F. S. GEE.

DISPLAY DEVICE.

APPLICATION FILED MAR. 7, 1921.

1,395,982. Patented Nov. 1, 1921.

Fig. 1.

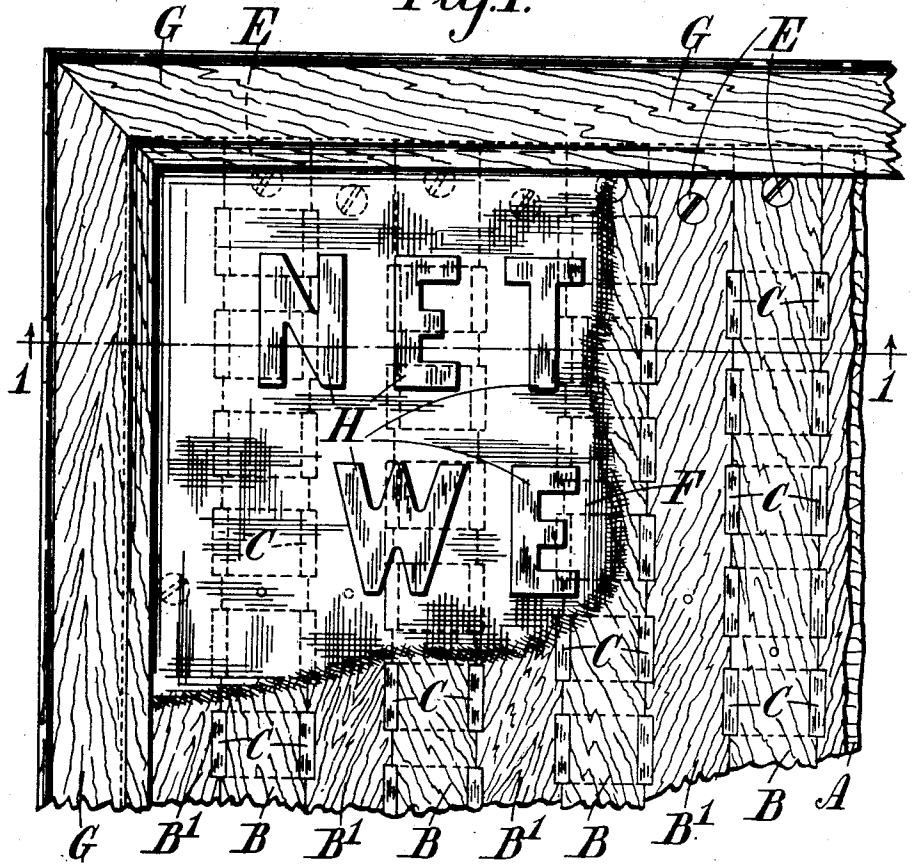


Fig. 2.

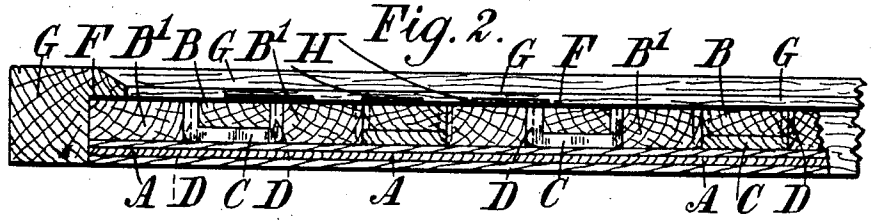
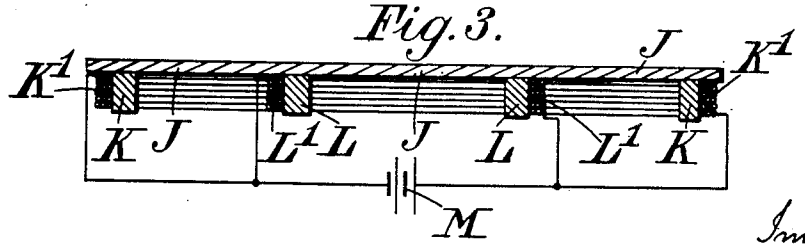


Fig. 3.



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UNITED STATES PATENT OFFICE.

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DISPLAY DEVICE.

1,395,982. Specification of Letters Patent. Patented Nov. 1, 1921.

Application filed March 7, 1921. Serial No. 450,362.

To all whom it may concern:

Be it known that I, FREDERICK SAMUEL GEE, a subject of the King of England, residing in London, England, have invented certain new and useful Improvements in Display Devices, (for which I have filed an application in Great Britain, dated March 6, 1920, Ser. No. 6920,) of which the following is a specification.

This invention is for improvements in or relating to display devices for advertisements or other notices of the kind in which characters constituting the advertisement are adjustably carried on a support on which they can be rearranged from time to time to change the appearance or nature of the advertisement.

The invention has for its main object to provide a device in which the characters are readily detachable from, and attachable to, their support in a simple manner without the use of rings, hooks, lugs or similar members.

The particular type of display device to which this invention relates is that comprising in combination a plurality of tablets each of which is composed wholly or partially of magnetizable material and bears on its outer face one or more characters, a support upon the surface of which the tablets are to be displayed, and a plurality of permanent- or electro-magnets carried on the support with their pole faces presented at or near the display surface and spaced apart substantially uniformly over that surface (for example in parallel rows with the pole faces in each row staggered in relation to those in the next adjacent rows).

According to the present invention there is provided for a display device of the type described above, a support comprising in combination a wooden or other non-magnetic base member to receive a plurality of horseshoe magnets with their yokes abutting said base member, and a series of parallel spacing strips abutting the outsides of the magnet shanks and so recessed as to engage said shanks and locate the magnets in parallel rows and in any desired spaced relationship in each row, said strips extending across the base member and having their ends secured thereto at or near opposite edges thereof.

Preferably in combination with the spacing strips aforesaid there are provided a series of retaining strips with their sides parallel with and abutting those of the spacing strips, each retaining strip extending along a row of magnets between the shanks thereof and secured at its ends, at or near opposite edges of the base member. The retaining strips also may be recessed where they embrace the magnet shanks, the two sets of recesses (*i. e.*, those in the spacing strips and those in the retaining strips) coöperating to accommodate the magnet shanks and thus provide a uniform unbroken surface in which the pole faces of the magnets lie. It will be understood that the spacing strips constitute means to locate the magnets in the base member while the retaining strips secure them thereto.

Two preferred forms of the invention will now be described by way of example only, with reference to the accompanying drawings in which—

Figure 1 is a plan of a portion of the device, the part to the right of the figure having the cover for the display surface removed;

Fig. 2 is a sectional elevation on the line 1—1, Fig. 1, and

Fig. 3 is a sectional elevation corresponding to Fig. 2 and diagrammatically illustrative of a modification constituting the second example.

In the first example, the support comprises a wooden base member A and a series of wooden spacing strips B, B^1. Abutting the base member A are the yokes of a plurality of horse-shoe magnets C arranged in equally spaced parallel rows across the support.

The magnets are so arranged within each row that the shanks of the magnets of one row are staggered in relation to those of adjacent rows.

Each magnet is formed from a flat strip of magnetizable metal having a comparatively large width in proportion to its thickness. Thus each horse-shoe magnet will present two pole-faces with their long sides parallel to one another.

The magnets are maintained in position by two spacing strips B, B^1, the former being located between the shanks D of the magnets in each row, and the latter between the shanks of adjacent rows. The

ends of the strips are secured to the base member A by screw nails E or similar means. The strips are of such depth that their outer faces lie in substantially the same plane as the pole faces of the magnets. The edges of the strips where they embrace the shanks of the magnets are half-checked or recessed to accommodate the shanks; in this way the pole faces lie in a uniform unbroken surface constituting the display surface of the device. This surface is provided with a silk covering F and the whole is inclosed in a wooden frame G.

The tablets are in the form of letters H stamped out of sheet metal with their outer or display surfaces coated with celluloid, enamel or other decorative material.

It will be readily understood that by providing a suitable number of magnet-poles over the display surface of the support the tablets may be placed in any desired position thereon and will be retained in that position by magnetic attraction. From these positions they may be readily removed to other positions as may be found desirable.

In the second example illustrated, the display surface takes the form of a sheet J of magnetizable metal. On the underside of this sheet are two rings K, L of magnetizable metal encircled by energizing coils K^1 L^1 connected to a dry battery M carried by the support and adapted to magnetically excite the sheet J.

The particular examples hereinbefore described admit of considerable modification without departing from the spirit of the invention. In the second example, for instance, the sheet J may itself be peripherally encircled by an energizing coil in place of the coils K^1 L^1. Such a form would be most conveniently employed when the tablets were required to be arranged around the marginal portions only of the display surface. Further, in place of the dry battery M the coils might, if desired, be connected to one member of a plug connector and excited direct from the live mains of an electric circuit. Again, electro-magnets may conveniently be substituted for the permanent magnets C of the first example, and means be provided—similar to those already described—for energizing the magnets.

In place of the screws E for securing the strips B, B^1 to the support, wire rods threaded through the strips and extending laterally across the support in the direction of the line 1—1, Fig. 1, may be provided. The ends of the rods would be screwed to receive nuts adapted to draw the strips together when the magnets were assembled. With this construction it would not of course be possible to adopt the staggered relation between the magnets of adjacent rows, as the rods must pass through the strips at points between the magnets.

It is not necessary that the tablets be wholly metallic, they may equally well be composed of cardboard, celluloid or other material provided with a metallic backing having magnetizable qualities and wholly or partially covering one face of the tablet.

The support with its tablets or characters applied to it may as a whole be inclosed in a glazed or other frame for the purpose of imparting a finished appearance to the device.

The decorative covering to overlie the display surface of the support and to be situated between the latter and the tablets may be of any desired material and may itself be decorated or marked out with any design which will conform with the nature of the advertisement or the like desired or with the arrangement of the characters.

Although the foregoing description has been that mainly of an advertising device it is obvious that a display device according to the invention would include toys, blackboards and other members upon which it is desired to display certain characters.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a display device of the type described, in combination, a support comprising a non-magnetic base member adapted to receive a plurality of horseshoe magnets with their yokes abutting said base member, and a series of parallel spacing strips abutting the outsides of the magnet shanks and so recessed as to engage said shanks and locate the magnets in parallel rows and in any desired space relationshp in each row, said strips extending across the base member and having their ends secured thereto at or near opposite edges thereof.

2. In a display device of the type described, in combination a support comprising a non-magnetic base member adapted to receive a plurality of horseshoe magnets arranged in spaced parallel rows with their yokes abutting said base member, the magnets in each row being staggered in relation to those in adjacent rows, for each row of magnets a retaining strip extending between and parallel with the magnet shanks in that row and having at its ends secured, at or near opposite edges of the base member aforesaid, and between each two adjacent rows, a spacing strip, parallel with the retaining strips aforesaid, and with its ends similarly secured to the base member.

3. In a display device of the type described, in combination a support comprising a non-magnetic base member to receive a plurality of horseshoe magnets with their yokes abutting said base member, a series of parallel spacing strips abutting the outsides of the magnet-shanks and so recessed as to engage said shanks and locate the magnets in parallel rows and in any desired spaced

relationship in each row, and a series of retaining strips the sides of which are parallel with and abut those of the spacing strips aforesaid, each retaining strip extending along a row of magnets between the shanks thereof, said spacing and retaining strips being of such depth that their outer faces lie in substantially the same plane as the pole pieces of the magnets and both sets of strips extending across the base member and having their ends secured thereto at or near opposite edges thereof.

In testimony whereof I affix my signature.

FREDERICK SAMUEL GEE.