

INVENTION

Call for Inventors

The government is in the market for inventions, and anyone is eligible to answer the call. Over 300 problems needing solution listed by the National Inventors Council.

By HOWARD SIMONS

WANTED: INVENTORS. Excellent opportunity with well-known organization. Age, 9-90. No experience needed. No education necessary. Either sex acceptable. Choose your own hours. Work at home.

This is what the National Inventors Council of the U. S. Department of Commerce in Washington is advertising for. The Government is in the market for inventive genius. It admits it needs help and has thrown the challenge out to everyone in the United States. Perhaps you can help.

Ideas of free lance inventors are needed right away, John C. Green, director of the Office of Technical Services, says. It is needed to help solve "blue sky" problems which baffle the military.

"We describe a problem as 'blue-sky' when we suspect it will take imaginative, sky-is-the-limit thinking to solve it," Mr. Green explains.

"The man who cracks one of these puzzles won't be bound by traditional barriers between sciences. He may have to be the modern equivalent of an Edison or Marconi—or even a Houdini."

Wide Range of Problems

At present, there are more than 300 problems that the National Inventors Council has listed as needing to be solved. They range widely in scope. Wanted is a practical means of destroying the tell-tale tracks of men or vehicles across snow fields, so the original contour of the snow field is restored to avoid air detection. Chemicals are needed for melting snow and ice without corroding metals.

Appealing to the general public for inventions that might help the nation is not new. The National Inventors Council has been doing it since its creation in 1940. It is the official clearinghouse for all inventions of potential value to the Government. In the last 16 years, the scientists who make up the Council have reviewed more than 250,000 ideas submitted by both amateur and professional inventors. Many of these have become standard equipment in the Army, Navy and Air Force, including the tropical dry cell battery and the signal mirror.

But perhaps the best illustrative success story of amateur invention passed on to the National Inventors Council and bringing fame and fortune to its inventor is that of the now familiar land mine detector.

Early in World War II a radio repairman in Miami, Fla., by the name of Charles Hedden was asked by a friend if he could build a device that would locate metal underground. The friend was about to embark on a treasure-hunting trip in the Caribbean and thought Mr. Hedden might be able to turn out a gold finder.

The end result was the grandfather of all magnetic mine detectors. And, although it did not turn up much treasure, it ended up as a much greater treasure by saving countless thousands of American lives during the Second World War.

In addition, Mr. Hedden, the amateur inventor, received \$50,000 for his invention from the U. S. Army who took a license out under his patent.

But the story of mine detectors has not ended there. One of the "blue-sky" problems now facing the National Inventors Council is to find a method for locating explosives buried at shallow depths below the earth's surface.

The U. S. Army Engineers are looking for new and better methods of detecting enemy mines and booby traps.

The problem of detecting metallic mines is largely solved, they say, with a tip of the hat to Mr. Hedden. Modified versions and outgrowths of this early mine detector are now standard equipment for picking up metallic mines. The device with its long-handle and pancake-like detector is a familiar sight to most of us. A similar device has also been developed for attachment to jeeps.

Enemy Countermeasures

But with most military developments, the engineers say, the enemy is quick to develop countermeasures. In this case, non-metallic mines, such as those made of plastic, glass or wood. And this is the rub. To this day the engineers have no completely adequate method for coping with this type of mine.

As one Army technician put it, "we can now find a needle in a haystack, but how are we going to find a toothpick in the same stack?"

If any amateur or professional inventors want to take a crack at the mine detector problem, they may be interested in some of the current thinking on the matter. The Army now has a device using ultra-high frequencies that it bills as the best to date. It will signify the presence of a hole in the ground. But, it cannot tell the operator whether something is in the hole or not.

The biggest objection to the hole finder is that it records anything, including an empty hole, a block of wood, a stone or a buried tin can.

The Army thinks that a workable method must be developed that will distinguish between mine-free soils and soils containing mines, regardless of the physical composition of the mine. As a working basis, the engineers explain that mines and their component parts have various properties to consider. These include electrical properties, such as conductivity, magnetism and resistivity; and thermal, optical and vapor producing physical properties.

The Army engineer's dream is to have someone walk into the NIC office some day with a foolproof device sufficiently selective and sensitive to detect only explosive compounds buried in the ground without regard to the mine's structure.

Particular Properties Clue

The ideal device may be a long way off, the engineers admit, but they suggest that all explosives may have certain distinguishing properties, for example, the fact that explosives are extremely unstable compounds as compared with the soils about them. Also, they have vapor producing properties that may suggest possible approaches for ingenious inventors. Two other ideas the inventors might try, the engineers say, is the use of sound waves to bounce back a



MINE DETECTOR—This is "Polly Smith," a metallic mine detector used in Korea. Its grandfather, and the first of all mine detectors, was invented by an amateur. Now the Government needs a mine detector that can locate non-metallic mines.

signal or a chemical spray that would reveal the presence of mines or explosives by changing its color.

The Army does not want new versions of probing methods, however.

The Army does want new ideas and suggestions for destroying mine fields once they are discovered.

Any ideas? Send them along to the National Inventors Council, Department of Commerce, Washington 25, D. C. The Council, which acts in an advisory capacity to the Department of Defense and other Government agencies, will evaluate, guide and analyze your invention.

If you want to submit an invention, here are some rules of the road:

1. No special forms are required, nor are the services of an attorney.

2. All material should be typewritten in English.

3. Funds for transportation for the inventor are not provided.

4. Models of the invention should not be forwarded unless requested.

5. Material submitted cannot be returned, duplicates should be made and kept by the inventor.

6. All submissions are held in secrecy and confidence, but the Council cannot give the protection afforded by a granted patent.

7. The Council cannot assist manufacturers in selling their products to the Government.

8. Acceptance of a disclosure by the Council does not legally obligate the U. S. Government, nor does it obligate the inventor. The Council is not directly concerned with compensation or rewards to inventors, nor in the development of a promising idea into a useful device. Those agencies which might use a promising suggestion, such as the Army, Navy and Air Force, are authorized to make arrangements with the inventor for the use of his invention. This direct method has been found to be mutually satisfactory.

So, if you have a non-magnetic compass, a method for converting light into electrical energy, a destructive ray or wave, or an explosive mine detector, send it along.

Science News Letter, April 6, 1957

MICROBIOLOGY

Ultrasonics Tear Cell Walls Away From Germs

► HIGH frequency sound waves are being used to break apart disease-causing microbes by Dr. Giulio Bosco of the University of Chicago's microbiology department, the University reported in Chicago.

The ultrasonic waves, vibrating at a frequency of 400,000 cycles per second and much too high to be heard by the human ear, are able to tear away the thin, tough wall that encases each of the one-celled organisms. The enclosed cytoplasm of the cell is then freed. It has been killed but left chemically unchanged by the process and can be used in the manufacture of vaccines.

The high frequency vibrations are produced by a 2,000-volt, 800-watt quartz crystal generator. The vibrations' microbe-breaking effect is similar to the breaking of a crystal glass by a very high human voice.

This method offers a quick and convenient way to isolate the cell walls from the main cell body. Older methods involve treating the microbes with alcohols and acids that often cause a change in the chemical composition of the cell structures.

Dr. Bosco first used his ultrasonic technique in Italy where he produced experimental cholera and typhoid vaccines by injecting the dead, but chemically unaltered, microbes into animals. These microbes stimulated the production of antibodies. Blood serum containing the antibodies is then drawn off and refined into vaccines, he said.

Science News Letter, April 6, 1957

RADIO

Saturday, April 13, 1957, 1:45-2:00 p.m., EST.
"Adventures in Science, with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Margaret Lyman, educational director, National Council on Infant and Child Care, New York, will discuss "Doctors, Mothers and Children."



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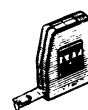
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