April 30, 1940. E. E. MOORE 2,199,138

HEATING METAL SLABS

Filed Sept. 12, 1939

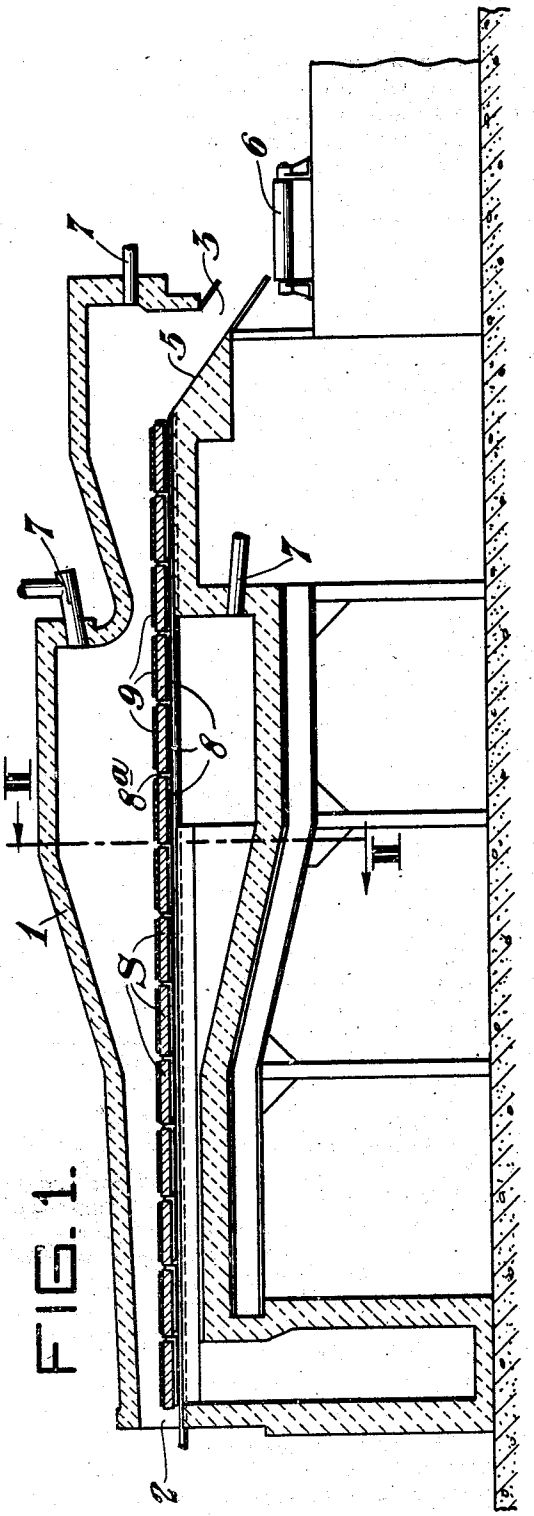


FIG. 1.

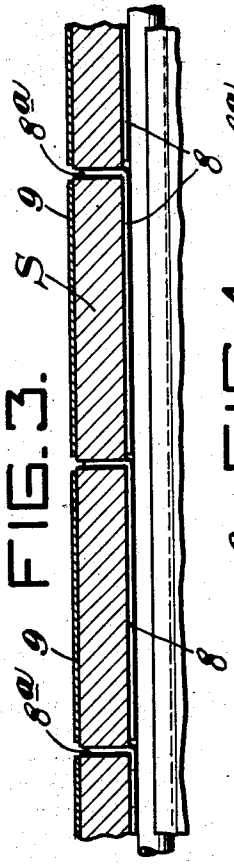


FIG. 3.

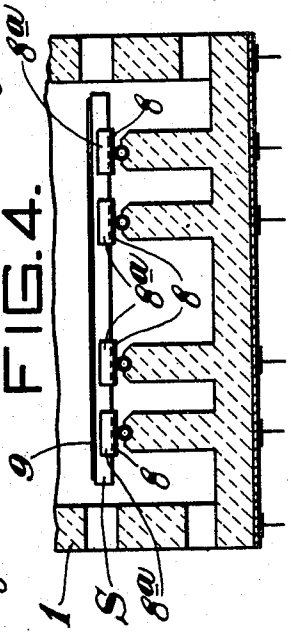


FIG. 4.

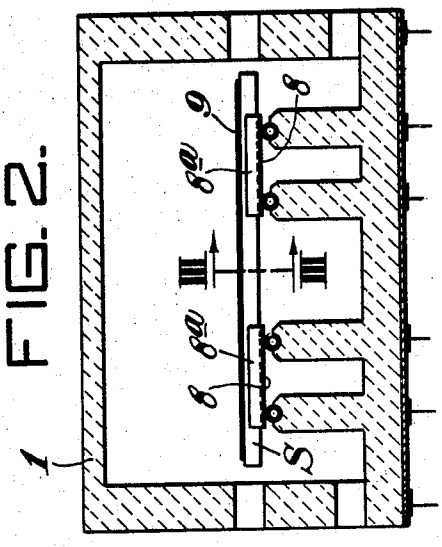


FIG. 2.

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HEATING METAL SLABS

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Application September 12, 1939, Serial No. 294,560

1 Claim. (Cl. 263—52)

This invention is concerned with the heating of metal slabs to rolling temperatures, particularly when the metal is stainless steel slabs which must be rolled into highly finished products.

A specific example of the invention is illustrated in the accompanying drawing in which:

Figure 1 is a section of a reheating furnace;

Figure 2 is a cross section from the line II—II in Figure 1;

Figure 3 is an enlargement from Figure 1; and

Figure 4 is a modification of Figure 2.

More particularly, the drawing shows a continuous furnace 1 having an entrance 2 and exit 3, stainless steel slabs S of oblong shape being moved horizontally through this furnace on spaced stationary water cooled skids 4 in edge-to-edge relation by pushing force transmitted through the abutting edges of the slabs. In accompanying this, a mechanical pusher is used at the entrance 2 which works against each slab successively placed in the furnace, this working through the abutting edges to push the slab most adjacent the exit 3 down a decline 5 and onto a roller table 6. The heating zone of the furnace is heated by open flame burners 7 arranged both above and below the slabs S as they move through the furnace.

To prevent the skids 4 from marking the slabs S, rider sheets 8 are positioned beneath each of the slabs on top of the skids 4. These rider sheets differ from the rider sheets used in carrying sheets through a furnace in that they have portions 8^a bent upwardly and positioned between the abutting edges of the slabs S so as to be clamped therebetween and positively cause the rider sheets to move with the slabs. Due to these rider sheets being positively positioned in this manner, they may be made just sufficiently wide to register with the skids 4, Figure 2 showing two sheets used beneath each slab because the skids 4 are arranged in the form of spaced pairs of closely spaced skids. Four very narrow rider sheets could also be used, as shown by Figure 4.

Furthermore, the rider sheet 8, in addition to being very narrow, are no longer than the widths of the slabs. Therefore, when each slab slides down the decline 5 onto the roller table 6, the rider sheets used with that slab, being no longer positively positioned, fall from the slab and can be easily removed. Their narrow widths are of importance in this connection because they could not be removed if the sheets were as wide as the slabs are long, since the slabs would then be forcing the sheets down on two or more of the rollers of the roller table 6.

It has been found that the upper burners 7 throw down a deposit on top of the slabs S which causes marks on the rolled product, and according to the present invention this is prevented by arranging metal cover sheets 9 on top of the slabs, these cover sheets having substantially the same contour as the slabs and completely covering them. Since these cover sheets are on top of the slabs, they can be easily thrown from the slabs when they reach the roller table 6.

I claim:

A method of preventing marks on metal slabs moved horizontally through a furnace in edge-to-edge relation by pushing force transmitted primarily through their relatively adjacent edges, said furnace having spaced stationary skids on which said slabs ride, said method including arranging metal rider sheets beneath said slabs on top of said skids with portions of said sheets bent upwardly and positioned betwen the relatively adjacent edges of said slabs so as to be clamped therebetween and positively cause said sheets to move with said slabs.

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