

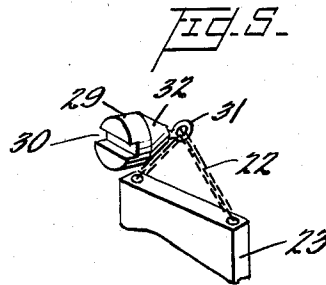
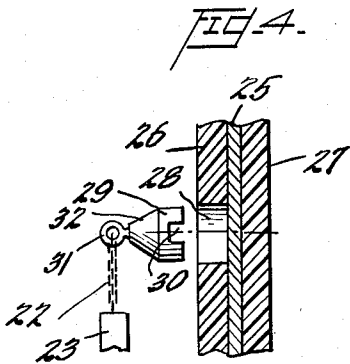
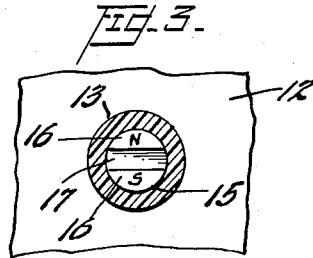
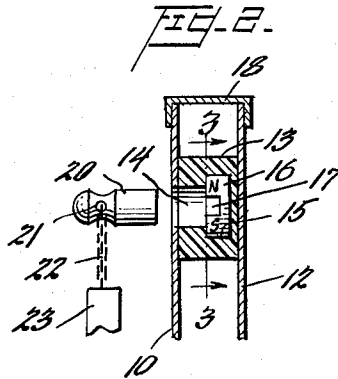
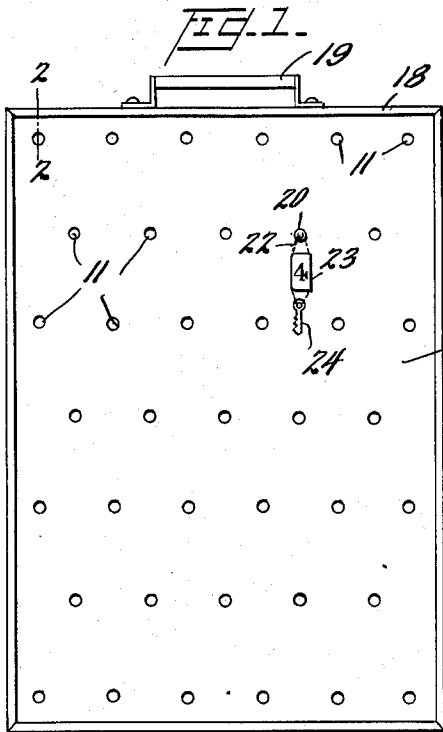
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MAGNETIC KEY RACKS

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MAGNETIC KEY RACKS

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4 Claims. (Cl. 211—13)

This invention relates to devices for storing small articles, and more particularly to compartmented receptacles wherein a plurality of small articles may be separately stored in readiness for immediate and independent withdrawal and use. An example of such a device is a rack or board adapted to serve as a repository for a plurality of room keys, as in a hotel, or motel, or a plurality of other keys as in an automobile dealer's establishment, or the like, such rack or board being adapted to receive and retain the said keys in such manner that the identifying data associated with each key may be readily seen, and any particular key, while being securely retained on the board or rack until needed, may be readily detached therefrom.

A general object of the invention is the provision of a board or rack of the type mentioned, employing permanent magnet means to retain the several keys, or other small articles, in spaced arrangement on the board, yet readily detachable therefrom, and wherein the keys or other articles are secured against accidental detachment and loss. In connection with the operation of a used car lot, for example, it is the practice to keep the keys for the various cars on a board or rack in the sales office. The cars on such a lot are customarily unlocked during the day, so that prospective customers may inspect them, and locked at the close of business, to prevent damage or loss during the night. In conducting such operations, it is usual for the operator of the business, or one of his employees, to take the rack of keys and make the rounds of all of the cars, unlocking or locking each as he comes to it. When the rack is provided with hooks or nails to retain the keys, as is frequently the case, the keys may easily be dislodged or lost while the rack is being carried about the lot, and a better arrangement is desirable.

An object of the present invention is the provision of a readily portable rack or board for receiving and retaining a plurality of keys or other small articles, which may be carried about, may be tilted or even inverted, and otherwise handled in the most convenient manner, without risk of losing the keys or other articles which are attached to the board.

More specifically, the present invention has for its object the provision of a device such as described in the preceding paragraph, comprising a sheet-like member of rigid, nonmagnetic material provided with a plurality of spaced apertures extending therethrough, permanent magnet means associated with the respective apertures, and magnetic armature means associated with said apertures, one of said means extending through said associated aperture and into contact with the other said means and being formed to provide means for attaching a small article thereto.

Another object is the provision of a board such as described in the previous paragraph wherein the permanent magnet means comprises a plurality of separate magnets positioned one opposite each said aperture, said magnetic armature means comprising a plurality of plug-

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like elements of ferrous material each of a size and shape to be received in one of said apertures.

Another object is the provision of a board of the character described, in which the permanent magnet means and armature means are reversed in position, the armature material being positioned behind the apertured sheet-like member, and the magnet means comprising a plurality of individual permanent magnets each of a size and shape to be received in one of the apertures, and provided with means for attaching a small article thereto.

Other and further objects, features and advantages will be apparent from the description which follows, read in connection with the accompanying drawings in which:

Figure 1 is a front elevational view of a board or rack constructed in accordance with the invention, and showing a key supported thereon;

Figure 2 is a fragmentary vertical transverse section on line 2—2 of Figure 1;

Figure 3 is a section on line 3—3 of Figure 2;

Figure 4 is a vertical transverse section similar to Figure 2, but illustrating a modification of the invention; and

Figure 5 is a perspective view of the permanent magnet device of Figure 4, with a portion of a key retainer attached thereto.

In order to facilitate an understanding of the invention, reference is made to the embodiments thereof shown in the accompanying drawings and detailed descriptive language is employed. It will nevertheless be understood that no limitation of the invention is thereby intended and that various changes and alterations are contemplated such as would ordinarily occur to one skilled in the art to which the invention relates.

Referring to Figures 1—3, the embodiment there illustrated comprises a rigid sheet-like member 10 of any suitable weather-resistant and preferably, though not necessarily, non-magnetic material, for example aluminum, fiberboard or the like, provided with a spaced series of apertures 11 extending therethrough from front to back, and a second sheet-like member 12 of similar material, though unapertured, in spaced relation to the member 10. Between the members 10 and 12 there are positioned, one in registry with each aperture 11, a plurality of magnet retainers 13 of suitable light-weight and preferably non-magnetic material, for example, molded plastic, wood, etc. The retainers 13 are cemented or otherwise secured to the member 10, and serve to preserve the illustrated spacing between the members 10 and 12. Each retainer 13 is formed with a bore portion 14 corresponding in size and shape to the aperture 11 with which it is associated, and an enlarged bore portion 15 of a size and shape to receive and retain a permanent magnet 16 (Figures 2 and 3). The magnet retainers 13 may be made in two pieces to permit insertion of the magnet 16, the said two pieces being then secured together; or, in the case of molded magnet retainers, the magnet 16 may be molded in place as shown.

Each magnet 16 is formed with a slot 17 extending across one face thereof, and is magnetized in such manner that the material on opposite sides of the slot 17 constitute north and south poles, respectively. The magnets 16 are permanent in nature, being made of any suitable magnetic material of high retentivity. The assemblage comprising the members 10 and 12, magnet retainers 13 and magnets 16, is held together by a border frame 18 which surrounds and embraces the peripheral edges of the members 10 and 12, the frame 18 being formed of any suitable material, for example aluminum channels secured together at their abutting ends in any conventional manner. Preferably, the frame 18 is pro-

vided with a handle 19 for ready portability and, if desired, may also be provided with any conventional means for supporting the same upon the wall of a room or the like.

The invention contemplates a plurality of plug-like elements of magnetic material such as that seen at 20 in Figure 2, which may be formed, for example, of iron or mild steel. In the embodiment illustrated, the apertures 11, bores 14, and elements 20 are cylindrical, and this is thought to be the most useful form, but obviously other shapes may be employed, so long as the element 20 is shaped and sized to have a close fit within the apertures 11 and bores 14. Each element 20 is provided with means for attaching a small article to be stored, and in the illustrated embodiment such means comprises an aperture 21 through which may be passed the chain 22 of a conventional key retainer, which may also include a tag portion 23 carrying identifying indicia. A key 24 (Figure 1) is attached to the chain 22 below the tag 23.

By virtue of the magnetic attraction between the magnets 16 and the armature elements 20, and also because of the mechanical support for the element 20 provided by the walls of the aperture 11 and bore 14, the armatures are securely retained within the bores 14 and in contact with magnets 16. While they may be readily detached when needed, the board may be carried about, tilted, and even inverted, without accidental detachment of the armatures 20 and their respective burdens. By virtue of its construction as described, the board is quite light in weight, and may be made of a size to accommodate a large number of keys or other small articles, while retaining its feature of ready portability.

In the embodiment illustrated in Figures 4 and 5, a sheet 25 of magnetic material, for example iron or mild steel, is sandwiched between sheet-like members 26 and 27 of light weight non-magnetic material, the member 26 being apertured as seen at 28. The aperture 28 is of a size and shape to receive a permanent magnet 29 which, as before, is provided with a slot 30 dividing its face into north and south poles. The magnet 29 is provided with any suitable means, such as the eye 31 for receiving the chain 22 or other means of attachment of a key or other small article. In the illustrated embodiment, the magnet 29 is identical with the magnet 16 of Figures 2 and 3, and is provided with a frusto-conical extension 32 in which the eye 31 is embedded. The extension 32 may be secured to the magnet 29 in any suitable fashion as by cementing, soldering, etc.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A storage device for small articles comprising a sheet-like member of rigid material provided with a plurality of spaced apertures extending therethrough, permanent magnet means associated with said apertures, said permanent magnet means comprising a plurality of separate magnets positioned one opposite each said aperture, magnetic armature means associated with said aper-

tures, said magnetic armature means comprising a plurality of plug-like elements of ferrous material, each of a size and shape to be received in one of said apertures, one of said means being removably supported in one of said apertures by engagement with the material surrounding same, and extending through said associated aperture and into contact with said other means, said one means having an end portion projecting from its said aperture on one side of said sheet, said one means being formed to provide means for attaching a small article thereto, the other said means being permanently fixed at one end of the respective apertures on the other side of said sheet, a second sheet-like member of rigid non-magnetic material, means securing said magnets in position between said members, and means securing said members together.

2. Device as defined in claim 1, said last means including a frame surrounding and embracing the peripheral edges of said members and provided with handle means.

3. A storage device for small articles, comprising a sheet-like member of rigid material provided with a plurality of spaced apertures extending therethrough, permanent magnet means associated with said apertures, said permanent magnet means comprising a plurality of separate magnets, each of a size and shape to be received in one of said apertures, magnetic armature means associated with said apertures, each said magnet being removably supported in one of said apertures by engagement with the material surrounding same, and extending through said associated aperture into contact with said magnetic armature means, each said magnet having an end portion projecting from its said aperture on one side of said sheet and formed to provide means for attaching a small article thereto, said magnetic armature means comprising an element of ferrous material positioned opposite one end of said apertures and consisting of a sheet-like member substantially covering one face of said apertured sheet-like member on the other side of said sheet and permanently fixed at one end of the apertures on the other side of the sheet, a second sheet of rigid non-magnetic material covering said element of ferrous material, and means securing said three sheet-like members together in sandwich form.

4. A device as defined in claim 3, wherein said means securing said sheet-like members together includes a frame surrounding and embracing the peripheral edges of said members and provided with handle means.

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