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Britner et al.

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[54] **SOLAR ENERGY ABSORBING-HEAT EXCHANGER DEVICE**

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[52] **U.S. Cl.** ..... **126/446**; 165/171; 165/183; 29/157.3 C

[58] **Field of Search** ..... 126/445, 446, 447, 448; 165/171, 170, 183; 29/157.3 C, 157.3 D, 521; 113/118 A, 118 C, 118 D, 1 N

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[57] **ABSTRACT**

A solar energy absorbing-heat exchanger device includes a copper tube and first and second identical copper sheets, the two sheets having semi-cylindrical curved surfaces which together fully enclose the tube and the sheets otherwise being essentially flat. Each sheet is joined to the other directly adjacent to and on opposite sides of the tube by two roll-formed seams. The roll-formed seams hold the sheets about the tube in tension to maintain contact between the tube surface and curved surfaces of the sheets. The semi-cylindrical curved surfaces may be roll-formed, as may be narrow channels and angular turns in each sheet which, when interengaged, are roll-formed toward the enclosed tube to form the two seams. The seams may include the use of solder, stiffener grooves may be added to the flat parts of the copper sheets, and channels may be added at the ends of the sheets remote from the enclosed tube to connect a number of such devices together. The roll-forming of the sheets may be carried out by a continuous, high-speed process.

7 Claims, 3 Drawing Figures