

[54] METHOD OF APPLYING A WEAR-RESISTANT COMPOSITE COATING TO AN ARTICLE

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Related U.S. Application Data

[63] Continuation of Ser. No. 643,546, Dec. 22, 1975, abandoned.

[51] **Int. Cl.²** **C21D 1/34**

[52] U.S. Cl. 427/53

[57] **ABSTRACT**

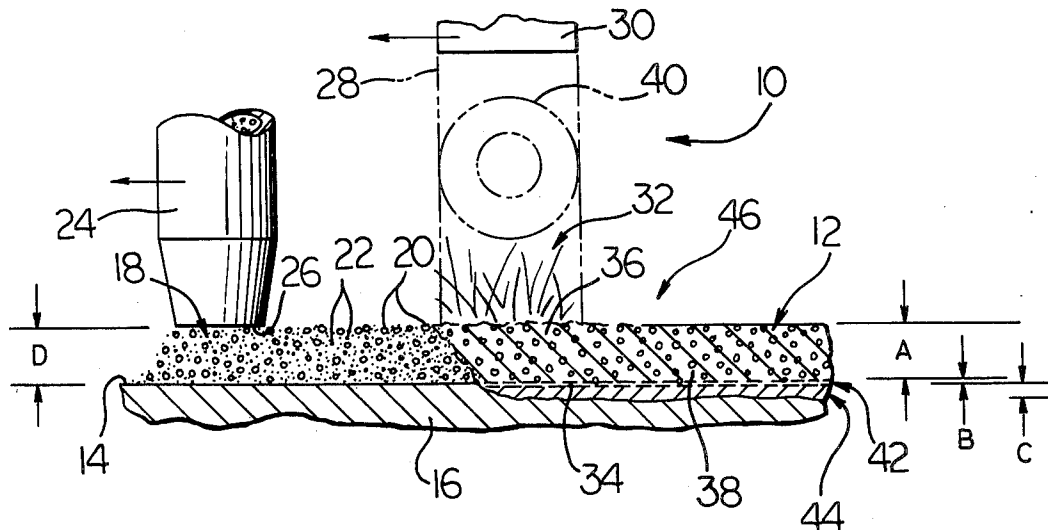
A method of applying a wear-resistant composite coating to an article is disclosed which includes the steps of

depositing a plurality of wear-resistant particles having a predetermined melting point along with a lower melting point element in solid form onto the surface of the article, focusably directing a coherent beam of electromagnetic energy thereon at a power density level sufficient to melt the element and a limited surface portion of the article while retaining the particles in substantially solid form, and removing the beam therefrom to allow solidification of the melted portion thereof into a matrix in which the wear-resistant particles are embedded. Advantageously this method provides a thin diffusion zone and a hardened zone underneath it to better support the coating.

5 Claims, 1 Sheet Drawing.

17 Pages Specification

The file of this unexamined application may be inspected and copies thereof may be purchased (849 O.G. 1221, Apr. 9, 1968).



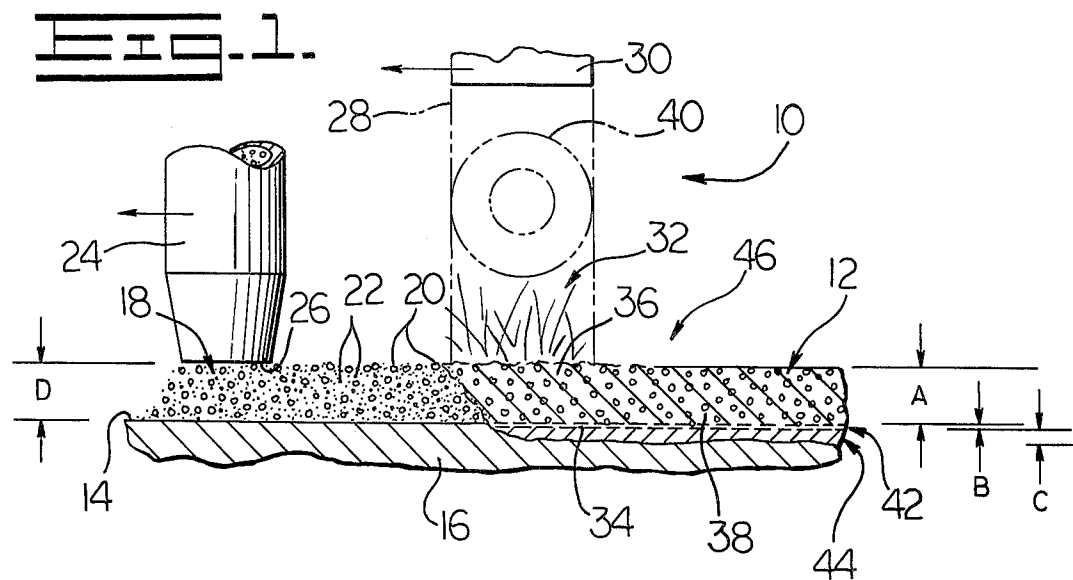


FIG. 2.

KNOOP HARDNESS

1217 —
1365 —
941 —
252 —
349 —
300 —
652 —
629 —
673 —
539 —
485 —
635 —
426 —
316 —

