

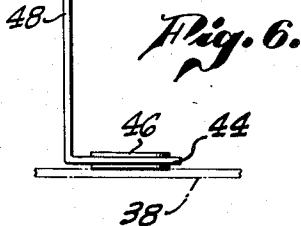
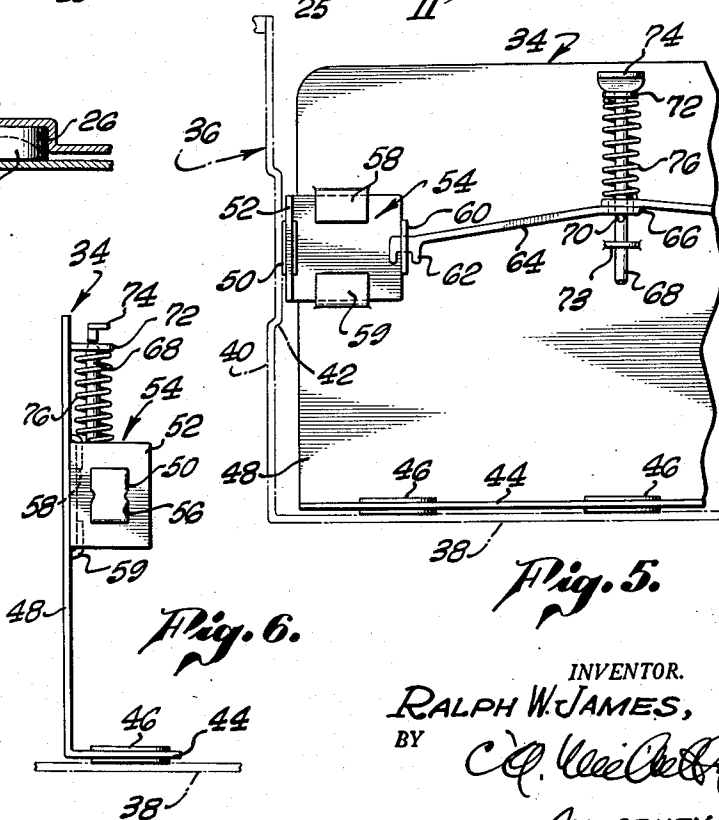
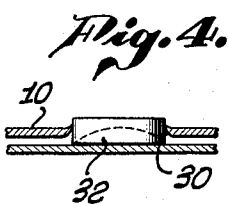
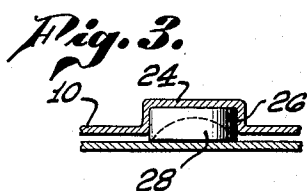
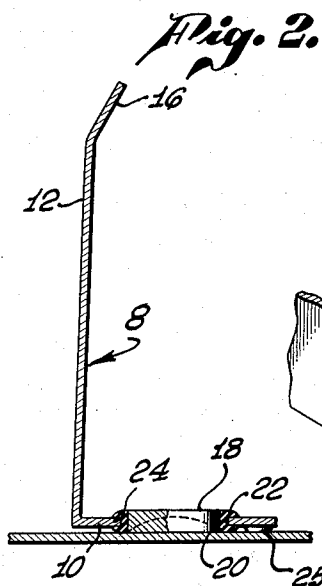
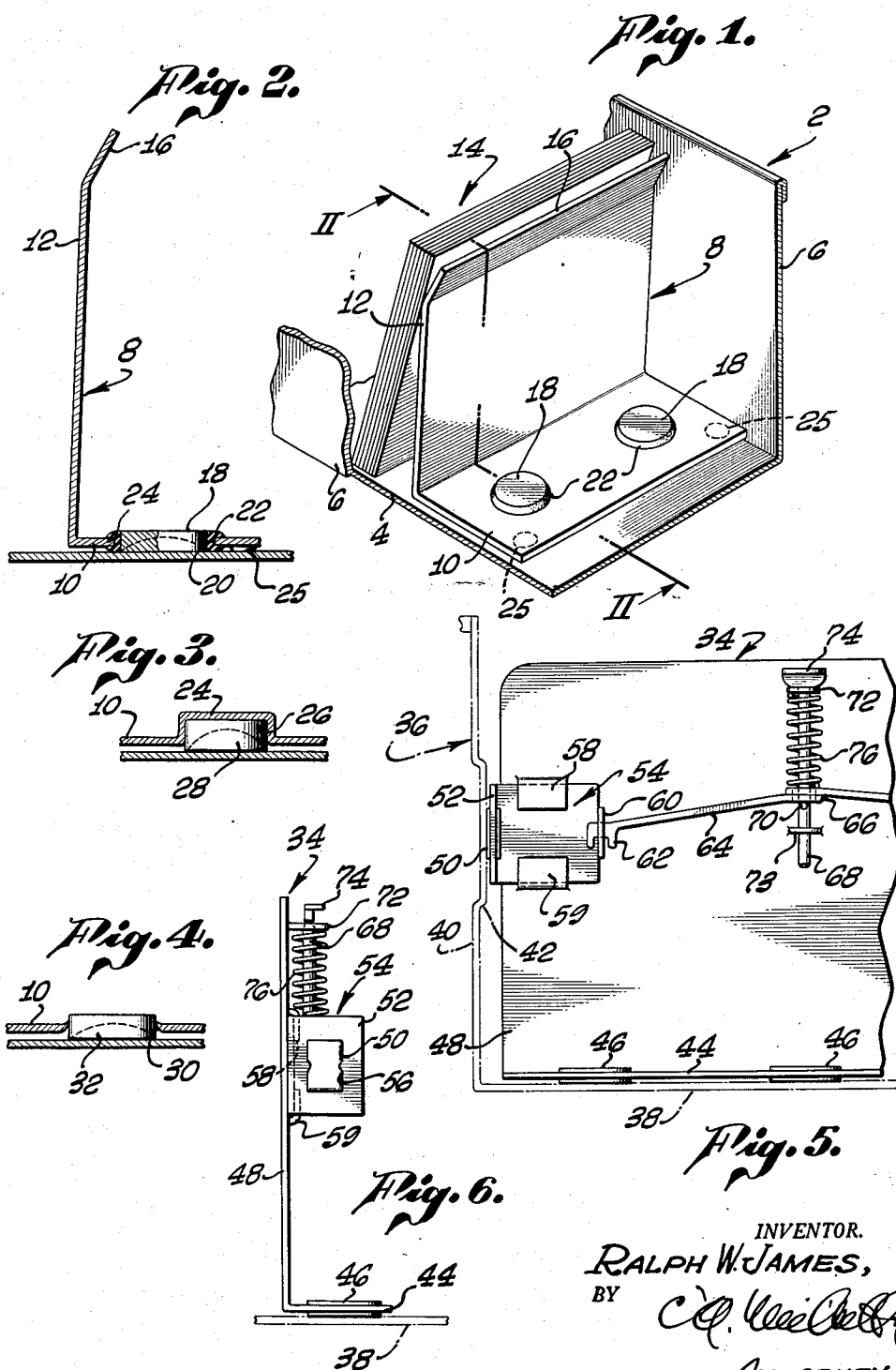
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FILE FOLLOWER

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FILE FOLLOWER

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This invention relates to improvements in file followers and more particularly to a removable file follower support especially adapted for use in filing drawers made of magnetic metal. This invention is characterized by the provision of a file follower which is free from mechanical engagement with an associated file drawer and which utilizes magnetic forces emanating from permanent magnets carried by the file follower for retaining the follower in position.

In commonly used file cabinets, each file drawer is provided with a file follower and support for the purpose of maintaining filing material such as cards, folders, pamphlets etc. in a substantially upright position so that titles of the files may be easily observed. Such followers have mechanical means for adjustably positioning the followers within the filing drawer. Generally, the mechanical means may include a lever system carried by the follower and lugs or other means in engagement with slots or serrations on the sides of the filing drawer. A minor misalignment of such mechanical means prevents the ready movement or adjustment of the follower. After a period of time, such mechanical means may become rusty or bent from constant use, with the result that it becomes difficult to position the file follower in the drawer when material is added or withdrawn.

The main object of my invention is to provide a removable support and follower which is free from mechanical connection with an associated file drawer.

Another object of my invention is to provide a file support and follower which may be readily positioned to properly accommodate filing material with a minimum of effort and yet have sufficient holding power to maintain the files in upright condition.

Another further object of my invention is to provide a support and file follower which may be readily removable from a file drawer.

Still another object of my invention is to provide a removable support and follower which may be retained in position within the file drawer by the use of magnetic forces.

Other objects and advantages of this invention will be readily apparent from the following description and claims.

In the drawings:

Fig. 1 is a fragmentary perspective view of one embodiment of my invention, a file drawer being cut away to show the arrangement of a file support and follower.

Fig. 2 is a sectional view of the follower shown in Fig. 1, the section being taken substantially in a vertical plane bisecting one of the magnets, as indicated by the line II—II of Fig. 1.

Fig. 3 is a fragmentary sectional view showing a modification of the manner of mounting a magnet.

Fig. 4 is a fragmentary sectional view showing a different manner of mounting a magnet.

Fig. 5 is a fragmentary view taken from the rear of a file drawer, showing a different modification of my invention.

Fig. 6 is a side view of the follower shown in Fig. 5.

Referring particularly to the embodiment of my invention shown in Figs. 1 and 2, a file drawer, generally indicated at 2, may be of a standard size and made of material, preferably metal, capable of being acted upon by magnetic forces. The drawer 2 has a bottom 4 with a relatively flat, smooth, upper surface and upstanding side walls 6 connected thereto.

Within the file drawer 2 is a removable file support and

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follower, generally indicated at 8, having a width slightly less than the internal width of the drawer in order to permit easy backward and forward movement of the follower.

The follower 8 may be made of any suitable material, preferably metal, and is provided with a substantially rectangular base portion 10. Integrally formed with the base portion 10 is an upstanding rest portion 12 inclined slightly rearwardly, as best seen in Fig. 2. The upstanding rest portion 12 affords a support or rest for filing material, generally indicated at 14. Extending across the top of the upstanding rest portion 12 is a transverse lip 16 inclined rearwardly for the purpose of affording means for easily grasping the file support and follower 8 in order to position the follower or to remove it from the drawer.

The base portion 10 carries a plurality of spaced permanent magnets 18 which may be formed in any convenient shape, shown here as being disc shaped. It is understood, of course, that a commonly used rectangular-shaped permanent bar magnet may be utilized in place of the disc shape shown. The permanent magnets 18 are carried by the base portion in spaced openings 20 which may be formed by an ordinary punching operation. The manner of mounting the magnets 18 as shown in Fig. 2 includes a grommet ring 22 of any suitable rubber composition, the ring 22 being provided with a circumferential groove 24 which accommodates and grasps the edges of the opening 20. The disc-like magnets 18 are resiliently positioned within the rubber composition ring 22 in such a manner that the lower faces of the magnets extend slightly below the bottom face of the base portion 10, thereby affording positive contact of the magnets with the bottom 4 of the file drawer. Each magnet 18 is permanently magnetized with pole faces of opposite polarity provided on their lower face, while their upper face has substantially neutral magnetic characteristics.

It will be understood that although a plurality of spaced magnets are illustrated in the embodiment shown in Figs. 1 and 2, this invention contemplates the use of a single permanent magnet of bar shape, horse-shoe shape, or any other suitable type having the required strength or magnetic attraction to the metal of the file drawer.

At each rear corner of the base portion 10 there may be mounted in any suitable manner pads or shoes of friction material 25, preferably a rubber composition, and shown as being circular in shape. The rubber pads 25 frictionally resist any tendency of the follower to slide rearwardly because of pressure exerted by the quantity of filing material.

It should be noted that the pads 25 are placed at points on the base portion lying virtually in the same transverse, downwardly inclined plane as the resultant force of the forces exerted by the pressure of the filing material on the file follower, and thus act as a fulcrum point between the follower and bottom of the drawer. The permanent magnets 18 resist tendency of the follower to turn on this fulcrum point since the magnetic forces of attraction are most effective or strongest when acting substantially vertical to the plane of the bottom of the drawer.

In operation of the file support and follower shown in Fig. 1, the follower 8 may be readily grasped at the lip 16, tilted slightly forward to relieve contact of pads 25 with the bottom of the drawer, and moved backward or forward in the file drawer, the magnets 18 having slidable engagement with the bottom 4 of the drawer. The permanent magnets 18 are of sufficient strength to retain the file follower in position after adjustment has been made of the filing material. If it is desired to remove the file follower, it may be readily grasped by the lip 16 and by means of a sharp pull, may be readily lifted out of the drawer.

In Fig. 3 is shown a different method of mounting a permanent magnet in the base portion 10 of the file follower. In this modification, the base portion 10 is provided with spaced bosses 24 formed in any convenient manner, as by a punching or drawing operation, and providing recesses 26 in the lower surface of the base portion. Each recess 26 may receive a disc-shaped per-

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manent magnet 28 which has a diameter slightly greater than the internal diameter of the recess 26, whereby a tight fit is provided when the magnet 28 is pressed into the recess. Each magnet 28 is also provided with poles of opposite polarity on its lower face. The depth of each recess 26 is less than the depth of the disc-shaped magnet 28 so that the bottom face of the magnet projects slightly beyond the plane of the bottom face of the base portion 10.

In Fig. 4 a different method of mounting a magnet is shown. Here the base portion 10 is provided with spaced openings 30 punched therein by any convenient method which leaves ragged edges around the openings 30. A magnet 32 may be forced into an opening 30 in such a manner that the ragged edges will serve to tightly hold the magnets in the desired position. As in the modification shown in Figs. 2 and 3, the lower face of the magnet extends slightly below the plane of the bottom face of the base portion 10 in order to provide a positive contact of the magnet with the metal bottom 4 of the drawer. It is to be understood that the magnets may be circular, rectangular or polygonal in plan.

A different modification of my invention is shown in Figs. 5 and 6, wherein a removable support and follower, generally indicated at 34, is provided for filing drawers of unusually great width. A file drawer 36, indicated in dotted lines, may be formed of magnetic metal and is provided with a bottom 38 and upstanding side walls 40 integrally formed therewith. Each side wall 40 is formed with a longitudinally extending, inwardly directed flat ridge 42. The inner surface of ridge 42 is provided for sliding engagement with magnets carried by the follower 34, as hereinafter described.

The removable support and file follower 34 includes a rectangular base portion 44 provided with spaced permanent magnets 46 mounted therein in a manner similar to that described in the modification shown in Figs. 1 and 2.

An upstanding rest portion 48 is connected to the base portion 44, said upstanding rest portion being provided with means for carrying rectangularly-shaped permanent magnets 50 on opposite sides. Each magnet 50 may be supported on a rectangular side wall 52 of a bracket 54. The method of mounting the magnet 50 in the side wall 52 may be the same as any one of those heretofore described and is shown here as being mounted in a rectangular opening 56 provided with ragged edges which tightly grasp and hold the magnet in the opening. The outer surface of the magnet 50 projects slightly beyond the plane of the outer face of the side wall 52 in order to provide positive contact with the inner face of the ridge 42 on a side wall of the file drawer.

Bracket 54 may be supported on the upstanding rest portion 48 by means of top and bottom clips 58 and 59 formed from the upstanding portion 48 adjacent its sides. The bracket 54 is adapted for slidable engagement with the top and bottom clips 58 and 59. The inner edge of each bracket 54 may be provided with a rearwardly directed lug 60 having an opening which receives a fingered end 62 of a diagonally disposed arm 64, the fingered end 62 being adapted to grasp the lug 60. The arm 64 is provided at its opposite end with a substantially horizontal end portion 66, said end portion 66 having a hole therein for the reception of a vertical release pin 68. The release pin 68 has a stop 70 upon which the end portion 66 of an arm 64 may rest in order to position the arm on the pin.

The pin 68 is guided by horizontal, rearwardly extending top and bottom guide lugs 72 and 73 formed in the upstanding rest portion 48. The top and bottom lugs 72 and 73 are provided with aligned openings through which the pin 68 may extend, said pin 68 also extending through aligned openings in the end portions 66 of the arms 64. The top of the release pin 68 is provided with a horizontal, rearwardly directed lug 74 which is provided for the purpose of affording means for readily grasping and operating the pin 68.

Extending between the top guide lug 72 and the uppermost end portion 66 is a coil spring 76 which is under compression and which acts to hold the end portions 66 against the stop 70 provided on the release pin 68.

When the coil spring is extended as above described and the arms 64 are in their normal position, the brackets 54 are pressed outward so that the magnets 50 are afforded positive engagement with the side walls 40 of the

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file drawer. When it is desired to move the file follower 34 backward or forward, the rearwardly extending lug 74 may be grasped and raised, thus compressing further the coil spring 76. The stop 70 on the pin 68 carries the ends 66 of the arms upward as the pin is raised, the brackets 54 are slidably moved inwardly, and the magnets 50 break their engagement with the walls 40. Further lifting of the release pin 68 and the file follower 34 will separate the magnets 46 from the base portion of the file follower 34, with the result that the follower is freed from magnetic engagement with the drawer 36 and may be readily removed.

It will be readily apparent to those skilled in the art that the removable file support and follower described in both modifications above may be readily moved backwards and forwards in a file drawer of magnetic metal with a minimum of effort because of the sliding contact of the magnets with smooth surfaces of the drawer. When the follower has been placed in the desired position, the magnetic attraction of the permanent magnets for the metal of the drawer securely retains the file follower in position. Since the file follower is free from any mechanical engagement with the file drawer, it may be readily removed simply by lifting it out of the drawer.

It is understood that the modifications of this invention described above are illustrations only and it is not intended to limit the scope of this invention thereby except as limited by the appended claims.

I claim:

1. In combination with a filing drawer having a bottom wall of magnetic material and side walls for storing file material comprising a support and follower movably adjustable in said drawer for holding the file material in virtually upright position, said follower having an apertured rearwardly extending base portion, an upstanding rest portion connected thereto, said rest portion being inclined from the vertical whereby the resultant force of file material supported by said follower projects downwardly and rearwardly and lies in a transverse inclined plane intersecting the base portion adjacent the rear marginal edge thereof, friction means carried by said base portion depending therefrom at the intersection of said transverse plane therewith in contact with the bottom wall for resisting the horizontal component of said resultant force, and magnetic means carried by said base portion depending therefrom between said friction means and said rest portion said magnetic means and said friction means supporting said base portion in parallel spaced relation to the bottom wall, said magnetic means normally in contact with the bottom wall holding said follower in upright position and resisting any turning movement produced by the resultant force acting at the line of intersection of said transverse plane, said magnetic means being secured within the aperture in the base by means of a grommet.

2. In combination with a filing drawer having a bottom wall and side walls for storing file material as claimed in claim 1, wherein a pair of said magnetic means are positioned transversely of the base and substantially midway between the front wall and rear marginal edge thereof.

3. In combination with a filing drawer having a bottom wall and side walls for storing file material as claimed in claim 1, wherein said friction means are transversely positioned adjacent the rear corners of said base portion, and between the rear marginal edge thereof and said magnetic means.

4. In combination with a filing drawer of magnetic metal for storing file material: a support and follower movably adjustable in said drawer for holding the file material in virtually upright position, said follower having an upstanding rest portion and a rearwardly extending base portion connected thereto, said rest portion and said base portion being connected in angular relationship so that the resultant force of file material held by said follower in normal position intersects the base portion at rear margins thereof; friction means including spaced friction pads carried on the base portion at the rear margins thereof for contact with the drawer, and magnet means carried by the base portion between said rear margins and the rest portion and in contact with the drawer whereby the magnetic forces of the magnetic means oppose components of the resultant force tending to overturn the follower about the friction means.

5. In combination with a file drawer having a bottom of magnetic metal: a removable support and follower

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having a base portion having a lower surface and an upstanding rest portion connected thereto, said base portion carrying a plurality of laterally spaced permanent magnets positioned forwardly of the rear margin of the base portion, each magnet including a downwardly directed face having sections of opposed polarity in magnetic contact with the bottom of the drawer, said faces lying in a plane slightly below the lower surface of the base portion, and laterally spaced friction means carried by said base portion adjacent the rear margin thereof and having bottom faces lying in a plane below the surface of the base portion for frictional contact with the bottom of the drawer, whereby said follower is supported on the bottom of the drawer at longitudinally spaced magnetic and friction areas of contact.

6. In combination with a metal filing drawer of magnetic metal for storing file material; a support and follower movably adjustable in said drawer for holding the file material in virtually upright position, said follower having an upstanding rest portion and a rearwardly extending, transverse flat base portion connected at the front margin of the base portion, said rest portion and said base portion being connected in angular relationship whereby the resultant force exerted by said file material held by the rest portion is directed along a downwardly and rearwardly inclined transverse plane which intersects

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the plane of the base portion adjacent the rear margin thereof; magnet means including a magnetic element having a bottom surface lying in a plane parallel to the plane of the bottom surface of the base portion in forward spaced relation to the rear margin and normally in contact with the drawer for holding said follower against rearward tilting by resisting any turning moment produced by the resultant force acting at the intersection of the inclined transverse plane with the plane of the base portion; and means, including a friction shoe, carried by the follower at the rear margin of the base portion and having a downwardly facing frictional surface area in frictional contact with the drawer at virtually the intersection of said inclined transverse plane with the bottom wall of the drawer for resisting the horizontal component of said resultant force to prevent horizontal sliding movement of the follower.

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