United States Patent [19]

Brazhnikov

[11] **4,117,732**

[45] **Oct. 3, 1978**

[54] **METHOD FOR CHECKING THICKNESS OF SHEET MATERIALS BY USING ACOUSTIC OSCILLATION AND DEVICE FOR EFFECTING SAME**

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[21] Appl. No.: **658,478**

[22] Filed: **Feb. 17, 1976**

[51] **Int. Cl.**[2] **G01B 17/00**

[52] **U.S. Cl.** **73/599**

[58] **Field of Search** ..... 73/67.5 R, 67.6, 599; 72/16

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[57] **ABSTRACT**

Disclosure is made of a method for checking the thickness of sheet materials, whereby acoustic oscillation is sent in the form of a traveling wave through a material being checked roughly perpendicularly to its surface. The amplitude of the acoustic oscillations that have passed through the material being checked is measured and compared to that of a reference signal, whereby the thickness of the sheet material is determined. The proposed device for checking the thickness of sheet materials comprises an acoustical radiator and an acoustical receiver. The working surface of the radiator and receiver are roughly parallel to the surface of a material being checked, which material is placed between the radiator and receiver. The distance between the radiator and receiver is selected to be in excess of the spatial extension of the traveling wave during each measurement period. The device further comprises a measuring unit which includes in series connection the receiver, an amplifier, a peak detector, and a unit for comparing a reference signal and a signal carrying information of the thickness of the sheet material being checked. Connected to the comparison unit are a reference signal setter and a recorder. The proposed method for checking the thickness of sheet materials and device for effecting this method ensures high accuracy of measurements within a broad range of values being measured.

12 Claims, 2 Drawing Figures