

## PATENT ABSTRACTS OF JAPAN

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### (54) NARROW BAND OPTICAL FILTER

#### (57)Abstract:

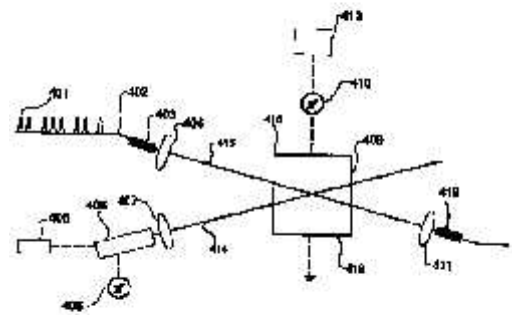
**PURPOSE:** To provide a narrow band optical filter having advantages with respect to the variableness of wavelength, multistage availability, the band width of transmitted spectrum, an optical loss and the manufacturing easiness.

**CONSTITUTION:** A filter device comprizing a device 403 for connecting an optical fiber 405 transmitting a

wavelength-multiplexed signal to the relevant device also comprizes a variable wavelength laser 406, a device 408 for controlling a transmitted central wavelength selected by the filter device by tuning the laser 406, an optical means 407 for converging a light beam from the laser 406, a photo-refractive crystal 409 forming the distribution of wavelength selective optical amplitudes by joining the converged laser beam to the

converged beam from the optical fiber 402, an electrode 416 on the crystal 409, devices 410, 413 for controlling an external voltage applied on the crystal 409 and the transmitted band width of the filter device and devices 411, 412 for outputting the light beam processed by the crystal

409 to the optical fiber, only the light beam having a wavelength closest to that of the light beam from the laser 406 from among the beam from the optical fiber 402 is amplified and outputted to the optical fiber.



### LEGAL STATUS

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