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**Hubbe**

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[54] **METHOD AND APPARATUS FOR MEASURING AN ELECTRICAL PROPERTY OF PAPERMAKING FURNISH**

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[52] **U.S. Cl.** ..... **73/53.03**

[58] **Field of Search** ..... 73/53.03, 64.56, 73/864.35, 863.84; 162/49, 198, 263

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[57] **ABSTRACT**

An apparatus for determining an electrical characteristic of a papermaking furnish includes a sample chamber having first and second sections for containing a sample of the papermaking furnish. A fiber-collecting screen having a mesh sufficient to inhibit the passage of suspended fibers separates the first and second sections of the sample chamber. Furnish is urged back and forth through the screen in a plurality of cycles so that as furnish flows in one direction through the screen, a fiber pad is formed adjacent the screen and as furnish is moved through the screen in a second direction, the fiber pad is expelled from the screen back and redispersed back into the furnish sample. A stirrer or mixer assists in removing the fiber pad from the screen and in redispersing fibers comprising the fiber pad back into the furnish sample. As furnish is urged through the screen, electrodes positioned on opposite sides of the screen produce signal outputs corresponding to an electrical characteristic of the furnish. A voltmeter receives the electrode outputs and measures voltage across the screen. In one embodiment, furnish is moved through the screen by means of a variable volume chamber in fluid connection with the screen and furnish. In an alternate embodiment, fluid is urged through the screen by reciprocating the screen within the furnish sample. Colloidal charge of the furnish may be determined by moving furnish through the screen in repeated cycles as the furnish sample is titrated with a highly charged additive.

**29 Claims, 7 Drawing Sheets**

