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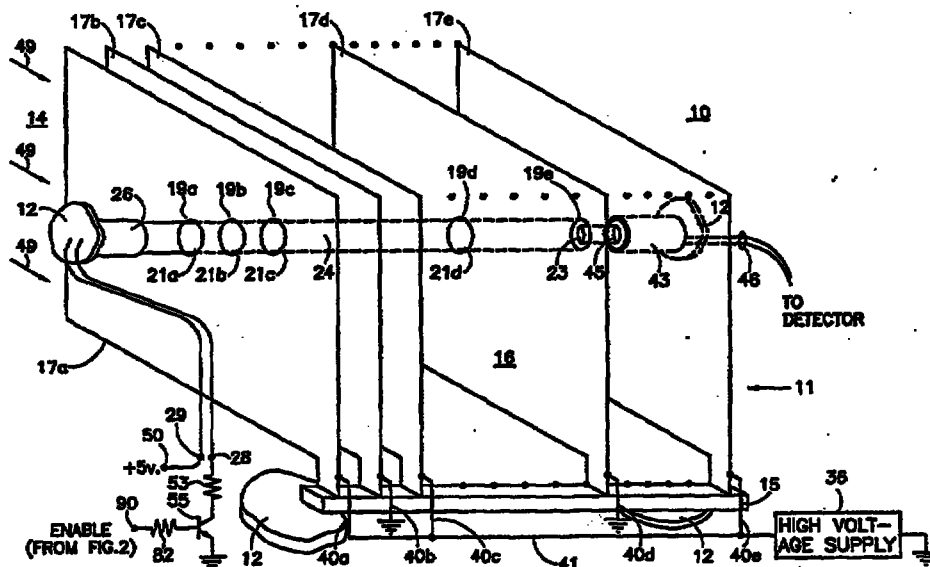


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(54) Title: **OPTICAL DIRTY CELL SENSOR FOR AN ELECTRONIC AIR CLEANER**



(57) Abstract

An electrostatic air cleaner has at least one hole in one of the plates over which air with charged dirt particles is passed. A light source is mounted adjacent to the hole so as to direct its light through the hole. A light sensor detects the level of light passing through the hole. As dirt particles deposit on the plate, they fill in the hole over a period of time, reducing the amount of light passing through the hole. It is possible by measuring the amount of light passing through the hole, to determine the amount of dirt deposited on the plate. In a preferred embodiment, each of the plates contain a hole in alignment with each of the other plate's holes so that light from a single light source can pass through each of the holes. Such a configuration allows both the light source and the light sensor to be located outside of the entire group of plates.