

LOCAL BATTERY SUBSCRIBER SET

N°2872.

A.S.B. 29.

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The Bell Telephone has developed a new style local battery subscriber set, the outside form of which differs entirely from the traditional design of the telephone sets in use up to the present and which has a very artistical appearance.

In a general way the microtelephone lays in the cradle so that both transmitter and receiver exceed the body.

We have been guided by the main idea to put a local battery set on the market, the body of which has been conceived in such a way that the microtelephone lays lengthwise in the body. Therefore, two cavities have been foreseen to take the transmitter and receiver parts of the microtelephone.

The body, made of bakelite, contains the gravityswitch-unit. All the other components are mounted on a base plate. This base plate has 4 grooved plastic feet to prevent slipping of the set on a smooth surface when moving the generator crank.

All the components used in the set are of our latest improved design and also the microtelephone is fitted with the 2040-type transmitter capsule and 2684-type receiver capsule.

The set will be supplied with the parts treated for use in countries with moderate tropical climate. All the spools will have a celanese covering.

It may be noted that this apparatus can likewise be supplied for use in heavy tropical countries so that, apart from the protection against moisture and heavy temperatures, the sets can be made insect proof.

Details on the components used, are described below :

1.- Ringer :

The N°2063-type ringer is also of a new conception and is built in one gong. Its mechanism consists of 2 spools, a magnet and an armature; the whole is of a very robust and compact construction.

Electrical characteristics :

The following main efficiency values have been obtained by 75 V. 16  $\frac{2}{3}$  hz. The sound level is on about 75 phones and with a resistance of 15.000 ohms in series very good results are still obtained. Impedance by 16  $\frac{2}{3}$  hz. is about 3.000 ohms.

From the above we may conclude that the ringer we are using in this telephone set is of a very high quality and will successfully stand the comparison with similar apparatus presented by the competition.

2.- Generator :

The N°2061-type generator is an improved model of the key hole type generator which we manufactured up till now. In order to save space in the telephone set the key hole magnet has been replaced by 2 flat magnets of relatively small dimensions and provided with 2 poleshoes which insure high efficiency.



Special steel alloy is used for the manufacture of the magnets and the components have so perfectly been developed that the flux could be considerably reduced, so that the crank can easily be moved even when the generator is short-circuited.

Electrical characteristics :

When tested with a voltmeter of 2.700 ohms at 16  $\frac{2}{3}$  cycles per second, the voltage is minimum 70 V. When tested with the voltmeter shunted to have a total resistance of 500 ohms, the voltage will be minimum 30 V.

3.- Induction coil :

The circuit adopted in this telephone set being of the anti-side tone type, we are using a three winding type induction coil in order to prevent increased side tone becoming objectionable on short lines.

4.- Condenser :

Upon request a condenser can be connected in the subscriber set circuit.

5.- Terminal Strips :

The terminal strip is made of bakelite.

6.- Cabling :

The cabling of this set is made of enamelled, double rayonne, single cotton acetate covered copper wire.

7.- Gravity Switch :

The gravity switch used in this telephone set is a new style one.

The plunger, which is generally used to action the switch, is now replaced by a steel ball, which latter pushes the spring nest of the gravity switch when the microtelephone is placed on the set.

8.- Cords :

The microtelephone and extension cords consist of a Polyvinyl Chloride covered bronze tinsel. The conductors have a black cotton outside braiding.

9.- Microtelephone :

The newly designed N°2295-type microtelephone this set is fitted with, differs from the earlier types in several respects :

1° It is shorter,

2° The mouthpiece is in a more favourable position relative to the mouth and is furthermore provided with large openings insuring much better transmitting frequency response characteristics.

The modifications we have applied on the N°2295 type microtelephone are based on results of head measurements recently carried out both in America and Europe.

10.- Transmitter Capsule :

The N°2040 transmitter capsule has a much better frequency response characteristic than the earlier N°2038 capsule. The frequency response characteristics of the transmitter capsule have been measured in open circuit condition and represent therefore the E.M.F. generated by the transmitter.



#### 11.- Receiver Capsule :

The receiver is of the N°2684-type which has a much better frequency response characteristic than the earlier N°2683 receiver. The absence of sharp resonance peaks and the much better response above 1500 cps. are particularly interesting properties. These improvements have been obtained by acoustical damping and suitable choice of the mechanical and acoustical constants of the system including the earcap.

#### Feeding :

A 3 volt battery will be sufficient to feed the telephone set.

#### Wall Adaptation :

A subscriber set specially designed for wall fixing has not been developed. As such a set can be needed by the customer, we have, for this intention, constructed a supporting shelf-console which can easily be fixed to the wall. In this case the set should be supplied without extension cord nor terminal block as the shelf is provided with a terminal strip for connecting purposes.

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