

# • New Machines and Gadgets •

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⚙️ **BUILDING BLOCKS** for the youngster, recently patented, resemble the ordinary toy blocks widely used but each is hollow and within them are magnets so arranged that they hold two blocks together or drive them apart. Permanent bar magnets are used to provide attraction or repulsion.

Science News Letter, November 24, 1951

⚙️ **FLUORESCENT SIGN** lamp has its sign message contained within the glass tube which is filled with an invisible gas and in which the electrical discharge takes place. The letters fluoresce when excited by the electrical energy. Any number of colors can be combined in one design.

Science News Letter, November 24, 1951

⚙️ **APRONS FOR** afternoon entertaining, as well as others for kitchen wear, are made of vinylite plastic material and come in a variety of patterns and colors. In styling, they range from permanently-pleated half aprons to invisibly-boned bib aprons, and all are resistant to moisture, fading and flame.

Science News Letter, November 24, 1951

⚙️ **INK REMOVER**, a recently patented device to take ink out of a fountain pen before refilling, has a horizontal arm on the top of a shaft which can be rotated at high speed. Ink in the pen is driven out by centrifugal force when the pen, pointed outward, is rapidly rotated on the arm.

Science News Letter, November 24, 1951

## Do You Know?

In making a ton of coal into coke, about eight gallons of tar are produced.

Dry rot in lumber is not really dry because some moisture is required for the growth of the fungus that causes rot.

During the 1950 hunting season in the United States, a total of 852 persons were accidentally shot, 173 of whom were killed.

*Porous asphalt* is under trial in one American city for surfacing street pedestrian areas with the idea that it will permit enough water to get into the soil to meet the needs of trees.

Brazil is a major source of industrial diamonds.

The home of the quince, once a popular fruit in America, is the Near East.



⚙️ **SUPER-FAST DRILL**, shown in the photograph, for boring holes in plastics has a straight, round shaft of smaller size than the spiral-grooved shaft found in conventional drills, thus reducing heat from friction. Two tiny notches in the drill tip

### BIOPHYSICS

## Eye Cells Color Sensitive

► BY LISTENING to the electrical signals picked up from individual cells of the eye's retina of cats and other animals, a scientist found that the visual cells are sensitive in a different way to different colors. Each one sends to the optic nerve and the brain a report of a relatively narrow band of the color spectrum.

This discovery was made by Prof. Ragnar Granit, director of the Nobel Institute for Neurophysiology, Stockholm, Sweden. He reported it to an audience of scientists at the National Academy of Sciences in Washington.

The nerve cells studied, known to neurologists as the third neuron ganglion cells, respond to both light and dark or to increase and decrease of illumination. The electric impulses resulting can be translated into light which writes its own record on photographic film, or it may be changed into sound and listened to over a loud-speaker. Some neurons are more sensitive to light than to its absence and give off a greater proportion of "on" than "off" responses. The proportion of on's to off's over the whole receptor field varies with increase of intensity of light as well as with change of wavelength of the stimulating light wavelength.

split chips into smaller pieces which allows a less impeded chip flow.

Science News Letter, November 24, 1951

⚙️ **SIX-COLOR PENCIL** has a simple rotary control to select, feed, expel and retract each of the six colors. The individual color indicator for each lead is visible and there is also an indicator to reveal the amount of lead of each color remaining.

Science News Letter, November 24, 1951

⚙️ **GIANT DRILL**, four feet in diameter and 200 feet long, is used to bore a horizontal hole in flat-lying coal seams and bring the coal out in a continuous stream. Six of these engine-driven augers operated in parallel can dig out up to 700 tons of coal an hour.

Science News Letter, November 24, 1951

⚙️ **HEATING TAPE**, to wrap around laboratory glassware of standard or odd shapes and deliver heat to the contents, is made of resistance wire covered with a double insulating sheath of braided glass fiber yarn. It comes with lead wires for direct connection to 110-volt current.

Science News Letter, November 24, 1951

The various nerve cells scattered through the retina are each sensitive to all or most of the rainbow colors, Prof. Granit found. But some are more sensitive to one color than to others.

By fatiguing the eye with light of a single color, say red, and then measuring the sensitivity of the various nerve cells, Prof. Granit was able to sort out those which were red-tired and those whose sensitivity was not affected so much.

Prof. Granit's work on the cat's eye was supplemented by study of the color sensitivity of other animals, including rats, guinea pigs, snakes, frogs and tortoises. These animals are more sensitive to some colors than to others. In general, the color sensitivities seem to cluster around three bands in the red, green and blue regions of the spectrum. There are also cells which do not show specific color sensitivity but record from the whole visible spectrum as if their activity represented all the specific color sensitivities combined.

The presence in the eye of at least three photochemical substances would be necessary to account for his results, Prof. Granit believes.

Science News Letter, November 24, 1951