



US005288350A

United States Patent [19]**Kita**[11] **Patent Number:** **5,288,350**[45] **Date of Patent:** **Feb. 22, 1994**

[54] **PLASTIC CASE HAVING IMPROVED
ULTRASONIC WELDS BETWEEN HALVES
THEREOF AND METHOD FOR
PRODUCING SAME**

[75] **Inventor:** Akihisa Kita, Kanagawa, Japan

[73] **Assignee:** Fuji Photo Film Co., Ltd., Kanagawa,
Japan

[21] **Appl. No.:** 8,180

[22] **Filed:** Jan. 25, 1993

Related U.S. Application Data

[62] Division of Ser. No. 743,617, Aug. 12, 1991, Pat. No.
5,199,593.

[30] **Foreign Application Priority Data**

Aug. 14, 1990 [JP] Japan 2-85442[U]
Sep. 11, 1990 [JP] Japan 2-94736[U]
Oct. 8, 1990 [JP] Japan 2-105196[U]

[51] **Int. Cl.⁵** B32B 31/16

[52] **U.S. Cl.** 156/73.1; 156/87;
156/293; 264/23

[58] **Field of Search** 156/73.1, 87, 285, 286,
156/293, 294, 580.1; 264/23, 248

[56] **References Cited****U.S. PATENT DOCUMENTS**

3,095,112 6/1963 Weinstein et al. 220/613
3,432,072 3/1969 Quercia 220/613
3,706,393 12/1972 Curtis et al. 220/613

4,464,109 8/1984 Giangiulio et al. 220/613
4,706,833 11/1987 Korcz et al. 220/613
4,886,181 12/1989 Haines 220/613
5,115,961 5/1992 Nakajima 228/111
5,116,216 5/1992 Cochran et al. 425/504
5,205,895 4/1993 Hohman, Jr. et al. 156/293

FOREIGN PATENT DOCUMENTS

WO89/50773 6/1989 PCT Int'l Appl. 220/612

Primary Examiner—David A. Simmons

Assistant Examiner—J. Sells

Attorney, Agent, or Firm—Sughrue, Mion, Zinn,
Macpeak & Seas

[57] **ABSTRACT**

A plastic case and a method for producing a plastic case composed of two halves ultrasonically welded together without problems caused by the generation of excess material, namely, excess melted resin and resin particles, produced during the welding process. The welding is effected at abutting portions of a projection formed on one of the two case halves and a recess formed on the other. A gap is left between the end surface of the distal face of the projection and the bottom of the recess defining an internal space. At least one air hole is formed communicating with the internal space, and suction may be applied to the internal space through the air hole. Also, a dust-blocking rib may be provided on at least one of the recess and projection surrounding the abutting welding portions.

9 Claims, 7 Drawing Sheets