

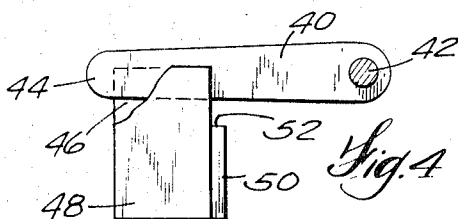
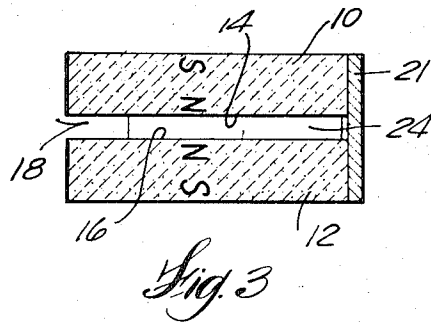
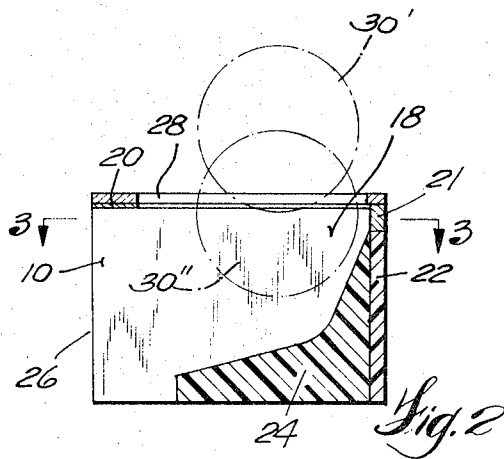
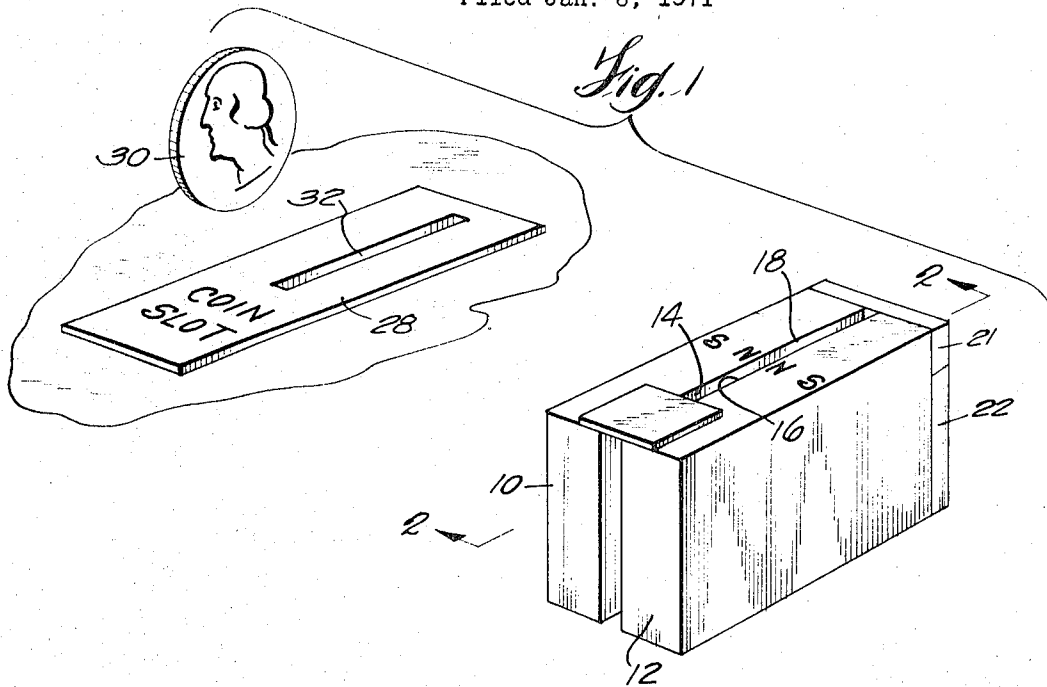
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MAGNETIC SPRING AND COIN REJECTOR

Filed Jan. 8, 1971



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## 3,717,233 MAGNETIC SPRING AND COIN REJECTOR

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4 Claims

### ABSTRACT OF THE DISCLOSURE

A slot between magnets having opposed faces of like polarity resiliently rejects a magnetic coin or other object sought to be passed through the slot. Instead of being deflected or mechanically obstructed, the coin remains exposed for manual removal from the slot, returning to its exposed position if pressed into the slot.

### BACKGROUND OF INVENTION

I am familiar with a wide variety of coin rejecting devices all of which, to my knowledge, either hold the coin magnetically or obstruct it mechanically. The instant device does not operate in either manner.

### SUMMARY OF INVENTION

A pair of magnetic bodies which are desirably ceramic magnets are connected in mutually spaced relation to provide a slot which, in the case of a coin device, is a part of the coin admission slot. In the case of a lever, the arrangement is merely such that the lever operates in the slot.

The two magnets have faces of like polarity at opposite sides of the slot. If a magnetically responsive coin is introduced into the slot, its motion is arrested resiliently at a level such that the central portion of the coin is just below the tops of the magnets. If the coin is manually pushed beyond this position (and assuming that it cannot pass across center toward the opposite sides of the magnets) the coin resiliently springs back to the indicated position where almost half of its circumference is exposed to permit the coin to be freely withdrawn from the coin slot.

This result is a great advantage as compared with machines which have magnetic devices internally which may trap slugs or magnetic coins such as Canadian coins and thus clog the machine. The external location preferred for the instant device precludes any internal trapping.

Since coin-operated machines of various kinds are frequently used in metal working shops, it is also advantageous that the instant device attracts metallic filings such as normally accumulate in the interior of coin-operated machines and require disassembly in order to remove them. In the instant device, all magnetic airborne particles accumulate on the surface of the coin slot or magnet where they can readily be removed with a brush.

Because the coin will resiliently position itself adjacent either the entrance margins of the magnets or the opposite margins thereof, a non-magnetic stop prevents the coin from moving across center and, at the same time, guides from between the magnets a non-magnetic coin of a type properly to be accepted by the machine.

Because of the resilient functioning of the magnets in rejecting a magnetic object, the two magnets with opposed poles are adapted for use with any magnetic article such as a lever to provide resilient support therefor without springs or other moving parts of any nature. Such an arrangement is diagrammatically illustrated in addition to the drawing of a coin-receiving device.

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### BRIEF DESCRIPTION OF DRAWING

FIG. 1 diagrammatically illustrates in mutually separated positions a coin, a slotted cover plate and a pair of magnets positioned to provide a slot registering with the cover plate and having opposed rolls.

FIG. 2 is a view taken in longitudinal cross section on the line 2—2 of FIG. 1.

FIG. 3 is a view taken in horizontal section on the line 3—3 of FIG. 2.

FIG. 4 is a diagrammatic view partially in side elevation and partially broken away to show the device functioning as a magnetic spring for a lever or the like.

### DETAILED DESCRIPTION

The two magnets 10 and 12 may be ceramic magnets, although this is not essential. In any event, the magnets have opposing faces 14 and 16 which are of like polarity. It is immaterial whether they are both "north" or both "south." By way of illustration, the symbols "N" and "S" have been used in FIG. 1 and FIG. 3.

The magnets 10 and 12 are held in mutually spaced positions as shown in FIG. 1 to define a slot 18 therebetween. It is immaterial what means is employed to hold the magnets in spaced relationship. I have shown plates 20 and 21 for this purpose. Plate 21 may itself constitute a magnet, if desired, in which case there may be another plate 22 below it as best shown in FIG. 2. If magnetic, the plate 21 draws the coin toward itself at the end of slot 18.

The bottom of the space between the magnet is closed, preferably by a non-magnetic body 24 which guides toward a discharge point 26 a coin introduced into slot 18 and which, if nonmagnetic, will pass the magnets.

The magnetic intercepting device comprising magnets 10 and 12 is assembled as shown in FIGS. 1 to 3 and may be covered by an ornamental plate 28 through which a coin 30 may be introduced through the slot 32 which registers with the slot or channel 18 between the magnets. If the coin 30 is non-magnetic, it passes freely between the magnets to the discharge point 26 which may lead to a conventional coin box or the like. If the coin is magnetic (magnetically responsive), it will be arrested resiliently in the approximate position indicated at 30' in FIG. 2. Even if a coin is manually pushed from the position 30' toward the stop surface 24 as indicated at 30'', it will not pass to the discharge opening at 26 but will spring back to the position 30'. Since almost half of its area is exposed, it can be manually plucked from this position, whereupon the slot will be open to receive a proper non-magnetic coin. It will, of course, be understood that the term "magnetic coin" is intended to include slugs and other counterfeit devices desirably rejected by such a device as this in order to prevent unauthorized operation of the coin operated machine.

In the embodiment shown in FIG. 4, a lever 40 of magnetic material is pivoted on a rock shaft 42 and has its free end 44 extended into the slot between magnets 46 and 48 which have opposed faces of like polarity, as in FIG. 1 and FIG. 3. The plate 50 which connects the magnets 46 and 48 has its upper margin 52 constituting a stop in any desired location to define a limit to the oscillatory movement of the rock shaft 42. Since the stop will be so located that it does not permit the lever to pass across the center of the magnets, any deflection of the lever on the rock shaft toward the stop will be resiliently opposed and when deflecting pressure on the lever is relieved, the lever will spring back to the approximate position shown in FIG. 4. In many installations such a device has all the advantage of a spring without requiring the use of a spring or any other means of mechanically positioning the controller object.

I claim:

1. A device for resiliently opposing movement of a magnetic coin, said device comprising a pair of magnets spaced to form a coin slot therebetween, said magnets having opposed poles of like polarity, and another magnet which spans the coin slot between the first mentioned magnets at one end thereof.

2. In a coin selector mechanism the combination with a pair of magnets having facial poles, means supporting said magnets with spaced opposed faces of like polarity, and a cover plate having a coin slot registering with the space between the magnets, the spacing means including a third magnet extending transversely across the space between the first mentioned magnets.

3. In a coin selector mechanism the combination with a pair of magnets having facial poles, means supporting said magnets with spaced opposed faces of like polarity, and a cover plate having a coin slot registering with the space between the magnets, the depth dimensions of the magnets exceeding the diameter of a magnetic coin

to be intercepted thereby, whereby said coin cannot be pushed manually across the center of said magnet.

4. A mechanism according to claim 3 in which a non-magnetic deflector for non-magnetic coins is interposed between said magnets.

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