

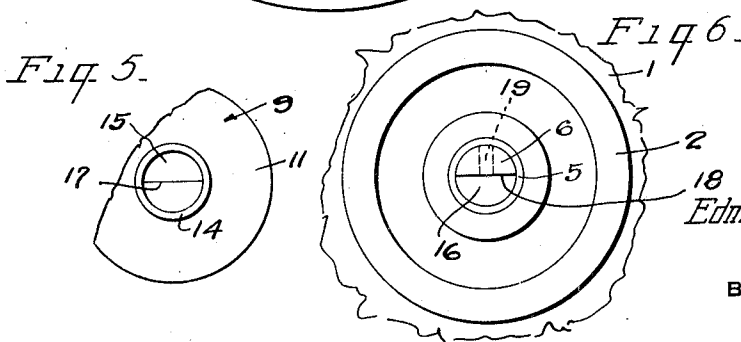
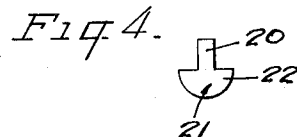
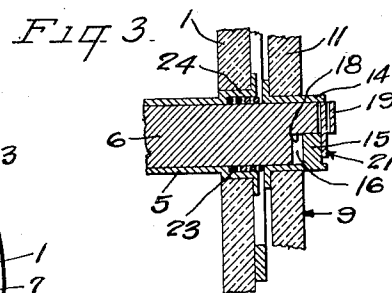
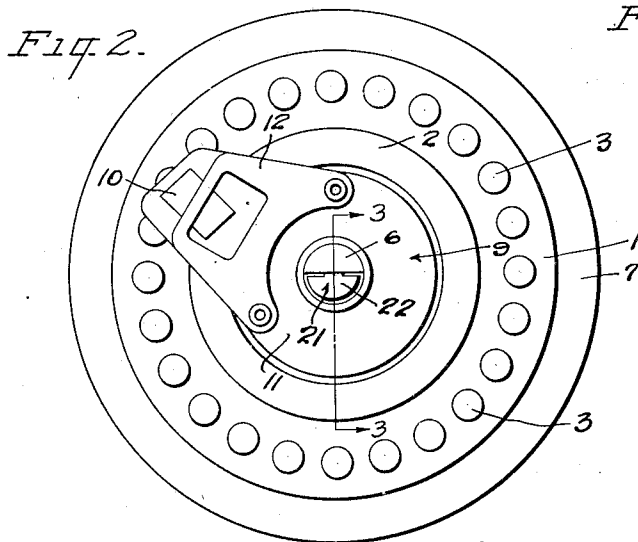
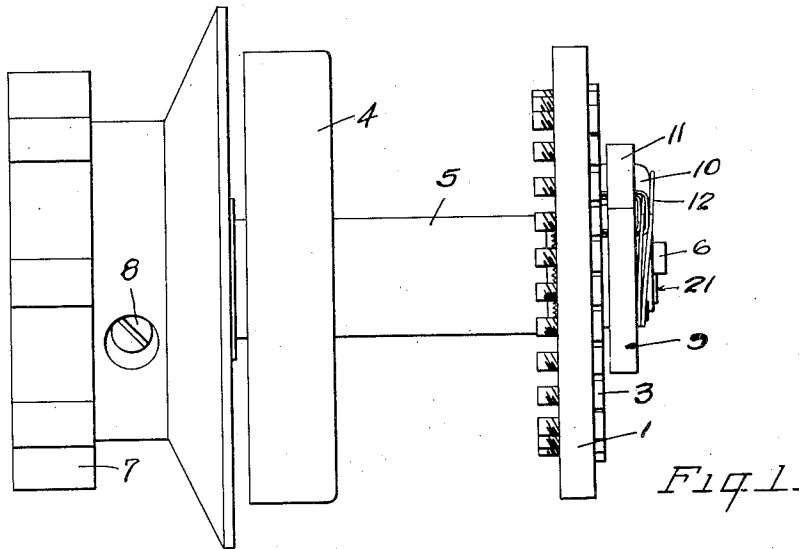
Sept. 13, 1949.

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2,481,649

ATTENUATOR ASSEMBLY

Filed April 25, 1945



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2,481,649

ATTENUATOR ASSEMBLY

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Application April 25, 1945, Serial No. 590,266

2 Claims. (Cl. 200—11)

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This invention relates to attenuators as used in communication in the communications field, and an object of the invention is to provide a simple, practical and inexpensive structure which will facilitate the assembly and dismantling of the parts of an attenuator.

More specifically, the present invention relates to a novel method of connecting and removably locking together in their proper positions and relationship the operating shaft, switch and contact-carrying head of an attenuator, and all in their proper position relative to the markings on the dial or panel with which the attenuator is employed.

A further object of the present invention is to provide an attenuator assembly which offers distinct manufacturing advantages in some types of attenuators over similar ones of present manufacture.

With these and other objects in view, as may appear from the accompanying specification, the invention consists of various features of construction and combination of parts, which will be first described in connection with the accompanying drawings, showing an attenuator assembly of a preferred form embodying the invention, and the features forming the invention will be specifically pointed out in the claims.

In the drawings:

Figure 1 is a side elevation of an attenuator structure from which the enclosing housing and the electrical resistance coils have been removed for the purpose of avoiding confusion in the illustration.

Figure 2 is an end view of the attenuator looking towards the inner or stationary contact-carrying end.

Figure 3 is a detail longitudinal section taken on the line 3—3 of Figure 2.

Figure 4 is a detail plan view of a locking key employed in the structure.

Figure 5 is a fragmentary end view of the movable switch body.

Figure 6 is a fragmentary end view of the inner end of the attenuator with the switch plate removed.

Referring more particularly to the drawings, the improved attenuator comprises the contact-carrying head 1 which is made of insulating material and carries the inner circular stationary contact 2 and the outer circle of spaced contacts 3. The contacts 3 are arranged in a circle concentric of the inner contact ring 2 and the axis of the contact-carrying plate 1.

In the construction of an attenuator, the con-

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tacts have connected thereto the electrical resistance coils which are not shown in the drawings of the present application, since they form no part of the invention and would only have a tendency to obscure the clearness of the drawings. The contact-carrying head 1 is connected to the detent (not shown) carrying head 4 by a suitable sleeve 5 through which the switch operating shaft 6 extends. The shaft 6 has the usual type of operating knob 7 removably mounted thereon and held in place by means of a set screw 8 so that as the knob 7 is turned, the movable switch member 9 will be rotated about its axis for bringing its contact members 10 into engagement with various ones of the spaced stationary contacts 3. The specific switch structure is clearly shown in Patent No. 2,424,745 issued July 29, 1947, but it is to be understood that any suitable type of switch structure may be employed without departing from the spirit of the present invention.

The switch structure 9 includes the contact-carrying body 11 which carries the movable contact members 10. The movable contact members 10 are held in proper position for yielding movement by means of spring members 12, all as described in the application above referred to. The carrying body 11 of the switch structure 9 has a bearing sleeve 14 extending therethrough which fits about the shaft 6, and an inwardly extending locking lug 15 is formed in the sleeve 14 a short distance inwardly from its outer end, as clearly shown in Figure 3 of the drawings. The locking lug 15 fits into a cut-out portion 16 of the outer end of the shaft 6. The locking lug 15, and the inner longitudinal side of the cut-out portion 16, and flat interengaging surfaces 17 and 18, respectively prevent rotation of the sleeve, and, consequently, of the switch member 9, independently of rotation of the shaft 6, and which interengaging surfaces also cause rotation of the sleeve with rotation of the shaft to move the switch member 9 about the contact-carrying head 1.

The sleeve 14 has a radially extending opening 19 therein which receives the reduced pin portion 20 of the locking key 21. The head 22 of the locking key is semi-circular in shape and rests against the outer surface of the locking lug 15 when the locking key 21 is in locking position. A spring 23 is coiled about the shaft 6 and engages the inner end of the sleeve 14 for urging the sleeve and the switch member 9 outwardly to apply yielding pressure from the lug 15 against the head 22 of the locking key 21 to bind the locking key in locking position and prevent accidental

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disconnection of the locking key, switch member 9, and shaft 6. If it is so desired, the spring 23 may be confined in an enlargement 24 of the sleeve 5 so as to provide an inner abutment for one end of the spring. For assembling or disassembling the structure—when the switch member 9 is mounted upon the end of the shaft 6 it is forced inwardly against the tension of the spring 23 sufficiently to permit the reduced pin portion 20 of the locking key 21 to be slipped into the opening 19 with the head 22 resting against the outer side of the lug 15, and then when the inward forcing pressure is relieved from the switch member, the spring 23 will force the switch member 9 outwardly, causing the locking lug 15 to press against the key 21 and securely bind it in locking position. In the case of disassembly when the switch member 9 is forced inwardly against the tension of the spring 23, the locking key will be relieved of pressure thereagainst and may be easily and quickly removed from its connection with the shaft.

By the provision of the flat interengaging surfaces on the locking lug 15 and the shaft 6, the switch member will always be locked in a fixed definite position relative to the contacts on the contact-carrying head 1.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown, but that they may be widely modified within the invention defined by the claims.

What is claimed is:

1. In an attenuator having a contact-carrying head a switch member movable relative to said head and provided with a shaft-receiving bore, a shaft for operating said switch member, a sleeve in said bore, said shaft extending into said sleeve and provided with a cut-out portion, a positioning lug formed in said sleeve and engaging in said cut-out portion to connect said shaft and switch

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member in proper operating position, said shaft provided with a transverse key-receiving opening therein, a locking key having an enlarged head portion and a reduced portion for insertion into said transverse opening, said lug positioned inwardly of the end of said sleeve whereby the head of the locking key is confined within the sleeve.

2. In an attenuator having a contact-carrying head, a switch member movable relative to said head and provided with a shaft-receiving bore, a shaft for operating said switch member, a sleeve in said bore, said shaft extending into said sleeve and provided with a cut-out portion a positioning lug formed in said sleeve and engaging in said cut-out portion to connect said shaft and switch member in proper operating position, said shaft provided with a transverse key-receiving opening therein, a locking key having an enlarged head portion and a reduced portion for insertion into said transverse opening, said lug positioned inwardly of the end of said sleeve whereby the head of the locking key is confined within the sleeve, and a spring for urging said lug against the head of said locking key to bind the locking key in locking position.

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