

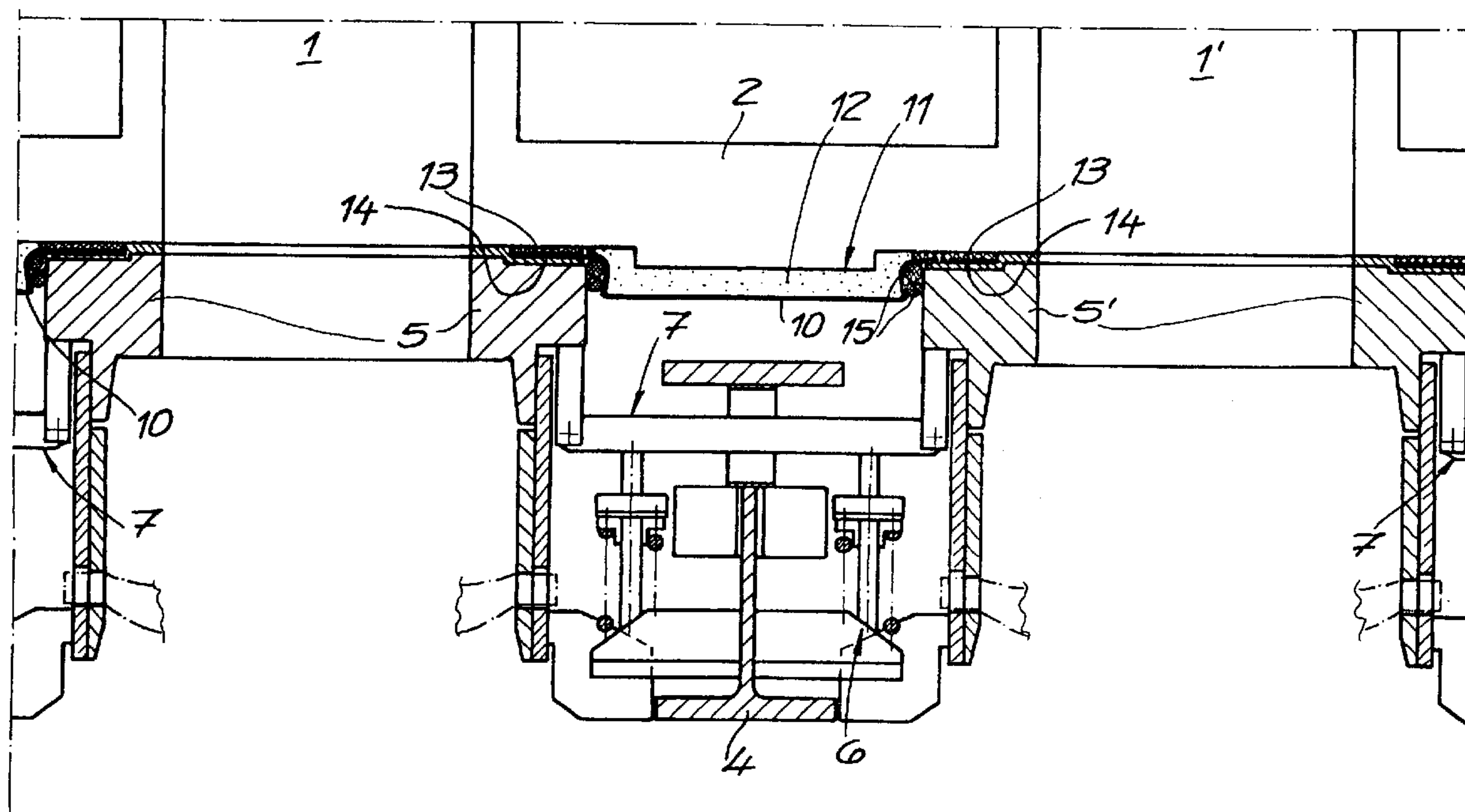


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(54) Titre : PROTECTION DE PAROI POUR TETE DE PAROI CHAUFFANTE ENTRE DEUX OUVERTURES DE CHAMBRES DE FOURS D'UNE BATTERIE DE FOURS A COKE

(54) Title: WALL PROTECTOR FOR A HEATING WALL HEAD BETWEEN TWO OVEN CHAMBER OPENINGS OF A COKE OVEN BATTERY



(57) Abrégé/Abstract:

The invention relates to a wall protector for a heating oven head (2) between two oven chamber openings (1, 1') of a coke oven battery, said wall protector being laterally bounded by vertical frame elements (5, 5'). The wall protector comprises an anchor stand (4) arranged in front of the heating wall head (2), extending vertically, and pressing devices (6) fixed to said anchor stand (4). Additionally, the wall protector has U-shaped yoke elements (7) onto which pressure is exerted by the pressing devices (6), and a rectangular head cover (10) covering the heating wall head (2). According to the invention, the U-shaped yoke elements (7) fit tightly against supporting surfaces of the frame elements (5, 5') in a force-fitted manner and the head cover (10) consists of a thin-walled metal sheet constrained between the frame elements (5, 5') and the heating wall head (2).



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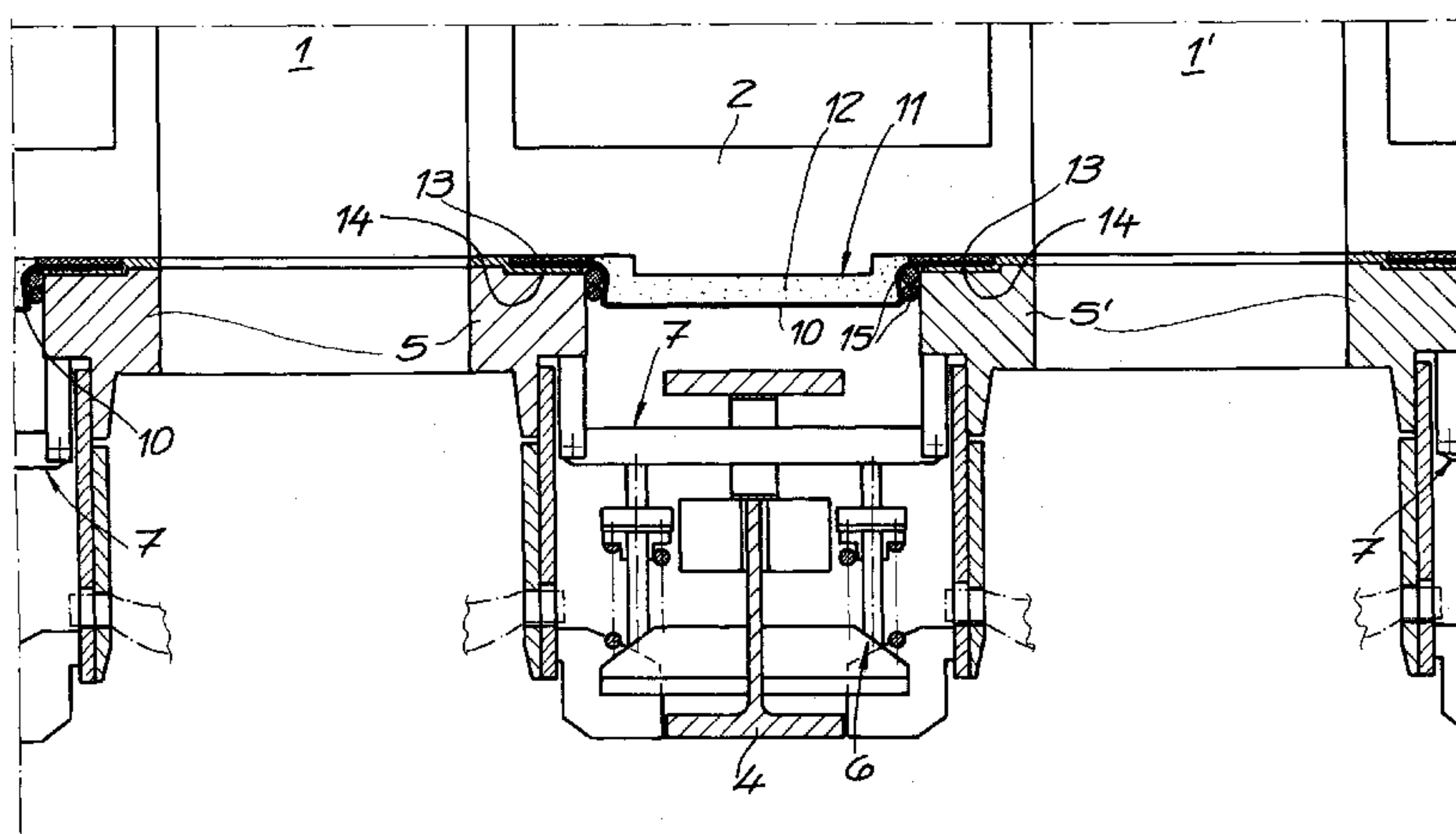
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[Fortsetzung auf der nächsten Seite]

(54) Title: WALL PROTECTOR FOR A HEATING WALL HEAD BETWEEN TWO OVEN CHAMBER OPENINGS OF A COKE OVEN BATTERY

(54) Bezeichnung: WANDSCHUTZ FÜR EINEN HEIZWANDKOPF ZWISCHEN ZWEI OFENKAMMERÖFFNUNGEN EINER KOKSOFFENBATTERIE



(57) Abstract: The invention relates to a wall protector for a heating oven head (2) between two oven chamber openings (1, 1') of a coke oven battery, said wall protector being laterally bounded by vertical frame elements (5, 5'). The wall protector comprises an anchor stand (4) arranged in front of the heating wall head (2), extending vertically, and pressing devices (6) fixed to said anchor stand (4). Additionally, the wall protector has U-shaped yoke elements (7) onto which pressure is exerted by the pressing devices (6), and a rectangular head cover (10) covering the heating wall head (2). According to the invention, the U-shaped yoke elements (7) fit tightly against supporting surfaces of the frame elements (5, 5') in a force-fitted manner and the head cover (10) consists of a thin-walled metal sheet constrained between the frame elements (5, 5') and the heating wall head (2).

(57) Zusammenfassung:

[Fortsetzung auf der nächsten Seite]

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Die Erfindung betrifft einen Wandschutz für einen Heizwandkopf (2) zwischen zwei Ofenkammeröffnungen (1, 1') einer Koks-
ofenbatterie, der seitlich von vertikalen Rahmenelementen (5, 5') begrenzt ist. Der Wandschutz umfasst einen vor dem Heizwand-
kopf (2) angeordneten Ankerständer (4), der sich vertikal erstreckt, sowie an dem Ankerständer (4) befestigte Andruckvorrichtun-
gen (6). Außerdem weist der Wandschutz von den Andruckvorrichtungen (6) beaufschlagte, U-förmige Jochelemente (7) sowie
eine den Heizwandkopf (2) abdeckende, rechteckige Kopfverkleidung (10) auf. Erfindungsgemäß liegen die U-förmigen Jochele-
mente (7) an Auflageflächen der Rahmenelemente (5, 5') kraftschlüssig an und besteht die Kopfverkleidung (10) aus einem dünn-
wandigen Blech, welches zwischen den Rahmenelementen (5, 5') und dem Heizwandkopf (2) eingespannt ist.

WALL PROTECTOR FOR A HEATING WALL HEAD BETWEEN TWO OVEN CHAMBER OPENINGS OF A COKE OVEN BATTERY

The invention relates to a wall protector for a heating
5 oven head between two chamber openings of a coke-oven battery that
is laterally bounded by vertical jambs extending along the chamber
openings. The insulating device comprises a vertical anchor post
located in front of the heating oven head, as well as biasers that
are fixed to the anchor post. Moreover, the insulating device is
10 provided with U-shaped yoke elements that are prestressed by the
biasers, as well as a rectangular head cover.

From DE 37 41 301, a wall-protection plate for coking
ovens is known. Coking ovens of the type described there are
collectively referred to as coke-oven batteries, so that the
15 chamber openings are always opened to one side. The masonry
between these chamber openings that are provided with heavy coke-
oven doors in a sequence of chambers is termed the heating wall
head and consists primarily of silica insulating mixture, firebrick
or sillimanite. The chamber openings are each surrounded by an
20 chamber frame that receives the respective coke-oven door and that
extends over part of the heating wall head on one side with its
vertically extending profiled jamb. The still open heating wall
section between the vertical profiles of the chamber frames of
adjacent chamber openings is covered by the wall-protection plate.

25 Based on the thermal load to which the masonry of the heating
walls is exposed at temperatures of over 1,000EC, robust anchoring
is required to hold the masonry together. The vertical jambs that
delimit the heating wall head laterally are therefore supported at

several points against an anchor post fixed in front of the heating wall head, this the anchor post being fixed at its upper and lower ends.

At the same time, there is a need for a gas-tight gasket seal of the heating wall head to avoid emissions. Previously this sealing was accomplished by inserting insulating mats between the jambs and the heating wall head, as well as by caulking a mortise groove formed between the jambs, the oven head masonry and the wall protection plate.

Beyond that, these wall protection plates have been the function of transmitting the required anchoring forces, as a result of which the plates became very thick and thus also became heavy and unwieldy. The thick plates react sensitively to temperature differences, which leads to thermal bending of the plates that acts counter to the anchoring forces. The desired application of force onto the heating wall head masonry is thereby changed disadvantageously.

Given this background, the object of invention is to provide a wall protector for a heating wall head that satisfies the functions described above, and that does not require a massive wall protection plate.

Based on a wall protector with the characteristics described at the beginning, the object is attained in accordance with the invention in that the prestressed U-shaped yoke elements abut in a force-fit at bearing faces of the vertical jambs, and that the head cover consists of thin-walled sheet metal that is clamped between the jambs and the heating wall head. The vertical

jams that delimit the heating wall head and extend along the chamber openings are prestressed directly by the yoke elements with the necessary anchoring force, without a detour over the massive plate. The sealing is accomplished by means of the sheet metal retained in a force-fit between the heating wall head and the chamber frame. The wall protection in accordance with the invention offers the advantage that the sheet metal adapts to the shape of the wall and the frame, as a result of which a sealing effect is achieved. The flexible, thin-walled design of the head cover as sheet metal offers, beyond that the advantage that thermal bending is significantly lowered with respect to more massive material, as a result of which an improved adaptation to the shape of the heating wall head masonry is given. In addition, gasket elements can be provided between the heating wall head and the sheet metal and/or between the sheet metal and the vertical chamber jams. An advantageous embodiment provides that the edges of the sheet metal that are clamped between the jams and the heating wall head that form the head cover are embedded on both sides between layers consisting of a sealing material.

The sheet metal forming the head cover is preferably shaped as a hood, so that a cavity is formed between the sheet metal and the heating wall head that can be filled with an insulating material, for example, mats of aluminum silicate. Advantageously, the hood has a horizontal cross section profile that is Z-shaped at the longer sides and is essentially shaped of right angles, so that a cavity forms between the hood and the heating wall head. This cavity has an essentially rectangular

horizontal cross-sectional shape. In a gap between the hood and the faces of the jambs, seals can be arranged in the form of cords or packing gasket so that this gap has an essentially rectangular horizontal cross section profile.

5 The device in accordance with the invention is particularly suitable for sealing heating wall heads that consist of silicon, fire clay or sillimanite rocks.

In the following, the invention is explained in conjunction with a drawing illustrating only one embodiment. The
10 sole figure is a schematic horizontal cross section through a portion of a heating wall head of a coke-oven battery with two adjacent coking chambers that are located right and left of a heating wall head.

The figure shows the openings 1 and 1' of two adjacent
15 coking chambers and a heating wall head 2 located between them. The coking chambers are circumferentially bordered by chamber frames. The vertical jambs 5 and 5' of the chamber frames define the sides of the oven chamber. A vertical post 4 that is anchored at its upper and lower end carries spring-type biasers 6 in front
20 of the heating wall head 2. The biasers 6 press U-shaped yoke elements 7 against front faces of the jambs 5 and 5' so as to retain the jambs 5 and 5' against the heating wall head 2. A thin piece of sheet metal 10 forming a head cover completely covering the heating-wall head 2 lies between the masonry of the heating
25 wall head 2 and the jambs 5 and 5'. In the region between the jambs 5 and 5' and the heating wall head 2, the edges of the sheet-

metal cover are embedded between layers 13 and 14 of a sealing material.

The figure shows that the sheet metal forming the head cover 10 is shaped as a hood, so that a cavity 11 is formed between the sheet metal and the heating wall head 2. In horizontal cross section, the hood has a horizontal cross section profile that is Z-shaped at the longer sides, formed at essentially right angles, so that the cavity 11 formed between the hood and the head wall is essentially of rectangular cross section. The cavity 11 is filled with an insulating material 12 that consists of, for example mats of aluminum silicate. A gap formed between the hood and the faces of the jambs 5 and 5' by the shape of the hood and the jambs 5 and 5' has an essentially rectangular horizontal cross section profile, and for better sealing further seals 15 are provided in the form of cords or a packing gasket.

Claims:

1. A wall protector for a heating wall head (2) between two chamber openings (1, 1=) of a coke-oven battery that is laterally bounded by vertical jambs (5, 5=) along the chamber openings and that has an anchor post (4) provided in front of the heating wall head (2) and extending vertically, biasers (6) fixed to the anchor post (4), U-shaped yoke elements (7) pressed by the biasers (6), and a rectangular head cover (10) covering the heating wall head (2), characterized in that the prestressed U-shaped yoke elements (7) engage in a force-fit at bearing faces of the jambs (5, 5=), and that the head cover (10) consists of thin-walled sheet metal that is clamped between the jambs (5, 5=) and the heating wall head (2).

2. The wall protector according to claim 1, characterized in that the edges of the sheet metal that forms the head cover (10) are clamped between the jambs (5, 5=) and the heating wall head (2) and embedded between layers (13, 14) of a sealing material.

3. The wall protector according to claim 1 or 2, characterized in that the sheet metal forming the head cover (10) is shaped as a hood and forms a cavity (11) between the sheet metal and the heating wall head (2).

4. The wall protector according to claim 3,

characterized in that the hood has, seen in horizontal cross section profile, Z-shaped longer sides forming essentially right angles, so that a cavity (11) forms between the hood and the heating wall head (2).

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5. The wall protector according to claim 4, characterized in that seals (15) are in a gap between the hood and the faces of the jambs (5, 5=).

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6. The wall protector according to one of claims 3 to 5, characterized in that the cavity (11) between the head cover (10) and the heating wall head (2) is filled with an insulating material (12) that preferably consists of mats of aluminum silicate.

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