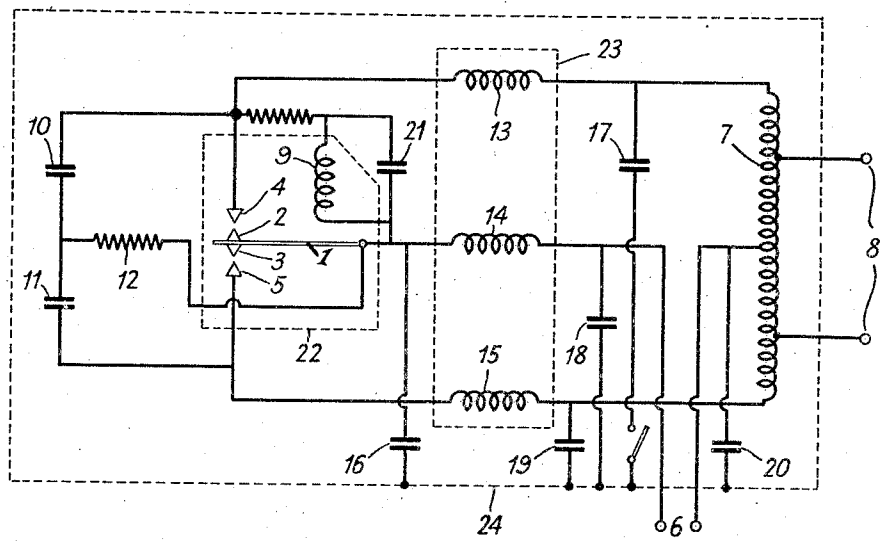
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DEVICE FOR CONVERTING DIRECT CURRENT INTO ALTERNATING CURRENT

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DEVICE FOR CONVERTING DIRECT CURRENT INTO ALTERNATING CURRENT

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1 Claim. (Cl. 175—363)

This invention relates to a device for converting direct current into alternating current with the aid of an oscillating member by which an electric circuit is alternately interrupted and closed again, thus producing an intermittent direct current. There are usually two circuits which are alternately interrupted and closed again by the member oscillating between two contacts, these contacts preferably being connected to the ends of a primary transformer winding. One terminal of the source of direct current is connected to the oscillating member, whereas the other terminal is connected to the midpoint of the primary winding of the transformer from whose secondary terminals the produced alternating current is taken off. It is known that the closing and interrupting of the current may involve strong high frequency oscillations and for this reason it is necessary, more particularly when the device serves to feed a radio receiving set, to provide means preventing the high frequency voltages from gaining access to the set.

As is well known such a freedom of interferences may be ensured by means of high frequency choke coils and condensers. Hitherto the anti-interference means were usually inserted in the supply and return conductors. Each of the conductors contained a choke coil and the conductors were bridged with the aid of a series-connection of two condensers whose common point was earthed, so that altogether four chokes and four condensers were necessary.

According to the present invention the anti-interference choke coils are inserted in the conductors leading to the contacts and the oscillating member, the points which are not connected to the contacts or to the member being either earthed or connected to a metal housing through condensers. It has been found that in this manner eminent anti-interference can be achieved, the advantage being obtained that only three chokes and three condensers are required. In addition, two of the chokes may have a smaller size since they convey only half the current.

The invention will be more clearly understood by reference to the accompanying drawing representing by way of example, one embodiment thereof.

The oscillating member 1 is furnished at its free end with two contact pieces 2 and 3 and is kept in vibration between contact pieces 4 and 5 with the aid of a coil 9, said contact pieces being preferably mounted in a slightly elastic manner. The member 1 is connected to one terminal of the source of direct current inserted between the terminals 6, the other terminal of said source being connected to the middle of the transformer winding 7. A radio receiving set to be fed with alternating current is connected to the secondary terminals 8 of the transformer which is preferably constructed as an auto-transformer. A condenser 21 promoting uniform motion is connected parallel with the coil 9. Preferably, the oscillating member together with the contacts 2, 3, 4 and 5 and the coil 9 is housed in a common screening casing 22 preventing any radiation of high frequency oscillations produced upon interrupting and closing the current. Furthermore two condensers 10 and 11 are provided for reducing the production of sparks upon interrupting the current. The resistance 12 serves to render ineffective the discharge current impulse upon closing the contacts.

Hitherto it was customary for making ineffective any high frequency oscillations produced in a set to insert anti-interference elements in the supply and return conductors. The invention consists in that the choke coils are interposed in the conductors extending between the contact device and the transformer, the points of these coils which are not connected to the contacts or the oscillating member being connected through the condensers 17, 18 and 19 to a housing 24 by which the assembly may be surrounded. Preferably the coils 13, 14 and 15 are lodged in a common housing 23. Furthermore condensers 16 and 20 may be provided, by which the oscillating member and the midpoint of the transformer winding are connected to the housing 24.

The condensers 17 and 19 constitute an additional load for the transformer 7 which is all but negligible more particularly when high voltages are concerned. Therefore they should not be given too large a value, the capacity preferably being of the order of magnitude of 0.1 mf. Sufficient filtering effect may be ensured by giving the choke coils a slightly higher than normal inductivity. Since the chokes 13 and 15 convey only half the current they may be given a corresponding smaller value.

What is claimed is:

In a device for converting direct current into alternating current of the type which utilizes a make and break device comprising, a member adapted to be vibrated between two contact pieces, a transformer having a pair of input terminals and a pair of output terminals, a connection between one of the contact pieces and one of the input terminals, said connection including a radio frequency choke, a connection between

the other contact and the other input terminal, said last named connection also including a radio frequency choke similar to said first named radio frequency choke, a pair of input terminals for the converting device, said input terminals being adapted to be connected to a source of direct current, a radio frequency choke having substantially greater inductance than either of said first two named chokes, connected between the vibrating member and one of the last named input terminals, the other of said last named input terminals being connected to substantially the midpoint of the primary of said transformer, a metallic housing for the converting device and means for connecting the ends of said three chokes which are remote from the make and break device to said housing, each of said last named means including a radio frequency by-pass condenser.

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