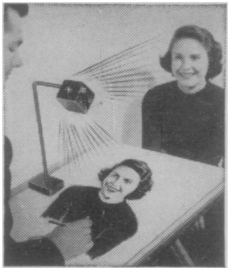


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## INVENTION

# Patents of the Week

Flexible optical probes that carry images around curves are used in two devices for measuring the amount of oxygen in a patient's blood which were granted patents.

➤ **TWO DEVICES** for measuring the amount of oxygen in a patient's blood using flexible optical probes were granted U.S. patents.

The probes consist of bundles of tiny glass fibers through which light travels. The glass fibers are flexible and can therefore be used for medical examination of various parts of the body otherwise difficult to scan, such as the duodenum or ureter.

Both devices patented this week provide for measuring the oxygen content of either arterial or venous blood within a patient continuously. They were awarded patents 3,068,739 and 3,068,742, rights to which were assigned to American Optical Company, Southbridge, Mass., by Drs. John W. Hicks Jr. of Fiskdale, Mass., and Michael E. Polanyi of Webster, Mass.

Using the flexible fibers to carry images gives doctors a chance to make medical examinations without trouble from blind spots caused by curves in body organs. Such flexible optical probes are being extensively tested experimentally.

## Nuclear Reactor

A method of converting the energy of nuclear fission into electricity, held secret for 16 years, won patent 3,069,341 for Dr. Farrington Daniels, now emeritus professor of chemistry at the University of Wisconsin, who assigned rights to the Government through the Atomic Energy Commission.

In the atomic power plant devised by Dr. Daniels, all machinery for producing electricity is completely shielded from the particles and radiations emitted by an operating nuclear reactor.

## Storing Cold Liquids

By using good conductors of heat between the upper and lower portions of containers, such very cold liquids as liquid helium can be stored more effectively, Dr. Herrick L. Johnston of Columbus, Ohio, has found.

For his method and apparatus to store materials at temperatures near absolute zero, some 459 degrees below zero Fahrenheit, Dr. Johnston was awarded patent 3,069,042, rights to which were assigned to The Herrick L. Johnston, Inc., firm, also of Columbus.

## Controlling Fusion Reactions

A device to aid in starting and controlling the hydrogen bomb reactions to produce peaceful power was awarded patent 3,069,344. Drs. Richard F. Post of Walnut Creek, Calif., and Frederic H. Coensgen of Pleasanton, Calif., assigned rights to the Government through the Atomic Energy Commission.

Fusion is the joining together of two lightweight atoms to make a heavier one, causing the release of tremendous amounts

of energy. It is the main way in which stars are stoked. Key to achieving such reactions on earth is to confine a plasma for sufficient time at a very high temperature. Using magnetic fields is the only known means of containment.

Drs. Post and Coensgen have devised an apparatus for materially increasing the energy and density of a plasma to produce nuclear reactions.

## Other Significant Patents:

A hybrid method of rocket propulsion for which Homer M. Fox of Bartlesville, Okla., won patent 3,068,641, rights to which he assigned to the Government through the Secretary of the Air Force. The hybrid combines liquid and solid fuels to give a rocket with improved performance.

An antenna system for an ordnance missile in which the missile itself forms part of the antenna. Dr. Robert D. Huntoon, deputy director of the National Bureau of Standards, assigned rights to patent 3,069,113 to the Government through the Secretary of the Navy.

A home billiard table having an improved ball track into which the billiard balls drop after falling into the pockets that can be collapsed for storage or shipment. Rights to patent 3,069,163 were assigned to Brunswick Corporation, Muskegon, Mich., by George E. Schaefer, also of Muskegon.

A method of uncapping honeycombs so that the honey can be extracted and the drained comb recovered in usable form for which Charles D. Owens of Tucson, Ariz., received patent 3,068,496, rights being assigned to the Government through the Secretary of Agriculture.

A way of recognizing complex patterns or lines in photographs or other pictorial representations particularly adapted to the study of subatomic particles. Paul V. C. Hough of Ann Arbor, Mich., assigned rights to patent 3,069,654 to the Government through the Atomic Energy Commission.

• Science News Letter, 83:14 January 5, 1963

## TECHNOLOGY

### Self-Adjusting Automatic Level for Surveyors

➤ **SURVEYORS** will be aided by the use of two new instruments.

One is an automatic level that immediately adjusts itself to become a completely level platform when placed on any surface. The other is an optical mean reading level that automatically compensates for instrument errors. Both instruments were developed by the W. F. Stanley & Co., Ltd., London.

• Science News Letter, 83:14 January 5, 1963