Aug. 3, 1937. G. M. ARRAGG 2,088,565

ELECTROMAGNET

Original Filed Aug. 3, 1933

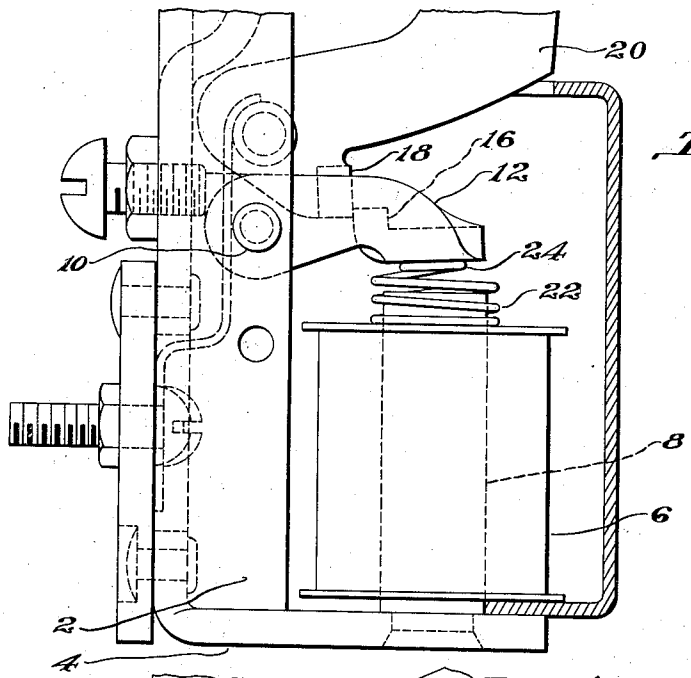

Fig. 1

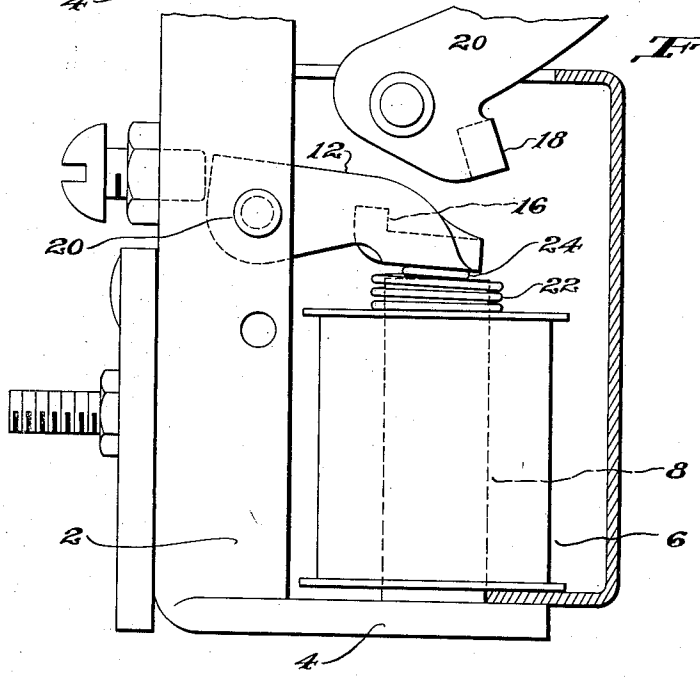

Fig. 2

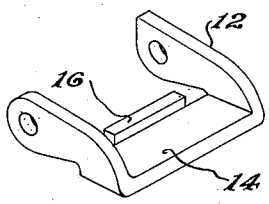

Fig. 3

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UNITED STATES PATENT OFFICE

2,088,565

ELECTROMAGNET

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Original application August 3, 1933, Serial No. 683,438, now Patent No. 2,044,238, June 16, 1936. Divided and this application January 18, 1936, Serial No. 59,757

2 Claims. (Cl. 175—336)

The present invention relates to electromagnets and more particularly to electromagnet and armature assemblies of the type disclosed in my co-pending application Serial No. 683,438, filed August 3, 1933, now Patent No. 2,044,238, granted June 16, 1936, of which this application is a division.

The principal object of the present invention is to provide an electromagnet for attraction of an armature, having provision for prevention of sticking of the armature after de-energization of the magnet. To this end, the present invention comprises the apparatus hereinafter described and particularly defined in the claims.

In the accompanying drawing, Fig. 1 is a side elevation of the preferred mechanism, showing the armature in normal or retracted position; Fig. 2 is an elevation showing the armature in attracted position; and Fig. 3 is a perspective view of the armature.

The invention is herein illustrated and described as embodied in a latch mechanism for a spinning frame stop motion of the type disclosed in my co-pending application above referred to, only so much of the latch mechanism being shown as is necessary for an understanding of the present invention.

The main frame 2 has a base 4 on which is mounted an electromagnet 6 having a core 8. The core is secured at the bottom to the base 4 and protrudes at the top from the magnet coil. Pivoted in the frame at 10 is an armature 12 which, as shown in Fig. 3, has a plate 14 to be attracted by the magnet. The plate has a projection 16 to engage the foot 18 of a lifter arm 20.

Surrounding the protruding upper end of the core 8 is a spring 22 of non-magnetic material, such as phosphor bronze, which engages the armature and is adapted to return the armature to retracted position when the magnet is de-energized. The spring is provided at the top with a loop 24 of smaller diameter than the core. When the armature is attracted, it is prevented from contacting the core by virtue of the interposed loop, so that upon subsequent de-energization of the magnet, the armature is free to retract under the influence of the spring.

The parts are shown in normal position in Fig. 1, the arm 20 being latched by the armature. In Fig. 2, the armature is shown attracted by the magnet whereby the arm 20 is released. Upon de-energization of the magnet, the armature is returned to its position of Fig. 1 in readiness for resetting of the arm 20.

Although the invention has been described as embodied in a latch for a stop motion, it will be understood that the invention is not limited to such use by may be applied to other types of apparatus.

The invention having been thus described, what is claimed is:

1. The combination with an electromagnet having a protruding core and an armature, of a coil spring of non-magnetic material surrounding the core and engaging the armature to restore the armature to retracted position upon de-energization of the magnet, and having its end portion overlying the core to prevent contact of the armature with the core when the armature is attracted.

2. The combination with an electromagnet having a protruding core and an armature, of a coil spring of non-magnetic material surrounding the core and engaging the armature to restore the armature to retracted position upon de-energization of the magnet, and having a loop of the coil of smaller diameter than the core and overlying the core to prevent contact of the armature with the core when the armature is attracted.

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