

More nails in smoking's coffin

The list of offenses pinned to cigarette smoking continues to grow. In the May 24/31 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, tobacco is linked to heart attacks in women under 50 and to delayed conception. In this issue of the journal, devoted primarily to the hazards of smoking, about the only good news for smokers is that stopping has an immediate, positive effect on blood flow to the brain.

Boston University researchers compared 555 women under 50 hospitalized with heart attacks with 1,864 women hospitalized for other reasons, and found that heart attack risk was related to the number of cigarettes smoked. Women who smoked one to 24 cigarettes a day were at 2.9 times the risk of nonsmokers, while women who smoked 25 or more were at 10 times the risk. Recent use of oral contra-

ceptives "substantially augmented the increased risk for smokers," they report.

In Houston, scientists at Baylor College of Medicine and the University of Houston studied 268 smokers, former smokers and lifelong nonsmokers, and showed that nonsmokers had the highest level of blood flow to the brain, followed by former smokers and then current smokers. In a close look at 11 people who were able to quit, they found that blood flow increased relative to the duration of abstinence. The results, they report, suggest that people who have smoked for three to four decades "can benefit substantially by abstaining from cigarette smoking and that significant improvement in cerebral circulation occurs within a relatively short period."

Another report in the journal notes that, though the overall proportion of smokers in the United States has decreased, the number of young women who smoke has increased alarmingly. And they may feel the effects sooner than middle or old age — a report from the National Institute of

Environmental Health Sciences in Research Triangle Park, N.C., indicates that these women are more likely to have problems conceiving a child. In a study of 678 pregnant women, they found that 38 percent of the nonsmokers had conceived in their first menstrual cycle without contraceptives, compared with 28 percent of smokers.

The Tobacco Institute, an industry-supported lobbying group based in Washington, D.C., had not formulated a reply by press time.

But to most researchers, the evidence is in, and has been for some time. William Foege, former head of the Centers for Disease Control in Atlanta, has called cigarette smoking "the smallpox of the 1980s." Advises Cedric Garland of the University of California at San Diego, who recently completed a study on passive smoking (SN: 5/18/85, p. 312), "Stop smoking. It's undoubtedly one of the most beneficial things you can do for your health."

—J. Silberman

A patent pursuit: Joe Newman's 'energy machine'

Normally, the floor of the Capital Centre in Largo, Md., rings with the clash of hockey sticks or the dribble of basketballs, but last week it played a small role in a different kind of battle—a long-running dispute between the Patent and Trademark Office (PTO) and inventor Joseph W. Newman. Newman claims that his "energy machine" generates more energy than it takes in from an "external" source such as a battery. The Patent and Trademark Office says his invention doesn't work and shouldn't get a patent.

Newman applied for a patent on his invention and the theory backing it in early 1979. Three years later, the Patent Office rejected his application, but Newman was unhappy with the way PTO had handled his case. Last year, he took the Patent Office to court.

At the first court hearing on Newman's suit, Judge Thomas P. Jackson of the U.S. District Court in Washington, D.C., called for the appointment of a "Special Master" to evaluate Newman's machine. The PTO-nominated individual chosen to fill this role was William E. Schuyler Jr., a former PTO commissioner and an electrical engineer.

In his report, released last September, Schuyler states, "Evidence before the Patent and Trademark Office and this court is overwhelming that Newman has built and tested a prototype of his invention in which the output energy exceeds the external input energy; there is no contradictory factual evidence."

The judge, however, refused to accept the findings of the Special Master and in March ordered Newman to turn his machine over to the National Bureau of Standards (NBS) for testing. He left the final judgment on whether a patent should



Newman explaining his machine.

be granted with PTO. If Newman fails to comply with this order, the judge could rule that the inventor has abandoned his patent application.

Newman, objecting to the judge's "arbitrary and unlawful" order, fearing that NBS would not deal with him objectively and fairly, and questioning the competence of the Patent Office, instead decided to show off his machine in a public demonstration. For the occasion, he shipped a new, 9,000-pound prototype of the machine from his home in Lucedale, Miss., to the floor of the Capital Centre.

There the machine sat: a massive permanent magnet whirling within a giant copper coil large enough to fill the back of a station wagon, ostensibly receiving en-

ergy from an array of batteries providing less than 2 milliamperes of current yet producing enough energy to light up a flickering set of fluorescent and incandescent lights. Says Newman, "This invention speaks for itself."

Newman says he knew the machine would work before he built it. "This is not an accidental discovery," he insists. It simply demonstrates one consequence of his own unconventional theory of electromagnetism.

In the mechanical model he uses to describe electromagnetism, Newman pictures magnetic lines of force as streams of spinning, "gyroscopic" particles that travel at the speed of light. His machine operates by taking advantage of these particles' kinetic energy—like putting a paddle wheel in a river, he says. To replace any energy lost or extracted, a tiny bit of atomic mass is converted into more spinning particles. Because some mass is converted into energy when his machine is running, Newman insists that his invention is not a perpetual-motion machine. If this mass loss is included, total energy is conserved.

This is not the kind of theory that most scientists can take seriously. Many dismiss Newman's ideas as nonsense and his machine as just another impossible perpetual-motion machine. A few, conceding that his ideas are very imaginative, complain that Newman, essentially self-taught, fails to present his theory in the "language of physics," that is, in a mathematical form with accepted scientific notation.

Nevertheless, Newman has been able to persuade a small group of scientists and engineers that his invention is worth investigating. Several have seen and tested