

Title (en)
Lubricating mandrel bars.

Title (de)
Schmierung von Dornstangen.

Title (fr)
Lubrification de mandrins.

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Application
EP 82305197 A 19820930

Priority
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Abstract (en)
A method of lubricating mandrel bars, plugs etc. which are used in rolling iron and steel tubes involves applying the lubricant by electrostatic deposition. The bar (10) is shown on a plurality of spaced driven support rolls (17). Spray guns (18 and 19) are used respectively to spray liquid carrier such as carbopol and lubricant such as graphite onto the bar (10). The liquid carbopol is contained in a tank (20) and supplied by means of a pump (21) to spray gun (18). The graphite is contained in a tank (22) and pumped by means of a pump (23) to spray gun (19). A high tension electrical supply (24) is connected so that the rollers (17) are earthed and the gun (19) positively charged to charge the graphite. Initially the bar is sprayed with a thin controlled layer of the liquid carrier, then graphite is sprayed onto the wet bar (10) employing the electrostatic spraying technique. In some instances it may be desirable to spray the liquid electrostatically as well but this is not essential. Excess liquid may be removed by means of the electrically operated dryer or heater (25) which, in one arrangement is a ring shaped heater completely surrounding the bar. Alternatively, the heat retained in the shell may be sufficient to remove the liquid carrier from the bar after it has entered the shell.

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B05B 5/14 (2013.01); **B21B 25/04** (2013.01)

Citation (search report)
• [A] DE 2732009 B2 19790927
• [A] US 3904346 A 19750909 - SHAW LESLIE EARL, et al
• [A] GB 2022471 A 19791219 - TI TUBE DIVISION SERVICES LTD, et al
• [A] DE 725839 C 19421001 - WILHELM H ENGELBERTZ

Cited by
US10166583B2; CN102489517A; EP0698426A1; US2013098128A1; DE102010049645A1; WO2012022284A2

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