

Aug. 25, 1970

J. DUDEK ET AL

3,525,847

BRUSH ELECTRODE

Filed Dec. 20, 1967

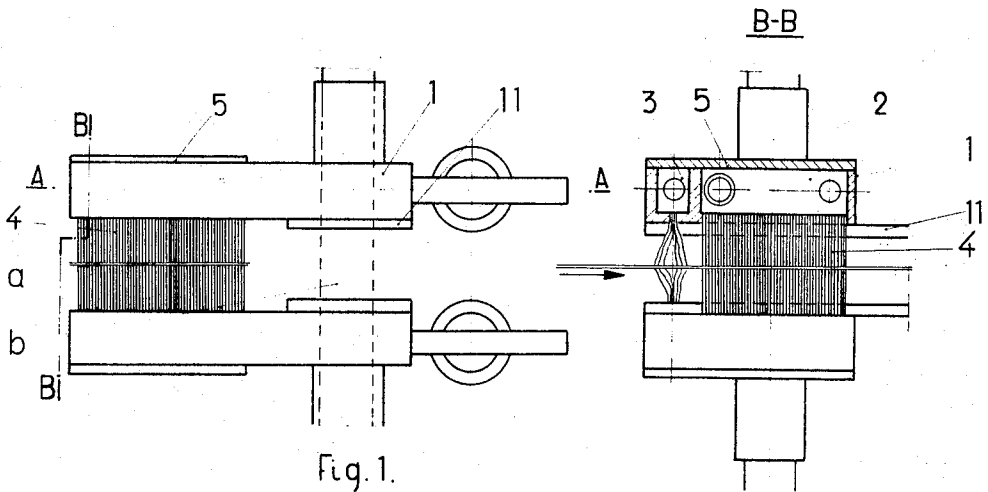


Fig. 1.

Fig. 3.

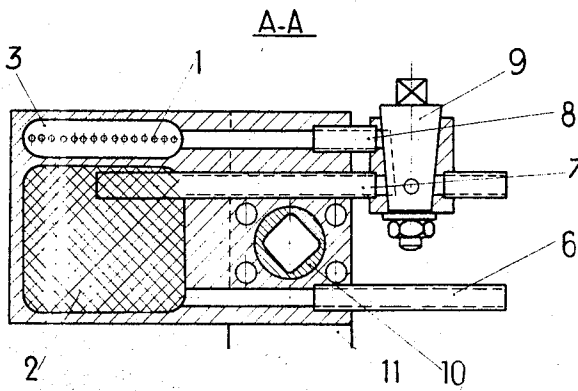


Fig. 2.

Jozef DUDEK
Jan GOCZAL
Jan GOLEK
Leslaw KUS
Kazimierz MARKIEWICZ

INVENTORS

BY *Karl F. Ross*

Attorney

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BRUSH ELECTRODE

Jozef Dudek, Jan Goczal, Jan Golek, Leslaw Kus, and Kazimierz Markiewicz, Gliwice, Poland, assignors to Instytut Metalurgii Zeleza Im. Stanislaw Staszica, Gliwice, Poland, a corporation of Poland

Filed Dec. 20, 1967, Ser. No. 692,173

Claims priority, application Poland, Dec. 28, 1966, P 118,194

Int. Cl. C21d 9/62; H05b 1/00

U.S. Cl. 219-119

2 Claims 10

ABSTRACT OF THE DISCLOSURE

Flat brush electrode for direct heating the metal strips, provided with two chambers arranged inside a body, through which the coolant flows, in order to endow the strip with desired strength properties.

BACKGROUND OF THE INVENTION

The invention relates to a flat-brush electrode being applicable for the resistance heating of metal strip material, especially of rolled strips.

In the manufacturing practice there were not hitherto known devices rendering it possible to heat rolling strips for heat treatment in a production line.

SUMMARY OF THE INVENTION

The invention provides flat brush electrodes, which used in a suitable arrangement, e.g. as described in commonly owned application Ser. No. 685,858, enables the resistance heating of strips being worked, immediately in the manufacturing line. This aim has been achieved by designing of flat cards including cooling chambers and a control valve.

BRIEF DESCRIPTION OF THE DRAWING

An embodiment of the brush electrode according to the invention is shown in the accompanying drawing, in which:

FIG. 1 is a side view of the electrode assemblies supplying the electric current to the strip;

FIG. 2 is a section along the line A-A of FIG. 1; and

FIG. 3 is a section along the line B-B of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The brush electrode according to the invention comprises a body 1 with a cooling chamber 2 and a water spray chamber 3, wires 4 soldered in the wall of the body 1, a wall 5, water circuit pipes 6, 7, 8, a special control valve 9, a guiding sleeve 10 travelling along the guide b, and a flexible current-carrying wire 11. The brush electrode according to the invention supplies the heating current to the metal strip a travelling in course of the production process, where the electrode is usually composed of two pairs of brushes dislocated at a suitable distance (see the aforementioned application). The electrodes, composed of two pairs of brushes are shifted

simultaneously against each another by means of a mechanism not being shown in the drawing. Thus a constant pressure of the wires against both surfaces of the strip is being secured. The guide b and the guiding sleeve 8 secure the parallelity of the brushes against each another. The valve 9 being positioned as shown in FIG. 2 supplies the water after passing it through the cooling chamber 2 to the water spray chamber 3, onto the heated strip. Such positioning of the valve is set for the pair of brushes, between which the strip comes after heating, for the pair of brushes, however, between the cold strip comes, the valve should be revolved by 90° in relation to the position shown in FIG. 2, when the water flows out, after passing through the cooling chamber.

The brush electrode according to the invention ensures a suitable contact area between it and the heated strip at minimum resistances braking the travel of the strip, what is of great importance in aspect of the considerable decrease of the strength of heated strip. Through application of the water spray chamber a desired heat treatment process e.g. solutioning or hardening may be performed immediately. The structure of the electrode is simple and suited for heating of the strips undergoing a heat treatment.

What is claimed is:

1. A flat-brush-electrode assembly for the heat treatment of metal strip, comprising a holder formed with a compartment and with a coolant-receiving chamber, said holder being provided with outlet means communicating with said chamber and trained upon said strip for directing coolant onto a surface thereof; a brush on said holder and including a generally flat array of wire bristles soldered to a wall of said compartment and extending co-directionally therefrom toward said surface of said strip, said bristles being in heat-conducting and electrically conducting relationship with said holder, said compartment forming a coolant circulation path; conduit means in said holder communicating with said path and with said chamber for feeding coolant to said chamber and said path and for removing coolant from said path; and valve means connected to said conduit means for selectively controlling the coolant flow to said chamber and along said path.

2. The assembly defined in claim 1 wherein two such holders and respective brushes are provided in symmetrically juxtaposed relation on opposite sides of a transport path from said strip.

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JOSEPH V. TRUHE, Primary Examiner

L. A. ROUSE, Assistant Examiner

U.S. Cl. X.R.

219-120