

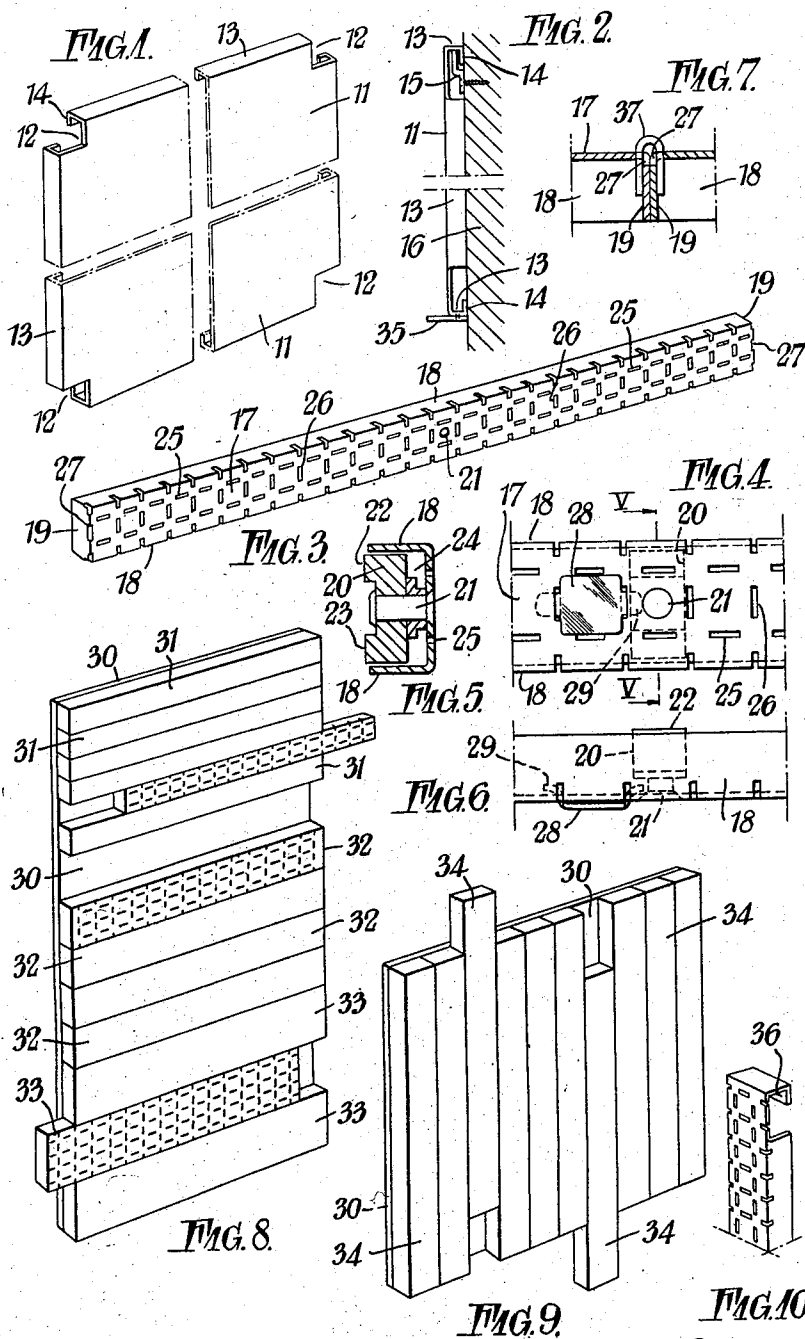
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DISPLAY DEVICES

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DISPLAY DEVICES

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1 Claim. (Cl. 40—63)

This invention relates to display devices which comprise a field or area adapted to receive symbols of any desired shape or shapes to build up the information it is desired to display on the said field, and particularly to such devices where sectional parts of the field are removable, and has for its object to provide such devices of much greater utility than those hitherto constructed.

Such devices, in which the sectional parts of the field are mounted to be movable in one direction only, have been used for advertisements or other indications, notice boards, graphs, charts, tabulated analysis, and for a great many other purposes. In many cases, the field is formed in such manner that the symbols can be detachably attached thereto. For example, it may have horizontal or vertical slots, or both horizontal and vertical slots, detachably to receive the symbols which have engaging means for co-operating with the slots. In another particular instance the field has comprised a plate of magnetic material and the individual symbols such as letters, characters or the like have included magnets in their structure so that they are directly held in position on the field by the magnetic attraction.

According to the present invention, in display devices which comprise a field or area made up from sectional parts, each sectional part of the field is formed to receive in various positions on its own particular portion of the display surface, a plurality of symbols detachably held in position in any known manner, and further is formed as or includes in its structure at least one permanent magnet, and the plurality of sectional field parts are combined with an entirely separate base plate of magnetic material on which they are held by the magnetic attraction in any desired positions, to allow direct removal or attachment, complete slidability in any direction, together with the building-up of an uninterrupted total field on the base plate when all the sectional parts of the field are placed side by side or one above the other, and without the aid of any frames.

In order that the invention may be better understood, it will now be described with reference to the accompanying drawings which are somewhat diagrammatic and given by way of example only, and in which:

Fig. 1 is a perspective view of one form of base plate included in devices according to the present invention.

Fig. 2 is a fragmentary sectional side elevation of such a base plate mounted in position on a wall.

Fig. 3 is a perspective view of a sectional part of a display field according to one method of carrying the invention into effect.

Fig. 4 is a front elevation, to a larger scale, of the central portion of the sectional part of a field shown in Fig. 3.

Fig. 5 is a sectional elevation on the line V—V, Fig. 4.

Fig. 6 is a plan of Fig. 4.

Fig. 7 is an enlarged sectional elevation of a detail hereinafter referred to.

Fig. 8 is a diagrammatic perspective view of one form of display device according to the invention.

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Fig. 9 is a similar view to Fig. 8 and of another form of the device in accordance with the invention, and

Fig. 10 is a fragmentary perspective view of a detail hereafter referred to.

Referring to Figs. 1 and 2 of the drawings, 11 is a rectangular base plate of magnetic material, for example steel, which has cut-away corners 12 and the edges of which have main flanges 13 at right angles thereto, which main flanges in turn have auxiliary flanges 14 which are turned inwards to come parallel with the plate 11. In this manner the said plate can be hung by any one of its edges upon a rail such as 15 attached to a wall 16 by means of the hook-like structure formed by the main flange 13 and the auxiliary flange 14, as illustrated in Fig. 2.

The sectional part of a display field shown in Figs. 3 to 6 is of light sheet metal, for example aluminium, and has an elongated rectangular central part 17 bounded at its edges by two long flanges 18 and two short end flanges 19.

In the channel space between the long flanges 18, at the central part of the component a permanent magnet 20 of generally rectangular shape is held by means of a rivet 21 so that its coplanar pole faces 22 and 23 project slightly from the channel and so that a space 24 is left around the rivet 21 and between the magnet and the inner surface of the rectangular portion 17.

In this manner the component forming the sectional part of the field can be held upon the base plate 11 by the attraction of the magnet 20. Further, it will be realised that the said component can be slid in any direction on and over the surface of this base plate 11, provided the magnet remains in contact therewith.

In certain preferred cases the component shown in Fig. 3 has a length which is the same as the width of the sheet 11 of magnetic material so that when mounted in position the end flanges 19 of the sectional part of the field come more or less coplanar with two parallel main flanges 13 of the base plate. However, the components can be of any desired length, often quite short, so that two or more could be placed end to end, to extend across a base plate such as 11.

As will be seen from Figs. 3 to 6, the rectangular surface 17 of the sectional part of the field has two spaced-apart horizontal rows of rectilinear slots 25 and corresponding vertical rows of slots 26, so that the arrangement is as set forth in the specification of applicant's prior United States Patent No. 2,111,780. In addition, the dimensions of the rectangular portion 17 of the component are such that the bends between the rectangle 17 to form the flanges 18 cut across the mid positions of vertical slots 26 and the bends for forming the end flanges 19 come in the position of the vertical slots lettered 27.

It should be realised that symbols or indicators as set forth in the specification of the United States Patent No. 2,111,780 can be used on the rectangle 17 and one of these, 28, is indicated in Figs. 4 and 6, and these two figures also show how the attaching lugs or tabs 29 of such indicator can be inserted in the slots adjacent the magnet 20 without hinderance therefrom.

In using devices according to the invention as thus far particularly described, it will be realised that a plurality of sectional parts of the field such as shown in Fig. 3 are located upon a base plate such as 11 to completely cover said base plate. When thus mounted, the sectional parts of the field can be utilised to carry the indicators such as 28 according to any known convention but that in addition the sectional parts of the field can be moved on the plate 11. For example, one or more can be entirely removed, allowing others to be slid vertically or horizontally, and they can be left in any desired setting. To en-

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able one sectional part of the field to be set into correct relationship with the next adjacent, the half slots coming at the bends of the long flanges 18 between adjacent components, act as registering means.

In Fig. 8 a simple plate 30 is shown which is of magnetic material and without the main and auxiliary flanges 14. This can be mounted upon a wall in any suitable manner, for example by screws or the like. It has mounted thereon a plurality of components 31 each forming a sectional part of the field, having a construction for example as shown in Fig. 3. The upper six of such components 31 are exactly similar to that shown in Fig. 3 and it will be seen how one of such components has been moved to the right, and further this figure also shows an uncovered portion of the plate 30. Thus it is possible to move the components 31 downwardly on the plate 30, or laterally. Below the uncovered portion of the plate 30 there are four more components 32 and each of these has a greater width than the six upper components 31, and there is an additional horizontal row of slots 25.

The last three components 33 have still greater width to accommodate four rows of horizontal slots 25.

It will be understood from this figure how, by mounting the components horizontally, various arrangements can be set up and, further, how one component can be moved laterally in relation to another or others for comparison or co-relation with the information carried by the two components.

In Fig. 9 there is an arrangement somewhat similar to that shown in Fig. 8 except that here the sectional parts of the field, that is to say, components 34, are arranged vertically, and two of them are shown in vertically projected positions. Not any of the components 34 in Fig. 9 has slots indicated thereon but it will be readily understood that these are similarly slotted to the construction shown in Figs. 3 to 6. Further again, in the case of Fig. 9 there is a simple base plate 30 of magnetic material.

According to particular arrangements, in some cases the lowermost main flange 13 can, as shown in Fig. 2, carry a forwardly projecting strip or flange 35 to serve as a support for the lowermost sectional part of the field when this is to have horizontal movement only. In other cases, if desired one of the side main flanges 13 can have a similar additional forwardly projecting flange to stop any lateral movement, for example in the case of arranging the components in a manner similar to Fig. 9.

Where it is desired that components such as shown in Fig. 9 should not project vertically upwards or downwards but only be moved laterally, in some cases they may be formed, as shown in Fig. 10, with a hook-like upper end 36 to engage over a rail carried by the base plate or otherwise, this action supplementing the magnetic attraction between the magnet carried by the component and the base plate.

Although sectional parts of a field, as shown in Figs. 3 to 10 of the drawings have two long flanges and two end flanges, it should be understood that they could have the long flanges alone, or the end flanges alone, or be without any flanges. In other words, they could comprise the central rectangular part only, carrying the magnet or magnets on its rear.

In some cases, according to the dimensions of the parts, sectional parts of the field can be arranged end to end, especially upon a very wide base plate. When they have a construction similar to Fig. 3, to couple two such components together an arrangement such as shown in Fig. 7 is adopted. Here, 19 are the end flanges of two components arranged end to end and 37 is a U clip, shown partly inserted, the limbs of which pass through the two coinciding slots 27 of the adjacent components.

Readily removable fastenings could also be used to connect the sectional parts of a field by their longer sides, to maintain vertical or horizontal alignment, according

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to the disposition of the components on the metal base plate.

Although only one permanent magnet has been included in the sectional part of the field as shown in the drawings, it is obvious that each sectional part of a field could have two or more such magnets fixed thereto in spaced-apart positions. Again, in some cases the sectional part of a field itself could be formed as a permanent magnet; for example, it could be of a suitable iron or steel sheet which after being formed as the sectional part of a field, is magnetised by any usual method.

The particular form and construction of a sectional part of a field shown in the drawings is of great utility, but it is obvious the invention is not limited thereto. It may have many other forms according to the exact nature of the display to be effected. Again, where the portion such as the rectangular central part 17 is slotted, the arrangement of slots can be varied from that shown, for example these slots can have a cruciform arrangement.

In another method of carrying the invention into effect, for example, a sectional part of a field can be constructed from wood of elongated rectangular form of desired thickness, having on the field surface a series of parallel T slots adapted to receive symbols having projecting T-shaped retaining shanks so that words or the like can be built-up by suitably locating various letters. At the rear this wooden member has attached thereto or located in recesses therein, one or more permanent magnets the outer polar faces of which project slightly for positioning upon the base plate of magnetic material.

A great advantage of devices in accordance with the present invention is that it is possible to insert or interpolate a sectional part of a field in accordance with the invention into an already existing field composed of a number of sectional parts of a field and which, for example, may be carrying a multiplicity of symbols. The interpolated sectional part of a field can carry its own assortment of symbols which it is to integrate with those already on the chart or the like exhibited by the display field, and, as indicated above, each sectional part of a field of such sectional field can either be removed piecemeal or can be re-arranged in strips or blocks as desired by being slidden in any direction.

An additional advantage lies in the fact that two or more complete fields, each built-up from its own series of sectional parts of a field, can be located side by side, or one above the other, so that the sections or some of the sections of one of the complete fields can be associated with and even connected to a section or sections of an adjacent field. In this way a sectional part of a field can extend over and even be magnetically held on two complete fields.

In some cases one or more sectional parts of a field mounted on a base plate of magnetic material can be used in conjunction with other known display devices comprising a field or area adapted detachably to receive symbols or indicators.

Still further, where such known display devices include a slotted plate of magnetic metal, one or more sectional parts of a field made in accordance with the present invention can be variously positioned thereon, as the slotted plate will function as a base plate of magnetic material. In this manner, the symbols carried by the sectional parts of a field can cooperate with those carried by the slotted plate to effect the particular display required.

The invention is not limited to the precise forms or details of construction herein described, as these may be varied to suit particular requirements.

I claim:

A display device, comprising a rectangular base plate of magnetic material defining a total display field, a plurality of rigid elongated rectangular plates of a length to extend from one edge to the other of said base plate and of a width equal to aliquot portions of said base plate,

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said rectangular plates being provided with substantially continuous side and end flanges extending at right angles from the rear surfaces thereof and each elongated plate having a series of well defined and separated areas arranged to receive a plurality of detachable symbols, a series of detachable symbols having tabs and adapted to be removably secured thereby to each of said elongated rectangular plates and located in said well defined areas, and a permanent magnet affixed in spaced relation to the rear side of each of said elongated rectangular plates between the flanges thereof and being of a size to extend beyond the flanges to engage said base plate and retain said elongated rectangular plates in position thereon, said rectangular plates having in their faces horizontal and vertical slots adapted to define and separate said areas and to receive the tabs on said detachable symbols to thereby locate them in said well defined areas, and said spacing of said

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magnets from the rear sides of the plates being adapted to accommodate the reception in the slots of the symbol tabs.

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