Claims:

1. An apparatus for interference based wave synthesis of an output wave, the apparatus comprising:
a first input wave generator;
a second input wave generator; and
a signal processor configured to:
receive information defining output wave characteristics of an output wave that is to be generated by interfering waves generated respectively by the first input wave generator and the second input wave generator, said output wave characteristics comprising at least an output wave frequency B, and an output signal amplitude M;
determine a constant value A;
drive the first input wave generator to generate a first input wave, wherein said first input wave has:
a frequency equal to (A+B), wherein A is the determined constant value and B is the output wave frequency of the output wave; and
an amplitude having a first amplitude value that is generated based on implementing a function of M/(2*sin(A*t)); and
drive the second input wave generator to generate a second input wave, wherein said second input wave has:
a frequency equal to (A-B), wherein A is the determined constant value and B is the output wave frequency of the output wave; and
an amplitude having a second amplitude value that is generated based on implementing a function of M/(2*sin(A*t)).

2. The apparatus as claimed in claim 1, wherein the signal processor is configured to:
drive the first input wave generator to generate the first input wave, such that said first amplitude value of said first input wave is equal to M/(2*sin(A*t)); and
drive the second input wave generator to generate the second input wave, such that said second amplitude value of said second input wave is equal to M/(2*sin(A*t)).

3. The apparatus as claimed in claim 1, wherein the first input wave generator is configured to define a first wave output path, and the second input wave generator is configured to define a second wave output path, such that the first input wave and the second input wave interfere with each other

within an interference region defined by an intersection of the first wave output path and the second wave output path.

4. The apparatus as claimed in claim 1, wherein the output wave frequency B has a value that is expressible by the waveform expression
$\cos B=(\sin(A+B)+\sin(A-B))/(2 \sin A)$.

5. The apparatus as claimed in claim 1, wherein the output wave having output wave frequency B and output signal amplitude M is generated by interfering the first input wave and the second input wave, and wherein the respective values of A and B are expressible by the waveform expression
$\sin B=(\sin(A+B)-\sin(A-B))/(2 \cos A)$.

6. The apparatus as claimed in claim 1, wherein the output wave having an output wave frequency B and output signal amplitude M is generated by interfering the first input wave and the second input wave, and wherein the respective values of A and B are expressible by the waveform expression
$\cos B=(\cos(A+B)+\cos(A-B))/(2 \cos A)$.

7. The apparatus as claimed in claim 1, wherein the output wave having an output wave frequency B and output signal amplitude M is generated by interfering the first input wave and the second input wave, and wherein the respective values of A and B are expressible by the waveform expression
$\sin B=(\cos(A-B)-\cos(A+B))/(2 \sin A)$.

8. The apparatus as claimed in claim 1, wherein the first input wave generator comprises a first input wave generating surface and the second input wave generator comprises a second input wave generating surface, wherein said first input wave generating surface and said second input wave generating surface are positioned to face each other.

9. The apparatus as claimed in claim 1, wherein frequency B is a frequency within a 20 Hz to 200 Hz range, and each of the frequency having a first frequency value equal to (A+B) and the frequency having a second frequency value equal to (A-B) is a frequency within a 20,000 Hz and 20 MHz range.

10. The method as claimed in claim 1, wherein the apparatus is a speaker.

11. A method for interference based wave synthesis, the method comprising:
receiving information defining output wave characteristics, of an output wave that is to be generated by interfering waves generated respectively by the first input wave generator and the second input wave generator, said output wave characteristics comprising at least an output wave frequency B, and an output signal amplitude M;
determining a constant value A;
generating a first input wave, wherein said first input wave has:
a frequency equal to (A+B), wherein A is the determined constant value and B is the output wave frequency of the output wave; and
an amplitude having a first amplitude value that is generated based on implementing a function of M/(2*sin(A*t)); and
generating a second input wave, wherein said second input wave has:
a frequency equal to (A-B), wherein A is the determined constant value and B is the output wave frequency of the output wave; and
an amplitude having a second amplitude value that is generated based on implementing a function of M/(2*sin(A*t)).

12. The method as claimed in claim 11, wherein:
said first amplitude value of said first input wave is a function of M/(2*sin(A*t)); and
said second amplitude value of said second input wave is a function of M/(2*sin(A*t)).

13. The method as claimed in claim 11, wherein a first input wave generator configured to generate the first input wave has a defined first wave output path, and a second input wave generator configured generate the second input wave has a defined second wave output path, such that the first input wave and the second input wave interfere with each other within an interference region defined by an intersection of the first wave output path and the second wave output path.

14. The method as claimed in claim 11, wherein the output wave frequency B has a value that is expressible by the waveform expression

cos B=(sin(A+B)+sin(A-B))/(2 sin A).

15. The method as claimed in claim 11, wherein the output wave having output wave frequency B and output signal amplitude M is generated by interfering the first input wave and the second input wave, and wherein the respective values of A and B are expressible by the waveform expression sin B=(sin(A+B)-sin(A-B))/(2 cos A).

16. The method as claimed in claim 11, wherein the output wave having an output wave frequency B and output signal amplitude M is generated by interfering the first input wave and the second input wave, and wherein the respective values of A and B are expressible by the waveform expression cos B=(cos(A+B)+cos(A-B))/(2 cos A).

17. The method as claimed in claim 11, wherein the output wave having output wave frequency B and output signal amplitude M is generated by interfering the first input wave and the second input wave, and wherein the respective values of A and B are expressible by the waveform expression sin B=(cos(A-B)-cos(A+B))/(2 sin A).

18. A computer program product for implementing interference based wave synthesis, comprising a non-transitory computer usable medium having computer readable program code embodied therein, the computer readable program code comprising instructions for
receiving information defining output wave characteristics, of an output wave that is to be generated by interfering waves generated respectively by the first input wave generator and the second input wave generator, said output wave characteristics comprising at least an output wave frequency B, and an output signal amplitude M;
determining a constant value A;
generating a first input wave, wherein said first input wave has:
a frequency equal to (A+B), wherein A is the determined constant value and B is the output wave frequency of the output wave; and
an amplitude having a first amplitude value that is generated based on implementing a function of M/(2*sin(A*t)); and
generating a second input wave, wherein said second input wave has:

a frequency equal to (A-B), wherein A is the determined constant value and B is the output wave frequency of the output wave; and

an amplitude having a second amplitude value that is generated based on implementing the function of M/(2*sin(A*t)).

19. The apparatus as claimed in claim 1, wherein the signal processor comprises any of a computer processor, logic circuit, a logic module, a logic device, a field programmable gate array (FPGA), an application specific integrated circuit (ASIC), or a digital signal processor (DSP).