SUMMARY

In a first aspect, a token sensor assembly is provided, comprising a container having a height and side walls that define an inside perimeter and an outside perimeter of the container, and a top surface and a bottom surface of the container;
a translucent cover disposed on the top surface, the translucent cover configured to filter out wavelengths in the visible spectrum that are outside a predetermined range for transmission through the translucent cover; a circuit board secured to the inside perimeter of the container; and a passive ambient light sensor disposed on a top side of the circuit board, the passive ambient light sensor configured to detect a presence of a wager if ambient light is blocked from entering the container when a token is placed on the translucent cover, wherein the passive ambient light sensor is configured to operate within the predetermined wavelength range in low light conditions of 11 lux or greater.

In a second aspect, a token sensor apparatus is provided, comprising a first token sensor assembly including a container having a height and side walls that define an inside perimeter and an outside perimeter of the container, and a top surface and a bottom surface; a translucent cover disposed on the top surface of the side walls; a circuit board secured to the inside perimeter of the container; a plurality of lights disposed on a top side of the circuit board; a passive ambient light sensor disposed on the top side of the circuit board; and a light controller operably coupled with the passive ambient light sensor and the plurality of lights, and configured to: control the plurality of lights to emit light that passes out of the container and through the translucent cover responsive to the passive ambient light sensor detecting a presence of a wager; and not poll a condition of the passive ambient light sensor if the plurality of lights are emitting the light.

In a third aspect, a method of controlling a token sensor assembly is provided, comprising detecting an absence of a wager on a token sensor assembly if ambient light passing through a translucent cover of the token sensor assembly is sensed by a passive ambient light sensor; detecting a presence of the wager on the token sensor assembly if the ambient light is blocked and not sensed by the passive ambient light sensor; generating light with a plurality of light sources from within the token sensor assembly, the generated light passing through the translucent cover and out from the token sensor assembly if the presence of the wager is

detected; and ceasing to poll a condition of the passive ambient light sensor while the plurality of light sources are generating the light.

Embodiments of the present disclosure include a gaming table apparatus, comprising: support surface; a token sensor controller; and a first token sensor assembly operably coupled to the token sensor controller, wherein the first token sensor assembly is physically restrained by the support surface, and wherein the first token sensor assembly comprises: a container having a translucent cover for supporting a token as a wager, the translucent cover configured to pass wavelengths of visible light within a predetermined wavelength range, and substantially attenuate wavelengths of visible light outside the predetermined wavelength range; a passive ambient light sensor configured to detect a presence of the wager by: detecting ambient light through the translucent cover if the token is not placed on the translucent cover; and detecting a lack of ambient light through the translucent cover if the token is placed on the translucent cover, wherein the passive ambient light sensor is configured to operate within the predetermined wavelength range.

Another embodiment includes a token sensor assembly, comprising a container having a height and side walls that define an inside perimeter and an outside perimeter of the container, and a top surface and bottom surface of the container; a translucent cover disposed on the top surface, the translucent cover configured to filter out wavelengths in the visible spectrum that are outside a predetermined range for transmission through the translucent cover; a circuit board secured to the inside perimeter of the container; and a passive ambient light sensor disposed on a top side of the circuit board, the passive ambient light sensor configured to detect a presence of a wager if ambient light is blocked from entering the container when a token is placed on the translucent cover, wherein the passive ambient light sensor is configured to operate in low light, such as 11 lux, 20 lux or 30 lux, for example. In some embodiments, suitable sensors have a spectral response sensitivity ratio of at least 0.5 or 0.6.

Another embodiment includes a token sensor assembly, comprising a container having a height and side walls which define an inside and outside perimeter of the container, and a top surface and bottom surface; a translucent cover disposed on the top surface of the side walls; a circuit board secured to the inside perimeter of the container; a plurality of lights disposed on a top side of the circuit board; a passive ambient light sensor disposed on the top side of the circuit board; and a light controller operably coupled with the passive ambient light sensor and the plurality of lights, and configured to: control the

CLAIMS

What is claimed is:

1. A token sensor assembly, comprising:
a container having a height and side walls that define an inside perimeter and an outside perimeter of the container, and a top surface and a bottom surface of the container;

a translucent cover disposed on the top surface, the translucent cover configured to filter out wavelengths in the visible spectrum that are outside a predetermined range for transmission through the translucent cover;

a circuit board secured to the inside perimeter of the container; and

a passive ambient light sensor disposed on a top side of the circuit board, the passive ambient light sensor configured to detect a presence of a wager if ambient light is blocked from entering the container when a token is placed on the translucent cover, wherein the passive ambient light sensor is configured to operate within the predetermined wavelength range in low light conditions of 11 lux or greater.

2. The token sensor assembly of claim 1, further comprising a plurality of light sources and a light controller operably coupled with the passive ambient light sensor, and configured to cause the plurality of light sources to flash on and off if the presence of the wager is detected.

3. The token sensor assembly of claim 2, wherein the token sensor assembly is configured to alternate between polling a condition of the passive ambient light sensor when the plurality of light sources are off and not polling the condition of the passive ambient light sensor if the plurality of light sources are on.

4. The token sensor assembly of claim 3, wherein the passive ambient light sensor is configured to be disabled when the plurality of light sources are on.

5. The token sensor assembly of claim 3, wherein the light controller is configured to ignore an output of the passive ambient light sensor when the plurality of light sources are on.

6. The token sensor assembly of claim 2, wherein the light controller is further configured to hold the plurality of light sources on when a dealer locks the wager during game play.

7. The token sensor assembly of claim 1, further comprising an operational amplifier operably coupled with the passive ambient light sensor, and configured to operate in a high gain mode.

8. The token sensor assembly of claim 1, wherein the passive ambient light sensor is capable of operating in light conditions between 11 lux and 400 lux.

9. The token sensor assembly of claim 8, wherein the passive ambient light sensor is capable of operating in a high gain mode.

10. The token sensor assembly of claim 1, wherein light sources of the plurality of light sources are configured to emit light having a wavelength in the visible spectrum that is substantially the same as a peak wavelength transmitted through the translucent cover.

11. A token sensor apparatus, comprising; a first token sensor assembly, including:
a container having a height and side walls that define an inside perimeter and

an outside perimeter of the container, and a top surface and a bottom surface;

a translucent cover disposed on the top surface of the side walls;

a circuit board secured to the inside perimeter of the container;

a plurality of lights disposed on a top side of the circuit board;

a passive ambient light sensor disposed on the top side of the circuit board; and

a light controller operably coupled with the passive ambient light sensor and the plurality of lights, and configured to:
control the plurality of lights to emit light that passes out of the container and through the translucent cover responsive to the passive ambient light sensor detecting a presence of a wager; and not poll a condition of the passive ambient light sensor if the plurality of lights are emitting the light.

12. The token sensor apparatus of claim 11, wherein the light controller is configured to control the plurality of lights to emit the light by flashing the plurality of lights on and off responsive to the wager initially being placed, and holding the plurality of lights continuously on responsive to a dealer input locking the wager.

13. The token sensor apparatus of claim 12, wherein the light controller is further configured to be reset responsive to a dealer input unlocking the wager.

14. The token sensor apparatus of claim 11, further comprising a plurality of token sensor assemblies operably coupled in a serial string with the first token sensor assembly and a token sensor controller, each token sensor assembly of the plurality of token sensor assemblies having the same components as the first token sensor assembly.

15. The token sensor apparatus of **14**, wherein each token sensor assembly in the serial string includes a sensor mode controller configured to operate the corresponding token sensor assembly in one of a plurality of operational modes.

16. The token sensor apparatus of claim 15, wherein:
a first operational mode is a read mode configured to read a state of the passive ambient light sensor; and

a second operational mode is a shift mode configured to shift a saved state of the passive ambient light sensor to a next token sensor assembly in the serial string.

17. The token sensor apparatus of claim 14, further comprising another plurality of token sensor assemblies connected with the token sensor controller as another serial string of token sensor assemblies, wherein:
the string of serially connected token sensor assemblies is coupled to a first port of the token sensor controller;

the another string of serially connected token sensor assemblies is coupled to a second port of the token sensor controller, and

the token sensor controller is configured to manage the string of serially connected token sensor assemblies and the another string of serially connected token sensor assemblies.

18. A method of controlling a token sensor assembly, the method comprising:
detecting an absence of a wager on a token sensor assembly if ambient light passing through a translucent cover of the token sensor assembly is sensed by a passive ambient light sensor;

detecting a presence of the wager on the token sensor assembly if the ambient light is blocked and not sensed by the passive ambient light sensor; generating light with a plurality of light sources from within the token sensor assembly, the generated light passing through the translucent cover and out from the token sensor assembly if the presence of the wager is detected; and ceasing to poll a condition of the passive ambient light sensor while the plurality of light sources are generating the light.

19. The method of claim 18, wherein generating the light with the plurality of light sources includes generating the light having a wavelength in the visible spectrum that is substantially the same as a peak wavelength passed by the translucent cover.

20. The method of claim 18, wherein detecting the presence of the wager on the token sensor assembly includes operation of the passive ambient light sensor in low light conditions of 11 lux or greater within a predetermined wavelength range of transmission through the translucent cover.