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(54) **Gate of an improved type**

(57) The gate comprises a substantially U-shaped supporting structure (2) having a horizontal beam (4) and two vertical uprights (12 and 13) and at least a closing wing (3). The main characteristic of the present invention consists in the fact that the gate is provided with means for adjusting the length of the beam (4) and therefore the distance between the vertical uprights (12 and 13).

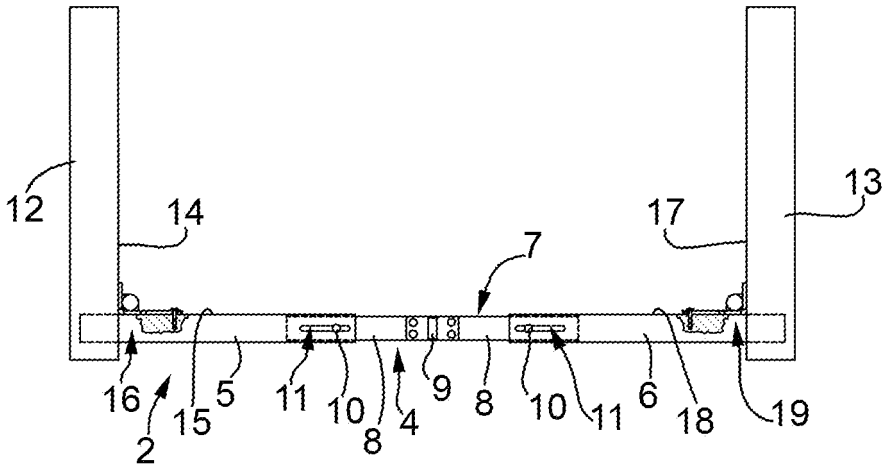


FIG.2

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Description

[0001] The present invention refers to a gate of an improved type.

[0002] As is known, gates installed outside buildings comprise a substantially U-shaped supporting structure defined by a horizontal beam to be sunk into the ground and two vertical uprights welded to the horizontal beam. The supporting structure sustains either two wings, one for each vertical upright, or a sliding wing. The supporting structure may be assembled either on site, with consequent manpower costs, or at the manufacturer's facility with the relative problems associated with storage and transport. The difficulties encountered during installation in order to adapt the length of the horizontal beam and the width of the wings in relation to the distance between the two vertical uprights must also be stressed.

[0003] The present invention relates to a gate of an improved type that overcomes the drawbacks described above and which, in particular, permits adaptation of the length of the horizontal beam and the width of the wings in relation to the distance between the two vertical uprights.

[0004] According to the present invention there is provided a gate of an improved type comprising a substantially U-shaped supporting structure and having a horizontal beam and two vertical uprights and at least one closing wing **characterised in that** it comprises means for adjusting the length of said beam.

[0005] In order to better understand the present invention, a non-limiting embodiment thereof will now be described by way of example with the help of the figures in the attached drawing, in which:

figure 1 is a front view of a gate of an improved type according to the present invention; and
figures 2 to 5 are schematic views of part of the gate of figure 1 in the various stages of preparation for packaging.

[0006] In figure 1 designated as a whole by number 1 is a gate of an improved type comprising a substantially U-shaped supporting structure 2. In this embodiment, the gate 1 comprises two closing wings 3 hinged to the supporting structure 2 but from the following description it will become apparent that an alternative embodiment of the gate 1 could be provided with a single sliding type closing wing.

[0007] The supporting structure 2 comprises a horizontal beam 4 which, during installation, can be embedded in the ground or preferably inserted in cast-in-place reinforced concrete. The beam 4 is made of metal, is internally hollow, and has a rectangular cross-section. The supporting structure 2 also comprises two vertical uprights 12 and 13 which are also made of metal, are internally hollow and have a rectangular cross-section that is preferably the same as the cross-section of the beam 4. Each upright 12 and 13 is hinged to the free axial end of a corresponding portion 5 and 6 of the beam 4 so that the uprights 12 and 13 can be arranged parallel to the portions 5 and 6 for transporting the structure 2 and so that the uprights 12 and 13 can be arranged at right-angles to the beam 4 during installation. Substantially, the structure 2 can be folded up to be transported as illustrated in figures 2 to 5. A hinge 16 is placed between the inner side surface 14 of the upright 12 and the upper surface 15 of the portion 5. When installed said hinge 16 is embedded in the ground as its sole purpose is to allow the structure 2 to be folded up. Similarly, a hinge 19 is placed between the inner side surface 17 of the upright 13 and the upper surface 18 of the portion 6.

[0008] With reference to figure 1, the hinges 16 and 19 are fitted with a respective plate 20 fastened to the corresponding surface 15 and 18 of the respective portion 5 and 6 by means of a bolt 21. The plate 20 is provided with a slot 22 through which the bolt 21 extends inside the respective portion 5 and 6 and is screwed into a threaded hole 23 provided in a full section 24 inside the portion 5 and 6. The end of the portions 5 and 6 is inside the respective upright 12 and 13 and the fastening system described above substantially permits the adjustment of the length of the part of the portions 5 and 6 inside the respective upright, that is to say the total length of the visible part of the beam 4.

[0009] With reference to figure 1, in addition to the method of adjustment described above that is useful for adjusting the distance between the uprights 12 and 13 and therefore for adjusting the total length of the visible part of the beam 4, the gate 1 having two wings 3 is provided with a system to adjust the width of each wing 3. Each wing 3 has one part 25 that is hinged to a respective upright 12 and 13 and a second part 26 that is fixed to the part 25 by means 27 for adjusting the total width of the wing 3. Said means 27 comprise horizontal bars 28 which are internally hollow on one of the parts 25 and 26 (in figure 1 on part 25) able to accommodate internally a respective bar 29 having a second of said parts 26 and 25 (in figure 1 on part 26). The bar 28 is provided with a through slot 30 and the bar 29 is provided with a threaded hole (not shown for the sake of simplicity) so that, after defining the width of the wing 3 a respective bolt 31 can be used to fasten the bars 28 and 29 to each other. After defining the width of the wing 3, the bolt 31 is screwed into said threaded hole through the slot 30.

[0010] As can be seen in figures 2 to 5, once the gate has been manufactured at the factory it can be folded up by first rotating the uprights 12 and 13 (figure 3) until they are substantially parallel to the respective portions 5 and 6 of the beam 4 (figure 4) and then by folding the beam 4 on itself (figure 5) so that the portions 5 and 6 are substantially parallel to each other. After transporting the gate 1 to the assembly site, these operations must be performed in reverse order to configure the gate 1 as shown in figure 2.

[0011] The numerous advantages obtained with the present invention are apparent from the above descrip-

tion.

[0012] In particular, the supporting structure of the gate can be folded up, thus reducing the space required for storage and transport. With the gate according to the present invention, once the gate has left the factory, it is sufficient to open the supporting structure and embed the base of the supporting structure in the ground. It is thus apparent not only that the gate can be installed easily and quickly but also that installation costs are significantly reduced in that no specialised manpower is required, except that necessary to embed the horizontal beam of the supporting structure, and this operation can therefore also be carried out by the end user. Moreover, it is possible to adjust the total length of the visible part of the horizontal beam and therefore the distance between the two vertical uprights. Lastly, it is possible to adjust the width of the wings to adapt these to the distance between the two vertical uprights, thus facilitating installation even further.

Claims

1. Gate of an improved type comprising a supporting structure (2), substantially U-shaped and having a horizontal beam (4) and two vertical uprights (12 and 13) and at least a closing wing (3), **characterised in that** it comprises means for adjusting the length of said beam (4).

2. Gate according to Claim 1, **characterised in that** said beam (4) comprises two portions (5 and 6), coaxial to each other and connected by means of an element (7) allowing the adjustment of the total length of said beam (4).

3. Gate according to Claim 2, **characterised in that** said element (7) comprises two first bars (8) connected to each other by means of a first hinge (9) and having their free ends inserted inside the respective said portion (5 and 6) of said beam (4); said free ends being fixed to the respective said portion (5 and 6) by means of a bolt (10) to extend inside said portion (5 or 6) by means of a slot (11) and to be screwed in a corresponding threaded hole foreseen in the corresponding said first bar (8).

4. Gate according to at least one of the preceding Claims, **characterised in that** said portions (5 and 6) are fixed to the respective said uprights (12 and 13) by means of a respective second hinge (16 and 19) and
characterised in that, between said second hinge (16 and 19) and the corresponding said portion (5 and 6), means for adjusting the position of said second hinge (16 and 19) with regard to the corresponding said portion (5 and 6) are provided.

5. Gate according to any one of the preceding Claims, **characterised in that** it comprises two wings (3), each of them having two parts (25 and 26) fixed to each other by means (27) for adjusting the width of said wing (3).

6. Gate according to Claim 5, **characterised in that** said means (27) for adjusting the width of said wing (3) comprise second horizontal bars (28), internally hollow, on a first said part (25) of said wing (3), and third bars (29) on a second said part (26) of said wing (3); said third bars (29) being arranged inside corresponding said second bars (28) and fixed there by means of a respective bolt (31) to extend inside said second bar (28) by means of a slot (30) and to be screwed in a threaded hole foreseen in the corresponding said third bar (29).

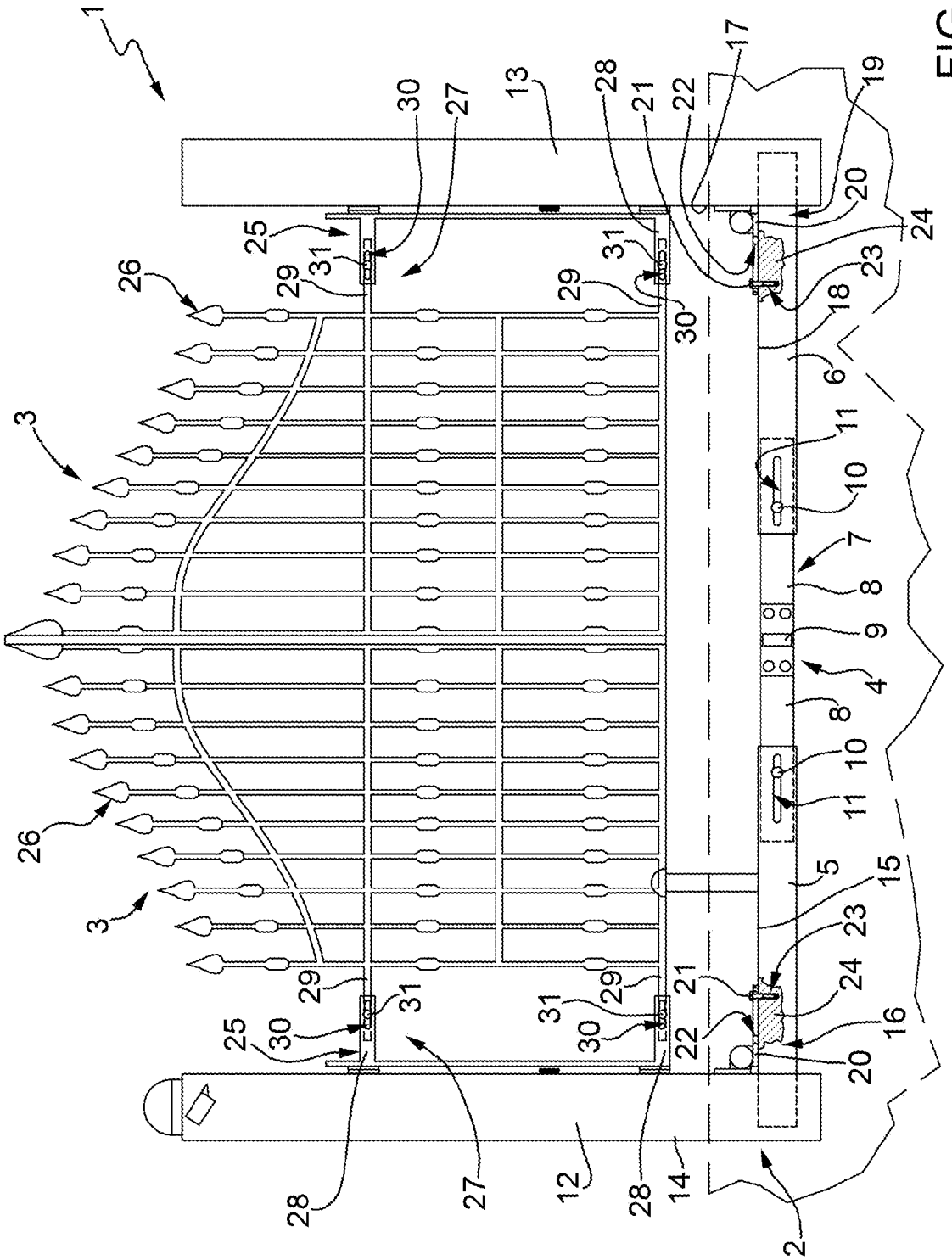

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FIG.1

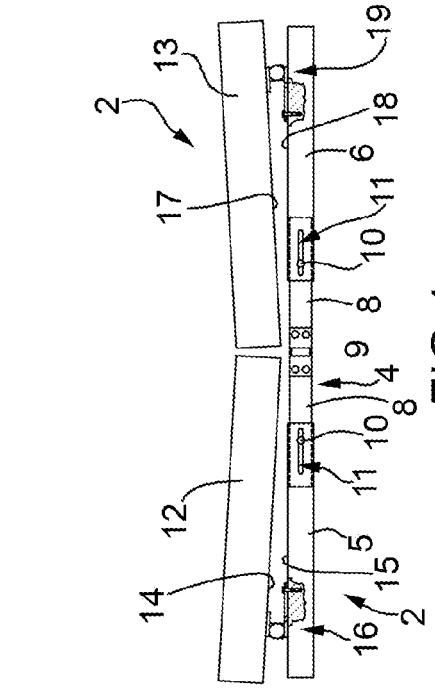


FIG.4

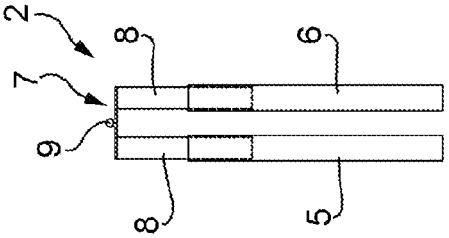


FIG.5

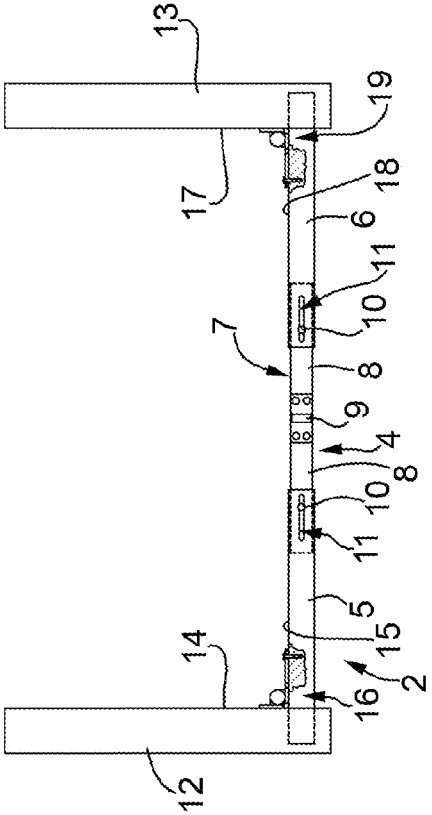


FIG.2

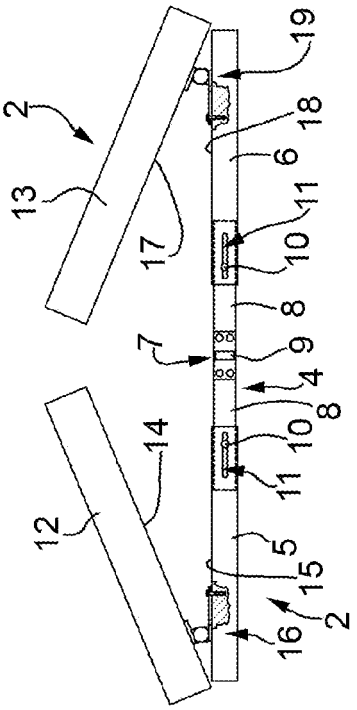


FIG.3