

Title (en)
Pin and sleeve for the connection of constructional elements in civil engineering.

Title (de)
Dorn und Hülse zur Verbindung von Bauteilen des Hoch- und Tiefbaues.

Title (fr)
Broche et douille pour la liaison d'éléments de construction en génie civil.

Publication
EP 0032105 A1 19810715 (DE)

Application
EP 80810269 A 19800901

Priority
CH 2780 A 19800104

Abstract (en)
1. Mandrel and sleeve for the absorption and transmission of lateral forces in the connection together of building elements in constructional and civil engineering works such as roofing elements, flooring elements, ceilings, walls, buttresses, shoring walls or parts thereof with each other or with other building elements, for which purpose the sleeve is to be embedded and secured in the one building element and the mandrel in the other in such a way that the sleeve and/or the mandrel protrude from the surface of their respective building elements, and that the mandrel penetrates the sleeve, and that the sleeve and/or mandrel are furnished with a reinforcement embedding piece for the transmission of lateral forces to the surrounding building element, c_h_a_r_a_c_t_e_r_i_s_e_d by the following features : a) the reinforcement embedding piece (12, 22, 32, 42, 15, 25, 35 and 45) exhibits a longitudinal solid or hollow form with either a continuous smooth surface or surface furnished with protruding vanes or the form of vanes mounted singly on the mandrel and/or sleeve ; b) the reinforcement embedding piece (12, 22, 32, 42, 15, 25, 35 and 45) encompasses the mandrel (14, 24, 34 and 44) and/or the sleeve (11, 21, 31 and 41) wholly or partly and embeds such within at least one portion of its own length ; c) the axial length of the reinforcement embedding piece (12, 22, 32, 42, 15, 25, 35 and 45) is less than that of the sleeve (11, 21, 31 and 41) and/or the mandrel (14, 24, 34 and 44) and is several times greater than the sectional diameter of the sleeve and/or mandrel ; d) the exterior surface area of the reinforcement embedding piece (12, 22, 32, 42, 15, 25, 35 and 45) is greater than that of the mandrel (14, 24, 34 and 44) and/or sleeve (11, 21, 31 and 41) encompassed by itself ; e) the reinforcement embedding piece (12, 22, 32, 42, 15, 25, 35 and 45) is mounted upon the mandrel (14, 24, 34 and 44) and/or sleeve (11, 21, 31 and 41) as an independant part in such a way that it extends thereon, in that section to be embedded in the building element, at least from the external end thereof inwards ; f) the reinforcement embedding piece is so shaped and attached that it is at least transversally to its length more flexibly resilient than the mandrel and/or sleeve themselves thus creating a flexible link with the building element and compensating in its longitudinal plane the tensions set up by the lateral forces to be absorbed and transmitted.

Abstract (de)
Als Verbindungselemente für benachbarte Bauteile, insbesondere aus Beton, sieht die Erfindung eine im einen Bauteil eingelassene Hülse (11) und einen im anderen Bauteil eingelassenen Dorn (14) vor, der die Hülse (11) durchdringt. Hülse (11) und Dorn (14) sind am äußeren Ende ihres einzulassenden Teils mit einer Verstärkung (12,15) von größerem Durchmesser versehen, welche dort, wo die Beanspruchung am größten ist, nicht nur die spezifische Betonbelastung vermindert, sondern sie, vor allem dank ihrer Elastizität, auch vergleichmäßig, so daß die anderenfalls an der Bauteilkante auftretende Belastungsspitze abgebaut wird.

IPC 1-7
E01C 11/14

IPC 8 full level
E01C 11/14 (2006.01); **E04B 1/48** (2006.01)

CPC (source: EP)
E01C 11/14 (2013.01); **E04B 1/483** (2013.01)

Citation (search report)
• [X] US 2194718 A 19400326 - CLIFFORD OLDER
• [X] US 2269703 A 19420113 - BAGWILL ROBERT M
• [X] US 2319713 A 19430518 - WILLIAMS ROLLAND G
• US 2181005 A 19391121 - WESTCOTT CLIFFORD H
• US 2196727 A 19400409 - OSCAR FREMONT WYNNE
• US 3260175 A 19660712 - CRONE ALFRED F
• US 3045565 A 19620724 - NETTLETON FELIX L
• BE 831180 A 19751103

Cited by
EP0773324A1; CN103174145A; EP0489988A1; DE4424278A1; EP0193494A1; EP0609783A1; DE3926672A1; EP2146004A3; EP0328484A1; EP0059171A1; EP0716192A3; US5201467A; US4578916A; EP0886008A1; EP0814213A1; US5911538A; AU716140B2; CH691066A5; US7736088B2; WO9925934A1; US6471441B1; US10077551B2; US10385567B2; EP2743415A1; US7716890B2; US10119281B2; US7481031B2

Designated contracting state (EPC)
AT BE CH DE FR GB IT LU NL SE

DOCDB simple family (publication)
EP 0032105 A1 19810715; EP 0032105 B1 19870520; AT E27321 T1 19870615; CH 651090 A5 19850830; DE 3071973 D1 19870625

DOCDB simple family (application)
EP 80810269 A 19800901; AT 80810269 T 19800901; CH 2780 A 19800104; DE 3071973 T 19800901