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Yasushi

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[54] **BRAIN WAVE INDUCING APPARATUS**

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[58] Field of Search 600/26-28;
128/731-732, 905

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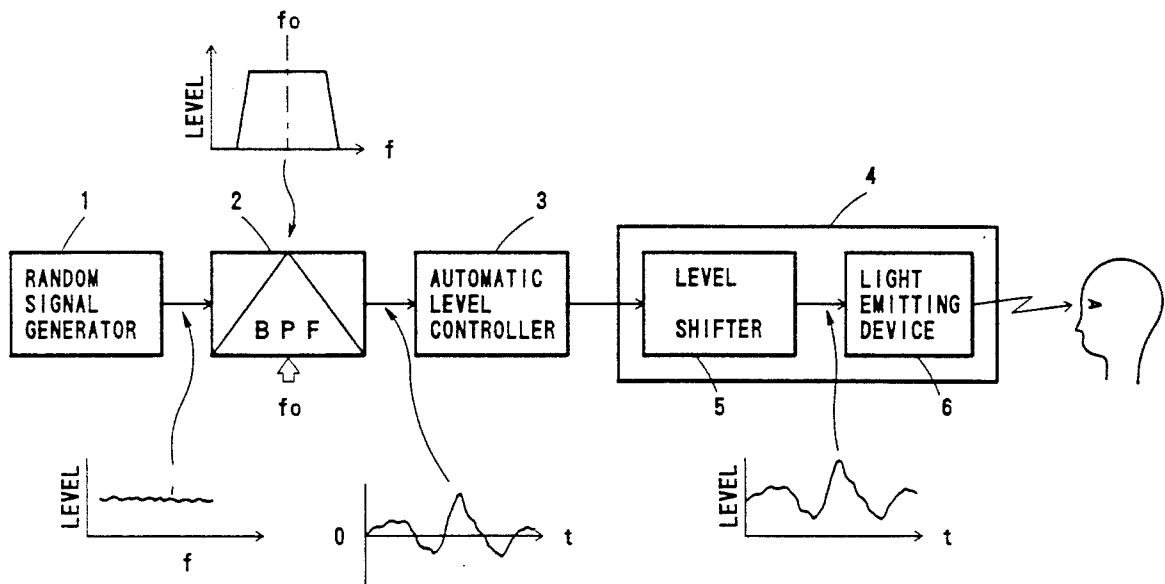
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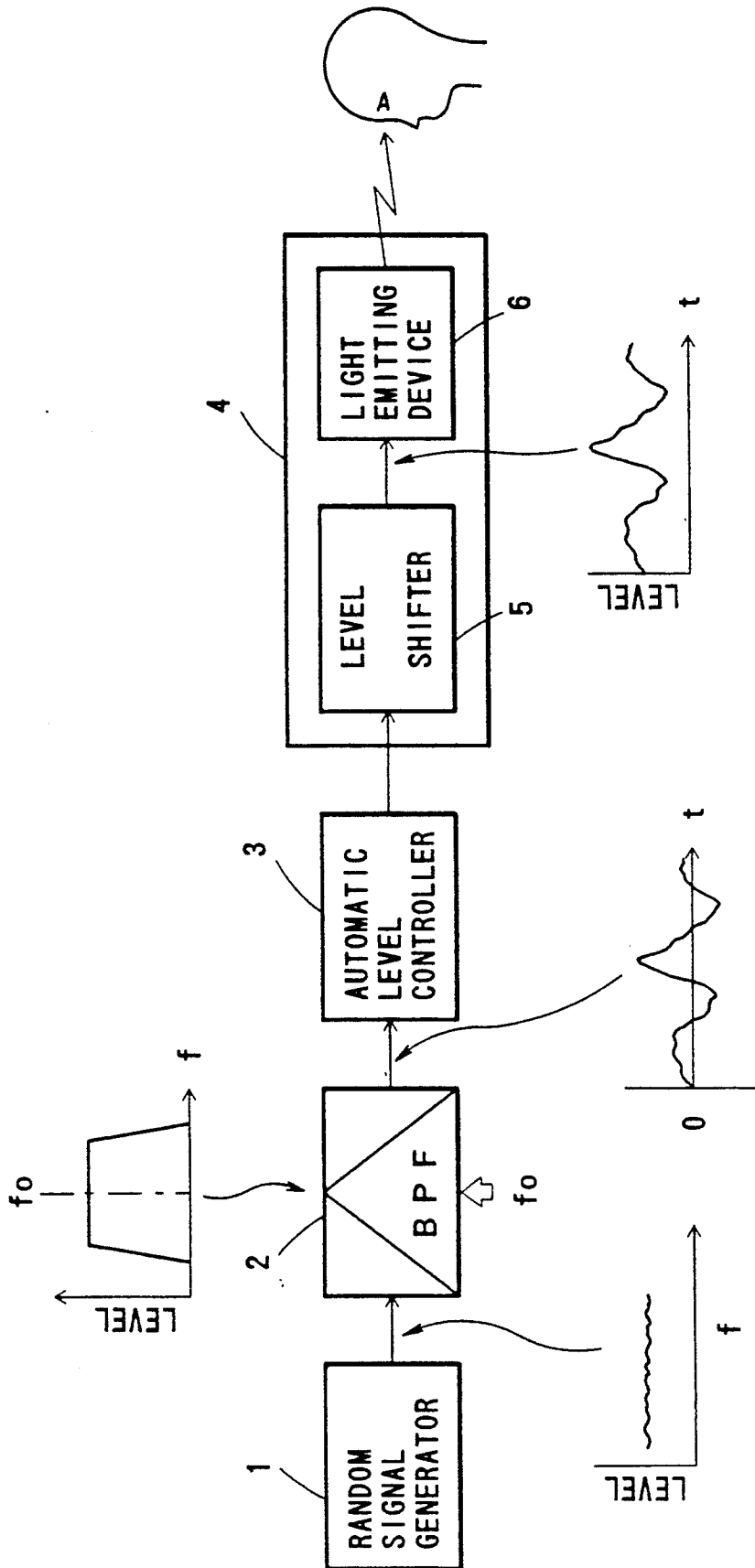
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[57] ABSTRACT

A random signal generator outputs a random noise signal to a band pass filter which selectively passes frequency components in the frequency range of a desired brain wave from a subject. The output of the band pass filter is supplied to an automatic level controller. The automatic level controller sets the output of band pass filter to a predetermined amplitude. Then, the output of the automatic level controller is fed to a stimulating light generator, which converts the output of the automatic level controller into a light signal for stimulating the subject in order to induce the desired brain wave from the subject. The light signal is then emitted into the subject's eyes.

10 Claims, 1 Drawing Sheet





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then the center frequency may be preset to that known frequency for more effective brain wave induction.

A brain wave inducing apparatus according to the invention does not require electrodes and cords for picking up a subject's brain waves, or circuits for processing such brain waves. This greatly simplifies the overall circuit configuration of the circuit providing the stimulating light.

What is claimed is:

1. A brain wave inducing apparatus for inducing 10 desired brain waves from a subject, comprising:

a random signal generator for outputting a random noise signal;

a band pass filter for receiving the random noise signal and selectively passing frequency components that lie in a frequency range of the desired brain waves;

an automatic level controller for setting the frequency components of said band pass filter to a predetermined amplitude;

a stimulating light generator for converting the output of said automatic level controller into a light signal for stimulating the subject to induce the desired brain waves from the subject.

2. A brain wave inducing apparatus according to claim 1, wherein the light signal is intensity modulated.

3. A brain wave inducing apparatus according to claim 1, wherein said random noise signal is a white noise.

4. A brain wave inducing apparatus according to claim 1, wherein said band pass filter has a center frequency that is a mid frequency in the frequency range of

the desired brain waves, and said band pass filter sets the center frequency in accordance with an input signal supplied to said band pass filter.

5. A brain wave inducing apparatus according to claim 1, wherein said stimulating light generator comprises a level shifter for shifting an amplitude of the output of said automatic level controller, and a light emitting device for outputting the light signal, which light signal varies in intensity in accordance with an output of said level shifter.

6. A brain wave inducing apparatus according to claim 4, wherein the center frequency set by said band pass filter lies within the range of 8-13 Hz to induce α waves as the desired brain waves.

7. A brain wave inducing apparatus according to claim 4, wherein the center frequency set by said band pass filter lies within the range of 14-30 Hz to induce β waves as the desired brain waves.

8. A brain wave inducing apparatus according to claim 4, wherein the center frequency set by said band pass filter lies within the range of 4-7 Hz to induce Θ waves as the desired brain waves.

9. A brain wave inducing apparatus according to claim 4, wherein the center frequency set by said band pass filter is determined by obtaining optimum center frequency data from a particular subject.

10. A brain wave inducing apparatus according to claim 4, wherein said band pass filter comprises a switched capacitor filter and a clock for setting the center frequency.

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