

Title (en)

Ladder having locking device and method for manufacturing the same

Title (de)

Leiter mit Verschlusseinrichtung und Verfahren zur Herstellung derselben

Title (fr)

Echelle ayant un système de fermeture et son procédé de fabrication

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Application

EP 99310087 A 19991215

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- KR 19990048423 A 19991103

Abstract (en)

A ladder with a locking device comprises a pair of inner rotating plates (102, 103) provided with a plurality of hinge holes spaced apart at predetermined angles; a rotating plate (106) with notch portions (105) corresponding to the hinge holes, said rotating plate rotating on an outer surface of the inner rotating plates (102, 103) to selectively open the hinge holes; a resilient member (107) biasing the rotating plate (106) to an initial state of closing the hinge holes, one end of said resilient member (107) being secured to the rotating plate (106) and the other end secured to one of the inner rotating plates (102); a pair of outer rotating plates (109, 110) with fixing holes formed on one side and supporting said inner rotating plates (102, 103) rotatably; and a locking key (114) including a guide pin (112) for securing the rotating plate (106), inner rotating plates (102, 103) and outer rotating plates (109, 110), and a fixing pin (113) for selective insertion into the hinge holes, said locking key (114) being adapted to lock after the ladder has been spread by rotating the inner rotating plates (102, 103) with respect to the outer rotating plates (109, 110), this being possible when the fixing pin (113) has been released from the hinge holes by the pressing of a push cover (115). The releasing of the hinge assembly due to an external force is prevented, thereby preventing accidents whilst facilitating the use of the ladder by enabling easy control of the locking and releasing of the assembly. Furthermore, the number of operations for assembling the ladder is reduced, thereby increasing the workability. Also, clearance between hollow beams of the ladder and the hinge assembly is obviated, thereby increasing the durability of the ladder. Furthermore, the number of parts for assembling the ladder is reduced, which in turn reduces the cost for manufacturing the ladder considerably.

<IMAGE>

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