

Current Patents

PETROLEUM ENGINEERING

Rich Oil Sands Tapped

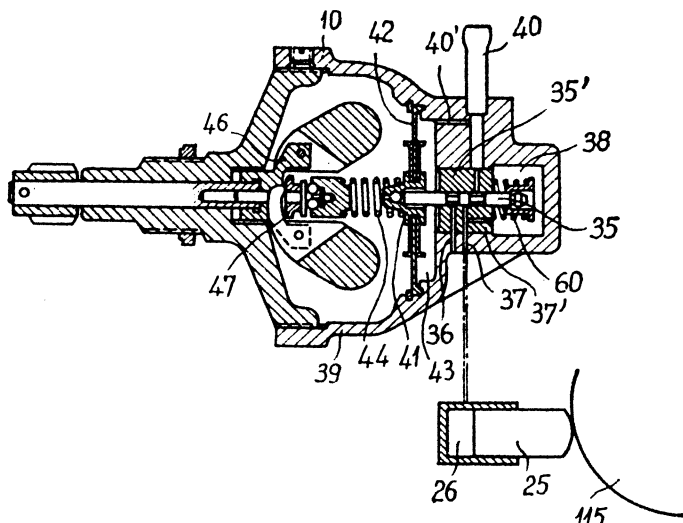
Oil men estimate there are 600 billion barrels of petroleum—more than the rest of the world's proven reserves combined—locked in the oil-drenched sands along the Athabasca River in Alberta, Canada.

The problem is getting the oil free from the solids that make up the tar sands. A pilot project now going on to remove the sands employs a separation method patented last week by John A. Bichard of the Imperial Oil Co.

The new method, which has the advantage of operating at temperatures below 200 degrees F., is a three-stage process. The oil sand, which is about 85 percent solid material, 5 percent water, and 10 percent oil, is mixed with water in the first stage at about 180 degrees F. This results in a froth from which much of the solid material drops. What is left is contained in an emulsion of water and oil.

In the second step, the froth is treated chemically to remove whatever clay, sand and heavy minerals didn't drop out. The third stage breaks the water-oil emulsion and separates the two.

Bichard assigned the patent to Esso Research and Engineering Co. **PATENT 3,330,757.**



system which makes the servo easier to operate. It also makes the steering wheel harder to turn the faster the car is going. This corrects against turning the wheel so far the car flips or goes into a ditch. **PATENT 3,330,372.**

MATERIALS RESEARCH

Ceramic Foam Makes Good Insulator

A method of making a high-temperature insulating foam from ceramics was patented last week by Dr. Jules Magder, who assigned the patent to Horizons, Inc., a research company in Cleveland.

The cheap, lightweight material could be used to replace brick in refractory kilns, or in steel ingot forming machinery, said a Horizons spokesman. It could also replace the cement or concrete used to fireproof safes, although "that might make the safes easier to steal," said the spokesman.

Foamed plastic, such as polyurethane, is used widely as an insulator for camping ice chests and the like, but the plastic can't take heat. The foamed ceramic, on the other hand, can be heated up to 2,500 degrees F.

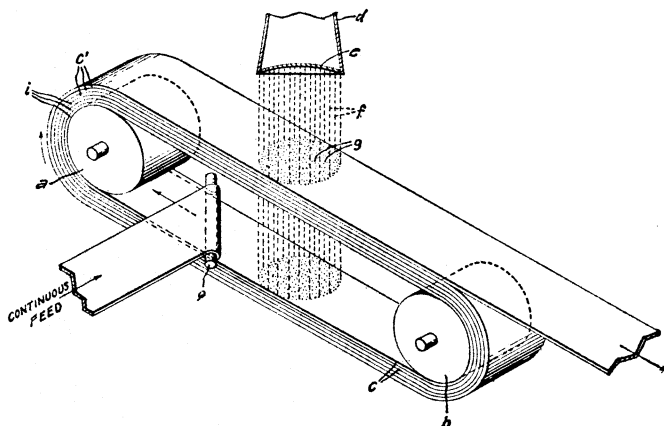
The advantage of the patented method is that the foam can be set chemically without being heated. This means that large slabs of the foam can be poured on-site in molds. **PATENT 3,330,675.**

PLASTICS

Irradiated Polymers are Stronger

Irradiating plastics such as polyethylene with high-energy electrons makes them able to stand higher temperatures, makes them insoluble in some solvents in which the untreated plastic dissolves, and reduces their cracking in oil and other chemicals.

One problem has been cost, a problem which can be solved since the electrons, having passed through the



plastic, still have a good deal of energy, wasted up to now.

A newly-patented invention by Elliott J. Lawton should make the process economically feasible. His process consists of passing plastic film back and forth over rollers. This presents the film to the source many times. **PATENT 3,330,748.**

AUTOMOBILE ENGINEERING

Servo-Steering Adjusts for Speed

The French auto firm Andre Citroen, noted for its advanced engineering concepts, has been assigned a patent for a servo-system for steering an automobile.

Servo systems use electric signals to control motion remotely. Turning a dial or wheel at one point results in something else—in this case the front wheels—turning, without direct physical contact.

The new patent was issued to Antoine Brueder for a