

ium, said Finney, do not get a kick or high. There is no feeling of elation; therefore, there is no desire to take the drugs in excessive doses or for non-therapeutic reasons.

The Government suggests that because Librium and Valium are used to treat alcoholics, these persons would be likely to misuse the drugs if they could not get alcohol.

"That presupposes a return to prohibition," Finney retorted. The drugs relieve the symptoms that lead people to drink but do not produce the same effect, certainly not as fast or effectively, Finney contended.

Laser Modulation

Frequency modulation of a laser beam, a discovery that could be the key to making laser light a practical method of communication, has been achieved by Dr. William J. Thaler, a physicist at Georgetown University in Washington, D.C.

Most of the research aimed at discovering an efficient way to modulate laser beams has centered on finding techniques for varying the amplitude, or intensity. This has usually been done by electro-optical devices that change the amplitude of the laser beam in accordance with the signal to be transmitted.

Such devices are both inefficient and suffer from the same problems with respect to background noise as does an AM radio system.

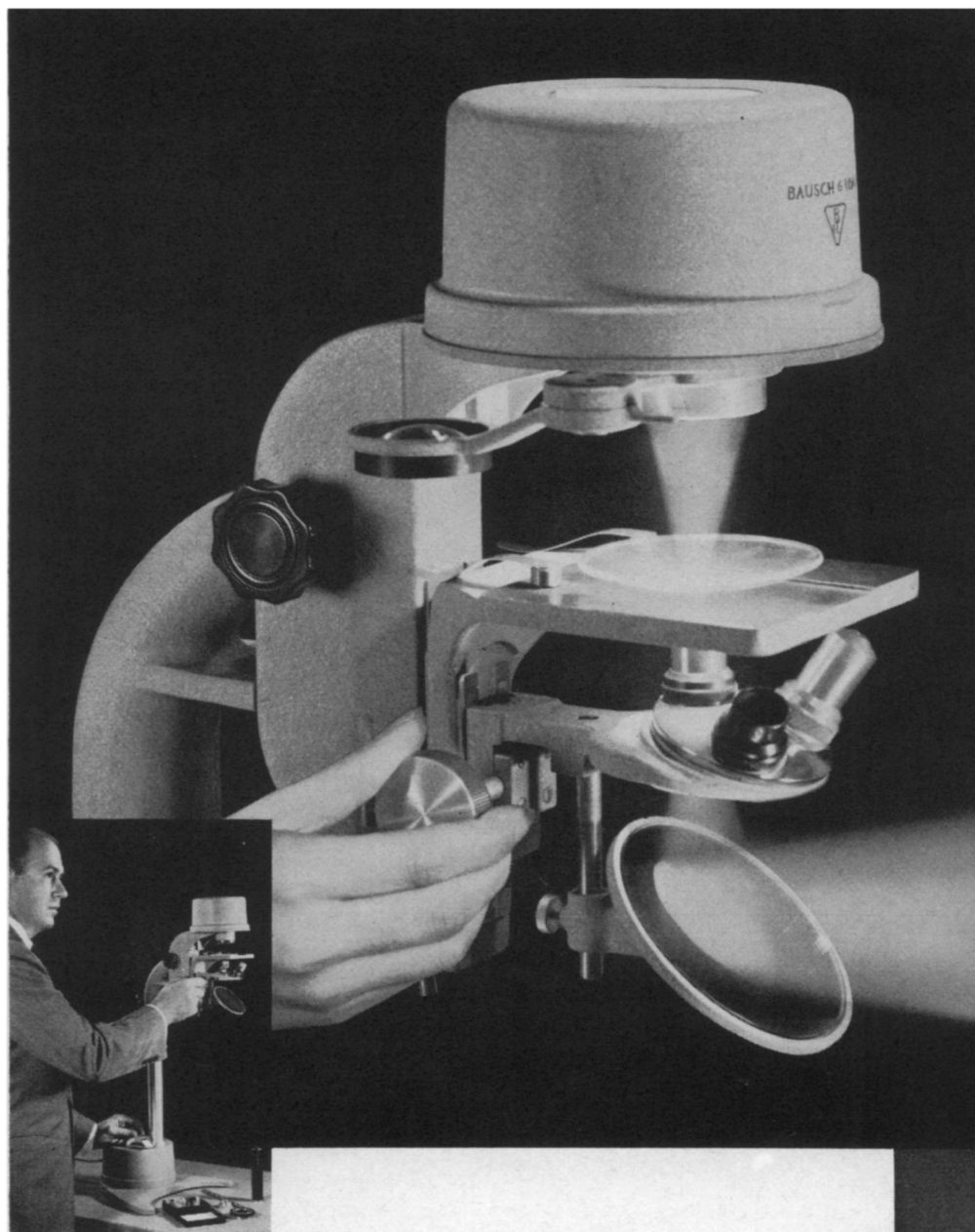
The apparatus developed by Dr. Thaler produces frequency modulation of a laser beam while the amplitude remains constant, changing it in such a way that the variation represents the audible sounds.

His device makes use of an interaction between the laser beam and a moving, periodic density disturbance—the bending that results when a ray of light passes from one transparent substance into another. Such disturbances can be generated by ultrasonic waves in transparent liquids or solids, or by propagating electromagnetic waves in electro-optical crystals.

By modulating the frequency of the periodic disturbances, Dr. Thaler has succeeded in modulating the frequency of the laser beam. He has transmitted FM music and a voice channel simultaneously over a single laser beam one-tenth of an inch in diameter to a distance of one-half mile.

The frequency modulated laser system has the same advantages over amplitude modulation as an FM radio has over AM. Interferences from lightning, electrical machinery or other source do not affect either FM system.

Dr. Thaler has applied for a patent.



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