

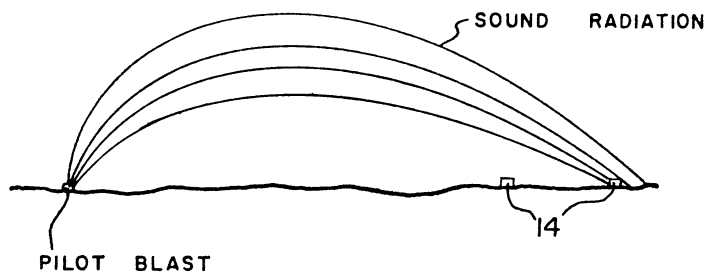
Current Patents

NOISE CONTROL

Quieting Explosions

Ringed the National Aeronautics and Space Administration's Mississippi test facility is a five-mile barrier of dense forest, intended to protect nearby areas from damage caused by the noise of rocket engine firings. Peculiar combinations of winds and temperatures can reflect the sound for great distances, often focusing it to break windows or do other structural damage. Five miles is not always enough margin, and test firings are sometimes cancelled on the basis of weather reports.

The same problem exists for surface pit mining, in which hundreds of thousands of pounds of explosives



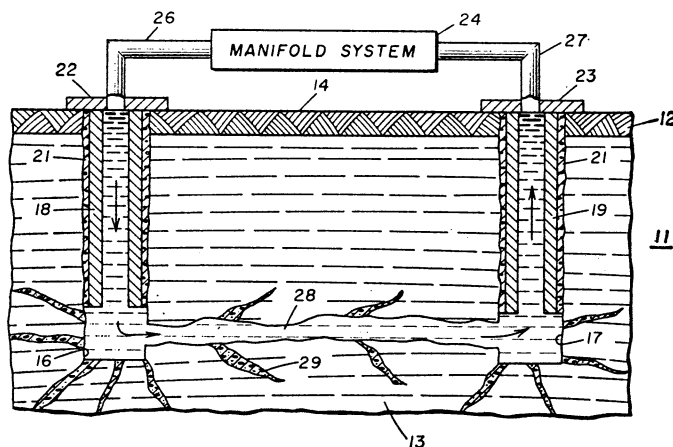
are often detonated at once; but the miners seem to have found a solution. Recently one system was developed which used an elaborate array of balloons, meteorological instruments, telemetry equipment and mathematical formulas. Now a simple technique has been patented that could make such complicated methods obsolete.

As little as 20 pounds of TNT can serve as a "pilot blast" to show whether there is likely to be a sound-focusing effect during the main blast, says mining engineer Wallace G. Fetzer, who assigned rights to his patent to Oglebay Norton Co. of Cleveland. A few people equipped with sound level meters can radio back reports from remote points without the need for any weather data, Fetzer says, and the main blast can be set off immediately if no focusing appears. PATENT 3,331,311

PETROLEUM

Down With Cement; Up With Oil

The most secret of secrets around oil companies these days are those dealing with ways to get at the oil-bearing rock called oil shale. Oil shale promises to become one of the most important sources of petroleum products in the future, as soon as an economical way can be found to get the oil out of the ground.



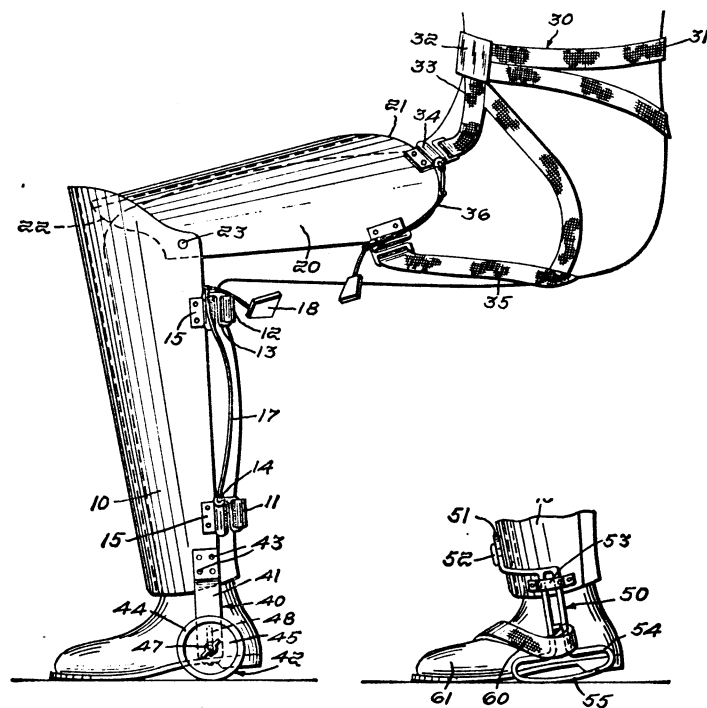
One such method has just been patented, almost three years after the application, by Marion L. Slusser, an engineer with Mobil Oil Corp.'s field research laboratories in Dallas. With oil-company-sized sums of money at stake, Slusser and the company are saying little, but in essence the patent is for a way of forcing the shale oil up a well after first surrounding it with a virtual wall of cement or some other sealant.

First, two holes are drilled in the ground; no one will specify the distance between them, but test holes were spaced 15 feet apart. The sealant is pumped down the holes until it has filled up all the underground cracks and fissures through which the shale oil might escape. Before the sealant has a chance to harden, high-pressure air or water is then forced down one of the holes, forcing the sealant between the two holes to emerge from the second one, and leaving what amounts to a tunnel connecting the holes. Whatever method is then used to re-tort the oil, or remove it from the shale, can then be carried out without losing the oil into surrounding fissures. PATENT 3,331,438

WEAPONRY

Armor on Wheels

Helicopters and other types of aircraft exposed to small arms fire from the ground cannot usually carry adequate armor because of its weight. Such armor must weigh about 20 pounds per square foot, says Mildred K. Holly of Maynard, Mass., who has instead designed leg armor to be worn by the flight crews themselves.



Even the man-sized units, however, are so heavy that they have been designed with wheels or skids at the bottom to support part of their weight. In addition, an elaborate system of straps distributes the weight of the armor around the wearer's body. The armor might be made of steel or titanium alloy and should withstand velocities of at least 2,800 feet per second for .30 caliber "ball and antipersonnel projectiles," says the inventor, who assigned rights to the Army. PATENT 3,331,083