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PANEL BOARD SECTION

Original Filed Dec. 26, 1925

Fig. 1

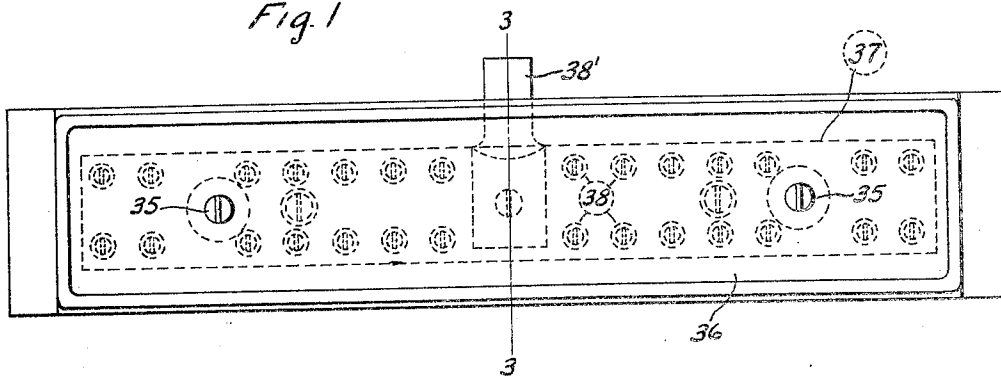


Fig. 2

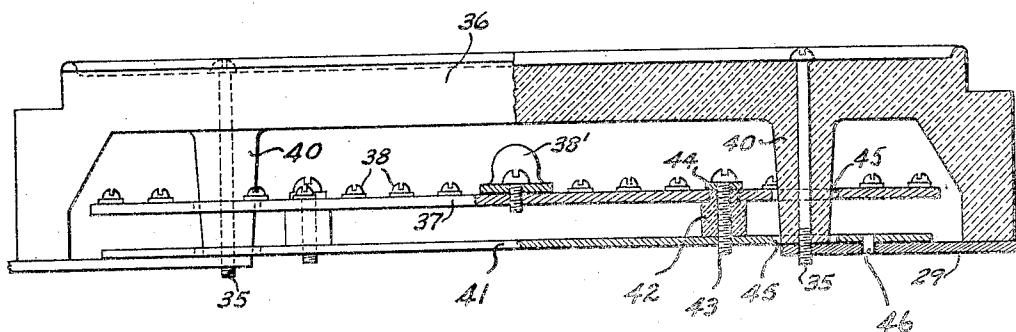
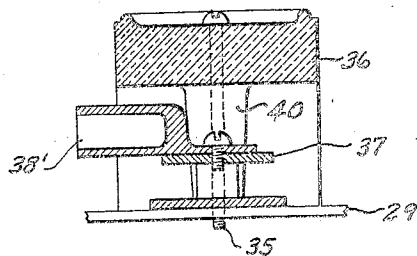


Fig. 3



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PANEL-BOARD SECTION

Original application filed December 26, 1925, Serial No. 77,682. Divided and this application filed December 23, 1927. Serial No. 242,212.

This invention relates to improvements in panelboard sections and especially to sections adapted for use in a panelboard for lighting or other circuits.

5 This invention is a division of the subject matter originally included in my co-pending application of Serial No. 77,682, filed December 26, 1925.

10 An object of this invention is to provide a special section for a sectional type of panelboard, the special section being intended for the accumulation of the neutral sides of a number, or all, of the branch circuits distributed through the panelboard.

15 A further object is the creation of the special section for the purpose outlined in the above object, which section is associated with a front or cover identical in dimensions and in its securing means with the sections comprising circuit controls.

20 Further objects and advantages of this invention will appear from the drawing and the following detailed description.

25 My improvements consist in the novel construction, arrangement, and combination of parts as hereinafter fully, clearly and concisely described, definitely pointed out in my claims and illustrated by the accompanying drawing in which:

30 Fig. 1 is a front elevation of a panelboard section comprising a neutral terminal plate assembly, and a front, or cover; Fig. 2 is an elevation, partly in section, of the device shown in Fig. 1; and Fig. 3 is a transverse section taken along the line 3—3 of Fig. 1.

35 The structure of the panelboard sections, their relative disposition, either inside or outside of the cabinet, the means for mounting the section, and the means for securing the sections adjacent each other, may be varied in form without departure from my invention, as hereinafter described and claimed; the showing of this description and the drawing being merely an illustration of one embodiment of my invention in response to the statutory requirements relating to applications for Letters Patent.

50 The section consists of a cover portion 36, and a collector plate assembly, hereinafter described, which are separably associated.

The cover portion is preferably formed in any conventional manner of an insulating or dielectric material, and is made to conform, in dimensions and general appearance, with the control sections of the panel. The particular cover portion illustrated has been constructed to conform substantially with a panel section comprising a number of switch and fuse elements, and described in my co-pending application, Serial No. 242,213, filed December 23, 1927. The present section, however, does not include the switch and fuse elements which characterize the control section described in the last named co-pending application.

65 The cover portion of the present section is imperforate, except for holes to receive screws 35, or other means for mounting the section. It will be noted that the screws 35, are insulated throughout their length, and particularly from the collector plate assembly, by means of rearwardly projecting portions 40, preferably tapered and formed integrally with the cover.

75 Inasmuch as this section is intended for use with control sections, and is adapted to be combined with them into a panel, the section is preferably attached to a mounting back 29, which may be the same as that provided for the control sections, or other panelboard elements. Such an assembly is illustrated and described in my co-pending application Serial No. 77,682, filed Dec. 26, 1925.

85 The collector plate assembly preferably comprises a pair of spaced plates, 37 and 41, insulated from each other by means of shouldered bushings 42, of a suitable insulating material. Plate 37, is apertured to receive the shoulders of these bushings, and the plate 41, has threaded openings adapted to receive suitable mounting screws 43. The bushings, together with screws 43, and insulating washers 44, serve to maintain the plates in spaced relation.

95 Each of the plates of the assembly is preferably apertured, as at 45, so that the assembly has a pair of coincident, related openings near each end, for the accommodation of the projecting portions 40, of the

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cover, by means of which the plate assembly may be positioned with respect to the recited cover. I preferably make the apertures 45, of such size that the tapered portions 40, may only extend therethrough for a limited distance and thereby maintain the distance relationship between the plate assembly and its cover. Plate 41 may be provided with bolt or screw receiving openings 46, which may be employed to attach the plate assembly to the mounting back or other support, independently of any securing means associated with the cover.

The plate 37 is preferably formed of copper, or other conductive material, and is provided with a suitable number of binding posts or screws 38, to accumulate all of the neutral sides of the branch circuits which the panelboard is adapted to distribute. The plate 37 is also provided with a main terminal 38', which serves as a connection for the neutral wire of the feeder circuit.

It will be understood that the wiring to the panelboard of which the present section is a part, may be of the so-called three-wire system in which heretofore it has been the practice to include in each branch circuit a fuse and a switch in the neutral wire. This practice obviously required much space upon the face of the panelboard. Through my provision of the special panel section I have omitted the fuse and switch in the neutral side of each branch circuit and I am enabled thereby to economize in the space required upon the face of the panelboard as a whole, the various circuits being completely controlled and protected by sections of a form described in my aforementioned co-pending application, Serial No. 242,213, filed December 23, 1927. The use of the arrangement suggested is, however, by no means limited to a three-wire system, provided only that one of the conductors is the so-called neutral wire.

The panel section or unit herein described is adapted to be used with one or several panelboard control sections, with the result that I have utilized by far the greater proportion of panelboard space for switches and fuses in the live side of each of the branch circuits, and have concentrated all neutral connections into a comparatively small portion of the assembled panelboard.

Although my invention consists largely in the construction and arrangement of parts hereinafter described and particularly pointed out in the claims, yet I do not limit my invention to the precise form or construction of parts shown, or the several parts thereof, inasmuch as various alterations may be made without changing the scope of my invention.

What I claim is:

1. A dead-front panelboard section in-

cluding a plate adapted to accumulate a plurality of neutral connections, means for connecting the plate with the neutral side of the feeder, a removable unitary insulating body including a substantially imperforate cover portion, spaced outwardly of the plate to provide a space, for neutral conductors and their connections, between the plate and cover, and extending over substantially the greater part of the area of the section.

2. A section of dead-front type, adapted for assembly in a panelboard controlling a plurality of circuits, said section including a unitary body of insulating material, forming a substantially uninterrupted front, a metal plate extending over the greater part of the area of the section and carrying a plurality of neutral branch connections on its outermost face, and a neutral feeder terminal, the plate being disposed rearwardly of the front to provide a common space for said connections, between the plate and front, the body having an open side to accommodate the wiring to said plate, mounting means associated with the section, adapted for detachably assembling said section with the circuit controlling elements of a panelboard, and projections extended rearwardly from the front, as a part of said body, and beyond said plate, for engagement with said mounting means.

3. A neutral-accumulating section of dead-front type, adapted for detachable assembly with control panels of a panelboard for controlling a plurality of load circuits, said accumulating section having a detachable, combined cover and body constructed of insulating material, and of generally rectangular form, a conducting plate for the neutral sides of branch circuits which are distributed from the panel board of which the sections form a part, said plate underlying substantially the greater part of the area of the front of the section, in spaced relation thereto, and also spaced from the rear of the section, the body of the section having at least one open side to receive the conductors to be connected to said plate, a mounting back structure common to the plate and body, and holding elements for independently securing the plate and body to the mounting back.

4. A sectional panelboard section of dead-front type, including an insulating cover, forming a continuous substantially imperforate front, a conductor plate spaced rearwardly, and extending over the greater part of the area of the cover, the section having an open side to accommodate wiring to the conductor plate, the plate being provided with means for the interconnection of the neutral sides of branch circuits, a feeder terminal associated with said section for connecting a neutral wire of the feeder with said conductor, mounting and holding members for detachably assembling said section

with the control portions of a panelboard, and holding elements permitting said plate to be mounted prior to, and independently of the cover portion of the section.

5 5. A dead-front panelboard section arranged for the accumulation of neutral connections to a panelboard, and adapted for detachable assembly with control sections of like proportions, said section including a
10 one-piece body of substantially rectangular shape, having an open side and end closures, a conductor plate underlying the greater part of the area of said body, a plurality of wire connecting means on the conductor plate,
15 said plate and means being adapted for the electrical interconnection of all neutral wires in the system of which said section is a part, a mounting common to the plate and body, and means supporting the plate and body
20 in spaced relation to each other, and to the mounting.

6. A panelboard section comprising an apertured conductor plate, a cover for said plate, and plate positioning means formed
25 on the cover and adapted to project through said aperture.

7. A panelboard section comprising an apertured conductor plate, a cover for the plate, and a non-conducting element adapted
30 to project into the aperture to position the plate relative to the cover, said element being adapted to coact with means for fastening the cover to a support for the section.

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