Aug. 28, 1951 W. G. SHERMAN 2,565,891

MAGNETIC DOOR LOCK

Filed Sept. 12, 1947

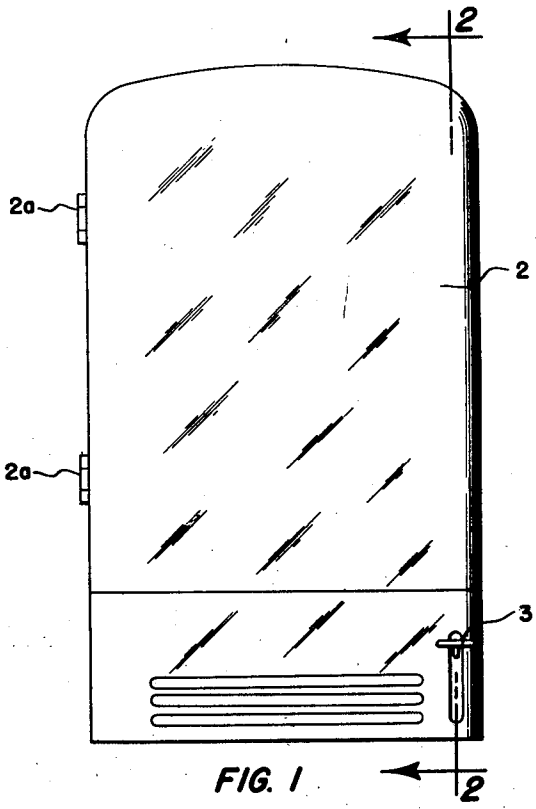


FIG. 1

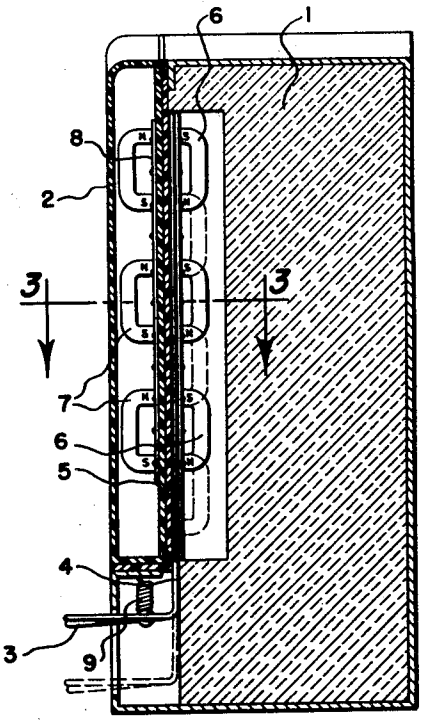


FIG. 2

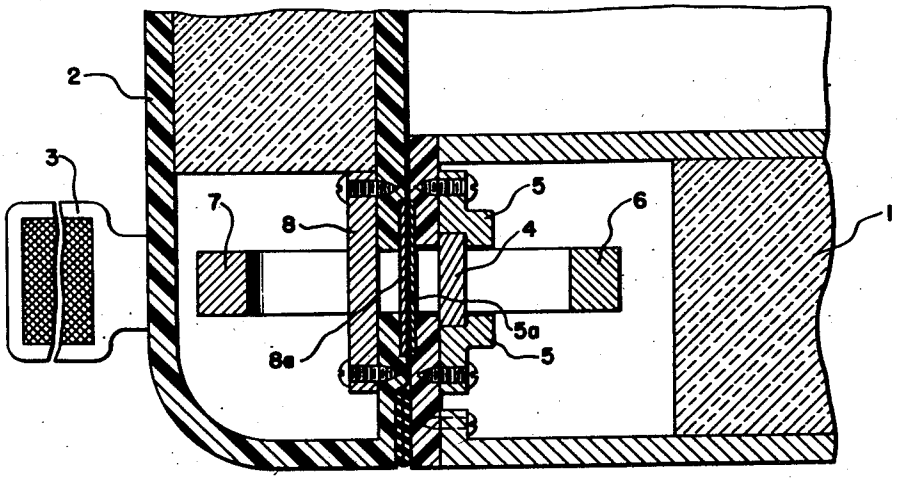


FIG. 3

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Patented Aug. 28, 1951 2,565,891

UNITED STATES PATENT OFFICE

2,565,891

MAGNETIC DOOR LOCK

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Application September 12, 1947, Serial No. 773,700

4 Claims. (Cl. 292—1)

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My invention relates to a magnetic door latch, more particularly for use in connection with refrigerator doors, cabinets, or other similar household appliances, and the objects of my invention are:

First; to provide a magnetic door latch of this class which may be operated by the foot of a person so that both hands may be used in carrying articles to and from a refrigerator or other cabinet while the opening and closing of the door may be accomplished by the foot and knee of the operator.

Second; to provide a magnetic door latch of this class which eliminates the conventional handle in connection with a refrigerator door, whereby the exterior of the door is neat and free of obstructions.

Third; to provide a magnetic door latch of this class which employs permanent magnets movable relatively to each other, whereby, the door of a cabinet is repelled therefrom when the magnets are in one position and attracted thereto when in another position, caused by reversal of the poles of the magnets in the cabinet and the door respectively.

Fourth; to provide a magnetic door latch of this class which does not have any critical wearing parts.

Fifth; to provide a magnetic door latch of this class which is very easy and convenient to operate.

Sixth; to provide a magnetic door latch of this class which is very simple and economical of construction, efficient in operation and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions, as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawing and to the characters of references thereon, forming a part of this application in which: Fig. 1 is a front elevational view of a refrigerator showing my magnetic door latch in connection therewith; Fig. 2 is a sectional view taken from the line 2—2 of Fig. 1 and Fig. 3 is an enlarged fragmentary sectional view taken from the line 3—3 of Fig. 2.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawing.

The cabinet 1, cabinet door 2, foot pedal 3, slide bar 4, guides 5, magnets 6 and 7, mounting plate

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8, and the spring 9 constitute the principal parts and portions of my magnetic door latch.

As shown in Fig. 2 of the drawing, the door 2 of the cabinet 1 is provided with an internally fixed mounting plate 8, on which the magnets 7 are secured and rigidly supported. These magnets 7 are positioned internally of the door 2 and extend slightly beyond the mounting plate 8 into adjacent relationship with a non-magnetic plate 8a close to a similar plate 5a so that close spaced relationship of the magnets 6 and 7 is attained for efficient operation thereof. The guides 5 provide a sliding support for the slide bar 4 on which the magnets 6 are secured. These magnets 6 operate adjacent the plate 5a which is a non-magnetic plate, and the foot pedal 3 is connected to the slide bar 4 and projects outwardly of the front side of the cabinet 1 below the door 2 as shown best in Fig. 2 of the drawing. The spring 9 is an extension spring tending to hold the foot pedal 3 upwardly together with the bar 4 and magnets 6 carried thereon. It will be noted that the magnets 6, bar 4, and the guides 5 are positioned in the cabinet 1, and only related to the magnets 7 by the attraction between the magnets 6 and 7. Each of the magnets 6 is provided with a north and south pole and each of the magnets 7 is provided with similar north and south poles so that the slidable relationship of the bar 4 carrying the magnets 6 shifts an equal distance to the space relationship of the poles of each of the individual magnets.

The operation of my magnetic door latch is substantially as follows:

When it is desired to open the door 2, hinged to the cabinet 1 by the hinges 2a, the operator presses the foot pedal 3 downwardly by foot, extending the spring 9 and shifting the poles of the magnets 6 relatively to the poles of the magnets 7, so that repulsion of the magnets 7 occurs which swings the door 2 outwardly on the hinges 2a opening the same, it being noted that each magnet 6 and 7 is provided with north and south poles, and that shifting of the bar 4 in connection with the foot pedal 3 shifts the magnets 6 vertically as indicated by dash lines in Fig. 2 of the drawings, wherein the poles of the magnets are reversed, causing repulsion of the magnets 7 as hereinbefore described. As indicated by dash lines, the magnets 6 correspond with certain magnets 7, and in this dash line position, each magnet 6 bridges two of the magnets 7 with the exception of the lower magnet 6 which passes below the lowest magnet 7. When the operator releases the foot pedal 3 the spring 9 forces the

magnets upwardly into the solid line position as shown in Fig. 2 of the drawing, wherein the magnets 6 attract the magnets 7 and cause positive closing of the door 2 relatively to the cabinet 1 when forced sufficiently near to be within the range of the magnets 6 and 7 in their attractive relationship to each other as indicated by solid lines in Fig. 2 of the drawings.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, combination and arrangement, but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

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

1. In a magnetic door latch of the class described, for a pivotally mounted door having a jamb comprising a plurality of stationarily mounted magnets in said door, arranged in spaced relation to each other equal to the distance between poles of each of the individual magnets, and a plurality of magnets in said jamb, slidably mounted therein, and having their poles aligned with opposite poles of said magnets in said door, whereby the alignment of the poles of the magnets in said jamb and said door may be reversed upon sliding the magnets in said jamb a distance equal to the distance between the individual poles of the magnets on the door.

2. In a magnetic door latch of the class described, the combination of a pivotally mounted door, a jamb for said door, a plurality of stationarily mounted magnets in said door having their opposite poles arranged in spaced relation to each other equal to the distance between poles of each of the individual magnets, and a plurality of similarly arranged magnets in said jamb, the poles of each magnet in the jamb being aligned with opposite poles of said magnets in the door when the door is in latched condition, a slide bar on which the magnets in the jamb are mounted, the poles of adjacent magnets in the door and the jamb being reversed upon sliding movement of said bar.

3. In a magnetic door latch of the class described, the combination of a pivotally mounted door, a jamb for said door, a plurality of stationarily mounted magnets in said door having their opposite poles arranged in spaced relation to each other equal to the distance between poles of adjacent individual magnets, and a plurality of similarly arranged magnets in said jamb, slidably mounted therein, aligned with said magnets in said door, whereby, poles of adjacent magnets in said jamb and said door may be reversed, a bar on which said slidably mounted magnets are secured, said bar having a foot pedal connected therewith projecting outwardly below said door.

4. In a magnetic door latch of the class described, the combination of a pivoted door, a cabinet to which said door is pivoted, a plurality of permanent magnets stationarily mounted in said door in a row having their adjacent poles spaced equal to the distance between poles of the individual magnets, a slide bar in said cabinet aligned with the poles of said magnet, and secondary magnets having their poles similarly arranged in equally spaced relationship to each other on said slide bar adjacent said first mentioned magnets, whereby, attraction of said door to said cabinet is caused by magnetic attraction of said first and second magnets toward each other and repulsion of said magnets on said door from said magnets in said jamb may be accomplished by sliding said bar equal to the distance between poles of said magnets.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,093,317	Gates	Sept. 14, 1937
2,252,144	Taylor et al.	Aug. 12, 1941
2,288,688	Dubilier	July 7, 1942

FOREIGN PATENTS

Number	Country	Date
145,325	Germany	Dec. 30, 1902
573,454	Great Britain	Nov. 21, 1945