W. S. FERGUSON.

FIXTURE HANGER.

APPLICATION FILED OCT. 27, 1913.

1,093,556.

Patented Apr. 14, 1914.

3 SHEETS—SHEET 1.

Fig. 1.

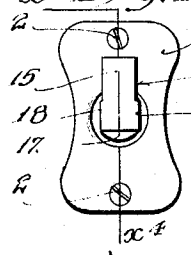


Fig. 2.

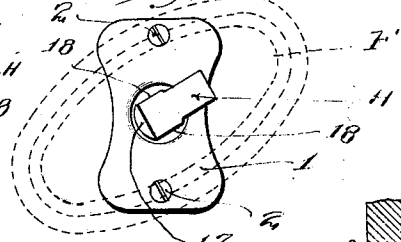


Fig. 3.

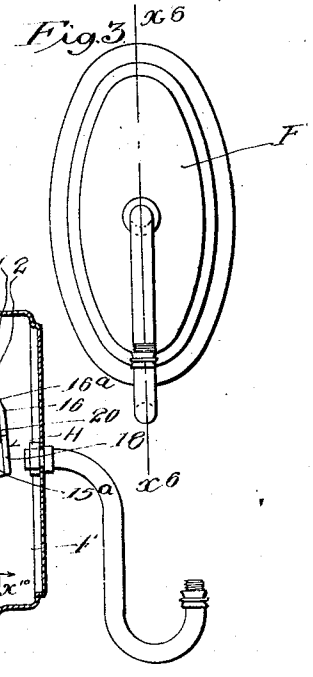


Fig. 4.

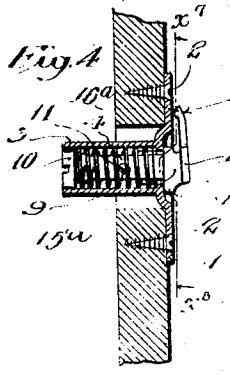


Fig. 5.

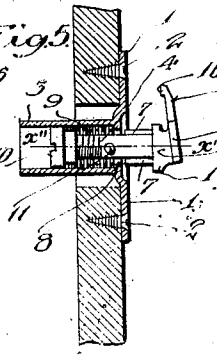


Fig. 6.



Fig. 7.

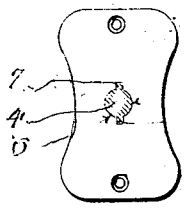


Fig. 8.

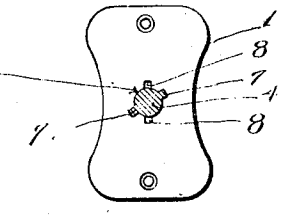


Fig. 9.

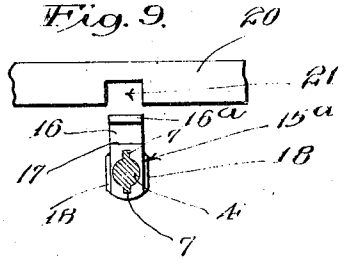


Fig. 10.

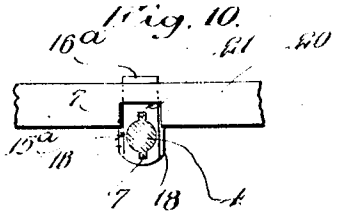
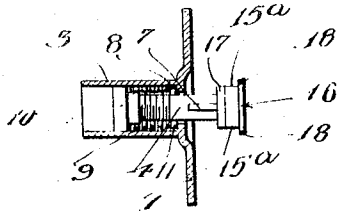


Fig. 11.



Witnesses:

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W. S. FERGUSON.

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3 SHEETS—SHEET 2.

Fig. 12.

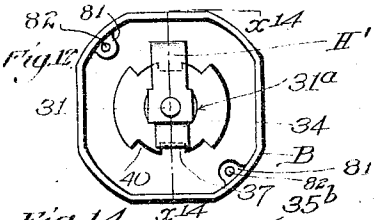



Fig. 13.

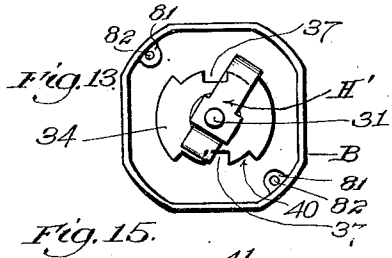



Fig. 14.

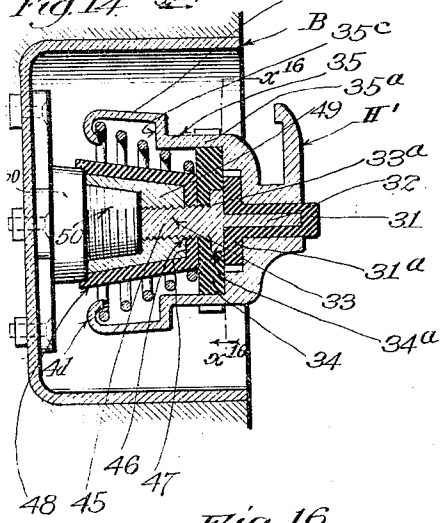



Fig. 15.

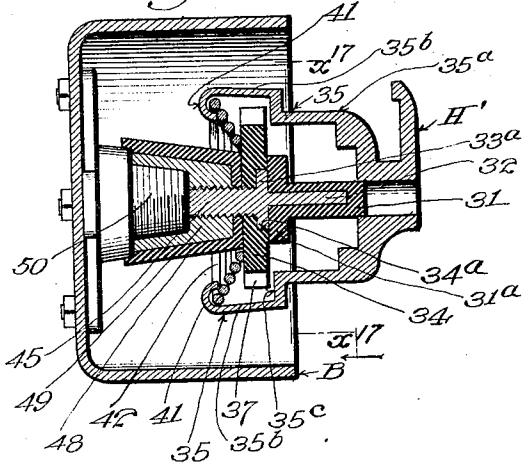



Fig. 16.

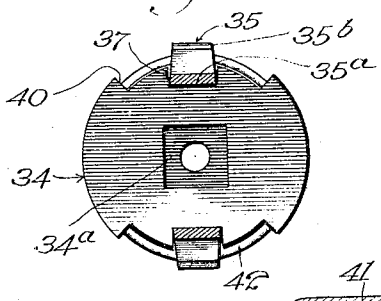



Fig. 17.

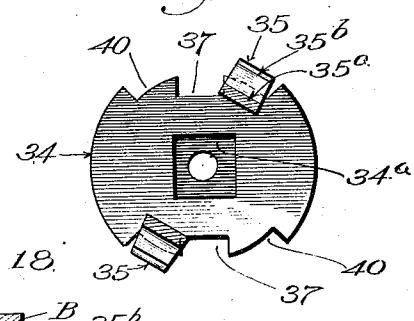
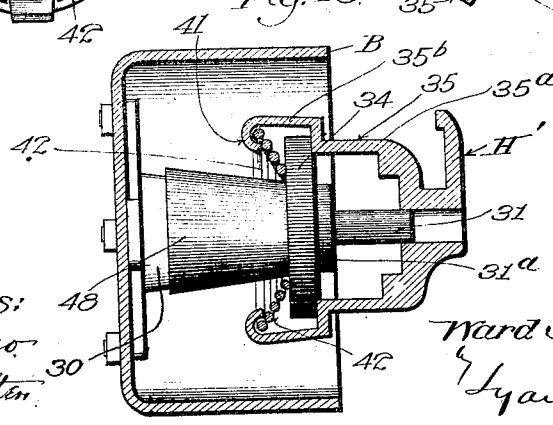



Fig. 18.




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3 SHEETS—SHEET 3.

Fig. 19.

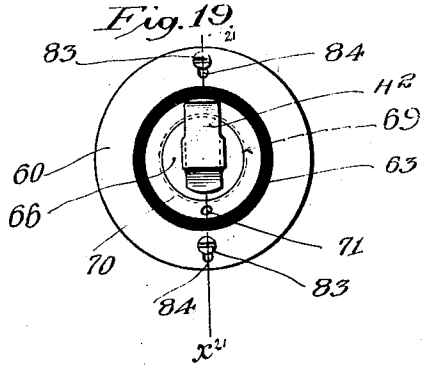



Fig. 20.

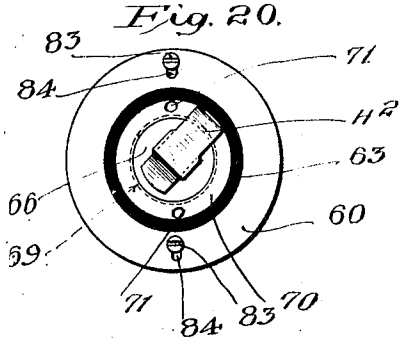



Fig. 21

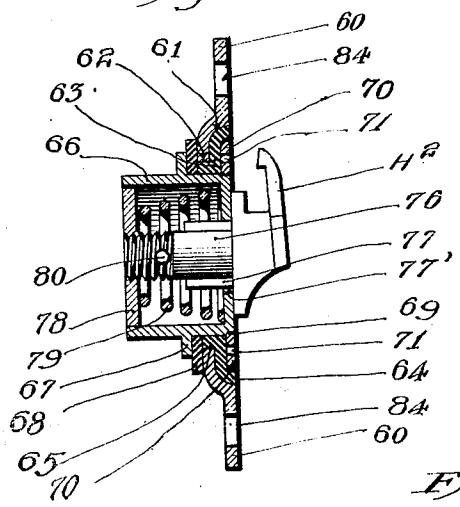



Fig. 22.

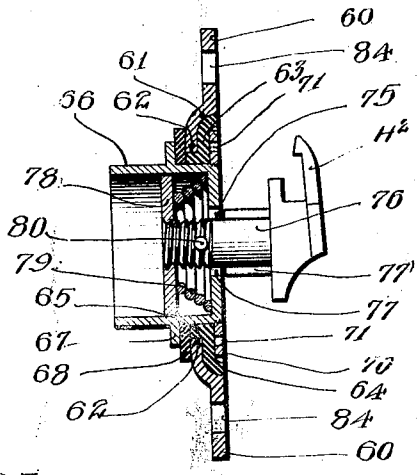
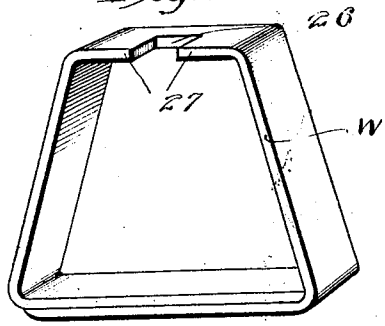



Fig. 23




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Lute A. Alter

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Ward S. Ferguson
by Ryan Hackley attys

# UNITED STATES PATENT OFFICE.

WARD S. FERGUSON, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO McCURDY-FERGUSON COMPANY, A PARTNERSHIP COMPOSED OF L. C. McCURDY AND W. S. FERGUSON, DOING BUSINESS IN LOS ANGELES, CALIFORNIA.

## FIXTURE-HANGER.

1,093,556. Specification of Letters Patent. Patented Apr. 14, 1914.

Application filed October 27, 1913. Serial No. 797,445.

*To all whom it may concern:*

Be it known that I, WARD S. FERGUSON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Fixture-Hanger, of which the following is a specification.

My invention relates to hangers and particularly to fixture hangers.

The object in general of my invention is to provide a hanger, by means of which fixtures, such for example as electric fixtures, may be readily and securely attached to a wall or ceiling without screws and without scratching the surface against which the fixture may rest.

Other objects will appear from the following description.

In the accompanying drawing forming part of this specification,—Figure 1 is a front view of one form of my invention as it normally appears before the fixture is applied thereto. Fig. 2 is a front view of the same form of my invention shown in Fig. 1 ready to receive the fixture to be secured in position thereby. Fig. 3 is a view illustrating a fixture secured in position by my improved hanger. Fig. 4 is a longitudinal sectional view of my improved hanger taken on the line $x^4$—$x^4$ of Fig. 1. Fig. 5 is a view similar to Fig. 4, but with the hanger in its forward position. Fig. 6 is a longitudinal sectional view taken on line $x^6$—$x^6$ of Fig. 3, showing the fixture hung in position by my improved hanger. Figs. 7 and 8 are detail sectional views taken on line $x^7$—$x^8$ of Fig. 4 looking in the direction of the arrow illustrating a certain part of the operation of the hanger. Figs. 9 and 10 are detail sectional views taken on the line $x^9$—$x^{10}$ of Fig. 6 illustrating how the fixture is placed on the hanger. Fig. 11 is a horizontal sectional view taken on line $x^{11}$—$x^{11}$ of Fig. 5. Fig. 12 is a front view of another form of my improved hanger applied to the fixture attachment in an ordinary conduit junction box, and shown in the position in which it normally appears before the fixture is applied thereto, to be secured in position thereby. Fig. 13 is a view similar to Fig. 12, but with the hanger in position ready to receive the fixture. Fig. 14 is a longitudinal sectional view taken on line $x^{14}$—$x^{14}$ of Fig. 12. Fig. 15 is a view similar to Fig. 14, but showing the hanger drawn forward. Fig. 16 is a sectional view taken on line $x^{16}$—$x^{16}$ of Fig. 14. Fig. 17 is a sectional view taken on line $x^{17}$—$x^{17}$ of Fig. 15. Fig. 18 is a view similar to Fig. 15, but with the hanger turned into position as shown in Fig. 13 to receive the fixture. Fig. 19 is a front view of another form of my improved hanger applied to the cover of a conduit junction box and shown in the position in which it normally appears before the fixture is attached in position thereby. Fig. 20 is a view similar to Fig. 19, but with the hanger shown in position ready to receive the fixture. Fig. 21 is a longitudinal sectional view taken on line $x^{21}$—$x^{21}$ of Fig. 19. Fig. 22 is a view similar to Fig. 21, but showing the hanger drawn forward. Fig. 23 is a view of the wrench used for drawing the hanger forward and turning the hanger into position to receive the fixture.

Referring to Figs. 1 to 11 inclusive the part marked 1 is the supporting member of the hanger, which is adapted to be secured preferably by screws 2 to a wall or ceiling at the point where the conducting wires, (not shown), are brought through the wall and where the fixture is to be hung. The conducting wires are brought through the wall around the sides of the base 1. The base 1 is provided with a rearwardly extending tubular portion 3 in which rests the shank 4 of the hanger H, which is located in front of the base 1. The base 1 is provided with an opening 6 through which the hanger shank 4 extends. The hanger shank 4 is provided with keys 7, which fit in the key notches 8 of the opening 6, when the hanger is in its inward position, to prevent the hanger from turning. A spring 9 surrounds the hanger shank 4 and its ends rest against the base 1 and a nut 10 screwed on the end of the shank, the purpose of which spring is to draw the hanger inwardly to hold the fixture in position as hereinafter described. The hanger shank 4 is provided with a pair of lugs 11 arranged substantially at right angles to the keys 7, adapted to engage the base 1 at the edge of the opening 6 to limit the forward movement of the hanger. The

hanger H comprises a head 15 provided with outwardly diverging sides 15ª, hook member 16 provided with a flange 16ª at its upper edge, guide member 17 and flanges 18 for the purpose about to be described. The fixture F which is attached in position by my hanger is provided with a hanger engaging element comprising a bar 20 secured to the fixture and provided with a notch 21 in which the hanger H rests when securing the fixture to the wall.

For drawing the hanger H forwardly and into position to receive the fixture I use a wrench W shown in Fig. 23. The wrench is provided with a notch 26 which is adapted to fit around the head 15 of the hanger so that the hanger may be turned by the wrench and the edges 27 of the wrench around said notch are adapted to engage the flanges 18 so that the hanger may be drawn forwardly.

The operation of the above described form of my invention is as follows: Assuming that it is desired to hang a fixture in position by my improved hanger and the hanger is in the position shown in Fig. 1 of the drawing, the wrench W is applied to the head 15 of the hanger H so that the notch 26 fits around the head 15 and the edges 27 engage the inner faces of the flanges 18. The hanger is then drawn forwardly by the wrench against the tension of spring 9 until the lugs 11 engage the base 1 as shown in Fig. 11, in which position of the hanger the keys 7 are disengaged from the key notches 8 of the opening 6 in the base 1 as shown in Fig. 11. The hanger is then turned by the wrench into the position shown in Fig. 2 of the drawing to receive the fixture. The wrench is then removed from the hanger and the keys 7 are drawn into engagement with the base member 1 by spring 9 as shown in Fig. 8 and the hanger is maintained in said fixture receiving position by said spring. The fixture wires, (not shown), are then connected to the conducting wires extending from the wall. The fixture is then placed over the hanger in such position that the notch 21 in bar 20 registers with the narrow part of the hanger head 15 between the sides 15ª, and the fixture is brought down upon the hanger, during which movement of the fixture the upper edge of the notch 21 engages the guide member 17, whereby the bar 20 is guided on to the head 15 in such position that the portion of the bar above the notch 21 rests on top of said head and the sides of the notch 21 engage the diverging sides 15ª of the head 15 tightly so there can be no relative movement of the fixture and hangers. The fixture is then turned and the engagement of the bar 20 at the sides of the notches 21 with the head 15 causes the hanger H also to turn until the keys 7 register with the key notches 8, whereupon the spring 9 draws the hanger H inwardly and as said hanger is drawn inwardly the hook member 16 and flanges 18 engage the bar 20 and draw the fixture firmly into position against the wall or ceiling.

The form of my invention illustrated in Figs. 12 to 18 inclusive is adapted to be applied to the fixture attaching element 30 within a conduit junction box B, into which the conducting wires (not shown) are brought from the conduits. In this form of my invention the hanger H′ is slidably and rotatably mounted upon a sleeve 31 of insulating material, which fits on a stud 32 projecting outwardly from a bolt 33 resting in a disk 34 of insulating material. The hanger H′ is provided with a pair of inwardly projecting arms 35, each of which consists of two parts 35ª and 35ᵇ, the parts 35ᵇ being spaced farther apart than the parts 35ª forming shoulders 35ᶜ. The disk 34 is provided with a pair of notches 37 in which the parts 35ª of arms 35 are adapted to rest to prevent the hanger turning when said hanger is in its inner position. The disk 34 is also provided with reduced portions 40 over which the parts 35ᵇ of arms 35 are adapted to be moved to enable the hanger H to be turned when drawn forwardly. The parts 35ᵇ of arms 35 are provided with hook extremities 41 for engaging one end of a spring 42, the other end of which rests against the disk 34. The head 33ª of bolt 33 rests in a recess 34ª of disk 34, whereby the disk is prevented from turning with relation to the bolt. The sleeve 31 is provided with an insulating flange 31ª at its inner end adapted to cover said head to prevent the hanger coming in contact with said head. The shank 45 of bolt 33 projects through an opening 46 in the end wall 47 of an insulating cup 48. An internally threaded cup 49 rests within said insulating cup and is screwed on to the end of bolt 33. The internally threaded portion of the cup 49 is adapted to screw on to the threaded part 50 of the junction box fixture attaching element 30 whereby the hanger is supported in position to hang the fixture. The insulating parts of this form of my invention prevent any current escaping from the fixture through the hanger to the attaching element 30.

The operation of this form of my invention is as follows: Assuming the hanger to be in the position shown in Figs. 12 and 14 and it is desired to hang a fixture thereon, the wrench W is applied to the hanger H′ in the same manner in which it is applied to the hanger H of Fig. 1. The hanger is drawn forwardly against the tension of spring 42 until the parts 35ª of arms 35 are withdrawn from the notches 37 and the

parts 35[b] of said arms are in registry with the disk reduced portions 40 and the shoulders 35[c] in front of the disk 34 as shown in Fig. 15. The hanger is then turned by the wrench into the position shown in Fig. 13 and the wrench removed, whereupon the spring 42 draws the hanger inwardly until the shoulders 35[c] engage the front face of the disk 34 at the sides of the notches 37. (see Fig. 18). The fixture wires (not shown) are then connected to the conducting wires. The fixture is then applied to the hanger H′ in the same manner in which it is applied to hanger H, and turned until the shoulders 35[c] and arm 35 register with the disk notches 37, whereupon the spring 42 draws the hanger H′ and fixture F inwardly until the fixture F is brought into position against the wall, during which operation of the spring the parts 35[a] of arms 35 are drawn into the notches 37, whereby the fixture is prevented from turning.

The form of my invention illustrated in Figs. 19 to 22 inclusive is adapted to be applied to a junction box cover 60. The cover is countersunk at 61, Fig. 21, and is provided with an opening 62. An insulating washer 63 rests within said countersunk portion 61 of the cover and is provided with an outer flange 64 and an inner flange 65 which rests within the opening 62 of said cover. A cup 66 rests within the flange 65 of washer 63. The cup is provided with a flange 67 against which rests an insulating washer 68. The cup 66 is threaded at 69 to receive a nut 70, which engages washer 63 and draws washer 68 into engagement with the countersunk portion 61 of the cover 60 whereby the cup is maintained in position on said cover. The nut is provided with holes 71 to receive a wrench by means of which the nut is screwed on or off the cup 66. The front wall of the cup 66 is provided with an opening 75 through which projects the shank 76 of the hanger H[2]. Key notches 77 are formed in the sides of the opening 75 to receive the keys 77′ on the forward end of the hanger shank 76. A nut 78 screws on to the inner end of the hanger shank 76, and a spring 79 surrounds the shank, the ends of which spring rest respectively against the front wall of the cup 66 and the nut 78. Said spring draws the hanger H[2] inwardly. Lugs 80 are located on the shank 76, which are adapted to engage the front wall of the cup 66 to limit the forward movement of the hanger. The junction box B, Fig. 12 is provided with lugs 81 having screw openings 82, in which fit screws 83, which project through slots 84 in the cover 60 and secure the cover to the junction box.

The operation of this form of my invention is as follows: Assuming that it is desired to hang a fixture on the hanger and the hanger is in the position shown in Fig. 19, the hanger H[2] is first drawn forwardly by the wrench W, in the manner in which the hanger H′ is drawn forwardly by said wrench until the lugs 80 engage the front wall of the cup 66 and the keys 77′ disengage the key notches 77, (see Fig. 22). The hanger is then turned by the wrench into the position shown in Fig. 20. The wrench is then removed from the hanger and the spring 79 draws the hanger inwardly until the inner ends of the keys 77′ engage the front wall of the cup 66. The fixture wires (not shown) are then connected to the conducting wires (not shown) in the junction box B. The fixture is then applied to the hanger H[2] in the same manner in which it is applied to the hanger H, and turned until the keys 77′ register with the key notches 77, whereupon the spring 79 draws the hanger H[2] and fixture F inwardly until the fixture is brought into position against the wall, during which operation of the spring, the keys 77′ are drawn into the notches 77 which prevents turning of the fixture.

What I claim is:

1. In a fixture hanger, a hanger supported on a wall or ceiling adapted to receive a fixture and adapted to draw the fixture in position against the wall and to maintain said fixture in such position and against turning.

2. In a fixture hanger, a hanger supported on a wall or ceiling adapted to receive a fixture and adapted to draw the fixture into position against the wall and to maintain said fixture in position against the wall and against turning, said hanger adapted to rest within the fixture out of view.

3. In a fixture hanger, a hanger supported on a wall or ceiling and adapted to receive a fixture and hold said fixture against turning thereon, a spring adapted to draw said hanger inwardly and said fixture in position against the wall whereby the fixture is maintained in position against the wall.

4. In a fixture hanger, a hanger supported on the wall adapted to be drawn forwardly, means for maintaining the hanger in such forward position to receive a fixture, said hanger adapted to be released by moving the fixture, and means for drawing the hanger inwardly when released and the fixture into position against the wall, whereby the fixture is maintained in position against the wall.

5. In a fixture hanger, a hanger supported on the wall adapted to be drawn forwardly and turned, means for maintaining the hanger in forward position when so turned to receive a fixture, a fixture adapted to be placed on said hanger, said hanger being adapted to be released when the fixture is turned into its proper position, and means for drawing the hanger inwardly when re-

leased and the fixture into position against the wall, whereby the fixture is maintained in position against the wall.

6. In a fixture hanger, a supporting member mounted in a wall provided with an opening and key notches at the sides of the opening, a hanger, a shank projecting from said hanger through said opening, keys on said shank adapted to fit in said key openings to prevent the hanger from turning when in its inner position, said hanger adapted to be drawn forwardly, so that the keys will disengage said key notches, and turned so that said keys will be out of registry with said notches, means for drawing said keys against said base when the hanger is in its forward position whereby the hanger is maintained in fixture-receiving position, a fixture adapted to be placed on said hanger, said keys adapted to be brought into registry with said notches when the fixture is turned into its proper position, and means for drawing the hanger inwardly and said keys into said notches when the fixture is so turned, whereby the fixture is drawn into position against the wall and maintained in such position.

7. In a fixture hanger, the combination with a fixture and a bar on said fixture provided with a notch, of a fixture hanger supported on a wall, a head on said hanger, said head provided with outwardly diverging flat sides, an engaging element at the forward end of said head, and means for drawing the hanger inwardly so that said element will engage said bar and draw the fixture against the wall and maintain the fixture against the wall, and the forward portions of said diverging sides will engage the side edges of said notch tightly.

8. In a fixture hanger the combination with a fixture and a bar on said fixture provided with a notch, of a fixture hanger supported on a wall, a head on said hanger, a guide on said head adapted to be engaged by the upper edge of said notch to guide said bar forwardly on the head, an engaging element on the forward end of the head for engaging said bar, and means for drawing the hanger inwardly so that said engaging element will draw said bar inwardly and the fixture against the wall, and maintain said fixture against the wall.

9. In a fixture hanger, the combination with a fixture and a bar on said fixture provided with a notch, of a fixture hanger on a wall, a head on said hanger adapted to be engaged by the edges of said notch, an engaging element at the forward end of said head for engaging said bar, and means for drawing the hanger inwardly so that said element will draw said bar and fixture inwardly and maintain the fixture against the wall.

10. In a fixture hanger, the combination with a fixture and a bar on said fixture provided with a notch, of a fixture hanger supported on a wall, a head on said hanger adapted to be engaged by the edges of said notch, flanges at the forward end of said head adapted to engage the side edges of said notch, and means for drawing the hanger inwardly, so that said flanges by their engagement with said side edges of said notch will draw said bar and fixture inwardly and maintain the fixture against the wall.

11. In a fixture hanger, the combination with a fixture and a bar on said fixture provided with a notch, of a fixture hanger supported on a wall, a head on said hanger adapted to be engaged by the edges of said notch, an upwardly extending engaging element at the forward end of said head, means for drawing the hanger inwardly so that said engaging element will engage said bar and draw the fixture against the wall and maintain the fixture thereagainst, and a flange on said engaging element for engaging the top edge of said bar to prevent the fixture being lifted off the hanger when the fixture is in position against the wall.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 23rd day of September, 1913.

WARD S. FERGUSON.

In presence of—
ALAN FRANKLIN,
GEO. T. HACKLEY.