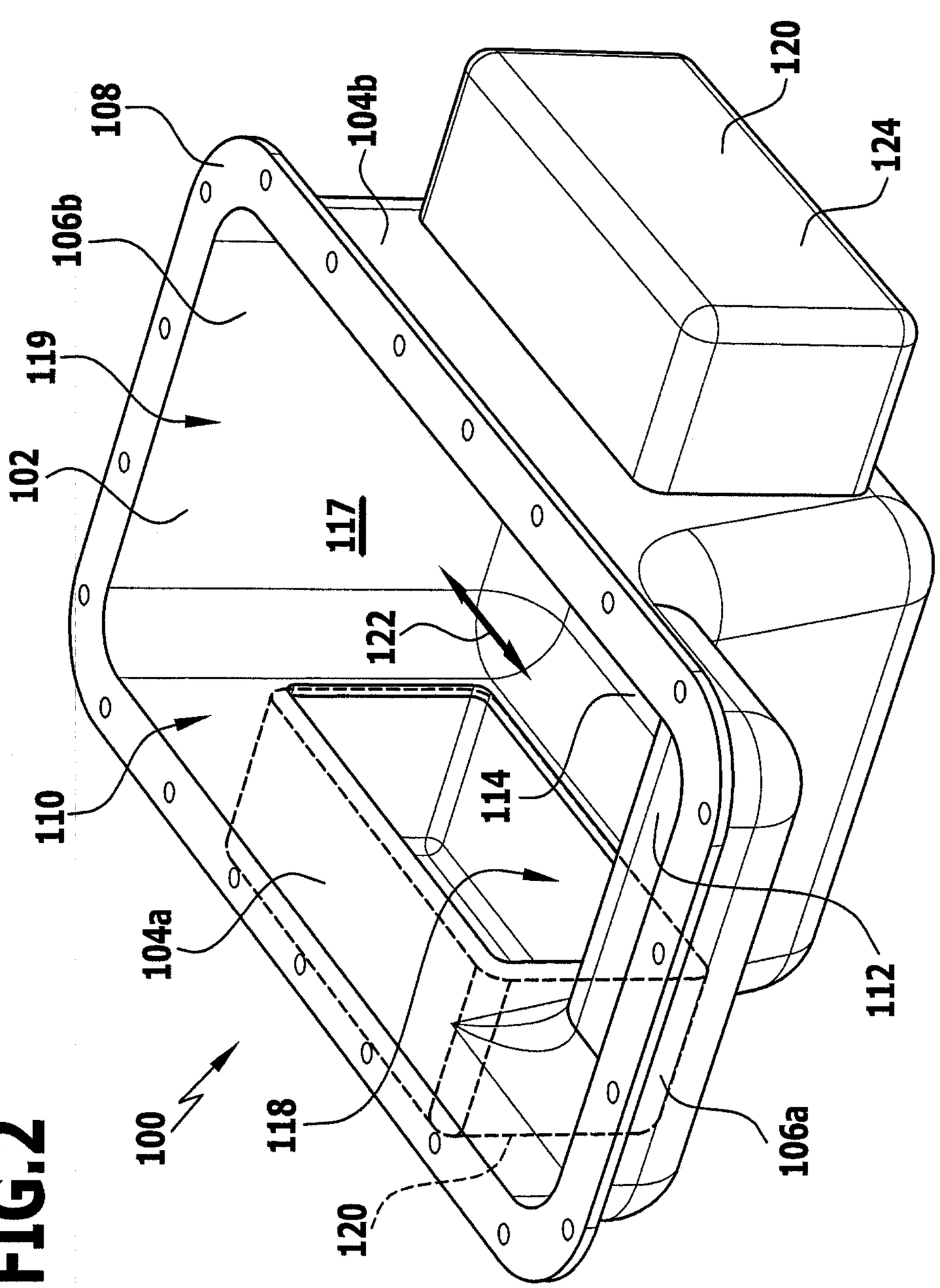
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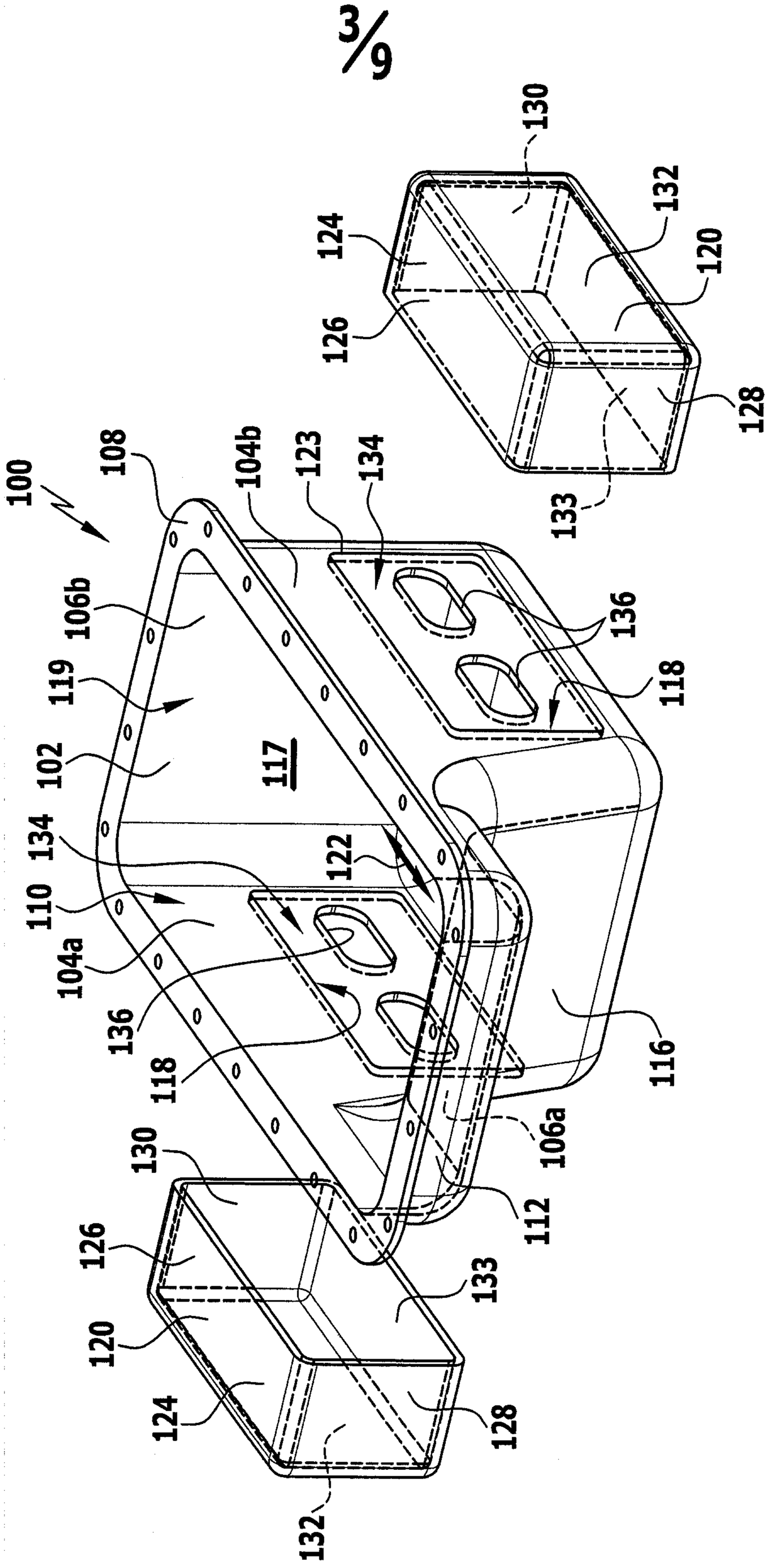
FIG.2


100
102
104a
104b
106a
106b
108
110
112
116
117
118
119
120
122
123
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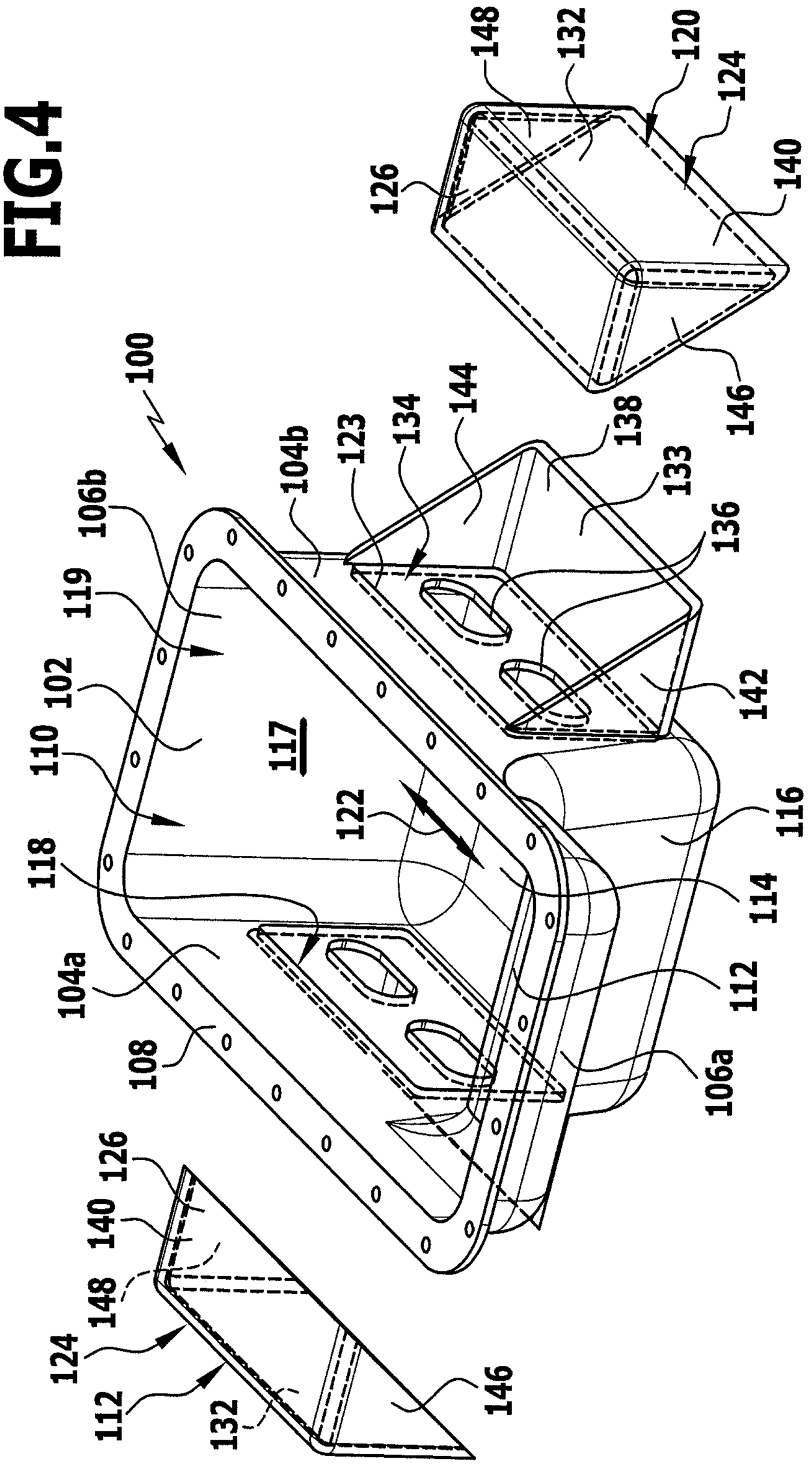
126
128
130
132
133
134
136
FIG.3

FIG.4


100
102
104a
104b
106a
106b
108
110
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120
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123
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133
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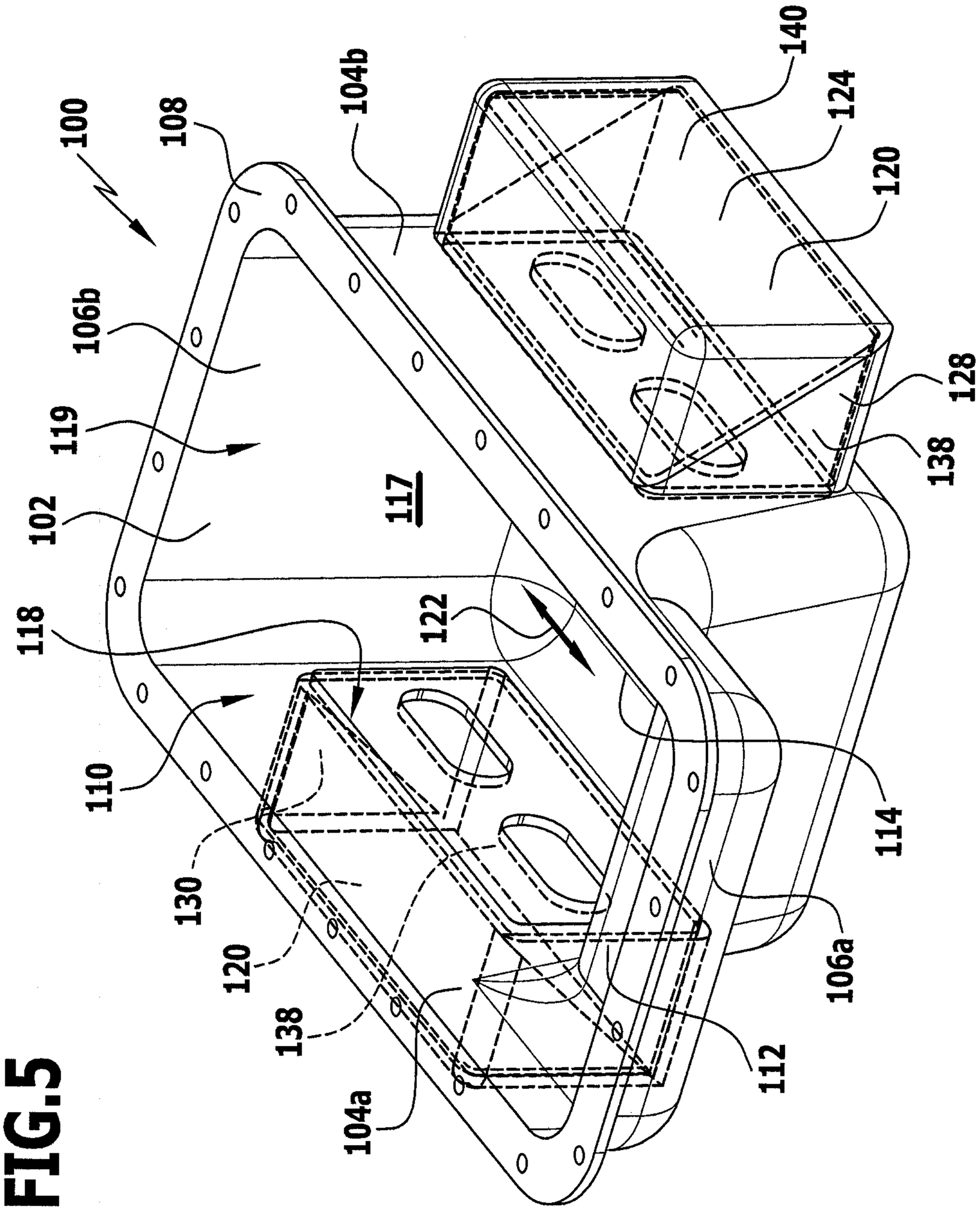
146
148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104b
140
124
120
106b
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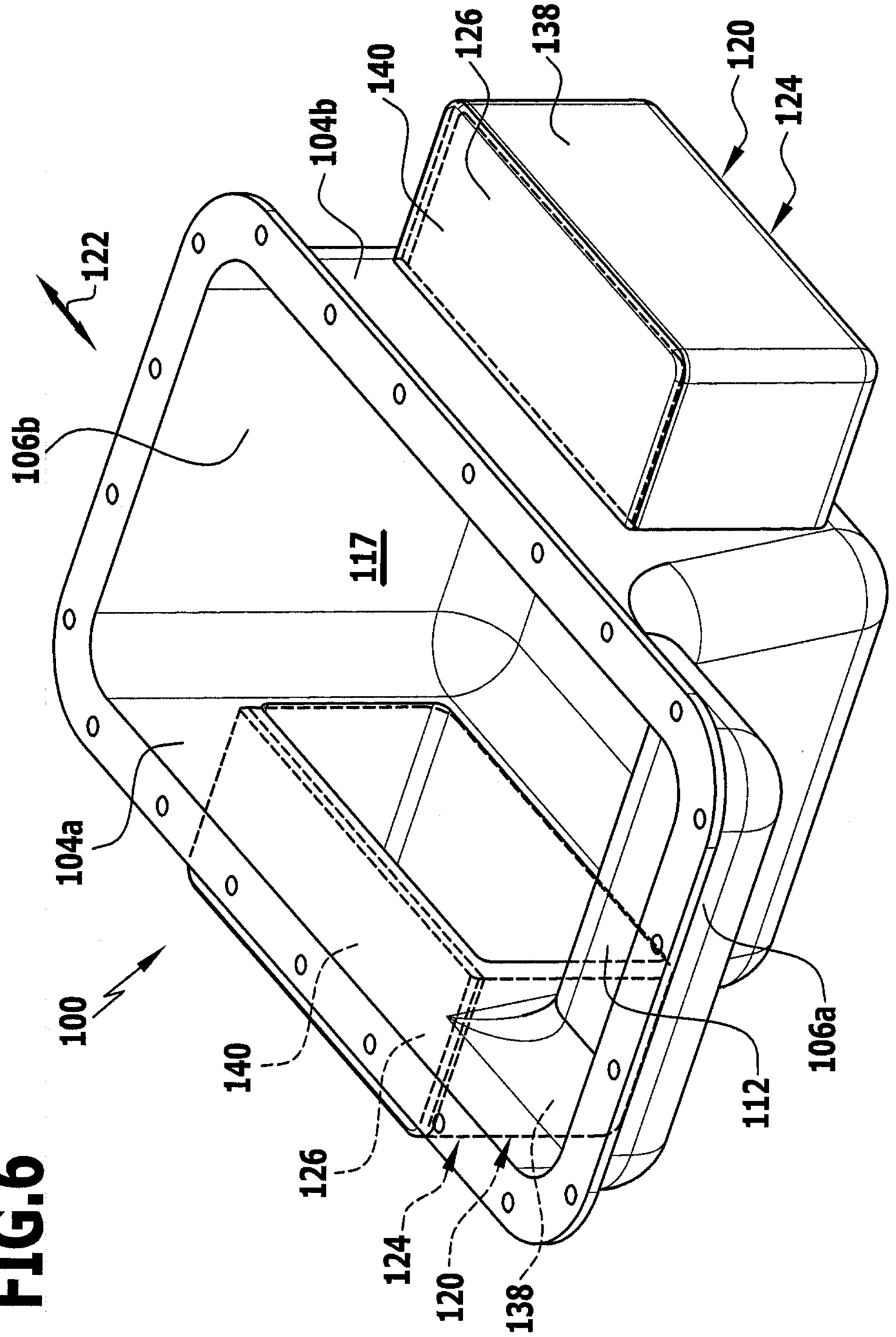
119
138
102
117
118
122
110
114
130
120
106a
138
112
104a

FIG.5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106b
104b
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138
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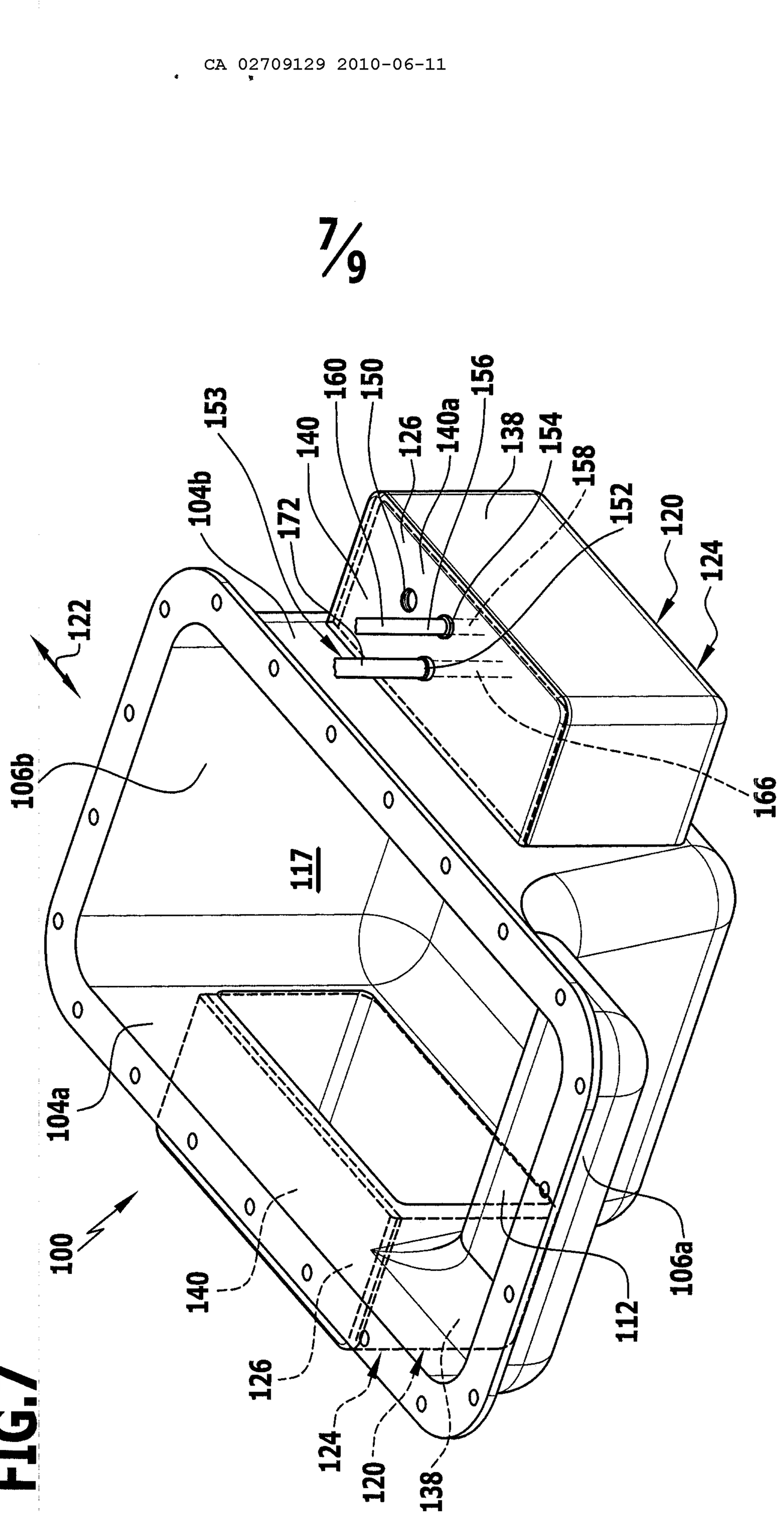
124
117
104a
100
140
112
106a
126
124
120
138

FIG.6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140a
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154
158
104b
172
152
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124
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106b
117
166
104a
100
140
112
106a
126
124
120
138

FIG.7

FIG.8

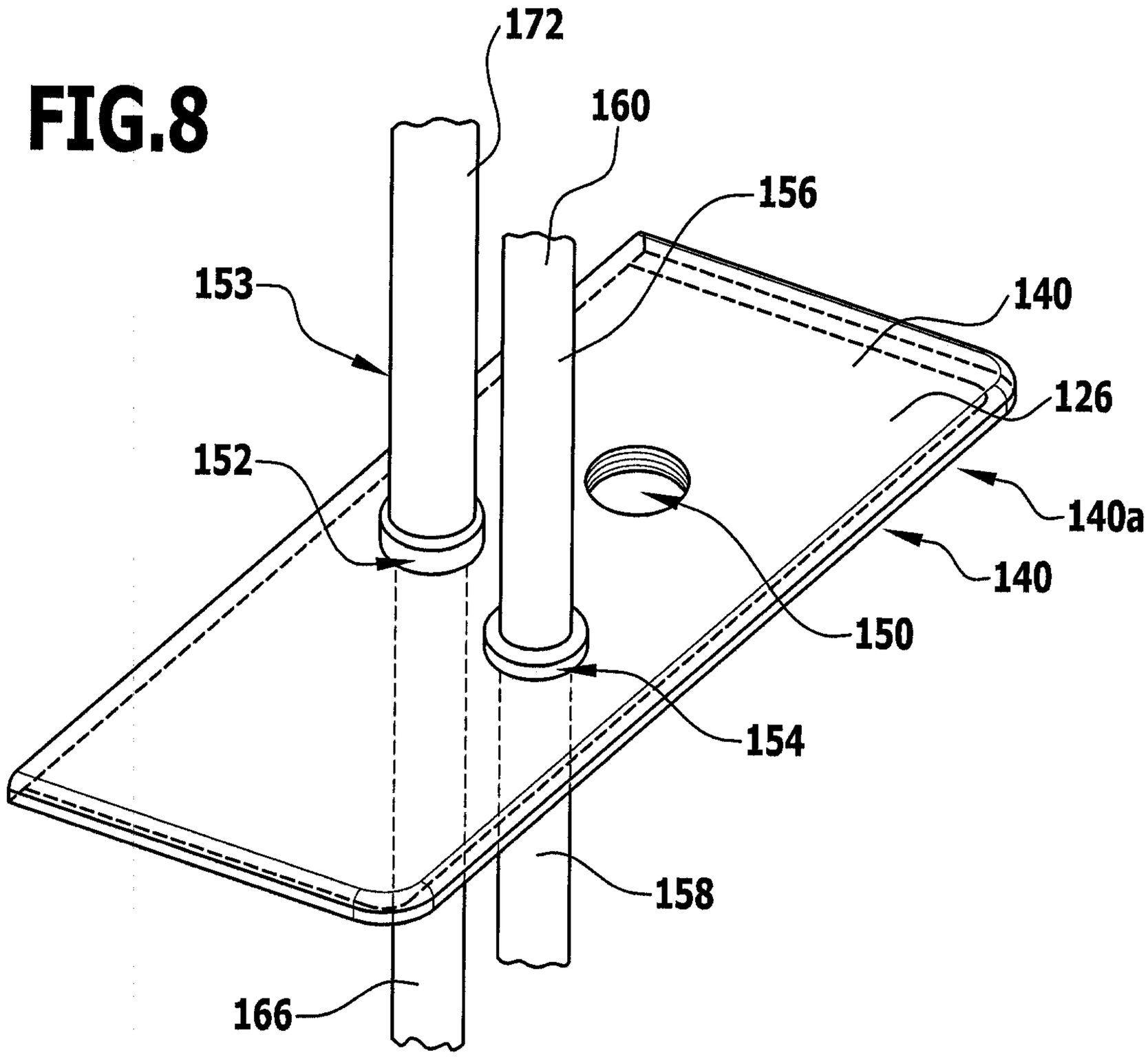
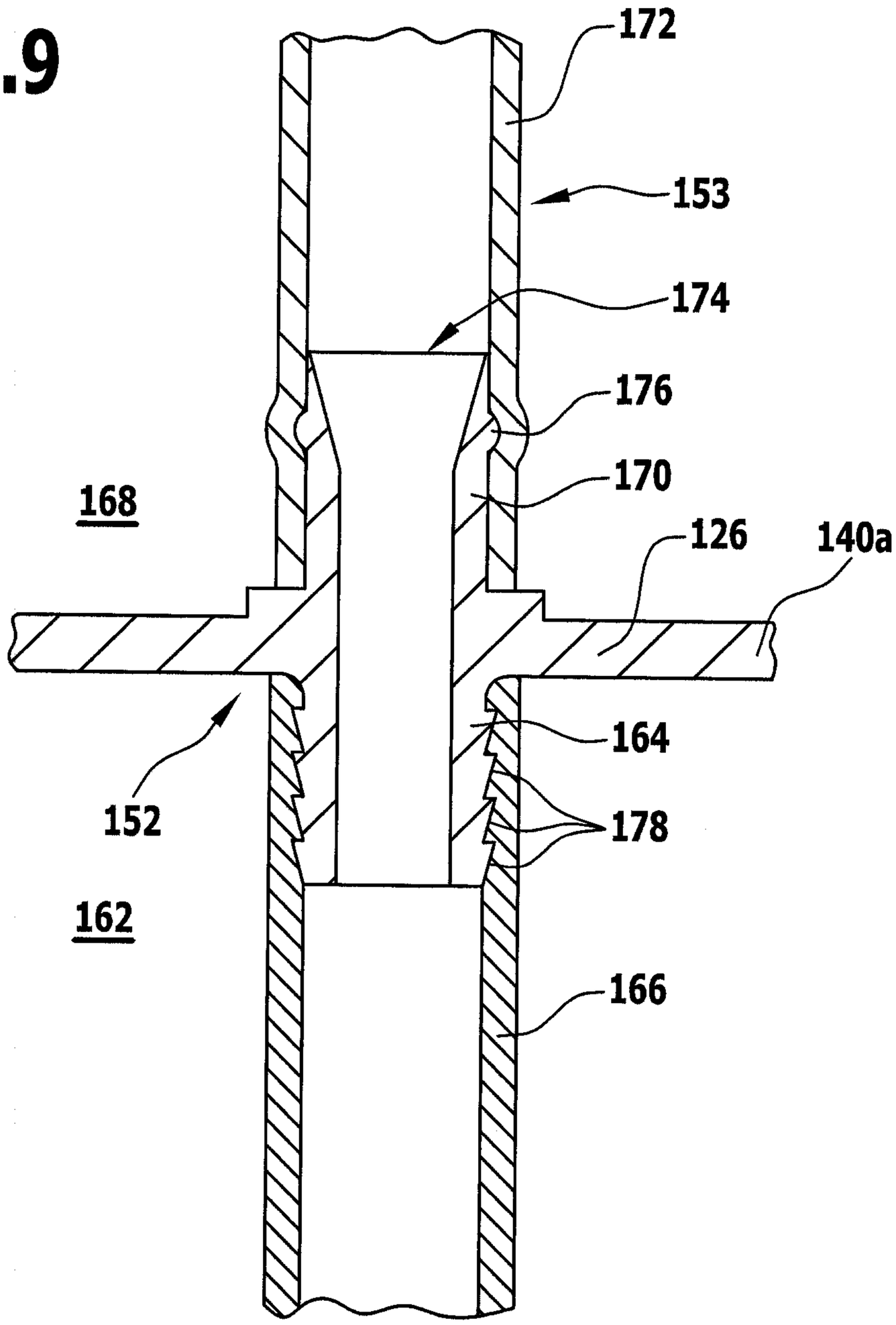
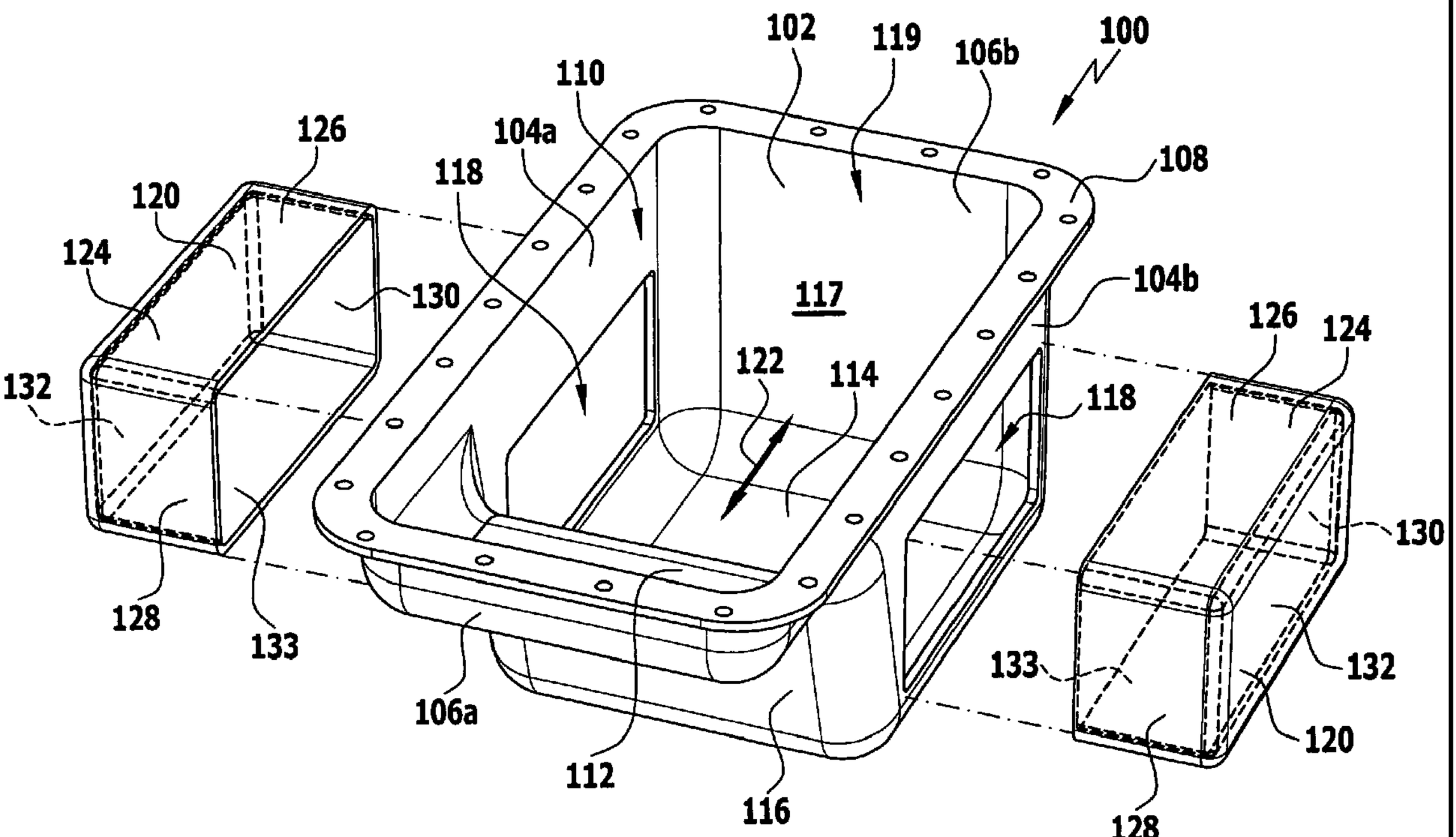


FIG.9

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124
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122
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130
133
132
120
128
133
106a
112
116
128