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Powerful Laser Utilizes Carbon Dioxide

By STACY V. JONES

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WASHINGTON, July 30—Bell Telephone Laboratories, Inc., received a basic patent this week for a gas laser that is already in wide use by industry and government.

Patents of the Week

The carbon dioxide laser, as it is known, creates an invisible beam of radiation that can be made powerful enough to burn holes through steel plates. Dr. C. Kumar N. Patel, director of the electronics research laboratory at Holmdel, N. J., was granted Patent 3,596,202, for which he first applied in 1964. Bell regards the patent as giving it a dominant licensing position among makers of such lasers.

The carbon dioxide laser radiates energy at a wavelength of about 10 microns in the infrared (invisible) range. Its operation employs the relative motions of the atoms in the molecule so as to make the laser easily excited as well as powerful. It is many times more efficient than the usual gas laser.

The patent refers to beneficial effects obtained by the addition of oxygen, water vapor and helium.

First uses of the carbon dioxide laser, besides in scientific laboratory research, have been in the high-power cutting of metals and ceramics and in welding. Government agencies have studied its military applications. Eventually, the laser is expected to have importance in communications—for atmospheric transmission in densely populated areas and for telephone and television transmissions from satellite to satellite.

"If the science fiction idea of a death ray or laser gun ever becomes a reality," said a Bell spokesman, "it will be with carbon dioxide." *

Other patents on improvements to the original concept have been applied for.

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Image Converter for Blind

A blind patient is enabled to "see" with the aid of a vibrating picture that touches the skin of his back. A closed-circuit television camera impresses a two-dimensional facsimile of the outlines of a visible object on a matrix that holds 400 contact points.

Dr. Carter C. Collins and Dr. Paul Bach-Y-Rita of the Institute of Medical Sciences, San Francisco, and Gordon W. Holmlund, an electronics engineer, were granted Patent 3,594,823 for the image converter this week.

It is understood that device has been used e mentally for several y persons blind from accidentally blin training, they things from sations.

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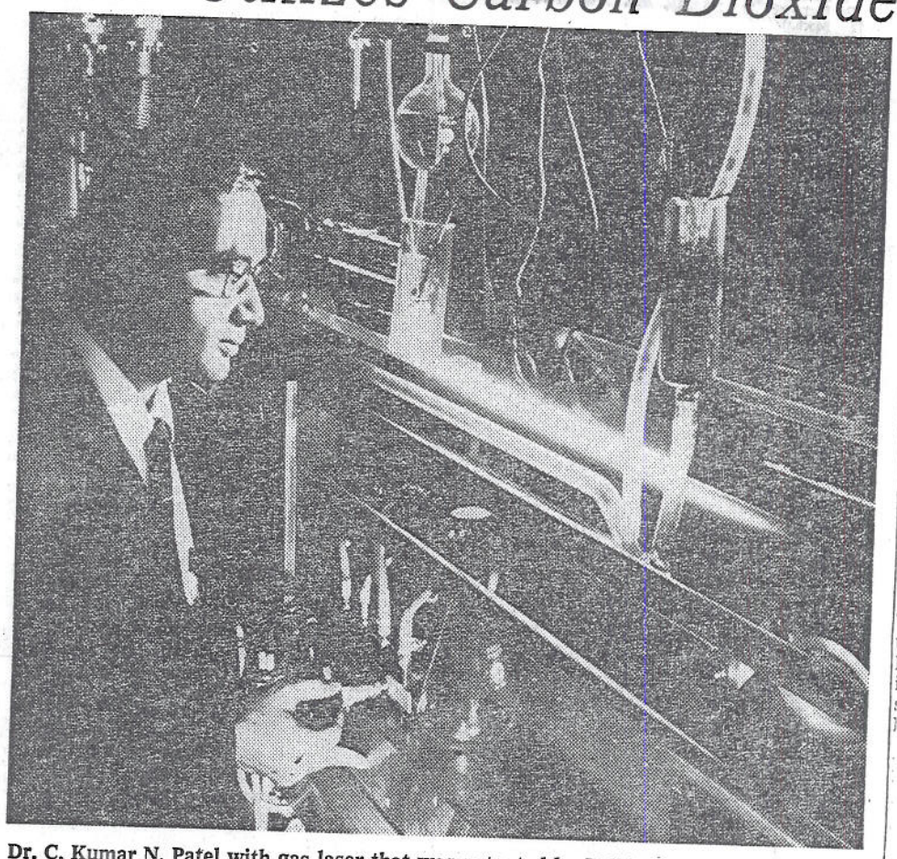

Dr. C. Kumar N. Patel with gas laser that was patented by Bell Telephone Laboratories

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