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(71) Applicant: **3M INNOVATIVE PROPERTIES COMPANY** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).

(72) Inventors: **FISCHER, Richard M., Jr.**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **GUTH, Bradley D.,**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **KETOLA, Warren D.,**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **RILEY, James W.,**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US).

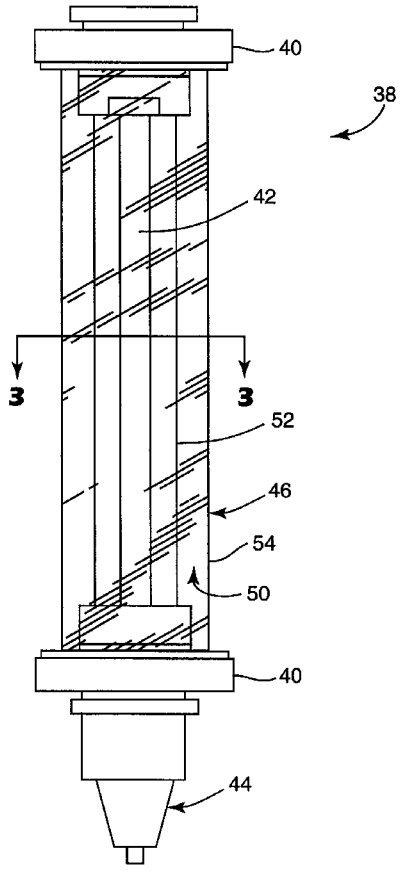
(74) Agents: **LILLY, James V.,** et al.; Office of Intellectual Property Counsel, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).

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(54) Title: OPTICAL FILTERS FOR MANIPULATING SPECTRAL POWER DISTRIBUTION IN ACCELERATED WEATHERING DEVICES



(57) Abstract: The present disclosure is directed to an optical filter that advantageously approximates sunlight that is both durable and stable for long periods of time when subject to harsh light intensity, thermal and moisture loads of accelerating weathering devices. The optical filter includes a glass having a lead content of between 0.5% and 50% by weight. In some examples, the filter can be constructed to have a thickness of 0.7mm to 10mm. In another aspect of the disclosure, the optical filter is part of an optical filter assembly suitable for manipulating spectral power distribution. The optical filter assembly includes a lead glass optical filter having a lead content of between 0.5% and 50% by weight and an ultraviolet transmissive optical filter. In one example, the ultraviolet transmissive optical filter is constructed from quartz glass. The ultraviolet transmissive optical filter can further include an infrared absorbing coating. In still another aspect of the present disclosure, an optical filter constructed from a lead glass has a thickness selected such that illumination passed through the lead glass has a first ratio and a second ratio. The first ratio is a first total irradiance for wavelengths shorter than 290nm to a second total irradiance for wavelengths between 300nm to 400nm, such that the first ratio is less than $2.0 \times 10_{-6}$. The second ratio is an irradiance at 310nm to the second total irradiance, wherein the second ratio is at least $1.2 \times 10_{-3}$.

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