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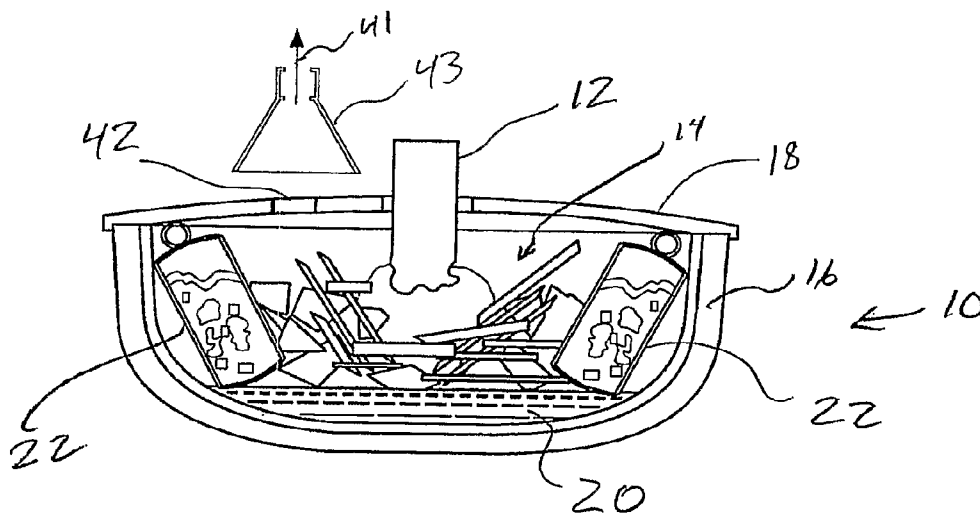
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(54) Title: APPARATUS AND METHOD FOR PROCESSING METALLURGICAL "FINES" IN (EAF) ELECTRIC ARC FURNACES



(57) Abstract: Apparatus and methods for recycling iron fines, such as mill scale. In one form, mill scale is placed in containers that are then placed as part of the charge in an electric arc furnace or other appropriate apparatus used in a metallurgical process. The capsule can be shaped so as to control the movement of the capsule during the melt cycle. In one form, various appendages are coupled to the capsule and used to interact with the vessel wall of the electric arc furnace or other appropriate apparatus used in a metallurgical process to control and/or delay the movement of the capsule during the melt cycle. Appendages can also be attached to the vessel wall to control and/or the movement of the capsule during the melt cycle. In one form, snubber cables can be hooked to the appendages on the vessel wall to aid the control of movement and/or delay movement. In one form, the capsules are sealed so that venting of internal gases is difficult, at least for some time, after heat is applied. Fusible vents can be provided, for example where a portion of the sealed container melts upon application of a sufficient amount of heat for a sufficient time.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - C22B 1/00; C22B 1/02; C22B 9/20 (2007.10) USPC - 75/433; 75/316; 75/10.1; 75/10.61 According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC(8) - C22B 1/00; C22B 1/02; C22B 9/20 (2007.10) USPC - 75/433; 75/316; 75/10.1; 75/10.61 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched IPC(8) - C22B 1/00; C22B 1/02; C22B 9/20 (2007.10) - PGPB, USPT, EPAB, JPAB USPC - 75/433; 75/316; 75/10.1; 75/10.61 - PGPB, USPT, EPAB, JPAB Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) USPTO - WEST - (PGPB, USPT, EPAB, JPAB); Google Scholar Terms: "metallurgical", "furnace", "mill scale", "container", "steel", "molten", "control mechanism", "liquid metal seal", "cable", query, search refine					
C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.			
X	US 2005/0274224 A1 (REIFFEL) 15 December 2005 (15.12.2005), entire document, especially para [0002], [0006], [0037], [0041], [0071], [0072], [0073], [0074], [0078], [0081], [0178], [0179], [0182], and FIGS. 2 and 4.	1-12			
☐ Further documents are listed in the continuation of Box C. ☐					
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