

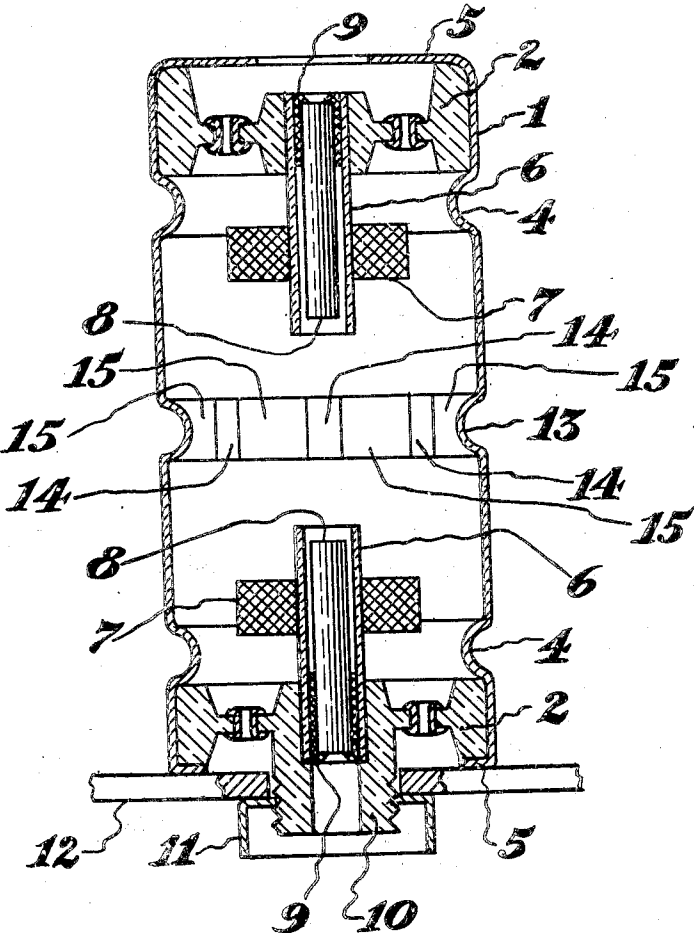
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HIGH-FREQUENCY INDUCTIVE COUPLING

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HIGH-FREQUENCY INDUCTIVE COUPLING

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This invention relates to a combination of at least two coils arranged in a cylinder. When such combinations are manufactured in large quantities, it is in most cases necessary for the properties of the combinations to be made exactly equal to one another. In order to be able to adjust the relative inductance of these coils, a construction was previously suggested in which the two coils wound on frames are arranged inside the cylinder and in which the portion of the cylinder at the height of the middle between these coils comprised a depressed groove. This groove constitutes somewhat of a diaphragm whereby the field coupling the coils could be reduced. It has been found that the possibility of adjustment in this construction is too small.

In another known construction the coils are mounted displaceably within the shield can or the can consists of two parts, one of which slides with respect to the other, each part carrying one of the coils. This type of construction is relatively complicated and expensive.

The object of this invention is to provide a simple and inexpensive coil system in which ample control of the coupling between coils is provided by varying the distance between the coils.

According to the invention two coils are each secured at a different location on the wall of a cylinder with the wall separating the coils easily deformable in order to alter the distance between the coils.

The invention will be explained more fully by reference to the accompanying drawing showing, by way of example, a section of a combination according to the invention.

In the vicinity of the ends of a metal cylinder 1 are arranged two dish-shaped insulating rings 2 which are, for example, of artificial resin. The cylinder comprises two grooves 4 in the vicinity of the adjacent edges of the insulating rings, whereas at the other side of the dish-shaped rings the cylinder is flanged in 5. These rings are thus firmly secured in the cylinder. Two little tubes 6, for example of pertinax, are clamped in the dish-shaped rings. The coils 7 are wound on these little tubes, while little rods 8 of high-frequency iron are fastened in the said tubes by means of a small quantity of compound indicated by 9. The lower dish-shaped ring 2 comprises a projecting part 10 which is provided with screw-

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thread and carries a nut 11 pressed from sheet metal. With the aid of these parts the combination is fastened on a chassis-plate 12. As can be seen from the drawing, the distance between the two coils is determined by the shape of the cylinder between these coils. This portion of the cylinder comprises not only grooves 4, by means of which the coils are fastened, but also a third groove 13. The latter is provided when the combination is completed. To this end it is placed on a device which is constituted by a combination of a lathe by means of which the groove may be provided and a measuring device by means of which the electrical properties of the combination may be ascertained. During the depression of groove 13, the changes in the electrical properties of the coils may thus be followed.

The groove may also be provided preliminarily in the cylinder and the electrical properties may be changed afterwards by depressing or extending the cylinder.

It is evident that methods of deformation of the cylinder other than by means of a depressed groove are also possible. The cylinder could comprise a certain number of apertures 14, placed in a circle, in such manner that the two halves are connected by means of a certain number of narrow metal strips 15 and can be displaced relatively to each other by deforming these strips. When such apertures are provided, however, it will generally be necessary to provide an additional shield.

What I claim is:

1. A coil system comprising a hollow cylindrical member, a plurality of coil members each secured to a separate portion of the inner wall of said cylindrical member, and an easily permanently deformable integral wall portion of said cylindrical member separating each of said coil members for altering the distance between the said coil members.

2. A coil system comprising a hollow cylindrical member, a plurality of coil members each secured to a separation portion of the inner wall of said cylindrical member, and an easily permanently deformable integral wall portion of said cylindrical member provided with an annular groove separating each of said coil members for altering the distance between the said coil members.

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3. A coil system comprising a hollow cylindrical member, a plurality of coil members each secured to a separate portion of the inner wall of said cylindrical member, and a wall portion integral with said cylindrical member provided with a row of apertures between each of said coil members, said intervening wall portion between said coil members being easily permanently deformable to thereby alter the distance between the said coil members.

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4**REFERENCES CITED**

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,014,820	Snider	Sept. 17, 1935

FOREIGN PATENTS

Number	Country	Date
139,211	Great Britain	Sept. 23, 1920