

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets

(11)

Publication number:

**0 284 129
A1**

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: **88200412.0**

(51) Int. Cl.4: **H01H 13/70**

(22) Date of filing: **04.03.88**

(30) Priority: **06.03.87 NL 8700551**

(43) Date of publication of application:
28.09.88 Bulletin 88/39

(84) Designated Contracting States:
DE ES FR GB NL

(71) Applicant: **Multinorm B.V.**
Hoofdweg 1278
NL-2153 LR Nieuw-Vennep(NL)

(72) Inventor: **Van Paradijs, Hendrikus Johannes**
Adrianus
Noordse Dorpsweg 35
NL-2431 AS Noorden(NL)

(74) Representative: **Hoorweg, Petrus Nicolaas et**
al
OCTROOIBUREAU ARNOLD & SIEDSMA
Sweelinckplein 1
NL-2517 GK The Hague(NL)

(54) Control panel.

(57) A control panel with more than one control circuit having control members (6) disposed in a pattern. Each group of control members of a control circuit is grouped separately from the control members of another control circuit. The user will find his way "blind" over the panel.

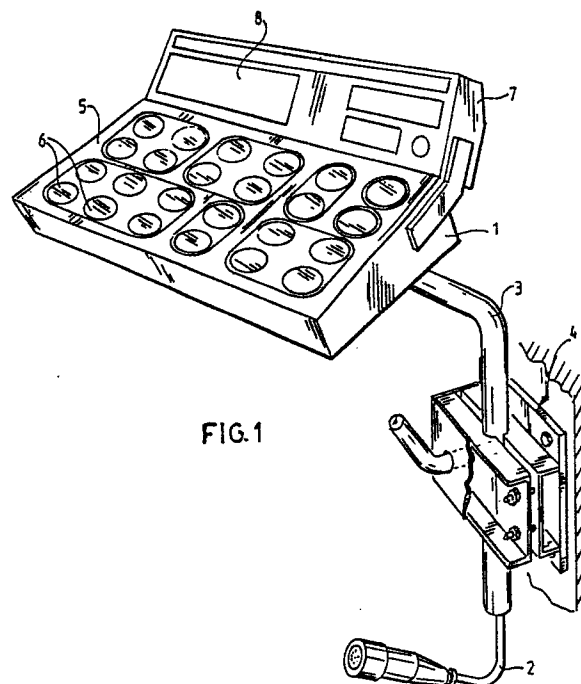


FIG.1

EP 0 284 129 A1

Control panel

The invention relates to a panel for a control system with more than one control circuit, which panel is provided with a surface having arranged thereon or therein manually controllable members, such as touch keys, which are disposed in a pattern.

Such panels are known in many embodiments, particularly where control panels for a single control circuit are concerned. An example here is a touch key board for a telephone and the like. In the case of control panels for multiple control circuits the problem arises that the user cannot find his way "blind" around the panel.

The invention has for its object to set out the control panel such that the user is immediately able to find his way around it and can therefore access the correct functions in the control circuit without error.

The panel according to the invention is distinguished in that each group of control members associated with a control circuit is grouped on the panel surface separately relative to control members associated with other control circuits.

The user can hereby learn quickly and clearly which group of control members he has to use for a particular function.

Ease of recognition is increased by disposing the group of control members associated with a control circuit in a distinctive pattern. This pattern may for example be a row of control members, but can also be a cruciform or rectangular pattern.

In accordance with a further development of the invention it is thereby recommended that the control members for operating a main function in the control circuit be given a distinctive position or form in that pattern. Such touch keys are usually to be used more than the touch keys or less important positions in the group so that as a result of this particular placing or particular form, identifying of the operating member is facilitated.

In order to provide tactile recognition of the pattern of a group of control members, the panel surface has a raised or recessed relief line each bounding a pattern, which makes the group easier to recognize.

In such a distinctive pattern the control member for a main function preferably lies at a point where the relief line encloses an angle of at least 90°.

According to another embodiment the control member in the form of a touch key, for example for a main function, can also display a relief in the touch surface thereof.

The invention is further elucidated in the following figure description of a number of embodiments.

In the drawing:

Fig. 1 shows a perspective view of a control panel, whereby the panel surface is set out as according to the invention,

fig. 2, 3, 4 and 5 each show perspective top views of a possible control panel set out as according to the invention.

The control panel shown in fig. 1 consists of a housing 1, in which are accommodated control circuits which lead by means of a connecting cable 2 to the members of for instance an agricultural machine which have to be actuated. Housing 1 is arranged on a support 3 which can be placed in the required position by means of a clamp construction 4, so that control panel 1 can be optimally positioned ergonomically relative to an operator as to ease of manual operation and display of selected functions.

Housing 1 is formed on the upper part with a panel surface 5 on which or in which are arranged control members 6, here in the form of touch keys.

Placed on the top of housing 1 is a second housing 7 provided with a visual display 8 on which can be read the various functions in operation.

In accordance with the invention the panel control surface 5 is set out such that optimum ease of recognition is provided for the operator.

Assuming that the control unit shown in fig. 1 is intended for an agricultural machine having multiple functions therein for operation, for instance a combine harvester, the operator then has to set these diverse functions into operation at the correct moment. In the case of a travelling farm machine the operator also has to keep his attention focused on the actual steering of the machine over the field, so that control panel 5 must be recognized by touch.

In accordance with the invention the control panel 5 is disposed such that the control members 6 are grouped in recognizable form.

With reference to fig. 2, which shows the same subdivision of the panel surface 5 as in fig. 1, it can be stated that for example the group of touch keys in the field 10 serve to set the lighting in operation, those in field 11 are for setting interior conveyor belts in operation, the field 12 is for rendering a discharge chute inoperative, the two separately arranged touch keys 13 are for separate functions in the farm machine, the field 14 is for the entire cutting apparatus on the front of the machine, the field 15 is for setting in operation of the threshing members and the field 16 for varying the revolution speed thereof.

The above mentioned function designations are purely illustrative and fall otherwise outside the scope of the invention.

Important here is that the group of touch keys for a particular control circuit are grouped in a determined pattern, for instance the fields 10, 11 and 15 in a square pattern, the field 14 in a rectangular pattern, the fields 12 and 16 as a column and the keys 13 separately. This already gives the operator a large measure of recognition, since the finding of the edge of the control panel and the pattern associated therewith can be performed easily by touch.

Tactile recognition can be further increased by surrounding each field with a relief line 20 that is raised or recessed relative to panel surface 5. This edge can be formed by raising or lowering the whole of field 14 relative to the upper surface of panel 5, but the line can also be formed by a rib or groove.

Should more than six touch keys or the like as shown in field 14 be used in a group of control members, the invention then proposes to arrange the keys for controlling a main function in the corners of the field. This means that the relief line 20 in such a corner will normally enclose an angle of at least 90°, so that tactile recognition of this key 6' likewise becomes easier.

Fig. 3, 4 and 5 each show different embodiments with respect to the grouping of the control keys.

In particular, fig. 5 shows field shapes which deviate from the right-angled form. Field 21 is thus H-shaped, field 22 cross-shaped and field 23 angle-shaped, etc.

As a result of the use of the relief line 20 round a group of control members, ease of recognition of the control circuits is considerably increased.

The invention is of course not limited to the above described embodiment. It is for instance possible to replace the touch keys as in the figures shown with tumbler switches and the like, to replace the round form shown with a triangular form, and it is even possible to provide the key tops of the touch keys with a relief, which results in improved ease of recognition for an individual key.

Claims

1. Panel for a control system with more than one control circuit, which panel is provided with a surface having arranged thereon or therein manually controllable members, such as touch keys, which are disposed in a pattern, **characterized in that** the group of control members associated with

a control circuit is in each case grouped on the panel surface separately relative to control members associated with other control circuits.

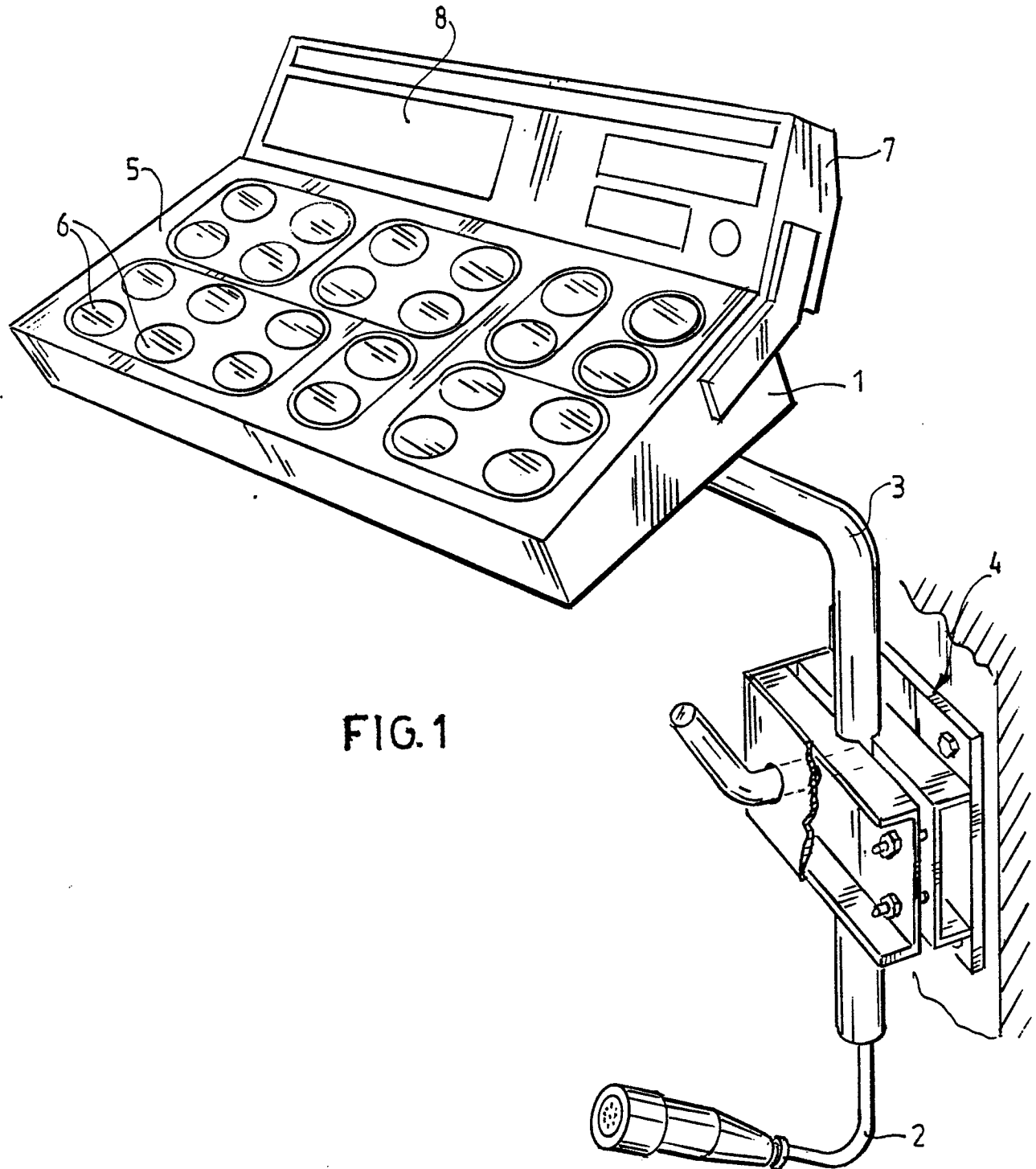
2. Panel as claimed in claim 1, **characterized in that** the group of control members associated with a control circuit is disposed in a distinctive pattern.

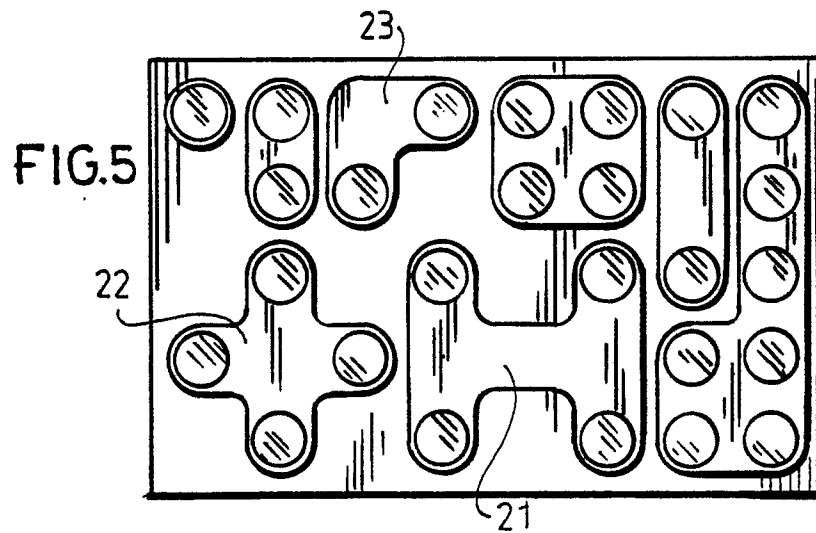
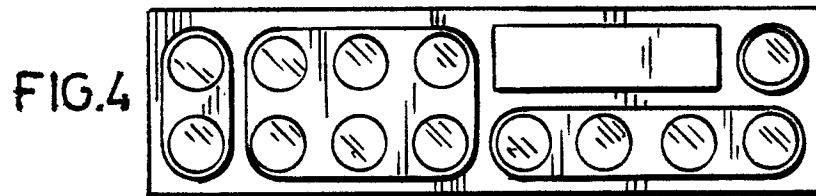
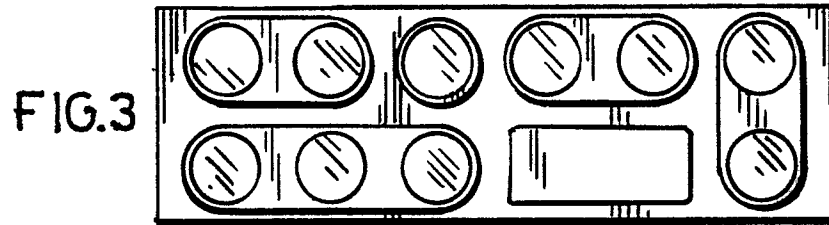
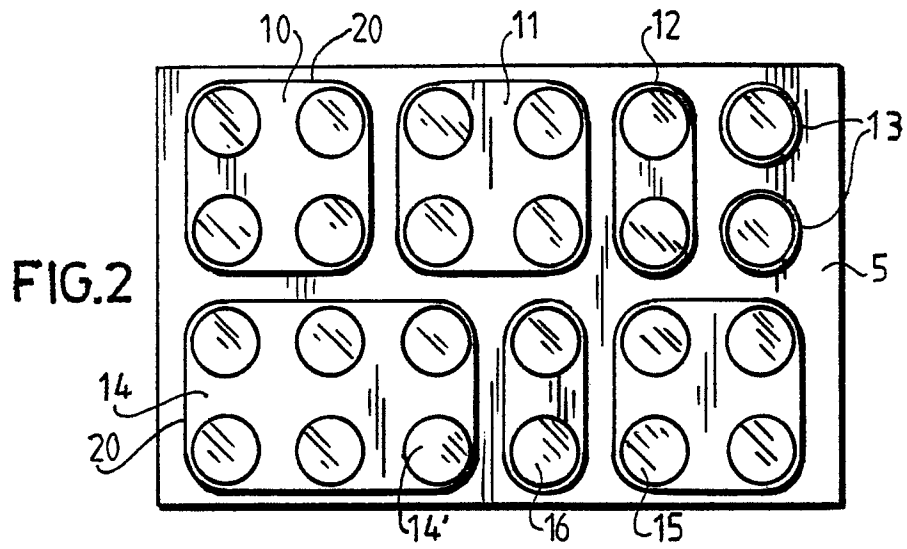
3. Panel as claimed in claims 1 and 2, **characterized in that** the control members for controlling a main function in the control circuit have a distinctive position or form in that pattern.

4. Panel as claimed in claims 1-3, **characterized in that** the panel surface has a raised or recessed relief line bounding a pattern in each case.

5. Panel as claimed in any of the foregoing claims, **characterized in that** the control member for a main function has a position in the pattern where the relief line encloses an angle of at least 90°.

6. Panel as claimed in any of the foregoing claims, **characterized in that** the control member in the form of a touch key, for example for a main function, displays a relief in the touch surface.







EP 88 20 0412

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	FR-A-2 191 403 (MANUFACTURE DES ALPES) * Page 1, lines 20-30; page 2, lines 4-24 *	1-3	H 01 H 13/70
A	BE-A- 662 996 (DEREFA) * Page 8, paragraph 2 *	1,4	
A	GB-A-2 009 047 (SAFEWAY STORES) * Page 1, lines 102-128 *	1,6	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			H 01 H 13/00 H 01 H 9/00
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21-06-1988	Examiner LIBBERECHT L.A.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			