

## Motorcycle Wireless Telephone Outfit

OUR front cover illustration shows a practical possibility in a wireless telephone set mounted on a motorcycle for military requirements, the motorcyclist here being in radiophonic communication with a

about 4 to 5 ozs. The radio outfit itself is attached rigidly to the rear of the motorcycle, behind the saddle, and this outfit does not weigh more than about 12 pounds. For motorcycle purposes it could undoubtedly be made to weigh less by having the box of aluminum sheeting, the weight in this case being not more than four to five pounds.

There should not be any reason why the complete outfit, including putting up aerial, starting generator, testing, etc., should take more than one and one-half minutes from the time of dismounting. There may be some small details which have not been worked out as yet, but they could probably be taken care of without much trouble by the radio engineer of to-day.

### "ANTI-ZEPP" SHADES FOR ENGLISH HOMES.

The English lighting regulations which are now being enforced with considerable rigor have given rise to a demand for shades which will effectually meet the conditions without shutting off more light than is absolutely necessary, says *The Electrician*, London. In order to fill this demand an English manufacturer has put on the market a series of cardboard lamp shades with special features



In "Dear Old Lunnon" It Is Now the Caper to Use Anti-Zepp Shades on All Electric Lights. These Deflect the Light Away from the Windows in the Manner Shown. We Wonder That Liza Will Stand for Such Lime-Light Publicity in Her Own Parlor. Eh, 'Arry?

which commend them for general use. These shades, instead of being fixed to the lampholder, are held by cords which are tied to the flexible wire above the lamp at the height necessary to screen the rays from the window. Different sizes and shapes of shade are available, so that their adjustability to all conditions is complete. One form is made with a wide collar shallow towards one side and deep towards the other, so that windows may be fully protected without shutting off much light from the remainder of the room. The collars may also be obtained separately for fixing onto the shades of the other patterns. All these shades are made in various tints, such as dark green, pink, brown, etc.

### ELECTROPLATING PLUS.

By Thos. W. Benson.

Electroplating plus machine accuracy is obtained by the use of a new electroplating machine that accomplishes mechanically

all operations performed by manual means in the common *still* process of plating. The machine shown in the attached illustration removes to a great extent the human factor in plating operations, which is naturally a great improvement in itself, regardless of the other advantages of the machine as regards more uniform deposits.

The machine is far from being complicated and its mode of operation is obvious. The tanks containing the cleaning, rinsing, dipping and plating solutions are arranged in an oval some thirty feet long. The articles to be plated are past from one bath to the other by means of cam actuated rods instead of by hand. Accurate timing of the plating is obtained by varying the speed of the endless chain that carries the rods, thus giving perfectly uniform deposits.

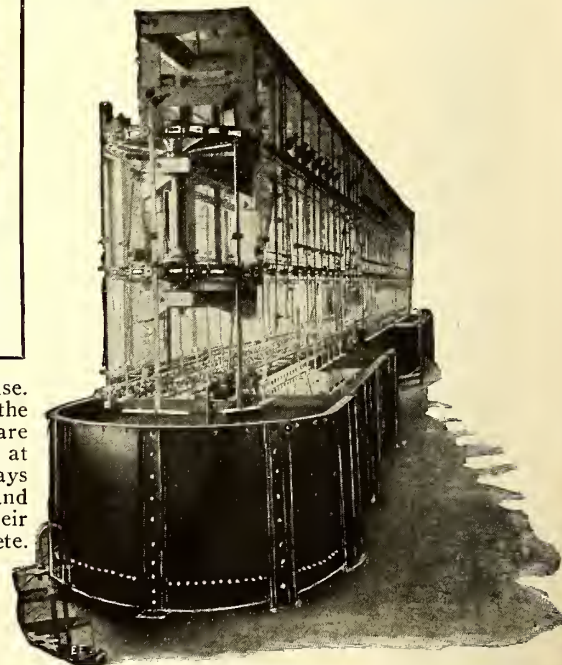
The articles to be plated are hung on racks as shown in the foreground and attached to the rods. After making one complete circuit of the tanks and returning to the starting point the plating is completed. For all ordinary work it takes about one hour for a complete circuit of the tanks; higher speeds would naturally give a lighter deposit, while lower speeds give a heavy deposit on the articles.

It requires but 1 H.P. to operate the machine, which can be easily installed in existing plating plants with a minimum expense of time and labor.

The machine may be adopted to special purposes by a modification of the cam mechanism and the number of tanks. This being made possible by the standardization of all parts.

In addition to the time saved by this machine in transferring the articles from one bath to another, it likewise allows of higher current densities being used without burning the deposit. This is due to the constant agitation of the plating solution by the moving racks.

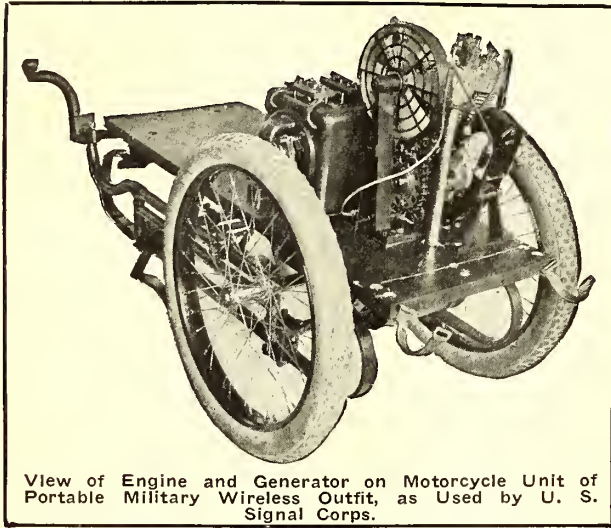
Altho intended expressly for electroplating it seems highly probable that with modifications it could be used in various other



This Monster Electro-Plating Machine Does Everything but Think. The Articles to Be Plated Are Suspended on Racks Which Move In and Out of the Different Baths Automatically.

lines, such as cleaning and lacquering small brass parts, or bleaching and dyeing yarn and similar products.

The device marks another important step forward and illustrates in a marked manner the trend of modern industry toward simplified processes and the elimination of time losses.



View of Engine and Generator on Motorcycle Unit of Portable Military Wireless Outfit, as Used by U. S. Signal Corps.

military aeroplane. While there are a number of motorcycle radio-telegraphic sets in use by the United States Signal Corps and also by foreign armies, these usually require considerable space and necessitate the using of from two to three motorcycle units to transport the complete equipment, which comprises an engine-dynamo cycle of the type here illustrated, a second cycle unit to carry the wireless receiving apparatus, etc., and a third cycle to care for the collapsible aerial mast and wires.

Having in mind the extreme compactness of the modern wireless telephone equipment of the de Forest type as is now available and which is capable of transmitting speech from fifty to one hundred miles with a very small amount of current, we have endeavored to bring out on the cover illustration the practical outcome of suitably combining such a radiophone outfit with the motorcycle engine unit, so as to require the minimum of space for the whole outfit, even to the aerial.

The illustration shows how the radio-telephone motorcyclist is enabled to quickly set up his aerial in order to communicate with headquarters or with aeroplanes equipt with radio apparatus. It will be noted that the rear wheel of the motorcycle is revolving, the frame, of course, being supported sufficiently high above the ground and the engine power being used for driving a small electric generator mounted integral with the balance of the motorcycle machinery, with the current from this generator used to energize the radiotelephone set, which might be of the vacuum tube type, for instance.

The aluminum collapsible aerial mast is only about five feet high, ordinarily, and telescopes similar to a fishing rod, it being made so as to weigh not more than two pounds. As a matter of fact, some have already been made weighing no more. The aerial itself is also made of thin aluminum wire and is the latest spiral aerial construction interlaced with silk cord, which will make the aerial collapsible also, folding together and taking up very little room when not in use. The entire weight of the aerial is not more than two pounds complete.

The ground wire connects to an aluminum tube tapt at the head for connection purposes, and this is driven in moist ground or earth, this piece not weighing more than