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71 Applicant: **SOCIEDAD ESPANOLA DEL
ACUMULADOR TUDOR, S.A.**
Condesa de Venadito, 1
E-28027 Madrid(ES)

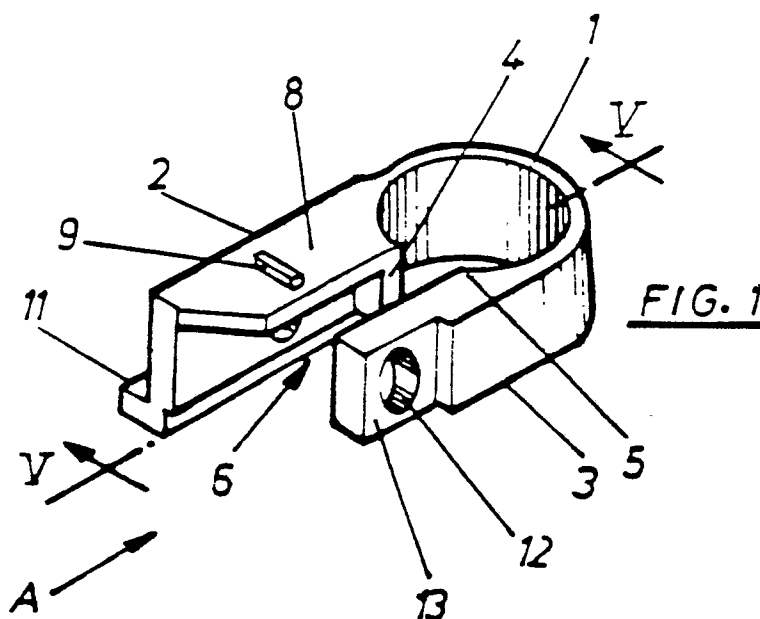
72 Inventor: **Lopez-Doriga, Juan Antonio**
Cea Bermúdez, 37
E-28003 Madrid(ES)

74 Representative: **Gomez-Acebo y Pombo, José**
Miguel et al
c/o CLARKE, MODET & Co. Paseo de la
Castellana 164
E-28046 Madrid(ES)

54 **Current tap for electric battery terminals.**

57 Current tap for electric battery terminals comprising a U-shaped clamp (1) with a curved base and two opposing holes (12), one in each arm (2 and 3), to allow the passage of a bolt with a locknut. The mouth of the U-shaped clamp (1) is partly blocked by a cross-piece (4) projecting from the inside of

one arm (2) and a thickening (5) of the other arm (3). Said cross-piece (4) is bounded externally by a flat surface (7) perpendicular to the arm (2) from which it projects, defining a dihedral angle which is enclosed on one side by the wall (8) perpendicular to the line of intersection of this angle.



EP 0 380 435 A1

CURRENT TAP FOR ELECTRIC BATTERY TERMINALS

This invention, hereinafter known as "the invention", refers to a current tap for electric battery terminals, particularly the terminals of electric starting batteries in automobiles.

The terminals of the electric starting batteries used in automobiles usually consist of lead pegs in the shape of truncated cones electrically connected to the respective plates of the battery cells. Vehicle current-tap cables terminate in connectors consisting of clamps that can be adjusted to firmly grip the battery terminals.

When current-tap cables terminate in connectors of a different shape, it becomes necessary to vary accordingly the shape of the battery terminals. This means that batteries with traditional truncated-cone shaped terminals cannot be mounted in vehicles whose connection cables have special connectors, e.g., washer-shaped connectors.

The invention aims to develop a current tap that can be mounted on traditional truncated-cone shaped battery terminals and that allows the coupling of washer-shaped connectors. The current tap thus acts as an intermediate element enabling cables terminating in washer-shaped connectors to be connected to truncated-cone shaped terminals.

The invention thus eliminates the problem that arises when one has to use an electric battery whose terminals are intended for vehicles with current-tap cable connectors of a different type, and are consequently of a shape that does not match.

The invention consists of an approximately U-shaped clamp with a curved base and a hole in each of its two arms, the two holes being located opposite each other so as to allow the passage of a bolt with a locknut. The mouth of the U is partly blocked by a cross-piece projecting from the inside face of one of the arms of the U, and by a slight thickening of the inside face of the opposite arm. The inner surfaces of said cross-piece and said thickening are oriented towards, and have the same curvature as, the base of the U, together with which they form a slightly tapering, truncated cone with axial openings.

The clamp as described above can be coupled to traditional battery terminals of a truncated-cone shape. In addition to the arrangement as described, the arms of the U-shaped clamp are prolonged beyond the part of the clamp that forms the truncated-cone that grips the terminal. These prolongations are where the above-mentioned opposing holes are placed to accommodate the clamp tightening bolt. If the vehicle cables terminate in a washer, this washer can be placed flush up against the outside face of one of the arms of the U-clamp

and fixed to it with the clamp bolt, thus providing a current tap that can be coupled to traditional terminals and that allows the connection of washer-shaped current-tap cable connectors.

The above-mentioned cross-piece which delimits the truncated-cone part of the clamp has a flat outer surface perpendicular to the arm of the U from which it projects. Said surface and said arm form a 90° dihedral angle bounded on one side by a wall perpendicular to the line of intersection of this angle. On the outer surface of said wall is marked the polarity of each battery terminal.

The arm of the U from which the inner cross-piece projects is longer than the other arm and along the free lengthwise edge of its final portion, it bears a short prolongation ending in a small wing oriented perpendicularly outwards. This wing may have a transversal notch. This central arm from which the said wing projects is designed to accommodate flush against its external surface the washer forming the vehicle cable terminal, which is then fixed to the clamp by the clamp bolt.

The following is a more detailed description of the invention. It makes reference to the attached drawings, which show an example of how it is to be performed but are not limiting.

In the drawings:

Figure 1 is a perspective of the current tap as in the invention.

Figure 2 is a view from above of the current tap shown in Figure 1.

Figure 3 is a bottom view of the same current tap.

Figure 4 is a front view as seen from A in Figure 1.

Figure 5 is a sectional view along line V-V in Figure 1.

The current tap shown in the drawings consists of a U-shaped clamp with a curved base 1 and arms 2 and 3 approximately parallel to each other. One of these arms, that denoted by reference number 2, bears on its inside surface a cross-piece 4, while the other arm exhibits a slight thickening 5 on its inside surface. The surfaces of said cross-piece 4 and said thickening 5 are oriented towards the base 1 of the clamp, have the same curvature as said base, and define an internal surface in the shape of a truncated cone that opens axially through passage 6.

On its outside, the cross-piece is bounded by a flat surface 7 that meets central arm 2 to form a 90° dihedral that is enclosed on one side by a transverse wall 8 running perpendicular to the line of intersection of the dihedral angle. The external face of wall 8 may be used for marking the termi-

nal polarity 9. Arm 2 also has along its free lengthwise edge a small prolongation 10, figure 4. This prolongation ends in a flat wing oriented perpendicularly outwards, denoted by reference number 11. This wing 11 may have a transversal groove at its midpoint.

Near their free ends, arms 2 and 3 of the U-shaped clamp have opposing orifices 12 to permit the passage of a clamp bolt. At its free end, the outer face of arm 3 has a box-shaped recess 13 able to accommodate the head of the clamp bolt.

To assemble the described current tap, the clamp is coupled by placing the truncated cone over the appropriate battery terminal. The clamp tightening bolt is passed through the washer forming the vehicle current-tap cable terminal. On tightening the locknut of this clamp, the washer is trapped upon the outer surface of an arm, at the same time as the truncated-cone housing is secured against the battery terminal.

For each battery, two symmetrical current taps are used, one marked with the symbol denoting negative 9, as illustrated by the attached drawings, while the other is marked with the symbol for positive.

Having described sufficiently the nature of the invention, as well as the way it is performed in practice, it should be specified that the provisions indicated above, and represented in the attached drawings, are subject to modifications in their details so long as these do not alter their basic principle.

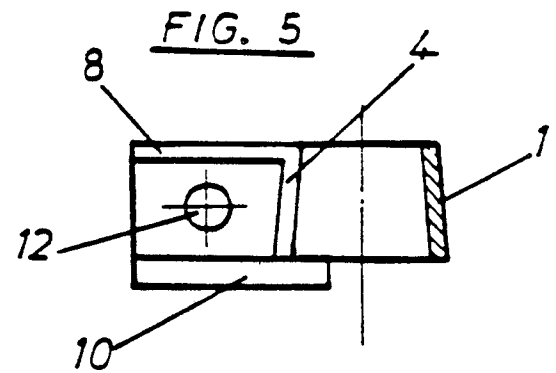
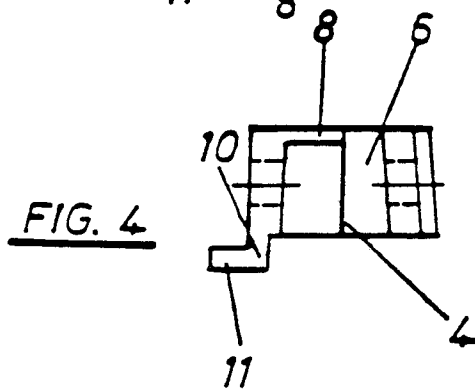
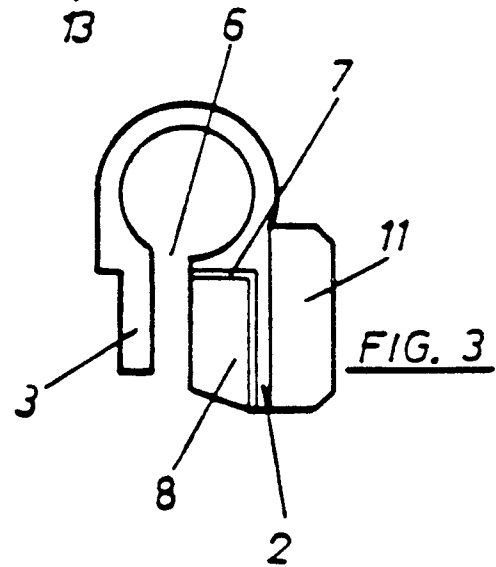
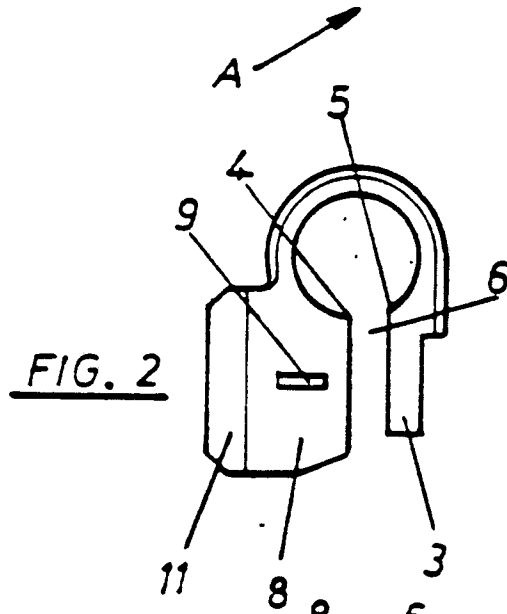
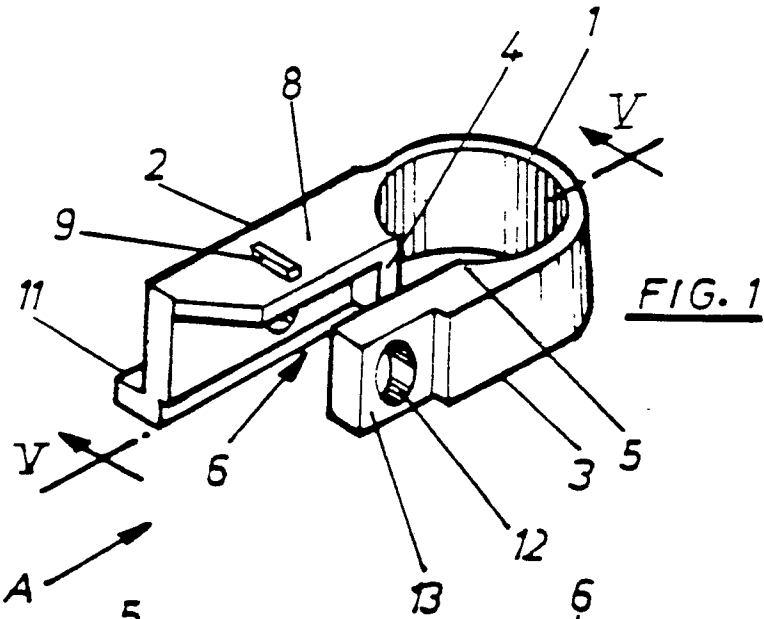
Claims

1. Current tap for electric battery terminals consisting of an approximately U-shaped clamp with a curved base and two opposing orifices, one located near the free end of each arm, to allow the passage of a bolt with a locknut. Said current tap is characterized by the clamp mouth being partly blocked by a cross-piece projecting from the inner surface of one of the arms, and by the presence of a slight internal thickening on the opposing arm opposite said cross-piece. The internal surfaces of said cross-piece and said thickening are oriented toward the base of the U, have the same curvature as said base, and define a slightly tapering, truncated cone with axial openings, while externally the said cross-piece is bounded by a flat surface perpendicular to the arm from which it projects, and with which it forms a 90° dihedral angle enclosed on one side by a wall perpendicular to the line of intersection of said angle.

2. Current tap as in Claim 1, characterized by the fact that the arm of the U which bears the internal cross-piece, is longer than the opposing

arm and has, along the end portion of the free lengthwise edge, a small prolongation ending in a wing oriented perpendicularly outwards.

3. Current tap as in Claim 2, characterized by said wing having a central transversal groove.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	FR-A-2582447 (COMPAGNIE FRANCAISE D'ELECTROCHIMIE) * page 3, lines 22 - 27; figures 1, 2 * ---	1-3	H01R11/28
A	FR-A-2443145 (RENAULT) * page 2, lines 18 - 25; figures 1, 2 * -----	1-3	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			H01R
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20 MARCH 1990	Examiner CERIBELLA G.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			