A. A. WELLS & H. B. FIFE.

FUSE BOX.

APPLICATION FILED AUG. 29, 1917.

1,298,608.

Patented Mar. 25, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

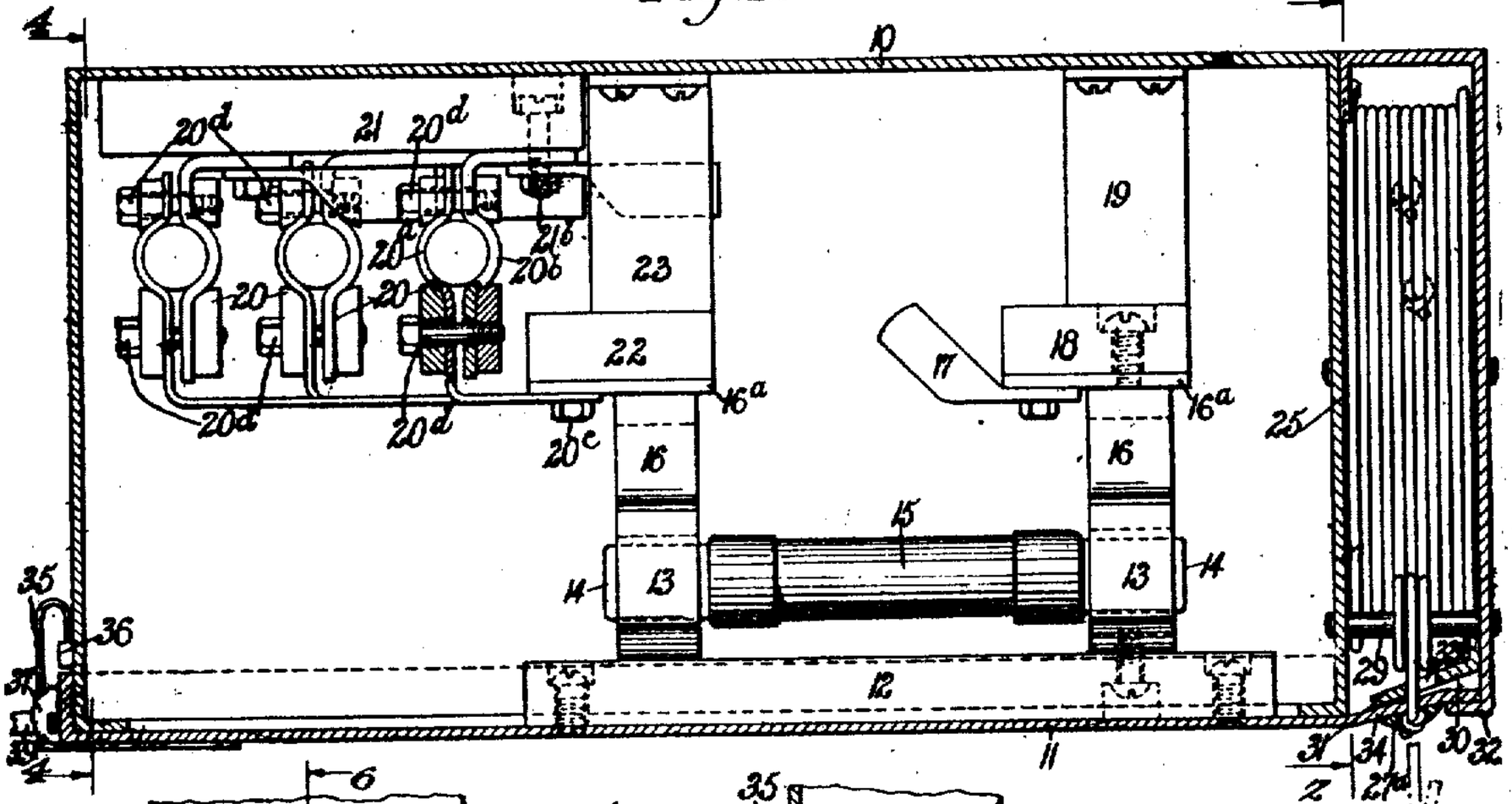


Fig. 5.

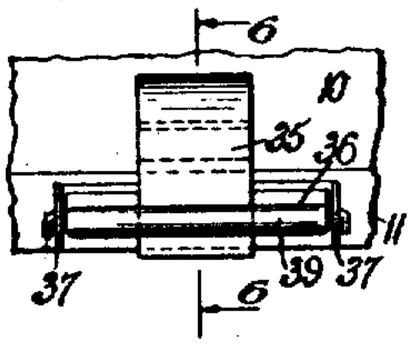


Fig. 6.

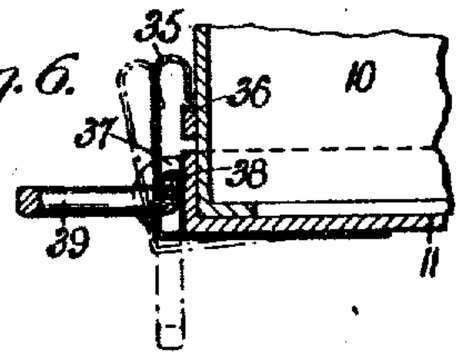


Fig. 2.

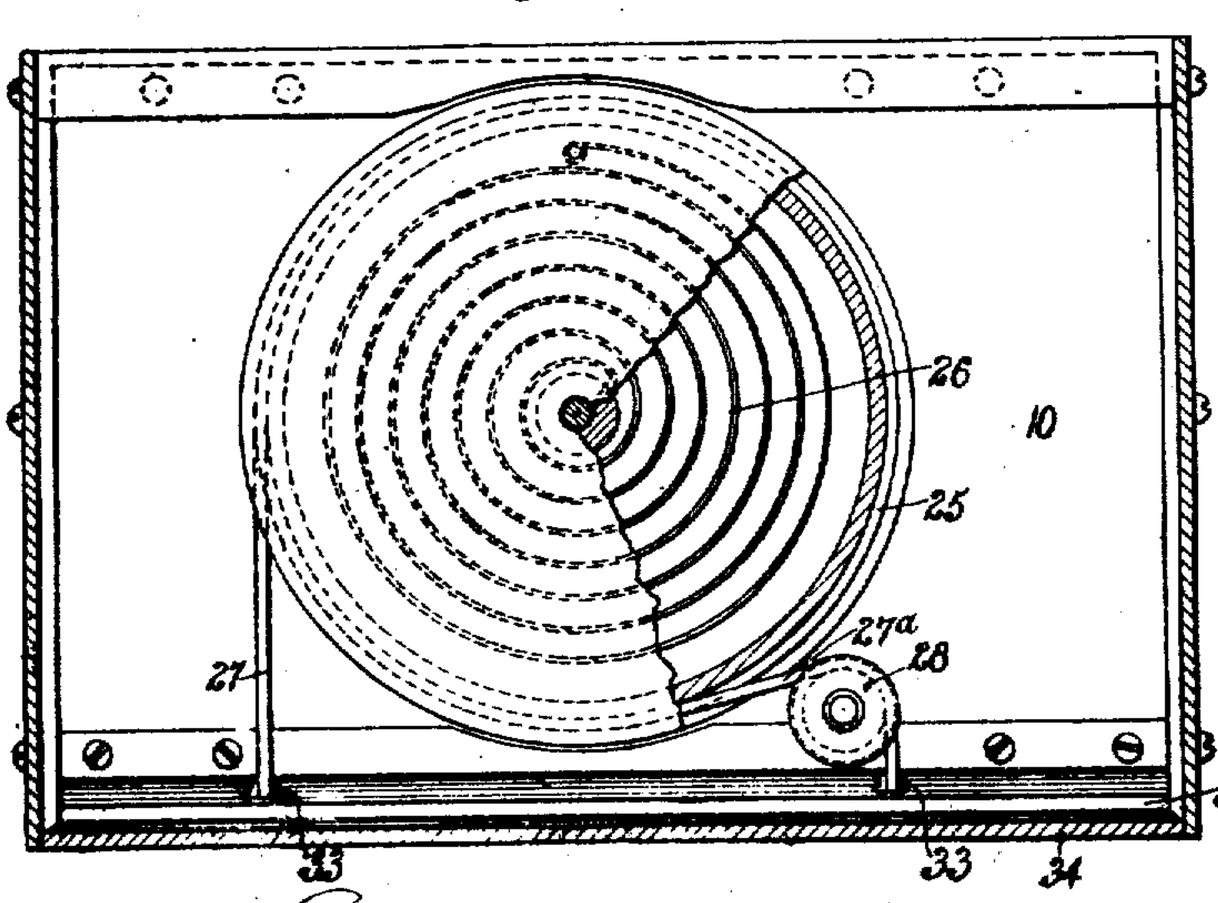


Fig. 8.

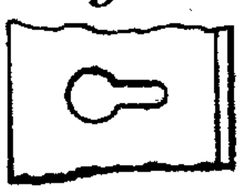
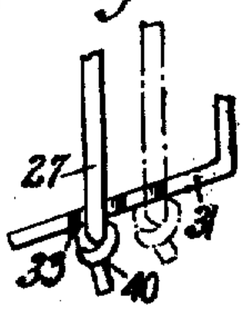


Fig. 7.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

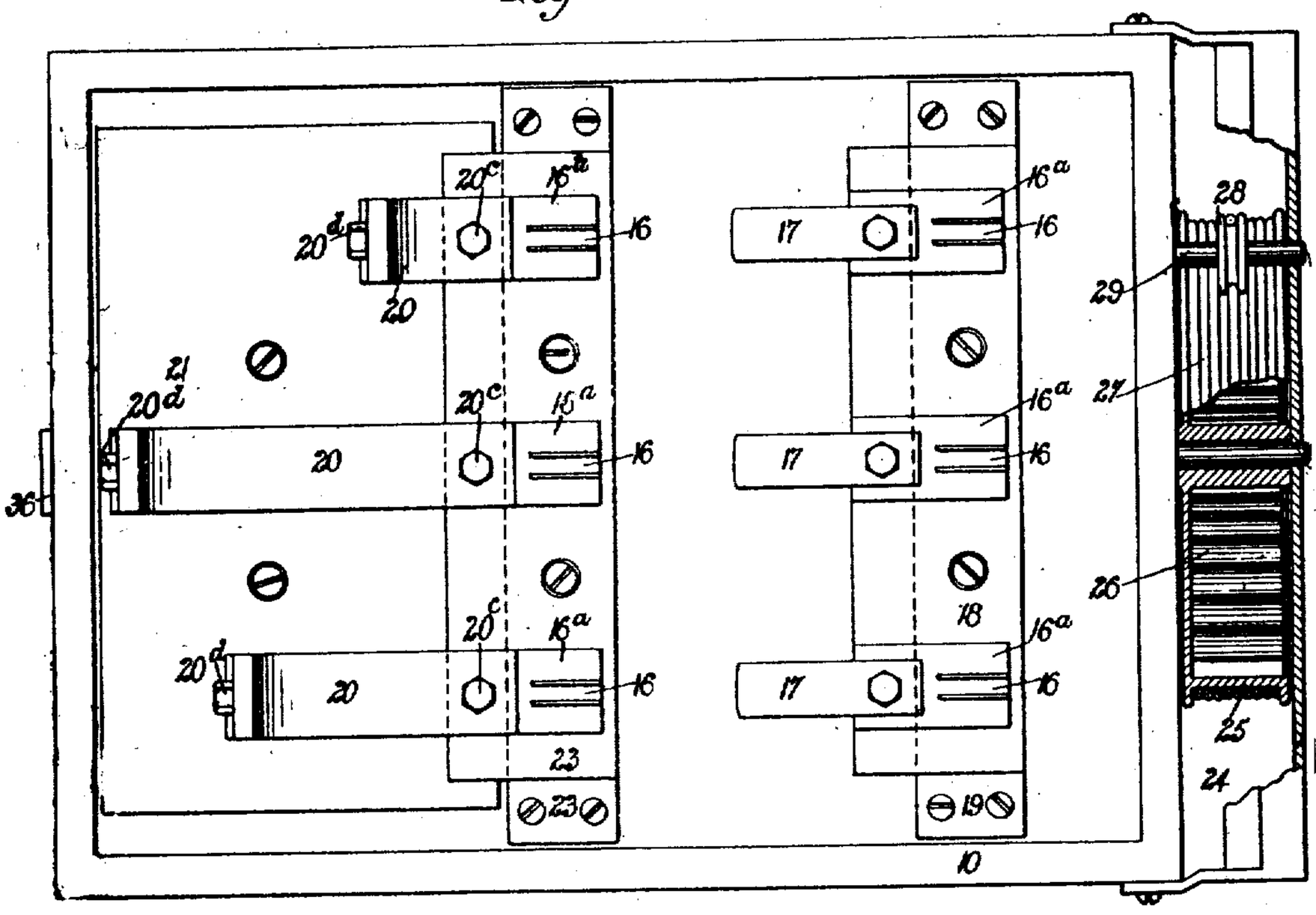
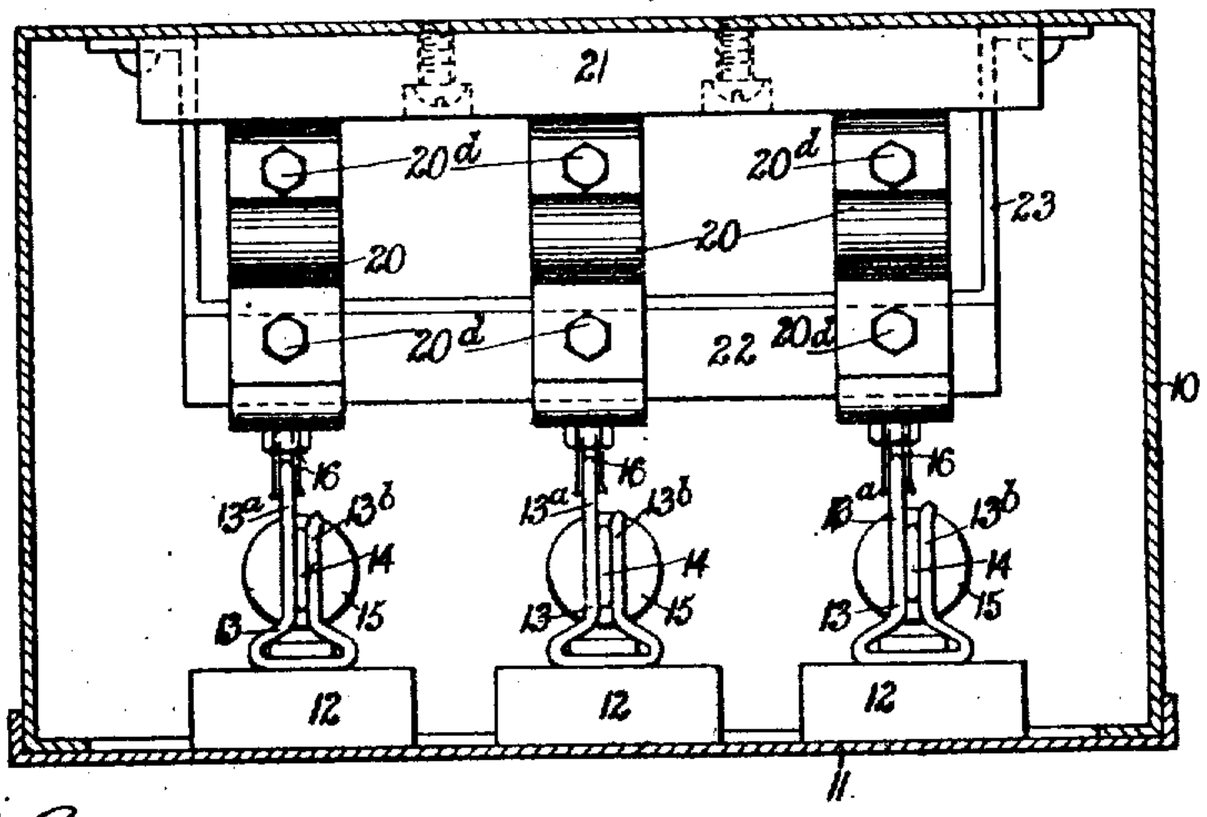


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALBERT A. WELLS AND HARRY B. FIFE, OF DETROIT, MICHIGAN.

FUSE-BOX.

1,298,608. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed August 29, 1917. Serial No. 188,788.

To all whom it may concern:

Be it known that we, ALBERT A. WELLS and HARRY B. FIFE, citizens of the United States, and residents of Detroit, in the county of Wayne and State of Michigan, have invented a new and improved Fuse-Box, of which the following is a full, clear, and exact description.

Our invention has for its object to provide a fuse box with a cover which contains the fuses, it being possible to open the cover and draw it down and away from the fuse box to permit of the renewal of the fuses without danger of shock. When the fuses have been replaced resilient means which are provided serve to draw the cover into position where it may be closed by a hook which is also used to open the cover and draw it away from the fuse box. Upon the closing of the cover the fuses are automatically inserted in the circuits.

Additional objects of the invention will appear in the following specification in which the preferred form of the invention is described.

In the drawings similar reference characters denote similar parts in all the views, in which—

Figure 1 is a sectional side elevation of the invention;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is an inverted plan view of the box with the cover removed;

Fig. 4 is a sectional view on the line 4—4 of Fig. 1;

Fig. 5 is an enlarged fragmentary view illustrating the latch on the cover which normally engages a projection on the fuse box;

Fig. 6 is a sectional view on the line 6—6 of Fig. 5; and

Fig. 7 is a fragmentary view illustrating the means for holding the cover down to permit of the insertion of new fuses.

Fig. 8 is a plan view of that section of the flange 31 containing the aperture for the cord.

The fuse box is designed to be used on feeders running along the ceilings of factories or other buildings or any other place where the fuse box may be conveniently spaced at a distance above the floor. The fuse box is so constructed that the cover containing the fuses may be drawn down from the fuse box by means of a pole having a hook to permit of the renewal of the fuses when the cover to which they are attached is spaced from the fuse box, thereby avoiding any possible danger of shock. The fuse box may be designed to receive two, three, four or any desired number of wire feeders of any predetermined capacity.

The fuse box 10 which is preferably constructed of steel is provided with a cover 11 having slate bases 12 on which clips 13 are mounted, each of these clips 13 having arms 13^a and 13^b, the clips being provided in pairs as best illustrated in Figure 1 of the drawings so that the terminals 14 at the ends of each fuse 15 may be embraced between the arms 13^a and 13^b of the clips. It will be seen that the terminals 13^a of the clips 13 are normally embraced by the clips 16 and 16^a but may be withdrawn therefrom. The clips 16^a are connected electrically with the lugs 17 which are secured to a slate base 18 to which the clips 16^a are also secured, the slate base 18 being supported in the interior of the box by a bracket 19. Inclosed fuses are shown at 15, which have terminals 14 which are gripped by the clips 13. The clips 16 are mounted on plates 16^a secured to a slate base 23. The feeder connectors 20 are constructed each of two parts 20^a and 20^b, each of the parts 20^b being secured to a slate base 21 by a screw 21^b and each of the parts 20^a to a plate 16^a by means of a screw 20^c. The parts 20^a and 20^b are connected together by bolts 20^d which serve to grip the feeders therebetween.

It will be understood that when the cover 11 is drawn downwardly and away from the fuse box, it will carry with it the clips 13 and the fuses 15 and that by this means the circuits will be broken, and when the cover 11 is moved to a position at a distance from the fuse box 10, the fuses 15 may be replaced as may be necessary. At one end of the fuse box 10 there is a compartment 24 in which is rotatably mounted a drum 25 there being a spring 26 in this drum 25 which serves to rotate the drum in one direction. Wound on this drum 25 there are two cords 27 and 27^a, the cord 27 extending down-

wardly at one side of the drum and the cord 27ª extending under the drum and being disposed over a roller or idler 28 which rotates on a spindle 29 supported on the fuse box. At the bottom of the fuse box disposed immediately below the drum 25 there is a guideway 30 formed by flanges 31 and 32, the flange 31 being disposed above the flange 32 and extending downwardly and inwardly, the flange 31 projecting inwardly beyond the flange 32. In the flange 31 there are two key slots 33, the cord 27 passing down through one of the key slots 33 and the cord 27ª passing down through the other key slot. The terminals of these cords 27 and 27ª are secured to a flange 34 at one end of the cover 11, this flange 34 being normally disposed in the guideway 30 and being held in position by the cords 27 and 27ª under the influence of the spring 26 in the drum 35. The other end of the cover 11 is held against the bottom of the fuse box 10 by a spring latch 35, the said spring latch 35 being secured to the cover 11 and being normally disposed in engagement with a projection 36 on the fuse box. Extending from the side of the cover 11 adjacent the latch 35, there are flanges 37 in which is journaled a cam 38, the cam being positioned for engaging the catch 35 so that when the cam 38 is moved outwardly it will move the latch 35 out of engagement with the projection 36. The cam 38 is operated by a looped arm 39 so that it will be possible to insert a hook mounted on a pole in the looped arm 39 and pull the said looped arm 39 downwardly which will operate the cam to move the spring latch 35 into inoperative position when the cover may be drawn downwardly, the spring drum permitting this downward movement of the cover. With this downward movement the flange 34 will be moved out of the guideway 30 and the cover may be drawn away from the fuse box 10 a considerable distance to a position where the fuses 15 may be conveniently placed. In order to hold the cover 11 down while the fuses 15 are being replaced, knots 40 are made in the cords 27 and 27ª so that when the knots 40 have been moved through the enlarged ends of the key slots 33 the cover 11 may be moved to a position where the cords 27 and 27ª will be disposed at the other ends of the key slots when the cover 11 may be permitted to move upwardly a short distance to engage the knots 40 with the flange 31 at the sides of the key slots. When the fuses 15 have been replaced the cover 11 is moved to a position where the knots will be disposed at the enlarged ends of the key slots so that the knots will pass through the key slots and the cover may be permitted to move upwardly under the influence of the spring drum. When the flange 34 strikes the flange 31 the flange 34 will move into the guideway 30 and the cover may be closed against the bottom of the fuse box by means of the hook mounted on a pole which has been referred to, the hook serving to move the looped arm 39 upwardly to move the flange 38 into inoperative position, thereby permitting the latch 35 to hold the cover 11 in position.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent:

1. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, and means securing the cover to the fuse box which will permit of the movement of the cover to a position at a distance from the fuse box while thus secured.

2. A fuse box having terminals, a cover for the fuse box, means on the cover supporting the fuse for connecting the terminals, flexible means secured at one side of the cover and to the fuse box which will permit of the movement of the cover to a position at a distance from the fuse box while thus secured, and means to secure the opposite side of the cover to the fuse box.

3. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, and resilient means securing the cover to the fuse box which will permit of the movement of the cover to a position at a distance from the fuse box while thus secured.

4. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, flexible means for connecting the cover with the fuse box which may be drawn out from the fuse box, and resilient means for drawing the flexible means to the fuse box.

5. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, a drum rotatably mounted on the fuse box, and a cord wound on the drum and secured to the cover.

6. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, a spring drum rotatably mounted on the fuse box, and a cord wound on the spring drum and secured to the cover.

7. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, a drum rotatably mounted on the fuse box, two cords wound on the drum and to which the cover is secured, and a roller on which one of the cords is disposed to space the cords apart.

8. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the ter-

minals, a guideway in the fuse box, a flange on the cover, and means to move the cover in the direction of the fuse box and the flange into the guideway.

9. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, a guideway at one end of the fuse box, a flange at one end of the cover, means to move the cover in the direction of the fuse box and the flange into the guideway, and means to secure the other end of the cover to the fuse box.

10. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, a drum mounted at one end of the fuse box, a cord wound on the drum, a flange at one end of the cover, the cord being secured to the said cover end, a guideway in the fuse box disposed adjacent the drum and in which the flange on the cover is adapted to move, and means to secure the other end of the cover to the other end of the fuse box.

11. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, a drum rotatably mounted on the fuse box, two cords wound on the drum and to which the cover is secured, a roller around which one of the cords is disposed to space the cords apart, a guideway in the fuse box adjacent the drum, a flange on the cover for moving in the guideway, and means for securing the cover to the fuse box at a distance from the guideway.

12. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, means connecting one end of the cover with the fuse box which will permit of the movement of the cover to a position at a distance from the fuse box, a resilient latch for holding the other end of the cover against the fuse box, a cam mounted on the cover for moving the latch out of the operative position, and a looped arm secured to the cam for operating the latter.

13. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, a drum rotatably mounted on the fuse box, two cords wound on the drum and to which the cover is secured, a roller around which one of the cords is disposed to space the cords apart, a guideway in the fuse box adjacent the drum, a flange on the cover for moving in the guideway, a resilient latch for holding the cover to the fuse box at a distance from the guideway, a cam mounted on the cover for moving the latch out of operative position, and a looped arm secured to the cam for operating the cover.

14. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting a fuse for connecting the terminals, a spring drum rotatably mounted at one end of the fuse box, a cord wound on the drum, a guideway below the drum having a key slot through which the cord is disposed, a flange on the cover for moving in the guideway and to which the cord is secured, and a knot in the cord which may be moved through the enlarged end of the key slot and against the guideway at the other end of the key slot for the purpose specified.

15. In a fuse box, a switch member, two resilient clips spaced apart on the switch member, each clip having two arms extending inwardly from the switch member and one projecting beyond the other, a fuse having ends embraced by the said arms of the resilient clips, and a companion switch member having resilient clips for receiving the said projecting arms of the first mentioned clips.

16. A fuse box having clips spaced apart, a cover for the fuse box, clips on the cover spaced apart, each clip having a projecting terminal for engagement by the first mentioned clips, a fuse having ends embraced by the second mentioned clips, and means securing the cover to the fuse box which will permit of the movement of the cover to a position at a distance from the fuse box while thus secured.

17. A fuse box having terminals, a cover for the fuse box having clips for receiving the terminals of a fuse, each clip having a projecting terminal, and additional clips connected with the first mentioned terminals for receiving the projecting terminals of the first mentioned clips.

18. In a fuse box having terminals, a cover for the fuse box, means on the cover for supporting the fuse for connecting the terminals, means securing the cover to the fuse box which will permit of the movement of the cover to a position at a distance from the fuse box while thus secured, a feeder connector member secured to the fuse box, a companion feeder connector member connected with one of the terminals, and bolts spaced apart and adapted to secure the feeder connector members one at each side of a feeder.

19. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting a fuse for connecting the terminals, means secured to one side of the cover and to one side of the fuse box which will permit of the movement of the cover to a position at a distance from the fuse box while thus secured, and means to secure the opposite side of the cover to the fuse box.

20. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting a fuse for connecting the terminals, resilient means secured to one side of the cover and to one side of the fuse box which will permit of the movement of the cover to

a position at a distance from the fuse box while thus secured, and means to secure the opposite side of the cover to the fuse box.

21. A fuse box having terminals, a cover for the fuse box, means on the cover for supporting a fuse for connecting the terminals a drum rotatably mounted on one side of the fuse box, a cord wound on the drum and secured to one side of the cover, and means to secure the opposite side of the cover to the fuse box.

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