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(54) Falling head support device for supporting beams of formworks for floors

Fallkopfvorrichtung zur Abstützung von Trägern einer Deckenschalung

Dispositif de support à charge decroissante pour supporter des poutres de coffrages pour planchers

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Description

Technical Field

[0001] The present invention relates to a falling head support device for supporting beams of form works for floors.

[0002] DE 33 16 557 C1 discloses a falling head support device for supporting beams of formworks for floors having a combination of structural features as set forth in the pre-characterizing portion of the appended claim 1.

[0003] EP-A-1 251 222 discloses a recoverable shuttering comprising beam supporting head parts vertically detachably engaged in an upright leg, and equipped with plate-like hooks with upwardly facing concave portions for supporting the beams.

Disclosure of the Invention

[0004] The aim of the present invention is to provide a falling head support device for supporting beams of formworks for floors that is structurally simple, achieving savings in their production.

[0005] Within this aim, an object of the present invention is to provide a falling head support device for supporting beams of formworks for floors that is particularly resistant to the loads applied thereto.

[0006] Another object of the present invention is to provide a falling head support device for supporting beams of formworks for floors provided with the safety systems required by the standards applicable to the field.

[0007] Another object of the present invention is to provide a falling head support device for supporting beams of formworks for floors that is easy to use.

[0008] Another object of the present invention is to provide a falling head support device for supporting beams of formworks for floors that can be manufactured with known systems and technologies.

[0009] In accordance with the invention, there is provided a falling head support device for supporting beams of formworks for floors as defined in the appended claims.

Brief description of the drawings

[0010] Further characteristics and advantages of the invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment thereof, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of a device according to the invention, with a supporting beam for form work of floors associated therewith;

Figure 2 is a partially sectional side view of the device of Figure 1;

Figure 3 is at top view of the device of Figure 2;

Figure 4 is a partially sectional front view of the device of Figure 2, with a supporting beam for formwork of floors associated therewith.

Ways of carrying out the Invention

[0011] With reference to the figures, a falling head support device for

[0012] Further characteristics and advantages of the invention will become supporting beams of formworks for floors according to the invention is generally designated by the reference numeral 10.

[0013] The support device 10 comprises a tubular upright 11, which has a square cross-section and, at the upper end, a T-shaped portion 12.

[0014] A flat bracket 13 is provided at the lower end of the upright 11, and a shank 14 protrudes downward from said bracket so as to be substantially aligned with the upright 12; the shank is designed to be inserted in a corresponding tubular supporting strut that rests on the ground (not shown in the figures) and is provided with a complementary plate to which the flat bracket 13 is locked by means of bolts.

[0015] A supporting head 15, in this embodiment for two supporting beams of a formwork for floors, is coupled slidingly to the upright 11; a single beam, designated by the reference numeral 16, is shown in Figures 1 and 4.

[0016] The supporting head 15 comprises a base plate 17, to which two plates 18 are welded edgeways and are arranged in a mirror-symmetrical fashion so that they are laterally adjacent to opposite sides of the upright 11 and are suitable to delimit laterally a region 19 for accommodating the end of the supporting beam 16.

[0017] In this embodiment, each plate 18 is symmetrical with respect to a vertical centerline axis, and as a pair the plates 18 consequently form two regions 19 for accommodating the ends of contiguous and aligned supporting beams 16.

[0018] The base plate 17 is provided centrally with a through hole 20 in order to allow its sliding along the upright 11; in particular, sliding is allowed for a single initial portion 11a of the upright 11, which is comprised between the flat bracket 13 and two stroke limiters 21, which are arranged on opposite sides of the upright 11 in an intermediate position thereof.

[0019] Means 22 for reversibly locking said supporting head in a preset position defined along the upright 11, described hereinafter, are associated with the supporting head 15.

[0020] Two recesses 23, suitable for resting the end of respective supporting beams 16, are provided on each plate and are arranged symmetrically with respect to the vertical centerline axis.

[0021] The recesses 23 of respective mirror-symmetrically matching plates 18 are useful for supporting the end of a respective supporting beam 16, as described hereinafter.

[0022] In particular, the recesses 23 have a substan-

tially V-shaped profile and guide the insertion and containment of a supporting portion 24 of the corresponding supporting beam 16.

[0023] In particular, the surface for supporting the supporting portion 24 of the supporting beam 16 is formed by the bottom 25 of the recess 23 of each plate 18 and by the lateral edge 26 of a respective plate-like element 27, which is arranged rigidly laterally adjacent to the plate 18, so that the lateral edge 26 is substantially at the same height as the bottom of the recess 23.

[0024] The supporting portion 24 is constituted by the lower portion of an inverted T-shaped body, which is welded at its end to the supporting beam 16.

[0025] A single plate-like element 27 is associated with each plate 18 and is longer than the distance between the recesses 23 of a same plate.

[0026] In this manner, a lower portion 16a of the beam 16 may also rest on the lateral edges 26 of the plate-like elements 27 (as shown in Figure 4) discharging part of the weight from the welds of the inverted T-shaped body (welded at its end to the beam 16) that forms the supporting portion 24.

[0027] Further, each plate-like element 27 is suitable to abut, with its lateral edge 26, against a respective stroke limiter 21.

[0028] Moreover, each plate-like element 27 forms, together with its corresponding element, a pair of containment and guiding elements for the head 15 on the upright 11.

[0029] On opposite sides of the through hole 20, transversely with respect to the plates 18, there are two guiding plates 28 for sliding on the upright 11, which are suitable to form in practice a pair of elements for containing and guiding the head 15 which is perpendicular with respect to the pair formed by the plate-like elements 27.

[0030] The supporting head 15 is provided with safety abutment elements 29 for the end of the supporting beam 16 during the setup and removal of the formwork of said beam.

[0031] In particular, the safety abutment elements 29 are constituted by hook-shaped portions 30, which protrude, as a continuation of the upper portions of the recesses 23, outward and toward the upper region of the plates 18.

[0032] The concave region of the hook-shaped portions 30 is substantially directed toward the upright 11.

[0033] The hook-shaped portions 30 prevent the supporting beam 16, once it is disengaged from one of the two heads that support it at its end, from disengaging accidentally from the remaining one, falling disastrously onto the workers below.

[0034] In particular, it is the inverted T-shaped body, which forms the supporting portion 24 of the end of the beam 16, that engages by way of the laterally protruding parts the hook-shaped portions 30.

[0035] Further, the supporting head 15 is provided with a transverse element 31 for connecting the two plates 18, which is suitable for temporarily supporting an inclined lower portion 32 of the supporting beam 16 during the setup and removal of the formwork of the beam, thus facilitating these steps.

[0036] The transverse element 31 is constituted by a cylindrical pin, which is welded at the end to the two plates 18.

[0037] In summary, the means 22 for locking reversibly the supporting head 15 comprise a frame 33, which is provided centrally with a through cavity that is shaped substantially so as to form two separate portions: a first portion (not shown in the figures, since it is superimposed on other components), which is substantially equal to the width of the initial portion 11 a of the upright 11, and a second portion 34, which is larger than the dimensions in plan view of the cross-section of the initial portion 11a.

[0038] In this initial portion 11 a, the upright has, on opposite sides, two wings 35, on the upper ends of which the first portion of the frame 33 rests so that it can slide.

[0039] The base plate 17 of the supporting head 15 rests on the frame 33 thus arranged; said head, therefore, cannot fall, since it is supported by the frame.

[0040] Advantageously, the edge of the frame 33 at the first portion is inclined upward toward the second portion 34.

[0041] By pushing the frame 33 on the side that corresponds to the second portion 34 toward the upright 11, said frame slides on the upper ends 36 of the two wings 35 until the second portion 34 is located at them: since it cannot be supported by the wings 35 because the second portion 34 is wider than the upright 11 with the wings 35, said frame falls down to reach the bracket 13, together with the supporting head 15.

[0042] It should be noted that the two guiding plates 28 for sliding on the upright 11 guide the head 15 along the upright 11, in practice being arranged laterally adjacent to the wings 35 (and an extension 35a of the wings 35 that is separated from them in order to allow the support of the frame 33).

[0043] In practice it has been found that the invention thus described achieves the intended aim and objects.

[0044] A falling head support device for supporting beams of formworks for floors has in fact been provided which is structurally simple and achieves savings in its production.

[0045] The number of components of the device is in fact reduced with respect to commercially known solutions, and the method of assembly is also easier, reducing the number of welds to be provided.

[0046] Although the structure of the device has been lightened and simplified, its load bearing strength is optimum.

[0047] In practice, the materials employed, so long as they are compatible with the specific use, as well as the dimensions, may be any according to requirements and to the state of the art.

[0048] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increas-

ing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A falling head support device for supporting beams of formworks for floors, comprising:

- an upright (11), which can be fixed at its end to a supporting strut that rests on the ground,
- a supporting head (15) for at least one beam (16) for supporting a form work for floors, which is coupled so that it can slide along said upright (11), said supporting head (15) being provided with safety abutment elements (29) for the end of the supporting beam (16) during the setup and removal of the formwork of said supporting beam (16),
- means (22) for reversibly locking said supporting head (15) in a preset position defined along said upright (11),

said supporting head (15) comprising:

- two plates (18), which are arranged mirror-symmetrically so that they are laterally adjacent to opposite sides of said upright (11) and are suitable to delimit laterally a region (19) for accommodating the end of the at least one supporting beam (16),
- at least two recesses (23) for guiding the insertion and containment of a supporting portion (24) of the corresponding supporting beam (16), each recess (23) being provided on a respective one of said plates (18), the bottom of each recess (23) forming at least part of the supporting surface of the supporting portion (24) of the supporting beam (16),
- a transverse element (31) for connecting said two plates (18), which is suitable to support temporarily an inclined lower portion (32) of the supporting beam (16) during the setup and removal of the formwork of said beam (16)

characterized in that said recesses (23) have a substantially V-shaped profile and guide the insertion and containment of said supporting portion (24) of the corresponding supporting beam (16), which is constituted by the lower portion of an inverted T-shaped body formed at the end of said supporting beam (16), and said safety abutment elements (29) for the end of the supporting beam (16) during
the setup and removal of the formwork of said beam are constituted by hook-shaped portions (30), which protrude outward, as a continuation of the upper portions of said recesses (23), toward the upper region of said plates (18), the concave region of said hook-shaped portions (30) being substantially directed toward said upright (11).

2. The device according to claim 1, **characterized in that** said surface for supporting the supporting portion (24) of the supporting beam (16) is formed by the bottom (25) of the recess (23) of each one of said plates (18) and by the lateral edge (26) of a respective plate-like element (27), which is rigidly coupled so as to be laterally adjacent to said plate (18) so that said lateral edge (26) is substantially at the same height as said bottom (25) of the recess (23).

3. The device according to claim 1 or 2, **characterized in that** said supporting head (15) comprises a base plate (17), on which said two plates (18) are welded edgeways, said plates (18) being arranged in a mirror-symmetrical fashion so that they are laterally adjacent to opposite sides of said upright (11), each one of said plates (18) being symmetrical with respect to a vertical centerline axis, said plates (18) forming accordingly, in pairs, two of said containment regions (19) for the ends of contiguous and aligned supporting beams (16).

4. The device according to claims 2 and 3, **characterized in that** said base plate (17) is provided centrally with a through hole (20) to allow its sliding along said upright (11), said sliding being allowed for a single initial portion (11a) of said upright (11) that is comprised between a flat bracket (13) and two stroke limiters (21), which are arranged on mutually opposite sides of said upright (11) along an intermediate position thereof, a single said plate-like element (27) that is longer than the distance of the recesses (23) of a same plate (18) being associated with each plate (18), each plate-like element (27) being suitable to abut against a respective one of said stroke limiters (21), each one of said plate-like elements (27) further forming, together with its matching element, a pair of containment and guiding elements for said head (15).

5. The device according to claim 1 or 2, **characterized in that** two guiding plates (28) for sliding on said upright (11) are provided on opposite sides of said through hole (20), transversely to said plates, and are suitable to form in practice a pair of containment and guiding elements for said head that is perpendicular to the pair of said plate-like elements (27).

6. The device according to one or more of the preceding claims, **characterized in that** said transverse element (31) is constituted by a cylindrical pivot, which is welded at the end to said two plates (18).

7. The device according to claim 4, **characterized in that** said reversible locking means (22) for said supporting head (15) comprise a frame (33) that is provided centrally with a through cavity that substantially forms two separate portions: a first portion, which is substantially equal to the width of said initial portion (11a) of the upright (11), and a second portion (34), which is larger than the plan dimensions of the cross-section of said initial portion (11a), said upright, in said initial portion (11a), having on opposite sides two wings (35), on the upper ends (36) of which said first portion of said frame (32) rests so that it can slide, said base plate (17) of the supporting head (15) resting on said frame thus arranged.

8. The device according to claim 7, **characterized in that** said edge of the frame (33), at said first portion, is inclined upward toward said second portion (34).

Patentansprüche

1. Eine Fallkopftragvorrichtung zur Abstützung von Trägern einer Deckenschalung, die Folgendes umfasst:

   - einen Pfosten (11), der an seinem Ende an einem tragenden Ständer befestigt werden kann, der auf dem Boden ruht,
   - einen Tragkopf (15) für mindestens einen Träger (16) zur Abstützung einer Deckenschalung, der verschiebbar entlang dem Pfosten (11) gekoppelt ist, wobei der Tragkopf (15) während der Montage und des Entfernens der Deckenschalung des Trägers (16) mit Sicherheits-Widerlagerelementen (29) für das Ende des Trägers (16) versehen ist,
   - Mittel (22) zur reversiblen Blockade des Tragkopfes (15) in einer voreingestellten Position, die entlang dem Pfosten (11) bestimmt ist,

   wobei der Tragkopf (15) Folgendes umfasst:

   - zwei Platten (18), die spiegelsymmetrisch so angeordnet sind, dass sie seitlich an gegenüberliegenden Seiten des Pfostens (11) angrenzen, und geeignet sind, seitlich einen Bereich (19) für die Aufnahme des Endes des mindestens einen Trägers (16) zu begrenzen,
   - mindestens zwei Vertiefungen (23), um das Einführen und Halten eines tragenden Abschnitts (24) des jeweiligen Trägers (16) zu leiten, wobei jede Vertiefung (23) in einer entsprechenden der Platten (18) angebracht ist, der Boden jeder Vertiefung (23) mindestens einen Teil der tragenden Fläche des tragenden Abschnitts (24) des Trägers (16) bildend,
   - ein transversales Element (31) zum Verbinden der beiden Platten (18), das geeignet ist, während der Montage und des Entfernens der Deckenschalung des Trägers (16) vorübergehend einen schrägen unteren Abschnitt (32) des Trägers (16) zu tragen,

   dadurch gekennzeichnet, dass die Vertiefungen (23) ein im Wesentlichen V-förmiges Profil haben und das Einführen und Halten des tragenden Abschnitts (24) des entsprechenden Trägers (16) leiten, der aus dem unteren Abschnitt eines umgekehrten T-förmigen Körpers besteht, der am Ende des Trägers (16) geformt ist, und die Sicherheitswiderlagerelemente (29) für das Ende des Trägers (16) während der Montage und des Entfernens der Deckenschalung des Trägers aus hakenförmigen Abschnitten (30) bestehen, die, als Fortsetzung der oberen Abschnitte der Vertiefungen (23), nach außen, zu dem oberen Bereich der Platten (18) hin, ragen, wobei der konkave Bereich der hakenförmigen Abschnitte (30) im Wesentlichen zu dem Pfosten (11) hin gerichtet ist.

2. Die Vorrichtung gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die Oberfläche zum Halten des tragenden Abschnitts (24) des Trägers (16) vom Boden (25) der Vertiefung (23) jeder der Platten (18) und von der Seitenkante (26) eines entsprechenden plattenähnlichen Elements (27) gebildet wird, das starr gekoppelt ist, um so seitlich an die Platte (18) anzugrenzen, so dass die Seitenkante (26) sich im Wesentlichen auf derselben Höhe befindet wie der Boden (25) der Vertiefung (23).

3. Die Vorrichtung gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Tragkopf (15) eine Grundplatte (17) umfasst, mit der zwei Platten (18) hochkant verschweißt sind, wobei die Platten (18) spiegelsymmetrisch so angeordnet sind, dass sie seitlich an gegenüberliegende Seiten des Pfostens (11) angrenzen, wobei jede der Platten (18) mit Bezug auf eine vertikale Mittelachse symmetrisch ist, die Platten (18) entsprechend in Paaren zwei der Aufnahmebereiche (19) für die Enden benachbarter und ausgerichteter Träger (16) bildend.

4. Die Vorrichtung gemäß Anspruch 2 und 3, **dadurch gekennzeichnet, dass** die Grundplatte (17) zentral mit einer Durchgangsbohrung (20) versehen ist, um ihr Gleiten entlang dem Pfosten (11) zu ermöglichen, wobei das Gleiten für einen einzigen ersten Abschnitt (11a) des Pfostens (11) ermöglicht wird, der zwischen einer flachen Halterung (13) und zwei Hubbegrenzern (21) liegt, die auf einander gegenüberliegenden Seiten des Pfostens (11) entlang einer intermediären Position davon angeordnet sind, wobei ein einziges plattenähnliches Element (27), das länger ist als der Abstand der Vertiefungen (23) einer

selben Platte (18), mit jeder Platte (18) verbunden ist, wobei jedes plattenähnliche Element (27) geeignet ist, gegen einen entsprechenden der Hubbegrenzer (21) anzustoßen, und jedes der plattenähnlichen Elemente (27) weiter gemeinsam mit seinem passenden Element ein Paar von Aufnahme- und Führungselementen für den Kopf (15) bildet.

5. Die Vorrichtung gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** zwei Führungsplatten (28) zum Gleiten an dem Pfosten (11) auf gegenüberliegenden Seiten der Durchgangsbohrung (20), quer zu den Platten, angeordnet und geeignet sind, in der Praxis ein Paar von Aufnahme- und Führungselementen für den Kopf zu bilden, das senkrecht zu dem Paar der plattenähnlichen Elemente (27) ist.

6. Die Vorrichtung gemäß einem oder mehreren der obigen Ansprüche, **dadurch gekennzeichnet, dass** das transversale Element (31) aus einem zylindrischen Drehzapfen besteht, der am Ende mit den zwei Platten (18) verschweißt ist.

7. Die Vorrichtung gemäß Anspruch 4, **dadurch gekennzeichnet, dass** die reversiblen Blockiermittel (22) für den Tragkopf (15) einen Rahmen (33) umfassen, der in der Mitte mit einem durchgehenden Hohlraum versehen ist, welcher im Wesentlichen zwei separate Abschnitte bildet: einen ersten Abschnitt, der im Wesentlichen gleich der Breite des ersten Abschnitts (11a) des Pfostens (11) ist, und einen zweiten Abschnitt (34), der größer ist als die Grundmaße des Querschnitts des ersten Abschnitts (11a), wobei der Pfosten in dem ersten Abschnitt (11a) auf gegenüberliegenden Seiten zwei Flügel (35) hat, auf deren oberen Enden (36) der erste Abschnitt des Rahmens (32) verschiebbar aufliegt, wobei die Grundplatte (17) des Tragkopfes (15) auf dem so angeordneten Rahmen aufliegt.

8. Die Vorrichtung gemäß Anspruch 7, **dadurch gekennzeichnet, dass** die Kante des Rahmens (33) in dem ersten Abschnitt aufwärts zu dem zweiten Abschnitt (34) hin schräg ist.

Revendications

1. Dispositif de support à charge décroissante pour supporter des poutres de coffrages pour planchers, comprenant :

un montant (11) qui peut être fixé au niveau de son extrémité à une jambe de force de support qui s'appuie sur le sol,
une charge de support (15) pour au moins une poutre (16) afin de supporter un coffrage pour planchers, qui est couplée de sorte qu'elle peut glisser le long dudit montant (11), ladite charge de support (15) étant prévue avec des éléments de butée de sécurité (29) pour l'extrémité de la poutre de support (16) pendant l'installation et le retrait du coffrage de ladite poutre de support (16),
des moyens (22) pour bloquer de manière réversible ladite charge de support (15) dans une position prédéterminée définie le long dudit montant (11),

ladite charge de support (15) comprenant :

deux plaques (18) qui sont agencées symétriquement en miroir de sorte qu'elles sont latéralement adjacentes aux côtés opposés dudit montant (11) et sont appropriées pour délimiter latéralement une région (19) afin de loger l'extrémité de la au moins une poutre de support (16),
au moins deux évidements (23) pour guider l'insertion et le confinement d'une partie de support (24) de la poutre de support (16) correspondante, chaque évidement (23) étant prévu sur une plaque respective desdites plaques (18), le fond de chaque évidement (23) formant au moins une partie de la surface de support de la partie de support (24) de la poutre de support (16),
un élément transversal (31) pour raccorder lesdites deux plaques (18), qui est approprié pour supporter temporairement une partie inférieure inclinée (32) de la poutre de support (16) pendant l'installation et le retrait du coffrage de ladite poutre (16),
caractérisé en ce que lesdits évidements (23) ont un profil sensiblement en forme de V et guident l'insertion et le confinement de ladite partie de support (24) de la poutre de support (16) correspondante, qui est constituée par la partie inférieure d'un corps en forme de T inversé, formé au niveau de l'extrémité de ladite poutre de support (16), et lesdits éléments de butée de sécurité (29) pour l'extrémité de la poutre de support (16) pendant l'installation et le retrait du coffrage de ladite poutre sont constitués par des parties en forme de crochet (30) qui font saillie vers l'extérieur, comme une continuité des parties supérieures desdits évidements (23), vers la région supérieure desdites plaques (18), la région concave desdites parties en forme de crochet (30) étant sensiblement dirigée vers ledit montant (11).

2. Dispositif selon la revendication 1, **caractérisé en ce que** ladite surface pour supporter la partie de support (24) de la poutre de support (16) est formée par le fond (25) de l'évidement (23) de chacune desdites plaques (18) et par le bord latéral (26) d'un élément

en forme de plaque (27) respective qui est rigidement couplé afin d'être latéralement adjacent à ladite plaque (18) de sorte que ledit bord latéral (26) est sensiblement à la même hauteur que ledit fond (25) de l'évidement (23).

3. Dispositif selon la revendication 1 ou la revendication 2, **caractérisé en ce que** ladite charge de support (15) comprend une plaque de base (17) sur laquelle lesdites deux plaques (18) sont soudées de chant, lesdites plaques (18) étant agencées d'une manière symétrique en miroir de sorte qu'elles sont latéralement adjacentes aux côtés opposés dudit montant (11), chacune desdites plaques (18) étant symétrique par rapport à un axe central vertical, lesdites plaques (18) formant par conséquent, en paires, deux desdites régions de confinement (19) pour les extrémités des poutres de support (16) contiguës et alignées.

4. Dispositif selon les revendications 2 et 3, **caractérisé en ce que** ladite plaque de base (17) est prévue au centre avec un trou traversant (20) pour permettre son coulissement le long dudit montant (11), ledit coulissement étant autorisé pour une seule partie initiale (11a) dudit montant (11) qui est comprise entre une console plate (13) et deux limiteurs de course (21) qui sont agencés sur des côtés mutuellement opposés dudit montant (11) le long de sa position intermédiaire, un seul desdits éléments en forme de plaque (27) qui est plus long que la distance des évidements (23) d'une même plaque (18) étant associé avec chaque plaque (18), chaque élément en forme de plaque (27) étant approprié pour venir en butée contre un limiteur respectif desdits limiteurs de course (21), chacun desdits éléments en forme de plaque (27) formant en outre, conjointement avec son élément correspondant, une paire d'éléments de confinement et de guidage pour ladite charge (15).

5. Dispositif selon la revendication 1 ou la revendication 2, **caractérisé en ce que** deux plaques de guidage (28) pour coulisser sur ledit montant (11) sont prévues sur des côtés opposés dudit trou traversant (20), transversalement par rapport auxdites plaques, et sont appropriées pour former en pratique une paire d'éléments de confinement et de guidage pour ladite charge qui est perpendiculaire à la paire desdits éléments en forme de plaque (27).

6. Dispositif selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** ledit élément transversal (31) est constitué par un pivot cylindrique, qui est soudé à l'extrémité desdites deux plaques (18).

7. Dispositif selon la revendication 4, **caractérisé en ce que** desdits moyens de blocage réversibles (22) pour ladite charge de support (15) comprennent un bâti (33) qui est prévu au centre avec une cavité traversante qui forme sensiblement deux parties séparées : une première partie qui est sensiblement égale à la largeur de ladite partie initiale (11a) du montant (11) et une seconde partie (34) qui est plus grande que les dimensions de plan de la section transversale de ladite partie initiale (11a), ledit montant, dans ladite partie initiale (11a), ayant sur des côtés opposés, deux ailes (35), sur les extrémités supérieures (36) desquelles, ladite première partie dudit bâti (32) s'appuie, de sorte qu'elle peut coulisser, ladite plaque de base (17) de la charge de support (15) s'appuyant sur ledit bâti ainsi agencé.

8. Dispositif selon la revendication 7, **caractérisé en ce que** ledit bord du bâti (33), au niveau de ladite première partie, est incliné vers le haut, vers ladite seconde partie (34).

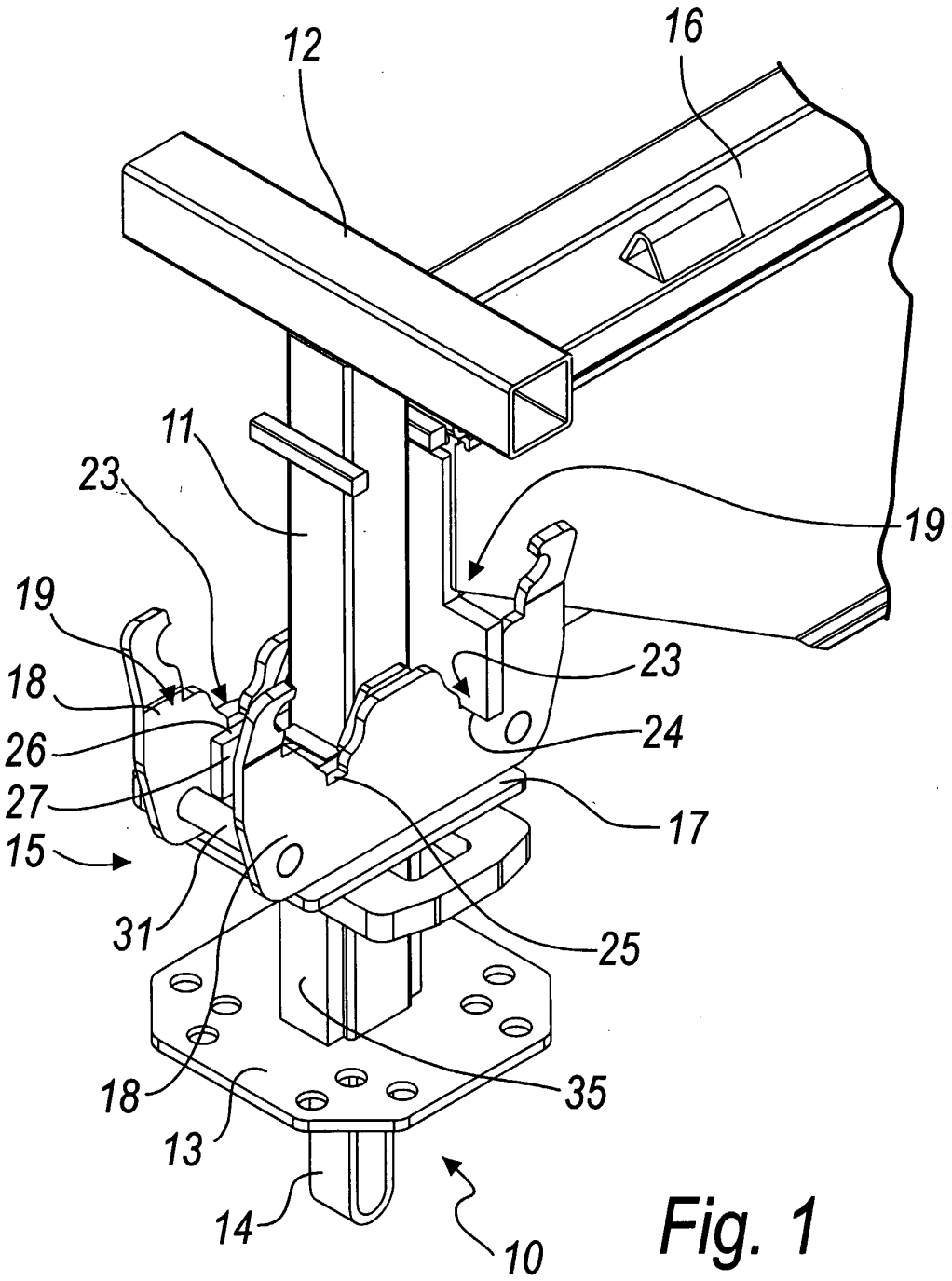

Fig. 1

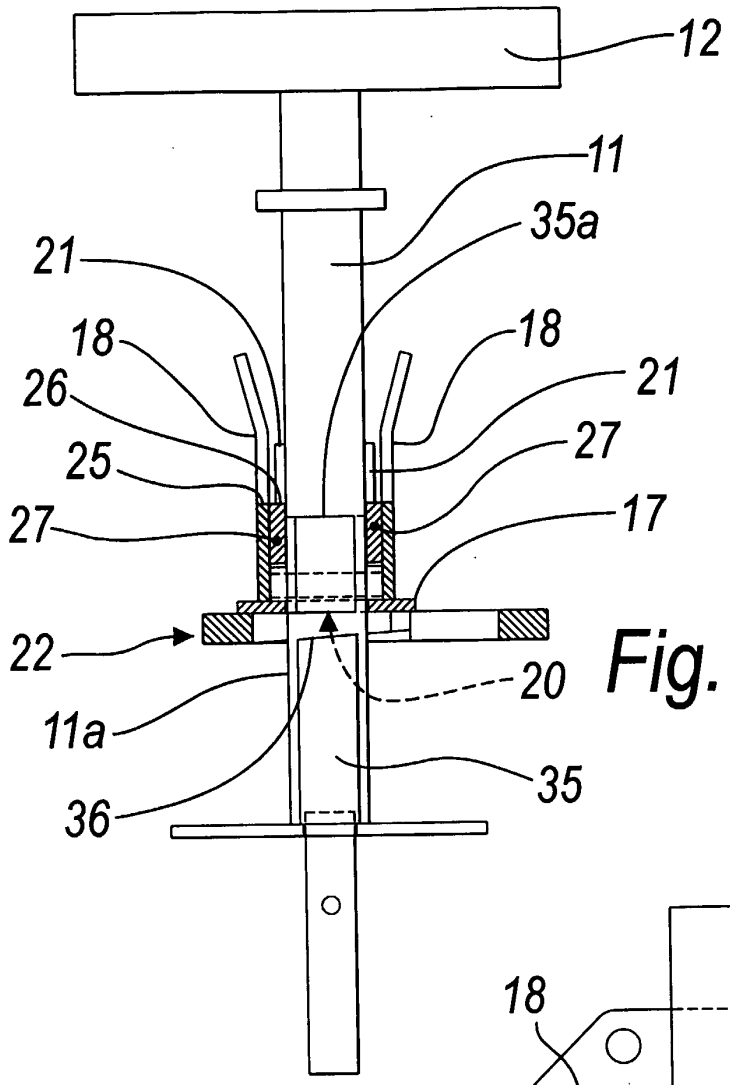
12
11
35a
21
18
18
21
26
27
25
27
17
22
20
11a
35
36

Fig. 2

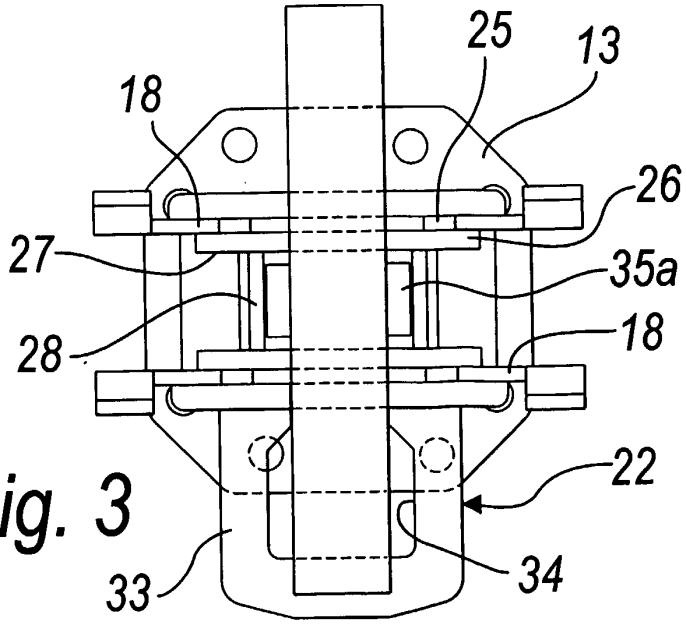
25
13
18
26
27
35a
28
18
22
33
34

Fig. 3

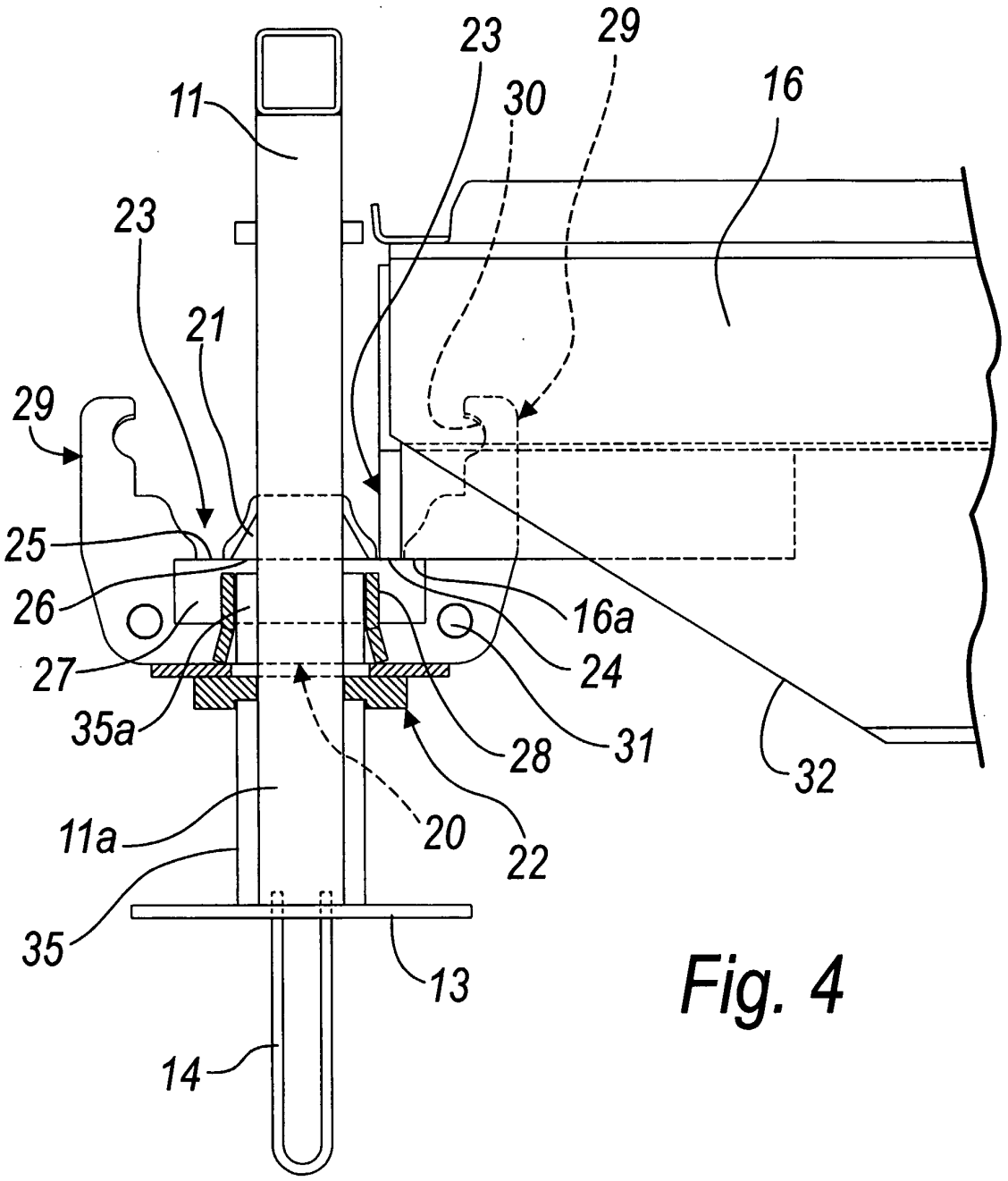

Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- EP 1251222 A **[0003]**