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### INVENTION

# Current U. S. Patents

The bowl-shaped landing pads act as feet of the vehicle that will land two U.S. astronauts on the moon received a patent—By William McCann

► THE FOUR "FEET" of the vehicle scheduled to soft-land two U.S. astronauts on the moon by 1970 received a patent from the U.S. Patent Office.

The "feet" are designed for Project Apollo's Lunar Excursion Module (LEM), which will carry the two astronauts down to the moon's surface from an orbiting spaceship.

Josef F. Blumrich of Marshall Space Flight Center, Huntsville, Ala., earned patent 3,175,789 for the invention, and patent rights were assigned to the Government through the National Aeronautics and Space Administration.

The feet are bowl-shaped landing pads, which are made of a thin sheet of material such as aluminum. They are designed to support the space vehicle regardless of the type of surface it encounters, reports Mr. Blumrich. Each foot is designed to collapse in a radial direction to absorb the shock on landing.

### Pencil-Matches

A book of matches that light or write received a patent. The matches have a graphite coating on the tip so that when

the user presses lightly they write and when he strikes harder they light.

The invention should find great use at bridge parties, golf matches, baseball games, business conferences, telephone booths and informal social gatherings, where small pencils are often needed but cannot be found, reported Nelson J. Waterbury, New York, N.Y. Since the only thing most people can find when they do need a pencil in a hurry is a book of matches, the pencil-matches will certainly come in very handy, he said.

The matches, which also may be coated with graphite at the bottom for writing at either end, earned patent 3,175,685.

### Railroad Tie Tester

A tie testing device that rides the rails on a truck-like vehicle may soon help railroads save thousands of dollars a year in maintenance.

The tie tester, which hangs from the rear of the vehicle, shoots a cone of gamma rays into the wooden ties. The energy from the radiation reflected back to the instrument is then translated into electrical impulses that can be read on a dial. The technician using the instrument can tell exactly what shape the ties are in from the reading, reported inventor James J. Wright, Cleveland, Ohio. The device indicates structural soundness of a wide variety of woods by measuring the density of the woods.

It is estimated that American railroads spend over \$100 million a year for the upkeep and replacement of more than a billion ties, Mr. Wright said. If tie replacement can be carried out only when necessary, great savings can obviously result.

The tie tester, which is now under license to Densitronics Inc., Columbus, Ohio, can also be used for the ground line testing utility poles.

The device earned patent 3,176,134 and patent rights were assigned to the Cleveland Technical Center, Inc., Cleveland.

### Pet Dryer

A household pet can now be dried in a dryer.

A newly patented drying device has heated walls to provide a gentle flow of heated air over the animal. The device has two chambers, one for the heating equipment and the other for the animal. It can also act like a pen, reported Robert E. Pollard, Apply Valley, Calif., in patent 3,175,534.

For a list of registered patent attorneys and agents and other Patent Office information, write the Commissioner of Patents, Washington, D.C. 20231, or call 202-697-4058 for specific information.

• Science News Letter, 87:254 April 17, 1965

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