

July 13, 1965

E. F. STAVER

3,195,022

MAGNETIC SHEET HOLDER

Filed Jan. 2, 1964

FIG. 1

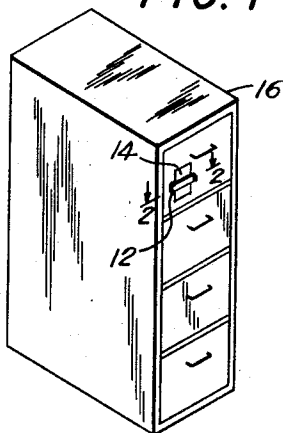


FIG. 3

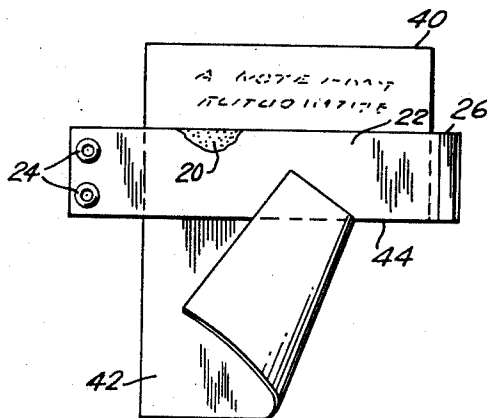


FIG. 2

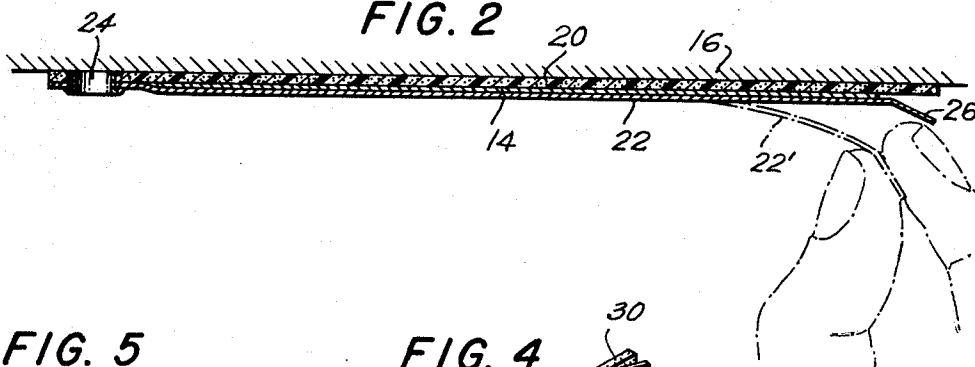


FIG. 5

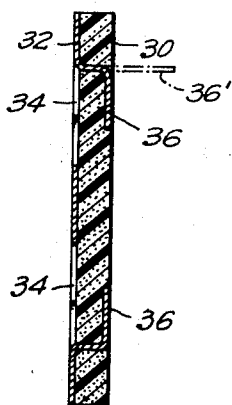


FIG. 4

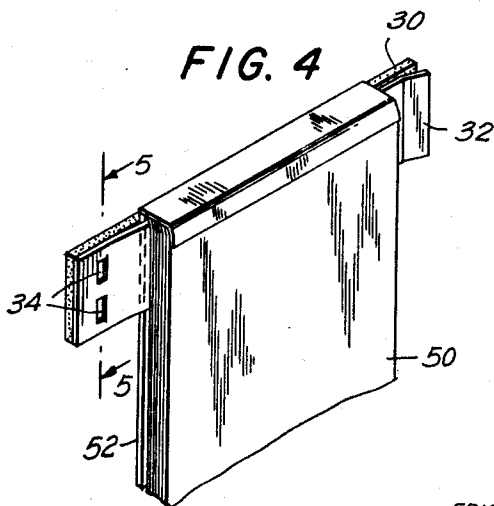
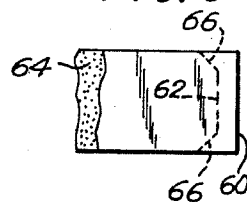


FIG. 6



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MAGNETIC SHEET HOLDER

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Filed Jan. 2, 1964, Ser. No. 335,145

7 Claims. (Cl. 317-159)

This invention relates to magnetic holders, and more particularly to such a holder for holding a non-magnetic sheet material, usually paper.

The general object of the present invention is to provide an improved sheet holder. A more particular object is to provide a magnetic holder which may be used without fastening means on a ferrous surface, for example a file cabinet, radiator, refrigerator, air conditioner, water cooler, metal door, automobile dashboard, or the like.

Other objects are to provide such a sheet holder which is small, light, and inexpensive, and the parts of which are secured together, and therefore are not subject to separation and loss.

To accomplish the foregoing general objects, and other more specific objects which will hereinafter appear, my invention resides in the magnetic sheet holder elements and their relation one to another as are hereinafter more particularly described in the following specification. The specification is accompanied by drawings, in which:

FIG. 1 is a perspective view showing my improved holder applied to a file cabinet;

FIG. 2 is a transverse section taken approximately in the plane of the line 2-2 of FIG. 1;

FIG. 3 is a front elevation showing the device used additionally as a tear edge;

FIG. 4 is a perspective view showing the holder supporting a pad of scratch paper;

FIG. 5 is a section drawn to enlarged scale and taken approximately in the plane of the line 5-5 of FIG. 4;

FIG. 6 is a fragmentary detail of a modification.

Referring to the drawing, and more particularly to FIG. 1, the sheet holder 12 is shown holding a small sheet 14 on the front of a filing cabinet 16. In FIG. 1, it is assumed that the sheet 14 is stiff. If the sheet is exceedingly thin, the holder 12 is readily raised to a higher position and then used to hold the top edge of the sheet.

Referring now to FIGS. 2 and 3 of the drawing, the sheet holder comprises a strip of plastic material 20 which is loaded with magnetizable particles or powder, and which is permanently magnetized. A thin flexible ferrous metal strip 22 overlies the plastic strip 20, and the strips are secured together at one end, in this case by eyelets 24.

The free end of the metal strip has a finger tab 26 which is most simply formed by bending the end of the strip outward slightly. This facilitates raising the metal strip, the beginning of this lifting action being indicated in broken lines at 22' in FIG. 2. The cross-hatching at 16 in FIG. 2 represents the body of the file cabinet or other ferrous wall to which the holder has been applied, the paper sheet being held as indicated at 14. It may be narrower or wider than the holder, and if wider it simply projects at the right or open end of the holder.

In the particular device shown, the plastic strip 20 is flexible and has a thickness of $\frac{1}{16}$ inch. The thickness may vary from, say, $\frac{1}{32}$ to $\frac{3}{32}$ inch and still provide adequate holding force. It may but need not be even thicker. Sheet material from which the strip may be cut is commercially available. In a typical case it is loaded with particles of barium iron oxides, and the body of the sheet may be rubber or a flexible plastics material.

The material is magnetized across the sheet, with minute adjacent areas oppositely polarized. When there is a ferrous sheet on both sides there is an actual completion

or closing of a large number of magnetic loops, thereby providing a strong magnetic attraction.

The sheet as sold ordinarily is somewhat more strongly magnetized on one face than on the other, and for the present purpose the more strongly magnetized face is kept remote from the cover strip 22.

The metal strip 22 is preferably made of the so-called "double-reduced" tin-plated steel which has a thickness of about 0.0055 inch. That rust inhibited material is now used for lightweight metal cans, and is readily available at low cost. It is highly flexible, so that it is easily bent away from the plastic magnet strip when inserting or removing a sheet of paper.

In FIGS. 2 and 3 the metal and plastic strips of the holder are secured together by eyelets indicated at 24. Two eyelets are preferred so that one strip will not pivot about the other. However, a single tight eyelet may be used, or a single non-circular eyelet.

FIGS. 4 and 5 show a modification in which the plastic magnet strip 30 and the flexible metal strip 32 are secured together by tongues formed integrally from the metal. The tongues are excised from the metal, as shown by the slots 34 in FIG. 4.

FIG. 5 shows how these tongues are first perpendicular, as shown in broken lines at 36', and are passed through mating slots or holes punched through the plastic magnet 30, and then are flattened against the plastic material, as indicated at 36.

FIG. 3 shows how the upper or lower edge of the metal strip 22 may be used as a tear edge. In this case a few lines of writing are on the upper end 40 of a thin paper sheet, and after suitably locating the sheet in the holder, the excess lower portion 42 is torn away against the lower edge 44 of the metal strip 22.

FIG. 4 shows how the holder may be used to support a pad of material instead of a single sheet. In this case there is a pad of scratch sheets 50 secured to the usual back cardboard 52, and the latter is passed through and is held by the holder, with the scratch sheets exposed in front for easy writing and removal one at a time from the pad.

Referring to FIG. 6, in this case the tip or free end 60 of the metal strip is not turned outward, but it extends beyond the end 62 of the plastic magnet 64. Alternatively, the end of the plastic magnet may be beveled, as shown at 66. Either the overhang 60 or the bevel 66 may be used alone, as well as both together as here shown. The overhang metal may be considered to be a finger tab in lieu of the outward bend shown in FIGS. 2 and 4. Moreover, either the overhang 60 or the bevel 66 or both, of FIG. 6, may be used together with an outward bend of part or all of the tip of the metal strip as shown in FIGS. 2 and 4, thereby further increasing the ease of lifting the metal strip.

In operation, the metal strip is readily lifted without danger of disturbing the adherence of the plastic strip to the ferrous wall. This is so for a number of reasons. One is that the metal wall is almost always much thicker than the thin flexible front strip, and thus the adherence to the metal wall is far stronger than the adherence to the thin front strip. Another results from the fact that the plastic strip is more strongly magnetized on one face than the other. This is usually the case because of the method of magnetization of the sheet material. I assemble the flexible metal strip against the weaker rather than the stronger side of the plastic magnet. Still another reason is that the sheet material in the holder itself provides a gap in the magnetic circuit to the front strip, which slightly weakens the grip on the front strip. Whatever the reasons, the front strip readily peels away from the magnet without disturbing the latter.

Although the grip at the back is stronger than that at

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the front, it is not strong enough to prevent intentional removal of the holder from the ferrous wall when it is desired to remove it for use elsewhere, or to change its position on the same wall. It is removed by the fingers, and no tool is needed.

It is believed that the construction and method of use, as well as the advantages of my improved magnetic holder for sheet material, will be apparent from the foregoing detailed description. It will also be apparent that while I have shown and described the holder in preferred forms, changes may be made in the structures shown without departing from the scope of the invention as sought to be defined in the following claims. In the claims the reference to loaded plastic is not intended to exclude similarly loaded and magnetized rubber, these magnets being somewhat interchangeably referred to in commerce as either rubber magnets or plastic magnets.

I claim:

1. A magnetic holder for sheet material, said holder comprising a strip of a plastic sheet material which is loaded with magnetizable particles and which is permanently magnetized, a thin flexible ferrous metal strip overlying the plastic strip, said strips being secured together at one end, the free end of the metal strip having a finger tab.

2. A magnetic holder for sheet material, said holder comprising a strip of a plastic sheet material which is loaded with magnetizable particles and which is permanently magnetized, a thin flexible ferrous metal strip overlying the plastic strip, said strips being secured together at one end, the free end of the metal strip having a finger tab, the side facing the metal strip being somewhat less strongly magnetized than the remote side, said metal strip being thin and flexible.

3. A magnetic holder for sheet material, said holder comprising a strip of a plastic sheet material which is loaded with magnetizable particles and which is permanently magnetized, a thin flexible ferrous metal strip overlying the plastic strip, said strips being secured together at one end, the free end of the metal strip having a finger tab, said plastic strip having a thickness of from $\frac{1}{32}$ to $\frac{3}{32}$ inch, said metal strip being thin and flexible.

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4. A magnetic holder for sheet material, said holder comprising a strip of a flexible plastic sheet material which is loaded with magnetizable particles and which is permanently magnetized transversely of the sheet, a thin flexible ferrous metal strip overlying the plastic strip, said strips being secured together at one end, the free end of the metal strip having a finger tab.

5. A magnetic holder for sheet material, said holder comprising a strip of a flexible plastic sheet material which is loaded with magnetizable particles and which is permanently magnetized transversely of the sheet, a thin flexible ferrous metal strip overlying the plastic strip, said strips being secured together at one end, the free end of the metal strip having a finger tab, the side of the plastic strip facing the metal strip being somewhat less strongly magnetized than the remote side.

6. A magnetic holder for sheet material, said holder comprising a strip of a flexible plastic sheet material which is loaded with magnetizable particles and which is permanently magnetized transversely of the sheet, a thin flexible ferrous metal strip overlying the plastic strip, said strips being secured together at one end, the free end of the metal strip having a finger tab, said plastic strip having a thickness of about $\frac{1}{16}$ inch, said metal strip being made of a double-reduced tin-plated steel having a thickness of about 0.0055 inch.

7. A magnetic holder for sheet material, said holder comprising a strip of a flexible plastic sheet material which is loaded with magnetizable particles and which is permanently magnetized transversely of the sheet, a thin flexible ferrous metal strip overlying the plastic strip, said strips being secured together at one end, the free end of the metal strip having a finger tab, said plastic strip having a thickness of about $\frac{1}{16}$ inch, the side of the plastic strip facing the metal strip being somewhat less strongly magnetized than the remote side, said metal strip being made of a double-reduced tin-plated steel having a thickness of about 0.0055 inch.

No references cited.

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