

**AN ELECTRIC SHELL FOR FIGHTING U-BOATS.**

It has remained for Mr. Lee A. Collins, of Louisville, Kentucky, to invent a new electric explosive shell for combating submarines.

This shell is one which explodes after being fired from a gun or other projectors or when dropt from airplanes and the like into the water, for warfare against submarines, torpedoes and the like. The inventor provides in this connection two electric conductors exposed to the outer surface of the shell with insulating means separating the electric conductors. This insulating means is soluble or made conductive when in water. Another object of the invention consists in providing a normally open circuit adapted to be closed upon contact of the two exposed terminals with water or other conductive means, thus causing an explosion. By attaching time fuses to the electric detonator it is possible to cause an explosion to take place at a predetermined time after the shell comes in contact with conductive means, instead of the instant that the shell strikes conductive means.

The invention also covers means for coating outer exposed conductors with a non-conductor covering, such as sealing-wax, paraffin or other suitable means which can readily be removed when shell is to be fired, thus preventing accidental contact, which would prematurely explode the shell.

These exposed conductors must have all insulation covering removed at outer exposed surface when ready for use. Heavily insulated covered conductors lead from the secondary of spark coil and thru wall separating the chambers to the respective terminals of a detonator, which may be of any suitable type. One form being a bulb containing fulminate of mercury and a platinum wire within, connecting the electric terminals leading from the spark coil. The detonator is in contact with or rests against the explosive, which may be a charge of guncoiton or other high explosive, placed within the forward chamber. Obviously, therefore, as soon as the platinum wire within the detonator is energized from the spark coil, the explosive explodes, thus causing destruction to the shell and all objects within reasonable radius.

In operation, when a shell is fired from a gun or dropt from an airplane or otherwise discharged into the water at an enemy vessel, submarine or torpedo, one conductor and the outer portion of the shell, which in this form is a conductor, will come into contact or be submerged into the water when it strikes the point of aim and closes the circuit of the battery thru

energization of the detonator the explosive is exploded and, of course, will destroy the shell and any objects within its radius such as submarines, torpedoes or other vessels.

In lieu of a spark coil a more powerful battery may be used and the ignition wires would be connected directly to the terminals of the detonator. Under some circumstances, it may be more desirable to form the insulating medium of dry salt or like mineral, which will readily become a conductor of electricity upon coming into contact with water and thus close the battery circuit to the spark coil.

**A NEW SECRET TELEPHONE TRANSMITTER.**

In order to permit privacy in telephoning, a Chicago inventor has developed a device shown in the accompanying illustration which can be used with any telephone mouthpiece. By its use, it is said, that telephone conversations can be conducted in a very low tone and in a whisper, under many conditions. It is pointed out that the device is not permanently attached to the telephone and is therefore not a fixture.

The device is held on the mouth-piece of any telephone, and is held securely by means of the horse-shoe shaped wire held by the two springs, which snaps over the mouth-piece of the telephone.

To use the muffler most effectively, the



A Newly Marketed "Secret" Telephone Muffler. It Fits Onto Your Regular Telephone and Is Removed in a Second.

inventor states that the upper lip should be prest gently against the mouth-piece, speaking slowly and articulating distinctly with the lips—almost a whisper (not down in the throat).

If used correctly you will be plainly heard at the other end, it is claimed, and no one near you need hear your conversation, thus permitting privacy and confining business and personal affairs strictly to yourself and those with whom you talk

In Peoria, a hilly city in central Illinois, 300 automobilists operate automobiles without gasoline, that being the number of electric pleasure vehicles used in the city.

One ton of saffires will be used during the year 1918 in one factory where the jewelled bearings of electric meters are made. The jewels are purchased in the rough and are put thru finishing and drilling processes which require a degree of skill comparable only to that of an experienced watchmaker.



Something Every Housewife Wants—a Positive Indicator That the Electric Iron Is "On" or "Off." The Tell-tale Lamp Solves the Problem.

**PILOT LAMP WARNS WHEN ELECTRIC IRON IS ON.**

A new heater control just brought out is equip with pilot lights which serve as a safety check on the woman who uses an electric iron or other extension device and on the workman who operates an electric iron in a factory, clothing shop or similar commercial establishment.

They enable the operator to play safe and avoid waste of current. The pilot light acts as a silent watchman and signals danger when the heating device is left in circuit unattended.

Take the case of an electric iron, for instance, on an ordinary padded ironing board: place it in circuit and leave it with "heat on," for say fifteen minutes or more. The probabilities are that quite an impression will be made in the pad, and quite possibly on the board also; perhaps the iron will even burn its way right thru the board. And then again, if the iron is left to itself long enough with the current on, the chances are that a serious fire may result. These new Heater Control switches have been brought out particularly to minimize fire hazard of this sort.

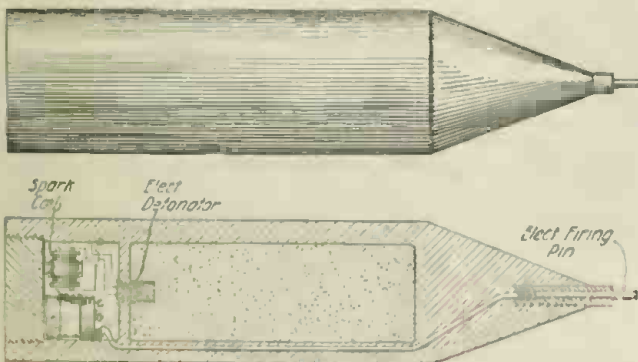
A wide variety of designs has been made to suit practically any condition desired. Each includes a pilot lamp and a 10-ampere double-pole indicating switch.

The flush types are mounted behind attractively finished face plates, and the pilot lamp signals thru a ruby bull's-eye. They are ornamental in appearance and are designed especially for use in the home.

Surface types are for use in factories. They provide for regular base lamps as pilots but candelabra base lamps may be employed by using adapters.

**USING EXHAUST STEAM.**

More attention than ever before is being paid this winter to careful use of exhaust steam in power plants. It may be applied to innumerable purposes, such as heating feed water for the steam boiler, for many washing purposes, heating buildings, pasteurizing and sterilizing, and the like. A small investment in additional boiler-room equipment, such as an exhaust-steam heater, will effect savings of several hundred dollars a year in the coal bill of even a moderate sized power plant.



Electric Shell For Fighting Submarines. When Dropt in the Water It Becomes Active Due to Insulation Being Dissolved At Point, Closing Detonator Circuit.

the primary of a spark coil. As a result, the primary of coil will induce a current into the secondary of the spark coil and energize the detonator thru wire. Upon