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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A63C 19/02, 19/06

A1

(11) International Publication Number: **WO 98/51379**

(43) International Publication Date: 19 November 1998 (19.11.98)

(21) International Application Number: PCT/NL98/00273

(22) International Filing Date: 14 May 1998 (14.05.98)

(30) Priority Data:
1006049 14 May 1997 (14.05.97) NL

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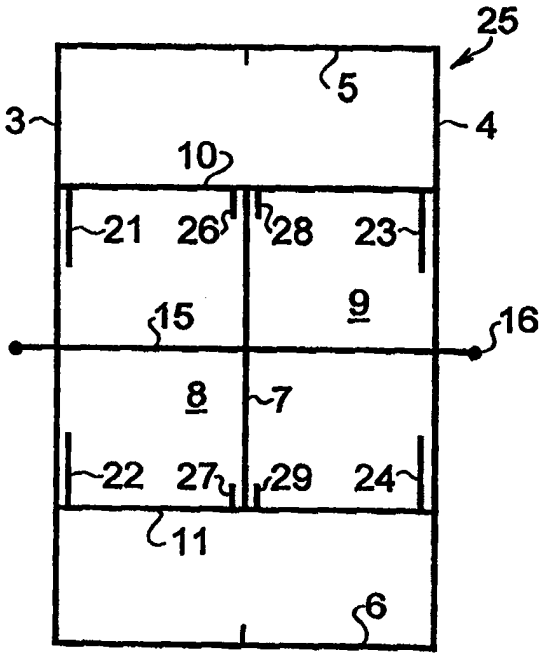
(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
In English translation (filed in Dutch).

(54) Title: A TENNIS COURT COMPRISING SERVICE COURTS OF REDUCED WIDTH

(57) Abstract

A tennis court (25) comprising a marked–off playing area in the form of a rectangle defined by two parallel sidelines (3, 4) and two parallel baselines (5, 6). Part of the playing area, starting from its centre, is divided into two halves by means of a centre line (7) extending parallel to the sidelines, which halves are further marked off by means of service lines (10, 11) extending parallel to the baselines (5, 6), in such a manner that rectangular service courts (8, 9) are formed within the playing area. These service courts (8, 9) are furthermore marked off to have their width narrowed (21–24, 26–29), at least over part thereof extending from the service line (10, 11). This narrowing (21–24, 26–29) may extend over its entire length of the service courts (8, 9), both adjacently to the sidelines (3, 4) and adjacently to the centre line (7). With such narrowing (21–24, 26–29) the chance of returning a service increases, however without undesirably influencing the speed with which the service can be hit. The narrowing (21–24, 26–29) can be marked off with new tennis courts as well as with existing tennis courts.



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A tennis court comprising service courts of reduced width.

The invention relates to a tennis court comprising a marked-off playing area in the form of a rectangle having two parallel sidelines and two parallel baselines, part of the playing area, starting from its center, being marked off in two halves by a centre line extending parallel to the sidelines, the halves at their ends being marked off by means of service lines extending parallel to the baselines, in such a manner that rectangular service courts are formed within the playing area.

Tennis is a ball game which is known per se, wherein at least two players, each carrying a so-called tennis racket, hit a tennis ball to and from over a net which is stretched across the playing area, whereby the ball is only allowed to hit the ground in the playing area beyond the net once with each stroke. If the ball which has been hit by the player hits the ground before the net or outside the playing area, or if the ball does not get past the net at all, the stroke counts as a fault.

The ball must be brought into play anew after each such fault, whereby the ball must hit the ground within a service court beyond the net. This way of starting the game of tennis is called the service stroke or service.

Well-trained tennis players are capable of serving the ball into the respective service court in such a manner that the receiving player is unable to return the ball. A ball which is hit in this manner is called an "ace" in tennis jargon. In a modern tennis match many aces may be hit, due to improvements in the materials that are used and because people are becoming taller and more powerful. In the case of an ace, the receiving player is physically eliminated, as it were, without taking part in the game. An excessive amount of aces in a tennis match degrades the game of tennis from an interactive sport into a solo sport, however. On the other hand it should be said that the hitting of aces gives the game of tennis a certain fascination, which should certainly not be eliminated.

The object of the present invention, therefore, is to provide a tennis court which offers the receiving player a better chance of returning or reaching the service, without this having an undesirable effect on the current speed of the game of tennis. That is, it must remain possible for the serving player to score an ace by hitting the ball hard,

whereby the emphasis will be more on the technique and ability of the serving player and of the receiving player.

According to the invention, this objective is accomplished by providing a tennis court comprising service courts which are marked off to have their width narrowed, at least over part thereof extending from the service line.

The solution according to the invention is based on the insight that the physical elimination of the receiving player is caused, on the one hand, by the high speed at which services can be hit with the current tennis materials and, on the other hand, by the length of the so-called service vector. The term service vector is in this connection understood to mean the distance which the receiving player must bridge from his starting position in order to return a service.

Studies have shown that most aces are the result of served balls which hit the service court in the area near the sideline that extends from approximately halfway the service court to the service line, and at a position near the service line and the centre line. This area will be called the service area hereinafter.

By narrowing the service court, at least near the service area, in accordance with the invention, the service vector is reduced and the receiving player is given a physically real chance to return a ball which is served hard and fast. Mind, the narrowing of the service court according to the invention hardly affects the speed with which a service can be hit, if at all, because the length of the service court itself is not reduced. This in contrast to solutions that have been proposed before, wherein the service line is moved closer to the net, or wherein the serving player must stand further behind the baseline.

This means that the solution according to the invention does not affect the dynamics of the game of tennis, and that the service spectacle can be maintained, be it that the receiver is given the chances again that are necessary in order to play the game of tennis as an attractive, interactive sport.

The narrowing of the service courts may be marked off only adjacently to the sidelines of the playing area, or only adjacently to the centre line, or adjacently to the sidelines as well as to the centre line. Depending on the desired degree of difficulty, the narrowing may be restricted to the aforesaid service area near the service line, wherein

the narrowing may extend over approximately half the length of the service court adjacently to a sideline of the playing area, and for example over about 1/10 of the length of the service court near the centre line. In the preferred embodiment of the invention, the service courts are narrowed over their entire length.

It has become apparent that a reduced width of up to approximately 9/10 of the width of the original service court effects such a change in the service that the receiving player has a real chance of returning the ball, whereby it also remains possible for well-trained players to hit an ace.

The marking-off of the service court according to the invention can be realised in various ways, whereby lines having a width of 5 - 10 cm may be conventionally used, which lines can be provided, for example in the case of a grass court, by means of chalk or another marking material, and which may be incorporated in the ground of the court itself in the case of a clay court.

The narrowing can be realised by means of additional lines extending parallel to the sidelines and/or the centre line, or by widening the sidelines and/or the centre line over the entire length of the service courts or over part thereof.

Those skilled in the art of tennis will appreciate that the narrowing of the service courts by widening the sidelines and/or the centre line requires an adaptation of the current rules of play for tennis. An adaptation in the sense that the served ball must in effect hit the ground in the service court, that is, within the marked-off area, whereby the lines themselves do not form part of the effective service court.

Besides being used for singles play, whereby two players play tennis, the invention may also be used with a tennis court for doubles play, which has a larger playing area, and whereby two pairs of tennis players play against each other.

The invention also relates to a method for marking off a playing area for playing tennis in the form of a rectangle having two parallel sidelines and two parallel baselines, part of the playing area, starting from its centre, is marked off in two halves by a centre line extending parallel to the sidelines, the halves at their ends are marked off by means of service lines extending parallel to the baselines, in such a manner that rectangular service courts are formed within the playing

area, wherein the service courts are marked off having their width narrowed, at least over part thereof from the service line.

The narrowing of the service courts according to the invention can be realised with new tennis courts as well as with existing tennis courts, both in the open air and in tennis halls and the like.

The invention will be described in more detail hereafter with reference to the accompanying drawings, wherein:

Figure 1 schematically shows, not to scale, the prescribed marking of tennis courts which are known in practice.

Figures 2 - 6 schematically show, not to scale, embodiments of tennis courts comprising narrowed service courts which have been marked off according to the invention.

Figure 7 shows the influence of the narrowing of the service courts on the service vector.

Corresponding parts are indicated by the same reference numerals in the figures.

Figure 1 schematically shows in plan view the way in which the playing area of a tennis court 1 is marked off both for singles play and for doubles play.

The playing area 2 for singles play is bounded by two parallel sidelines 3, 4, and two parallel baselines 5, 6, which connect to the sidelines, in such a manner that a rectangular playing area is formed.

Playing area 2 is divided in two halves 8, 9 from the middle over part thereof by a centre line 7 extending parallel to sidelines 3, 4, which halves 8, 9 are marked off at their ends by service lines 10, 11 extending parallel to the baselines 5, 6.

Further sidelines 12, 13 extend parallel to and spaced from the sidelines 3, 4, which further sidelines 12, 13 connect to the baselines 5, 6 and which as a whole mark off a larger playing area 14 for playing doubles.

A net 15 is stretched across the middle of the playing areas 2 and 14, which net is secured to two net posts 16. The net 15 extends vertically with respect to the playing areas 2 and 14.

The centre of the two baselines 5, 6 is marked by short transverse lines 17. Beyond the baselines 5, 6 and the sidelines 12, 13 are the runback areas 18 and 19.

The standardised dimensions of the playing areas 2 and 14, the service courts 8, 9 and the runback areas 18, 19, as well as the height of the net 15 and the net posts 16 are shown in Figure 1, wherein the numbers between brackets represent the dimensions in inches.

Figure 2 shows a first embodiment of a tennis court 20 according to the invention, which, for the sake of clarity, is only shown as a tennis court for singles play.

Lines 21, 22, 23 and 24 mark off a narrowing of the service courts 8, 9 in the area near the respective service lines 10 and 11. In the illustrated embodiment, lines 21, 22, 23 and 24 extend from a respective service line 10, 11, parallel to a respective sideline 3, 4, over some distance.

Figure 3 shows another embodiment of a tennis court 25 according to the invention, wherein a narrowing has been realised adjacently to the centre line 7, extending from the service lines 10, 11, by means of lines 26, 27, 28 and 29 extending parallel to the centre line 7. Lines 26, 27, 28 and 29 can be used alone or in combination with lines 21, 22, 23 and 24.

It has been proven that an effective narrowing in the service area near service lines 10, 11 can be achieved already by means of lines 21, 22, 23 and 24 having a length of up to approximately 1/2 the total length of the service courts 8, 9 and/or by means of lines 26, 27, 28 and 29 having a length of up to approximately 1/10 of the length of a service court 8, 9 (see Figure 1).

Figure 4 shows a preferred embodiment of a tennis court 30 according to the invention, wherein the narrowing of the service courts has been realised by means of lines 31, 32 extending over the entire length of the service courts 8, 9, parallel and adjacently to the sidelines 3, 4.

Figure 5 shows a preferred embodiment of a tennis court 35 according to the invention, wherein lines 33 and 34 extending parallel and adjacently to the centre line 7 have been provided over the entire length of the service courts. In effect this results in service courts 36 and 37 which comprise a reduced width over their entire length in comparison with the original service courts 8 and 9 (see Figure 1).

Figure 6 shows an embodiment of a tennis court 40 for singles play and doubles play, wherein service courts 36 and 37 have been

realised in accordance with the invention by widening the respective parts 38 of the sidelines 3 and 4 and the part 39 of the centre line 7.

When playing tennis on a tennis court 40, the rule applies that a ball must in effect be hit within the respective service court, that is, the ball must not touch lines 38 and 39. Of course this rule only applies to the service, and not to normal play, which takes place in the entire playing area marked off by the sidelines and the baselines, whereby the area of the respective lines themselves also forms part of the playing area.

The width of the lines 38 and 39 can be selected such that the width of the service courts 36 and 37 is reduced by for example 1/10 of the original width of a service court 8, 9, that is, by approximately 30 - 40 cm (see Figure 1). Of course this width can be varied at will. A reduction by maximally 1/10 of the original width, however, seems to be optimal for hitting an ace and at the same time giving the receiving player a real chance of returning the ball. Of course it is possible to make the width of the lines adjustable, for example by using movable lines or fold-out lines 21 - 24; 26 - 29; 31, 32; 33, 34 and 38, 39.

The invention can be realised on all new and existing tennis courts by narrowing the existing service courts in accordance with the invention. Consequently, the invention also relates to a method for narrowing the service courts as described above.

The invention comprises both indoor courts and outdoor courts having any type of surface which is suitable for playing tennis, such as grass, clay, stone, concrete, asphalt, synthetic material, artificial grass and the like. On grass, for example, the marking may be provided by means of chalk or another material. Also permanent marking as used with clay courts, paint and the like fall within the scope of the invention. Also the projection of the marking according to the invention by means of laser beams and the like on a surface which is suitable for playing tennis forms part of the invention.

Figure 7 schematically illustrates the difference between an existing tennis court and a tennis court according to the invention, wherein a tennis court 35 as discussed above with reference to Figure 5 has been taken as a starting point.

Numeral 41 indicates a serving tennis player. Numeral 42 represents the receiving tennis player on the opposite side of the net 15.

The serving tennis player 41 will prefer to serve from a position near the centre mark 17 of the baseline 6, because in this way he will have a maximum chance of being able to play a returned ball into the playing area of player 42.

Line 44 indicates the path of a served ball in the case of the known tennis court, whereby the service is "good" if the ball hits the service court at the point indicated by numeral 43. This means that a service vector 45 will remain for the player 42.

With the known tennis court a service is also "good" when the ball follows path 47 and hits the service court at point 46. In this case a service vector 48 will remain.

When the combination of service vectors 45 and 48 and the speed of the ball is such that player 42 is unable to return the ball, this means that an ace has been hit.

In the case of the tennis court 35 according to the invention, wherein service courts 36 and 37 have been realised, a "good" service can be hit via balls which follow path 50 or 53, for example. In that case the ball will hit the ground in the service court 36 at point 49 or 52 respectively. In such a case, service vectors 51 and 54 respectively remain for player 42, which service vectors are shorter than the service vectors 45 and 48, as can be seen in the figure. These shorter service vectors 51 and 54 give the player 42 a greater chance of returning a ball which is served with the same speed as the ball which is served via paths 44 and 47, for example.

In other words, with the tennis court 35 according to the invention services can be hit with the same speed as is now possible with the known courts. This means that the dynamics and the speed of the game of tennis are maintained, but the returning tennis player 42 will have a more real chance of returning such a ball, which prevents the game of tennis from degrading into a solo game dominated by aces.

It will be apparent that the length of the service vectors 51 and 54 can be adjusted by placing the lines 31, 32, 33 and 34 closer to or further away from the respective sidelines 3, 4 or the centre line 7.

For the sake of simplicity, paths 44, 47, 50, 53 are shown as straight lines. In practice, however, in particular paths 44 and 50 will be curves extending outwards of the playing area, so that the difference between service vectors 45 and 51 may even be larger than indicated in Figure 7.

The invention is not limited to the above-described examples of embodiments, but can be realised in various ways within the scope of the invention.

CLAIMS

1. A tennis court comprising a marked-off playing area in the form of a rectangle having two parallel sidelines and two parallel baselines, part of said playing area, starting from its center, being marked off in two halves by a centre line extending parallel to the sidelines, said halves at their ends being marked off by means of service lines extending parallel to the baselines, in such a manner that rectangular service courts are formed within the playing area, characterized in that said service courts are marked off having their width narrowed, at least over part thereof extending from the service line.

2. A tennis court according to claim 1, characterized in that said narrowing is marked off adjacently to the sidelines.

3. A tennis court according to claim 2, characterized in that said narrowing is marked off to approximately 1/2 a length of a service court.

4. A tennis court according to claim 2, characterized in that said narrowing is marked off over an entire length of a service court.

5. A tennis court according to one or more of the preceding claims, characterized in that said narrowing is marked of adjacently to the centre line.

6. A tennis court according to claim 5, characterized in that said narrowing is marked off to approximately 1/10 of a length of a service court.

7. A tennis court according to claim 5, characterized in that said narrowing is marked of over an entire length of a service court.

8. A tennis court according to one or more of the preceding claims, characterized in that said narrowing is marked off by lines extending parallel to the sidelines and/or to the centre line.

9. A tennis court according to one or more of the claims 1 - 7, characterized in that said narrowing is marked off by a widening of the sidelines and/or the centre line.

10. A tennis court according to one or more of the preceding claims, characterized in that said narrowing may extend to approximately 1/10 of the width of a service court, seen from the sidelines and/or the centre line.

11. A tennis court according to one or more of the preceding claims, characterized by further lines extending parallel to and spaced from said sidelines, which further lines connect to the baselines so as to mark off a larger playing area for playing doubles.

12. A tennis court according to one or more of the preceding claims, characterized in that said marking consists of lines having a width of 5 - 10 cm.

13. A tennis court according to one or more of the preceding claims, characterized in that said marking is projected on a surface suitable for playing tennis.

14. A tennis court according to one or more of the preceding claims, characterized in that said marking is provided on a surface of grass, clay, concrete, synthetic material or on any other surface which is suitable for playing tennis.

15. A tennis court according to one or more of the preceding claims, characterized in that the playing area is marked off in accordance with the prescribed dimensions for tennis.

16. A method for marking off a playing area for playing tennis in the form of a rectangle having two parallel sidelines and two parallel baselines, part of said playing area, starting from its centre, is marked off in two halves by a centre line extending parallel to the sidelines, said halves at their ends are marked off by means of service lines extending parallel to the baselines, in such a manner that rectangular service courts are formed within the playing area, characterized in that said service courts are marked off having their width narrowed, at least over part thereof from the service line.

17. A method according to claim 16, characterized in that said narrowing is marked off adjacently to the sidelines and/or to the centre line.

18. A method according to claim 17, characterized in that said narrowing is marked off by providing further lines or line portions parallel to the sidelines and/or the centre line.

19. A method according to claim 18, characterized in that said narrowing is provided by widening the sidelines and/or the centre line over its entire length or over part of its length of the service courts.

20. A method according to one or more of the claims 16 - 19, characterized in that said marking is realised by projecting lines on a surface suitable for playing tennis.

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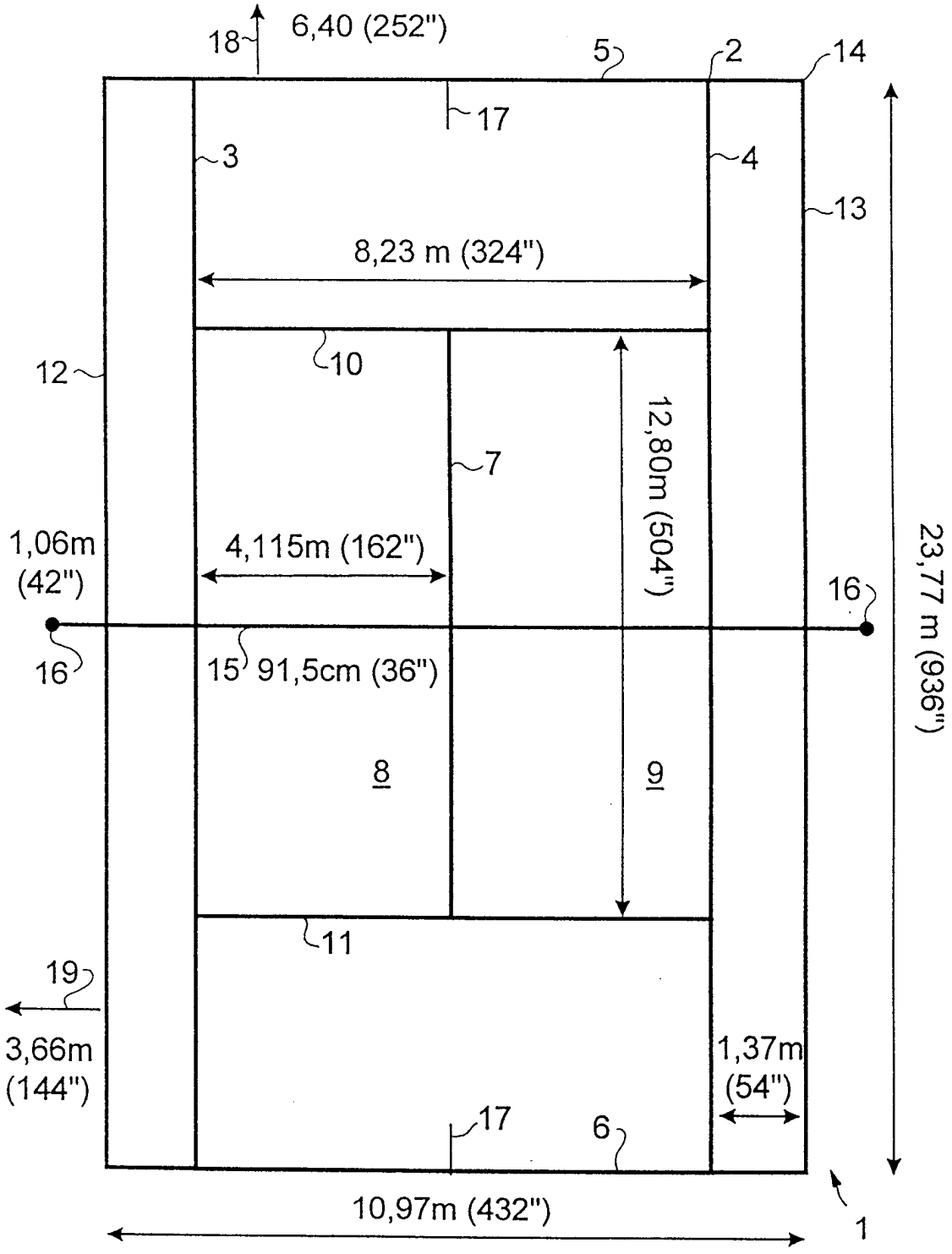
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(42")
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10,97m (432")
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Fig. 1

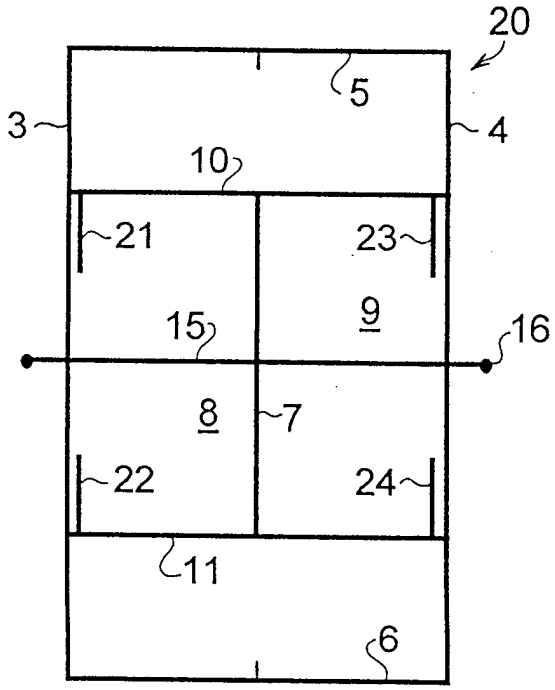
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Fig. 2

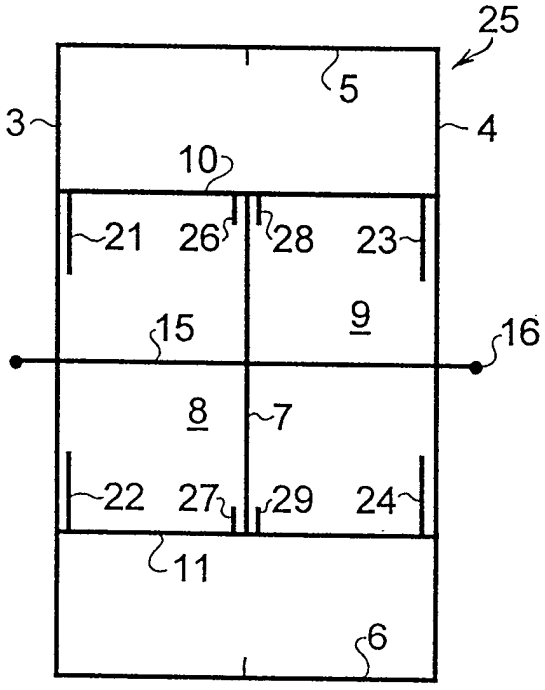
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Fig. 3

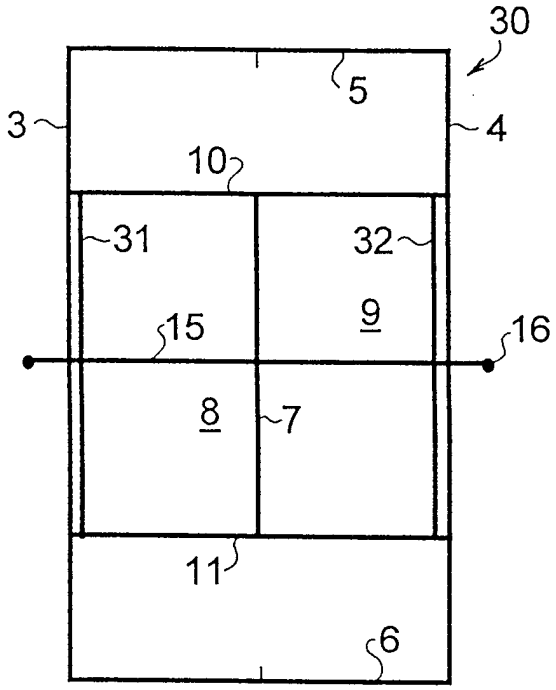

Fig. 4

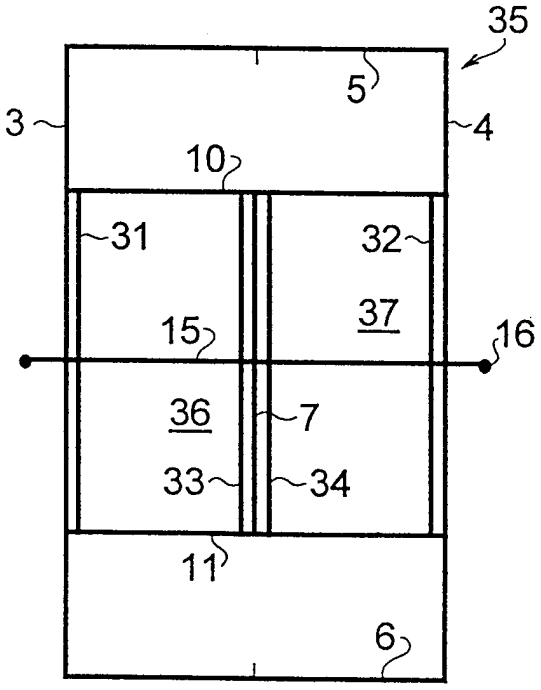

Fig. 5

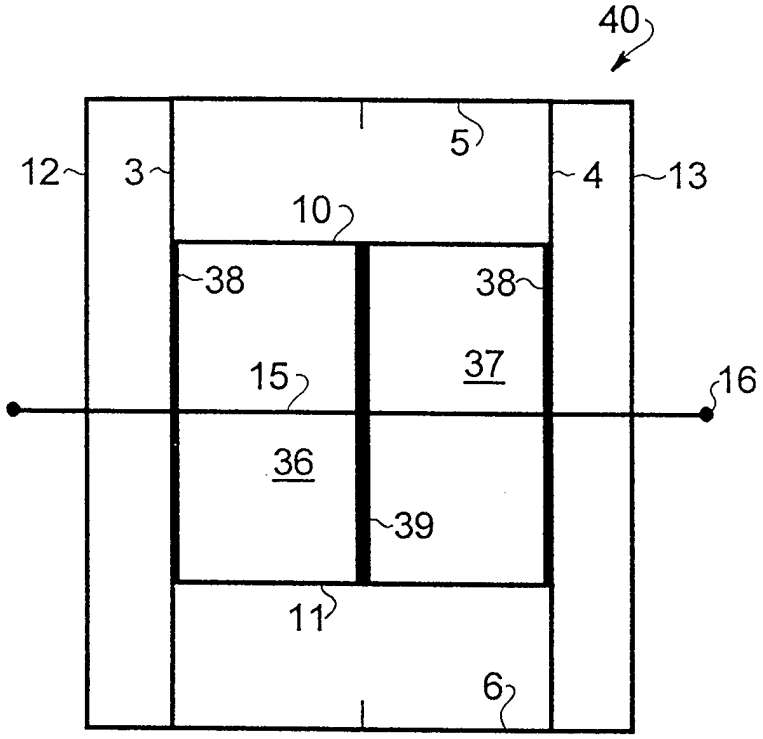

Fig. 6

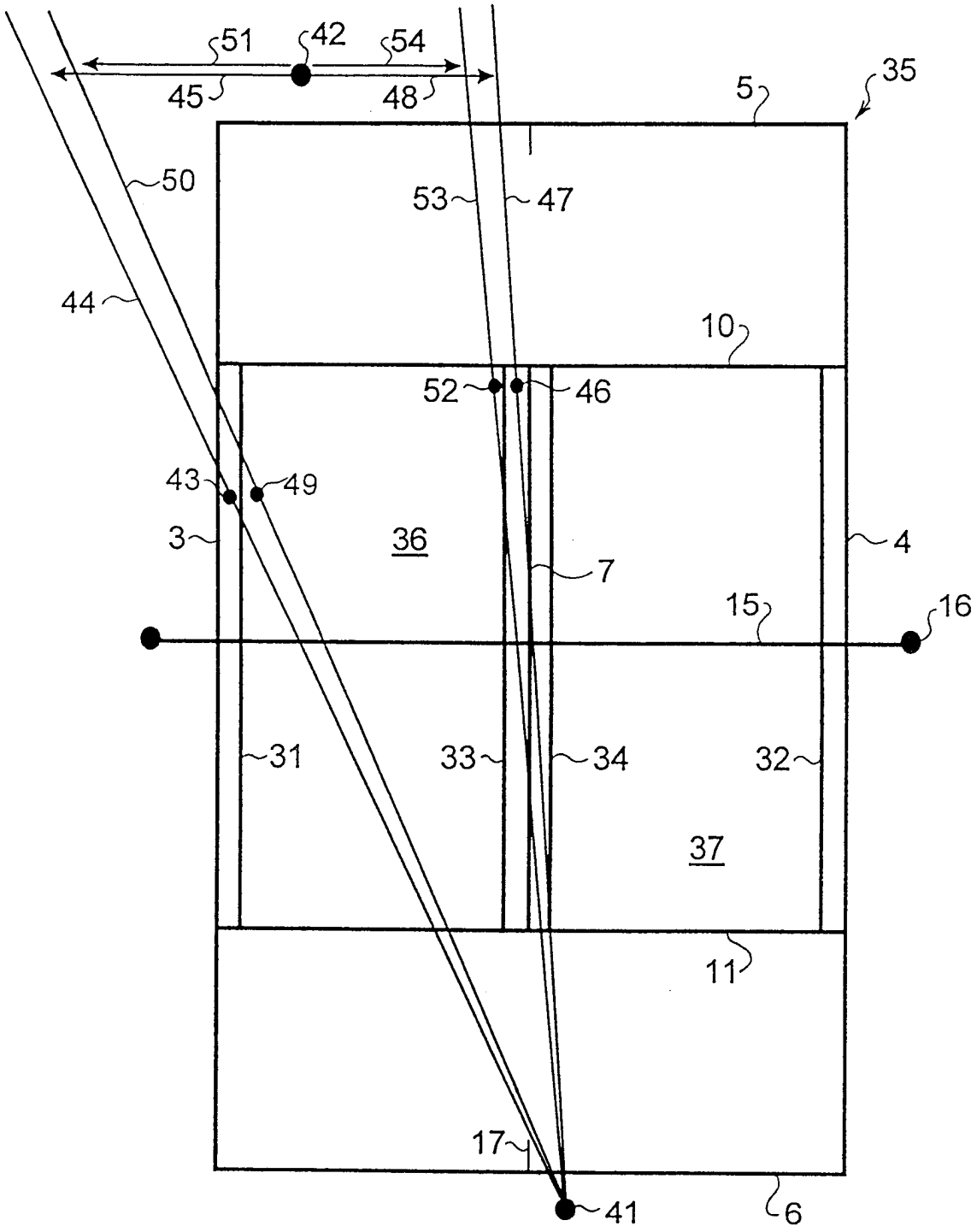
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Fig. 7

INTERNATIONAL SEARCH REPORT

International Application No
PCT/NL 98/00273

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A63C19/02 A63C19/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A63C A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 275 058 A (KAPPESER) 20 July 1988 see column 3, paragraph 6; figure 1	1
A	GB 2 233 565 A (JEFFREY) 16 January 1991 see page 3, paragraph 1; figure 5	3
A	DE 42 37 204 A (GRÖSCHEL) 13 May 1993 see page 1	1,16

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☒ Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
14 September 1998	21/09/1998

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Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/NL 98/00273

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