KAWASAKI STEEL TECHNICAL REPORT
No.16 (June 1987)

Automation of Material Handling at a Cold Strip Mill

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Synopsis :
The continuous annealing plant commissioned at Mizushima Works in February 1984 has a number of new automatic devices for material handling developed on the basis of the so-called "mechatronics technology" which has make a prominent progress recently. The automatic devices mainly consist of the following: (1) Unmanned crane with electrical non-snaking control and a light weight non-swaying clamp mechanism (2) Automatic carrying-out system for scrap steel sheets and trimming scraps (3) Automatic changer of cold coil sleeves (4) Automatic paper wrapping device The automatic devices have made a noticeable contribution to both labor saving and rapid, reliable operation control.

The body can be viewed from the next page.

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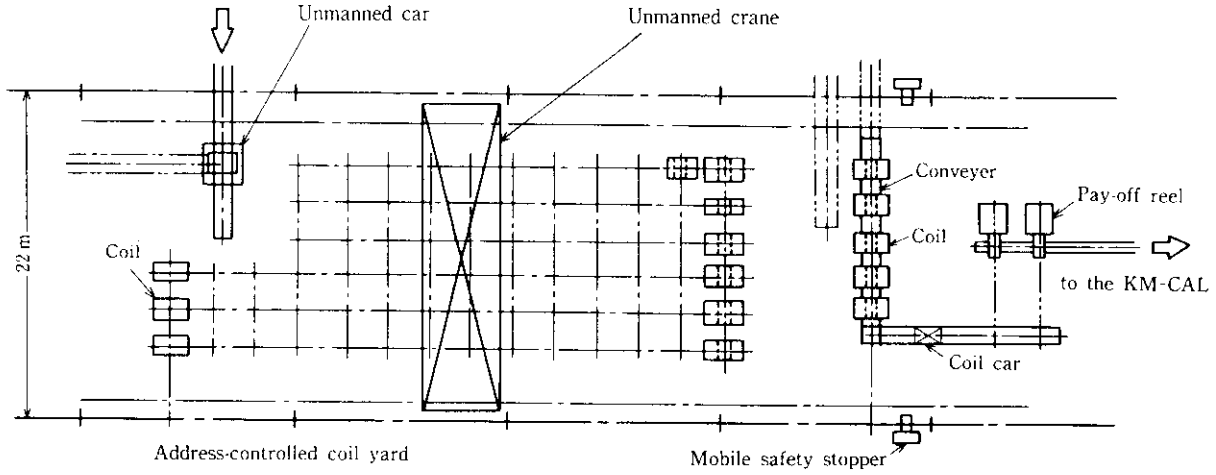
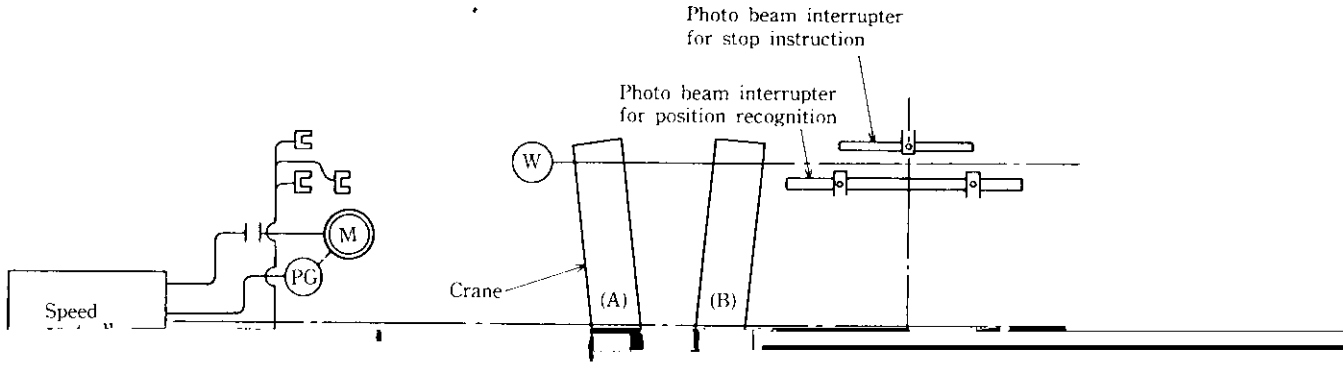


Fig. 1 Unmanned crane for 50 t coil



2.1.2 Non-snaking control method

The wheels on the two sides (right and left) of the crane are driven by separate motors. However, they are controlled by the same speed instruction since the posi-

side. Accordingly, speed is lowered to 5% on the position

detector side stop-instruction dog-end located 50 mm

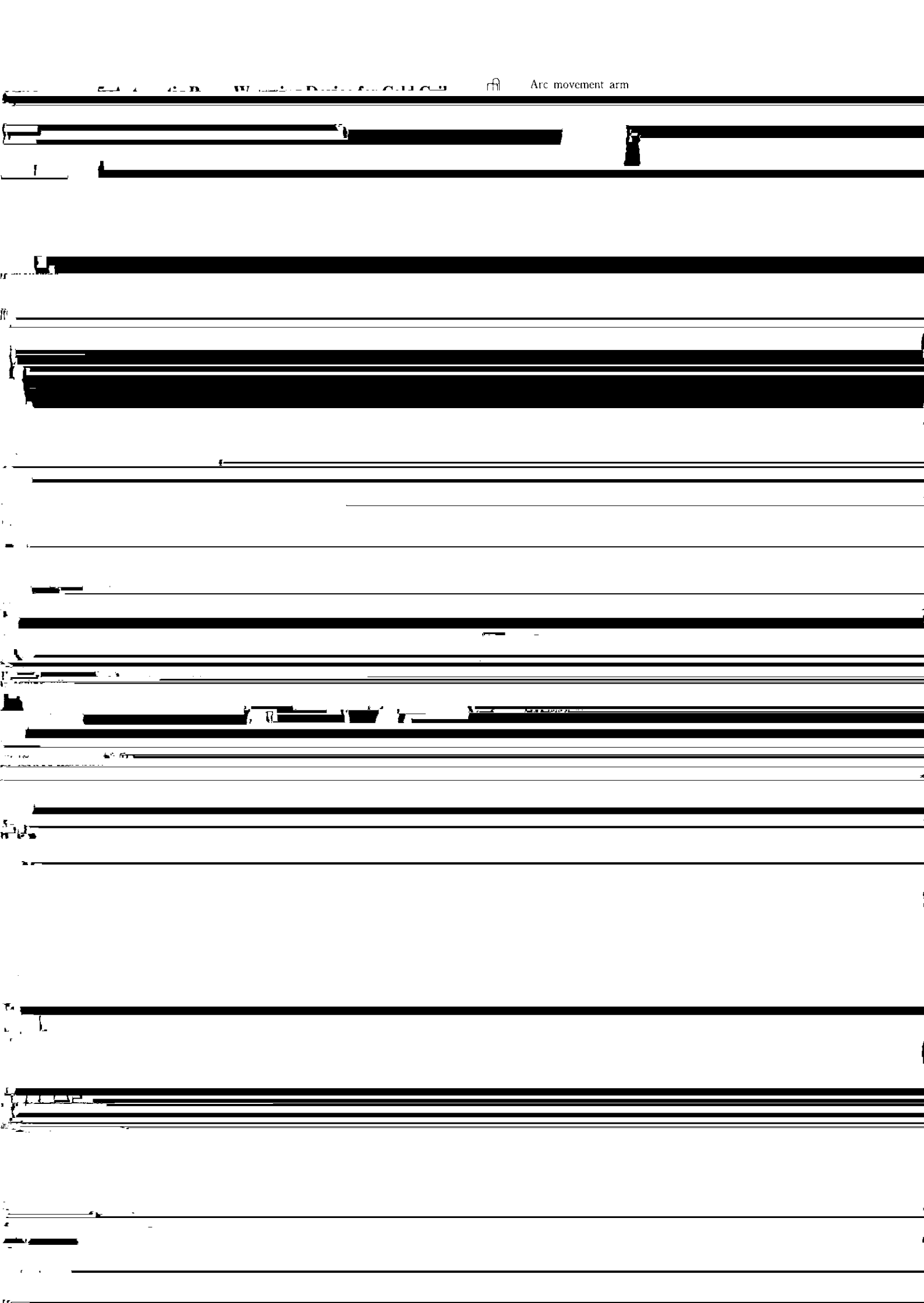
2.2 Light-Weight Non-Swaying Clamp Mechanism

Another problem in crane automation is sway control. The electrical non-swaying method is superior to the mechanical method as it does not cause weight

ed an electrical method, however it is not used in actual

operation because the effects of a malfunction would be

The present newly developed type of unit is shown in [redacted] vator hopper. When several tons of [redacted]


Arc movement arm