

INVENTION

Robot "Sniffer"

New device secures atmosphere samples in remote corners of airplanes where human inspectors can't reach and detect gasoline vapor fire hazards.

► **ABATEMENT** of fire danger from gasoline vapor in remote corners and glory-holes of airplanes is the objective of an invention by F. J. Schirm of Hoboken, N. J., on which he has just received U. S. patent 2,302,061 from the U. S. Patent Office. The device might be characterized as a robot sniffer, getting its multiple nose into parts of a plane no human inspector can reach even on the ground, much less while in flight.

Basically, it consists of a suction pump from which slender tubes lead to all parts of the plane where dangerous vapors are likely to accumulate. The in-drawn atmosphere samples are passed successively through a combustion chamber. If any of them are getting near the ignition point, the heat of their combustion changes the conductivity of a wire passing through the chamber, and the resulting change in current operates a relay to throw a switch, turning on a warning lamp.

While the device is intended primarily for use in airplanes, obviously adaptations of it can be used in other places, such as factories, refineries, ships' holds, etc. Rights in the patent are assigned to the Davis Emergency Equipment Company of New York.

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Plastic Ammunition Belt

► **ANOTHER INVENTION** of military importance, among the 745 on which patents were issued recently, is a machine-gun ammunition belt composed of ring-shaped plastic links. Linked machine-gun belts have come into wide use of recent years, but all of them have been made of metal, which of course creates a shortage somewhere else, besides adding to the weight carried in such critical places as fighter planes. Substitution of plastic links releases this extra metal for uses where only metal will serve.

The inventor of the plastic link, L. L. Berry of Erie, Pa., has received patent 2,302,595, which he has assigned to the Erie Resistor Corporation.

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Visor for Army Helmets

► **STILL ANOTHER** warlike invention is a visor for modern helmets intended to give protection for the wearer's eyes, and making present-day warriors look more than ever like ancient Roman gladiators, at least so far as their heads are concerned. This device, on which patent 2,302,231 has been granted, was developed by M. J. O. Lobelle of Langley, England. The visor, states the inventor, may consist either of a light plate of metal with numerous perforations or of a veil-like curtain of chain mail mounted on a hinged frame. Mr. Lobelle's invention, which pertains particularly to the manner of hinging, is assigned to the Fairey Aviation Company, Ltd.

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PHYSICS

Scientists Who Explore Submicroscopic World Meet

► **FIRST MEETING** in history of the new group of scientists who explore the submicroscopic world with the electron microscope was held at the National Chemical Exposition in Chicago.

Representatives were present from about 40 laboratories having the ma-

chines which magnify from 20 to 50 times as powerfully as an ordinary light microscope.

Discussion indicated that the revolutionary microscopes are being used for important war work. New techniques make it possible to examine war metals and other opaque objects. New facts have been discovered about blood cells. Other reports covered examination of rubber, cellulose, powders, oils, etc.

It is expected that this first meeting will lead to a new permanent organization of the group.

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ENGINEERING

Welded Ships Are Superior In Withstanding War Blows

See Front Cover

► **BUCKLED** plates and framing on war-scarred ships in drydocks for repairs now often show no leakage and are sent on their way. Welding is the reason. On old-type riveted ships, many of these minor casualties would be laid up in drydock for repairs, David Arnott of New York City asserted at the meeting of the Society of Naval Architects and Marine Engineers.

The rat-a-tat-tat of the riveting hammer is therefore disappearing from the country's shipyards. Rapid extension of the welding method is being made to the larger ships and is now in universal practice on smaller type vessels and Liberty ships.

Cover of this week's **SCIENCE NEWS LETTER** is an official Maritime Commission photo, showing welders working on a turbine gear blank for a victory ship.

War has speeded adoption of the method, but with the coming of peace Mr. Arnott believes that the all-welded ship will hold her own except perhaps for the very largest types.

Cracks have occasionally developed in welded ships. But tests show that such difficulties are due to unsuitable materials, use of the wrong welding sequence, or working in cold weather, especially when there has been a sudden drop of temperature.

Scarcity of experienced welders has been a problem, Mr. Arnott reports. Government and private agencies have both established new schools and sponsored expansion of existing facilities. Use of automatic welding machines has also played a part in relieving the shortage of welders, as well as saving time on jobs for which this method is fitted.

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