CLAIMS

1. A system for categorising a coin, comprising:

at least one image capture devices positioned to capture at least one image of a surface of the coin;

a transparent plate;

a coin delivery device for delivering the coin across the transparent plate, a first side of the coin, being one of an obverse and a reverse of the coin, faces away from the transparent plate and a second side of the coin, being another of the obverse and the reverse of the coin, is visible through the transparent plate;

an edge capture mirror positioned to reflect an image of a peripheral edge of the coin towards the at least one image capture device;

wherein the at least one image capture device is positioned to capture at least one image of both the first and second sides of the coin while the coin is on the transparent plate;

memory comprising master coin data of at least one master coin; and

at least one processor, wherein the at least one processor is configured to:

identify the surface in the at least one image, the surface being one of an obverse and a reverse of the coin;

measure one or more data describing a portion of the surface within a peripheral edge of the coin;

compare the one or more data with the master coin data to determine an amount of deviation of the one or more data from the master coin data; and

categorise the coin as acceptable if the amount of deviation is below a predetermined threshold, and otherwise categorise the coin as unacceptable.

2. The system of claim 1, wherein the one or more image capture devices are positioned to capture at least one image of the reverse of the coin.

3. The system of claim 1 or 2, wherein:

measuring one or more data describing a portion of the surface comprises selecting a central portion of the surface comprising a relief; and

comparing the one or more data with the master coin data comprises determining if the central portion matches master coin data describing a central portion of a surface of the master coin, the central portion of the master coin comprising a relief.

4. The system of claim 3, wherein comparing the one or more data with the master coin data further comprises orienting the central portion of the surface to match an orientation of the central portion of the master coin.

5. The system of claim 3 or 4, wherein comparing the one or more data with the master coin data to determine an amount of deviation of the one or more data from the master coin data comprises determining whether a relief of the coin matches a relief of the master coin.

6. The system of any preceding claim, wherein measuring one or more data describing a portion of the surface comprises determining a reflectance of the portion of the surface of the coin.

7. The system of claim 6, wherein comparing the one or more data with the master coin data to determine an amount of deviation of the one or more data from the master coin data comprises calculating a difference in reflectance between the reflectance of the surface of the coin and a reflectance of a surface of the master coin.

8. The system of any preceding claim, further comprising a light source for illuminating the coin during capturing of the at least one image.

9. The system of claim 8, wherein the light source is configured to illuminate the coin using light of a predetermined wavelength.

10. The system of claim 8, wherein the light source is configured to illuminate the coin using light having a wavelength within a predetermined spectrum.

11. The system of any preceding claim, wherein the one or more image capture devices are positioned to capture at least one image of each of the obverse and reverse of the coin.

12. The system of claim 11, wherein identifying the surface in the at least one image comprises identifying both the obverse and reverse in respective images of the at least one image.

13. The system of claim 11 or 12, wherein:

measuring one or more data describing a portion of the surface comprises:

selecting a portion of the surface comprising a relief; and

determining a reflectance of the portion of the surface of the coin; and

comparing the one or more data with the master coin data comprises:

determining if the central portion matches master coin data describing a central portion, comprising a relief, of a surface of the master coin; and

calculating a difference in reflectance between the reflectance of the surface of the coin and a reflectance of a surface of the master coin.

14. The system of claim 13, wherein the coin is classified as acceptable only if the central portion matches master coin data describing the central portion of the master coin, and the difference in reflectance is below the predetermined threshold.

15. The system of any preceding claim, further comprising a separator configured to locate the coin in a first location if the coin is acceptable, and to locate the coin in a second location is the coin is unacceptable.

16. The system of claim 15, wherein the at least one image capture device comprises a first image capture device arranged to capture at least one image of the first side of the coin, and a second image capture device arranged to capture at least one image of the second side of the coin.

17. The system of claim 15 or 16, further comprising a first surface mirror positioned above the transparent plate, to reflect the first side of the coin towards the at least one image capture device.

18. The system of any one of claims 15 to 17, further comprising a second surface mirror positioned below the transparent plate, to reflect the second side of the coin towards the at least one image capture device.

19. The system of claim 17 or 18, wherein the first or second mirror is angled to enable the at least one image capture device to be positioned to laterally with respect to the transparent plate.

20. The system of claim 1, wherein a surface of the edge capture mirror facing the coin is concave.

21. The system of claim 20, wherein the edge capture mirror reflects an entirety of the peripheral edge.

22. The system of claim any one of claims 18 to 21, wherein the edge capture mirror is located below the transparent plate.

23. The system of any one of claims 13 to 22, wherein the coin delivery device comprises a coin hopper and an upstream conveyor, the upstream conveyor being arranged to receive the coin from the hopper and deliver the coin across the transparent plate from an upstream side of the transparent plate.

24. The system of claim 23, further comprising a downstream conveyor arranged to receive the coin on a downstream side of the transparent plate, to convey the coin away from the transparent plate.

25. The system of claim 23 or 24, wherein the or each conveyor is located above a run, such that the coin is sandwiched between the conveyor and run.

26. The system of claim 25, wherein the or each conveyor comprises one or more spring-loaded rollers, wherein the spring of the respective roller becomes compressed as a coin passes between the roller and the run.

27. The system of claim 25 or 26, wherein the run comprises opposing bumpers, at least one of the bumpers being adjustable laterally to change a width of the run.

28. The system of claim 27, wherein a height of the bumpers is adjustable.

29. The system of claim 23, wherein the run under the downstream conveyor comprises a kicker, the kicker being activated, if the coin is classified as unacceptable, to kick the coin from said run.

30. The system of any one of claims 13 to 29, further comprising at least one edge detector for determining at least one of:

(i) when the coin is passing across the transparent plate; and
(ii) when the coin has passed across the transparent plate.

31. A method for categorising a coin, comprising:

delivering the coin across a transparent plate;

capturing at least one image of a surface of the coin, wherein capturing at least one image of a surface of the coin comprises capturing an image of both an obverse and reverse surface of the coin, the image of one of the obverse and reverse surface of the coin being captured through the transparent plate by using an edge capture mirror positioned to reflect an image of a peripheral edge of the coin towards the at least one image capture device;

identifying the surface of the coin in the at least one image, the surface being one of the obverse and the reverse of the coin;

measuring one or more data describing a portion of the surface within a peripheral edge of the coin;

comparing the one or more data with master coin data of at least one master coin to determine an amount of deviation of the one or more data from the master coin data; and

categorising the coin as acceptable if the amount of deviation is below a predetermined threshold, and otherwise categorising the coin as unacceptable.

32. The method of claim 31, wherein:

measuring one or more data describing a portion of the surface comprises selecting a central portion of the surface comprising a relief; and

comparing the one or more data with the master coin data comprises determining if the central portion matches master coin data describing a central portion of a surface of the master coin, the central portion of the master coin comprising a relief.

33. The method of claim 31 or 32, wherein comparing the one or more data with the master coin data to determine an amount of deviation of the one or more data from the master coin data comprises determining whether a relief of the coin matches a relief of the master coin.

34. The method of any one of claim 31 to 33, wherein measuring one or more data describing a portion of the surface comprises determining a reflectance of the portion of the surface of the coin.

35. The method of claim 34, wherein comparing the one or more data with the master coin data to determine an amount of deviation of the one or more data from the master coin data comprises calculating a difference in reflectance between the reflectance of the surface of the coin and a reflectance of a surface of the master coin.

36. The method of claim 31, wherein a surface of the edge capture mirror facing the coin is concave.