This invention relates generally to musical instruments, and more particularly to a musical instrument system comprising a plurality of different musical instruments and a system for simultaneously controlling them.

The principal object of this invention is to combine a plurality of different musical instruments in such fashion that they can be simultaneously controlled and played by a single musician.

Another object of this invention is to provide a control system for a plurality of different musical instruments of the type, for example, well known in automobile mufflers, thereby to eliminate noise of blower and prevent interference with the musical output of the instruments.

For playing the vibraharp 14, keyboard 16 may be arranged as illustrated in Fig. 2 where each key 29 includes at its inner end a contact actuating spring 30 adapted to close the contacts 31. Closure of contacts 31 may energize, through switch 13, conductors 32, and transformer 33, the solenoids 35 which in turn actuate the magnetic slug members 34 mounted within solenoids 33 by any suitable and well known mounting structure 35. Each key 29 in keyboard 16 may be arranged to operate a pair of contacts 31 and energize one of the solenoids 33, thereby to strike the bars 36 of the vibraharp in whatever sequence the particular musical composition requires. Fig. 3 illustrates several switches 31 and solenoids 33 in vibraharp 14 and zither 18 whereby the electrical connections will be obvious.

The zither 18 may be energized through switch 17, transformer 32 and conductors 19 by means of the lower keyboard 20 which is equipped with contacts 31 in the same manner as described above in connection with keyboard 16. Thus, the keys 29 in keyboards 16 and 20 operate organ 10 in conventional manner and simultaneously operate vibraharp 14 and the zither 18. In order to provide selective energization of the circuits energizing vibraharp 14 and zither 18, switches 13 and 17 are provided in the circuits of each instrument for energizing those circuits as desired. For supplying power to these circuits there is provided a transformer 38 connected to a wall plug 39 by conductors 40.

For controlling the volume of the accordions 11 and 12 there is provided a knee operated lever 42 connected by a mechanical linkage 43 to a pivoted flap valve 44 on each accordion. Valve 44 is mounted on a rod 45 rotatably mounted in eye members 46 fastened to the back boards of the accordions. Rod 45 may be fixed to the mechanical linkages 43, whereby movement of knee lever 42 opens the valves to varying degrees, thereby varying the degree of suction on the reeds of the accordion.

While the drawings show only a vibraharp and a zither connected to the keyboards of the organ, it is possible that other instrument may also be connected to various keys of the keyboard of the organ. For example, "bongo" drums may be connected to contacts operated by certain keys of the organ, whereby they may be played in conjunction with the organ or the other instruments. "Wood knockers" may also be connected to other keys of the organ. Other instruments too numerous to mention may also be incorporated in this invention. The musical instrument system provided in accordance with this invention may be operated by first playing the organ, for example, and then switching on the blower 21 to energize the accordions. The organ may be played with one hand, while an accordion may be played with the other hand, the volume of the accordions being controlled by lever 42 and the linkage 43 connected thereto. Also, the accordions may be played simultaneously, or the zither and vibraharp may be connected by switches 13 and 17 so that they may be played separately or in combination with one another and the organ.

The invention claimed is:

1. A musical instrument system comprising an organ having a plurality of keyboards, each keyboard including a bank of electrical switching contacts operably connected to each key, a first solenoid operated musical instrument including solenoids connected to the contacts of one keyboard, a second solenoid operated musical instrument including solenoids connected to the contacts of another of said keyboards, a master control switch mounted adjacent each said keyboard and connected in
circuit with the bank of contacts of that keyboard for controlling the operation of said instruments by said key-boards, a pair of accordions mounted adjacent said key-boards, power means including a blower having tubes connected to said accordions for drawing air through the reeds of said accordions, a knee operated volume control for said accordions including a knee operated lever located beneath said keyboard and valves on said accordions connected to said lever for controlling the amount of air drawn through said accordions, and a source of electrical power connected in circuit with said solenoid circuits.

2. A musical instrument system comprising an organ having a plurality of keyboards, each keyboard including a bank of electrical switching contacts operably connected to each key of said keyboard, a musical instrument including electromagnets connected to the contacts of one keyboard, a musical instrument including electromagnets connected to the contacts of another keyboard, a master control switch mounted adjacent said keyboard and connected in circuit with the bank of contacts of said keyboard for controlling operation of said instruments by said keyboard, a pair of accordions mounted adjacent said keyboards, power means including a blower having tubes connected to said accordions for drawing air through the reeds of said accordions, a knee valve control for said accordions, including a knee operated lever located beneath said keyboard and valves on said accordions connected to said lever for controlling the amount of air drawn through said accordions, switch means mounted adjacent said keyboards and connected to said power means for energizing it, and a source of electrical power connected in circuit with said electromagnet circuits and said power means.

3. A musical instrument system comprising an organ having a keyboard, a bank of electrical switching contacts operably connected to each key of said keyboard, a musical instrument including electromotive means connected to the contacts of said keyboard, a control switch mounted adjacent said keyboard and connected in circuit with said bank of contacts for controlling operation of said instrument by said keyboard, an accordion mounted adjacent said keyboard, power means including a blower having a tube connected to said accordion for drawing air through the reeds of said accordion, a knee operated volume control for said accordion including a knee operated lever mounted on said organ and connected to said accordion for controlling the volume of said accordion, and switch means connected to said blower for energizing it when it is desired to play said accordions.

4. A musical instrument system comprising an organ having a keyboard, a bank of electrical switching contacts operably connected to each key of said keyboard, a musical instrument including electromotive means connected to the contacts of said keyboard, a master control switch mounted adjacent said keyboard and connected in circuit with the bank of contacts of said keyboard for controlling operation of said instruments by said keyboard, a pair of accordions mounted adjacent said keyboards, power means including a blower having a tube connected to said accordion for drawing air through the reeds of said accordion, and a muffler for silencing the exhaust of said blower, a knee operated volume control for said accordion including a knee operated lever mounted on said organ and a valve on said accordion connected to said lever for controlling the amount of air drawn through said accordion, switch means mounted adjacent said keyboard and connected to said power means for energizing it, and a source of electrical power connected in circuit with said power means.

5. A musical instrument for operative association with an organ having a keyboard comprising, an accordion mounted adjacent said keyboard, power means including a blower having a tube connected to said accordion for drawing air through the reeds of said accordion, and a muffler for silencing the exhaust of said blower, a knee operated volume control for said accordion including a knee operated lever mounted on said organ and a valve on said accordion connected to said lever for controlling the amount of air drawn through said accordion, switch means mounted adjacent said keyboard and connected to said power means for energizing it, and a source of electrical power connected in circuit with said power means.

6. A musical instrument for operative association with an organ comprising, a pair of accordions mounted in spaced relation to one another on said organ, each accordion including a hinged flap valve mounted on the back thereof for opening and closing the air chambers in said accordions, a blower having tubes connected to said accordions for drawing air through the reeds thereof, a muffler connected to the exhaust of said blower for eliminating the noise thereof, a knee controlled mechanical linkage including a knee operated lever mounted on said organ and connected to said flap valves for controlling the volume of said accordions, and switch means connected to said blower for energizing it when it is desired to play said accordions.

7. A musical instrument for operative association with an organ comprising, a pair of accordions mounted in spaced relation to one another on said organ, each accordion including a valve for opening and closing the air chambers in said accordions, a blower having tubes connected to said accordions for drawing air through the reeds thereof, a knee controlled mechanical linkage including a knee operated lever mounted on said organ and connected to said flap valves for controlling the volume of said accordions, and switch means connected to said blower for energizing it when it is desired to play said accordions.

8. A musical instrument for operative association with an organ comprising, an accordion mounted on said organ, a hinged flap valve mounted on the back thereof for opening and closing the air chamber in said accordion, a blower having a tube connected to said accordion for drawing air through the reeds thereof, a muffler connected to exhaust of said blower for eliminating the noise thereof, a knee controlled mechanical linkage including a knee operated lever mounted on said organ and connected to said flap valve for controlling the volume of said accordion, and switch means connected to said blower for energizing it when it is desired to play said accordion.

9. A musical instrument for operative association with another instrument comprising, an accordion mounted on said other instrument, a valve mounted on the back of said accordion for opening and closing the air chamber in said accordion, a blower having tubes connected to said accordion for drawing air through the reeds thereof, a knee controlled mechanical linkage mounted on said other instrument and connected to said valve for controlling the volume of said accordion, and switch means connected to said blower for energizing it when it is desired to play said accordion.

10. A musical instrument for operative association with another instrument comprising, an accordion mounted on said other instrument, said accordion including a valve for opening and closing the air chamber in said accordion, a blower having a tube connected to said accordion for drawing air through the reeds thereof, a muffler connected to the exhaust of said blower for eliminating the noise thereof, and a knee operated lever mounted on said other instrument and connected to said valve for controlling the volume for said accordion.

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