

Sept 20

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To Mr. E. Davidson

Dear Sir,

Please make the following amendments, suppressions and additions on the specification of the - Phonetic Interrupter.

At page 1, line 11, cancel the words: My, etc. until the expressions: if desire, at page 2, line 7, and write: - The primary end of this invention is to produce oscillations of electricity and also flickerings of light by means of the human voice or other sounds. The secondary end is to use these electric or luminous oscillations so produced, for telegraphing and telephoning without wires. For telegraphing, that is, by means of these electric oscillations and like by means of the luminous oscillations or flickerings of light; for telephoning properly, that is, by means of the devices like that which I use in my own wireless telephone application filed Oct. 4th, 1901, Serial no. 77,576, and in connection with certain features of this present application.

To produce the two kinds of oscillations above mentioned, I imagined certain devices in connection with an apparatus ^{invented} by myself, which I denominated a phonetic interrupter or sarah.

My phonetic interrupter consists, etc. as

is at page 2, line 8, until the word: into, at line 14, after which add: - electric or luminous. At line 15, cancel the words: being projected, and write: - coming or arriving. At line 17, after the word: operation, add: and some times, in connection with an extra autodecohering coherer or a selenium cell. At line 18, before the word: impulsus, add: - electric or luminous. At line 20, cancel the word: or, after the term - receiver; and after the word: like, add: - or a Morse register, and after add this expressions: -

I said: or an extra autodecohering coherer, because though the phonetic interrupter make, here, the functions of an autodecoherer, based on the principle of the imperfect contact of a metallic point with a disk preferably made of an oxidated metal; yet, when the interrupter is used in connection with the devices for receiving, and one desires to receive by means of the flickerings from the Lamp E, to have a visual signal, or by means of a Morse receiver, to have a registered signal; the addition of an autodecoherer, in connection with the phonetic interrupter and a relay, is necessary. Then, the interrupter exercises the functions of an intermedial relay. In this case I prefer an autodecoherer consisting

ted by a small tube of a non-conductor substance,
 having inside a little oxidated powder or parti-
 cles made of hard steel, which are gently com-
 pressed between two metallic electrodes, one of
 which, is movable for purpose of regulating. But
 if one desires to receive only by means of the
 telephone T, the arrangement of the figure 5 is
 sufficient, and then, the interrupter exercises
 the functions of an autodysherer, as I said
 above, and in this case, it is necessary:
 to remove the bowls of the excitator; to re-
 tain open the switch S; to use the con-
 nection of the figure 4, because the other
 connection serves for sending; to reduce
 to the smallest voltage possible the energy
 of the batteries M; to adjust the micropho-
 nic contacts of a and b², on the interrupter,
 so that they may offer in a state of repose
 a resistance of 1.000 to 25.000 ohms,
 and to prevent the sparks between the
 points of contact a and b², by means of a sui-
 table resistance. } This apparatus like the devices
 in connection, are fully, etc. as is at pag. 2 lin. 21,
 until the words: in detail. At pag. 4, lin. 16, after
 the word: speech, add: or sounds, and at line
 21, cancel the words: A sufficient, etc. until the words:
code value. At pag. 5, lin. 14, cancel the words: say
 etc. until the word: microfarads, because its ca-
 pacity like the resistance of the excitator

can vary, according to the amplitudes of the electric waves which one desires to obtain.

At page 5, line 21, after the word: receiver I, add: as the primary contains a lamp E, not only for sending or receiving, but also to control ^{to} regulate the devices of the interrupter.

This lamp and this telephone or other equivalent means for detecting slight discharges, are used in connection with the interrupter for receiving, as is said, and cancel the words: or other, etc. until the words: refer to later.

At line 24, cancel the words: having, etc. until the terms: condenser G, because its capacity can vary according to the dimensions of the coils; and before the words: The operation of the system, etc. at page 5, line 27, add this words:

To produce oscillations of light by means of the interrupter, in the sending station, I use the natural human voice preferably, because the flickerings produced by this interrupter, are the interpretation or traduction of the sounds by which they are produced; and for this reason one can hear more or less perfectly these sounds produced in the sending station, if are used the devices of the optical telegraphy.

for receiving and in connection with the interrupter and a selenium cell. A sufficient number of distinctive words can be selected to make a very efficient code, and many words or tones can be recognised for their own value as well for their code value.

To produce electric oscillations by means of the same interrupter, I use, in sending station, sound or sounds produced by means of a musical instrument like that of a small organ with the devices to play and provided with one or more acoustic tubes. This tube or tubes are connected by their extremities emitting the sounds, with the mouth-piece of the interrupter; which diaphragm, affected by the sonorous vibrations coming through the tubes, cause the interrupter to be producer of electric or luminous oscillations.

The result is that the signal message may be received in the other station, not only by means of a telephone receiver; but also by means of a Morse register; and not only when I use the electric oscillations, the message may be received in this manner; but also when I use the flickerings of light for purpose of telegraphing, chiefly if this flickerings were produced at the sending station.

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by a musical instrument, and are received in the terminal station, by means of the devices of the optical telegraphy in connection with a selenium cell, as is above described.

The operation of this system, etc. as is at page 5, line 29, until the word: to, and add: produce sounds, and cancel the word: speak. At page 6, line 9, cancel the words: having the same frequency. Line 15, at the same page, after the word: transmission, add this expressions: confineth with the electric waves, and cancel the words: to which, etc. until the word and. At the same page, line 24, cancel the words: impulse waves, and write this words: electric impulsus, and at line 25, cancel the letter S, and write: F. In the same line, cancel the words: which other waves, and write: which are propagated, etc. as is, and before the word: primary, add this word: common, and after the no.: 16, add this words: that is, of the coil F and of the interrupter A, and cancel the words: As shown in Fig. 5, etc. until the words: telephone I, at page 7, line 1, and write this expressions: Then, under the action of the electric impulsus, the interrupter closes the primary circuit, and at the same times working as a microphone, produces on its secondary circuit, inducted currents, which modify the resistance on the tele-

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phone T, and it reproduces sounds similar to these sounds, which have been produced in the sending station into the mouth-piece of the interrupter, by means of the voice or another sounds. The condensers G' and G, in the receiving station, may vary in its capacities, and they serve; the first, to regulate the frequencies of the electric impulses and consequently, to the selection, the other condenser, in resonance with the first, serves to ^{the} good and stable working of the apparatus. The coil F, in this case, serves to prevent the effects of the waves too much strong.

At page 7, line 2, cancel the words: the lamp E etc. until the words: suitable devices, and write: By the flickerings of the lamp E, I close the switch S; but in this case and like when one desires to receive by means of a morse register, it is necessary to use an extra autodecider and a relay in connection with the interrupter, as is said above, and after the word: therefore,

at line 11, add this words: And also in the receiving station, these sounds of the telephone T, may be transformed into flickerings of light; and these flickerings of the lamp E, may be transformed, in the same receiving station,

into sounds. These sounds may be transformed into
 light, by means of an arrangement like that of the
 figure 5 for transmitting; then, must close only
 the switch S and connect directly and meca-
 nically the telephone T with the mouth-piece
 of this interrupter. These flickerings of the lamp
 E, in the receiving station, may be transfor-
 med into sounds, by means of the photopho-
 nic devices for receiving; then, the lamp E
 must produce or reflect its flickerings against
 the selenium plate. The addition of a disk
 made of clear and violet colored glass, ~~must~~
 adjusted in form of concentric zones, and
 located between the selenium plate and
 the lamp E, improves very much; accor-
 ding the property of the violet or actinic
 on the selenium, by myself discovered,
 indicated in my own photaphonic
 wireless, and after more than one year,
 confirmed by the public experiments of
 Mr. Ruhmer ^{made} in Germain. The same
 transformations of sounds and flickerings of
 light made in the receiving station and
 produced, in this station, by the electric
 waves coming from the transmitting
 station, are well extensive to the tele-
 graphy made only by means of the fli-
 ckerings produced by the lamp E or another
 similar device, for producing flickerings

Fine detail

of light. And in this case I use the same devices for transforming the sounds and the flickerings of light, produced in the receiving station, which I use in the same station, for transforming the sounds and the flickerings of light, made in the terminal station, only by means of the electric waves from the sending station.

With this phonetic interrupter in connection to the Gaetanus or devices described above, I have solved a great problem, that is: The transformation of the radiaphonic messages made by light or electric impulses, into wireless telegraphic or registered messages. At page 7, line 13, cancel the word: etherie, and write this: electric or luminous. At line 17, cancel the word: sounds, and write: by means of flickerings of light. At line 27, cancel the words: and the like, etc. until the words: most cases, and after the words: other application, add this words: or other kind of light. At line 33, cancel the words: which should, etc. until the words: as stated, which are at page 8, line 4. At line 16, page 10, after the word: telegraphy, add: by means of electric waves or flickerings of light.

N.Y. Sept. 20th, 1903. Yours truly, H. Landell