Aug. 13, 1946. J. J. KEHOE 2,405,655

PERMANENT SEPARATING MAGNET

Filed Jan. 15, 1945 2 Sheets-Sheet 1

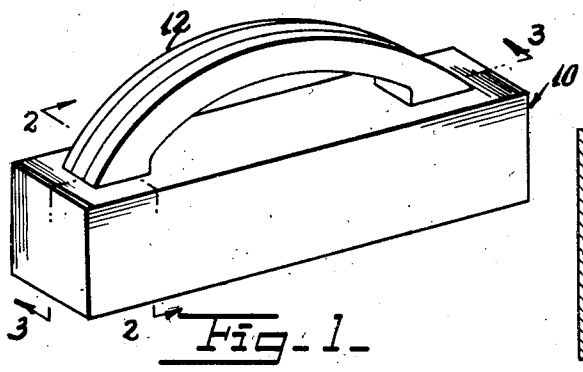


Fig. 1.

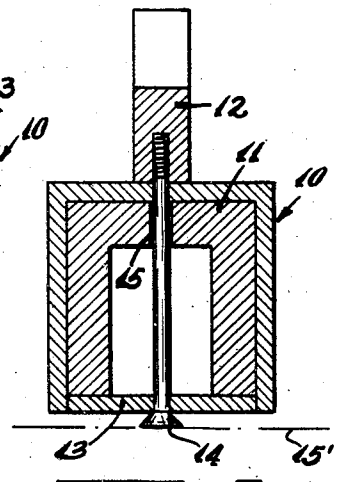


Fig. 2

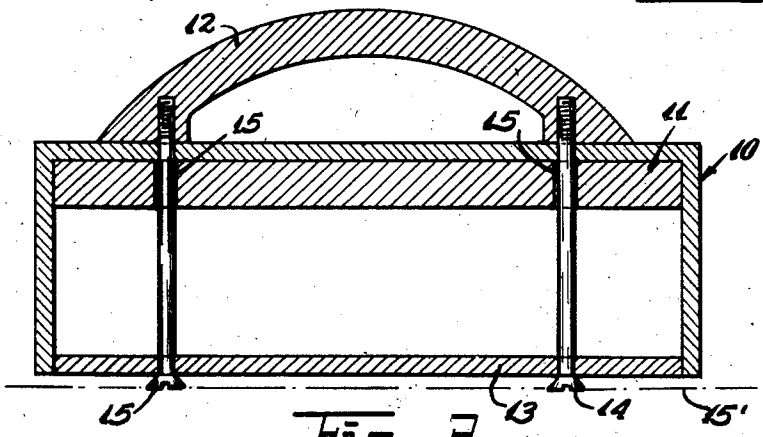


Fig. 3.

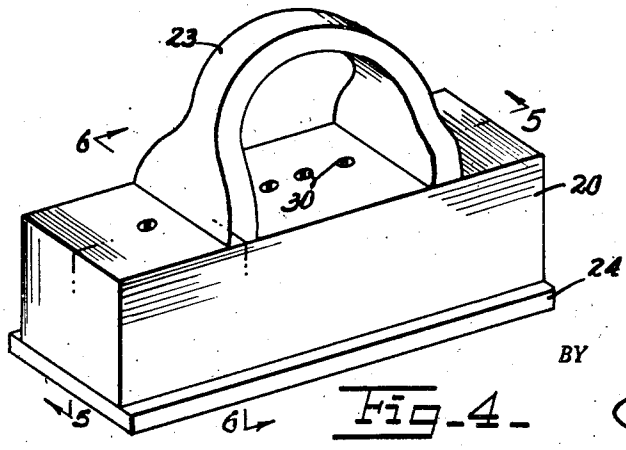


Fig. 4.

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2 Sheets-Sheet 2

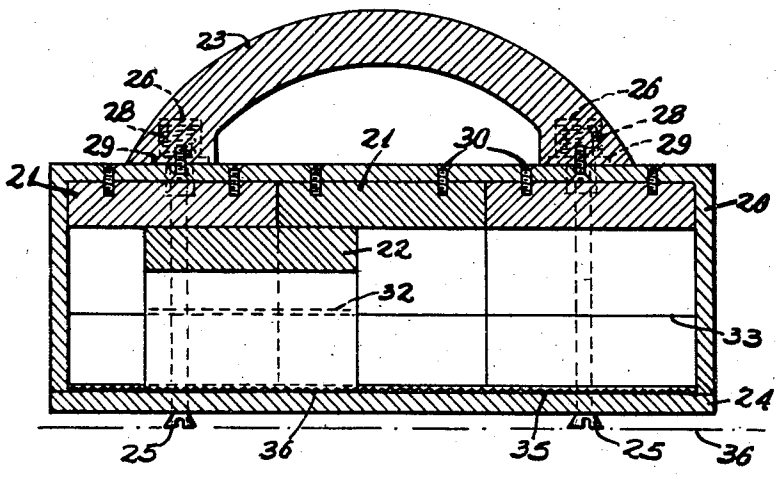


Fig. 5.

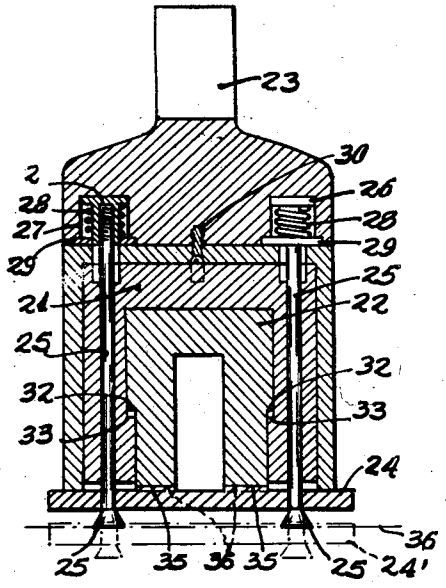


Fig. 6.

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PERMANENT SEPARATING MAGNET

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Application January 15, 1945, Serial No. 572,866

5 Claims. (Cl. 294—65.5)

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This invention relates to new and useful improvements in a permanent separating magnet.

The invention contemplates the construction of a magnet which is characterized by a non-magnetic housing for a magnet, a magnet within said housing, and a handle by which the housing may be conveniently carried around. With this device it is possible to pick up small iron or steel objects. It is very useful around factories to pick up iron filings, and steel and iron chips.

Still further the invention contemplates several modified forms embodying several improved features. One form is proposed in which it is possible to readily drop the attracted filings or other small articles, when desired. Another form is proposed in which the strength of the magnet may be varied.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of a permanent separating magnet constructed in accordance with this invention.

Fig. 2 is an enlarged vertical sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a longitudinal sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of a permanent separating magnet embodying another form of this invention.

Fig. 5 is a longitudinal sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 5.

The permanent separating magnet, in accordance with the form of the invention illustrated in Figs. 1–3 inclusive includes a non-metallic housing 10 for a magnet 11. A handle 12 is provided by which said housing 10 may be carried around. The housing 10 is in the nature of a box having an open bottom. This bottom is closed by a wall 13. Several screws 14 are engaged through said wall 13 and extend through openings 15 in back of the magnet 11 and engage and hold the handle 12 in position.

The screws 14 have their heads projecting from said wall 13 so that when the separating magnet is placed on a flat surface, such as indicated by the dot and dash lines 15', it will be slightly spaced therefrom. This permits the separating

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magnet to operate over flat surfaces and over articles to be picked up. The magnet 11 is in the nature of a horseshoe magnet. It extends the entire length of the housing 10. It has its poles directed downwards against the bottom wall 13.

The shape of the magnet 11 and housing 10 may be square, round or of other configuration and the magnet may be attached to other devices such as a sweeping broom, automobile body, etc.

In Figs. 4–6 another embodiment of the invention has been disclosed. This separating magnet includes a non-magnetic housing 20 for magnets 21 and 22. The housing 20 is provided with a handle 23 by which it may be conveniently carried about. The housing 20 is in the nature of a box having an open bottom, and a wall 24 extends across the bottom and projects slightly from the sides of the housing 20. Several screws 25 pass through the wall 24 and through openings in the magnets 21 and threadedly engage bushings 26 located within recesses 27 formed in the bottom of the handle 23. These bushings 26 are urged upwards by coaxial springs 28 acting against plates 29 mounted in the bottom of the handle 23.

There are three of the magnets 21 arranged one adjacent the other within the housing 20. They are connected with the housing by fastening screws 30. The magnet 22 is of a smaller size than the magnets 21 and is slidable between the poles of the magnet 21. The magnet 22 has shoulders 32 spaced slightly above complementary shoulders 33 formed upon the poles of the magnets 21. With this arrangement the magnet 22 will not fall down very far if the wall 24 is removed, since the shoulders 32 and 33 will engage each other and support the magnet 22.

The wall 24 is formed with two rows of serrations 35 which are engageable with complementary serrations 36 formed on the bottom ends of the poles of the magnet 22. When the bottom wall 24 is held by the screws 25 the serrations 35 and 36 engage each other, holding the magnet 22 from shifting. The heads of the screws 25 project from the bottom face of the wall 24 to hold same spaced from a flat surface, indicated by the dot and dash lines 26. However, the bottom wall 24 may be manually gripped and pulled downwards so that the bolts 25 move downwards, moving the bushings 26 downwards and compressing the springs 28. This frees the magnet 22 which then may be shifted to one end or the other end, or the center of the housing 20, as desired. Moreover, downward motion of the wall 24 to the

position indicated by the dot and dash lines 24' is sufficient to move picked up small articles out of the strong magnetic field so that the articles are dropped.

The purpose of shifting the magnet 22 is that one end or the other end, or the center of the permanent separating magnet may be thus arranged to have stronger magnetic power than the remaining portions.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A permanent separating magnet, comprising a non-magnetic housing for a magnet, a magnet within said housing, and a handle on said housing, said housing having a removable bottom wall, screws with projecting heads engaged through said bottom wall for holding same in position, said screws extending through the housing and connecting with and holding said handle on the top of said housing.

2. A permanent separating magnet, comprising a non-magnetic housing for a magnet, a magnet within said housing, a handle on said housing, and an additional magnet for extra lifting power slidably mounted within a portion of said magnet.

3. A permanent separating magnet, comprising a non-magnetic housing for a magnet, a magnet within said housing, a handle on said housing, and an additional magnet for extra lifting power slidably mounted within a portion of said magnet, and means for holding said latter-named magnet in selected shifted positions.

4. A permanent separating magnet, comprising a non-magnetic housing for a magnet, a magnet within said housing, a handle on said housing, and an additional magnet for extra lifting power slidably mounted within a portion of said magnet, and means for holding said latter-named magnet in selected shifted positions, including a bottom wall for said casing, and resilient means for urging said bottom wall against the ends of said last-named magnet for clamping same in position.

5. A permanent separating magnet, comprising a non-magnetic housing for a magnet, a magnet within said housing, a handle on said housing, and an additional magnet for extra lifting power slidably mounted within a portion of said magnet, and means for holding said latter-named magnet in selected shifted positions, including a bottom wall for said casing, and resilient means for urging said bottom wall against the ends of said last-named magnet for clamping same in position, said bottom wall being separable from the other portions of said housing to cause magnetically picked up articles to be dropped.

JOSEPH J. KEHOE.