

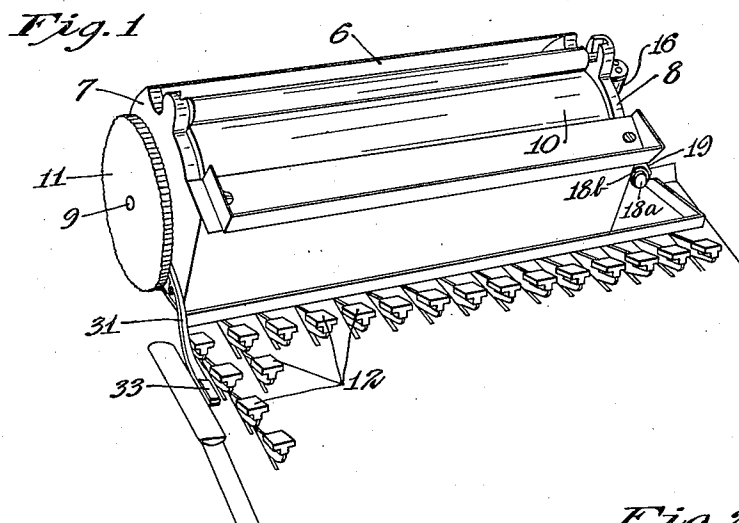
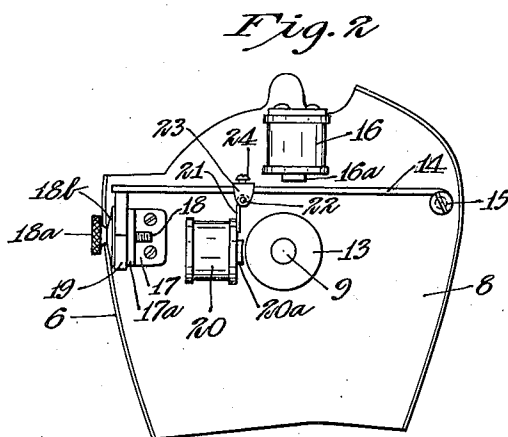
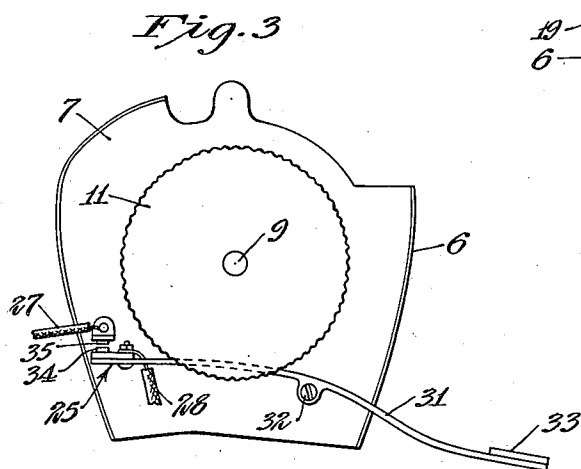
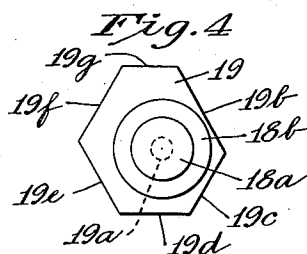
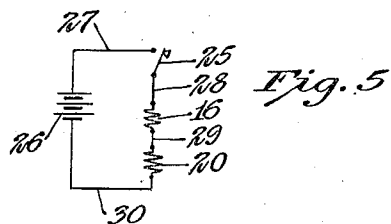
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ELECTROMECHANICAL OPERATOR FOR COPY HOLDERS

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ELECTROMECHANICAL OPERATOR FOR
COPY HOLDERS

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4 Claims. (Cl. 74-142)

My invention relates to copyholders and particularly to operating mechanism therefor.

In use of copyholders in connection with operation of keyboard-equipped machines such as typewriters, type-casting machines and the like, it is essential that advancing of the copy matter may be accomplished rapidly and easily and with minimum shifting of the operator's hands from their normal positions over the keyboard. It is also necessary that the copy matter be advanced each time through a suitable distance and that the copyholder operating means be adjustable to provide for various distances of advance.

An object of my invention is to provide a copyholder operating mechanism which may be operated by a light touch on a control element adapted for placement in closely adjacent relation with the keys of a keyboard operated machine.

Another object is to provide such a mechanism of an electrically controllable nature.

Still another object is to provide such a mechanism arranged for rapid movement of a copyholder without subsequent coasting thereof.

Yet another object is to provide such a mechanism having quickly and easily operable means for adjustively altering the distance through which each operation will advance the copy matter.

A further object is to provide such mechanism of light, compact, rugged, dependable and inexpensive construction.

These and other objects and advantages of the invention will more fully appear in the following description made in connection with the accompanying drawing, in which like reference characters refer to similar parts throughout the several views, and, in which:—

Fig. 1 is a perspective view of a portion of the keyboard of a Linotype line-casting machine with an embodiment of my invention associated therewith;

Fig. 2 is an end view of the embodiment of my invention shown in Fig. 1 taken from the right thereof as viewed in Fig. 1;

Fig. 3 is an end view taken from the left;

Fig. 4 is a detail view of a certain part of the device; and

Fig. 5 is an electrical connection diagram of the device.

My improved copyholder operating mechanism is shown in the drawing combined with a copyholder similar, except as regards the operating mechanism, to my copyholder illustrated and described in my Patent No. 2,006,609, issued July 2, 1935, and entitled "Copyholder".

My electrical copyholder operating device is shown incorporated in a copyholder having an open topped casing 6 with left and right hand end walls 7 and 8 in which is journaled a shaft 9 carrying a copyholding drum 10 disposed within

the casing 6. The left-hand end of the shaft 9 is provided with a knob 11. The casing 6 is shown in Fig. 1 associated with a Linotype machine keyboard having keys 12.

The drum carrying shaft 9 is provided at its right-hand end with a cylindrical body or collar 13 formed of suitable magnetic material such as iron or the like. As shown in Fig. 2, an armature 14 is horizontally disposed a moderate distance above the cylindrical member 13 and is mounted at its rear end on a pivot pin 15 projecting from the end wall 8 of the casing 6. Obviously the armature 14 is arranged for swinging movement upwardly and downwardly. Above the armature 14 an electromagnet 16 is mounted on the end wall 8 with its core or pole 16a disposed above the medial portion of the armature 14, for the purpose of raising the armature 14 when the electromagnet 16 is energized. Means is provided for determining the lower limit of movement of the armature 14 and thus also determining the distance through which the armature 14 can move. This limiting means is preferably adjustable so as to provide for various distances of movement of the armature 14. A bracket 17 is mounted on the forward portion of the end wall 8 below the forward end of the armature 14. The bracket 17 includes an outwardly projecting portion 17a which is apertured and internally screw threaded. A screw 18, having preferably a knurled head 18a and a flange 18b immediately inwardly of the head 18a, is screw-threadedly mounted in the aperture of the bracket 17 so as to provide for clamping a suitable object between flange 18b and the projecting leg 17a of the bracket 17. An element 19 illustrated in Fig. 4 is centrally apertured for projecting of the screw 18 therethrough. The element 19 is mounted by means of the aperture 19a therethrough on the screw 18 between the flange 18b and the leg 17a of the bracket 17. The element 19 has a series of peripheral portions thereof 19b, 19c, 19d, 19e, 19f, and 19g disposed at various respective distances from the aperture 19a. The normally tightened screw 18 may be loosened and the element 19 turned so that any desired one of the respective above mentioned peripheral portions of the element 19 may serve as a stop engaging the lower side of the free end of the armature 14 whereby the distance of travel of the armature 14 may be adjustably selected. The screw 18 is, of course, tightened to clamp the element 19 in any one of the respective positions thereof.

Means is provided in association with the armature 14 for engaging the periphery of the cylindrical magnetic member 13. For this purpose an electromagnet 20 is disposed forwardly of the member 13 with its core or pole 20a closely adjacent said periphery so as to attract and engage the same. The electromagnet 20 is provided at

its upper side with an element 21, projecting upwardly and at its upper end pivotally mounted on a pin 22 carried by a clip 23 movable longitudinally of the armature 13, and arranged to be secured in any desired adjusted position on the armature 14 by means of a set screw 24. The pivotal support of the electromagnet 20 is so arranged that the electromagnet 20 is free to swing toward and away from the magnetic member 13 in a direction substantially radially thereof. The clip 23 should normally be so positioned on the armature 14 that the pole 20a of the electromagnet 20 will be only very slightly spaced from the periphery of the magnetic member 13. When the electromagnet 20 is electrically energized so as to attract and engage the magnetic member 13, it should be obvious that the upward movement of the armature 14 will shift the pole 20a in a direction substantially circumferentially with respect to the member 13 so as to rotatively move the member 13 through a predetermined angle. When such movement has been completed and the electromagnet 20 is still energized, it should be apparent that the pole 20a will function as a brake to halt rotation of the magnetic member 13 and thus prevent coasting of the same. As illustrated in the connection diagram of Fig. 5, the electromagnets 16 and 20 may be connected in series through a switch 25 to a suitable source of electrical energy such as a battery 26 by means of electrical conductors 27, 28, 29 and 30.

The switch 25 should, of course, be of such nature as to be easily operated from a position closely associated with the keys 12 of a keyboard operated machine with which my device is used. For this purpose I provide a double ended lever 31 pivotally mounted on the end wall 7 of the casing 6 by suitable means such as the pivot screw 32 and carrying a finger piece 33 at its forward end situated closely adjacent the keys 12 as shown in Fig. 1. The rear portion of the double armed lever 31 carries thereon an electrical contact 34 insulated therefrom and connected to one of the wires of the circuit of Fig. 5 such as the wire 28. For cooperation with the contact 34 another contact 35 is insulatedly mounted on the end wall 7 thereabove and may be connected to another wire of the circuit of Fig. 5 such as the wire 27. It should be apparent that downward pressure on the finger piece 33 will cause engagement of the contacts 34 and 35 to simultaneously energize the electromagnets 18 and 20, whereupon the pole 20a will attract and engage the periphery of the magnetic member 13, and the pole 16a of the electromagnet 16 will raise the armature 14 to rotatively progress the magnetic member 13 through a predetermined angle determined by the selected position of the stop element 19. In normal operation of the device the finger piece 33 is held in its depressed position for a sufficient length of time to enable completion of the movement of the armature 14, pole 20a and magnetic member 13 and provide for the previously described braking effect of the pole 20a on the magnetic member 13.

It is apparent that I have invented a simple, compact, inexpensive, and reliable copyholder operating mechanism capable of convenient and rapid operation from a point closely associated with the keys of a keyboard operated machine. It also should be apparent that my electromechanical operating device is readily adaptable for

use in connection with many structures other than copyholders of the type illustrated.

It will, of course, be understood that various changes may be made in the form, details, proportions and arrangements of the parts without departing from the scope of my invention.

What is claimed is:

1. Electromechanical apparatus including a rotatable body, a cylindrical magnetic member connected co-axially with said body to rotate therewith, an electromagnet having a pole thereof situated closely adjacent the periphery of said cylindrical member for attracting and engaging the same, an armature by which said pole is carried with freedom for movement substantially radially of said cylindrical member, said armature being mounted for movement thereof such as to carry said pole in a direction extending substantially circumferentially of said cylindrical member, electromagnetic means for imparting said movement to said armature, and means for controlling electrical energization of said electromagnet and said electromagnetic means.

2. Electromechanical apparatus including, a rotatable body, a cylindrical magnetic member connected co-axially with said body to rotate therewith, an electromagnet, an armature associated with said electromagnet to be deflected in response to energization thereof, a second electromagnet positioned for attracting and engaging the periphery of said member and solely supported by said armature with freedom for movement substantially radially of said member, said armature being deflectible in such direction that said second electromagnet will be shifted substantially circumferentially of said member responsive to energization of said first mentioned electromagnet, and means operable to produce electrical energization of said electromagnets.

3. Electromagnetic apparatus including, a body rotatable about a horizontal axis, a generally cylindrical, magnetic member co-axially connected with said body for rotation therewith, a substantially horizontally extending armature mounted at one of its ends for vertical swinging movement and disposed with its medial portion situated above said member, stop means limiting downward movement of said armature, a first electromagnet situated above said armature for deflecting the same upwardly responsive to electrical energization of said electromagnet, a second electromagnet supported by and disposed below said armature and normally situated closely adjacent the periphery of said member for attraction of and engagement of the same, said second electromagnet being swingably carried by said armature for freedom for movement toward and away from said member substantially radially thereof, and means operable to produce co-incidental electrical energization of said electromagnets.

4. Electromechanical apparatus including, a rotatably mounted magnetic member, an electromagnet situated for magnetically adhering to said member and being movable radially thereof for engagement with and disengagement from the same, electromagnetic means operable when energized to shift said electromagnet generally circumferentially of said member, and means for electrically energizing said electromagnet and said electromagnetic means.

RALPH V. STREETER.