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ARMSTRONG(10) **Pub. No.: US 2009/0039038 A1**(43) **Pub. Date: Feb. 12, 2009**(54) **OFFICE TOOL**continuation-in-part of application No. 10/692,710,
filed on Oct. 23, 2003, now abandoned.(76) Inventor: **Mark E. ARMSTRONG**, Hermon,
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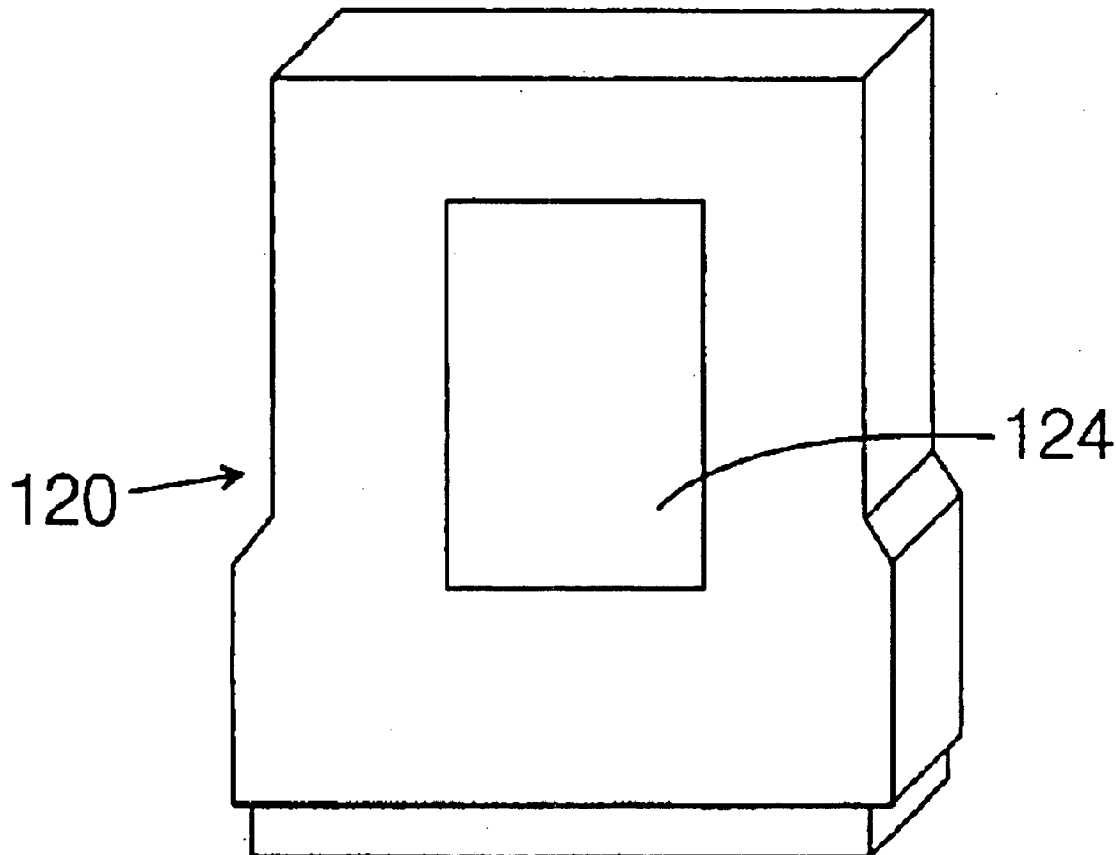
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(57)

ABSTRACT

An improved office tool for use with a universal storage system that includes a magnetic holding means integrated with the improved office tool and a universal storage device. The magnetic holding means is applied to or incorporated into the office tool, which is then stored on the universal storage device. The universal storage device includes a mounting surface of magnetically attractive material and securely holds the office tool in place, yet readily releases it when it is needed. The magnetic holding means is well-suited for mounting all types of conventional self-inking, flash inked, pre-inked, as well as wood-handled stamps, of any size, weight and shape, as well as other office and household articles and tools.

(21) Appl. No.: **12/246,903**(22) Filed: **Oct. 7, 2008****Related U.S. Application Data**(63) Continuation-in-part of application No. 10/978,164,
filed on Oct. 30, 2004, now Pat. No. 7,461,750, which
is a continuation-in-part of application No. 10/615,
578, filed on Jul. 8, 2003, now abandoned, which is a

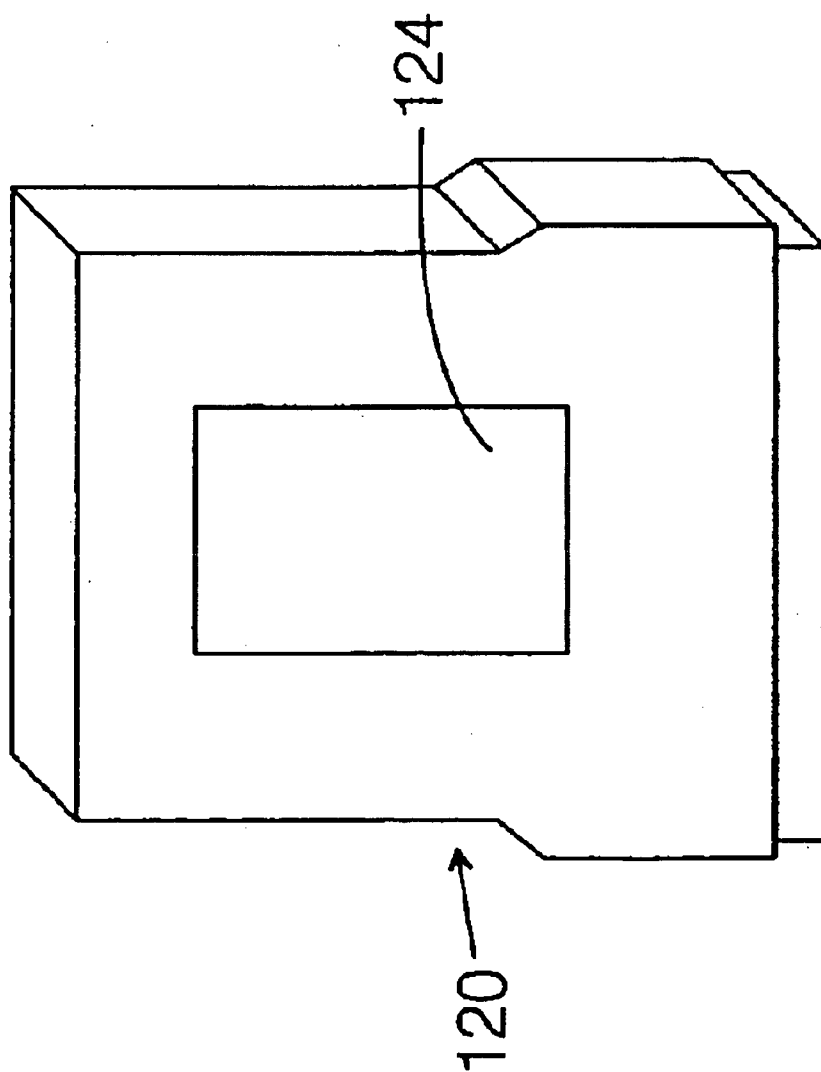


Fig. 1

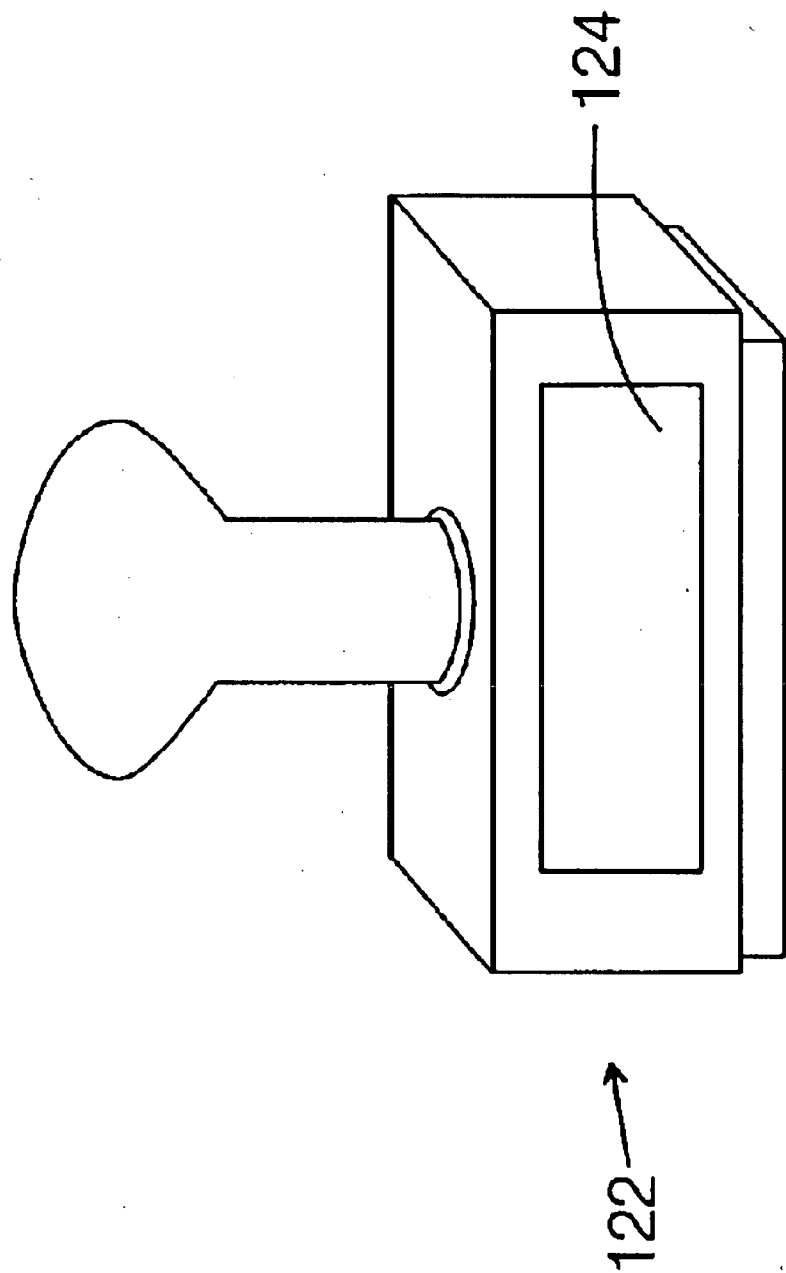


Fig. 2

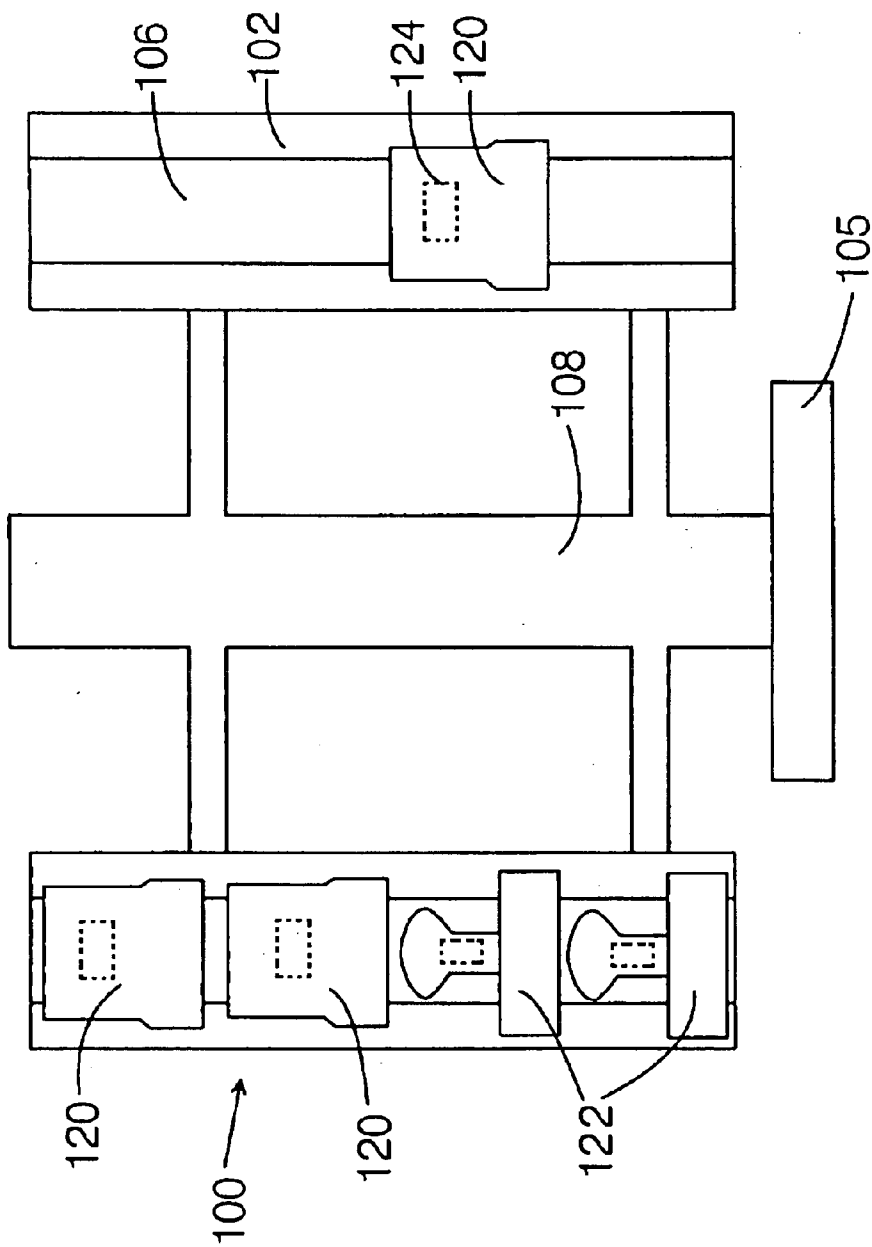


Fig. 3

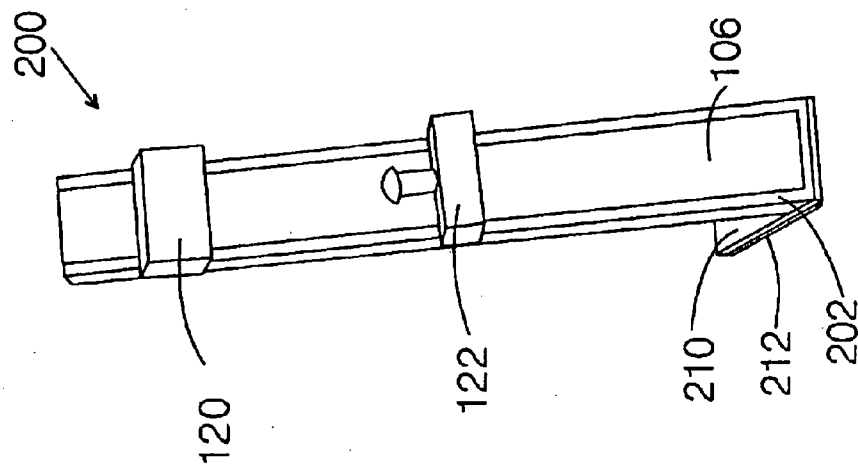


Fig. 4

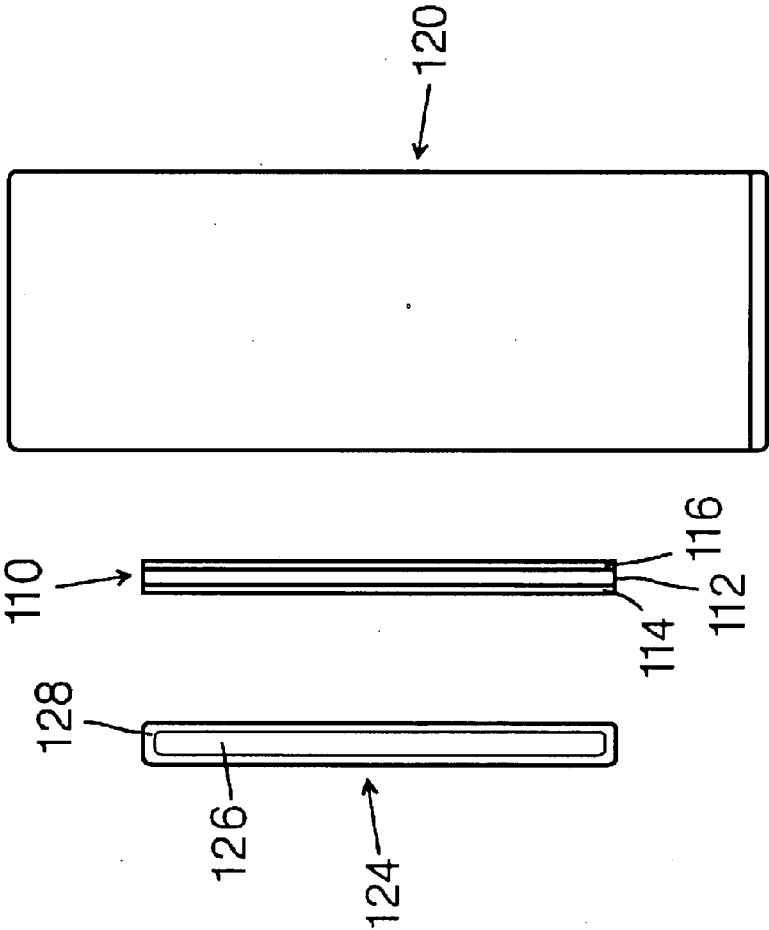


Fig. 5

OFFICE TOOL

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation in part of U.S. Ser. No. 10/978,164, filed Oct. 30, 2004 and currently pending, entitled Universal Storage System For Office Tools, which is hereby incorporated by reference.

[0002] U.S. Ser. No. 10/978,164 is in turn a continuation in part of U.S. Ser. No. 10/692,710, filed on Oct. 23, 2003 and since abandoned, which is in turn a continuation in part of U.S. Ser. No. 10/615,578, filed on Jul. 8, 2003 and since abandoned, which are hereby incorporated by reference.

BACKGROUND INFORMATION

[0003] 1. Field of Invention

[0004] The present invention relates to office tools. More particularly, the invention relates to an improved office tool suitably adapted to be used with a system of magnetically storing and organizing office stamps and other tools.

[0005] 2. Description of the Prior Art

[0006] Typically, when the term “stamp” or “rubber stamp” is used today to reference a marking device, it brings to mind a wood-handled rubber stamp that requires a remote pad in order to create an imprint. The majority of conventional holders for the storage of wood-handled stamps took advantage of the universal commonality in the wood handle shape and suspended the stamps from clips or hooks on racks. Another method of storage such wood-handled stamps used conventional magnets to mount the stamps on a stamp rack. One such method of storing wood-handled stamps with the use of a magnet is disclosed by Sinkiewicz (U.S. Pat. No. 2,996,004; 1961), in which a permanent magnet is imbedded into the rear of the wooden handle or fastened to a bracket of non-magnetic material, which is then fastened to the stamp between the handle and stamp base or to the stamp base proper by means of screws or the like. Carter (U.S. Pat. No. 3,314,634; 1967) disclosed a related method in which a removable strip of commonly available permanent magnetic material was applied to the rear of the stamp.

[0007] Both methods included the use of a storage holding strip that had magnetically attractive material applied to the face of the strip. The strip was typically fastened to a vertical surface by mechanical fasteners and the stamps held in place by the magnetic force exerted on the magnetically attractive material. These methods had a disadvantage in that only relatively lightweight wood-handled stamps can be mounted in this manner. This is because the permanent magnets that were available in the 1960s were low energy magnets. The magnets were also, of course, limited in size, because they had to fit on the wood-handled stamp, without interfering with its operation. Because the magnets were small and low energy products, the load they could reliably secure was correspondingly small.

[0008] Another variation of the magnetic methods described above was in the form of a “kit” which comprised a stamp pad mounted to a base and around which existed by means of a hinged arrangement the same magnetically attractive material formed into a type of cover that acted as a holding area for the stamps. This kit has the disadvantage of the other magnetic methods described above, but it also has the disadvantage of occupying valuable desk space, while storing relatively few stamps.

[0009] In the late 1960s, an “inked” type of stamp emerged onto the market place that combined the stamp and ink into a single unit, eliminating the need for an ink pad. Today, the market is almost exclusively dominated by such inked stamps, which include types of stamps that are referred to as “self-inking”, “flash inked”, “pre-inked”, etc., although older wood-handled stamps remain in use. This shift from traditional wood-handled stamps to inked stamps created a need for a storage device capable of efficiently storing the various conventional types of stamps in use today.

[0010] The functional changes of the inked stamps resulted in changes to the conventional form, weight and construction materials used for office stamps. Most inked stamps have a bulky rectangular shape, without a handle from which to suspend the stamp from a rack. The self-inking type of inked stamps, for example, includes an inkpad within the stamp housing, and requires that the stamp rotate through an inking process before it is operational. Consequently, the stamp is significantly heavier and the stamp housing significantly larger than that of a wood-handled stamp that carries the same information. The known methods of magnetically holding office stamps were inadequate with regard to these inked stamps, primarily because the conventional magnetic materials were not strong enough to hold the new, heavier inked stamp.

[0011] Bertoni et al. (U.S. Pat. No. 6,510,951; 2003) discloses a stamp holder that is capable of holding a specific type of inked stamps, such as stamps having a box-like frame or case and openings on at least two opposite ends. A disadvantage of this stamp holder is its inability to hold other types of inked stamps, such as pre-inked or flash-ink stamps, older wood-handled stamps, or other office tools. Pichler (U.S. Pat. No. 6,003,686; 1999) discloses a device that holds the inked stamps, in addition to “other office utensils”, by inserting “an attachment” in at least one of the through-holes provided in the base of the device. The “attachment” must be uniquely adapted for each different stamp or office utensil. In other words, each stamp or utensil mates with a particular holder. This is impractical and inefficient in terms of convenience, cost and/or time because this system locks one into using stamps and mating holders from a particular supplier or manufacturer, or requires that the user obtain custom-made attachments to hold stamps and/or utensils not provided with the mating holder. Furthermore, the base of the Pichler holder occupies more desk space than if the stamps and utensils were arranged neatly side by side on the desk, and because a stamp or utensil fits only into a mating holder, the Pichler system requires that the user locate the mating holder for a particular stamp or utensil in order to store it after use.

[0012] What is needed, therefore, is an improved office tool suitably adapted to be used with a system of organizing and storing office stamps and/or tools that is universal in its ability to hold such stamps or tools of various shapes, sizes, and weights.

[0013] Other objectives of the present invention will be readily apparent from the description that follows.

BRIEF SUMMARY OF THE INVENTION

[0014] For the reasons cited above, it is an objective of this present invention to provide an improved office tool suitable for use with a universal system of storing and organizing office stamps and/or tools of various weights, shapes, and sizes. The improved office tool includes a combination of any type of inked stamp and wood-handled stamps, as well as

other types of office tools such as letter openers, pens, highlighters, paperclip containers, etc.

[0015] The objective has been achieved by providing an improved office tool suitable for use with a universal storage system for storing and organizing office tools. The term “inked stamp” shall include various types of stamps that ink themselves, such as self-inking, flash, pre-inked, etc. The term “office stamps and tools”, shall be abbreviated to “tools” and, as used hereinafter, shall include wood-handled stamps and various types of inked stamps, of various sizes, shapes and weights, as well as various conventional office tools and articles that are typically used at an office desk or workstation, such as pens, highlighters, markers, scissors, staplers, letter openers, paperclip containers, etc.

[0016] The purpose of the present invention is to improve storage efficiency of small office tools by using to advantage the vertical space that is available at a workstation. This is best achieved by using a magnet to mount the office tools to a magnetically attractive surface. The improved office tool according to the invention comprises a magnetic holding means affixed to the improved office tool to be used with a universal storage device with a mounting surface of magnetically attractive material. The magnetic holding means includes a high-strength permanent magnet. A number of problems had to be resolved in order to achieve an efficient improved office tool. The first problem to solve was the strength of the magnet. “First generation” permanent magnets that became available in the 1950s were made of ferrite or aluminum-nickel-cobalt (AlNiCo). These magnets had a relatively low “energy product”, that is, the density of useful magnetic energy stored in the magnet was low. They provided sufficient holding strength to hold a conventional lightweight wood-handled stamp, but were not strong enough to hold a stamp or office tool that weighs, for example, one-half pound. Stronger “second generation” permanent magnets became available in the early 1980s, but were relatively expensive because of their use of rare-earth elements and were used primarily in military and aerospace applications. A “third generation” of permanent magnets was developed in 1983. These third generation magnets used less costly rare earth elements and were, therefore, less expensive, and they also had a very high energy product.

[0017] In addition to strength, other considerations for a suitable magnet for the improved office tool included the relative size of the magnet and its imperviousness to oil and dirt. The magnet must be attachable to a vast array of stamps and tools, thus, it must be relatively small and compact so that it does not interfere with the use or operation of the tool to which it is attached. The magnet should also last the lifetime of the tool to which it is attached and, therefore, must also be rugged and impervious to dust, dirt, oils, and other contaminants that are commonly present in work environments. One magnet that is particularly well-suited for use in the improved office tool is a neodymium-iron-boron (NdFeB) NEO 35 magnet having an energy product of max. 35 BH, and available from E.A. Magnetics Inc. of Bethpage, N.Y. Neodymium is highly corrosive, so the magnet has a protective nickel coating. Other sintered rare earth magnets, such as a Samarium Cobalt magnet are also suitable for use within the improved office tool.

[0018] In a first configuration of the magnetic holding means, the magnet is structurally integrated into the housing or outer surface of the tool. In a second configuration, the magnetic holding means also comprises an adhesive means

for attaching the magnet to an individual office tool. Ideally, the adhesive system provides a permanent bond to the protective nickel coating of the magnet, as well as to plastic and other materials commonly used in the manufacture of stamps, markers, letter openers and other common office tools. The adhesive means chosen is a double-coated acrylic foam tape that carries two dissimilar adhesives for bonding one side of the tape to the metallic surface of the magnet and the other to the plastic material of the tool to be mounted. A “medium surface energy” acrylic adhesive is applied to one side of the tape for adhering to the improved office tool. This adhesive is particularly well-suited for adhering to the “hard-to-stick-to” thermoplastic materials typically used in the housings of the inked stamps. A “high surface energy” acrylic adhesive, particularly designed to adhere to metal surfaces, is applied to the other side of the foam tape, which side is applied to the magnet. The carrier for the adhesive is an acrylic foam tape that has the ability to conform to irregular shapes and curved contours, thereby providing maximum surface contact of the adhesive to the respective surface. The tape may also be provided in various shapes and sizes, to make it readily adaptable to the particular size and shape of the tool to which it is to be applied. Once applied to the respective surfaces, the adhesive means forms a stable long-term bond that is able to withstand continuous shear stress over time without failure. An example of a suitable adhesive means is the 4622 VBH™ Double Coated Acrylic Foam Tape available from the 3M company. The adhesive sides of the tape are protected by a removable sheet until the adhesive tape is applied to a magnet and/or tool.

[0019] The universal storage device used with the improved office tool according to the invention comprises a mounting surface of magnetically-attractive material and encompasses numerous configurations. The magnetically-attractive material is typically a ferromagnetic material, referred to hereinafter as a ferrous material. The preferred configuration of the universal storage device is disclosed in U.S. Ser. No. 10/978,164, filed Oct. 30, 2004. Other configurations of universal storage devices may also be used, provided they include a mounting surface of magnetically-attractive material.

[0020] Other features and advantages of the present invention are described below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] FIG. 1 is an illustration of a conventional stamp that inks itself with a rare-earth-element magnet applied.

[0022] FIG. 2 is an illustration of a conventional wooden handled stamp with a rare-earth-element magnet applied.

[0023] FIG. 3 is a plan view of one configuration of a universal storage device with the improved office tool attached thereto.

[0024] FIG. 4 is a perspective view of another configuration of a universal storage device with the improved office tool attached thereto.

[0025] FIG. 5 is an exploded view of the improved office tool showing the relationship of the adhesive means to the rare-earth-element magnet and the office tool.

DETAILED DESCRIPTION OF THE INVENTION

[0026] The present invention comprises a magnetically mountable office tool. The office tool has an outer surface constructed at least in part of a plastic material. Affixed to the office tool is a rare-earth-element magnet 124. The rare-earth-

element magnet **124** should have holding power sufficient to support a load of at least eight ounces on a vertical surface. The rare-earth-element magnet **124** is affixed to the office tool by an adhesive means **110**, with the adhesive means **110** being suitably adapted to provide a permanent bond simultaneously to both a metallic surface and to a plastic surface. The adhesive means **110** forms a stable long-term bond between the rare-earth-element magnet **124** and the office tool that is able to withstand continuous shear stress over time without failure. Preferably, the adhesive means **110** is suitably adapted to conform to irregular shapes and curved contours.

[0027] FIG. 5 illustrates a side view of the rare-earth-element magnet **124**, the adhesive means **110**, and the office tool **120**, in relation to each other. The rare-earth-element magnet **124** must have an outer surface **128** constructed at least in part of a metallic material. The rare-earth-element magnet **124** also includes a core **126**, which is a high-strength rare-earth element magnet and, preferably, a neodymium-iron-boron magnet. The preferred outer surface **128** is a nickel coating.

[0028] FIG. 5 also depicts a detailed view of the adhesive means **110**. The adhesive means **110** comprises three primary elements: a core **112** and two different types of adhesive. One adhesive is applied to the first side **114** of the core **112** and a different adhesive is applied to the second side **116** of the core **112**. The adhesive applied to the first side **114** of the core **112** must be suitably adapted to bond to the metallic outer surface of the rare-earth-element magnet **124**. As such it is a high surface energy acrylic adhesive designed to adhere to metal surfaces. The adhesive applied to the second side **116** of the core **112** must be suitably adapted to bond to the plastic outer surface of the office tool **120**. As such it is a medium surface energy acrylic adhesive designed to adhere to plastic materials. In one embodiment the adhesive means **110** is a double-coated acrylic foam tape. In another embodiment the adhesive means **110** may comprise one or more removable protective sheets to temporarily protect the adhesives of the first and second sides **114, 116** of the core **112**. An example of a suitable adhesive means **110** is the 4622 VBH™ Double Coated Acrylic Foam Tape manufactured by 3M.

[0029] FIGS. 1 and 2 illustrate different types of office tools of the present invention. FIG. 1 depicts a conventional rectangular inked stamp **120** that has been adapted with a rare-earth-element magnet according to the invention for use with the universal storage system **100**. FIG. 2 depicts a conventional wood-handled stamp **122** that has been similarly adapted with a rare-earth-element magnet according to the invention for use with the universal storage system **100**. These tools are merely illustrative of any number of common office tools that comprise the present invention, including various types of objects, of various weights and shapes, to which the rare-earth-element magnet **124** has been attached, such as inked stamps, wood-handled stamps, letter openers, pens, highlighters, paperclip containers, scissors, rulers, staplers, tape dispensers, and the like.

[0030] FIG. 3 illustrates one embodiment of the universal storage system **100** with which the improved office tool of the present invention is used. In this embodiment the universal storage system is a rotary desk holder. FIG. 3 shows a plurality of holding panels **102** that are attached to and extend radially outward from a stem **108**. The stem **108** is fastened to a base **105**, which includes a suitable rotating plate or mechanism that allows the stem **108** to rotate. A mounting surface **106** is attached to opposite sides of each of the panels **102** to maximize storage efficiency. A collection of tools **120, 122** is

shown placed on the mounting surfaces **106** of the universal storage system **100**. Each mounting surface **106** is ideally a strip of ferromagnetic material that is permanently bonded to the panel **102**. The rare-earth-element magnets **124** (shown in dashed lines) have been applied to each tool **120, 122** by simply peeling the protective sheets away from the adhesive layers and applying the rare-earth-element magnets **124** to a suitable surface on the particular tool **120, 122**. Access to a particular tool **120, 122** stored on the universal storage system **100** is quickly achieved by rotating the stem **108** until the desired tool is available. After using the chosen tool, it may then be returned quickly to the same location or any other available space on the universal storage system **100** that the user chooses, thus creating an efficient storage system.

[0031] FIG. 4 illustrates another embodiment of a universal holding system **200** which is a desk-mount holder. As shown, a collection of tools **120, 122** that have been adapted with the rare-earth-element magnet **124** are stored on the mounting surface **106**. The universal storage system **200** comprises a base **210** and a panel **202**, which may be formed of a single piece of material, as shown in FIG. 4, or be separate pieces that are fixedly attached to each other. The underside of the base **210** includes an anti slip adhesive **212** to prevent the universal storage system **200** from moving once positioned on the desired surface. The universal storage system **200** is easily installed on a desktop: the user simply applies the anti-slip means **212** to the desk or table surface, or to the underside of the base **210** and places the universal storage system **200** onto the desired surface. No tools are required to either install or remove the universal storage system **200**. The anti-slip material **212** is preferably a material that remains flexible indefinitely and allows simple removal or repositioning at a later date by gently lifting on one end of the universal storage system **200** to cleanly lift the anti-slip material **212** from the surface. A suitable adhesive for this purpose is the Scotch™ Clear Mounting Squares™, which is a removable adhesive.

[0032] It is understood that the embodiments described herein are merely illustrative of the present invention. One skilled in the art may contemplate variations in the construction of the invention without limiting the intended scope of the invention herein disclosed and as defined by the following claims.

I claim:

1. A magnetically mountable office tool comprising an office tool, said office tool including a rare-earth-element magnet with holding power to support a load of at least eight ounces on a vertical surface; and an adhesive means for attaching said magnet to said office tool.
2. The magnetically mountable office tool of claim 1, wherein said rare-earth-element magnet is a nickel-coated neodymium-iron-boron magnet with an energy product of at least 25 BH.
3. The magnetically mountable office tool of claim 1, wherein said office tool has a housing and said rare-earth-element magnet is structurally integrated into said housing.
4. The magnetically mountable office tool of claim 1, wherein said office tool has an outer surface constructed at least in part of a plastic material; said rare-earth-element magnet has an outer surface constructed at least in part of a metallic material; and

said adhesive means is suitably adapted to provide a permanent bond simultaneously to both a metallic surface and to a plastic surface.

5. A magnetically mountable office tool comprising an office tool having an outer surface constructed at least in part of a plastic material;

said office tool including a rare-earth-element magnet with holding power to support a load of at least eight ounces on a vertical surface, said rare-earth-element magnet having an outer surface constructed at least in part of a metallic material; and

said office tool including an adhesive means for attaching said rare-earth-element magnet to said office tool, said adhesive means being suitably adapted to provide a permanent bond simultaneously to both a metallic surface and to a plastic surface, said adhesive means comprising a double-coated acrylic foam tape having a first side and a second side, said tape carrying two dissimilar adhesives, with the adhesive for bonding the first side of the tape to the metallic outer surface of the magnet being a high surface energy acrylic adhesive designed to adhere to metal surfaces, and the adhesive for bonding the sec-

ond side of the tape to the plastic outer surface of the office tool being a medium surface energy acrylic adhesive designed to adhere to plastic materials, with the adhesive means forming a stable long-term bond between the magnet and the office tool that is able to withstand continuous shear stress over time without failure, and with the double-coated acrylic foam tape being suitably adapted to conform to irregular shapes and curved contours.

6. The magnetically mountable office tool of claim 1 comprising

an office tool from the following group: inked stamp, wood-handled stamp, letter opener, pen, highlighter, paperclip container, scissors, ruler, stapler, and tape dispenser.

7. The magnetically mountable office tool of claim 5 comprising

an office tool from the following group: inked stamp, wood-handled stamp, letter opener, pen, highlighter, paperclip container, scissors, ruler, stapler, and tape dispenser.

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