

[54] **ELECTRONIC GUITAR HAVING PLURAL OUTPUT CHANNELS, ONE OF WHICH SIMULATES AN ORGAN**

[72] Inventor: **Attila Dudas**, New York, N.Y.

[73] Assignee: **The Raymond Lee Organization, Inc.**, New York, N.Y.

[22] Filed: **Nov. 13, 1970**

[21] Appl. No.: **89,236**

[52] U.S. Cl. **84/1.01, 84/1.16, 84/1.17, 84/DIG. 27, 84/DIG.30, 84/DIG. 1**

[51] Int. Cl. **G10h 3/00, G10h 5/00**

[58] Field of Search **84/1.16, DIG. 1, DIG. 27, DIG. 30, 84/1.01, 1.17**

[56] **References Cited**

UNITED STATES PATENTS

2,792,738 5/1957 Donahue **84/DIG. 30**

2,910,906	11/1959	Della Libera	84/DIG. 30
3,116,357	12/1963	Krebs	84/1.16
3,223,771	12/1965	Hopping	84/DIG. 30
3,388,206	6/1968	Sines	84/1.16
3,482,028	12/1969	Cox et al.	84/1.16
3,539,699	11/1970	Johnson	84/1.16
3,217,079	11/1965	Murrell	84/1.16
3,249,677	5/1966	Burns et al.	84/1.16
3,530,227	9/1970	Wheeler et al.	84/1.16

Primary Examiner—**Lewis H. Myers**

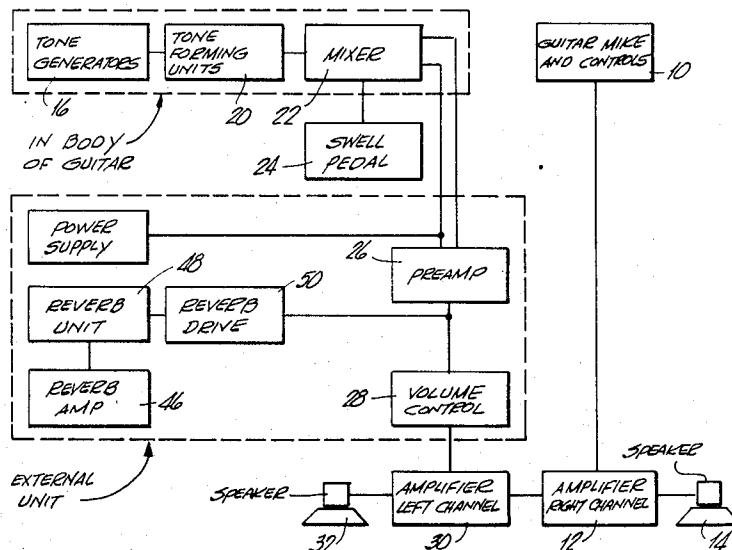
Assistant Examiner—**Stanley J. Witkowski**

Attorney—**Allison C. Collard**

[57] **ABSTRACT**

An electric guitar is coupled through one channel of a stereo amplifier to a corresponding speaker in conventional manner while separate means responsive to string movements and pedal controls produce an organ like sound amplified in the other channel and reproduced in another speaker.

4 Claims, 6 Drawing Figures



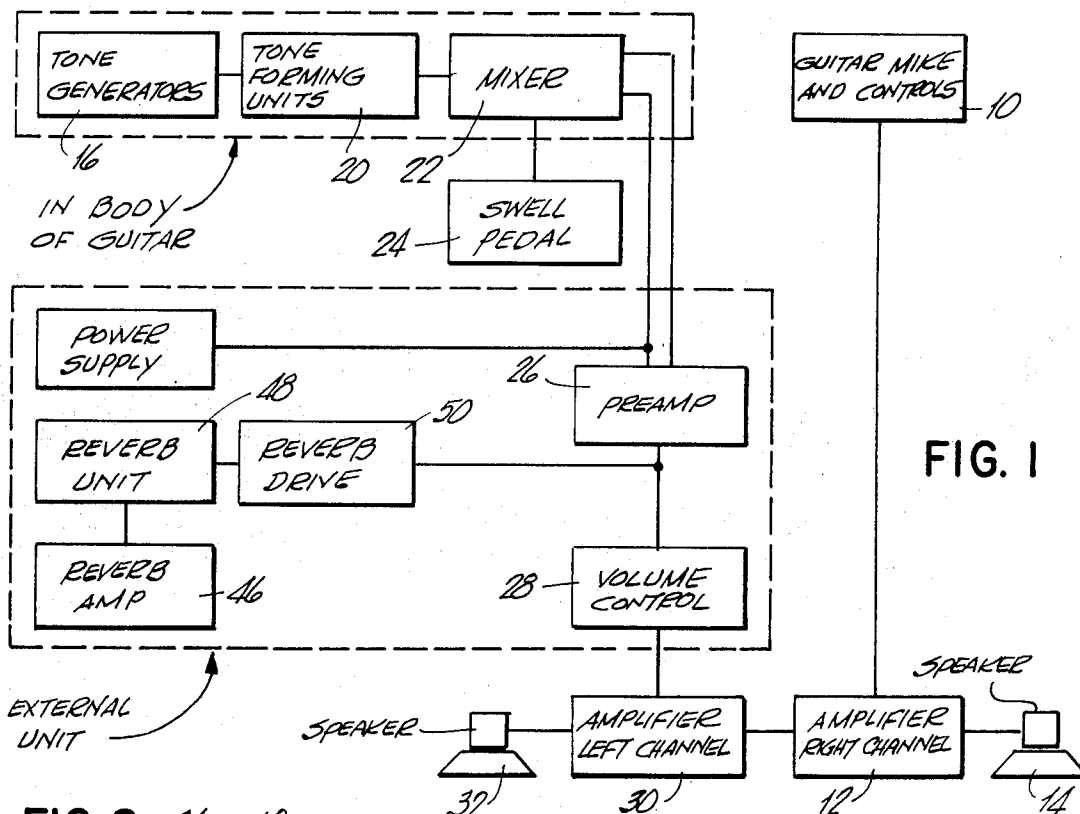


FIG. 1

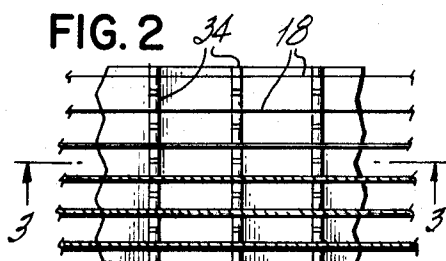


FIG. 2

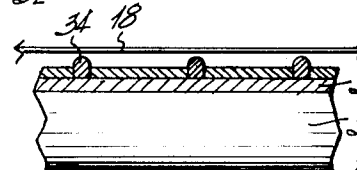


FIG. 3

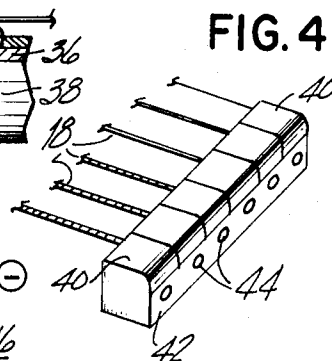


FIG. 4

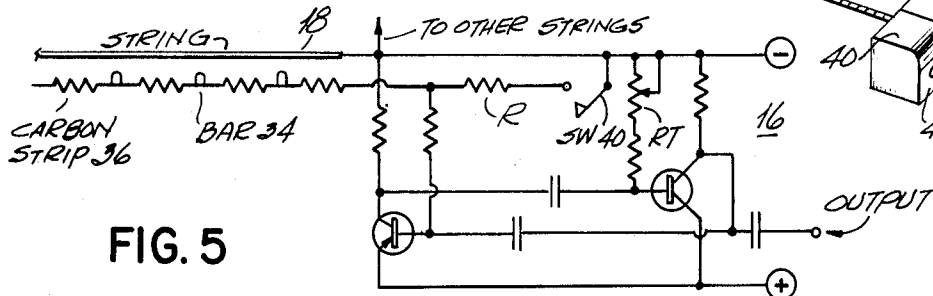


FIG. 5

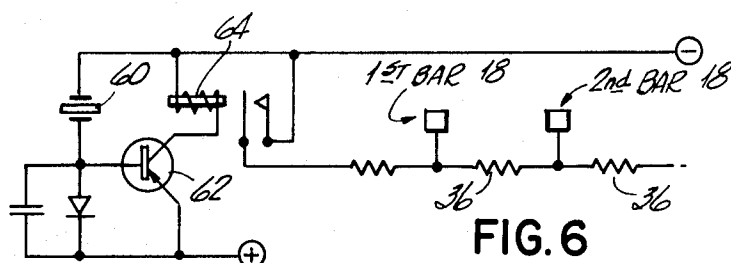


FIG. 6

INVENTOR
ATTILA DUDAS

ELECTRONIC GUITAR HAVING PLURAL OUTPUT CHANNELS, ONE OF WHICH SIMULATES AN ORGAN

SUMMARY OF THE INVENTION

The purpose of my invention is to produce the sounds of a guitar combined with the sounds of an organ when an operator plays the guitar.

To this end, an electric guitar is coupled through one channel of a stereo amplifier to a loudspeaker in conventional manner with this one channel functioning as a conventional guitar amplifier.

Tone generators, tone forming units and a mixer are disposed within the guitar body. Push button switches select which generator to use. A pedal disposed outside the body controls the mixer. The output of the mixer is fed through the other channel of the stereo amplifier to another loudspeaker. Carbon strips are disposed underneath the bars on the keyboard of the guitar. Each strip is coupled to a corresponding generator whereby the tapping on this strip through the bars of the guitar changes the resistance and thus changes the tone generated. The sounds produced in the other speaker are simulated organ tones.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a block diagram of my invention;

FIG. 2 is a detail view of the guitar strings and keyboard;

FIG. 3 is a view taken along line 3—3 in FIG. 2;

FIG. 4 is a perspective view of the control switches;

FIG. 5 is a detailed circuit diagram of one portion of my invention; and

FIG. 6 is a circuit diagram of a modification of my invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring now to FIGS. 1-5, a guitar body of electric type (not shown in full) operates in cooperation with guitar mike and controls 10 to feed through the right channel amplifier 12 of a stereo amplifier to feed a loud speaker 14. The body contains six tone generators or oscillators 16, each associated with a different one of the six strings 18. Each oscillator is coupled through a corresponding tone forming unit 20 which is a filter network, to a mixer 22, the gain of which is controlled by an external foot operated swell pedal 24. The output of the mixer is fed through a preamplifier 26, a volume control 28 (which is set to some value desired), the left hand channel amplifier 30 of the stereo amplifier and a second loudspeaker 32. The right and left hand channels of the stereo amplifier, which are coupled together schematically in FIG. 1, process the guitar and organ signals separately.

The metal bars or frets 34 on top of the neck 38 of the guitar each extend in spaced parallel transverse manner underneath all the strings. Six separate carbon strips 36 are disposed between the bars and the neck 38, each strip underlying a corresponding string. Each strip as shown in FIG. 5 is connected through a corresponding one of six manually operated switches 40 disposed in a bank 42 at the base of the strings. This bank also has six screws 44 each of which enables the user to tune the corresponding generator to the corresponding string. As shown in the circuit diagram of FIG. 5, screws 44 adjust the variable resistor RT and thereby adjust the pitch or tone of the tone generators 16. The generators will not function unless their switches are closed. With the switch closed, as the user presses a string down upon a bar or fret, the pressure on the corresponding strip changes its resistance and

produces slight change in the generator or oscillator frequency.

Reverb amplifier 46, unit 48 and drive 50 can be coupled into the amplifier 30 via the volume control to produce a vibrato effect.

In FIG. 6, a modification is shown for use when the strings are plucked. To this end, six piezo electric devices 60 each tuned or associated with a corresponding string drive separate transistors 62 operating relays 64 which supply or interrupt the supply of current to a corresponding strip.

While I have described my invention with particular reference to the drawings, such is not to be considered as limiting its actual scope.

What is claimed is:

1. In an electric guitar, having a microphone and controls therefor, producing simulated organ tones, comprising:

first means, coupled to the microphone and controls, for amplifying the electrical signals produced by the;

a first loudspeaker, coupled to said amplifying means, for audibly reproducing the electrical signals amplified by said amplifying means;

a plurality of tone generating means, each associated with a corresponding guitar string and tuned to the frequency thereof, responsive to the engagement of the guitar strings by the frets of the guitar, for generating a plurality of simulated organ tones;

second means, coupled to said plurality of tone generating means, for amplifying said plurality of simulated organ tones produced by said tone generating means;

a second loudspeaker, coupled to said second amplifying means, for audibly reproducing said amplified simulated organ tones;

a plurality of elongated strips of carbon material, each longitudinally disposed along the neck of the guitar below a corresponding guitar string, and positioned below and perpendicular to the frets of the guitar, said strips being coupled to said frets and said plurality of tone generating means so that the resistance of each of said strips varies with the position of the frets engaged by the guitar strings when finger pressure is applied to the strings of the guitar, for varying the output frequency of said plurality of tone generating means and the simulated organ tones produced; and

means for coupling said plurality of tone generating means to said second amplifying means.

2. The electric guitar as recited in claim 1, wherein said first and second amplifying means comprise a two-channel, stereophonic, electronic amplifier, having the first channel thereof coupled to the guitar and said first loudspeaker, and the second channel thereof coupled to said coupling means for said plurality of tone generating means and said second loudspeaker, so that said first loudspeaker audibly reproduces the sounds produced by the guitar strings and said second loudspeaker audibly reproduces said simulated organ tones.

3. The electric guitar as recited in claim 2, further comprising a plurality of manually operated switching means, each coupled to a corresponding one of said plurality of tone generating means and guitar strings, for switching said plurality of tone generating means on and off during operation of the guitar.

4. The electric guitar as recited in claim 3, further comprising a plurality of variable resistors, coupled to the strings of the guitar and said plurality of tone generating means, for varying the resistance between said tone generating means and the guitar strings, thereby adjusting the output frequency of said plurality of tone generating means and tuning said plurality of tone generating means to the strings of the guitar.

* * * * *