

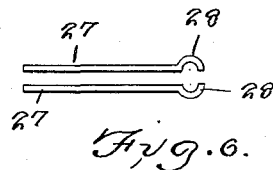
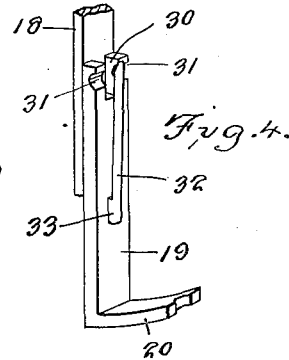
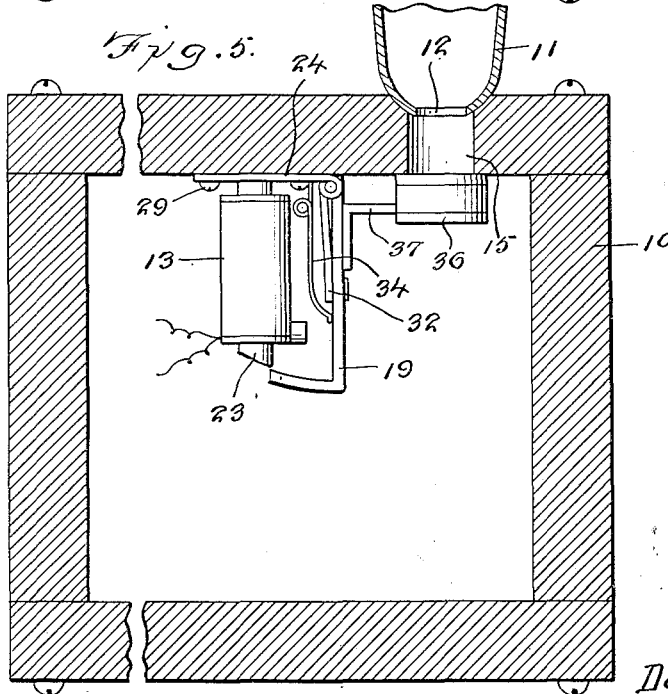
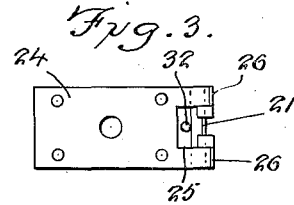
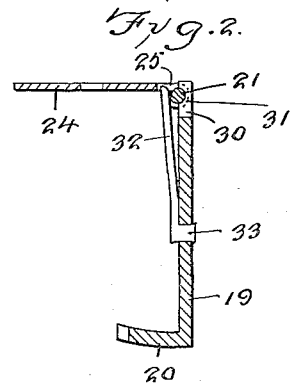
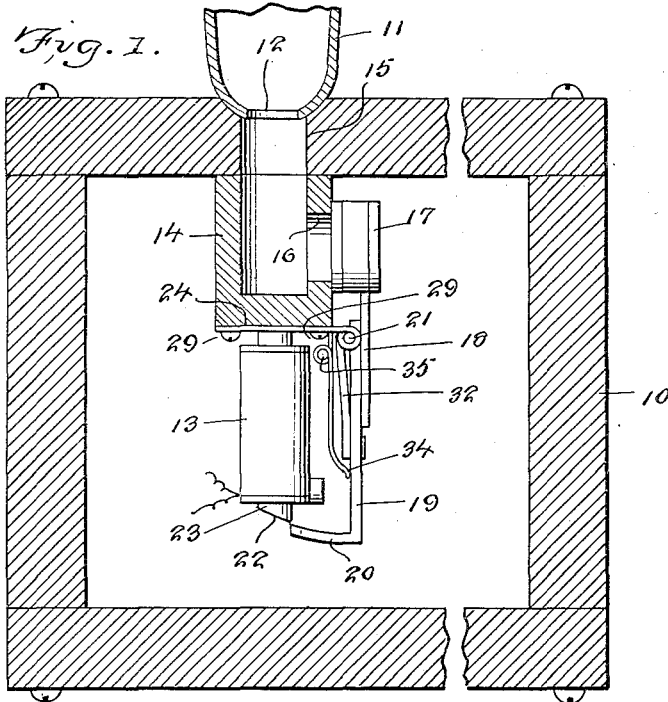
May 9, 1939.

D. MARR

2,158,010

MAGNET FOR ORGANS

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# UNITED STATES PATENT OFFICE

2,158,010

## MAGNET FOR ORGANS

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Application January 24, 1938, Serial No. 186,687

### 1 Claim. (Cl. 175—345)

This invention relates to magnets for organs and has for an object to provide a magnet of this character wherein the armature may be removed by a straight downward pull.

5 A further object is to provide an electro-magnet for organ actions adapted to be responsive to relatively weak currents for opening the valve against usual air pressure.

10 A further object is to provide a device of this character which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

15 With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

20 In the accompanying drawing forming part of this specification,

25 Figure 1 is a cross sectional view through an organ wind chest and showing a magnet coil, armature and valve constructed in accordance with the invention.

30 Figure 2 is a longitudinal sectional view through the armature and hinge and showing the pin from which the armature and valve may be detached by straight line downward pull.

Figure 3 is a plan view of the parts shown in Figure 2.

35 Figure 4 is a detail perspective view of the armature and leaf spring for yieldably holding the armature in place.

40 Figure 5 is a cross sectional view through the wind chest of an organ showing a modified form of armature, the same carrying the valve parallel with the armature instead of in alignment with the armature shown in Figure 1.

Figure 6 is a side elevation of a modified form of hinge for the armature.

45 Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a wind chest for holding a series of valve actions adapted to control the flow of air to the pipes 11. These pipes are mounted at their lower ends on the wind chest and are provided with ports 12 for conducting air to respective pipes.

50 In one embodiment of the invention I provide an electro-magnet 13 for each pipe, the electro-magnet being secured to the bottom of a casing 14 which is open at the top and communicates

with the opening 15, which supplies air from the wind chest to the respective pipe through the port 12. The casing collects dust and dirt. The casing is provided in one side with a port 16 which is controlled by a valve having a stem 18 extending parallel with the casing 14.

5 The valve stem 18 is secured to an armature 19 which extends longitudinally of the electro-magnet 13 and is provided with an arcuate free end 20 arranged concentric with a pivot pin 21 of the armature so as to travel across the beveled end 22 of the electro-magnet core 23.

10 As best shown in Figure 3, the hinge plate 24 may be formed of a single blank of metal having one end provided with a longitudinal slot 25 and having the ends on each side of the slot deformed to provide hinge eyes 26 which receive the above mentioned pivot pin 21. However, the hinge plate may be formed of two identical blanks 27, as best shown in Figure 6, the blanks having half-round complementary ends 28 which form the eyes. The hinge plate is secured to the bottom of the casing 14 by screws 29 or other connectors.

15 By referring to Figure 4 it will be seen that the armature 19 is provided at the upper end with a slot 30 and on each side of the slot the upper end of the armature is grooved as shown at 31, these grooves being disposed in alignment to embrace one side of the pivot pin 21. A leaf spring 32 is secured at the lower end 33 to the armature and the upper end of the leaf spring projects over the slot 30 and presses against the opposite side of the pivot pin 21. Thus by straight line downward movement the armature may be detached from the pivot pin to promote inspection and repairs. No screws or other connectors are required to pivotally and detachably mount the armature in place. The armature may be secured to the valve stem 18 in any preferred manner.

20 A leaf spring 34 bears with its lower end against the armature 19 to hold the armature in neutral position. The leaf spring is provided with a coil 35 near the upper end and at the upper end is bent at a right angle and secured to the hinge plate 24 in any preferred manner.

25 When the coil of the electro-magnet is energized the armature 19 will be attracted by the core 23 and rock the valve 17 open. Upon the magnet becoming de-energized the leaf spring 34 will immediately return the armature to neutral position and close the valve 17.

30 A modified form of the invention is shown in Figure 5. In this modified form of the invention all of the parts above described are the same as the parts described in Figure 1 with the exception

that the valve 36 is provided with a stem 37 of right angular contour, the free end of which is secured to the armature 19 of the electro-magnet 13. In this modified form of the invention the dust collector 14 is dispensed with and the hinge plate 24 is secured direct to the underneath face of the top of the wind chest by the screws 29.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

The combination of an electro-magnet, a hinge plate for mounting the magnet having spaced hinge eyes in the free end, a pivot pin in said hinge eyes, an armature for the electro-magnet having spaced projections at one end provided with grooves receiving one side of said pivot pin, and a spring on the armature bearing against the other side of said pin to permit of the armature being detached by straight line movement longitudinally of the electro-magnet.

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