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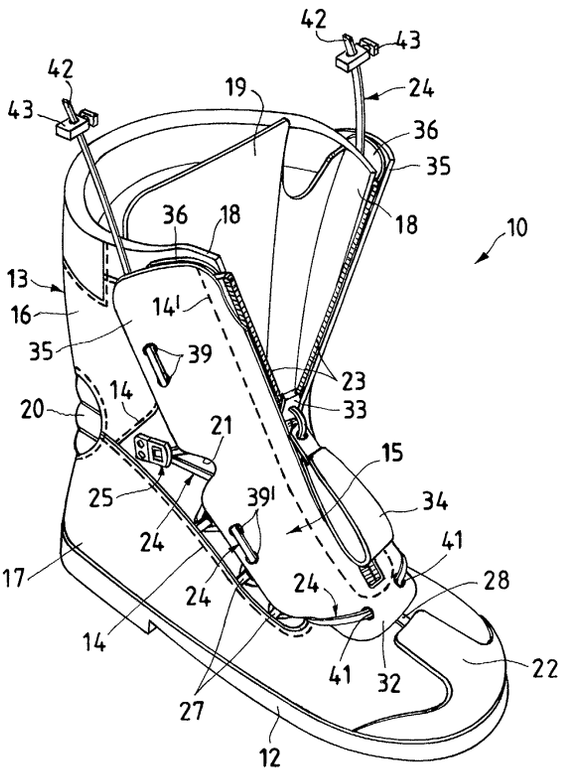
(54) Safety boot

(57) A safety boot (10) comprises a sole (12) and a leather upper (13), consisting of a leg (16) and a foot (17), and furthermore comprises a central flap (15), provided with quick-acting fastenings, such as a zip (23), and adjustable-width fastenings, such as a lace (24), which joins the upper (13), to which a number of fabric loops (26, 27, 28) are applied, to the central flap (15), provided with a number of fabric loops (40, 40') and metal eyelets (37, 38, 38', 41).

Fig.1



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Description

[0001] The present invention refers to a safety boot, in particular for special corps such as firemen, forest rangers, civil defence or other.

[0002] Said boots must necessarily be worn and adjusted so that they adapt perfectly to the operator's foot, in both the leg and foot parts. It is nevertheless equally important to be able to rapidly take the boot off and put it back on again in a practical way, also using one single hand.

[0003] Lacing systems for boots are currently used consisting in the combination of a laced portion and a zip, which run parallel to each other. Fastening by means of laces permits optimal adjustment of the boot for adaptation to the foot, whereas the zip allows the operator to put the boot on quickly without having to loosen the laces.

[0004] The main disadvantage of the boots proposed consists in exposure of the laces to the outside with consequent high risk of becoming entangled in obstacles. This constitutes a weak point in the product and, above all, increases risks for the operator.

[0005] The aim of the present invention is to produce a boot that offers the operator maximum safety and reliability.

[0006] A further aim of the present invention is to produce a boot resistant to wear and aggressive external agents.

[0007] A further aim of the present invention is to produce a particularly simple and functional safety boot with the combined characteristics of being perfectly adaptable to the foot and quick to put on.

[0008] These aims according to the present invention are achieved by producing a safety boot as described in claim 1.

[0009] Further characteristics of a safety boot are described in the dependent claims.

[0010] The characteristics and advantages of a safety boot according to the present invention will be illustrated more clearly in the following description, intended as a non-restrictive example, referring to the attached schematic drawings in which:

figure 1 is a perspective view of a safety boot, subject of the present invention;
figure 2 is an enlarged detail of the lacing of figure 1;
figure 3 is a plan view of a strip of fireproof fabric from which the loops are obtained;
figure 4 shows a view of the fabric strip of figure 3 folded, partially sectioned;
figure 5 is a section of the fabric strip of figure 4 along the line V-V;
figures 6 and 7 show enlarged details of the lacing via sections of different planes of the leg along lines VI-VI and VII-VII.

[0011] With reference to the figures, a safety boot is shown, indicated overall by no. 10, comprising a sole 12, an upper 13 consisting of several parts joined by stitching 14 with ultra-strong thread, and a central flap 15, made of appropriately treated water-repellent leather. The upper 13 consists of a leg 16, a foot 17 and two front portions 18.

[0012] Between the front portions 18 a padded gusset 19 is sewn with width decreasing from top to bottom and made of cellular fabric, for example.

[0013] The safety boot 10, produced as above, is also fully lined in waterproof breathable material.

[0014] The rear part of the leg 16 comprises a more flexible insert 20, made of reflective fireproof fabric, for added operator comfort.

[0015] A similar function is performed by the shaped recessed elements 21 located near the instep, in the area where the leg 16 continues into the foot 17, both in the central flap 15 and in the front portions 18.

[0016] The tip of the safety boot 10 is covered by a shaped rubber protection 22 and contains a crushproof steel toe-cap.

[0017] The boot 10 can be put on/taken off by quick-action fastenings such as a zip 23 and the fit can also be adapted by adjustable-width fastenings such as a lace 24 made of fireproof fabric.

[0018] The lace 24 joins the central flap 15 to the leg 16 and to the foot 17 of the boot 10, passing through a number of ring elements, such as lace grips 25, fabric loops and metal eyelets which are arranged in the same way on both sides of the boot 10.

[0019] The following description will therefore be limited to the arrangement of said ring elements on one single side of the boot 10, as shown in figure 2.

[0020] The upper comprises a series of four loops 26 on the leg 16 and a series of three loops 27 on the foot 17, in addition to a single loop 28 near the toe.

[0021] The loops are made from one single strip 29 of aramidic fibre, intrinsically fireproof, shown in figure 3, consisting of one single piece and comprising two parallel longitudinal portions 30 joined by equidistant bridge elements 31. Sections of strip constituting the different series of loops 26 and 27 or the single loop 28, to be applied to the different points of the boot 10, will be cut from said strip 29.

[0022] The series of loops are made by folding over itself the strip section 30 of appropriate length, as shown in figures 4 and 5, and sewing it along the longitudinal portions by means of double stitching 14 if necessary, between the front portions 18 and the leg 16 respectively (figures 6 and 7), and between the front portions 18 and the foot 17. In this way the load is sustained not by the single loop but by the whole section of strip retained by the stitching 14 and forming the loops 26 or 27.

[0023] The individual central loop 28, near the toe-cap, is formed in the same way and glued between the foot 17 and the rubber protection 22.

[0024] The central flap 15 is divided by the zip 23 into two symmetrical longitudinal parts, with the exception of

the fixed end 32 at the tip, to which a reflective fabric insert can be applied if necessary.

[0025] A tab 34 made of leather or reflective material if necessary is applied to the slide fastener 33 of the zip 23 to facilitate opening and closing of the zip.

[0026] The central flap 15 consists of two layers of leather, one outer layer 35 and one narrower inner layer 36. The zip 23 is sewn in 14' to the flap 15 in a protected position between the two layers 35 and 36.

[0027] Eyelets are provided on the inner layer 36, which in the example proposed are distributed as follows on each side of the boot 10: one eyelet 37 in the upper part of the leg (figure 6) and two eyelets 38 and 38' near the shaped recessed element.

[0028] On the outer layer 35 of the central flap 15, a pair of closely-positioned eyelets 39 or 39' are provided, both on the portion facing the leg 16 and on the portion facing the foot 17, followed by a fabric loop 40 or 40', sewn on the inner surface of the layer 35, as shown in detail in figure 7.

[0029] Lastly, a further eyelet 41 is applied on each side of the fixed end 32.

[0030] The lacing is provided by threading the lace 24 alternatively through a ring element on the upper 13 and a ring element on the central flap 15. The lacing is performed with one lace only 24, which runs along both sides of the boot 10, as shown in figure 1.

[0031] The example shown in figure 2 illustrates the path of the lace 24 through the first loop 26 of the series of loops arranged on the leg 16, through the eyelet 37 of the inner layer 36 of the flap, through the second loop 26, through the pair of eyelets 39 of the outer layer 35 of the flap, through the third loop 26, through the fabric loop 40 of the flap, through the fourth and last loop 26 of the leg, through the eyelet 38 of the flap near the recess 21 to the lace grip 25. From the lace grip 25 along the foot 17 the lace 24 runs through the second eyelet 38' of the flap near the recess 21, through the first loop 27 of the foot 17, through the pair of eyelets 39' of the outer layer 35 of the flap, through the second loop 27, through the loop 40' of the flap, through the last loop 27 on the foot, through the eyelet 41 near the fixed end 32 of the flap and finally through the single central loop 28.

[0032] With this lacing pattern and arrangement of the ring elements, the flap 15 is kept as close as possible to the leg and foot. The pairs of eyelets 39 and 39', which expose a brief longitudinal section of the lace 24 to the outside, are provided for this purpose.

[0033] After putting on the safety boot 10 via the zip 23, the operator can adjust the fit if necessary by means of the lace 24.

[0034] In the area of the instep the lace grip 25 maintains adjustment of the foot lacing during adjustment of the leg. At two ends 42 of the lace, lace stops 43 are applied, for example of the spring type, which maintain adjustment of the boot 10. The ends 42 that protrude from the lace stops 43 are then knotted on the rear part of the leg.

[0035] An example of the boot 10, not shown, features a fabric loop on the rear of the leg 16 in a position protected by a leather tongue, which secures the knotted lace.

[0036] The safety boot, subject of the present invention, has the advantage of exposing to the outside the least possible amount of lace.

[0037] The safety boot is advantageously distinguished by a front portion provided with the lacing, with relatively flat shape and adhering to the boot, thanks to the replacement of numerous eyelets by fabric loops.

[0038] The boot subject of the present invention has the advantage of being a highly protective product, at the same time offering an excellent level of operator comfort.

Claims

1. Safety boot comprising a sole (12) and an upper (13) made of leather, consisting of a leg (16) and a foot (17), also comprising a central flap (15) provided with quick-action fasteners, such as a zip (23), and adjustable-width fasteners, such as a lace (24), which joins said central flap (15) to said upper (13), **characterised in that** a number of fabric loops (26, 27, 28) are applied on said upper (13) and that a number of fabric loops (40, 40') and metal eyelets (37, 38, 38', 41) are applied on said flap (15).

2. Boot according to claim 1, **characterised in that** said fabric loops (26, 27, 28), applied to said upper (13), consist of sections of a strip (29) comprising two parallel longitudinal portions (30), joined by means of equidistant bridge elements (31), fixed by stitching (14) between the front portions (18) and the upper (13) respectively, in a folded position with said longitudinal portions (30) overlapped and forming said loops (26, 27, 28).

3. Boot according to claim 2, **characterised in that** said stitching (14) is double.

4. Boot according to claim 1, **characterised in that** said central flap (15) consists of an outer layer (35) and a narrower inner layer (36), where on said inner layer (36) eyelets (37, 38, 38') are provided and on the outer layer (35) pairs of eyelets (39, 39') and a fabric loop (40, 40'), sewn on the inner surface, are provided, and consisting also of a fixed end (32) provided with two eyelets (41).

5. Boot according to claim 4, **characterised in that** said zip (23) is sewn (in 14') to the flap (15) in a protected position between the two layers (35, 36).

6. Boot according to claim 1, **characterised in that** said upper (13) is provided with a rubber protection

(22) at the tip, which fixes a single central loop (28).

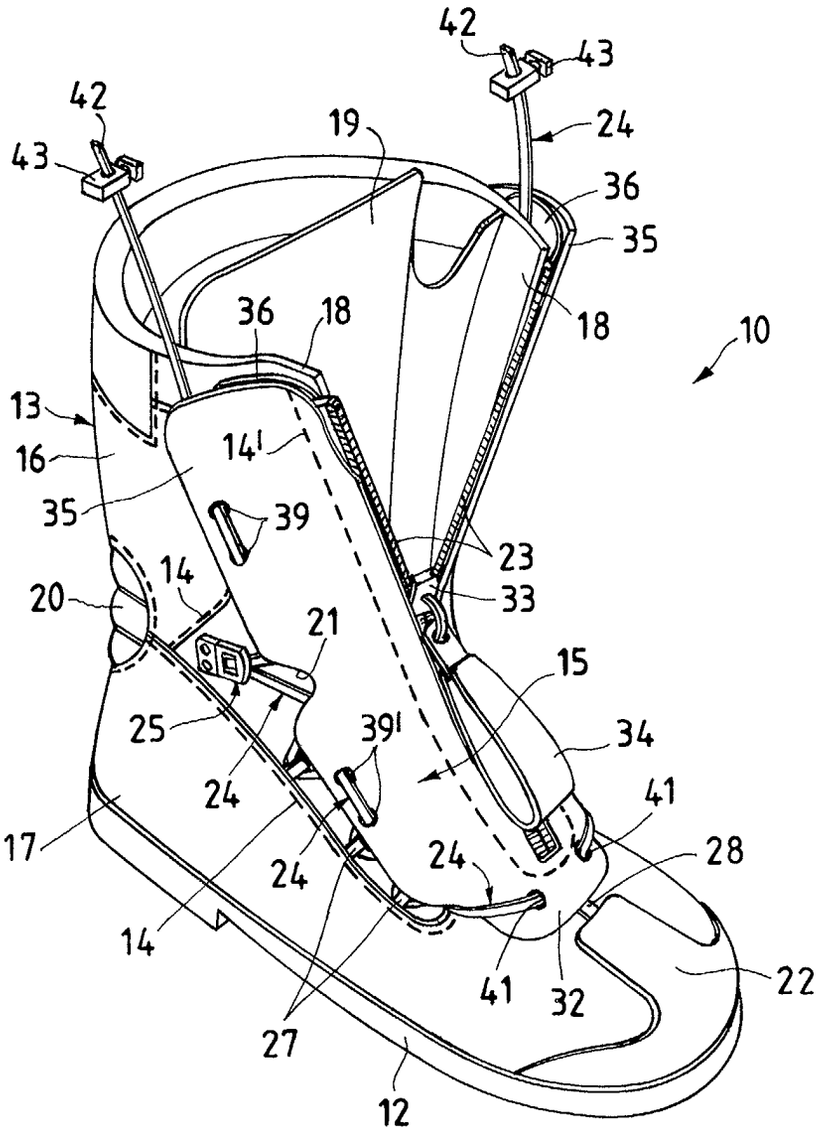
7. Boot according to claim 1, **characterised in that** it is provided with lace grips (25) positioned in the instep area and lace stops (43) at the ends (42) of said lace (24).

8. Boot according to claim 1, **characterised in that** a gusset (19) with width decreasing from top to bottom is sewn between the front portions (18).

9. Boot according to claim 1, **characterised in that** said leg (16) is provided in the rear part with a more flexible insert (20).

10. Boot according to claim 1, **characterised in that** said central flap (15) and front portions (18) have a shaped recessed element (21) in the instep area.

Fig.1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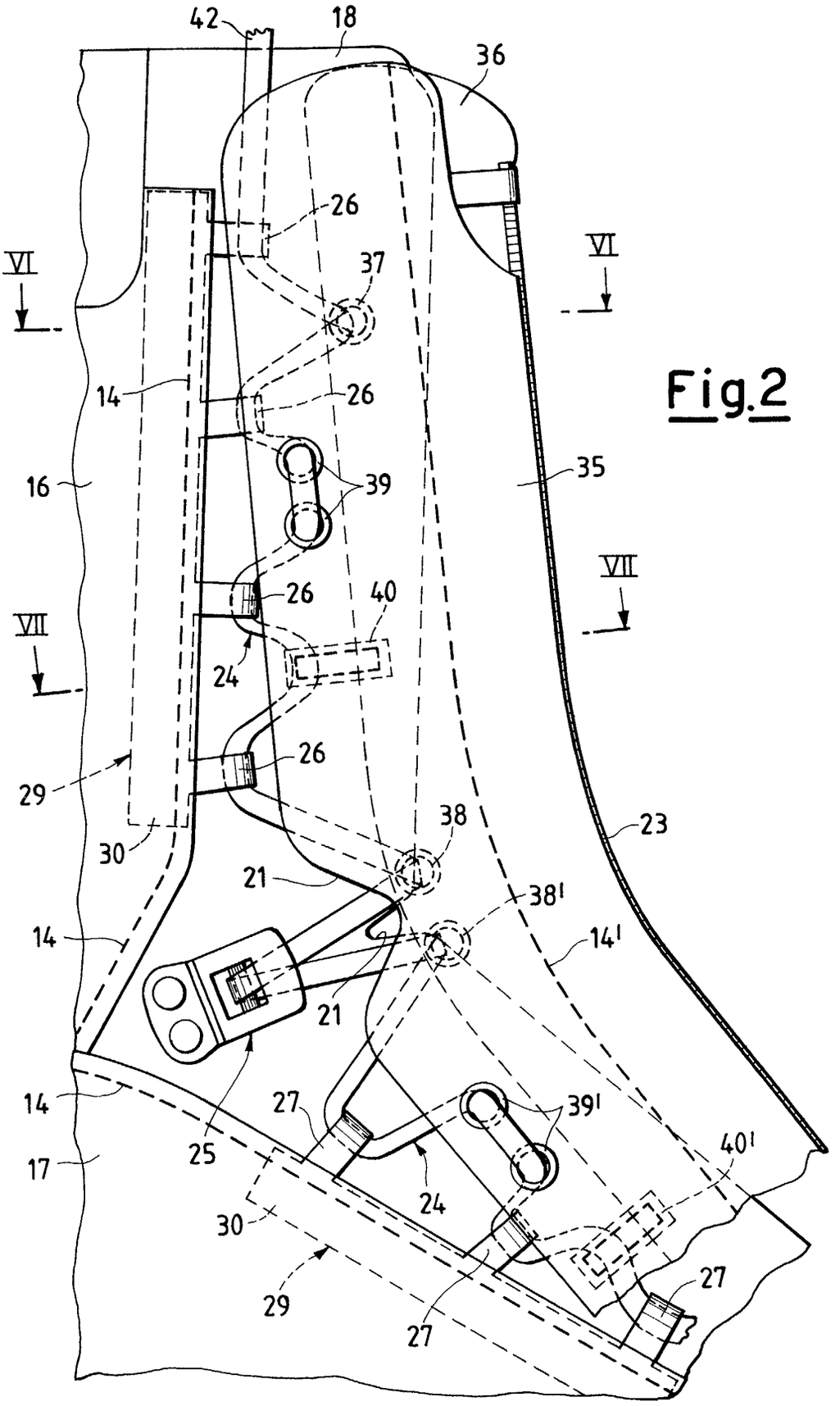
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Fig.2

Fig.3

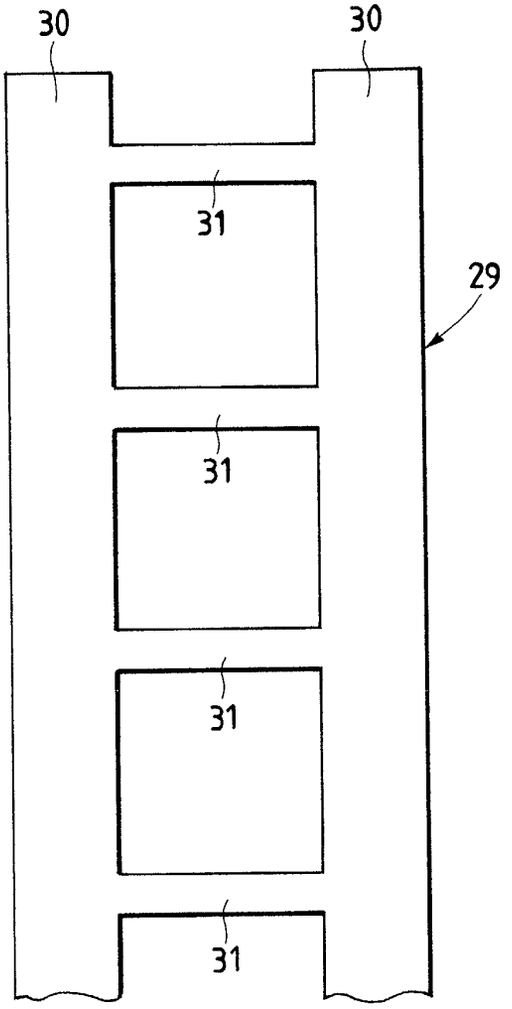

Fig.4

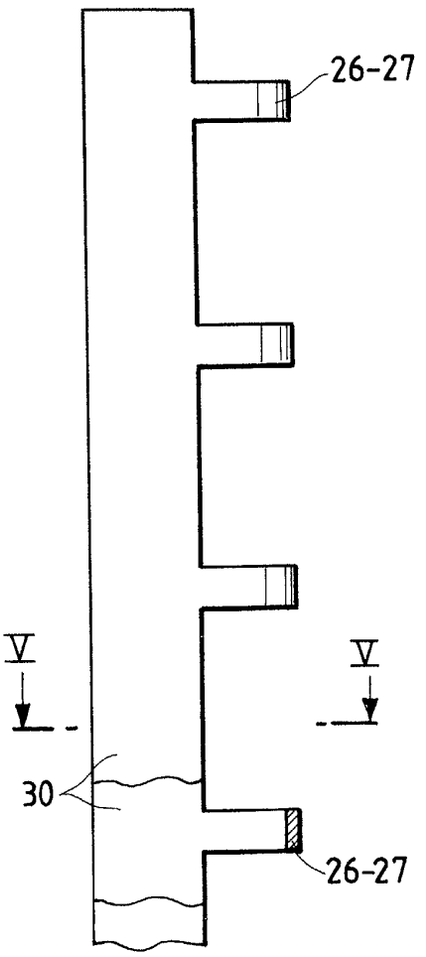

Fig.5

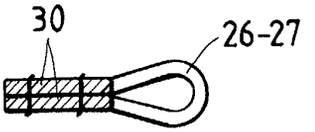

Fig.6

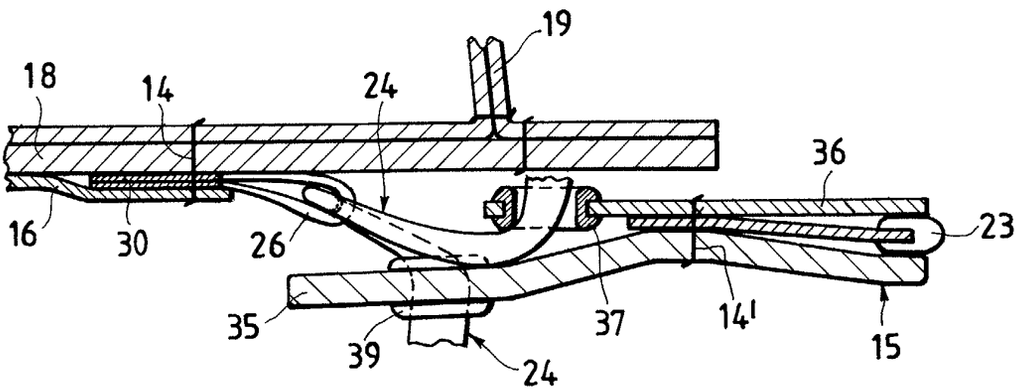
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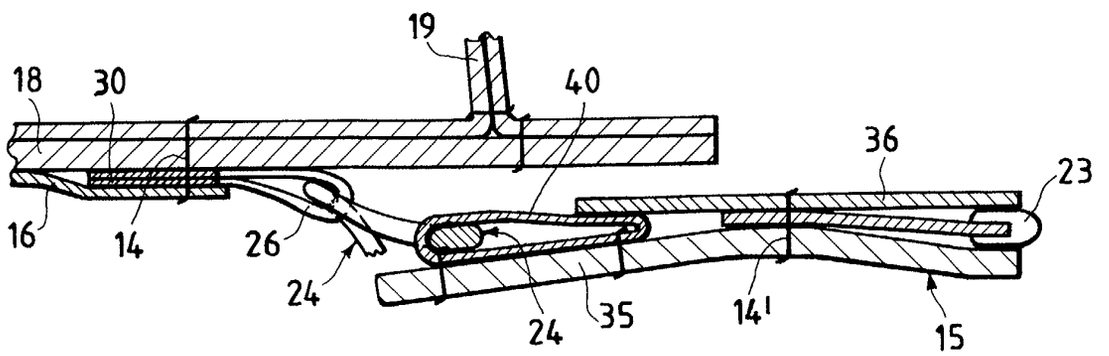
Fig.7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