(No Model.) 2 Sheets—Sheet 1.

L. D. McMUNN.

ELECTRIC CUT-OUT AND SWITCH BOX.

No. 483,235. Patented Sept. 27, 1892.

Fig. 1.

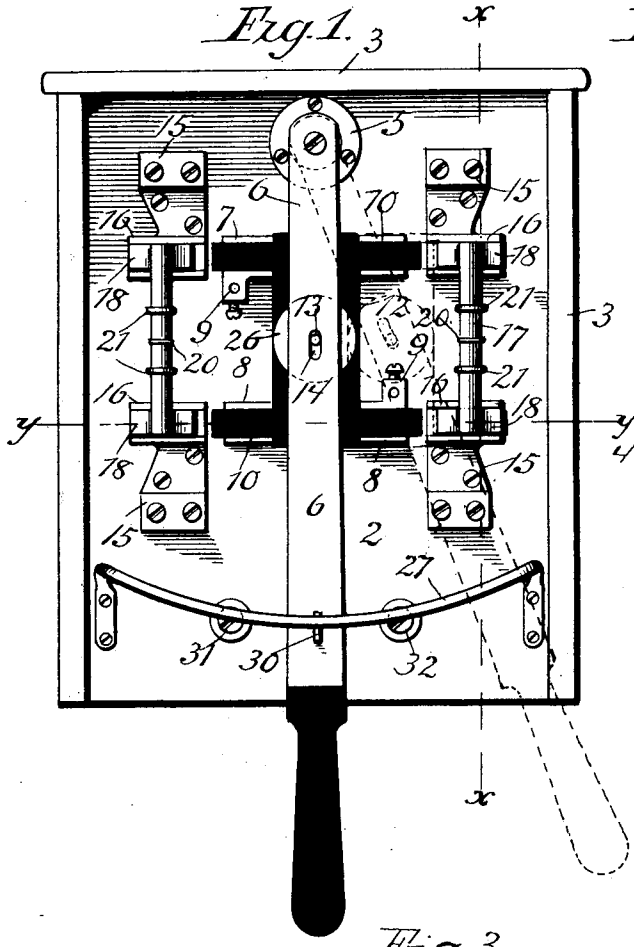

Fig. 2.

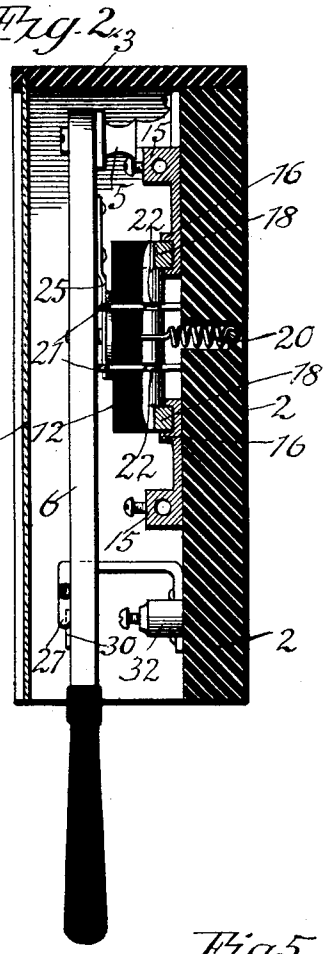

Fig. 3.

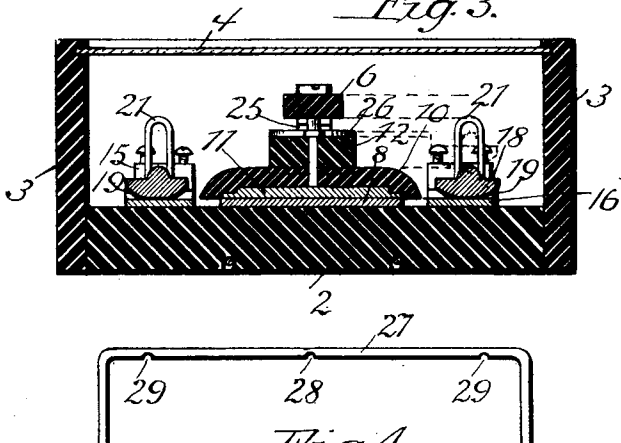

Fig. 5.

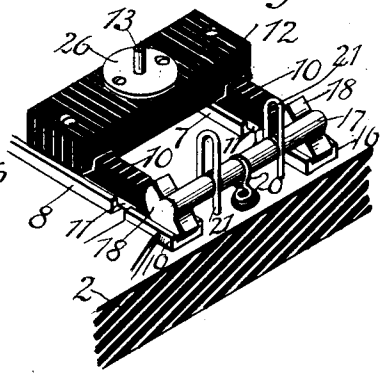

Fig. 4.

Witnesses.
J. Jessen.
F. S. Lyon.

Inventor:
Llewellyn D. McMunn.
By Paul & Sherman attys

(No Model.) 2 Sheets—Sheet 2.

L. D. McMUNN.

ELECTRIC CUT-OUT AND SWITCH BOX.

No. 483,235. Patented Sept. 27, 1892.

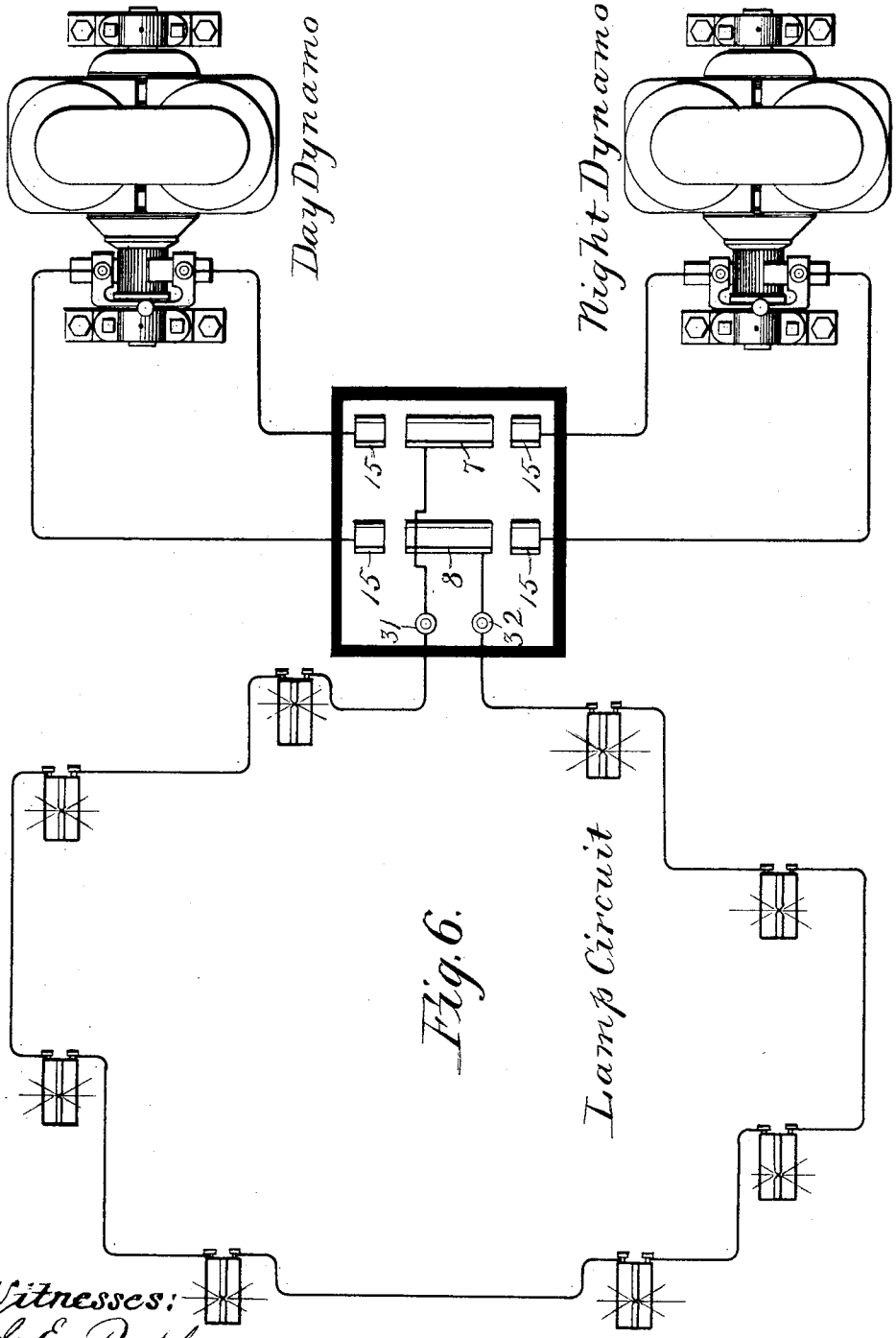

Fig. 6.

Witnesses:
G. E. Purple
A. D. Lyon

Inventor:
Llewellyn D. McMunn
By Paul & Merwin
His Attys.

UNITED STATES PATENT OFFICE.

LLEWELLYN D. McMUNN, OF CROMWELL, NORTH DAKOTA, ASSIGNOR OF ONE-HALF TO MILTON R. UTLEY, OF MINNEAPOLIS, MINNESOTA.

ELECTRIC CUT-OUT AND SWITCH-BOX.

SPECIFICATION forming part of Letters Patent No. 483,235, dated September 27, 1892.

Application filed April 5, 1892. Serial No. 427,802. (No model.)

To all whom it may concern:

Be it known that I, LLEWELLYN D. McMUNN, of Cromwell, Burleigh county, North Dakota, have invented a certain new Improved Electric Cut-Out and Switch-Box, of which the following is a specification.

My invention relates to an electric cut-out and switch-box of a novel and particularly advantageous construction.

The object of my invention is both to cheapen the construction of such devices and to render the same more efficient and reliable; and the invention consists in the combination, with terminal plates for the lamp-circuit, of sliding contact-blocks arranged thereon, a lever for operating the same, and one or two pairs of dynamo-circuit terminals with a spring-jumper or short-circuit bar arranged between each pair of said terminals, and in various constructions and combinations, all as hereinafter described, and pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a full front view of the cut-out and switch-box embodying my invention. Fig. 2 is a cross-section thereof on the line *x x* of Fig. 1. Fig. 3 is a cross-section of the same on the line *y y* of Fig. 1. Fig. 4 is a detail showing means for locking the lever; and Fig. 5 is a detail perspective view showing the short-circuit jumper, the terminal blocks, and the sliding contacts. Fig. 6 is a diagrammatic representation showing the contact-blocks of my cut-out switch with the two dynamo and the lamp circuits in connection therewith.

As shown in the drawings, 2 represents the back board of the box, and 3 the side and top walls thereof, in which the glass front 4 is secured. At the top of the board and midway between the sides thereof is the post 5, on which the upper end of the long lever 6, preferably made of insulating material, is pivoted. Beneath this post and fastened upon the insulating-back 2 of the box I arrange the two terminal plates 7 and 8, to which the wires of the lamp-circuit are connected by means of the binding terminal lugs 9. These plates are formed, as shown, with grooves to receive the long sliding blocks 10, having the sharp beveled or rounded ends. (Shown in Fig. 3.) On the lower sides of these blocks and constantly in contact with the lamp-terminal plates I arrange the conductor-strips 11, one upon each block. These strips are shorter than the sliding blocks 10, which are of insulating material. An insulating-block 12 is secured across the tops of the two parts 10 and is provided with the stud or spindle 13, projecting into the slot 14 of the lever 6, by means of which the sliding blocks are thrown from one side to the other. At each end of the main terminals 7 and 8 are the dynamo-circuit-terminal blocks 15, having the short grooved guides 16 in line with the grooves of the lamp-plates 7 and 8. Between each pair of dynamo-circuit terminals extends a short-circuiting bar 17, having the rocker or T ends 18, provided with the convex lower sides 19, adapted to rest upon the contact-surfaces of the parts 15. These surfaces are in line with those of the plates 7 and 8, and hence as the lever is thrown over to one side to carry the contact-blocks over upon the working-circuit terminals the conductor-bars 11 thereof are bridged across between the lamp contact-plates or terminals 7 and 8 and the dynamo-circuit terminals. This movement wedges up and lifts the rockers or jumper-feet 18, which lodge upon the insulating-blocks 10 and, being held firmly down by the coiled spring 20, attached at the middle of the cross-bar 17, tend to hold the contacts and the long lever in place. Two guide-staples 21 are provided for each jumper-bar, which bars have the annular grooves 22 to receive the staples, which therefore prevent the bars from moving longitudinally. It will be seen that when the lever is first thrown from its middle position the wedge ends of the two blocks 10 will pass beneath the oppositely-curved lower surfaces of the jumper-feet, tilting the same into the position shown in Fig. 5. The arrangement is such that the jumper-feet will not leave their contact-plates until the ends of the two plates 11, carried by the blocks 10, pass onto the contact-surfaces of the terminals 15, immediately after which the jumpers are lifted and the short circuit through the jumper-bar removed. Thus,

while the action is quick, all sparking or arcing is avoided. This is also true when the switch-lever is returned, as the distance between the adjoining edges of the plates 7 and 8 and the dynamo-circuit terminals is too great to allow the formation of an arc.

I arrange a spring 25 on the under side of the lever and adapted to bear on the plate 26 of the stud 13, thus holding the bridging or conductor plates 11 at all times firmly in position on the parts 7 and 8. The lower end of the lever is guided by the bracket or bridge 27, extending across from side to side of the box and having on its inner side three notches 28 29 29. The lever has a projection 30, adapted to drop into these notches when the lever is brought to its central position or thrown to one side or the other, respectively, thereby locking the lever securely.

I preferably employ the two pairs of dynamo-circuit terminals, though it is obvious that one only may be used. The former arrangement, however, is especially applicable in cases where night and day circuits exist. The wires of the main lamp-circuit are secured in the two binding-posts 31 and 32, from which electrical connections extend to the plates 7 and 8, respectively, as indicated in dotted lines in Fig. 1.

The wires of the day and night dynamos, respectively, may be carried directly through the sides of the box and fastened in the posts 15.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, in an electric cut-out and switch, of the lamp-circuit-terminal plates with the slidable contact or bridge-bars arranged thereon, dynamo-circuit terminals arranged opposite the ends of the lamp-circuit-terminal plates and with which said sliding bars are adapted to make contact, a short-circuiting bar or jumper extending between the dynamo-circuit terminals, said bar adapted to be lifted by the sliding bars, and means for moving said bars, substantially as described.

2. The combination, in an electric cut-out and switch-box, of the insulated plates with the insulating-blocks arranged to slide thereon and carrying conductor-bars in engagement with said plates, a lever for moving said blocks, dynamo-circuit terminals arranged opposite the same, and a short-circuiting bar extending between the dynamo-circuit terminals and adapted to be lifted therefrom by said insulated blocks, substantially as described.

3. The combination, in an electric switch-box, of the grooved contact-terminal plates 7 and 8, with the insulating-blocks arranged thereon and carrying the sliding contact or bridge plates adapted to engage the parts 7 and 8, the cross-block extending between said insulating-blocks, a lever attached thereto for shifting said blocks, dynamo-circuit terminals insulated from one another and from the parts 7 and 8, and a spring-bar extending between the dynamo-circuit terminals and having jumper-feet to rest thereon, said jumper-feet having the convex under surfaces, substantially as set forth.

4. The combination, with the grooved terminal plates 7 and 8, of the insulating-blocks 10, the contact-plates 11, secured on said blocks and in constant contact with the parts 7 and 8, respectively, a lever arranged in connection with said blocks, dynamo-circuit terminals having grooved parts, the jumper-bar, guides therefor, the feet of said bar having convex lower surfaces, and a spring connection connected with said bar, substantially as described.

5. The combination, with the plates 7 and 8, of the insulating-blocks 10, carrying the conductor-plates 11, a block connecting the parts 10, the lever to engage said block, said insulating-blocks being longer than the bars 11, two pairs of dynamo-circuit terminals having the parts 16, the short-circuiting bars 17, springs connected therewith, vertical guides for said bar, the jumper-feet of said bars adapted to rest upon the dynamo-circuit terminals, and means for securing said lever, substantially as described.

6. The combination, with the containing-box, of the grooved plates 7 and 8, insulated from one another, the sliding contacts 11, the longer insulating-blocks 10, whereto they are secured, a cross-block connecting them, the pivoted lever, said cross-block provided with the stud to engage the same, a spring arranged between the two parts, dynamo-circuit terminals, and the bridging and spring bar 27, extending across the blocks and notched, as described, and a lug 30 on said lever to engage the same, substantially as described.

7. The combination, with the dynamo-circuit terminals, of the slidable contact-plates 11, the insulating-blocks having the wedge-like ends and being longer than said parts 11, the dynamo-circuit terminals grooved as described, the jumper-bar provided with the feet having the convex lower surfaces, the guide-staples, a spring connected with said bar, and said bar grooved to engage said staples, substantially as described.

In testimony whereof witness my hand this 29th day of March, 1892.

LLEWELLYN D. McMUNN.

In presence of—
O. G. HAWLEY,
F. S. LYON.