Dec. 12, 1967

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3,358,190

CONTROL PANEL

Filed Nov. 22, 1966

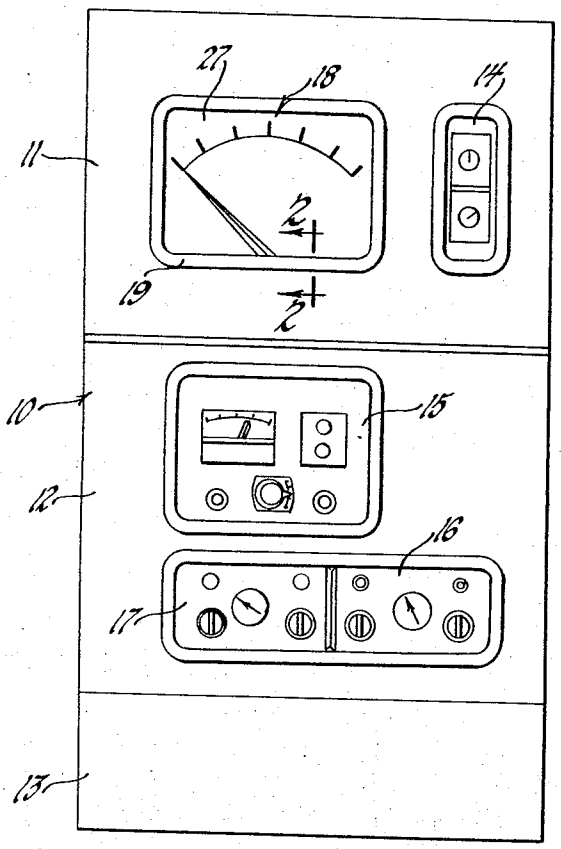


Fig. 1

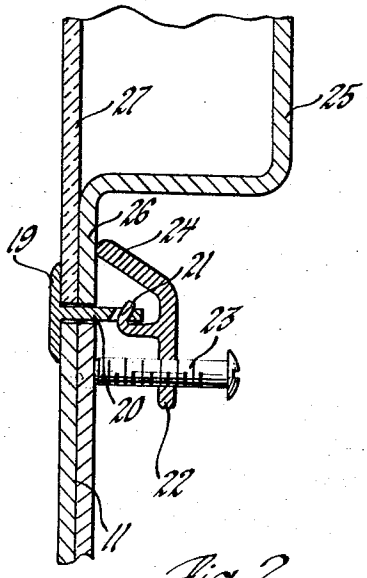


Fig. 2

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United States Patent Office 3,358,190 Patented Dec. 12, 1967

3,358,190

CONTROL PANEL

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Filed Nov. 22, 1966, Ser. No. 596,309
1 Claim. (Cl. 317—99)

ABSTRACT OF THE DISCLOSURE

A plurality of standardized apertures through the body of a main control panel receive complemental subpanel assemblies detachably mounted therein and arranged in selected patterns determined by the nature and step-by-step sequence of work performance phases peculiar to the carrying out of a particular industrial process in which the main panel is to be used. Each subpanel assembly carries one or more control instrumentalities operative to govern an individual phase of the process.

The present invention relates to the art of control panel construction and usage, and in particular to control panels for use with industrial processes in which a plurality of separate instruments on a control panel are caused to function selectively or in a predetermined pattern as controllers, regulators, indicators, etc.

Control panel boards which mount a plurality of instruments that function in processes standardized in respect to production of the particular manufacturing plant in which they are installed are, of course, well known. They are substantially permanent installations that require nothing more than occasional replacement of worn out or defective instruments, a mere substitution without change in process control. They are not adaptable for conversion to meet control requirements of processes different than those for which they were installed.

The present invention provides a method and means by which a standard control panel is readily adapted for interchange use in a number of processes that differ individually in the character and in the arrangement of their controls.

In the accompanying drawings:

FIG. 1 is a front elevation of a control panel embodying the present invention.

FIG. 2 is a section on line 2—2 of FIG. 1.

As here shown the invention comprises a panel board indicated generally as **10** made of material conventionally employed for such use. It may be one-piece or be constituted of a plurality of attached sections which may conveniently be a top section **11**, an intermediate section **12**, and a base section **13**.

The body of the panel is cut out at defined areas to provide a plurality of openings for reception of subpanels such as **14, 15, 16, 17** and/or instruments as at **18**. The apertures which receive the various subpanels and instruments are shaped complemental thereto and may be arranged in any preferred pattern and number.

Each subpanel or instrument is seated in a frame strip F of T-shape cross section having a flat head portion **19** and a perpendicular flat-sided shank portion **20**. The free end of the shank has therein a transverse slot which receives therethrough a hook **21** on a traveling nut **22** that is threaded on a bolt **23**. The nut **22** has an inclined lateral extension **24** as shown in FIG. 2. Nut **22** and bolt

23 in conjunction with the frame F constitute means by which the various frames are detachably secured in their mountings in the panel. As shown in FIG. 2, the casing **25** for the instrument **18** has a lateral edge flange **26** which together with the instrument face plate **27** is clamped against the frame **19** when the bolt is operated appropriately. The inner end of the bolt bears loosely on the rear face of the panel **11**. The specific structure of the securing means as described is merely illustrative of an example and is not intended to be restrictive.

Each of the various subpanels **14–17** individually carries one or more instruments as shown and which are in themselves part of the subpanel unit or assembly. As arranged on their subpanel they constitute a group of controls to govern a particular phase of a process which, for example, may be illustrated on a flow sheet (not shown). When the panel is to be used in a process different in phases and sequence or in other respects than the process for which the panel was initially set, the various subpanels are changed in pattern, substituted, or removed as required to adapt the panel to the new process.

It is to be understood that the herein disclosed embodiment of my invention is illustrative of a practical example and that the invention is not restricted thereto. It may comprise any structure falling within the scope of the invention as claimed.

I claim:

In a mounting means for a subpanel assembly of a control panel display, the combination comprising: a panel board provided with one or more openings therein to accommodate preselected indicator subpanels, complemental subpanel assemblies each containing a prearranged indicator display, frame means complemental to said opening in said panel and said subpanel for supporting said subpanel within said panel opening, said frame means including a framing strip portion overlying the edge of said opening in said panel and simultaneously overlying the peripheral extremity of said subpanel disposed within said opening, said frame means including a substantially continuous shank portion perpendicular to said framing strip portion extending between the periphery of said subpanel and the edge of the opening in said panel, said shank portion including an opening therethrough angularly directed upwardly from said panel toward said subpanel, hook means including an extension portion, a hooked portion and a nut portion connected to said shank portion of said frame by interconnection of said hooked portion of said hook means with said inclined opening in said shank, and screw means receivable within said nut portion engageable with said panel for actuating said hook means to apply pulling pressure of said shank and pushing pressure on said extension whereby to press said subpanel into engagement with said frame and to simultaneously pull said frame into engagement with said panel.

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