CLAIMS

1. An ophthalmic optical instrument, comprising:

a visual target element;

a first lens, spaced apart from the visual target element, wherein light emitted from the visual target element enters the first lens and exits as parallel light;

a second lens, located on a side of the first lens away from the visual target element, wherein the parallel light is converged to form an image after passing through the second lens; and

a third lens, located on a side of the second lens away from the first lens,

wherein the ophthalmic optical instrument further comprises a control element, the control element is connected to the second lens and configured to control movement of the second lens along its principal optical axis, so that an image formed by the second lens moves to at least one side of the third lens.

2. The ophthalmic optical instrument according to claim 1, wherein the first lens is a collimator lens, the second lens comprises a first positive lens, and the third lens comprises a second positive lens,

wherein the control element is configured to control the second lens to move between the first lens and the third lens, and an image plane of the second lens is located on a side of the second lens away from the visual target element.

3. The ophthalmic optical instrument according to claim 2, wherein a preset position is defined between the first lens and the third lens,

wherein in response to that the second lens moves between the preset position and the third lens, the image plane of the second lens is located on a side of the third lens away from the visual target element.

4. The ophthalmic optical instrument according to claim 3, wherein a focal length of the third lens is greater than a focal length of the second lens.

5. The ophthalmic optical instrument according to any one of claims 2 to 4, further comprising a lens barrel, wherein the lens barrel comprises a first end and a second end opposite to

each other, the third lens is connected to the first end, and a central axis of the lens barrel coincides with a principal optical axis of the third lens, and a distance between the first end and the second end is not greater than a focal length of the third lens,

wherein an entrance pupil center of an examinee's eye coincides with a back focal point of the third lens.

6. The ophthalmic optical instrument according to any one of claims 1 to 5, wherein a focal length of the first lens is greater than a focal length of the second lens,

and the focal length of the second lens is in a range from 1/5 to 4/5 of the focal length of the first lens.

7. The ophthalmic optical instrument according to any one of claims 1 to 6, wherein a distance between the first lens and the third lens is greater than a sum of a focal length of the second lens and a focal length of the third lens.

8. The ophthalmic optical instrument according to any one of claims 1 to 7, wherein the visual target element is located at a front focal point of the first lens.

9. The ophthalmic optical instrument according to claim 5, further comprising:

a beam splitter, located in the lens barrel, wherein a principal optical axis of the beam splitter forms an inclination angle with a focal plane of the third lens, the inclination angle is in a range from 25 degrees to 50 degrees; and

an automatic detection element, configured to receive light from the beam splitter so as to detect a diopter of the examinee's eye.

10. The ophthalmic optical instrument according to any one of claims 1 to 9, wherein the visual target element comprises an electronic display panel configured to display a visual target,

wherein the visual target comprises at least one of a Chinese character, a numeral, and an English letter, and the Chinese character comprises at least one typeface,

a shape and a size of the visual target are variable.

11. The ophthalmic optical instrument according to claim 10, wherein the electronic display panel is further configured to provide a voice prompt.

12. The ophthalmic optical instrument according to claim 10 or 11, wherein the visual target comprises a plurality of sub-targets arranged as M sub-target rows, where M is a positive integer greater than 1,

wherein along an arrangement direction of the M sub-target rows, a height of an i-th sub-target row, a distance between the i-th sub-target row and an (i+1)-th sub-target row, and a height of the (i+1)-th sub-target row are distributed in a geometric progression, where i is a positive integer less than or equal to M-1.

13. The ophthalmic optical instrument according to claim 5, further comprising: a body and a mounting frame, wherein the body is tubular, the first lens, the second lens, and the third lens are all located in the body, the body comprises two ends opposite with each other, the light emitted from the visual target element enters the body through an end of the body close to the first lens, and at least part of the lens barrel extends into the body from another end of the body,

wherein the body is rotatably connected to the mounting frame, so that an angle of the body relative to a setup plane of the mounting frame is adjustable.

14. The ophthalmic optical instrument according to claim 13, wherein an outer diameter of the lens barrel is smaller than an inner diameter of the body.

15. An optical measurement system, comprising the ophthalmic optical instrument according to any one of claims 1 to 14.