[0026] Scratchpad **66** is used to make scratching sound effects by physically rotating scratchpad **66**. Use of scratchpad **66** has a switch **66***a* that allows its effect to be limited to a one-time effect on a particular audio track **22**, **24**, **26**.

[0027] The term "speed" used herein refers at a minimum to the count or tempo of the sound recording, sometimes measured in beats per minute. In analog audio increasing the speed automatically increases the pitch of the sound recording. In digital format, the speed can be increased without altering the pitch. Hence, in device **10** of the present invention the user has the option of increasing the tempo and the pitch or increasing the tempo without increasing the pitch. As used herein, therefore, the term "speed" refers to the tempo with or without the pitch.

[0028] For each audio track **22**, **24**, **26** the mixing console also has a preview button **37** for use of headphones **42**. It should be noted that the number of audio tracks included in the device **10** can range from as few as two to as many as approximately six.

[0029] Device **10** also includes two audio outputs **40**, **42** including a headphone **42** or headphone output **42** and a main speaker output **40**. These two audio outputs **40**, **42** each have a digital to analog convertor. Headphone output **42** (made up of a digital to analog convertor, a headphone volume knob **42***a* and a headphone jack) also includes analog controls, e.g. headphone volume knob **42***a*, for adjusting a volume of a final mix analog audio heard on the headphone **42**. Console **20** also includes main output master volume knob **40***a* for controlling the volume of the final mix analog audio. Headphone volume knob **42***a* and main output master volume knob **40***a* are also analog controls **30** but are not connected to the computer **11** and do not interact with the software.

[0030] Device **10** also includes a touch screen LCD panel **50** (also called simply a "touch screen"). Touch screen LCD panel **50** may be divided into sections **55** with each section **55** corresponding to a single audio track **22**, **24**, **26**. Each section **55** typically has a button for selecting a "new" song and several buttons for queuing sound recordings played on that audio track, for example audio track one **22** and those button would at least include a button for play mode, a button for rewind mode, a button for forward mode and a button for pause mode. Each section **55** would also have a button for opening a menu of special effects that are selected to be applied to that audio track (for example audio track one **22**) in digital format. Touch screen LCD panel **50** also includes an area in each section **55** for a particular audio track, say audio track one **22** for example, in which is shown a graphical display of a wave form of a song in a play mode on that audio track **22**, **24**, **26**.

[0031] Device **10** includes a computer **11**, that has a processor **12**, ROM storage means **13** for storing the software, RAM storage means **14**, a hard disc **15** to store audio sound track files, and software **16**. Processor **12**, which means one processor or a main processor and co-processors specialized in digital signal processing and/or in compressed audio data encoding and decoding, uses software **16** that decodes each audio track from compressed digital audio data format to digital format, applies special effects to each audio track based on speed parameters supplied by the sliders **31** and based on special effects parameters supplied the touch screen LCD panel **50** and based on tone parameters supplied by the equalizing knobs **33**. The software also mixes the audio tracks **22**, **24**, **26** that are in digital format using volume parameters provided by the analog controls to generate a final mix digital output. As part of the process of creating a final mix digital output, the software **16** also interprets the placement of the crossfader slider to determine which audio track volume to be heard on the main speaker output **40**, as detailed further below.

[0032] Software **16** also mixes audio tracks **22**, **24**, **26** to be heard in the headphone output **42** by creating a headphone mix digital output from the preview buttons **37**.

[0033] Once there is a final mix digital output, the software **16** sends the final mix digital output to the digital to analog convertor of the main speaker output to be converted to final mix analog audio. For example, volume parameters represented digitally might be volume at 70% of the maximum range in audio track one and volume at 25% of the maximum range in audio track two.

[0034] Once there is a headphone mix digital output, software **16** sends it to the digital to analog convertor **42***a* of the headphone output **42** to be converted to headphone mix analog audio.

[0035] The single device **10** allows a disc jockey to manually mix and manually adjust the speed of compressed digital audio data sound recordings with a level of manual dexterity typically used in the mixing of vinyl records, and this level of manual dexterity far exceeds the level of manual dexterity provided by a computer mouse or other computer pointing device.

[0036] Device **10** also allows the user or controller to re-encode the final mix digital output into compressed digital audio data format which can then be stored on hard disc **15** of computer **11** within device **10** to be played later as a single sound recording on a particular audio track **22** as an element in a further mix. In the main embodiment, although not in the alternative embodiment described below, by pushing a "record" button on touch screen **50** while the final mix digital output is being played on the main speaker output **40**, device **10** automatically encodes the final mix digital output into compressed digital audio data format and stores it on the hard disk for future selection by touch screen **50**, as seen in **FIG. 3**. This editing feature permits the user or controller to perform editing of a song with the device **10** such as by splicing in one part of a song to a second location.

[0037] Device **10** also includes an optional interface **88** between the device **10** and an external personal computer **111** for uploading sound recordings from the personal computer **111** to the device **10** and for downloading an audio mixing performance created using the device **10** on to the personal computer **111** from the device **10** for the purpose of advertising and/or selling the audio mixing performance through a global telecommunications network.

[0038] Device **10** includes an optional audio input **77** comprising an analog to digital converter **76** for converting sound recordings in analog format to compressed digital audio data format and an optional CD ROM drive **79** for converting sound recordings in digital format to compressed digital audio data format thereby allowing the device **10** to be used with a high degree of manual dexterity for mixing sound recordings in either compressed digital audio data format or CD format for noncompressed digital data.