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LOUD-SPEAKER SYSTEM FOR DRIVE-IN THEATERS

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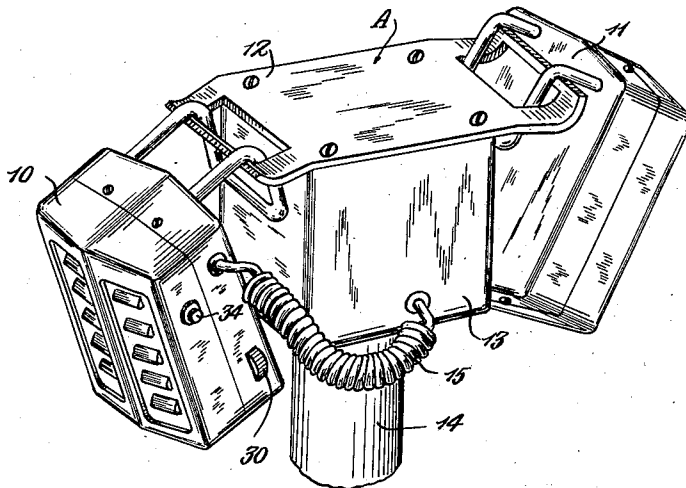


FIG. 1

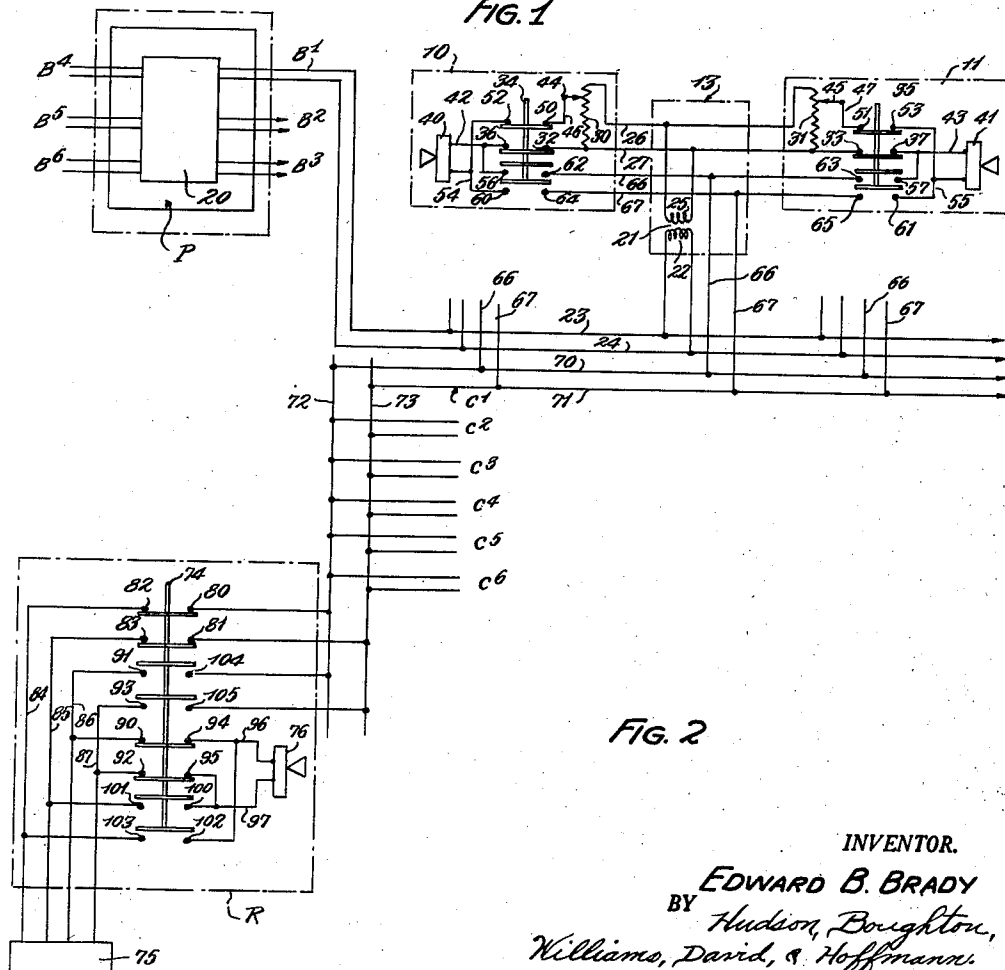


FIG. 2

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LOUD-SPEAKER SYSTEM FOR DRIVE-IN THEATERS

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3 Claims. (Cl. 179-1)

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The present invention relates to drive-in theatres equipped with in-car speakers and, more particularly, to a talk-back system permitting communication between the customers and the concession stand, which system utilizes the in-car speaker units.

Prior to the present invention, it was customary for the customers of drive-in theatres if they desired any refreshments, to leave their cars and walk to the concession stand which, in some instances, was three hundred feet or more away. This naturally inconvenienced the customers and was not conducive to maximum concession stand sales.

The principal object of the invention is the provision of a talk-back system for drive-in theatre equipment with in-car speakers, which system permits the customers to communicate with the concession stand, and is simple in construction, inexpensive to install and operate and utilizes the in-car speaker units.

The invention resides in certain constructions and combinations and arrangements of parts and further objects and advantages will be apparent to those skilled in the art to which it relates from the following description of the preferred embodiment described with reference to the accompanying drawings forming a part of this specification, in which

Fig. 1 is a perspective view of a customer's in-car speaker station of a drive-in theatre equipped with the present invention; and

Fig. 2 is a fragmentary, schematic wiring diagram of a drive-in theatre equipped with an in-car speaker and concession stand talk-back system of the present invention.

Referring to the drawings, the reference character A designates generally a customer's in-car speaker station of a drive-in theatre. The station shown comprises two portable in-car speaker units 10, 11 detachably connected to opposite sides of a bracket 12 forming the cover of a junction box 13 on the top of a hollow iron pole 14 projecting from the ground in the center of a car ramp. Each of the speaker units 10, 11 is electrically connected to the junction box 13 by a four-conductor cable 15 of some suitable length, usually about six feet. The stations A are so located along the various car ramps of the theatre that there is one such station for each two customer cars. The customers drive their cars up alongside of the stations A, reach out and remove the speaker units from their supports and hang them in their cars. The sound reproduced from the film being projected

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is fed from the projection booth to the in-car speaker units by means of underground cables extending from the projection booth to the junction boxes 13.

The reference characters B1, B2, B3, B4, B5, B6 shown in Fig. 2 represent two wire buses connected to and leading from the output of the sound amplifier, designated generally by the reference character 20, in the projection booth P, which amplifier may be of any desired well-known construction. While only six buses are shown, it is to be understood that any desired number of buses may be provided. Each bus is preferably in the form of a two-conductor, underground cable and extends along one or more of the car ramps of the theatre. At each of the stations A the buses are connected to a transformer 21 common to the two in-car speaker units 10, 11 at that particular station. The primaries 22 of all of the transformers 21 connected to any one bus are connected in parallel with the bus conductors 23, 24.

The secondary 25 of the transformer 21 located at any station A is connected in parallel circuit by conductors 26, 27 with two potentiometers 30, 31, one located in each of the in-car speaker units 10, 11, which potentiometers provide means whereby the customer may control the volume of the particular speaker with which it is associated. In addition to being connected to the potentiometers 30, 31 in the respective in-car speaker unit, the conductor 27 is connected to contacts 32, 33 of push button switches 34, 35 located in the in-car speaker units 10, 11, respectively. The other contacts 36, 37 with which the contacts 32, 33 are associated and with which they are normally connected, are connected to speakers or speaker elements 40, 41 by wires 42, 43. The movable contact arms 44, 45 of the potentiometers 30, 31 are connected by wires 46, 47 to contacts 50, 51 of the switches 34, 35, which contacts are normally connected to contacts 52, 53, which latter contacts are, in turn, connected to the speakers 40, 41 by wires 54, 55.

The wires 42, 54 and 43, 55 connected to the speakers 40, 41, in addition to being connected to contacts 36, 52 and 37, 53, are connected to contacts 56, 60 and 57, 61, respectively, of the push button switches 34, 35. The contacts 62, 63 and 64, 65 with which the contacts 56, 57 and 60, 61 are adapted to be connected when the push button switches 34, 35 are depressed are connected by means of wires 66, 67 to conductors 70, 71 of a two-wire bus C1, which bus is simi-

lar to the bus B1 but extends to the concession stand R instead of the projection booth P. The wires 26, 27 and 66, 67 extending between the junction boxes and the in-car speaker units are within or form parts of the cables 15 previously referred to. The wires extending from the junction boxes to the buses B1, C1, etc., are preferably housed within the hollow pipes 14 which support the junction boxes.

The potentiometers and the push button switches of each of the in-car speaker units are accessible from the outside of the speaker unit case and when a customer wishes to communicate with the concession stand, he merely depresses the push button switch associated with his in-car speaker unit, thereby connecting his speaker to the concession stand, which speaker may thereafter be used both as a speaker and a microphone.

At the concession stand the conductors 70, 71 of bus C1 are connected to a two-conductor bus comprising the conductors 72, 73 as are the other buses C2 to C6, etc., extending along one or more of the other ramps of the theatre. The ramp buses B1, etc., and C1, etc., may be shielded, if desired, and are preferably underground. The conductors 72, 73 are adapted to be selectively connected by a push button or other suitable switch 74, either to the input circuit or to the output circuit of a power amplifier in the concession stand, designated generally by the reference character 75. The amplifier 75 may be of any conventional construction. A speaker 76 also in the concession stand is adapted to be selectively connected by the switch 74 simultaneously to the opposite side of the amplifier from that to which the conductors 72, 73 are connected so that the speaker 76 may be used either as a speaker or a microphone by the concession stand operator.

Normally the wires 72, 73 are connected to the input circuit of the amplifier 75 and the speaker 76 to the output circuit thereof so that when one of the customers depresses the push button switch associated with his in-car speaker, he can talk to the concession stand. The concession stand operator can then talk to the customer if he maintains his push button switch in depressed position by depressing the push button switch 74 in the concession stand.

The conductors 72, 73, as shown, are connected to contacts 80, 81 of switch 74, which contacts are normally connected to contacts 82, 83. The contacts 82, 83 are connected by conductors 84, 85 to the input circuit of the amplifier 75. The output circuit of the amplifier is connected by conductors 86, 87 to contacts 90, 91 and 92, 93, respectively, of push button switch 74. The contacts 90, 92 are normally connected to contacts 94, 95 connected by conductors 96, 97 to the concession stand speaker 76, thereby completing the circuit from the in-car speaker units through the conductors 72, 73 and the amplifier 75 to the concession stand speaker 76. When the concession stand operator wishes to answer the customer, he depresses push button switch 74 connecting his speaker 76 to the input circuit of the amplifier 75 through the normally open contacts 100, 101 and 102, 103, which contacts close upon the push button switch 74 being depressed. The concession stand speaker 76 is simultaneously disconnected from the output circuit of the amplifier 75 by the opening of normally closed contacts 90, 94 and 92, 95. At the same time that the concession stand speaker 76 is connected to

the input circuit of the amplifier 75, the customer's speaker is connected to the output circuit of the amplifier by the closing of normally open contacts 91, 104 and 93, 105, the contacts 104, 105 being connected to the conductors 72, 73 of the concession stand bus.

It is believed that the operation of the device will be apparent from the foregoing description thereof. Suffice it to say that any customer can communicate with the concession stand by depressing the push button switch at his in-car speaker unit and upon the switch 74 in the concession stand being properly manipulated by the concession stand operator. As a practical matter, the number of customer stations A that can be connected to any one amplifier and speaker combination in a concession stand is limited but the number of customer stations connected to any one amplifier and speaker unit can be kept within practical limitations by providing a plurality of separate channels or circuits, each connected to a limited number of customer stations and each having its own amplifier and speaker combination.

From the foregoing description of the preferred embodiment of the invention, it will be apparent that the objects heretofore enumerated and others have been accomplished and that there has been provided a novel and improved in-car speaker system for theatres incorporating a talk-back system whereby the customers may talk to the concession stand and which system requires a minimum of additional equipment and utilizes the speaker element of the in-car speaker unit both as a microphone and as a speaker for the talk-back system. While the preferred embodiment of the invention has been described in considerable detail, it will be apparent that the invention is not limited to the particular construction shown and it is my intention to cover hereby all adaptations, modifications and uses thereof which come within the practice of those skilled in the art to which the invention relates and within the scope of the appended claims.

Having thus described my invention, I claim:

1. In an in-car speaker system for a drive-in-theatre having a concession stand, a program sound amplifier and an in-car speaker unit connected with the output circuit of said amplifier, an amplifier and a speaker unit at the concession stand, a circuit connecting said in-car speaker unit with said amplifier and speaker unit at said concession stand, switching means at said in-car speaker unit for connecting said in-car speaker unit with one or the other of said circuits, switching means including an actuating member at said concession stand adapted to connect said concession speaker unit with the concession amplifier output and the second mentioned circuit with the concession amplifier input when said actuating member is in one position and to connect said concession speaker unit with the concession amplifier input and said second mentioned circuit with said concession amplifier output when said actuating member is moved to a second position.

2. In an in-car speaker system for a drive-in-theatre having a concession stand, a program sound amplifier and a plurality of in-car speaker units connected in parallel with the output circuit of said amplifier, an amplifier and a speaker unit at the concession stand, a circuit connecting said in-car speaker units with said concession stand amplifier unit, switching means at

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each of said in-car speaker units for connecting the respective in-car speaker units with one or the other of said circuits, switching means including an actuating member at said concession stand adapted to connect said concession speaker unit with the concession amplifier output and the second mentioned circuit with the concession amplifier input when said actuating member is in one position and to connect said concession speaker unit with the concession amplifier input and said second mentioned circuit with said concession amplifier output when said actuating member is moved to a second position.

3. In an in-car speaker system for a drive-in-theatre having a concession stand, a program sound amplifier and an in-car speaker unit connected with the output circuit of said amplifier, an amplifier and a speaker unit in the concession stand, a circuit connecting said in-car speaker unit and said concession stand amplifier unit, switching means at said in-car speaker unit normally positioned to connect said in-car speaker unit with said output circuit and mov-

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able to connect said in-car speaker unit with the other of said circuits, switching means including an actuating member at said concession stand normally positioned to connect said concession speaker unit with the concession amplifier output and the second mentioned circuit with the concession amplifier input and movable to connect said concession speaker unit with the concession amplifier input and said second mentioned circuit with said concession amplifier output.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
2,054,933	Frazier	Sept. 22, 1936
2,396,756	Snodgrass	Mar. 19, 1946
2,463,339	Wetzel et al.	Mar. 1, 1949