Dec. 17, 1968 V. SHANOK ETAL 3,416,761

MAGNETIC MOUNTING DEVICE

Filed Feb. 8, 1967

FIG. 1

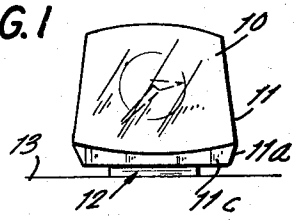


FIG. 3

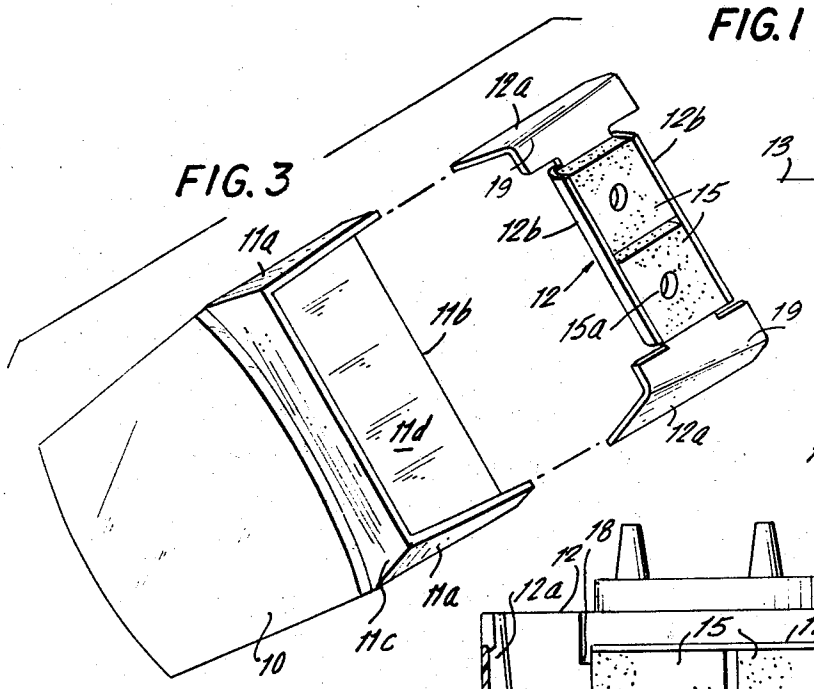
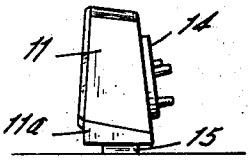


FIG. 2



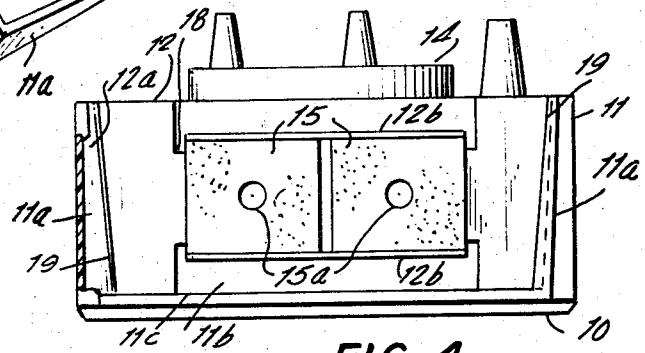
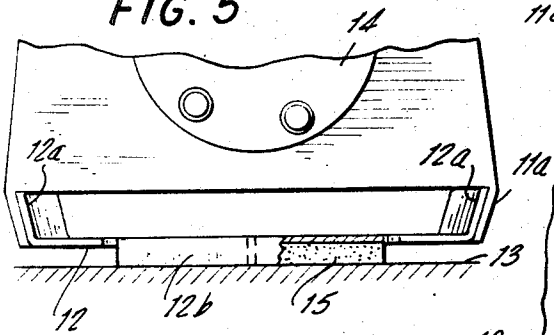


FIG. 4

FIG. 5



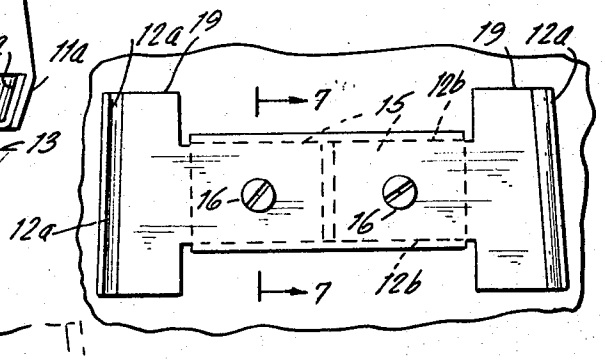


FIG. 6

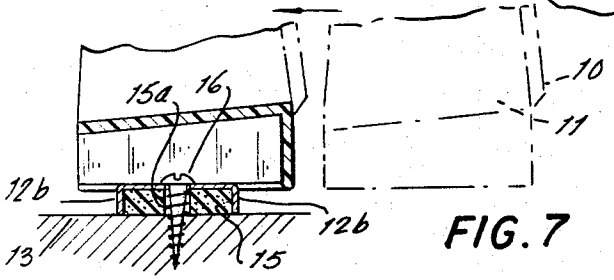


FIG. 7

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MAGNETIC MOUNTING DEVICE

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ABSTRACT OF THE DISCLOSURE

This invention is concerned with providing an improved clock supporting device adapted to be magnetically mounted upon a surface attracted by a magnetic field. Briefly, the new device comprises a housing, a clock received within the housing, the housing being removably fitted in a base provided with magnetic means exposable against a magnetic surface.

Background of the invention

(1) *Field of the invention.*—This invention relates generally to a mounting device and more particularly to an improved mounting device employable for the support of clocks or the like.

(2) *Description of the prior art.*—The use of small permanent magnets of great strength in various mounting devices is of course well known. For example they have been employed for mounting such objects as change receptables in automobiles, or ash-trays, or for attaching messages to telephone receivers by the use of magnetized clips. It is also known to utilize such magnets in providing mounting means for supporting a portable clock. However, these have resulted in an assembly that left the clock permanently attached to the mounting means, so that while the entire assembly might be portable, the clock itself was no longer portable. This is an especially serious disadvantage if the entire assembly is bulky or cumbersome, or is not easily adaptable to small mounting spaces. Moreover, if just the clock were needed because there was no requirement for the magnetic mounting means, this was not possible to achieve absent a dismantling of the entire device.

Summary of the invention

It is, therefore, an object of this invention to provide an improved magnetic mounting means for the support of such devices which will be readily detachable without the need for dismantling the assembly.

It is another object of the invention to provide an improved magnetic mounting means as above, for use in support of a portable clock.

It is a further object of the invention to provide an improved magnetic mounting means which may be used for support and incorporation in a portable clock.

It is a still further object to provide a portable clock having facilities for the reception of an improved magnetic mounting means which will render each readily detachable from the other.

In accordance with the present invention the above objectives are achieved by an improved clock supporting device which comprises in combination a housing, a clock received within the housing, the housing being adapted to overlie and be slidingly and detachably engageable with oppositely disposed members provided on a base, and the bottom portion of the base receiving magnetic means exposable against a magnetic surface. The invention is also further directed to an improved supporting device comprising a member provided with oppositely disposed holding means for the device to be supported, the holding means being integral with said member, and

the bottom of the said member receiving magnetic mounting means, as above.

Brief description of the drawing

The invention will hereinafter be more fully described with reference to the accompanying drawing, in which

FIGURE 1 is a front view of one embodiment of the invention showing the clock and base in combination disposed on a flat surface attractable to the magnets.

FIGURE 2 is a side elevational view of this form of the invention.

FIGURE 3 is an exploded perspective view of the invention showing the clock and base in detached form according to another embodiment.

FIGURE 4 is a bottom plan of the clock and base in combination showing the face of the clock disposed vertically towards the figure designation.

FIGURE 5 is a partially cut away view showing the rear of the clock, which is attached to the base, the entire device being upwardly disposed in part, away from the plane of the paper and towards the viewer, with part of the magnet being shown in cross-section.

FIGURE 6 is a top plan view of the base showing the base affixed to a suitable surface by means of screws according to another invention embodiment.

FIGURE 7 is a cross-sectional view taken along line 7—7, looking in the direction of the arrows designated thereat; the figure also denotes the clock by phantom lines (partially cutaway) and shows the direction in which the clock is attached to the base by an arrow at the top of the cutaway portion.

Description of the preferred embodiments

Referring now to the figures of the drawing, one embodiment of the invention comprises a clock having a dial **10** and housing **11**, the latter receiving a conventional clock mechanism **14**. Said housing is provided with inwardly sloping sides **11***a* which are integral with face plate **11***c* forming a recess **11***d* with the housing bottom **11***b*. Inwardly sloping sides **11***a* can be further defined as being angularly disposed such that an imaginary line drawn from each of said sides in the direction of the bottom of the clock would intersect at some point below the plane of the bottom of the clock. For reasons that will be explained subsequently the degree of angular disposition of said sides **11***a* is not critical and will vary depending on the construction of the base **12**. The base **12** generally conforms roughly to an H shaped structure integrally formed as a single unit which can best be seen by referring to FIGS. 3 and 6. Said base **12** is provided with oppositely and angularly disposed flanges **12***a* corresponding to the oppositely disposed members of the H shaped structure aforementioned. Along the horizontal portion **18** of the H shaped base **12** connecting flanges **12***a* are provided oppositely disposed retaining members **12***b* forming an inverted U-shaped member (with respect to flanges **12***a*). Flanges **12***a* as above mentioned are angularly disposed and such disposition may be defined by the fact that an imaginary line drawn from each of said flanges in the direction of members **12***b* would intersect at some point below the plane of said members **12***b*. It is this latter disposition (i.e., of said flanges) that determines the angle (or angular disposition) of sides **11***a* since these are adapted to overlie flanges **12***a*, therefore the angular dispositions must, of necessity, correspond one to the other. Additionally, flanges **12***a* are bevelled as denoted by reference numeral **19** and said bevels are also angularly disposed, such angular disposition being defined by the fact that an imaginary line drawn from each of said bevels in the direction of face plate **11***c* would intersect at some point below the plane of said face plate. This can best be seen by referring to

FIG. 4. It can also be seen by referring to the figure that sides **11***a* have the same angular disposition as the bevels **19** since as already mentioned, sides **11***a* are adapted to overlie and thus sheath members **12***a*. Indeed, as can be seen from FIG. 3, sides **11***a* are adapted to overlie and sheath flanges **12***a*. Thus said housing is adapted to overlie and be slidingly (and detachably) engageable with base **12** provided with oppositely disposed flanges **12***a*. The overlie and sheath effect should be tight enough to prevent accidental jarring, yet be loose enough to be easily removable. This is of course controlled by coordinating the angular dispositions of the parts above as mentioned and additionally by regulating the overall length of the base **12** extending along the line of the flanges **12***a*. By once again referring to FIG. 4 it will be observed that base **12** is fitted snugly into position, with the entire clock assembly, abutting at face plate **11c**. The base is preferably made of steel or other suitable magnetic rigid material, while the housing may be composed of any rigid non-magnetic material, such as preferably plastic.

The base **12** is also mountable upon any surface attracted by a magnetic field. Thus the base **12** may be disposed upon the flat surfaces of a steel cabinet or other such equipment or on the metal dashboard of a car or truck.

To provide the magnetic field required for the mounting of said clock, the bottom of the base **12** is provided with oppositely disposed retaining members **12***b*, forming an inverted U-shaped member, which house a pair of rectangular shaped magnets **15**. The magnets are of the ceramic type wherein the magnetic poles are located at the upper and lower faces of the magnet so that one face attaches to the base **12** and the other to the flat surface **13** to which it is intended to dispose the magnetic clock.

In one embodiment of the invention the magnets **15** are provided with central apertures **15***a*, through which screws **16** or other fasteners may be inserted to provide for a more permanent type of mount, said screws being inserted in like aligned apertures bored through base **12**, if desired (FIG. 6). Thus it can be seen by referring to FIG. 7 that the clock and housing (shown by phantom lines) would still be slidingly and detachably engageable with the fastened base **12** into suitable support **17**.

While there have been shown and described and indicated the fundamental novel features of this invention, as applied to a specific embodiment, or embodiments, thereof, it is to be understood that various omissions,

substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art, without departing from the spirit of the invention.

What is claimed is:

1. An improved supporting device comprising in combination a housing and a base therefor, said base being provided with oppositely disposed members, said housing being adapted to overlie and be slidingly engageable with said oppositely disposed members provided on said base, the bottom portion of said base receiving magnetic means exposable against a magnetic surface, said housing being further provided with angularly disposed sides integral with a face plate on said housing and thereby forming a recess with the bottom of said housing, said angularly disposed sides being angularly coordinated with oppositely disposed angularly disposed flanges provided on said base, said housing thereby being adapted to overlie and be slidingly and detachably engageable with said oppositely disposed flanges.

2. An improved supporting device comprising a structure provided with oppositely disposed holding means for the device to be supported, said holding means being integral with said structure, the bottom portion of said structure receiving magnetic mounting means, said magnetic mounting means being abuttable against a magnetic surface, said oppositely disposed holding means consisting of angularly disposed flanges with respect to a horizontal portion of said device connecting said flanges, said flanges also being coordinated in angular disposition with the device to be supported, said magnetic mounting means being received in a substantially inverted U-shaped member, said member being inverted with respect to said flanges.

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U.S. Cl. X.R.

248—206, 225; 312—245