

Title (en)  
Device and method for sealing or opening an opening, in particular floor opening of a material bunker for a furnace and furnace with such a device

Title (de)  
Vorrichtung und Verfahren zum Verschließen oder Öffnen einer Öffnung, insbesondere Bodenöffnung eines Materialbunkers für einen Hochofen und Hochofen mit einer derartigen Vorrichtung

Title (fr)  
Dispositif et procédé de fermeture ou d'ouverture d'une ouverture, en particulier une ouverture au sol d'un réservoir de matériau pour un haut fourneau et haut fourneau doté d'un tel dispositif

Publication  
**EP 2000547 A3 20081217 (DE)**

Application  
**EP 08157147 A 20080529**

Priority  
DE 102007026509 A 20070608

Abstract (en)  
[origin: EP2000547A2] The device for closing or opening of a base opening (10) of a material bunker (11) arranged above the charge of a blast furnace, comprises a propellable flap plate (12), and a gear arrangement (13) connected to the flap plate and having a lever (15) and a plate lever (16). The flap plate is movable in an opening position releasing the opening and in a closing position blocking the opening and in reverse. The flap plate is connected in such a manner that the flap plate flows through a linear movement perpendicularly to the opening level and distal of the opening of a swivel movement. The device for closing or opening of a base opening (10) of a material bunker (11) arranged above the charge of a blast furnace, comprises a propellable flap plate (12), and a gear arrangement (13) connected to the flap plate and having a lever (15) and a plate lever (16). The flap plate is movable in an opening position releasing the opening and in a closing position blocking the opening and in reverse. The flap plate is connected in such a manner that the flap plate flows through a linear movement perpendicularly to the opening level and distal of the opening of a swivel movement. The swivel movement of the flap plate has a translatory movement parallel to the opening level, which overlays the rotatory movement, and comprises a four-link drive chain, which couples the flap plate with a drive. The lever and a plate lever have axes of rotation, are stationarily arranged against each other and are coupled by a first swivel joint. The plate lever has a rigid first arm connected with the flap plate and a second arm rotatably placed in the axes of rotation. The first and second arms are coupled by a second swivel joint. The first and second swivel joints are arranged in the closing position on a common perpendicular axis of the base opening. The stationary rotatory axes are arranged on a perpendicular axis. The axis of rotation of the plate lever is arranged more near to an axle center of the opening as the axis of rotation of the lever. The first and second swivel joints are movable on different swiveling ways. An independent claim is included for procedure for closing or opening of a ground opening of a material bunker arranged above the charge of a blast furnace.

IPC 8 full level  
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CPC (source: EP KR US)  
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Citation (search report)  
[X] JP H10339582 A 19981222 - ISHIKAWAJIMA HARIMA HEAVY IND

Cited by  
DE102017106809A1; WO2011000966A1; WO2017050313A1; DE102015116195B4; LU91583B1; CN102472577A; US8568653B2; DE102015116195A1; WO2018087115A1; US11199359B2

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