April 6, 1954 A. CLAUD-MANTLE 2,674,205

ASSIST LOOP ASSEMBLY

Filed Feb. 1, 1952

Fig.1.

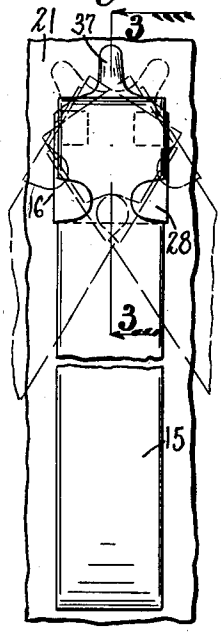


Fig.2.

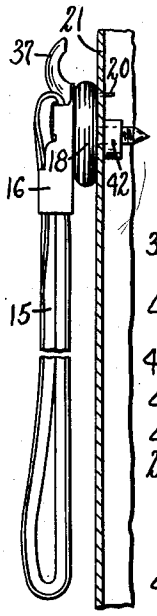


Fig.3.

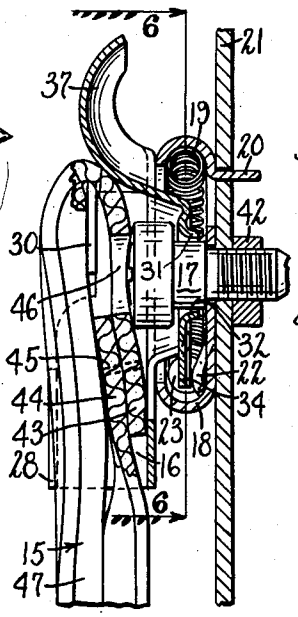


Fig.4.

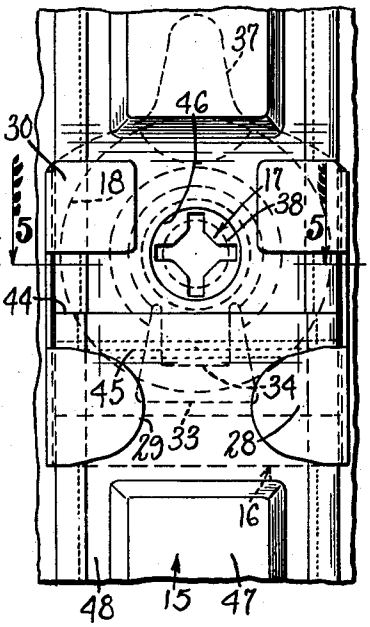


Fig.5.

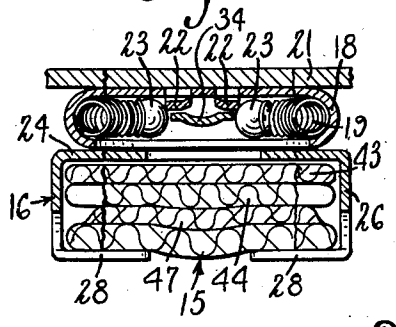


Fig.6.

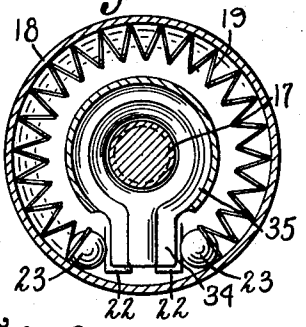


Fig.7.

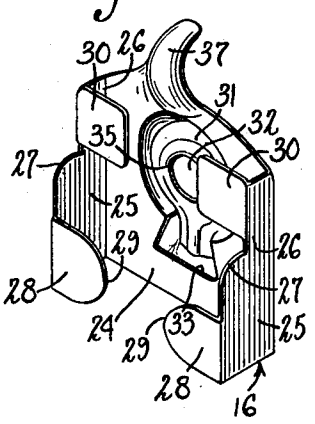
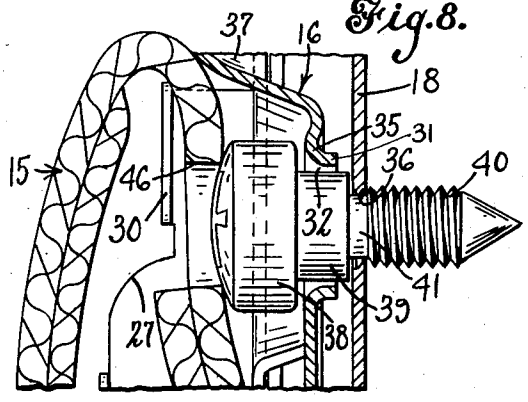


Fig.8.



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ASSIST LOOP ASSEMBLY

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17 Claims. (Cl. 105—354)

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This invention relates to assist loop assemblies such as used in motor cars.

One object of the invention is to provide a simpler and cheaper device of this character which can be easily and conveniently installed in the automobile.

Another object is to provide a device which can be handled more conveniently and without loss of parts before the device is installed in the automobile.

To an extent, also, an object is to provide an improved assembly of the general type shown in my Patent 2,215,870 of September 24, 1940, where the strap is in the form of a continuous loop, the ends of the strap being permanently interconnected and held in place in a suitable retainer or trim member swingable with respect to a fastener such as a screw applied to the wall, there being mounted on the screw and at the rear of the trim member a spring case containing a return spring.

A further purpose of the invention is to provide an assembly of the general type just referred to in which it is unnecessary to support the strap directly on the fastener, and in which a retainer or trim member which holds the loop in a flattened condition has an abutment that takes the strain occasioned by downward pull on the strap.

In the accompanying drawings:

Fig. 1 is a front elevation of an assist loop assembly embodying my improvements, the normal position of the assist loop being illustrated as vertical in this particular instance;

Fig. 2 is a side elevation of the parts shown in Fig. 1;

Fig. 3 is an enlarged section on line 3—3 of Fig. 1;

Fig. 4 is a fragmentary front elevation, with the outer part of the strap loop omitted;

Fig. 5 is a section on line 5—5 of Fig. 4;

Fig. 6 is a section on line 6—6 of Fig. 3;

Fig. 7 is a perspective view of the retainer; and

Fig. 8 is a fragmentary enlarged sectional view of the sub-assembly made up of the retainer, the fastening screw, and the spring-equipped cup-shaped casing.

In the form shown in the drawings, the device is of the general type disclosed in my Patent 2,215,870, in that the assist strap has its respective ends permanently interconnected so as to form a continuous loop, the loop being held in a flattened condition by a retainer, the strap and retainer having pivotal relationship to a supporting member such as a screw applied to the

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supporting wall, and there being mounted on the supporting screw at the rear of the strap a cup-shaped spring-equipped case, the spring in the case serving to hold the assist member normally in a predetermined angular position.

In the drawings, the strap member is indicated at 15, the retainer at 16, the fastening screw at 17, the spring-containing case at 18, the coiled spring in the case at 19, and the lug which holds the case 18 against angular movement, at 20. The lug 20 extends into a suitable hole provided in the supporting wall 21. The spring case 18, as disclosed in the patent previously mentioned, is a relatively shallow round member having a back that seats against the supporting wall and being open at the front, and being provided with a curved peripheral wall which holds the curved spring 19 in position in the case. Adjacent the ends of the spring are lugs 22 bent up from the back of the case and serving to position ball members 23 engaged with the respective ends of the spring coil.

Lying against the case 18 and disposed forwardly thereof is the retainer or trim member 16, which is preferably bent up from sheet metal and has the form shown in Fig. 7, this member being in the nature of a rectangular keeper which is substantially closed at the rear but is open at the top and bottom and partially open at the front. This member has a back wall 24 and side walls 25 integral with the back wall. Each side wall 25, as shown in Fig. 7, has an upper part 26 narrower than the lower part and joining the latter by a shoulder 27. Each lower or main portion of the side wall 25 has at the lower end of the retainer an integral front lug 28, and, as will be seen from Fig. 7, the two lugs 28 have a substantial space between them, this being for a purpose which will appear hereinafter. Preferably, also, the lugs 28 have rounded tips, as indicated at 29. At the upper part 26 of each side an integral lug 30 is provided extending crosswise of the retainer in a plane set inwardly from the plane of the lugs 28, and it is preferred to make the lugs 30 substantially rectangular in shape, as shown.

The rear wall 24 of the retainer is provided with a generally rearwardly directed boss 31 adapted to extend into the spring case 18, as shown in Fig. 3, and the boss has a hole 32 through which the screw 17 extends with clearance. Below the boss 31, the rear wall of the retainer has a cut-out portion 33, and to the rear of this cut-out portion the boss 31 has a downwardly projecting tongue 34 that lies between the

balls 23 in a position in which it can engage either one of them so that by swinging movement of the retainer in one direction or the other the spring 19 can be pressed from the corresponding end for the purpose of energizing the spring.

It will be noted from Figs. 5 and 6 that the tongue 34 is of somewhat channeled cross section, which is for the purpose of making it stronger, and the channel of the tongue is preferably continued within the boss 31 for the purpose of reinforcing the boss, the channel part of the boss being indicated at 35. The perforation 32 in the boss is preferably of somewhat greater diameter than the perforation in the rear wall of the spring case 18. The latter perforation is shown at 36, and the wall of the perforation or hole 36 is threaded, as shown in Fig. 8, so that it is adapted to be engaged by the threads of the screw 17.

Reverting to the retainer 16, this is preferably provided at the upper part with a coat hook 37, which may be integral with the rear wall 24 and may be curved forwardly and upwardly from the upper end of the rear wall of the retainer, as shown particularly in Figs. 3 and 7.

The fastening screw 17 may be of the form shown in Fig. 8, being provided with an enlarged round head 38 having screw-driver nicks at the front face, and being provided rearwardly of the head with an integral round shoulder portion 39 from which projects the threaded shank portion 40. However, between the shoulder 39 and the threaded shank portion is an unthreaded or relatively smooth portion 41 on the shank adapted to be located in the threaded hole 36 of the screw case for a purpose which will appear hereinafter.

The socket provided upon the supporting wall 21, into which the screw 17 screws, may be provided by a socket member 42 having interior threads to engage those of the screw, the member 42 being suitably fastened to the supporting wall as by welding.

The assist member or strap member 15 is in the form of a strap or web having its ends permanently interconnected to form a loop. As shown in Fig. 3, the strap has an upper depending end 43 placed rearwardly of an end portion 44 that extends upwardly, and these overlapping portions 43 and 44 are suitably interconnected as by stitching 45. In the present form there is provided in the upper rear portion of the strap immediately above the portion 43 an aperture or hole 46 which is round and preferably of a diameter somewhat less than that of the head 38 of the screw. This aperture 46 is provided for the purpose of enabling a screw-driver bit to be passed through the strap for the purpose of installing the fastening screw in its socket and removing it therefrom.

Inasmuch as the retainer member 16 is open at the front in the space between the upper lugs 30 and also in the space between the lower lugs 28, it is possible to introduce the strap loop into the retainer from the front so that it takes the position shown in Figs. 1, 2 and 3. In this position it will be noted that the upper end of the loop has an inner portion engaging the upper lugs 30, and these lugs, acting as an abutment in the nature of a partial bridge engaging substantial portions of the width of the strap, take the down pull on the strap loop when the device is in use, and from the retainer the strain is transmitted to the spring case 18 supporting the retainer from the rear, and to the screw on which the retainer and the spring case are supported. The head 38 of the screw is larger than the hole 32 in the retainer, and when the screw is installed it holds the spring case and the retainer securely against tipping in a forward and rearward direction while at the same time the rear wall of the retainer, with its projecting spring-engaging tongue 34, has the necessary free tilting movement with reference to the shoulder portion 17 of the screw.

In the assembled position, as will be seen from Figs. 1 and 2, the lower lugs 28 extending over the outer part of the strap hold the strap loop in flattened condition. It will also be observed from Figs. 2 and 3 that in the assembled position the top portion of the strap loop is confined between the upper lugs 30 and the central coat hook 37 which projects forwardly to an extent in a region between and somewhat above these lugs, and thereby the coat hook 37 serves to an extent in positioning the strap within the retainer.

In the particular form shown, the portions of the strap loop respectively above and below the interconnected ends of the strap, in the assembled position, are somewhat reinforced and thickened throughout a portion of the width of the strap, as indicated at 47. In this particular case a stiffening or reinforcement is placed under a lining member 48 of cloth or other suitable material.

When the device is sent to the automobile factory it may, if desired, be in the form of a completed assembly of strap, retainer, spring case and fastening screw. The rear part of the strap will have the position shown in Fig. 4, the front part being free of the lugs 28, and, upon inserting a screw driver through the aperture 46 into the nicked or socketed part of the screw, the screw can be screwed into the supporting wall, the lug 20 of the spring case being inserted into its hole or socket in the wall. After the screw has been placed in position, the front part of the strap can be introduced between the lower lugs of the retainer, and the assembly shown in Figs. 1, 2 and 3 will then be complete. The screw has a relatively deep head and when the strap portions are fully engaged there is pressure against this head tending to eliminate any rattle between the strap retainer and the spring retainer.

The advantage of providing the smooth or unthreaded portion 41 on the screw shank is that in shipping the assembly the screw will not readily be disengaged from the spring case if, in the assembly as shipped, the screw has the relationship to the other parts shown in Fig. 8, the portion 41 being within the screw hole. This will, to a very large extent, overcome the loss of the screw part in shipping, and it is obviously of advantage to have the device reach the automobile factory as an assembly rather than as a collection of separate parts that have to be put together in proper relationship.

In the case just mentioned it is assumed that the strap is a part of the assembly as sent to the factory. However, in some cases the strap may be sent separately. There may be a sub-assembly consisting of only three parts, namely, the retainer, the screw, and the spring casing. In this case also the previously mentioned advantage of having the screw part preserved against loss will still obtain.

It will be noted that in the present device it is unnecessary to provide a grommet or liner in the aperture 46, although this may be done if desired.

It is obviously unnecessary in this construction to support the strap on the screw, as in Patent 2,215,870. The upper abutment or partial bridge supporting the strap from the upper end of the retainer enables the strain to be transmitted very effectively from the retainer to the supporting parts associated with the wall. While the strap is in the form of a complete loop, it is nevertheless readily insertable into and removable from the retainer at the front of the retainer, and, as above described, the device can be shipped in assembled or partly assembled form, and can be applied to the car at the factory in a very quick, easy and convenient manner by relatively unskilled persons, and there is much less likelihood than heretofore of the installation being a faulty one. Moreover, if the strap portion is damaged or badly worn, there is the possibility of easy removal and replacement of the strap portion of the device without disturbing the relationship of the other parts as installed in the car.

A further advantage of the present construction is its relatively simple form and small number of parts, and in this connection it will be noted that the retainer mounted on the supporting wall by means of the fastener has, as an integral part of such retainer and within the spring case, a part such as a tongue or lug that co-acts with the respective ends of the coil spring.

Various changes can be made in the arrangement of the parts and in the details of construction without departing from the principles of the invention or the scope of the claims.

What I claim is:

1. In an assist loop assembly, the combination of an assist strap in the form of a continuous loop, a retainer member in which the upper portion of the loop is clamped in a flattened condition and having a partially open front wall by way of which the loop is insertable and removable in a lateral direction and having a perforated rear wall, a fastener passing through the perforation of said rear wall into a supporting wall and providing a pivotal mounting for said retainer, spring means embracing said fastener including a case back of the retainer and also including a coil spring in the case coacting with an integral part of the retainer to normally hold the loop member in a predetermined angular position.

2. In an assist loop assembly, the combination of an assist strap in the form of a continuous loop, a retainer member in which the upper portion of the loop is clamped in a flattened condition and having a partially open front wall by way of which the loop is insertable and removable in a lateral direction and having a perforated rear wall, a fastener passing through the perforation of said rear wall into a supporting wall and providing a pivotal mounting for said retainer, and spring means embracing said fastener including a case back of the retainer and also including a coil spring in the case co-acting with the retainer to normally hold the loop member in a predetermined angular position, said spring means co-acting with a part integral with the rear wall of the retainer.

3. In an assist loop assembly, a flexible strap in the form of a continuous loop, a retainer having a front wall through which the loop is insertable and withdrawable in a lateral direction, said retainer having a rear wall, and a fastener passing through the rear wall of the retainer into a supporting wall and providing a pivotal mounting for the retainer, said strap being located forwardly of the fastener and having an aperture in one side of the loop adapted to be moved into line with said fastener to permit manipulation of the fastener.

4. In an assist loop assembly, a flexible strap in the form of a continuous loop, a retainer having a front wall through which the loop is insertable and withdrawable in a lateral direction, said retainer having a rear wall, and a fastener passing through the rear wall of the retainer into a supporting wall, said strap being located forwardly of the fastener and having an aperture in one side of the loop which in the installed position of the device is in line with said fastener in close adjacency thereto for the purpose of giving access to the fastener.

5. In an assist loop assembly, the combination of a flexible strap in the form of a continuous loop, a retainer into which said loop is insertable and from which it is removable by way of the forward portion of the retainer, and a fastener passing through said retainer for mounting it pivotally on a supporting wall, said fastener having a manipulating head which is overlain by an underlying portion of said loop in the operative position of the device, and said portion of the loop being apertured to give access to the fastener head.

6. In an assist loop assembly, the combination of a flexible strap in the form of a continuous loop, a retainer into which said loop is insertable and from which it is removable by way of the forward portion of the retainer, a fastener passing through said retainer for mounting it pivotally on a supporting wall, and spring means embracing said fastener including a case back of the retainer held in place by the fastener and also including a coil spring in the case co-acting with an integral part of the retainer to normally hold the loop in a predetermined angular position, said fastener having a manipulating head which is overlain by said loop in the operative position thereof, said loop being apertured to give access to the fastener head, and said retainer having a member at the upper forward part thereof over which the loop extends and engaging the upper part of the loop to take the downward pull on the loop.

7. In an assist loop assembly, the combination of an assist loop member comprising a strap having its ends interconnected to form a continuous loop, a fastener in the form of a screw extending into a supporting wall, spring means embracing said fastener including a case and also including a coil spring within said case, and a retainer forwardly of said case into which said loop member is insertable from the front and by means of which the loop is held in flattened condition, said retainer having a rear wall through which said screw passes providing a pivotal mounting for said retainer and also having as a part of its rear wall a lug engaging said spring means so that the retainer is maintained normally in a predetermined angular position with respect to the screw.

8. In an assist loop assembly, the combination of an assist loop member comprising a strap having its ends interconnected to form a continuous loop, a fastener in the form of a screw extending into a supporting wall, spring means embracing the fastener including a case and also including a coil spring within said case, and a retainer forwardly of said case into which said loop member is insertable from the front and by means of which the loop is held in flattened condition, said retainer having a rear wall through which said screw passes providing a pivotal mounting for said re-

tainer and also having as a part of its rear wall a lug engaging said spring means so that the retainer is maintained normally in a predetermined angular position with respect to the screw, said retainer having a strain-bearing member at the upper part thereof supporting said loop member independently of the head of said screw, and the loop being disposed forwardly of said fastener and having an aperture in line with the screw head to permit manipulation of the screw.

9. In an assist loop assembly, the combination of an assist loop member comprising a strap having its ends interconnected to form a continuous loop, a fastener in the form of a screw extending into a supporting wall, spring means embracing the fastener including a case and also including a coil spring within said case, and a retainer forwardly of said case into which said loop member is insertable from the front and by means of which the loop is held in flattened condition, said retainer having a rear wall through which said screw passes providing a pivotal mounting for said retainer and also having as a part of its rear wall a lug engaging said spring means so that the retainer is maintained normally in a predetermined angular position with respect to the screw, said retainer having a strain-bearing member at the upper part thereof supporting said loop member independently of the head of said screw, and the loop being disposed forwardly of said fastener and having an aperture in line with the screw head to permit manipulation of the screw, said strap ends being interconnected in the rearward reach of the loop by forwardly and rearwardly disposed portions which overlap each other within the retainer, said aperture being located adjacent said overlapping portions.

10. In an assist loop assembly, a flexible strap in the form of a continuous loop, a retainer having a gapped upper front wall portion receiving the upper end portion of the loop and taking the pulling strain and having a gapped lower front wall portion clamping the front and rear portions of the loop so that the loop is held in a flattened condition, said retainer having a rear wall, a fastener passing through the rear wall and into a supporting wall providing a pivotal mounting for said retainer, and spring means embracing the fastener and co-acting with a part integral with the rear wall of the retainer to hold the loop normally in a predetermined angular position.

11. In an assist loop assembly, a flexible strap in the form of a continuous loop, a retainer having a gapped lower front wall portion into which both front and rear portions of the loop are insertable and in which the loop is held in a flattened condition, said retainer also having a gapped upper front wall portion over which the upper end of the loop extends and which portion takes the strain from the upper end of the loop, said retainer having a rear wall, and a screw extending through said rear wall of the retainer into a supporting wall.

12. In an assist loop assembly, a flexible strap in the form of a continuous loop, a retainer having a gapped lower front wall portion into which both front and rear portions of the loop are insertable and in which the loop is held in a flattened condition, said retainer also having a gapped upper front wall portion over which the upper end of the loop extends and which portion takes the strain from the upper end of the loop, said retainer having a rear wall, and a screw extending through said rear wall of the retainer into a supporting wall, said retainer having integral with its rear wall a forwardly and upwardly extending coat hook which assists in locating the upper end of the loop.

13. In a device such as described, a sheet metal trim member or retainer having a rear wall and having at the lower front portion of the retainer lugs extending toward each other but leaving a gap, said retainer having at the upper front portion thereof lugs extending toward each other but leaving a gap, said second lugs being offset with respect to the first-mentioned lugs so as to be nearer the rear wall than are said first-mentioned lugs, said rear wall being perforated to receive a supporting fastener.

14. In a device such as described, a sub-assembly comprising a strap loop, a trim member or retainer holding the strap loop in flattened condition, a spring-equipped case disposed rearwardly of the retainer and co-acting with the retainer to normally hold the loop member in a predetermined angular position, and a screw having a shank extending through a wall of the retainer and through the spring case, the spring case having a threaded hole in one wall engageable with the threads of the screw, and the screw shank having a plain or unthreaded portion which is disposed in the threaded hole of the spring case so as to inhibit loss of the screw.

15. In a device such as described a sheet metal trim member or retainer having a rear wall and having lugs extending toward each other and leaving a gap therebetween at the lower front portion of the retainer, said retainer having lugs extending toward each other and leaving a gap therebetween at the upper front portion of the retainer, said rear wall being perforated to receive a supporting fastener.

16. In a device such as described a sheet metal trim member or retainer having a rear wall and having lugs extending toward each other and leaving a gap therebetween at the lower front portion of the retainer, said retainer having lugs extending toward each other and leaving a gap therebetween at the upper front portion of the retainer, said rear wall being perforated to receive a supporting fastener, and said rear wall being provided with a forwardly and an upwardly directed hook at the upper end thereof and adjacent the upper lugs.

17. In a device such as described a sheet metal trim member or retainer having a rear wall and having lugs extending toward each other and leaving a gap therebetween at the lower front portion of the retainer, said retainer having lugs extending toward each other and leaving a gap therebetween at the upper front portion of the retainer, said last-mentioned lugs being offset with respect to the first-mentioned lugs so as to be nearer the rear wall than are the first-mentioned lugs, said rear wall being perforated to receive a supporting fastener, and said rear wall being provided with a forwardly and upwardly directed hook at the upper end thereof and adjacent the upper lugs.

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