

THE JOINT EXAMINATION BOARD

PAPER P4

Amendment of Specifications for United Kingdom Patents/Applications in Prosecution, Revocation Proceedings or Otherwise

Wednesday 9th October 2013
10.00 a.m. – 1.00 p.m.

*Please read the following instructions carefully. Time Allowed – **THREE HOURS***

1. Please note the following:
 - a. Start each question (but not necessarily each part of each question) on a fresh sheet of paper;
 - b. Enter the Paper Number (P4), the question number and your Examination number in the appropriate boxes at the top of each sheet of paper;
 - c. The scripts are photocopied for marking purposes. Please write with a **dark inked pen** on one side of the paper only and within the printed margins, and do not use highlighters in your answer;
 - d. Do not state your name anywhere in the answers;
 - e. Write clearly, examiners cannot award marks to scripts that cannot be read;
 - f. Reasoning should always be given where appropriate.
 - g. You must number all the pages of your answer script. Once the exam finishes, an **additional** 5 minutes will be allowed for you to do this.
2. Under the Examination Regulations **you may be disqualified from the examination and have other disciplinary measures taken against you if:**
 - a. you are found with unauthorised printed matter or other unauthorised material in the examination room;
 - b. your mobile phone is found to be switched on;
 - c. you copy the work of another candidate, use an electronic aid, or communicate with another candidate or with anyone outside the examination;
 - d. you continue to write after being told to stop writing by the invigilator(s).
NO WRITING OF ANY KIND IS PERMITTED AFTER THE TIME ALLOTTED TO THIS PAPER HAS EXPIRED.
3. **At the end of the examination assemble your answer sheets in question number order, number all the pages and put them in the WHITE envelope provided.** Do not staple or join your answer sheets together in any way. Any answer script taken out of the examination room will not be marked.

This paper consists of 18 sheets including this sheet, and comprises:

Question [1 sheet]
Client's letter [1 sheet]
Client's Application GB 1212121.2 [8 sheets]
Official Letter [1 sheet]
Prior art reference EP 1,111,111 [3 sheets]
Prior art reference ref US 2,222,222 [2 sheets]
Copy of claims for GB 1212121.2 [1 sheet]

Question

A United Kingdom patent application comprising the attached specification (identified as GB 1212121.2) has been filed at the UK Intellectual Property Office without any claim to priority.

The UK Intellectual Property Office has now issued the attached Official Letter. You have received brief comments from your client in a letter, which is also attached.

Your task is to prepare:

1. A letter to the UK Intellectual Property Office in response to the Official Letter;
2. A set of amended claims, if considered necessary;
3. An outline memorandum for your client, explaining the actions you have taken and why. You should provide full reasoning for your actions and provide an outline of future actions that your client could take to secure full protection for their commercial interests as outlined by your client, taking into account that further information may be needed. This future advice should only relate to the invention(s) outlined in the client's letter to you. These notes should also be restricted to patent matters and you are NOT required to consider other matters such as copyright or design protection.

If the advice to your client includes a suggestion of filing a divisional application or applications you should draft the corresponding independent claim(s) and your memorandum should explain why filing a divisional is advisable. You should NOT draft a description or any dependent claims for a divisional application.

Note the following:

- (a) You are NOT required in this examination to make any amendments to the description of the client's patent application.
- (b) You should accept the facts given to you and base your answer on those facts. In particular you should NOT make any use of any special knowledge that you may have of the subject-matter concerned, and you must presume that the prior art referred to is exhaustive.
- (c) If you submit any amended claim set and/or divisional claims(s) put these at the top of the answer papers when handing in your answer and number the pages accordingly so as to readily identify the claims or claim sets.

Letter from client

Dear Mr Hinge:

5 Our first examination report on this case, I'm excited that this is now moving through the
Patent Office as I am making great progress with this in discussions with some garden
centres. It seems that in this credit crunch the gardeners are keen to install fencing that
will be cost-effective in the long term. The fencing sections that the garden centres
currently stock are generally like the ones in the European case in the report you sent to
10 me. Our fencing has the advantage that you can easily remove a single section in the
middle if it needs replacing – this is not easy to accomplish with the type of fences shown
in this reference, not least because whenever you try the “snap-fit” hinges often snap off
as they become brittle over time, especially over the winter. Additionally, because the
supports are spikes on the panel themselves, once the first segment of the fencing is
15 placed into the ground, a second segment cannot be easily attached because the next
fence segment needs to be pushed into the ground to match the hinge vertically, but then
it is fixed in place and the hinge rod can't be “snapped” into the first segment as it
requires horizontal movement. In any case, we are clearly different to these fences as
they do not have a separate joining rod, and I don't know why the examiner hasn't seen
20 this.

The other reference found by the Examiner was similar to our original plan for this fence,
we started with fence sections that had complete holes in each finger but we found that
we just couldn't manufacture these reliably (if the hole is just a fraction too small then we
25 have to throw out a whole batch of fence panels). The result was that we lost so much
stock in quality control that it was uneconomical – the decision to move to a construction
using two grooves to form the rod hole has been key and I haven't seen any other fences
with this type of hinge arrangement.

30 I hope that you can convince the Examiner to allow this case, because it would greatly
help in our discussions if I can argue that we have patent protection.

35 Regards,
F. Ence

APPLICATION

GB Application no. 1212121.2

The invention relates to the field of connecting apparatus in general and to the field of moulded edge connectors in particular, especially as applied to fencing.

5 The present invention provides a novel and practical means of joining edges by a hinge and makes use of low-cost plastic moulding. It is especially adapted for use in readily removable plastic fences and other enclosing structures. The construction allows such an enclosure to follow a meandering course, as well as to surround areas bounded by obtuse and right angles.

The invention is defined in claim 1.

10 The design of the present invention permits the quick and easy insertion or removal of a segment of an enclosure without disturbing adjacent connected segments. A hinge pin also referred to herein as a joining rod may be of a length great enough to extend below the lower edge of the fencing and form a fence post to support the fencing in an upright position. If optional corresponding anchor blocks are installed in the ground and are provided with an opening to receive the extended lower extremity of the joining rod, the fencing or segments thereof may be
15 independently lifted from the ground surface. Then each segment of the fencing then may be readily and independently returned to the identical original position by simple insertion of the extended joining rods into the openings in the anchor blocks.

The axis of the joining rod is preferably substantially coplanar with the segments or fence sections to be connected, which allows free pivoting in either direction.

20 In preferred embodiments, the connecting fingers are spaced apart along the rod axis with only a groove in each finger, preferably with a half-round groove. The grooves alternately face toward the mid-plane of the segment or fence section and are joined together by inserting the joining rod after the connecting fingers have been placed in position. This construction allows for connecting the hinge parts without turning or twisting the connecting fingers and allows a direct edge-to-edge
25 connection. It particularly allows for a more simplified and cheaper mould construction for moulding of component parts, compared to the existing plastic moulded decorative fences in the prior art, such as EP 1,111,111.

BRIEF DESCRIPTION OF THE DRAWINGS

30 The invention will be better understood after reading the following detailed description of the embodiments thereof with reference to the appended drawings, in which:

FIG. 1 is a perspective view of a hinge connector in a first assembled position with a second position shown in phantom;

FIG. 2 is a disassembled perspective view;

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FIG. 3 is a perspective view of joined moulded plastic fence sections incorporating hinges moulded integrally together with the fence sections; and

5 FIG. 4 is a view of the bottom end of a connector rod in position in an anchor block.

FIG. 5 shows a side view and top view of a disassembled hinge;

FIG. 6 shows a side view and a top view of an assembled hinge;

10 **FIG. 1** shows a hinge connector 110 comprising a segment 112 and a segment 114 to be joined along a vertical edge. Each segment has fingers 120 along the vertical edges, each finger having a half-round (half-cylindrical) groove to receive a hinge pin or joining rod 116; the grooves are aligned, defining a pivot axis. The connector 110 is constructed to permit the pivoting movement of one segment in relation to the other in the manner of a hinge, about the joining rod 116. This movement is made possible by two things.

15 The first is that connector fingers are distributed, along the axis of the joining rod 116, so that there is no plane perpendicular to the axis of the joining rod 116 that contains connecting fingers from both segments (see Fig 5); thus the two fence sections can be moved into position from any direction without obstruction, ready to receive the joining rod 116.

20 The second thing that makes possible pivoting movement of one segment with respect to the other is providing a radius 126 on the end surface of the connector finger 120, as shown, and/or providing clearance of the ends of the fingers with respect to the opposite segment 112 or 114. The centre line 111, or the top of the central plane, is also seen. The ability to pivot the connector fingers allows the creation of a corner when the connector is used in the building of an enclosing wall or fence or when used with a closure such as a gate or other movable opening such as a door.

25 **FIG. 2** presents a perspective disassembled view of a connector and shows how each hinge segment in this example 112, 114 has four fingers. The connector fingers 120 each have their own level in the pair of hinge segments, so that any horizontal plane contains only one finger. They generally alternate in the axial direction, as between the faces on one segment and as between the segments, but the precise order is not critical. The two segments are held together in an assembled position by the insertion of the joining rod 116 through the then aligned half-round grooves 122, 30 the oppositely facing sets of grooves trapping the rod.

Making the grooves no deeper than half round, i.e., not greater than the radius of the joining rod, allows simple manufacture. Preferably, the grooves are half round. It is possible to get a stable hinge when there are two fingers on each segment edge – the fingers each facing in opposite directions (one from the front face F and one from the rear face R), then when two vertical edges

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from adjacent segments are brought to one another this will form at least two complete pairs of fingers, where each pair comprises two fingers each facing in opposite directions (see FIG. 2, which shows such a minimal construction). However, greater numbers of fingers will provide for greater stability of the hinge. Accordingly, in one embodiment preferably there are at least three
5 fingers extending from each edge, more preferably at least four fingers extending from each edge. It is not required that each vertical edge has the same number of fingers. Moreover, more than one hinge may be used, as is shown in FIG. 3.

FIG. 3 illustrates the use of the invention to connect two sections of moulded plastic fencing, 130 and 132, each made up of vertical pickets 140 connected by horizontal bars 142. The sections 130
10 and 132 are held together by two hinges of the kind shown in FIG. 2. The one half or segment 112 of the edge connector is moulded together with the fence section 130 as a single unit. The other half 114 of the edge connector is moulded together with the other fence section 132 as a single unit. The edge connector halves 112 and 114 are joined together by the joining rod 116. The diameter of the joining rod 116, and the size and thickness of the connector halves, must provide sufficient
15 strength to support a fence.

Anchor blocks 136 (as shown in FIG. 4) may optionally be installed so that their upper surface 138 is substantially flush or coplanar with the surface of the ground 134. This allows the fence to be temporarily removed, e.g. to mow a lawn. **FIG. 4** shows how the joining rod 116 extends below the segments and into the ground 134 to serve as a fence post. To make it easy to remove and
20 replace the fence from time to time, e.g. for mowing, anchor blocks 136 are inserted into the ground with their upper surface 138 flush with the surface. The rods 116 can be readily inserted into the anchor blocks 136. Each segment may be independently removed and replaced.

FIG. 5 and FIG. 6 show disassembled and assembled connectors respectively from the side and from above. These connectors are similar to those shown in FIGS. 1 and 2, but have an extra
25 finger.

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Claims

1. A fence section for a fence to be made up of a number of such sections hinged together at vertical edges of the sections, the fence section comprising:

a first vertical edge, incorporating an integral hinge segment which comprises at least two fingers which have recesses for receiving a joining rod; and

a second vertical edge opposite the first edge, similarly incorporating an integral hinge segment having at least two fingers and recesses for receiving a joining rod, the fingers of the second edge cooperating with those of the first edge of the adjacent fence section to form a hinge;

and the joining rods in the assembled fence each being located, in use, in the recesses in alternating fingers in the manner of a hinge pin, with its axis passing through the fingers of each fence section.
2. A fence section according to claim 1, wherein the recesses in the fingers on the first edge of one fence section are coaxial with those in the fingers on the second edge of a second fence section, so as to form a channel shaped to receive the joining rod.
3. A fence section according to claim 1 or 2, wherein the connecting fingers of one hinge segment alternate with the connecting fingers of a second hinge segment along the axis of the joining rod.
4. A fence section according to any preceding claim, wherein the joining rod lies in the plane of the fence sections when assembled.
5. A fence section according to any preceding claim, wherein the connecting fingers of at least one fence section have curved end surfaces, allowing adjacent fence sections to pivot with respect to each other about the rod axis as a hinge.
6. A fence section according to any preceding claim, wherein a portion of the joining rod extends below the fence sections into the ground, to provide support to the fence sections through the hinge segments.
7. A fence section according to any preceding claim, where the fence sections constitute portions of a fence supported solely by the joining rod.
8. A fence section according to any previous claim, wherein the hinges between the sections allow the fence to follow a meandering or random course, or to enclose areas bounded by obtuse and right angles.

APPLICATION

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GB 1212121.2

Fig.1

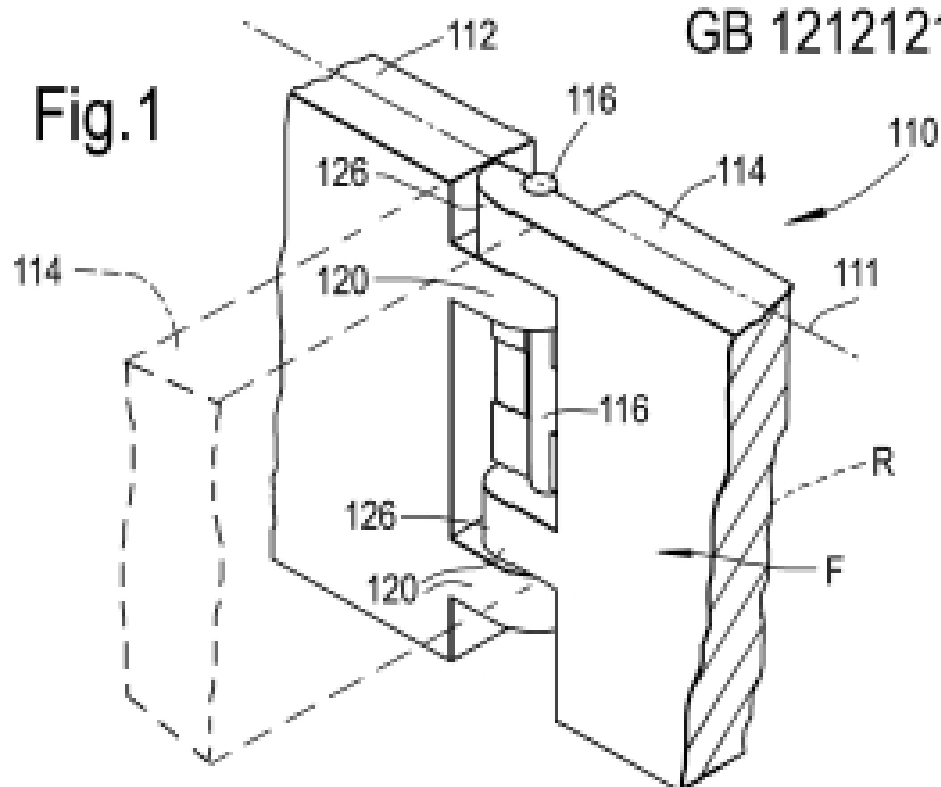
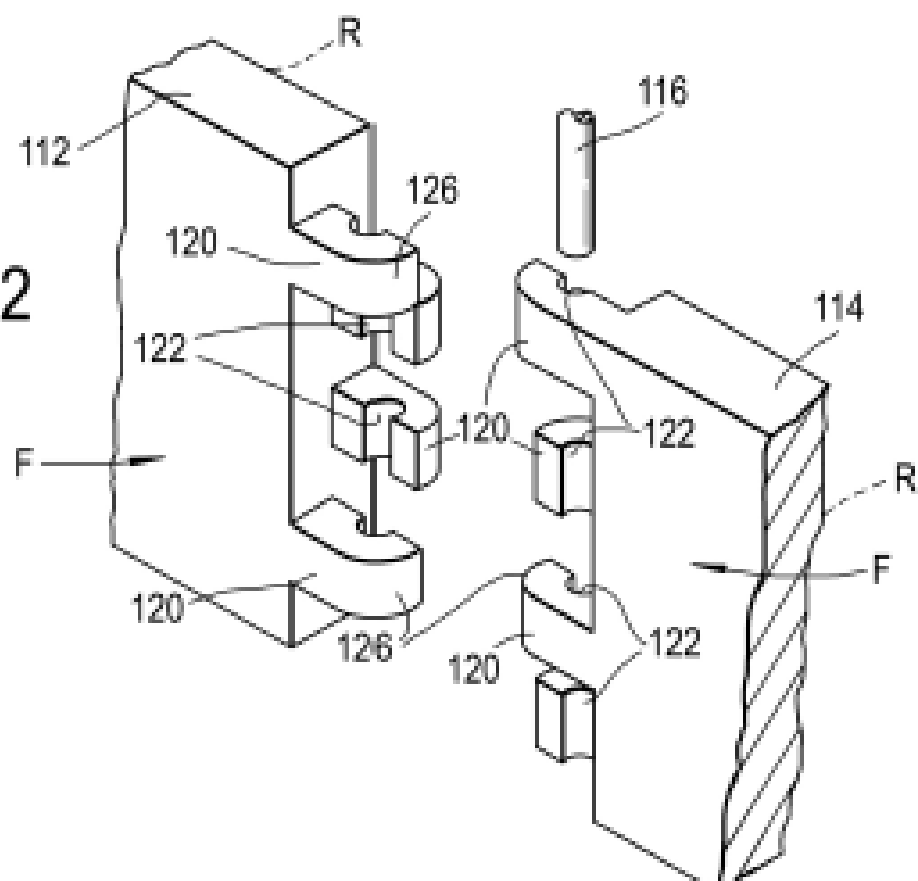


Fig.2



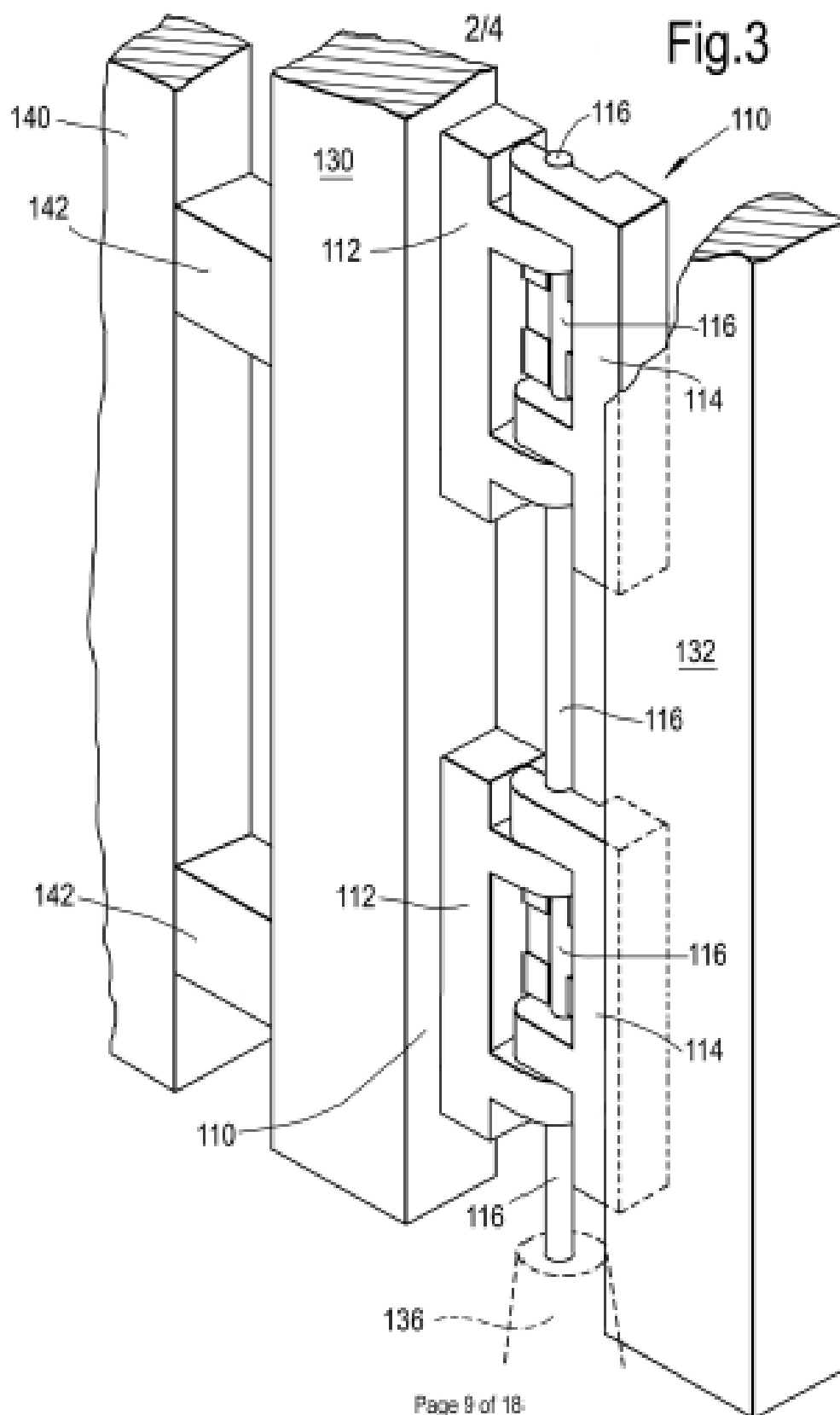
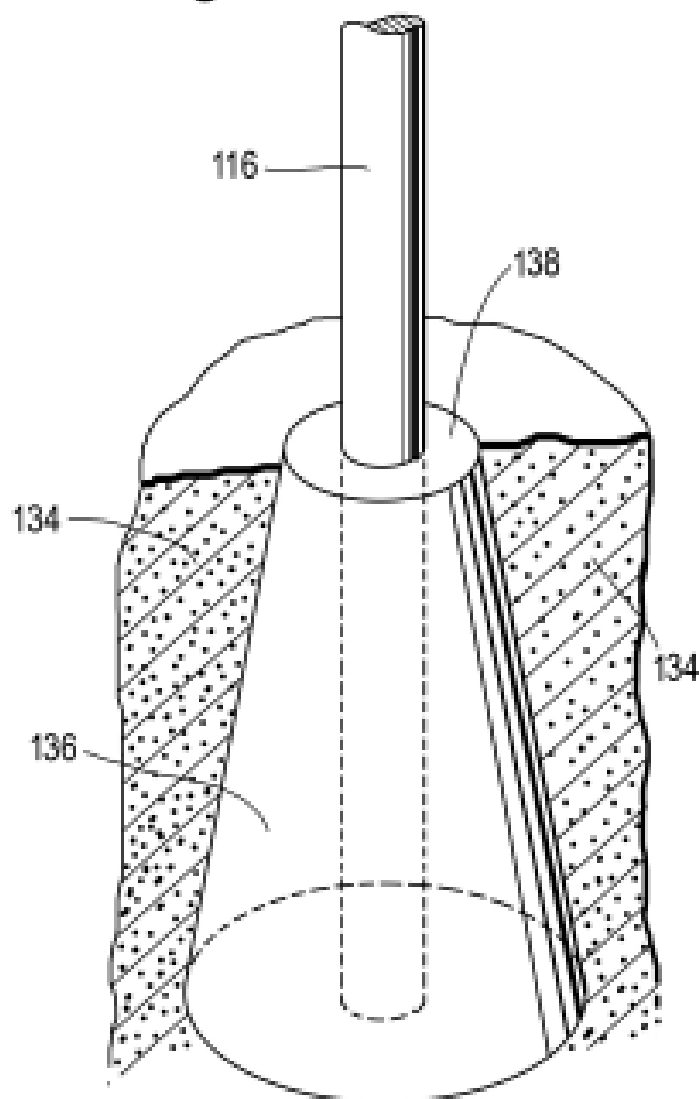
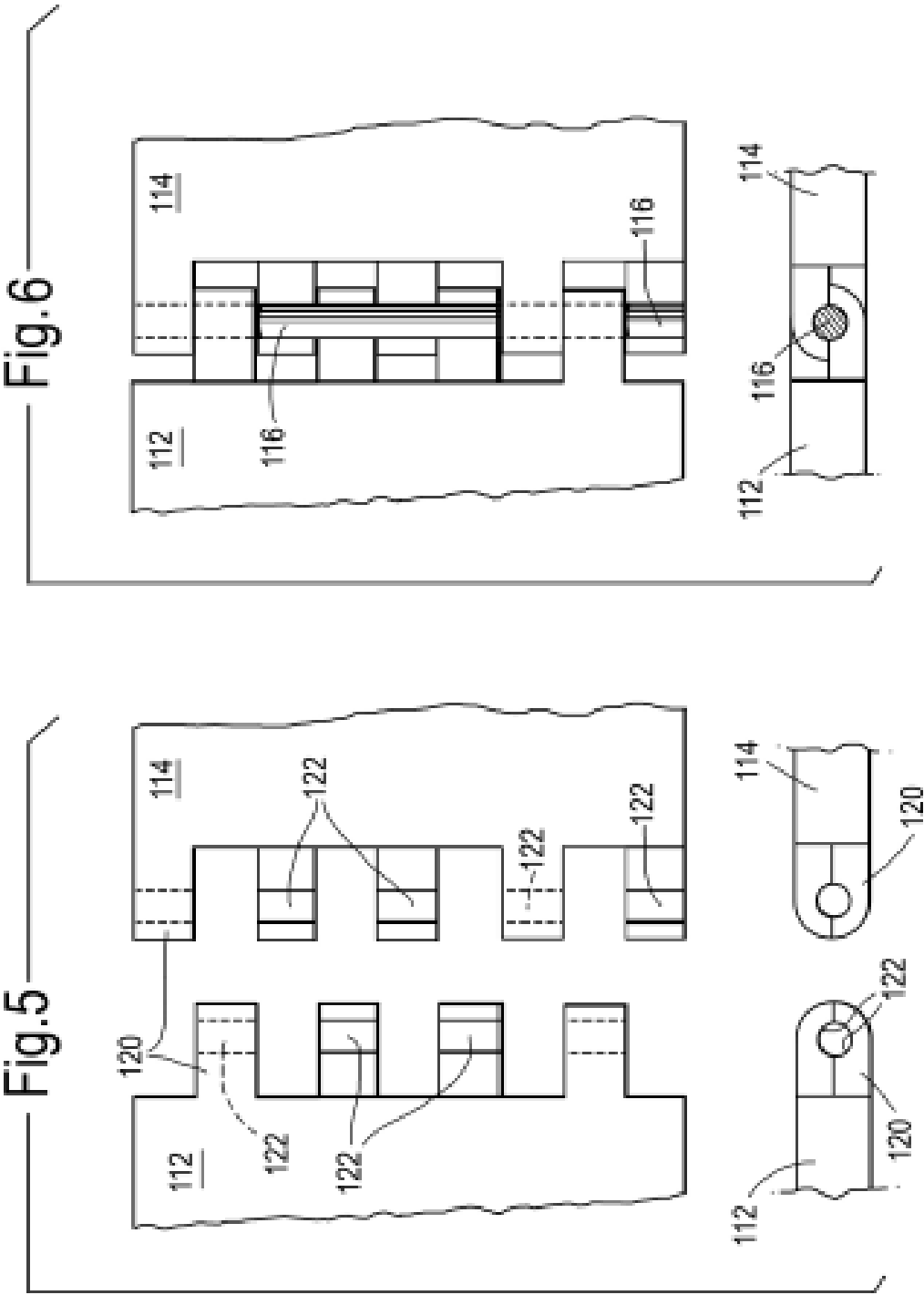


Fig.4





IPO Examination Report

20 August 2013

Application No. 1212121.2

Applicant: F. Ence

5 *Filing date: 24th February 2012 -*

Latest Date for Reply: 20 December 2013

Patents Act 1977:

Examination Report under Section 18(3)

Novelty

10 Claim 1 is not new when compared to the document EP 1 111 111 (D1), which was published on 10th June 2005, and mentioned in the application: this document shows fence sections with hinges 20 made of fingers (hinge elements) 22a, 24a which receive a joining rod 30. According to the second-last paragraph, the second edge can also have fingers and recesses.

15 Claim 1 is also not new compared to US 2,222,222 (D2), which was granted on 29th November 2007: again there are fence sections (pickets 13, railings 14, 16) with alternating fingers (14), and a joining rod (dowel 11) which passes through holes 17 in the fingers.

20 Claim 2: the holes are aligned to form a channel. In D2 the fingers co-operate to form a hole.

Claim 3: alternating fingers in the axial direction are shown in both D1 and D2.

Claim 4: As seen in Figures 4 and 5 of D1, the rod 30 is in the plane of the fence sections. Equally, for D2, the dowel is in the plane of the fence.

25 Claim 5: In D1 the ends of the fingers are not shown as curved in Figures 4 and 5 but there is adequate clearance for pivoting (as can be seen by the arrangement of the fence in Figure 1. In D2 the end surfaces of the fingers are clearly curved (Fig. 1).

D2 clearly shows the joining rod 11 extending into the ground, supporting the fence, as claimed in claims 6 and 7.

Claim 8: a meandering form is shown in both citations.

30 Inventive Step

In case the applicant views any differences over D1 or D2 as establishing novelty, they are not considered inventive, since both these documents are concerned with mainly ornamental garden fences, as is the present invention.

Clarity and support

35 Claim 6 is not clear because a joining rod is not part of a fence section; this feature can only be described as part of an assembled fence.

In claim 7 there would appear to be no antecedent for the fence "sections" (plural). The same applies to claim 8.

FENCE SECTIONS

BACKGROUND OF THE INVENTION

There are numerous types of fencing which are used to produce decorative and protective borders for lawns, gardens, flower beds and the like. One example is wooden fence sections which have vertical and horizontal members or slats that are secured to each other by staples or nails. These wooden sections require excessive amounts of assembly time and, cannot easily be connected to each other, and have limited decorative possibilities.

Although moulded plastic fencing has been suggested for use previously, a practical and easily interconnectable plastic fencing section has not been available. Thus, there remains a need for a simple and inexpensive plastic fencing section that can be utilized and easily installed by a homeowner in any desired length.

SUMMARY OF THE INVENTION

The present invention relates generally to improved fence sections which may be integrally formed or moulded from plastic, and which may be snap-locked together. Each section has hinge means on opposite ends for easy interconnection, so that by simple manipulation of the two fence sections they may be arranged in any desired angular relationship. The hinge structure for securing adjacent sections is constructed so that a decorative elongated fence of a plurality of sections may extend in a straight line path, or in a zig-zag array or in right angle corner arrangements, all with the same hinge structure, and without the necessity of separating the fence sections once they have been connected to each other.

Each fence section comprises a panel-shaped main body that has upper and lower edges and opposite vertical side edges. Integral stakes depend from the main body. One side edge of the fence section provides an integral first hinge member while the opposite side edge provides a second cooperating integral hinge member, with the two hinge members being adapted to be interconnected by a snap action. Thus, two adjacent fence sections can be connected for rotational movement about a vertical pivot or hinge axis defined by the hinge members.

Embodiments of the invention will now be described, referring to the attached Figures.

DESCRIPTION OF THE FIGURES

Figure 1 is a front perspective view of a plurality of plastic fence sections of this invention, interconnected and disposed in a manner to provide a generally zig-zag array;

Figure 2 is an enlarged fragmentary view of two interconnected sections of fence;

Figure 3 is an enlarged fragmentary view of two sections of fence prior to interconnection;

Figure 4 is a horizontal section taken along line 4-4 of Figure 2; and

Figure 5 is a horizontal section taken along line 5-5 of Figure 3.

DESCRIPTION OF THE INVENTION

Figure 1 of the drawings discloses a plurality of fence sections constructed in accordance with the present invention as they would appear in interconnected fashion ready for insertion into the ground. Each fence section is a one-piece integral member that is moulded from a suitable plastic material, and has a panel-shaped main body that includes a

plurality of horizontal hollow ribs 14 and a plurality of vertical hollow ribs 16. At least two horizontally spaced stake members 18 project downwardly from the lower edge of the main body 12 and are of a length that allows them to be simultaneously driven into the ground stably to support the fence section.

- 5 The adjacent ends of two fence sections are interconnected by a suitable snap lock hinge means 20 that is illustrated in detail in Figures. 2 to 5. The hinge means 20 consists of first and second hinge members that are respectively located at opposite side edges of a single fence section. The hinge members of adjacent pairs of fence sections are adapted to be interconnected in a snap fit, so that two adjacent sections may be rotated relative to each other about a vertical axis without their separation. As is more clearly shown in Figure 3, the
10 hinge means 20 consists of a first hinge member 22 at one side edge of the main body 12 and a second hinge member 24 at the opposite side edge of the main body 12.

- The first hinge member 22 consists of upper and lower hinge elements 22a. Each hinge element 22a consists of a suitable male member such as an elongate, circular vertical pin 30 bordered above and below by, and formed integrally with shoulders or lugs 32 that extend from the respective horizontal ribs 14. The upper and lower pins 30 are located on a
15 common vertical axis 26.

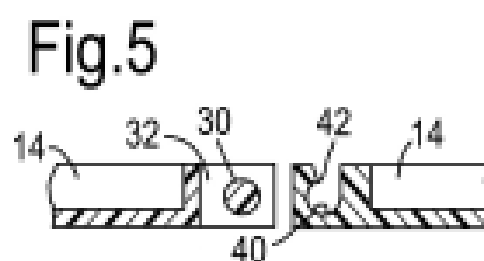
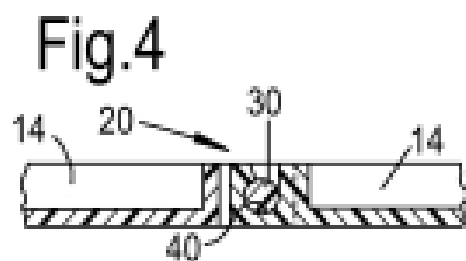
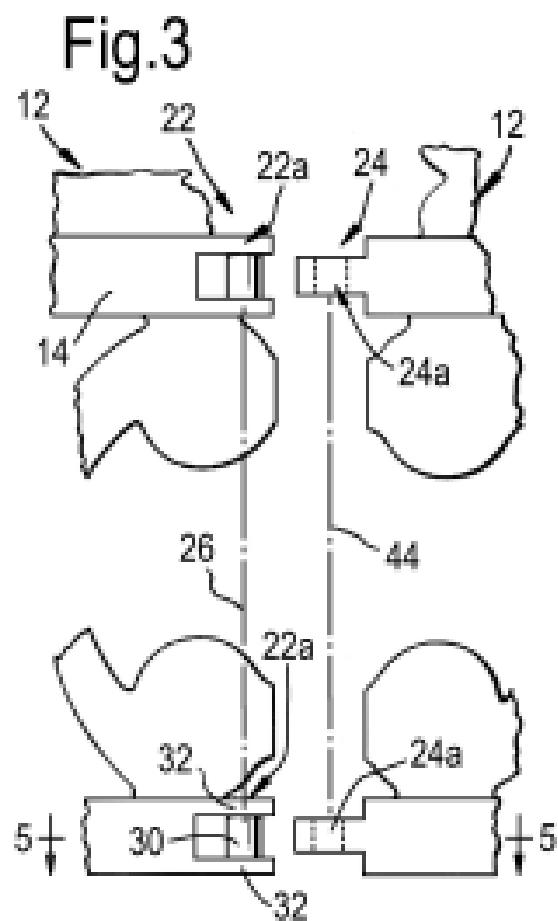
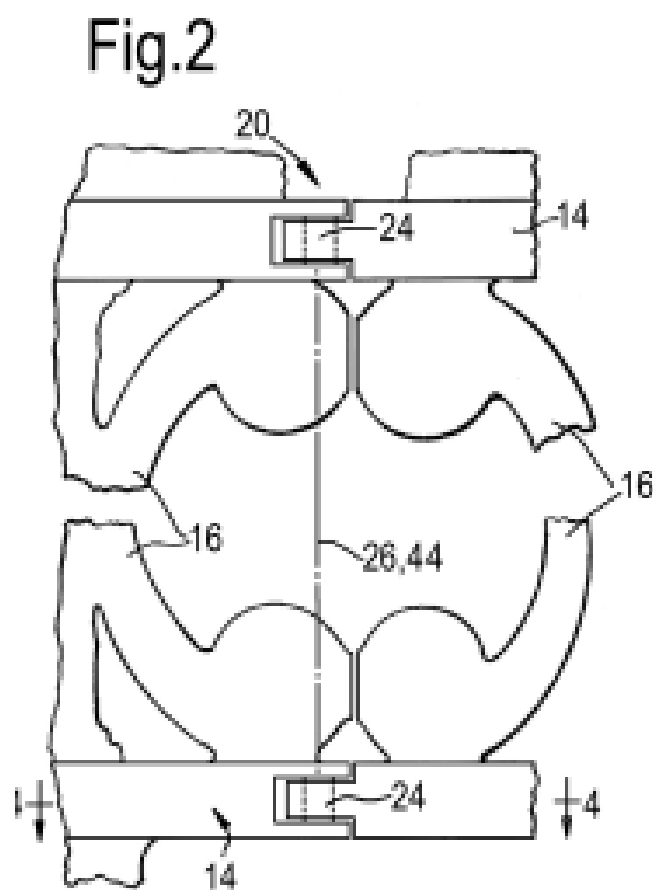
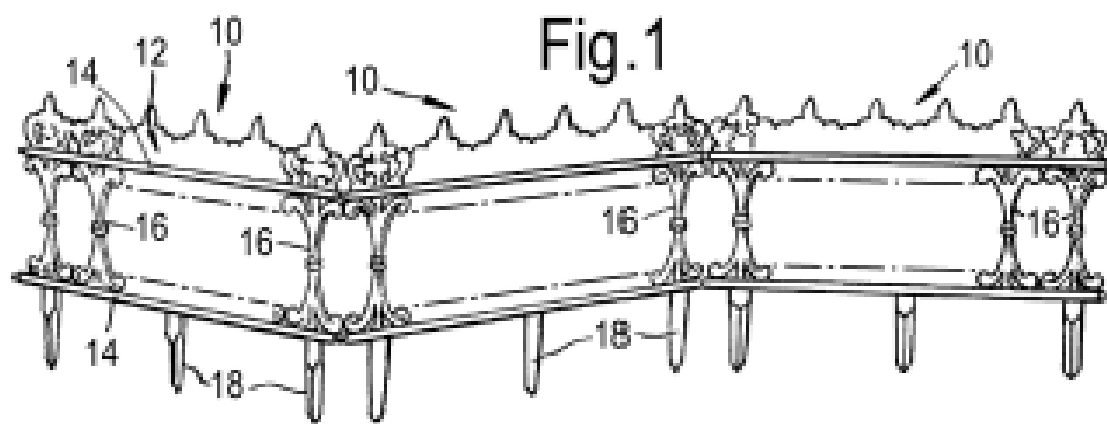
- The second hinge member 24 consists of upper and lower female hinge elements 24a each defining a circular opening 40 that has a circular cross-sectional internal dimension or width substantially equal to the width or diameter of the pin 30, and a reduced area entry slot 42
20 extending from one side of the opening 40. The width of the entry slot is less than the width of pin 30. The respective openings 40 of the upper and lower hinge elements 24a have their centres located on a common vertical axis 44 while the entry slots 42 extend to the same side of the respective openings.

- 25 With this arrangement, the hinge means may be interconnected by aligning the pins 30 with the entry slots 42 and forcing the pins 30 through entry slots 42 into the openings 40. During such forced movement, the inherent resiliency of the plastic material of which the fence section has been moulded allows the inner or throat portion of the slot 42 to spread sufficiently to allow a pin 30 to be releasably snap-received in the opening 40. Since the
30 throat portion of the entry slot 42 has a transverse dimension that is less than the diameter of the pin 30, the pin will be releasably snap-retained in the opening.

- In their assembled condition, the respective vertical axes 26 and 44 of the two hinge members of an adjacent pair of fence sections coincide with each other to define a hinge axis for those fence sections, so that the fence sections can be positioned at any design
35 angle of rotation relative to each other.

The fence sections may all be identical, having both male and female members as shown, or fence sections may have only male or only female members, with a fence being assembled by alternating each type of fence section.

- 40 The present fence section allows for the formation of a fence of indefinite length merely by juxtaposition of pairs of sections and snap-interconnecting the hinge means at opposite side edges.



PICKET FENCES

BACKGROUND OF THE INVENTION

5 This invention relates to prefabricated picket-type fencing of a decorative kind that can be used for protecting shrubbery, flowers and bushes. The fencing can be erected to be straight or to follow any type of curve.

SUMMARY OF THE INVENTION

10 It is an object of this invention to provide a fence which can be installed easily, quickly and economically at any site with the use of a hammer or a mallet for tapping dowels into the ground. Another object of this invention is to provide a fence that can form many designs since the elements of the fence can be turned at a 45° angle either inward or outward and can also form a circle inward or outward. Another object of this invention is to provide a fence that is novel in design, easy to erect, and capable of being erected to follow any line of angular or curved design.

15 These and other objects of this invention are obtained by providing a series of repeating units hingedly attached to each other. Each repeating unit consists of at least one vertical picket, rails attached near the top and bottom of the picket, dowels to engage in vertically aligned holes in the rails, and pegs to support the rails on the dowels in vertical alignment with each other.

DESCRIPTION OF THE DRAWINGS

20 FIG. 1 is a perspective front view of the fence of this invention in its assembled state;

FIG. 2 is a side elevation of a dowel post;

FIG. 3 is a front elevation of a picket with its railings;

FIG. 4 shows pegs inserted in a dowel; and

FIG. 5 shows one fence unit assembled.

25 Figure 1 shows part of an assembled fence in accordance with the invention. The fence is made of identical units, three being shown here.

This fence may be manufactured of wood, metal or plastic. Each unit, when assembled, consists of four parts: dowel **11**, two pegs **12a** and **12b**, and one or more pickets **13** with attached top and bottom railings **14**, **16**, as shown in FIG. 3.

30 Each railing has holes **17** on both ends on a common axis for the dowel **11** to be inserted. The railings **14** and **16** are also rounded on both ends **18** and **19** (see FIG. 1) so that the picket can be turned to any curve or angle. Each dowel has holes top and bottom **21a** and **21b** as shown in FIG. 2 to insert pegs **12a** and **12b**, to support the picket when assembling the fence unit **13**. Each dowel **11** will act as a post and a guide as shown in FIG. 1. The dowels **11** enter
35 into the ground with a space between the ground and the bottom of the picket **13**. After the fence is erected, dowels **11** and pickets **13** will be equally spaced and uniform in height. The fence will consist of a plurality of units to complete the fence as shown in FIG. 1.

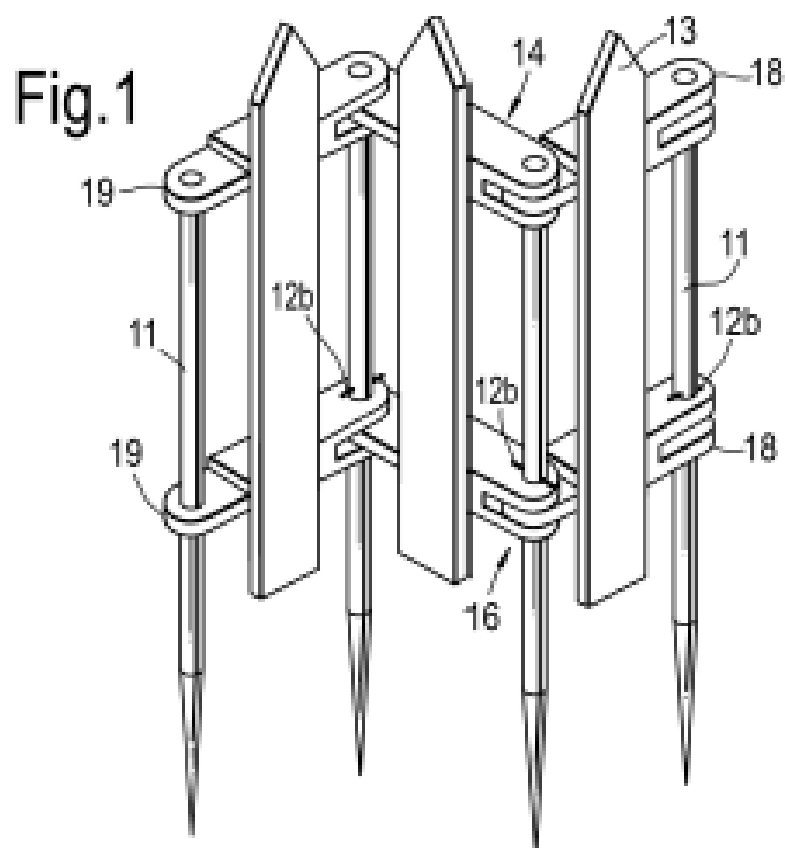


Fig.2



Fig.3

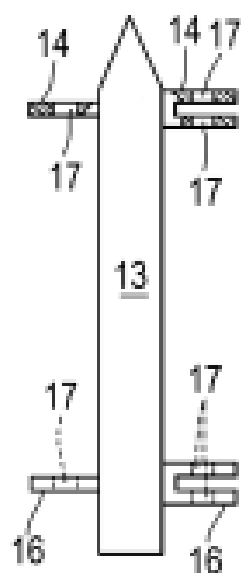


Fig.4

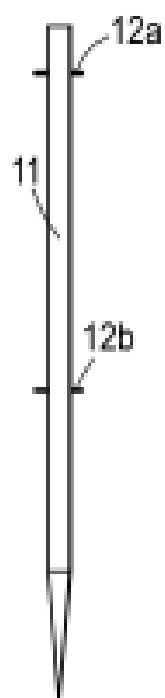
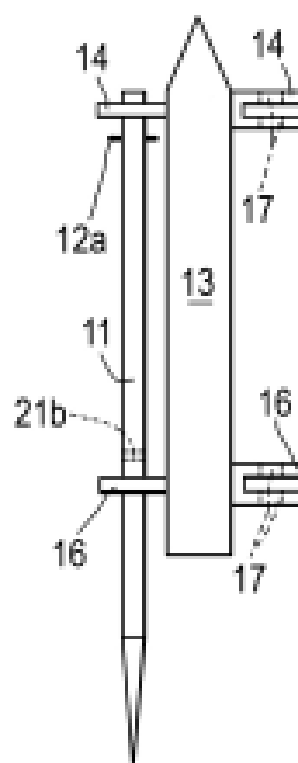


Fig.5



PAPER	QUESTION

SHEET	OF-

CANDIDATE
NUMBER

Claims

1. A fence section for a fence to be made up of a number of such sections hinged together at vertical edges of the sections, the fence section comprising:

a first vertical edge, incorporating an integral hinge segment which comprises at least two fingers which have recesses for receiving a joining rod; and

a second vertical edge opposite the first edge, similarly incorporating an integral hinge segment having at least two fingers and recesses for receiving a joining rod, the fingers of the second edge cooperating with those of the first edge of the adjacent fence section to form a hinge; and the joining rods in the assembled fence each being located, in use, in the recesses in alternating fingers in the manner of a hinge pin, with its axis passing through the fingers of each fence section.
2. A fence section according to claim 1, wherein the recesses in the fingers on the first edge of one fence section are coaxial with those in the fingers on the second edge of a second fence section, so as to form a channel shaped to receive the joining rod.
3. A fence section according to claim 1 or 2, wherein the connecting fingers of one hinge segment alternate with the connecting fingers of a second hinge segment along the axis of the joining rod.
4. A fence section according to any preceding claim, wherein the joining rod lies in the plane of the fence sections when assembled.
5. A fence section according to any preceding claim, wherein the connecting fingers of at least one fence section have curved end surfaces, allowing adjacent fence sections to pivot with respect to each other about the rod axis as a hinge.
6. A fence section according to any preceding claim, wherein a portion of the joining rod extends below the fence sections into the ground, to provide support to the fence sections through the hinge segments.
7. A fence section according to any preceding claim, where the fence sections constitute portions of a fence supported solely by the joining rod.
8. A fence section according to any previous claim, wherein the hinges between the sections allow the fence to follow a meandering or random course, or to enclose areas bounded by obtuse and right angles.