April 16, 1963 W. HEMPHILL, JR 3,085,278

MAGNETIC DUST PAN

Filed Sept. 25, 1961 2 Sheets-Sheet 1

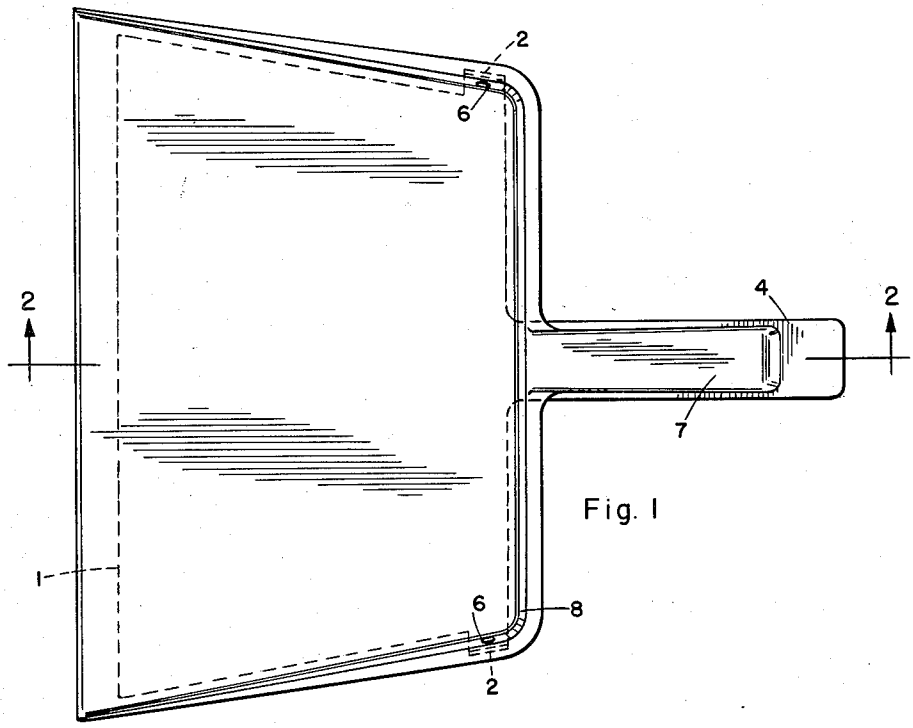


Fig. 1

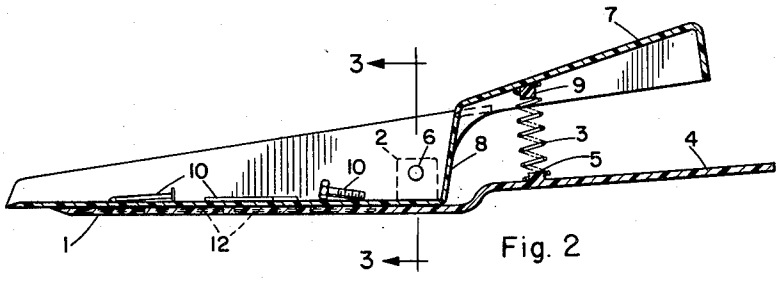


Fig. 2

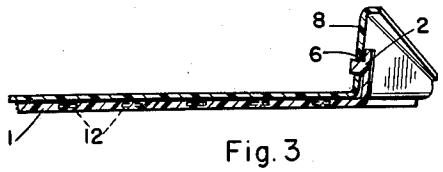


Fig. 3

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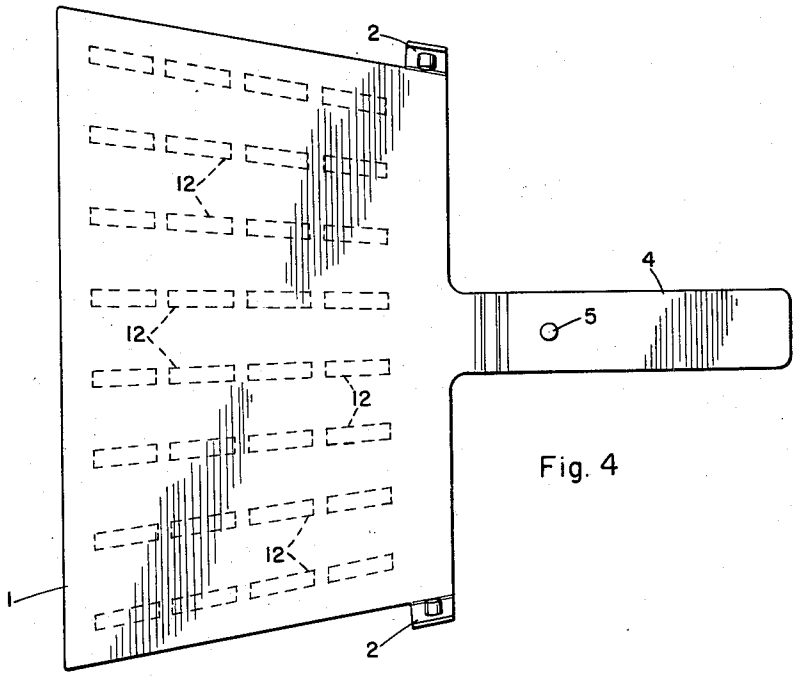


Fig. 4

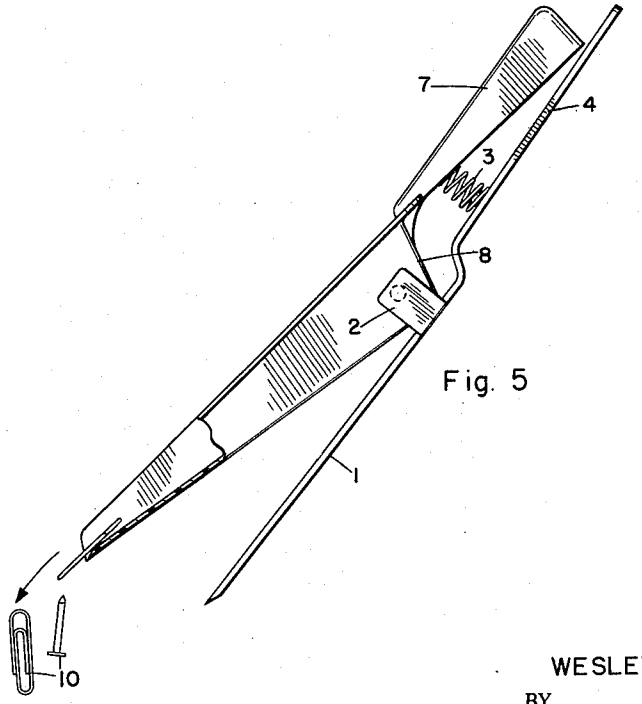


Fig. 5

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United States Patent Office 3,085,278 Patented Apr. 16, 1963

3,085,278

MAGNETIC DUST PAN

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Filed Sept. 25, 1961, Ser. No. 140,352
8 Claims. (Cl. 15—257.1)

This invention consists of a permanently magnetized light weight metal plate or a plate made of plastic or other suitable material and having small permanent magnetic bars embedded within its flat surface. The plate is equipped with a handle having a coil spring retainer mounted on top thereof and a coil spring mounted on the retainer. The magnetic plate is also equipped with two nipple tension springs mounted respectively on opposite sides thereof by which it is operatively connected with a conventional dust pan.

An object of the invention is to create a magnetic field within the bottom of a conventional dust pan with sufficient force to effectively retain ferromagnetic objects such as paper clips, paper clamps, nuts bolts or screws and the like swept from office or factory floors.

The magnetic dust pan can be of use in the home, especially near the dressing table, where such iron-containing articles as bobby pins, hair pins and safety pins are dropped.

With this and other objects definitely in view, this invention consists in the novel construction, combination and arrangement of elements and portions, as will be hereinafter fully described in the specification, particularly pointed out in the claims, and illustrated in the drawings which form a material part of this disclosure and in which:

FIGURE 1 is a top plan view of the dust pan and magnetic plate;

FIGURE 2 is a sectional view taken on line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view taken on line 3—3 of FIGURE 2;

FIGURE 4 is a top plan view of the magnetic plate; and

FIGURE 5 is a side view of the assembly in release position.

FIGURE 1 shows a plate 1 with permanent magnetized bars 12 embedded in its flat front surface. Attached to each of the rearward sides of the plate are nipple tension springs 2. A coil spring retainer 5, positioned on handle 4 of plate 1 serves as a retainer for coil spring 3.

A conventional dust pan (FIGURE 2), provided with a handle 7, has a rear section 8 with openings 6 therein. Plate 1 is pivotally supported on the dust pan through the interaction of the nipple springs 2 in openings 6 as clearly shown in FIGURE 3. Reference numeral 9 designates the coil spring retainer, mounted on handle 7.

FIGURE 2 shows a side view of the magnetic plate 1 in place beneath, and attached to, the conventional dust pan with the nipple tension springs 2 snapped into position in the openings 6. Coil spring 3 exerts a force tending to separate handles 4 and 7. In this position plate

1 is in juxtaposed position with the bottom of the dust pan and any small ferromagnetic articles and particles 10 will be held firmly against the bottom of the dust pan by magnetic force. With the parts in this position tilting of the dust pan will release only the non-magnetic particles or objects.

To release the magnetic particles handles 4 and 7 are brought together by compressing spring 3 thereby separating plate 1 from the bottom of the dust pan as shown in FIGURE 5. Tilting of the pan will permit particles 10 to slide therefrom as clearly shown.

It is understood that minor variations from the form of the invention disclosed herein may be made without departure from the spirit and scope of the invention, and that the specification and drawings are to be considered as merely illustrative rather than limiting.

Having thus completely and fully described the invention what is now claimed as new is as follows:

1. A hand tool comprising:
a dust pan having a pan member;
a magnetic element shiftably mounted on said dust pan and, in one position thereof, disposed to create a magnetic field in said pan member;
and means for shifting said magnetic element to another position thereof creating no significant magnetic field in said pan member.

2. Apparatus according to claim 1 wherein said magnetic element is biased to move toward one of said positions.

3. Apparatus according to claim 1 wherein said magnetic element is biased to move toward the first mentioned position.

4. Apparatus according to claim 1 wherein said magnetic element is hinged to the dust pan and is manually shiftable toward and away from said pan member.

5. Apparatus according to claim 4 wherein said lever is biased to move away from said handle member, thus urging said plate to move toward said pan member.

6. Apparatus according to claim 1 wherein said dust pan has a handle member, and said magnetic element is a plate hinged to the dust pan adjacent the juncture of said handle member and said pan member.

7. Apparatus according to claim 6 wherein said plate has a lever thereon adjacent to said handle member, whereby said lever may be grasped and operated by the fingers of an operator's hand used to hold said handle member.

8. Apparatus according to claim 6 wherein said plate extends, in said one position thereof, beneath a major portion of said pan member.

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