To this end, the invention relates to a suspension device configured to connect a chassis to an axle of a vehicle, the suspension device including elastic means for restoring in compression between a bearing point of the chassis and the axle. Advantageously, the suspension device further includes at least one support arm, a first end of which is made integral in an embedded manner with the chassis, the axle being in turn integrally attached to the second end of the support arm.

This permits to take advantage of the elasticity of the support arm to act as a damping spring, together with the elastic restoring means.

According to an additional feature of the invention, the elastic restoring means are interposed between the support arm and the bearing point of the chassis.

This permits to complement the function as damping spring of the support arm.

<u>According to the invention, each support arm includes a set-back in its longitudinal direction configured to free up a space permitting a maximum steering angle of a wheel attached to the corresponding axle.</u>

According to another feature of the invention, the elastic restoring means include at least one rubber silentbloc®.

This permits to compensate for small variations in height in the case of an uneven distribution of a heavy load to be transported, namely for variations in height of less than 50% of the height without any compression of the silentblocs®.

Finally, according to an alternative embodiment of the invention, the elastic restoring means include shock absorbers complementary to the silentbloc® or silentblocs®.

This permits to increase the damping rate of the device, namely for variations in height of more than 25% of the height without compression of the silentblocs®. More precisely, the complementary shock absorbers permit to maintain a high characteristic damping rate during quick deflections, these complementary shock absorbers absorbing the energy generated by a movement of more than 25% of the height at rest of the silentblocs, during a short period of about less than 20 ms.

~~According to yet another feature of the invention, each support arm includes a set-back in its longitudinal direction configured to free up a space permitting a maximum steering angle of a wheel attached to the corresponding axle.~~

According to another feature of the invention, the suspension device includes two support arms made integral with the same chassis and resting on the same axle.

According to another feature of the invention, the two support arms are configured so that, at rest, these support arms are parallel to each other.

Claims

1. Suspension device (1), configured to connect a chassis (2) to an axle (3) of a vehicle (V), the axle (3) supporting one or more wheels (30) by means of mounting means (303), the suspension device (1) including: ~~elastic means for restoring (4) in compression between a bearing point (21) of the chassis (2) and the axle (3), wherein the suspension device (1) further includes~~ - at least one support arm (5), a first end of which (50) is made integral in the embedded manner with the chassis (2), the axle (3) being in turn integrally attached to the second end (51) of the support arm (5)~~.~~;

- elastic means for restoring (4) in compression between a bearing point (21) of the chassis (2) and the axle (3), and interposed between the support arm (5) and the bearing point (21) of the chassis (2);

wherein each support arm (5) includes a set-back (53) in its longitudinal direction configured to free up a space (E) permitting a maximum steering angle of a wheel (30) attached to the corresponding axle (3).

~~2. Suspension device (1) according to claim 1, wherein the elastic restoring means (4) are interposed between the support arm (5) and the bearing point (21) of the chassis (2).~~

~~3.~~ 2. Suspension device (1) according to claim 1 ~~or claim 2~~, wherein the elastic restoring means (4) include at least one silentbloc® made of rubber.

~~4.~~ 3. Suspension device (1) according to claim 2~~3~~, wherein the elastic restoring means (4) include dampers 6 complementary to the silentbloc® or silentblocs®.

~~5. Suspension device (1) according to one of the preceding claims, wherein each support arm (5) includes a set-back (53) in its longitudinal direction configured to free up a space (E) permitting a maximum steering angle of a wheel (30) attached to the corresponding axle (3).~~

~~6.~~ 4. Suspension device (1) according to one of the preceding claims, wherein the suspension device (1) includes two support arms (5) made integral with the same chassis (2) and resting on the same axle (3).

~~7.~~ 5. Suspension device (1) according to claim ~~4~~6, wherein the two support arms (5) are configured so that, at rest, these support arms (5) are parallel to each other.

~~8.~~ 6. Suspension device (1) according to claim ~~6~~4 or claim ~~7~~5, wherein the two support arms (5) attached, on the one hand, to the same chassis (2), and on the other hand, to the same axle (3) have an X configuration, i.e. a junction (55) connects the two support arms (5), said junction (55) occurring between the first and second ends (50, 51) of the support arms (5).

~~9.~~ 7. Suspension device (1) according to one of the preceding claims, wherein the support arm or arms (5) is or are attached, on the one hand, to a chassis (2), and on the other hand, to at least two successive axles (3), namely in the case of a double-axle configuration.

~~10.~~ 8. Vehicle (V) including a chassis (2), at least one axle (3), wherein it includes at least one suspension device (1) according to one of the preceding claims.