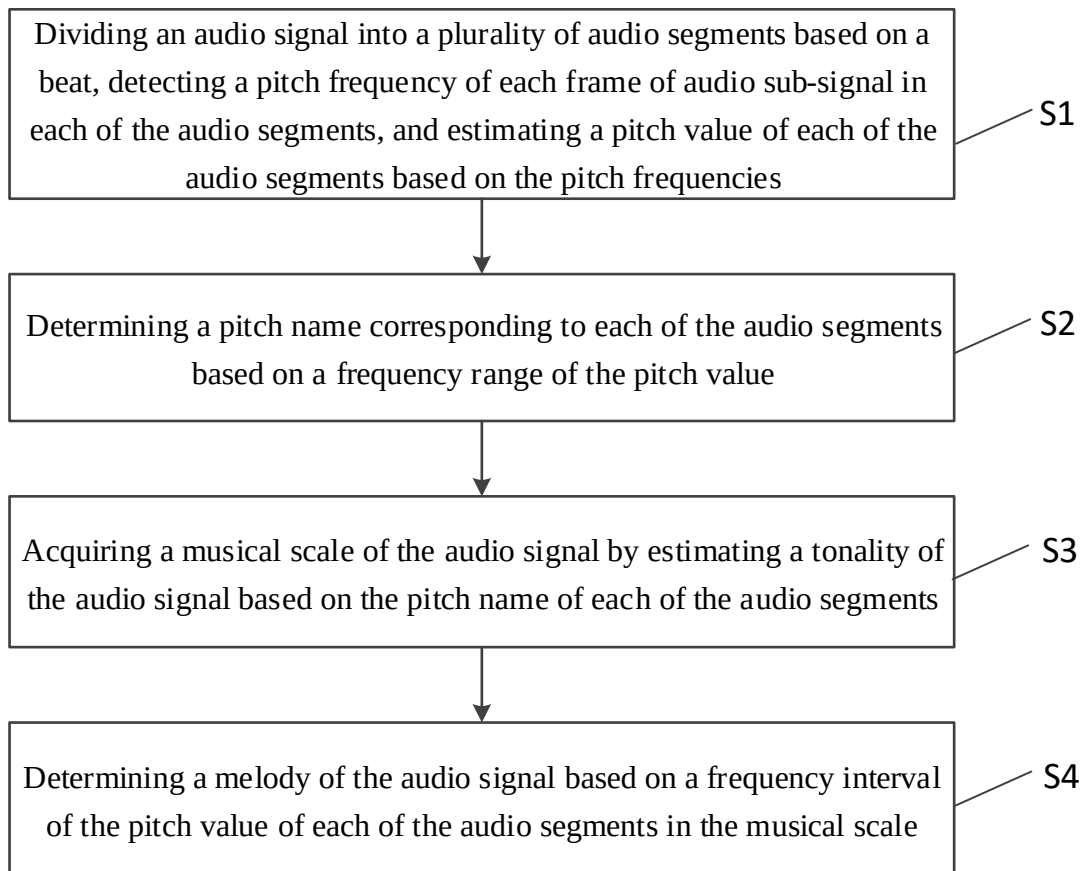
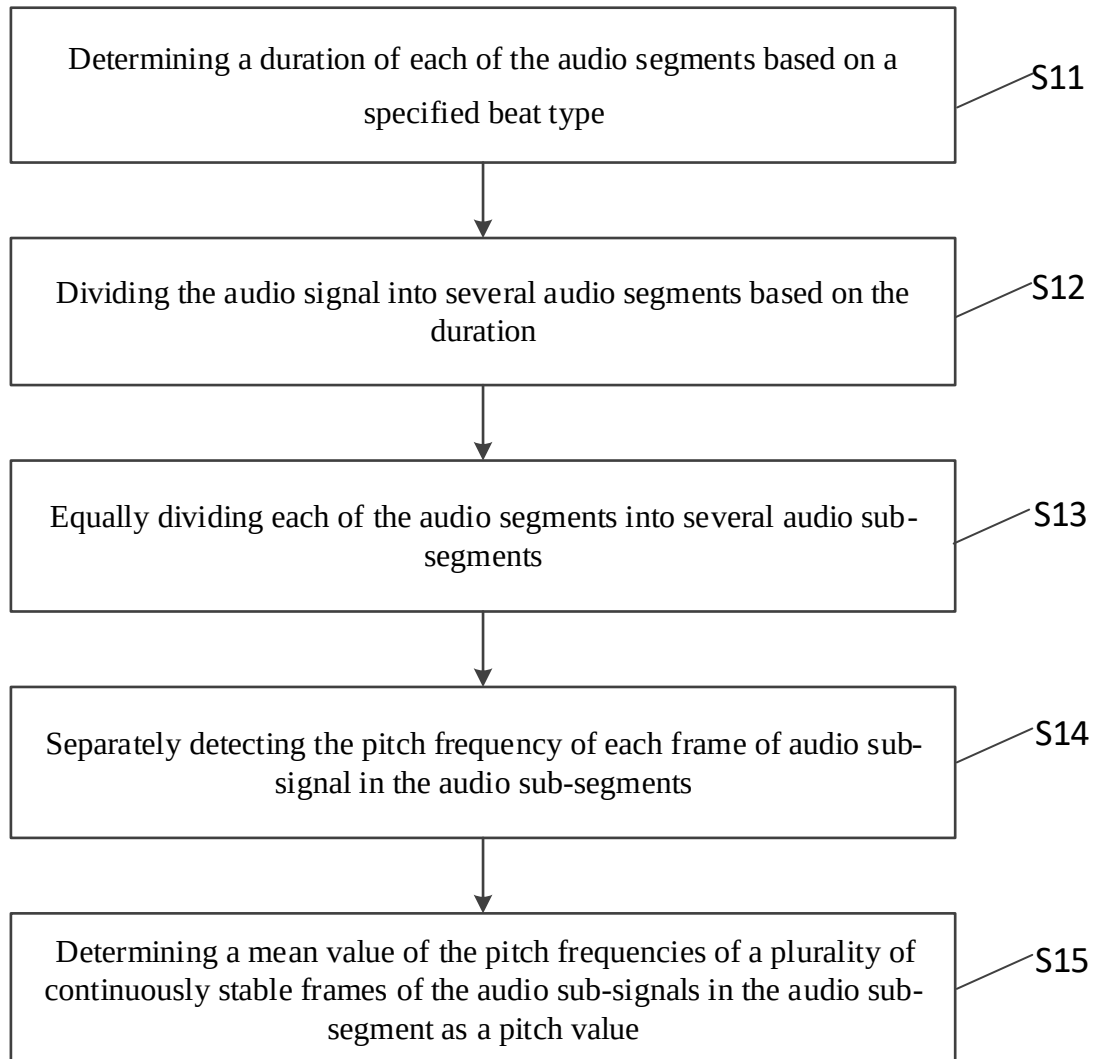


**FIG. 1**

**FIG. 2**

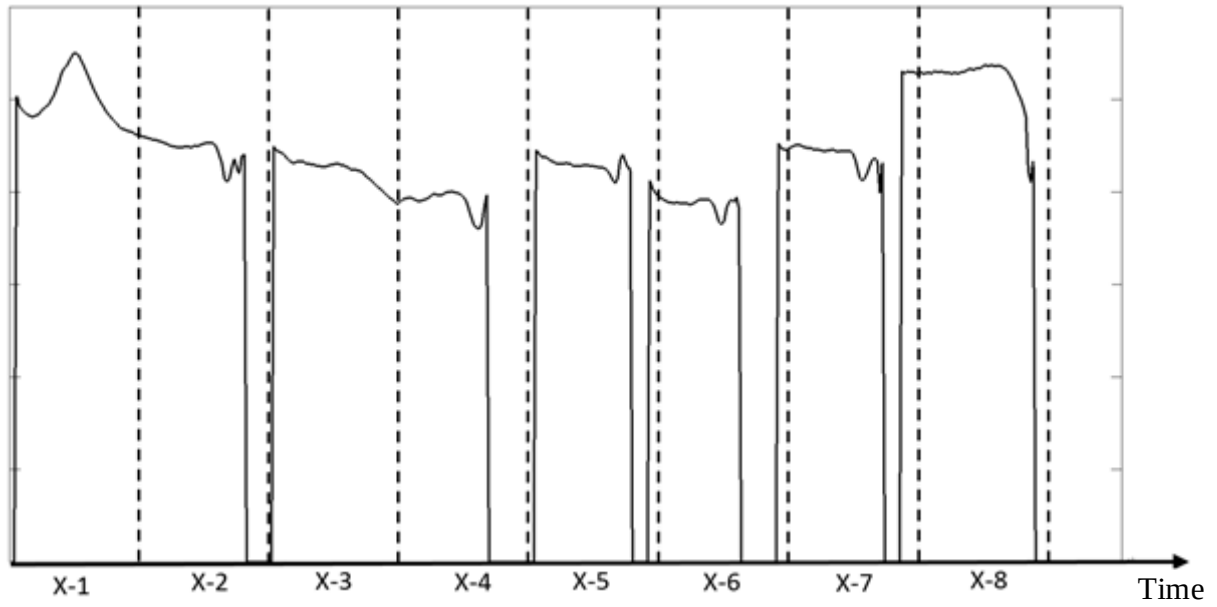
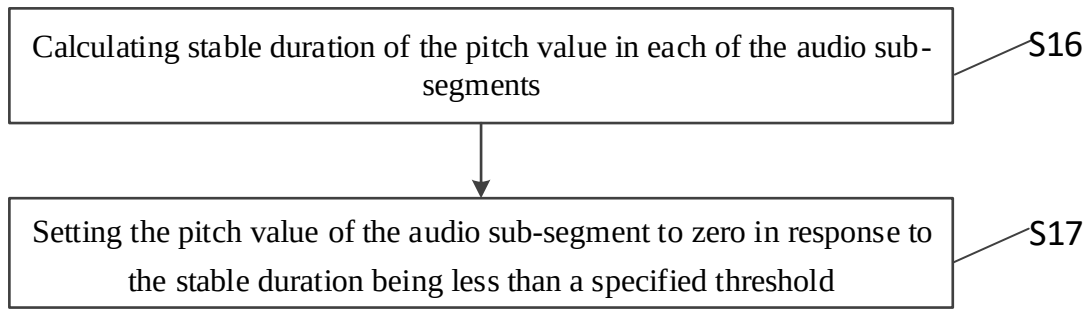
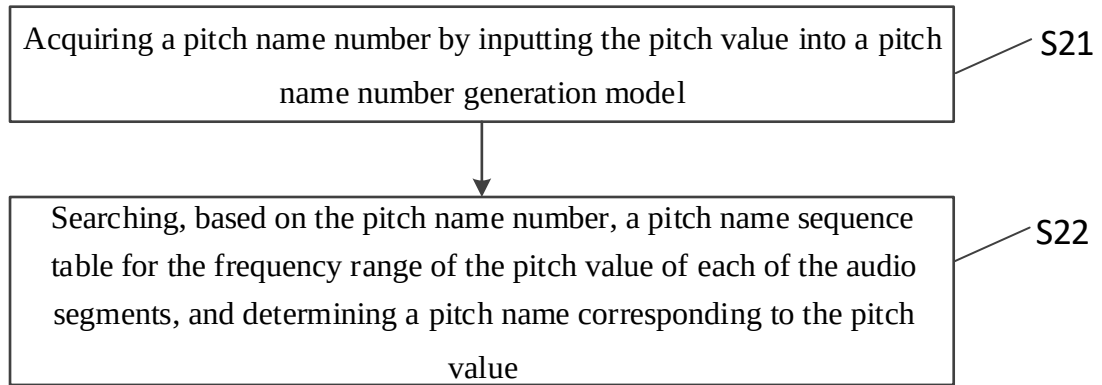


FIG. 3

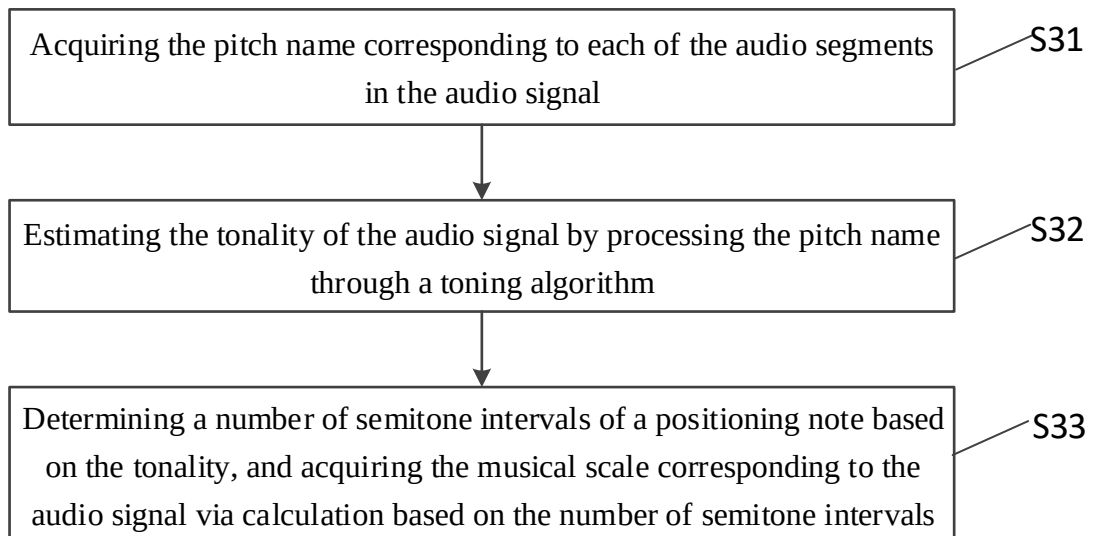
4/12



**FIG. 4**

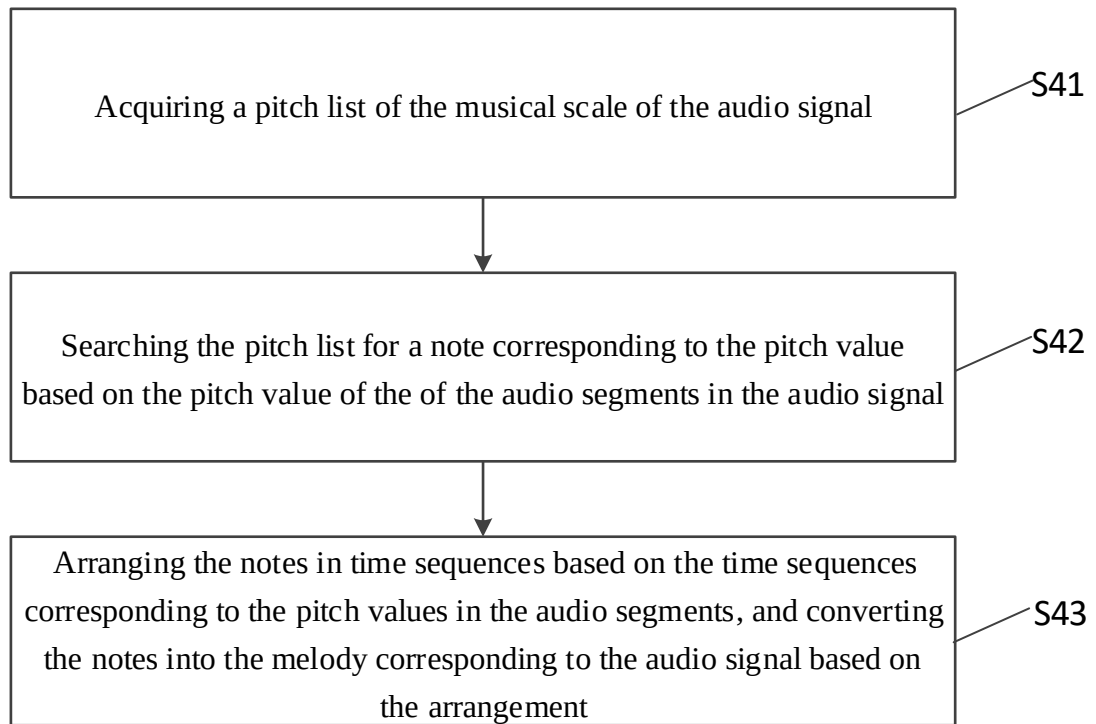


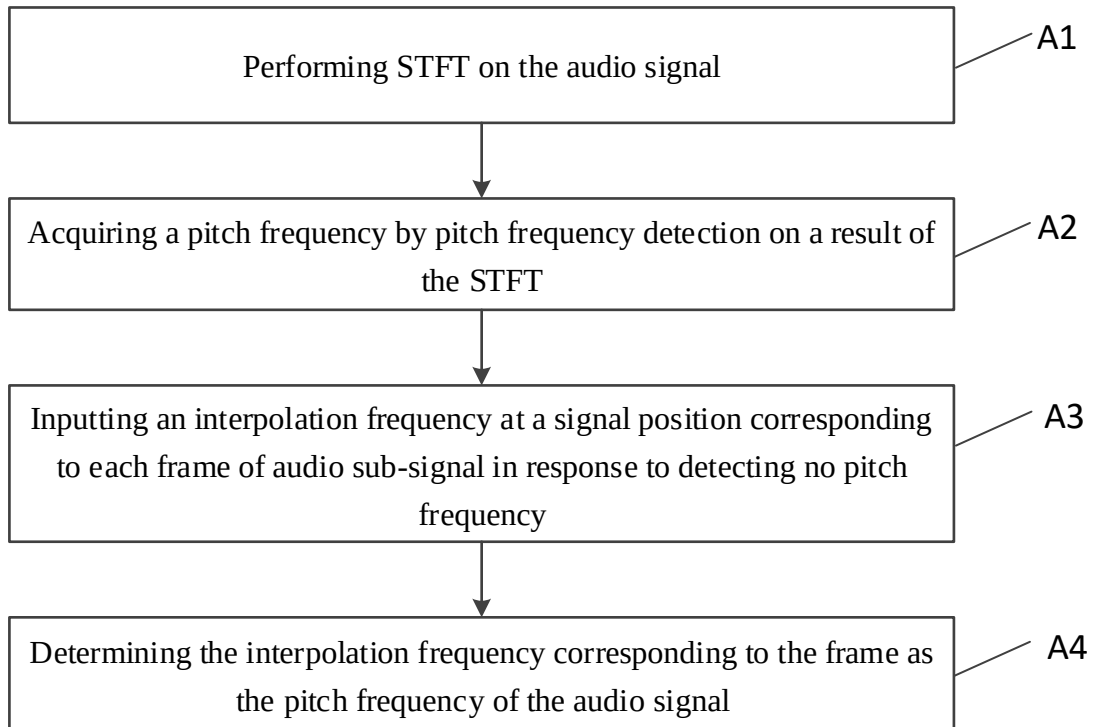
**FIG. 5**

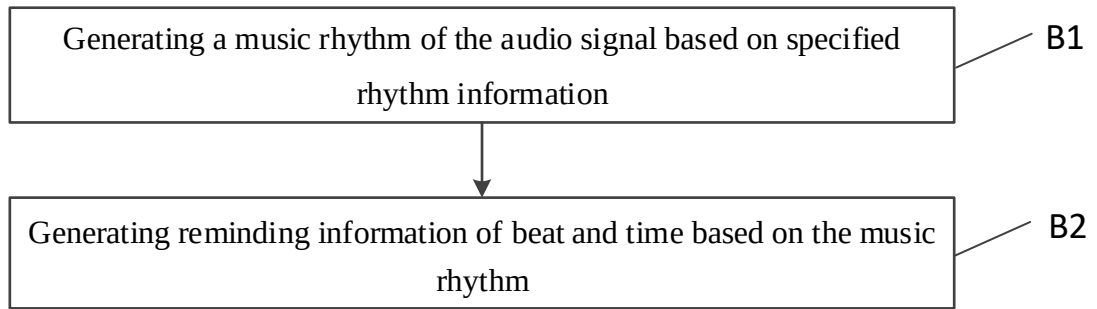
**FIG. 6**

| Pitch name                                                                  | Number of semitone intervals | Multiple relationship                                 | Frequency (Hz)                                                  |
|-----------------------------------------------------------------------------|------------------------------|-------------------------------------------------------|-----------------------------------------------------------------|
| Perfect prime (A <sup>1</sup> )                                             | <b>0</b>                     | $2^1 = 2$                                             | $440 \times 1 = 440$                                            |
| Augmented prime/<br>diminished second<br>(A <sup>#</sup> /B <sup>b</sup> 1) | <b>1</b>                     | $2^{11/12} \approx 1.8877486253633869932838263133351$ | $440 \times 2^{1/12} \approx 466.1637615180899164072031297762$  |
| Major second (B <sup>1</sup> )                                              | <b>2</b>                     | $2^{5/6} \approx 1.781797436280678609480452411181$    | $440 \times 2^{1/6} \approx 493.8833012561241118307545418586$   |
| Minor third (C)                                                             | <b>3</b>                     | $2^{3/4} \approx 1.6817928305074290860622509524664$   | $440 \times 2^{1/4} \approx 523.2511306011972693556999870466$   |
| Major third (C <sup>#</sup> )                                               | <b>4</b>                     | $2^{2/3} \approx 1.5874010519681994747517056392723$   | $440 \times 2^{1/3} \approx 554.3652619537441924975726672023$   |
| Perfect fourth (D)                                                          | <b>5</b>                     | $2^{7/12} \approx 1.4983070768766814987992807320298$  | $440 \times 2^{5/12} \approx 587.3295358348151205255660277209$  |
| Augmented fourth/<br>diminished fifth (D <sup>#</sup> /<br>E <sup>b</sup> ) | <b>6</b>                     | $2^{1/2} \approx 1.4142135623730950488016887242097$   | $440 \times 2^{1/2} \approx 622.2539674441618214727430386522$   |
| Perfect fifth (E)                                                           | <b>7</b>                     | $2^{5/12} \approx 1.3348398541700343648308318811845$  | $440 \times 2^{7/12} \approx 659.2551138257398594716835220930$  |
| Minor sixth (F)                                                             | <b>8</b>                     | $2^{1/3} \approx 1.2599210498948731647672106072782$   | $440 \times 2^{2/3} \approx 698.4564628660077688907504812795$   |
| Major sixth (F <sup>#</sup> )                                               | <b>9</b>                     | $2^{1/4} \approx 1.1892071150027210667174999705605$   | $440 \times 2^{3/4} \approx 739.9888454232687978673904190852$   |
| Minor seventh (G)                                                           | <b>10</b>                    | $2^{1/6} \approx 1.1224620483093729814335330496792$   | $440 \times 2^{5/6} \approx 783.9908719634985881713990609195$   |
| Major seventh (G <sup>#</sup> )                                             | <b>11</b>                    | $2^{1/12} \approx 1.0594630943592952645618252949463$  | $440 \times 2^{11/12} \approx 830.6093951598902770448835778670$ |
| Perfect eighth (A)                                                          | <b>12</b>                    | $2^0 = 1$                                             | $440 \times 2 = 880$                                            |

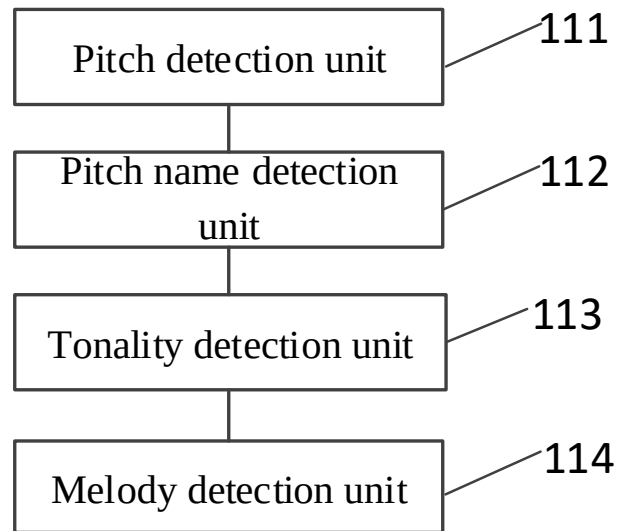
FIG. 7

**FIG. 8**

**FIG. 9**



**FIG. 10**



**FIG. 11**

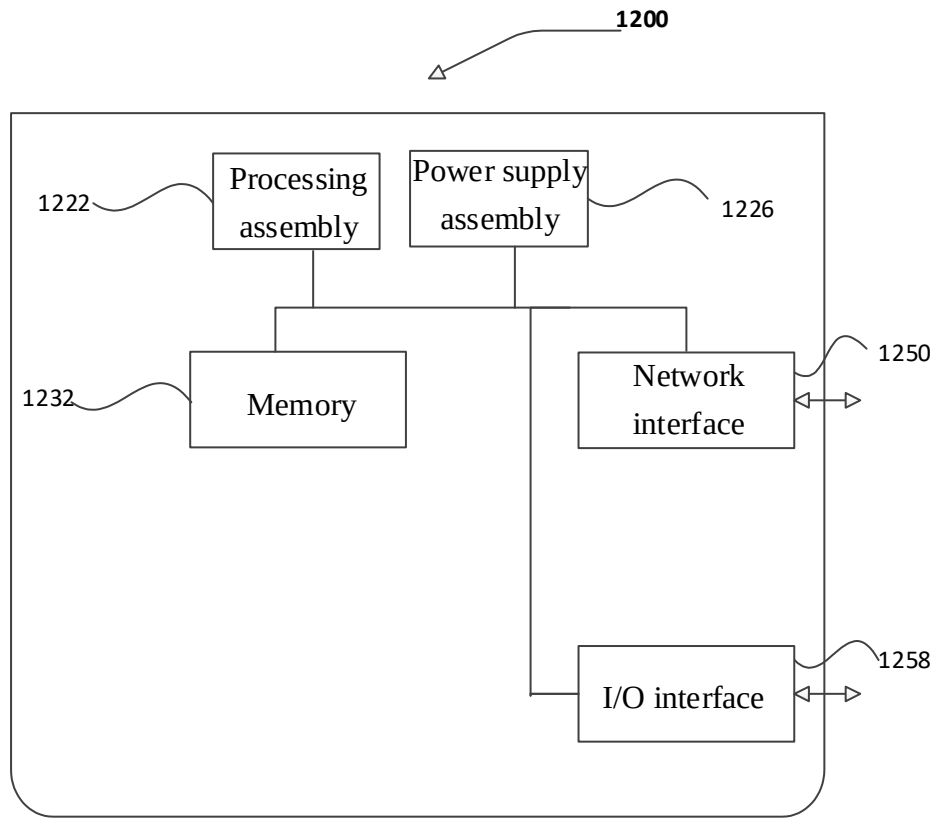


FIG. 12