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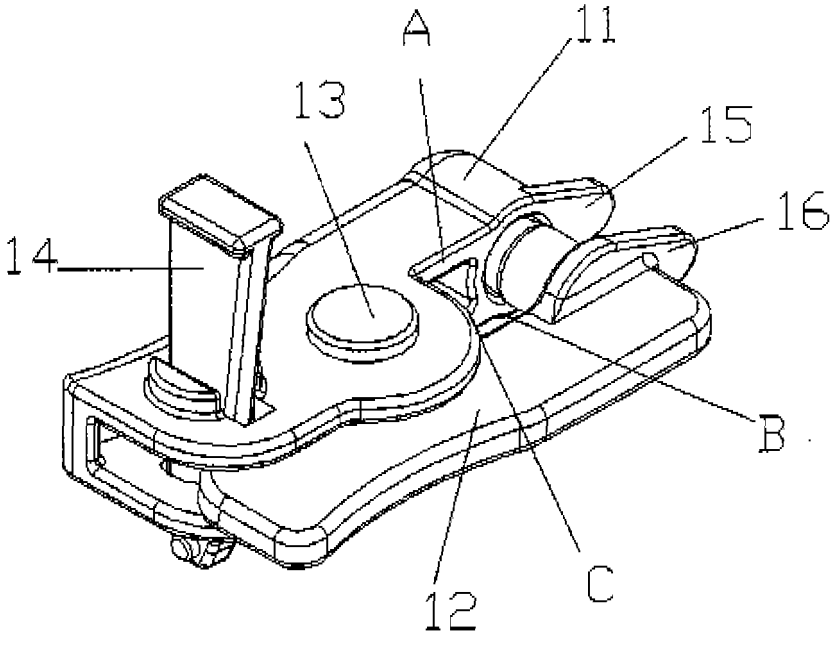
(54) CONNECTION CLAMP OF BUILDING FORMWORK

(57) The present invention proposes a connection clamp of building formwork comprising fixture block I, fixture block II and the fastener; fixture block I and fixture block II are used for clamped connection of the two construction formworks; the said fixture block I is designed with a location hole, and the said fixture block II is designed with a location shaft; the said location shaft is inserted into the said location hole for connection; the said location shaft and the said location hole fit the through holes of the two construction formworks; the said fastener is used to fix the said fixture block I to the said fixture block II. The connection clamp of building formworks of the present invention overcome the shortcomings in the prior art and feature simple structure, outstanding safety, fast locking and removal, reliable fastening, excellent preservation, low cost and long performance life.



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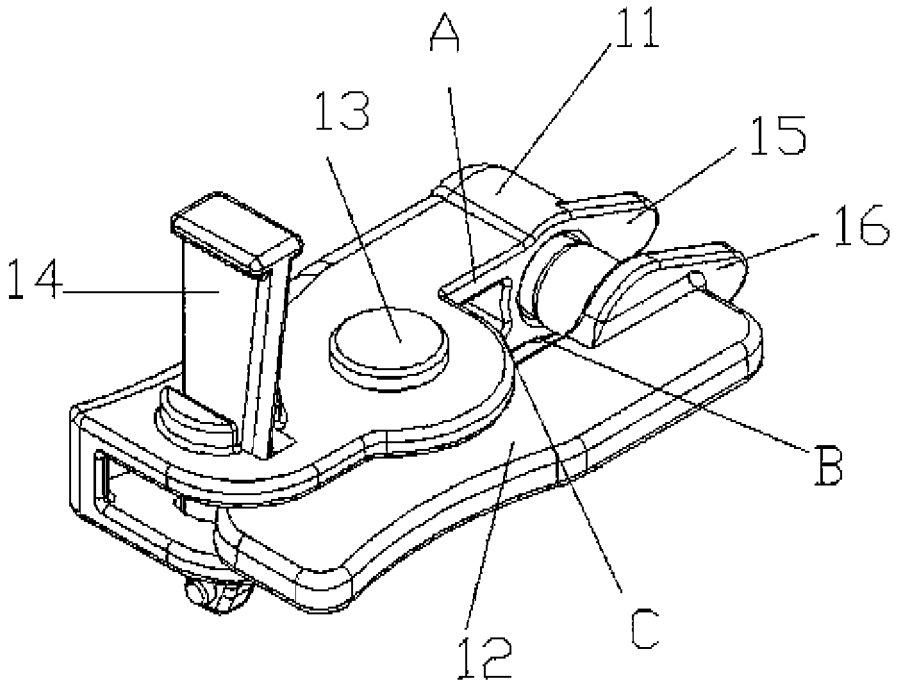

Fig. 1

Description

Field of Technology

[0001] The present invention relates to a connection clamp of building formwork in the field of technology for architectural construction.

Background Art

[0002] The aluminum formworks currently available on construction market are normally assembled and connected through iron pins and iron tabs in a perforated manner; the iron pins are inserted into the corresponding holes made on the sides of both aluminum formworks; the iron tab is inserted into the iron pin slot, hammered down and bent to prevent its drop that may cause the iron pin to get loose. This connection method has shortcomings in practice: Since the iron tab is bent during installation, it must be straightened and knocked off during the removal to loosen the iron pin, which brings about a relatively low disassembly efficiency; moreover, the strong hammer force applied to iron tab may often cause the iron tab to shoot out at high rate, and such flying iron pins may cause personal injury from time to time, which poses a serious potential safety hazard; secondly, since the iron tab is thin, it may get out of service when frequently hammered, needing to be replaced after several operations; furthermore, iron tab is as small in size as iron pin, it's easy to lose, which may lead to the increase in construction cost.

Content of Invention

[0003] The present invention proposes a connection clamp of building formwork against the shortcomings in the prior art.

[0004] The technical proposal of the present invention is realized in the following manner: A connection clamp of building formwork comprising fixture block I, fixture block II and the fastener; fixture block I and fixture block II are used for clamped connection of the two construction formworks; the said fixture block 1 is designed with a location hole, and the said fixture block II is designed with a location shaft; the said location shaft is inserted into the said location hole for connection; the said location shaft and the said location hole fit the through holes of the two construction formworks; the said fastener is used to fix the said fixture block I to the said fixture block II.

[0005] Further, when fixture block I, fixture block II and the fastener clamp the two construction formworks, fixture block I and fixture block II form a concave inner side; at least one of the three concave inner sides comes into contact with the forming face of construction formwork.

[0006] Further, reinforcing plate I is arranged near the location hole of fixture block I, while reinforcing plate II is arranged near the location shaft of fixture block II; when fixture block I, fixture block II and the fastener clamp the two construction formworks, reinforcing plate I comes into contact with the surface of one construction formwork, while reinforcing plate II comes into contact with the surface of the other construction formwork

[0007] Further, the said fixture block I is fixture block I, and the said fixture block II is fixture block II; the said fixture block I and the said fixture block II are hinged by a pivot; the said fixture block I is fitted with two clamping boards I, between which insertion slot I forms; the said fixture block II is fitted with a clamping board II that is inserted into insertion slot I; the said fixture block I is designed with two fastener insertion holes that fit the fastener.

[0008] Further, the said fixture block I is fixture block III, and the said fixture block II is fixture block IV; fixture block III is fitted with two clamping boards III, between which there is an insertion slot II; the said fixture block IV is designed with a clamping board IV; fixture block III is also furnished with limit slide slot I, while the said clamping board IV is fitted with limit shaft I; clamping board IV is inserted into insertion slot II; limit shaft I slides back and forth along the limit slide slot; two clamping boards III and clamping board IV are designed with insertion holes for fastener.

[0009] Further, the said fixture block I is fixture block V, and the said fixture block II is fixture block VI; fixture block V is fitted with two clamping boards V; fixture block VI is furnished with a clamping board VI; between clamping boards V is an insertion slot III; clamping board VI is inserted into insertion slot III; each of the two clamping boards V is fitted with an insertion hole for fastener; clamping board VI is designed with a slide slot; the fastener is provided with a raised bar that is inserted into the slide slot; each of the two clamping boards is fitted with a limit slide slot II; the said clamping board VI is provided with limit shaft II that slides back and forth along limit slide slot II.

[0010] Further, the said fixture block I is fixture block VII, and the said fixture block II is fixture block VIII, which is fitted with insertion slot IV; fixture block VIII is inserted into insertion slot IV; fixture block VII is designed with insertion hole for fastener; fixture block VIII is provided with a holding block; the fastener is a pull rod, of which the casing is designed with a spring; the pull rod is fitted with a removable stop pin; fixture block VII is also provided with a baffle fitted with a pull rod insertion hole; the spring is in a compressed state between the baffle and the stop pin; the pull rod fits the holding block.

[0011] Further, the said fixture block I is fixture block IX, and the said fixture block II is fixture block X; the said fixture block IX is fitted with insertion slot V, and the said fixture block X is inserted into insertion slot V; the said fixture block X is provided with limit shaft V, and the said fixture block IX is designed with limit slide slot V; the said limit shaft V slides back and forth along the limit slide slot; one end of the said fastener is rotationally connected to fixture block IX; the said fixture block X has a locking slot; the other end of the said fastener is connected to

the locking slot of fixture block X.

[0012] Further, one end of the said fastener is fitted with a stop shaft, of which the size is smaller than the diameter of one insertion hole for fastener and greater than the diameter of the other insertion hole for fastener.

[0013] Further, there are two said raised bars and two said slide slots; the two raised bars slide along the two slide slots.

[0014] Further, the said fastener includes four side bars, i.e., side bar I, side bar II, side bar III and side bar IV, which form a rectangular structure; side bar I is rotationally connected with fixture block IX; side bar II is connected to the locking slot; side bar III and side bar IV are in contact with the surface of fixture block IX.

[0015] Benefits of the present invention: The connection clamp of building formworks of the present invention overcome the shortcomings in the prior art and feature simple structure, outstanding safety, fast locking and removal, reliable fastening, excellent preservation, low cost and long performance life. The connection clamp of building formwork comes into contact with the formwork surface to effectively expand the range of compression; moreover, the clamping point of clamp is the closest to the concrete, so the formwork joint is almost level, which ensures the smooth and flat finished concrete surface. The clamp features high strength, large holding force, outstanding stability, and recyclability, which effectively save the cost. The paired design of clamp and formwork drives the formwork to quickly align itself and get clamped autonomously, thereby achieving stronger pressure bearing capacity of the formwork. It's easy to assemble and disassemble, and is efficient for setup and removal. The formwork is not easy to deform under pressure, and the concrete is not easy to accumulate; it's clear and simple. No convex mark develops on the back of formwork; the connecting formwork can meet the requirements for operational support even under pressure, in which case its performance does not change significantly. It's difficult for the formwork to move and go off, and it can be quickly and accurately aligned; one-step connection for fixation is available; moreover, the formwork is durable and difficult to get lost.

Description of Drawings

[0016] To give a clearer description of the technical solutions in the embodiments of the present invention or the prior arts, the drawings needed for the description of the embodiments or prior arts are briefly presented below. Obviously, the drawings described below deal only with some embodiments of present invention. Ordinary skill in the art can obtain other drawings based on the said drawings without making creative efforts.

Fig. 1 is the structural diagram of Embodiment 1 for the present invention "a connection clamp of building formwork";

Fig. 2 is the exploded view of the connection clamp of building formwork shown in Fig. 1;

Fig. 3 is the structural diagram of the connection of the connection clamp of building formwork shown in Fig. 1 to the construction formwork;

Fig. 4 is the structural diagram of Embodiment 2 for a connection clamp of building formwork;

Fig. 5 is the exploded view of the connection clamp of building formwork shown in Fig. 4;

Fig. 6 is the structural diagram of the connection of the connection clamp of building formwork shown in Fig. 4 to the construction formwork;

Fig. 7 is the structural diagram of Embodiment 3 for a connection clamp of building formwork;

Fig. 8 is the exploded view of the connection clamp of building formwork shown in Fig. 7;

Fig. 9 is the structural diagram of the connection of the connection clamp of building formwork shown in Fig. 7 to the construction formwork;

Fig. 10 is the structural diagram of Embodiment 4 for a connection clamp of building formwork;

Fig. 11 is the sectional structure diagram of the connection clamp of building formwork shown in Fig. 10;

Fig. 12 is the exploded view of the connection clamp of building formwork shown in Fig. 10;

Fig. 13 is the structural diagram of the connection of the connection clamp of building formwork shown in Fig. 10 to the construction formwork;

Fig. 14 is the structural diagram of Embodiment 5 for a connection clamp of building formwork;

Fig. 15 is the exploded view of the connection clamp of building formwork shown in Fig. 14;

Fig. 16 is the structural diagram of the connection of the connection clamp of building formwork shown in Fig. 14 to the construction formwork.

[0017] In the attached drawings; 1-Connection clamp of building formwork I; 11-Fixture block I; 12-Fixture block II; 13-Pivot; 14-Fastener I; 111-Pivot insertion hole I; 112-Pivot insertion hole II; 113-Pivot insertion hole 3; 115-Insertion hole I for fastener; 116-Insertion hole II for fastener; 17-Stop shaft I; 18-Location hole I; 19-Location shaft I; 2-Connection clamp of building formwork II; 21-Fixture block III; 22-Fixture block IV; 23-Fastener II; 24-

Reinforcing plate I; 25-Reinforcing plate II; 26-Insertion hole III for fastener; 27-Insertion hole IV for fastener; 28-Limit shaft I; 29-Limit slide slot I; 211-Stop shaft II; 212-Location hole II; 213-Location shaft II; 3-Connection clamp of building formwork III; 31-Fixture block V; 32-Fixture block VI; 33-Fastener III; 34-Limit shaft II; 35-Stop shaft III; 36-Insertion hole V for fastener; 37-Limit slide slot II; 311-Raised bar: 313-Location hole III; 314-Location shaft III; 322-Slide slot; 4-Connection clamp of building formwork IV; 41-Fixture block VII; 411-Holding block; 412-Location hole IV; 42-Fixture block VIII; 421-Location shaft IV; 43-Fastener IV; 431-Handle; 432-Pull rod; 44-Spring; 45-Stop pin: 46-Limit shaft III; 47-Limit slide slot III; 48-Limit slide slot IV; 49-Insertion hole VI for fastener; 491-Baffle; 5-Connection clamp of building formwork V; 51-Fixture block IX; 511-Location hole V; 52-Fixture block X; 521-Location shaft V; 53-Fastener V; 54-Locking slot; 55-Limit shaft V; 56-Limit slide slot V.

Specific Embodiments

[0018] The drawings in embodiments of the present invention are used to give a clearer and more complete description of the technical solutions in embodiments of the present invention. It is obvious that the described embodiments are just part of the embodiments of the present invention. Based on embodiments of the present invention, every other embodiment achieved by the one of ordinary skill in the art without creative efforts is deemed within the protection scope of the present invention.

Embodiment 1:

[0019] A connection clamp of building formwork, which comprises fixture block I 11, fixture block II 12 and the fastener 14; fixture block I 11 and fixture block II 12 are used for clamped connection of the two construction formworks; the said fixture block I 11 is designed with a location hole, and the said fixture block II 12 is designed with a location shaft; the said location shaft is inserted into the said location hole for connection; the said location shaft and the said location hole fit the through holes of the two construction formworks; The said fastener 14 is used to secure the said fixture block I 11 and the said fixture block II 12; When fixture block I 11, fixture block II 12 and the fastener 14 clamp the two construction formworks, fixture block I 11 and fixture block II 12 form a concave inner side; at least one of the three concave inner sides A, B and C comes into contact with the forming face of construction formwork; in this embodiment, the three concave inner sides A, B and C are in contact with the surface of construction formwork.

[0020] Reinforcing plate I is arranged near the location hole 18 of fixture block I 11, while reinforcing plate II is arranged near the location shaft 19 of fixture block II 12; when fixture block I 11, fixture block II 12 and the fastener 14 clamp the two construction formworks, reinforcing plate I comes into contact with the surface of one construction formwork, while reinforcing plate II comes into contact with the surface of the other construction formwork.

[0021] The said fixture block I is fixture block I 11, and the said fixture block II is fixture block II 12; the said fixture block I 11 and the said fixture block II 123 are articulated through pivot 13; the said fixture block I 11 is fitted with two clamping boards 1, between which there is an insertion slot I; the said fixture block II is provided with a clamping board II that is inserted into insertion slot I.

[0022] The said fixture block I 11 is fitted with two insertion holes 115 and 116 for fastener that fit fasteners 14: one end of the said fastener 14 is designed with stop shaft I 17; the size of the said stop shaft I 17 is smaller than the diameter of insertion hole 116 for fastener, and is greater than the diameter of the other insertion hole 115 for fastener.

[0023] In practice, it's necessary to pull fastener I 14 away from insertion hole II 116 for fastener and rotate fixture block I 11 and fixture block II 12 so that the location shaft I 19 fits location hole I 18 and the through holes of the two construction formworks; lock and align, and insert fastener I 14 into insertion hole I 115 for fastener.

Embodiment 2:

[0024] A connection clamp of building formwork, which comprises fixture block I 21, fixture block II 22 and the fastener 23; fixture block I 21 and fixture block II 22 are used for clamped connection of the two construction formworks; the said fixture block I 21 is designed with a location hole 212, and the said fixture block II 22 is designed with a location shaft 213; the said location shaft 213 is inserted into the said location hole 212 for connection; the said location shaft 213 and the said location hole 212 fit the through holes of the two construction formworks; The said fastener 23 is used to secure the said fixture block I 21 and the said fixture block II 22; When fixture block I 21, fixture block II 22 and the fastener 23 clamp the two construction formworks, fixture block I 21 and fixture block II 22 form a concave inner side; at least one of the three concave inner sides comes into contact with the forming face of construction formwork; in this embodiment, the three concave inner sides are in contact with the surface of construction formwork.

[0025] Further, reinforcing plate I 24 is arranged near the location hole of fixture block I, while reinforcing plate II 25 is arranged near the location shaft of fixture block II; when fixture block I, fixture block II and the fastener clamp the two construction formworks, reinforcing plate I 24 comes into contact with the surface of one construction formwork, while reinforcing plate II 25 comes into contact with the surface of the other construction formwork.

[0026] The said fixture block I is fixture block III 21, and the said fixture block II is fixture block IV 22; fixture block III 21 is fitted with two clamping boards III, between which

there is an insertion slot II; the said fixture block IV is designed with a clamping board IV; fixture block III is also furnished with limit slide slot I, while the said clamping board IV is fitted with limit shaft I 28; clamping board IV is inserted into insertion slot II; limit shaft I 28 slides back and forth along the limit slide slot 29; two clamping boards III and clamping board IV are designed with insertion holes 26 and 27 for fastener.

[0027] In practice, limit shaft I 28 is in limit slide slot I 29 so that location shaft II 213 and location hole II 212 connect the through holes of the two construction formworks; then, limit shaft I 28 slides so that location shaft II 213 is inserted into location hole II 212; at this point, fastener II 23 is inserted into the two insertion hole III for fastener and insertion hole IV for fastener; fix and lock.

Embodiment 3:

[0028] A connection clamp of building formwork, which comprises fixture block I 31, fixture block II 32 and the fastener 33; fixture block I 31 and fixture block II 32 are used for clamped connection of the two construction formworks; the said fixture block I 31 is designed with a location hole 313, and the said fixture block II 32 is designed with a location shaft 314; the said location shaft 314 is inserted into the said location hole 313 for connection; the said location shaft 314 and the said location hole 313 fit the through holes of the two construction formworks; The said fastener 33 is used to secure the said fixture block I 31 and the said fixture block II 32; When fixture block I 31, fixture block II 32 and the fastener 33 clamp the two construction formworks, fixture block I 31 and fixture block II 32 form a concave inner side; at least one of the three concave inner sides comes into contact with the forming face of construction formwork; in this embodiment, the three concave inner sides are in contact with the surface of construction formwork.

[0029] Reinforcing plate I is arranged near the location hole 313 of fixture block I 31, while reinforcing plate II is arranged near the location shaft of fixture block II 32; when fixture block I 31, fixture block II 32 and the fastener 33 clamp the two construction formworks, reinforcing plate I comes into contact with the surface of one construction formwork, while reinforcing plate II comes into contact with the surface of the other construction formwork.

[0030] The said fixture block I is fixture block V 31, and the said fixture block II is fixture block VI 32; fixture block V 31 is fitted with two clamping boards V 31; fixture block VI is furnished with a clamping board VI 32; between clamping boards V 31 is an insertion slot III; clamping board VI 32 is inserted into insertion slot III; each of the two clamping boards V is fitted with an insertion hole 36 for fastener; clamping board VI 32 is designed with a slide slot 322; the fastener 33 is provided with a raised bar 311 that is inserted into the slide slot 322; each of the two clamping boards V 31 is fitted with a limit slide slot II 37; the said clamping board VI 32 is provided with limit shaft II 34 that slides back and forth along limit slide slot II 37.

[0031] There are two said raised bars 311 and two said slide slots 322; the two raised bars 311 slide along the two slide slots 322.

[0032] In practice, it's necessary to align the location shaft and location hole with the through holes of construction formwork, insert the location shaft into the location hole, align the raised bar of fastener to the slide slot, and insert and lock the raised bar in the slide slot; for the loosening, it's necessary to pull out the fastener and slide the limit shaft along limit slide slot I and limit slide slot II to move the location shaft away from location hole.

Embodiment 4:

[0033] A connection clamp of building formwork, which comprises fixture block I 41, fixture block II 42 and the fastener 43; fixture block I 41 and fixture block II 42 are used for clamped connection of the two construction formworks; the said fixture block I 42 is designed with a location hole 412, and the said fixture block II 42 is designed with a location shaft 421; the said location shaft 421 is inserted Into the said location hole 412 for connection; the said location shaft 421 and the said location hole 412 fit the through holes of the two construction formworks; The said fastener 43 is used to secure the said fixture block I 41 and the said fixture block II 42; When fixture block I 41, fixture block II 42 and the fastener 43 clamp the two construction formworks, fixture block I 41 and fixture block II 42 form a concave inner side; at least one of the three concave inner sides comes into contact with the forming face of construction formwork; in this embodiment, the three concave inner sides are in contact with the surface of construction formwork.

[0034] Reinforcing plate I is arranged near the location hole 412 of fixture block I, while reinforcing plate II is arranged near the location shaft of fixture block II; when fixture block I 41, fixture block II 42 and the fastener 43 clamp the two construction formworks, reinforcing plate I comes into contact with the surface of one construction formwork, while reinforcing plate II comes into contact with the surface of the other construction formwork.

[0035] The said fixture block I is fixture block VII 41, and the said fixture block II is fixture block VIII 42, which is fitted with Insertion slot IV; fixture block VIII 42 is inserted into insertion slot IV; fixture block VII 41 is designed with insertion hole for fastener; fixture block VIII 42 is provided with a holding block 411; the fastener is a pull rod 432, of which the casing is designed with a spring 44; the pull rod 432 is fitted with a removable stop pin 45; fixture block VII 41 is also provided with a baffle 491 fitted with a pull rod insertion hole; the spring 44 is in a compressed state between the baffle 491 and the stop pin 45; the pull rod 432 fits the holding block 411.

[0036] In practice, it's necessary to pull the pull rod so that one of its ends gets away from the holding block in

order that fixture block I gets away from fixture block II; connect the location hole and location shaft to the through holes of construction formwork and release the pull rod so that one of its ends is connect to the holding block In order that fixture block I and fixture block II lock the construction formwork.

Embodiment 5:

[0037] A connection clamp of building formwork, which comprises fixture block I 51, fixture block II 52 and the fastener 53; fixture block I 51 and fixture block II 52 are used for clamped connection of the two construction formworks; the said fixture block I 51 is designed with a location hole 511, and the said fixture block II 52 is designed with a location shaft 521; the said location shaft 521 is inserted into the said location hole 511 for connection; the said location shaft 521 and the said location hole 511 fit the through holes of the two construction formworks; The said fastener 53 is used to secure the said fixture block I 51 and the said fixture block II 52; When fixture block I 51, fixture block II 52 and the fastener 53 clamp the two construction formworks, fixture block I 51 and fixture block II 52 form a concave inner side; at least one of the three concave inner sides comes into contact with the forming face of construction formwork; in this embodiment, the three concave inner sides are in contact with the surface of construction formwork.

[0038] Reinforcing plate I is arranged near the location hole 511 of fixture block I 51, while reinforcing plate II is arranged near the location shaft 521 of fixture block II 52; when fixture block I 51, fixture block II 52 and the fastener 53 clamp the two construction formworks, reinforcing plate I comes into contact with the surface of one construction formwork, while reinforcing plate II comes into contact with the surface of the other construction formwork.

[0039] The said fixture block I is fixture block IX 51, and the said fixture block II is fixture block X 52; the said fixture block IX 51 is fitted with insertion slot V, and the said fixture block X 52 is inserted into insertion slot V; the said fixture block X is provided with limit shaft V 55, and the said fixture block IX 51 is designed with limit slide slot V 56; the said limit shaft V 55 slides back and forth along the limit slide slot V 56; one end of the said fastener 53 is rotationally connected to fixture block IX 51; the said fixture block X 52 has a locking slot 54; the other end of the said fastener 53 is connected to the locking slot 54 of fixture block X 52.

[0040] The said fastener 53 includes four side bars, i.e., side bar I, side bar II, side bar III and side bar IV, which form a rectangular structure; side bar I is rotationally connected with fixture block IX 51; side bar II is connected to the locking slot 54; side bar III and side bar IV are in contact with the surface of fixture block IX.

[0041] In practice, it's necessary to move the side bar II away from the locking slot so that location shaft 521 gets away from location hole 511; after the alignment with through hole of the construction formwork, the location shaft 521 is inserted into the through hole and the location hole 511 successively; finally, side bar II is connected and locked to locking slot.

[0042] The connection clamp of building formwork comes into contact with the formwork surface to effectively expand the range of compression; moreover, the clamping point of clamp is the closest to the concrete, so the formwork joint Is almost level, which ensures the smooth and flat finished concrete surface. The clamp features high strength, large holding force, outstanding stability, and recyclability, which effectively save the cost. The paired design of clamp and formwork drives the formwork to quickly align itself and get clamped autonomously, thereby achieving stronger pressure bearing capacity of the formwork. It's easy to assemble and disassemble, and is efficient for setup and removal. The formwork is not easy to deform under pressure, and the concrete is not easy to accumulate; it's clear and simple. No convex mark develops on the back of formwork; the connecting formwork can meet the requirements for operational support even under pressure, in which case its performance does not change significantly. It's difficult for the formwork to move and go off, and it can be quickly and accurately aligned; one-step connection for fixation is available; moreover, the formwork is durable and difficult to get lost.

[0043] The above are merely preferred embodiments of the present invention, thus not being used to restrict the present invention. Any modification, equivalent replacement and improvement, etc. performed following the principles of the present invention shall be covered by the protection of the present invention.

Claims

1. A connection clamp of building formwork, which is **characterized in** fact that it comprises fixture block I, fixture block II and the fastener; fixture block I and fixture block II are used for clamped connection of the two construction formworks; the said fixture block I is designed with a location hole, and the said fixture block II is designed with a location shaft; the said location shaft is inserted into the said location hole for connection; the said location shaft and the said location hole fit the through holes of the two construction formworks; the said fastener is used to fix the said fixture block I to the said fixture block II.

2. The connection clamp of building formwork stated in Claim 1 is **characterized by** the following: When fixture block I, fixture block II and the fastener clamp the two construction formworks, fixture block I and fixture block II form a concave inner side; at least one of the three concave inner sides comes into contact with the forming face of construction formwork.

3. The connection clamp of building formwork set forth in Claim 1, which is **characterized by** the following: Reinforcing plate I is arranged near the location hole of fixture block I, while reinforcing plate II is arranged near the location shaft of fixture block II; when fixture block I, fixture block II and the fastener clamp the two construction formworks, reinforcing plate I comes into contact with the surface of one construction formwork, while reinforcing plate II comes into contact with the surface of the other construction formwork.

4. The connection clamp of building formwork set forth in Claim 1, which is **characterized by** the following: The said fixture block I is fixture block I, and the said fixture block II is fixture block II; the said fixture block I and the said fixture block II are hinged by a pivot; the said fixture block I is fitted with two clamping boards I, between which insertion slot I forms; the said fixture block II is fitted with a clamping board II that is inserted into insertion slot I; the said fixture block I is designed with two fastener Insertion holes that fit the fastener.

5. The connection clamp of building formwork set forth in Claim 1, which is **characterized by** the following: The said fixture block I is fixture block III, and the said fixture block II is fixture block IV; fixture block III is fitted with two clamping boards III, between which there is an insertion slot II; the said fixture block IV is designed with a clamping board IV; fixture block III is also furnished with limit slide slot I, while the said clamping board IV is fitted with limit shaft I; clamping board IV is inserted into insertion slot II; limit shaft I slides back and forth along the limit slide slot; two clamping boards III and clamping board IV are designed with insertion holes for fastener.

6. The connection clamp of building formwork set forth in Claim 1, which is **characterized by** the following: The said fixture block I is fixture block V, and the said fixture block II is fixture block VI; fixture block V is fitted with two clamping boards V; fixture block VI is furnished with a clamping board VI; between clamping boards V is an insertion slot III; clamping board VI is inserted into insertion slot III; each of the two clamping boards V is fitted with an insertion hole for fastener; clamping board VI is designed with a slide slot; the fastener is provided with a raised bar that is inserted into the slide slot; each of the two clamping boards is fitted with a limit slide slot II; the said clamping board VI is provided with limit shaft II that slides back and forth along limit slide slot II.

7. The connection clamp of building formwork set forth in Claim 1, which is **characterized by** the following: The said fixture block I is fixture block VII, and the said fixture block II is fixture block VIII, which is fitted with insertion slot IV; fixture block VIII is inserted into insertion slot IV; fixture block VII is designed with insertion hole for fastener; fixture block VIII is provided with a holding block; the fastener is a pull rod, of which the casing is designed with a spring; the pull rod is fitted with a removable stop pin; fixture block VII is also provided with a baffle fitted with a pull rod insertion hole; the spring is in a compressed state between the baffle and the stop pin; the pull rod fits the holding block.

8. The connection clamp of building formwork set forth in Claim 1, which is **characterized by** the following: The said fixture block I is fixture block IX, and the said fixture block II is fixture block X; the said fixture block IX is fitted with insertion slot V, and the said fixture block X is inserted into insertion slot V; the said fixture block X is provided with limit shaft V, and the said fixture block IX is designed with limit slide slot V; the said limit shaft V slides back and forth along the limit slide slot; one end of the said fastener is rotationally connected to fixture block IX; the said fixture block X has a locking slot; the other end of the said fastener is connected to the locking slot of fixture block X.

9. The connection clamp of building formwork stated in Claim 4, which is **characterized by** the following: One end of the said fastener is fitted with a stop shaft, of which the size is smaller than the diameter of one insertion hole for fastener and greater than the diameter of the other insertion hole for fastener.

10. The connection clamp of building formwork stated in Claim 7, which is **characterized by** the following: The said fastener includes four side bars, i.e., side bar I, side bar II, side bar III and side bar IV, which form a rectangular structure; side bar I is rotationally connected with fixture block IX: side bar II is connected to the locking slot; side bar III and side bar IV are in contact with the surface of fixture block IX.

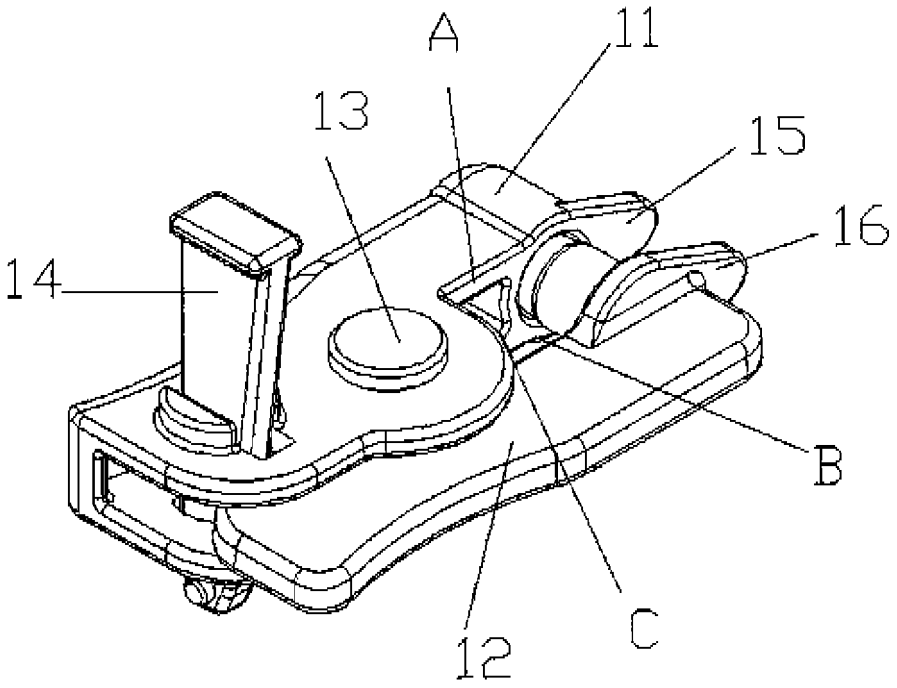

Fig. 1

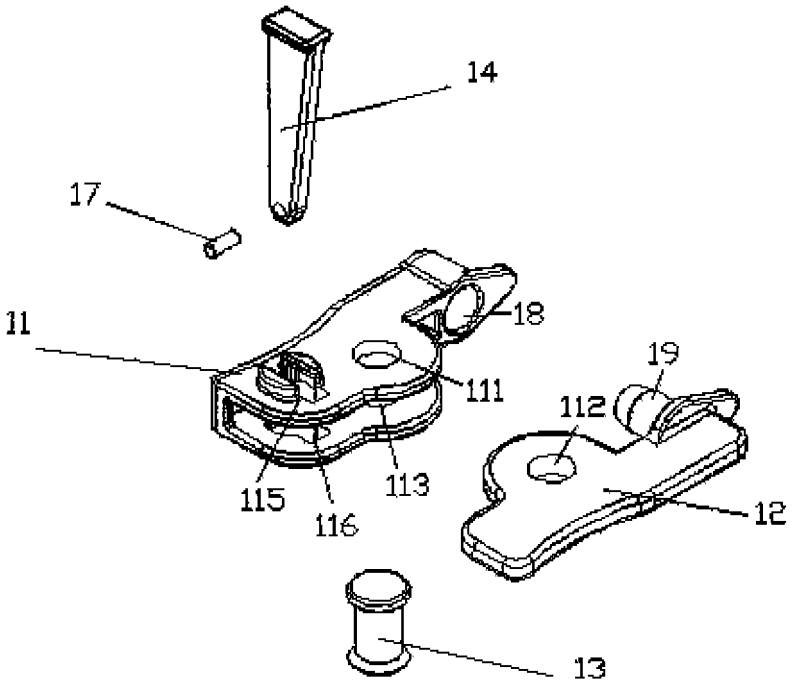

Fig. 2

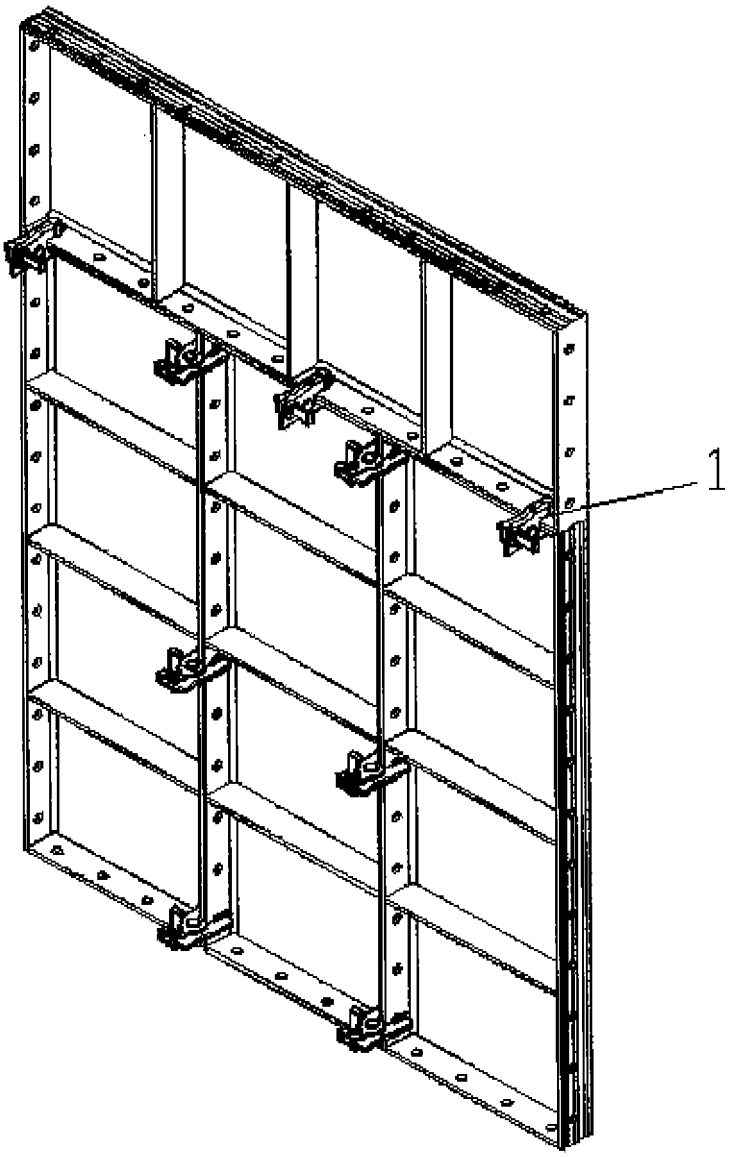

Fig. 3

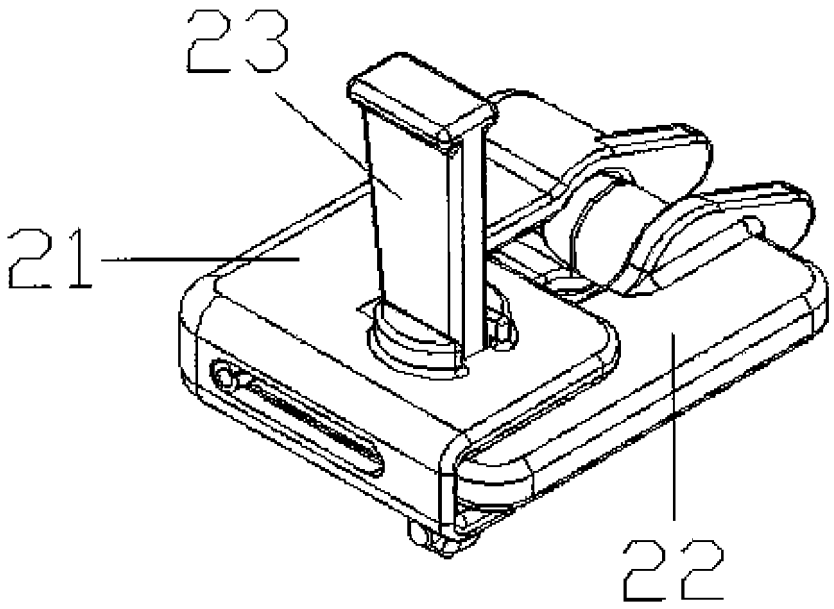

Fig. 4

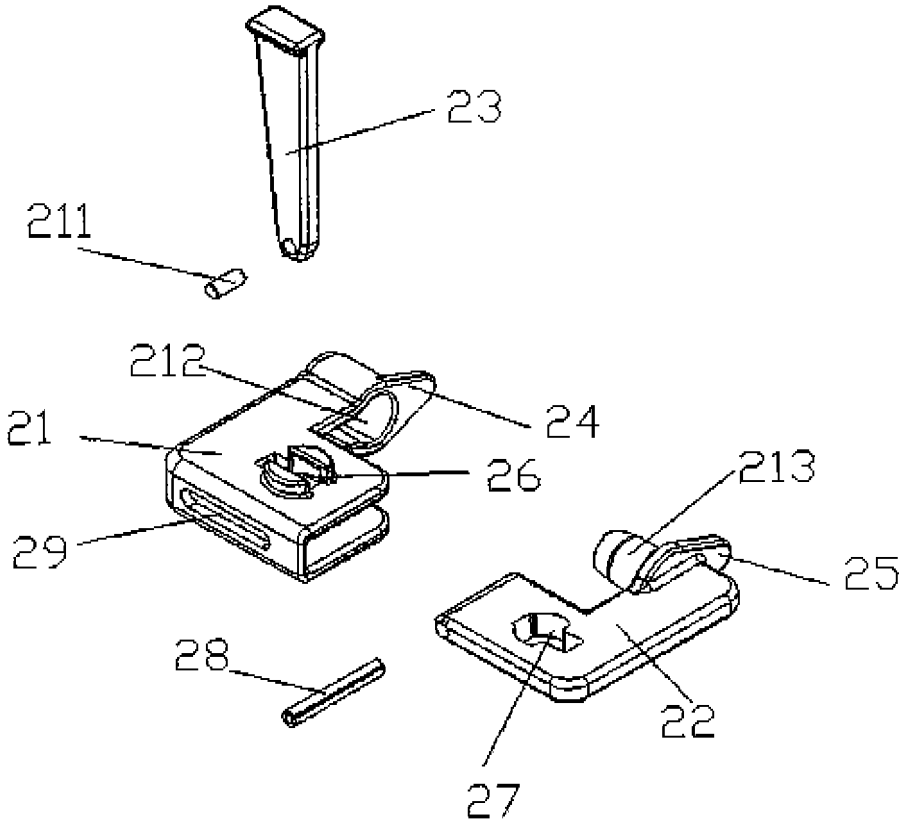

Fig. 5

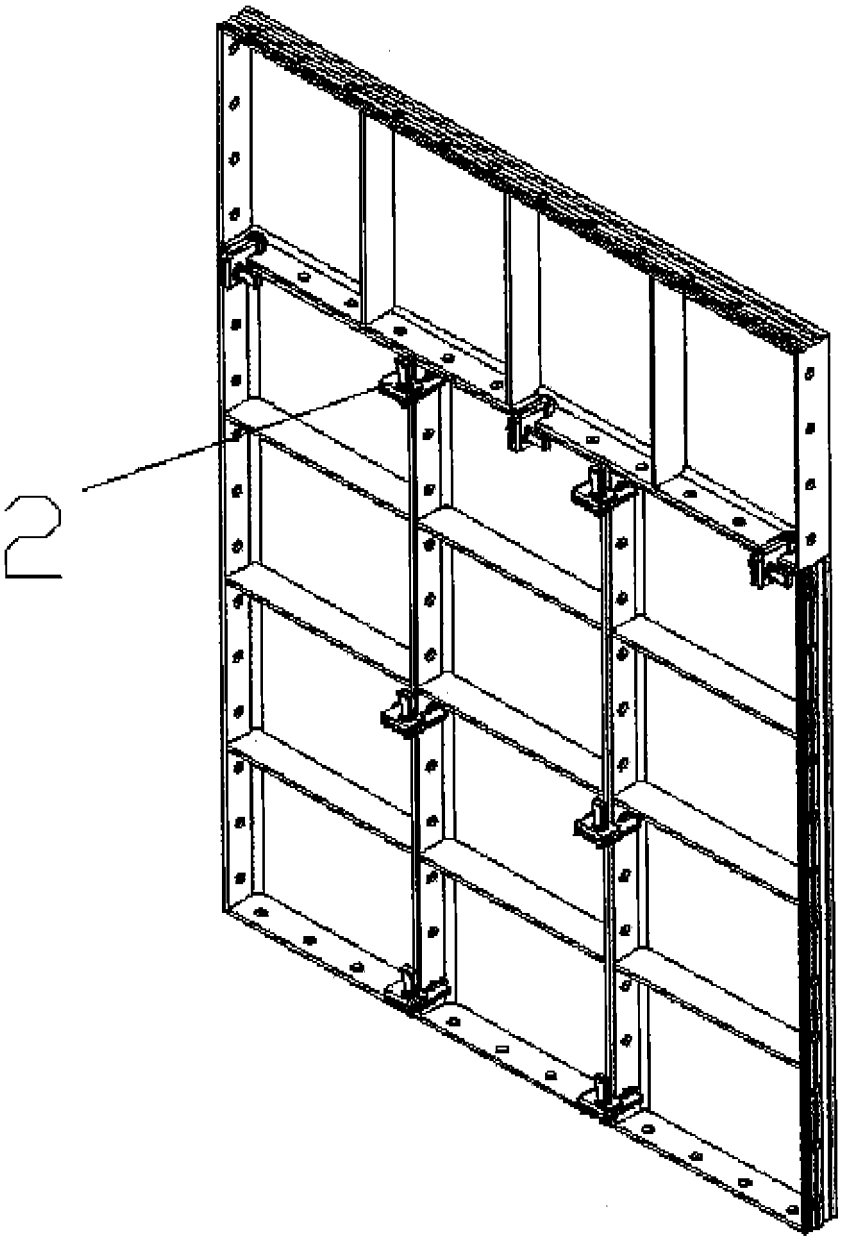

Fig. 6

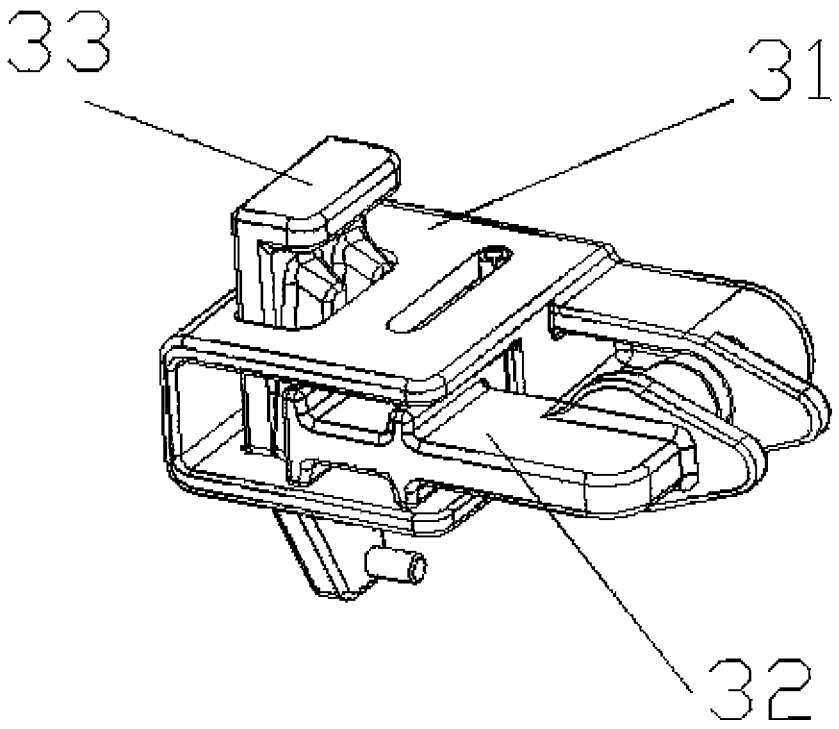

Fig. 7

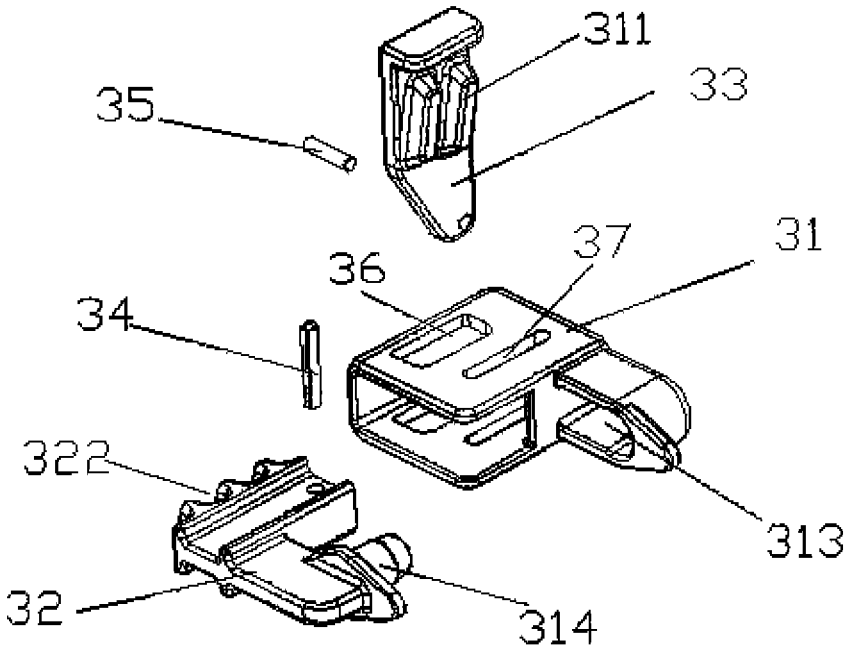

Fig. 8

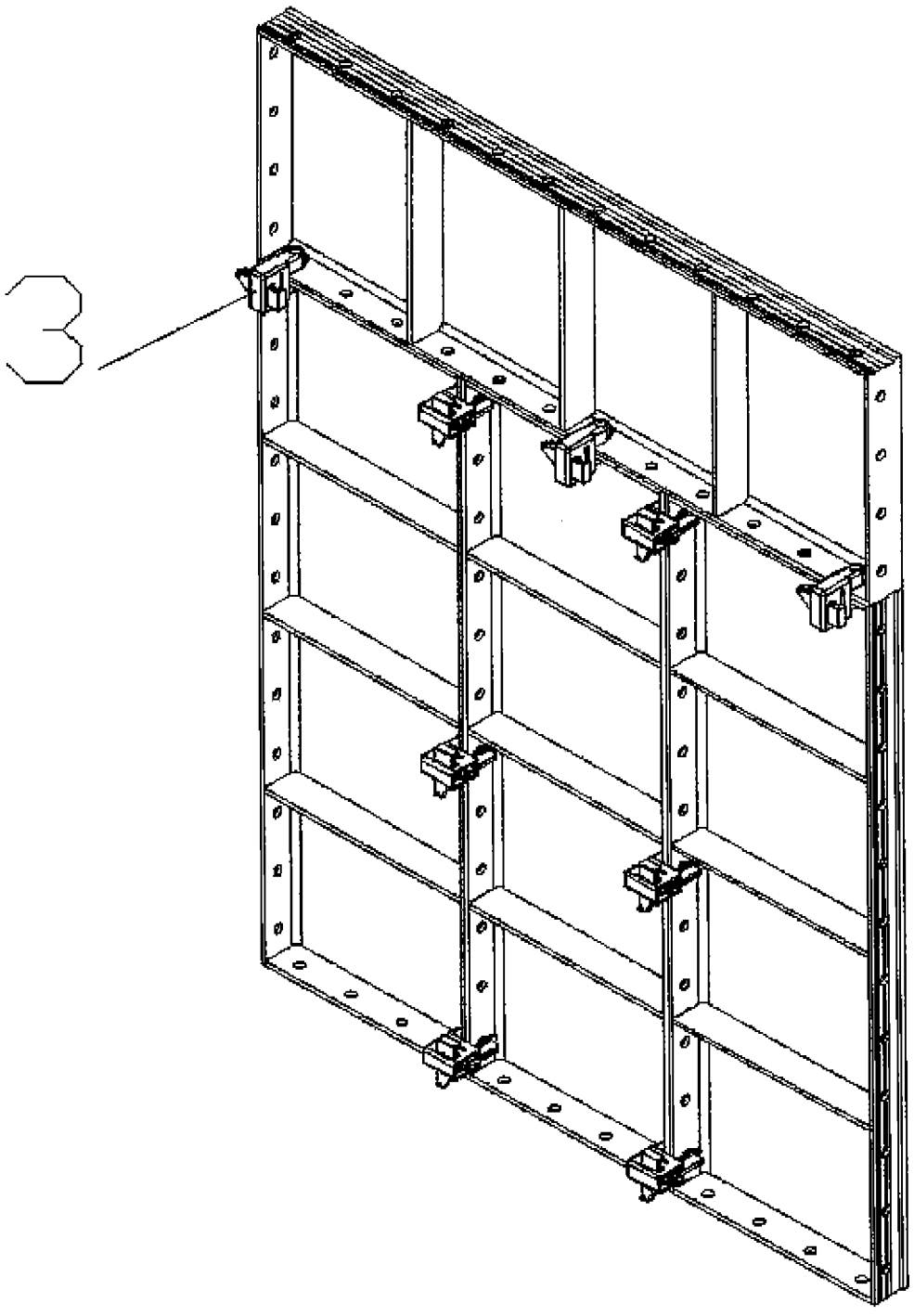

Fig. 9

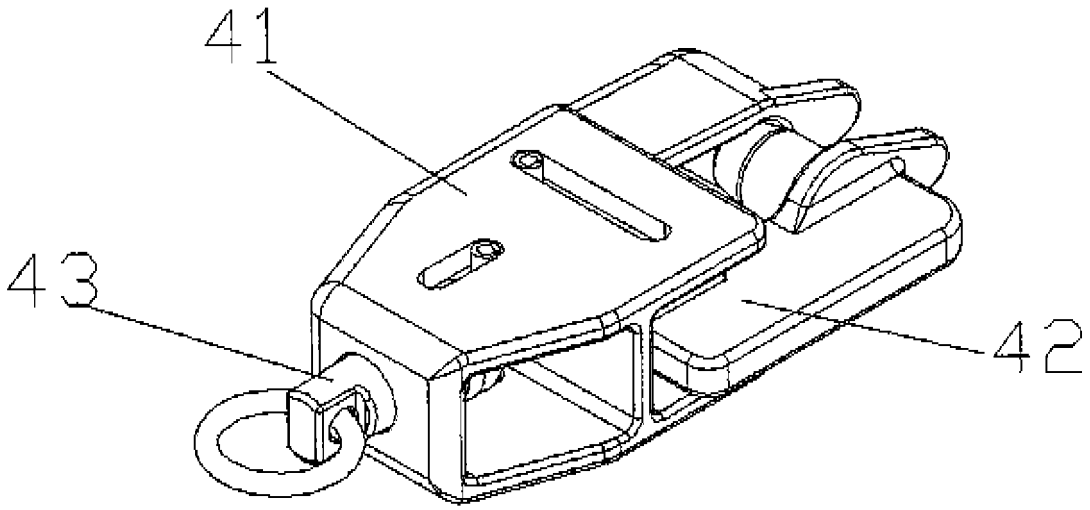

Fig. 10

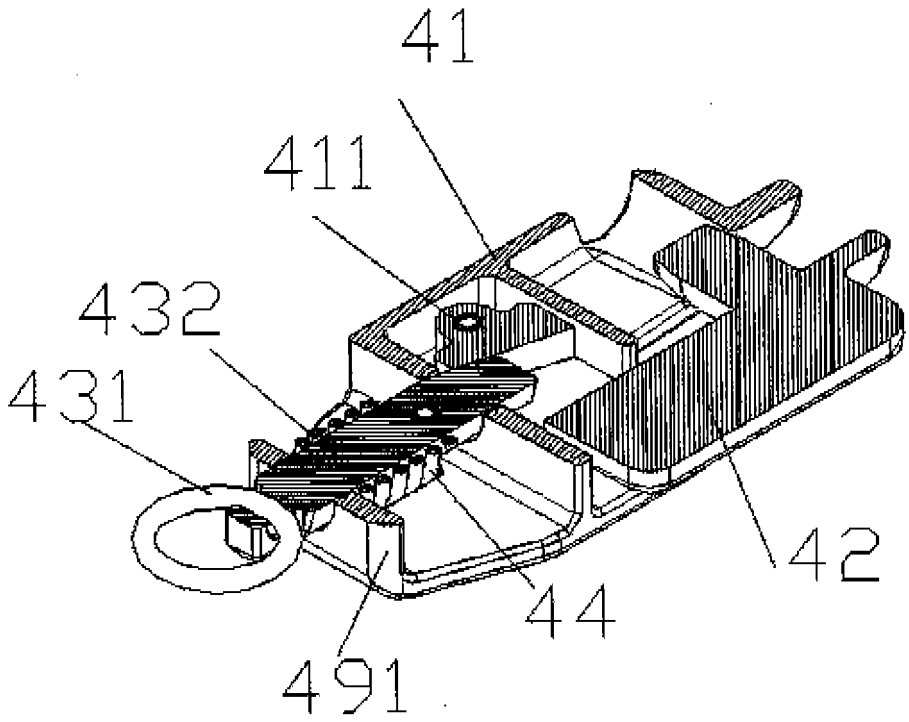

Fig. 11

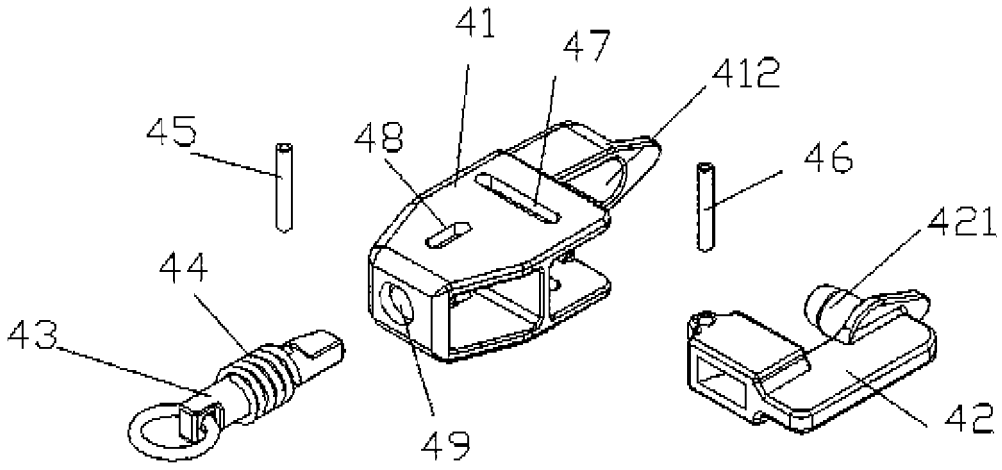

Fig. 12

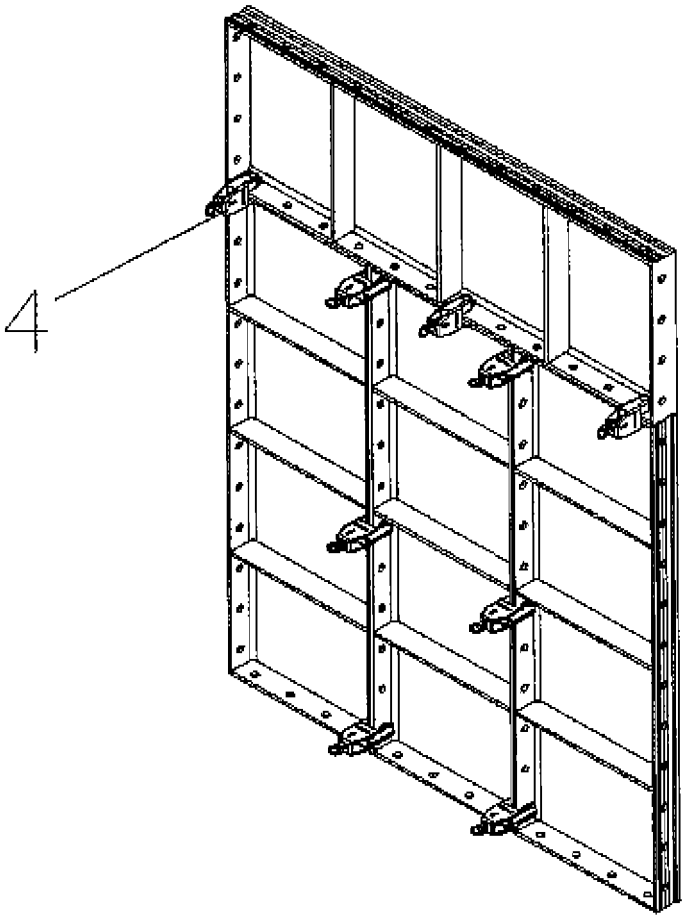

Fig. 13

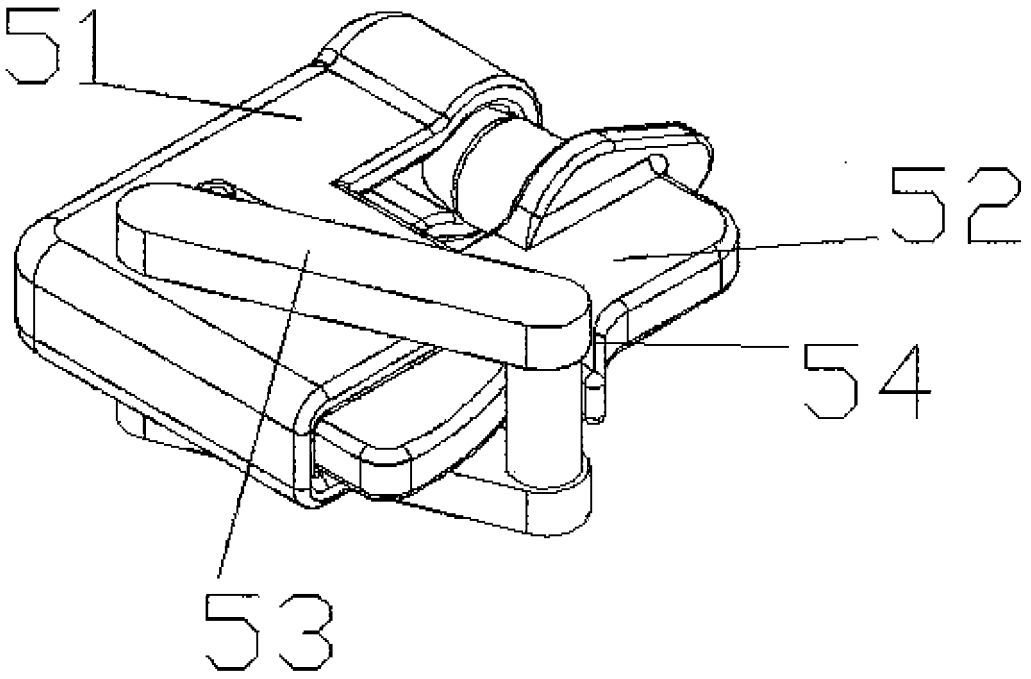

Fig. 14

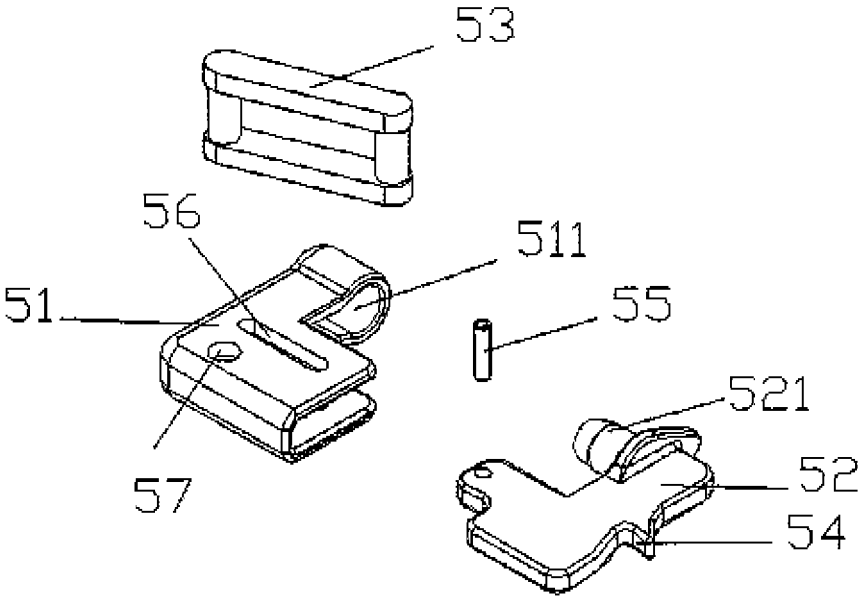

Fig. 15

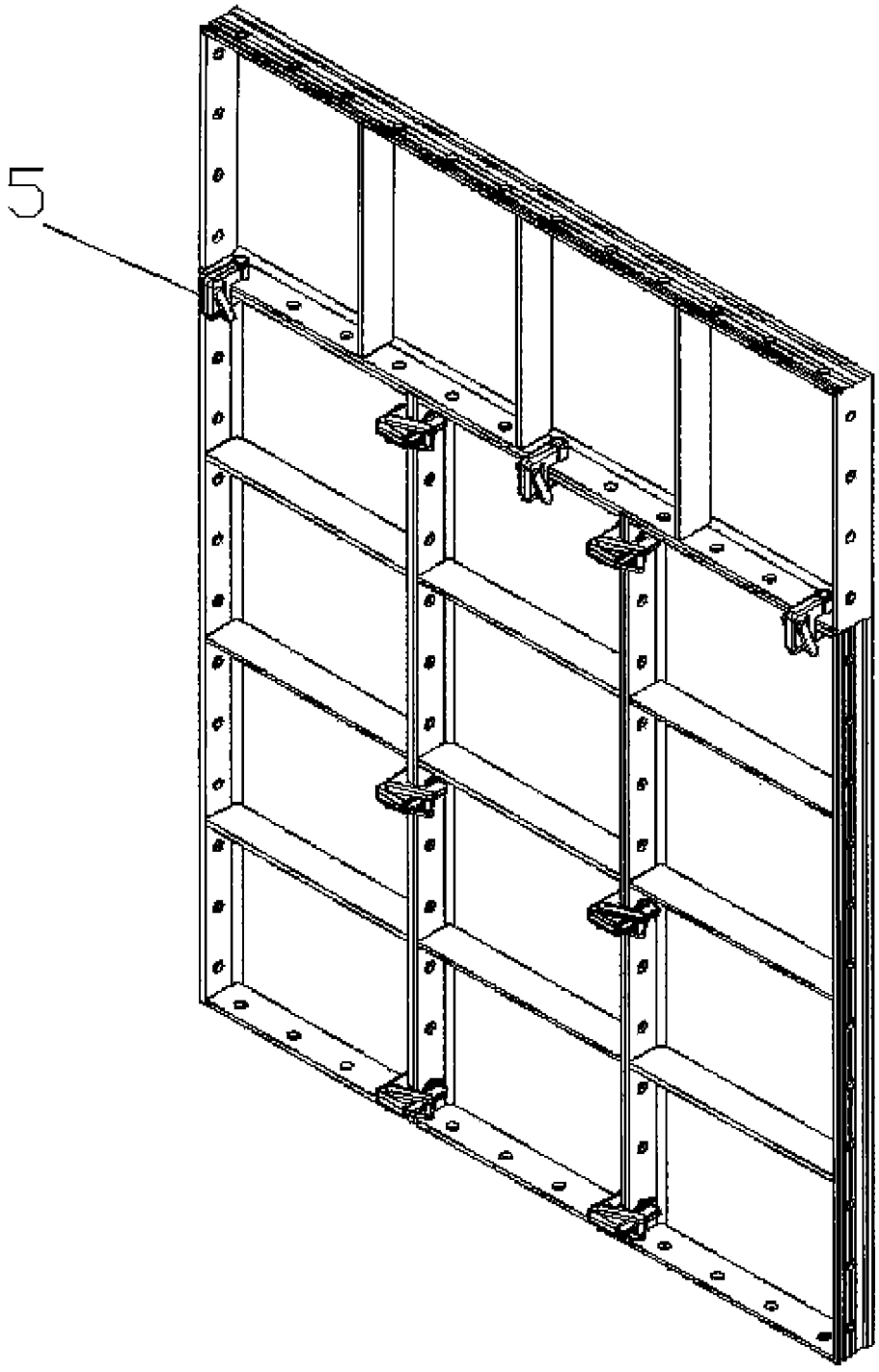

Fig. 16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/118852

A. CLASSIFICATION OF SUBJECT MATTER

E04G 17/04(2006.01)i; E04G 17/06(2006.01)i

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)

E04G

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 practicable, search terms used)

CNABS, CNTXT, VEN, CNKI: 夹扣, 模板, 扣, 夹, 连接, 定位, 孔, 轴, 槽, 滑; latch+, lock+, template, clip+, connect+, hole?, shaft?, groove?, slid+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 104806006 A (GUANGZHOU CITY OF ARTS AND MACHINERY CO., LTD.) 29 July 2015 (2015-07-29) description, paragraph [0025], and figures 1-11	1-4, 9
Y	CN 206681373 U (SIHUI YANCHUANG ELECTRIC CO., LTD.) 28 November 2017 (2017-11-28) description, paragraphs [0013] and [0014], and figures 1-3	1-4, 9
A	CN 204174933 U (GUANGZHOU CITY OF ARTS AND MACHINERY CO., LTD.) 25 February 2015 (2015-02-25) entire document	1-10
A	CN 206428964 U (GUANGZHOU CITY OF ARTS AND MACHINERY CO., LTD.) 22 August 2017 (2017-08-22) entire document	1-10
A	CN 204609289 U (GUANGZHOU CITY OF ARTS AND MACHINERY CO., LTD.) 02 September 2015 (2015-09-02) entire document	1-10

☑ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
05 March 2019	**18 March 2019**

Name and mailing address of the ISA/CN	Authorized officer
National Intellectual Property Administration, PRC (ISA/CN) **No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088** **China**	
Facsimile No. **(86-10)62019451**	Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/118852

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 108824807 A (GUANGZHOU CITY OF ARTS AND MACHINERY CO., LTD.) 16 November 2018 (2018-11-16) entire document	1-10
A	JP 6105893 B2 (ALINCO K. K. ET AL.) 29 March 2017 (2017-03-29) entire document	1-10

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2018/118852

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 104806006 A	29 July 2015	None	
CN 206681373 U	28 November 2017	None	
CN 204174933 U	25 February 2015	None	
CN 206428964 U	22 August 2017	None	
CN 204609289 U	02 September 2015	None	
CN 108824807 A	16 November 2018	None	
JP 6105893 B2	29 March 2017	JP 2014080799 A	08 May 2014

Form PCT/ISA/210 (patent family annex) (January 2015)