CLAIMS

1. An accessory configured to be detachably mountable to an image pickup apparatus that includes a first mount portion and a pin, the first mount portion including a plurality of first bayonet claw portions, the accessory comprising:

a second mount portion that includes a plurality of second bayonet claw portions configured to enable engagement with the plurality of first bayonet claw portions, and a concave portion in which the pin is inserted when the accessory is mounted to the image pickup apparatus,

characterized in that, when viewed in a central axis direction of the second mount portion, a concave portion side is a side on which the concave portion is provided with respect to a boundary line, the boundary line being a line that is orthogonal to a reference line passing through a center of the concave portion and a central axis of the second mount portion and that passes through the central axis, the plurality of second bayonet claw portions includes, first and second concave portion side bayonet claw portions each having at least a portion disposed on the concave portion side, and an opposite side bayonet claw portion in which both ends thereof are provided on an opposite side of the concave portion side with respect to the boundary line,

and

$1.00 \leq \theta 1/\theta 2 \leq 1.40$, and

$90° < \theta 1 + \theta 2 < 180°$

are satisfied, where $\theta 1$ is an angle formed between the reference line and a first line that passes through the central axis and an end of the first concave portion side bayonet claw portion that is closer to the concave portion, and the central axis of the second mount portion, and $\theta 2$ is an angle formed between the reference line and a second line that passes through the central axis and an end of the second concave portion side bayonet claw portion that is closer to the concave portion.

2. The accessory according to Claim 1, wherein

$1.00 \leq \theta 1/\theta 2 \leq 1.35$

is satisfied.

3. The accessory according to Claim 1,

wherein when viewed in the central axis direction, the reference line and the opposite side bayonet claw portion overlap each other.

4. The accessory according to Claim 1,

wherein

$0.6 \leq \theta 3/\theta 4 \leq 0.9$

is satisfied, where θ3 is an angle formed between the reference line and a line that passes through the central axis and an end of the opposite side bayonet claw portion that is on the side of the first concave portion side bayonet claw portion, and θ4 is an angle formed between the reference line and a line passing through the central axis and an end of the opposite side bayonet claw portion that is on the side of the second concave portion side bayonet claw portion.

5. The accessory according to Claim 1,

wherein

$40° < \theta 1 < 70°$, and

$40° < \theta 2 < 70°$

are satisfied.

6. The accessory according to Claim 1,

wherein when viewed in the central axis direction, the first concave portion side bayonet claw portion and the second concave portion side bayonet claw portion both overlap the boundary line.

7. The accessory according to Claim 1,

wherein a first cutaway is a portion between the first concave portion side bayonet claw portion and the opposite side bayonet claw portion, a second cutaway is a portion

between the opposite side bayonet claw portion and the second concave portion side bayonet claw portion, and a third cutaway is a portion between the second concave portion side bayonet claw portion and the first concave portion side bayonet claw portion,

a dimension of the third cutaway in a circumferential direction of the accessory is larger than dimensions of the first cutaway and the second cutaway in the circumferential direction of the accessory.

8. The accessory according to Claim 1,

wherein among the plurality of first bayonet claw portions, a third bayonet claw portion is a first bayonet claw portion configured to enable engagement with the opposite side bayonet claw portion, a fourth bayonet claw portion is a first bayonet claw portion configured to enable engagement with the second concave portion side bayonet claw portion, and a fifth bayonet claw portion is a first bayonet claw portion configured to enable engagement with the first concave portion side bayonet claw portion, and wherein when viewed in the central axis direction in a state of the first and second mount portions contacting with each other, a reference line is a line that connects the central axis and a center of the pin to each other, $\theta 5$ is an angle formed between a line that connects a point that is, in a region

where the first concave portion side bayonet claw portion and the fifth bayonet claw portion overlap each other, nearest to the pin and the central axis, and the reference line, $\theta 6$ is an angle formed between a line that connects a point that is, in a region where the second concave portion side bayonet claw portion and the fourth bayonet claw portion overlap each other, nearest to the pin and the central axis, and the reference line $\theta 6$, $\theta 7$ is a minimum value of $\theta 5$, and $\theta 8$ is a minimum value of $\theta 6$,

$$0.75 \leq \theta 7/\theta 8 \leq 1.25$$

is satisfied.

9. The accessory according to Claim 1, wherein

$$90^\circ < \theta 7 + \theta 8 < 180^\circ,$$

and

$$90^\circ < \theta 9 + \theta 8 < 180^\circ$$

are satisfied, where among the plurality of first bayonet claw portions, a third bayonet claw portion is a first bayonet claw portion configured to enable engagement with the opposite side bayonet claw portion, a fourth bayonet claw portion is a first bayonet claw portion configured to enable engagement with the second concave portion side bayonet claw portion, and a fifth bayonet claw portion is a first bayonet claw portion configured to enable engagement with the first concave portion side bayonet claw portion,

and wherein when viewed in the central axis direction in a state of the first and second mount portions contacting with each other, a reference line is a line that connects the central axis and a center of the pin to each other, θ5 is an angle formed between a line that connects a point that is, in a region where the first concave portion side bayonet claw portion and the fifth bayonet claw portion overlap each other, nearest to the pin and the central axis, and the reference line, θ6 is an angle formed between a line that connects a point that is, in a region where the second concave portion side bayonet claw portion and the fourth bayonet claw portion overlap each other, nearest to the pin and the central axis, and the reference line θ6, θ7 is a minimum value of θ5, and θ8 is a minimum value of θ6, a maximum value of θ5 is θ9.

10. The accessory according to Claim 1,

wherein among the plurality of first bayonet claw portions, a third bayonet claw portion is a first bayonet claw portion configured to enable engagement with the opposite side bayonet claw portion, a fourth bayonet claw portion is a first bayonet claw portion configured to enable engagement with the second concave portion side bayonet claw portion, and a fifth bayonet claw portion is a first bayonet claw portion configured to enable engagement with the first

concave portion side bayonet claw portion,

and when the accessory mounted to the image pickup apparatus is viewed in the central axis direction, among sides of a hexagon passing through a first end and a second end of a region where the first concave portion side bayonet claw portion and the fifth bayonet claw portion overlap each other, a first end and a second end of a region where the second concave portion side bayonet claw portion and the fourth bayonet claw portion overlap each other, and a first end and a second end of a region where the opposite side bayonet claw portion and the third bayonet claw portion overlap each other, the side nearest to the pin is a longest side of the hexagon.

11. The accessory according to Claim 1,

wherein

$75° \leq \theta 10 \leq 105°$, $75° \leq \theta 20 \leq 105°$, $75° \leq \theta 30 \leq 105°$, and $75° \leq \theta L \leq 105°$

are satisfied, where, among internal angles of a quadrangle formed by connecting a center of the opposite side bayonet claw portion, a center of the second concave portion side bayonet claw portion, a center of the first concave portion side bayonet claw portion, and the center of the concave portion, $\theta 10$ is an angle of a first internal angle in which a vertex thereof is the center of the opposite side bayonet

claw portion, θ20 is an angle of a second internal angle in which a vertex thereof is the center of the second concave portion side bayonet claw portion, θ30 is an angle of a third internal angle in which a vertex thereof is the center of the first concave portion side bayonet claw portion, and θL is an angle of a fourth internal angle in which a vertex thereof is the center of the concave portion.

12. The accessory according to Claim 1,

wherein

$60° \leq \theta 10 \leq 100°$, $60° \leq \theta 20 \leq 100°$, $60° \leq \theta 30 \leq 100°$, and $60° \leq \theta L \leq 100°$

are satisfied, where, among internal angles of a quadrangle formed by connecting a center of the opposite side bayonet claw portion, a center of the second concave portion side bayonet claw portion, a center of the first concave portion side bayonet claw portion, and the center of the concave portion, θ10 is an angle of a first internal angle in which a vertex thereof is the center of the opposite side bayonet claw portion, θ20 is an angle of a second internal angle in which a vertex thereof is the center of the second concave portion side bayonet claw portion, θ30 is an angle of a third internal angle in which a vertex thereof is the center of the first concave portion side bayonet claw portion, and θL is an angle of a fourth internal angle in which a vertex

thereof is the center of the concave portion.

13. The accessory according to Claim 12,

wherein

$65° \leq \theta 10 \leq 100°$, $65° \leq \theta 20 \leq 100°$, $65° \leq \theta 30 \leq 100°$, and $65° \leq \theta L \leq 100°$

is satisfied.

14. The accessory according to Claim 12,

wherein

$70° \leq \theta 10 \leq 100°$, $70° \leq \theta 20 \leq 100°$, $70° \leq \theta 30 \leq 100°$, and $70° \leq \theta L \leq 100°$

is satisfied.

15. The accessory according to Claim 11,

wherein at least one among $\theta 10$, $\theta 20$, $\theta 30$, and θL is in a range of 85 to 95, inclusive.

16. The accessory according to Claim 11,

wherein

$85° \leq \theta L \leq 95°$

is satisfied.

17. The accessory according to Claim 1,

wherein

$$0.75 \leq \theta 30/\theta 20 \leq 1.25$$

is satisfied, where, among internal angles of a quadrangle formed by connecting a center of the opposite side bayonet claw portion, a center of the second concave portion side bayonet claw portion, a center of the first concave portion side bayonet claw portion, and the center of the concave portion, $\theta 20$ is an angle of a second internal angle in which a vertex thereof is the center of the second concave portion side bayonet claw portion, and $\theta 30$ is an angle of a third internal angle in which a vertex thereof is the center of the first concave portion side bayonet claw portion.

18. The accessory according to Claim 1,

wherein by having the accessory rotate relative to the image pickup apparatus, the accessory can be transitioned from a first state in which the plurality of second bayonet claw portions are positioned between the plurality of first bayonet claw portions to a second state in which the plurality of second bayonet claw portions are engaged with the plurality of first bayonet claw portions.

19. The accessory according to Claim 1, further comprising:

a plurality of second terminals configured to contact with a plurality of first terminals included in the image

pickup apparatus,

wherein the plurality of second terminals are provided at positions that are different from positions of the plurality of second bayonet claw portions.

20. The accessory according to Claim 19,

wherein the plurality of second terminals include second terminals that determine whether the accessory is mounted on the image pickup apparatus.

21. The accessory according to Claim 19,

wherein the plurality of second terminals include a second terminal that distinguishes a type of the accessory mounted on the image pickup apparatus.

22. The accessory according to Claim 20,

wherein the plurality of second terminals include

a second terminal configured to connect the image pickup apparatus and a communication control system of the accessory to the ground, and

a second terminal configured to supply power, used in an operation of the communication control system, from the image pickup apparatus to the accessory.

23. The accessory according to Claim 22,

wherein the plurality of second terminals include

a second terminal configured to connect the image pickup apparatus and a mechanical drive system of the accessory to the ground, and

a second terminal configured to supply power, used in the operation of the mechanical drive system, from the image pickup apparatus to the accessory.

24. The accessory according to Claim 22,

wherein the plurality of second terminals include

a first communication unit configured to perform a first communication,

wherein the first communication unit includes

a second terminal configured to communicate clock signal that is output from the image pickup apparatus to the accessory,

a second terminal configured to enable two-way communication between the image pickup apparatus and the accessory, and

a second terminal configured to communicate a data that is output from the accessory to the image pickup apparatus.

25. The accessory according to Claim 24,

wherein the plurality of second terminals include

a second communication unit configured to perform a second communication independent of the first communication, and

wherein the second communication unit includes a second terminal configured to communicate a data that is output from the accessory to the image pickup apparatus.

26. The accessory according to Claim 25,

wherein the plurality of second terminals include

a third communication unit configured to perform a third communication independent of the first communication and the second communication, and

wherein the third communication unit includes

a second terminal configured to enable two-way communication between the image pickup apparatus and the accessory, and

a second terminal configured to communicate a communication request signal between the image pickup apparatus and the accessory.

27. The accessory according to Claim 1, further comprising a lens.

28. The accessory according to Claim 1,

wherein the accessory is configured to be detachably

mountable to a lens apparatus.

29. The accessory according to Claim 1,

wherein when the accessory is in a normal position, the second concave portion side bayonet claw portion is positioned on a gravity direction side with respect to the first concave portion side bayonet claw portion.

30. The accessory according to Claim 1,

wherein the concave portion is positioned at a region between the first line and the second line.

31. The accessory according to Claim 1,

further comprising a third mount portion including a plurality of third bayonet claw portions configured to enable engagement with a lens apparatus,

wherein a smallest angle of the plurality of third bayonet claw portions in a circumferential direction is larger than a smallest angle of a cutaway between the plurality of second bayonet claw portions in a circumferential direction.

32. The accessory according to Claim 4,

wherein

$$0.6 \leq \theta 3/\theta 4 \leq 0.8$$

is satisfied.

33. The accessory according to Claim 1,

wherein among the plurality of first bayonet claw portions, a third bayonet claw portion is a first bayonet claw portion configured to enable engagement with the opposite side bayonet claw portion, a fourth bayonet claw portion is a first bayonet claw portion configured to enable engagement with the second concave portion side bayonet claw portion, and a fifth bayonet claw portion is a first bayonet claw portion configured to enable engagement with the first concave portion side bayonet claw portion, and

wherein when viewed in the central axis direction in a state of the first and second mount portions contacting with each other, a reference line is a line that connects the central axis and a center of the pin to each other, $\theta 5$ is an angle formed between a line that connects a point that is, in a region where the first concave portion side bayonet claw portion and the fifth bayonet claw portion overlap each other, nearest to the pin and the central axis, and the reference line, $\theta 6$ is an angle formed between a line that connects a point that is, in a region where the second concave portion side bayonet claw portion and the fourth bayonet claw portion overlap each other, nearest to the pin and the central axis, and the reference line $\theta 6$, $\theta 7$ is a minimum value of $\theta 5$, and $\theta 8$ is a minimum value of $\theta 6$,

$45^\circ \leq \theta 7$, and

$45° \leq \theta 8$

are satisfied.

34. The accessory according to Claim 1,

wherein

$90° < \theta 1 + \theta 2 < 120°$

is satisfied.

35. The accessory according to Claim 1,

wherein

$90° < \theta 1 + \theta 2 < 100°$

is satisfied.

36. An accessory configured to be detachably mountable to an image pickup apparatus that includes a first mount portion and a pin, the first mount portion including a plurality of first bayonet claw portions, the accessory comprising:

a second mount portion that includes a plurality of second bayonet claw portions configured to enable engagement with the plurality of first bayonet claw portions, and a concave portion in which the pin is inserted when the accessory is mounted to the image pickup apparatus,

characterized in that when viewed in a central axis direction of the second mount portion, a concave portion

side is a side on which the concave portion is provided with respect to a boundary line, the boundary line being a line that is orthogonal to a reference line passing through a center of the concave portion and a central axis of the second mount portion and that passes through the central axis, the plurality of second bayonet claw portions includes, first and second concave portion side bayonet claw portions each having at least a portion disposed on the concave portion side, and an opposite side bayonet claw portion in which both ends thereof are provided on an opposite side of the concave portion side with respect to the boundary line,

the concave portion is positioned at a region between a first line that passes through the central axis and an end of the first concave portion side bayonet claw portion that is closer to the concave portion, and a second line that passes through the central axis and an end of the second concave portion side bayonet claw portion that is closer to the concave portion, and

$$90° < \theta1 + \theta2 < 180°$$

is satisfied, where $\theta1$ is an angle formed between the reference line and the first line, and $\theta2$ is an angle formed between the reference line and the second line.

37. The accessory according to Claim 36, wherein

$$1.00 \leq \theta1/\theta2 \leq 1.35$$

is satisfied.

38. The accessory according to Claim 36,

wherein

$$90° < \theta 1 + \theta 2 < 120°$$

is satisfied.

39. The accessory according to Claim 36,

wherein

$$90° < \theta 1 + \theta 2 < 100°$$

is satisfied.

40. The accessory according to Claim 36,

wherein

$$0.6 \leq \theta 3/\theta 4 \leq 0.9$$

is satisfied, where $\theta 3$ is an angle formed between a line that passes an end of the opposite side bayonet claw portion that is on the side of the first concave portion side bayonet claw portion, and the central axis, and a line that passes the center of the concave portion and the central axis, and $\theta 4$ is an angle formed between a line passing through an end of the opposite side bayonet claw portion that is on the side of the second concave portion side bayonet claw portion, and the central axis, and a line that passes through the center of the concave portion and the central axis.

41. The accessory according to Claim 40,

wherein

$$0.6 \leq \theta 3/\theta 4 \leq 0.8$$

is satisfied.

42. An image pickup apparatus comprising:

a first mount portion that includes a plurality of first bayonet claw portions;

a pin; and

an image pickup element,

characterized in that the image pickup apparatus is configured such that the accessory according to any one of Claims 1 to 41 is detachably mountable to the image pickup apparatus.

43. A camera system comprising:

the image pickup apparatus as claimed in Claim 42; and

the accessory according to any one of Claims 1 to 41.

44. A lens mount configured to be detachably mountable to a camera mount having a pin and a first mount portion that includes a plurality of first bayonet claw portions, the lens mount comprising:

a second mount portion that includes a plurality of second bayonet claw portions configured to enable engagement with the plurality of first bayonet claw portions, and a

concave portion in which the pin is inserted when the lens mount is mounted to the camera mount,

characterized in that, when viewed in a central axis direction of the second mount portion, a concave portion side is a side on which the concave portion is provided with respect to a boundary line, the boundary line being a line that is orthogonal to a reference line passing through a center of the concave portion and a central axis of the second mount portion and that passes through the central axis, the plurality of second bayonet claw portions includes, first and second concave portion side bayonet claw portions each having at least a portion disposed on the concave portion side, and an opposite side bayonet claw portion in which both ends thereof are provided on an opposite side of the concave portion side with respect to the boundary line, and

$$1.00 \leq \theta 1/\theta 2 \leq 1.40, \text{ and}$$

$$90^\circ < \theta 1 + \theta 2 < 180^\circ$$

are satisfied, where $\theta 1$ is an angle formed between the reference line and a first line that passes through the central axis and an end of the first concave portion side bayonet claw portion that is closer to the concave portion, and $\theta 2$ is an angle formed between the reference line and a second line that passes through the central axis and an end of the second concave portion side bayonet claw portion that is closer to the concave portion.

45. A lens mount configured to be detachably mountable to a camera mount having a pin and a first mount portion that includes a plurality of first bayonet claw portions, the lens mount comprising:

a second mount portion that includes a plurality of second bayonet claw portions configured to enable engagement with the plurality of first bayonet claw portions, and a concave portion in which the pin is inserted when the lens mount is mounted to the camera mount,

characterized in that when viewed in a central axis direction of the second mount portion, a concave portion side is a side on which the concave portion is provided with respect to a boundary line, the boundary line being a line that is orthogonal to a reference line passing through a center of the concave portion and a central axis of the second mount portion and that passes through the central axis, the plurality of second bayonet claw portions includes, first and second concave portion side bayonet claw portions each having at least a portion disposed on the concave portion side, and an opposite side bayonet claw portion in which both ends thereof are provided on an opposite side of the concave portion side with respect to the boundary line,

wherein the concave portion is positioned at a region between a first line that passes through the central axis and an end of the first concave portion side bayonet claw

portion that is closer to the concave portion, and a second line that passes through the central axis and an end of the second concave portion side bayonet claw portion that is closer to the concave portion, and

$$90° < \theta1 + \theta2 < 180°$$

is satisfied, where $\theta1$ is an angle formed between the reference line and the first line, and $\theta2$ is an angle formed between the reference line and the second line

46. A camera mount comprising:

a first mount portion including a plurality of first bayonet claw portions; and

a pin,

characterized in that the camera mount is configured such that the lens mount according to Claim 44 or 45 is detachably mountable to the camera mount.