Nov. 25, 1941. P. CATUCCI 2,264,129

STOPPING DEVICE

Filed Sept. 5, 1940

Fig. 2

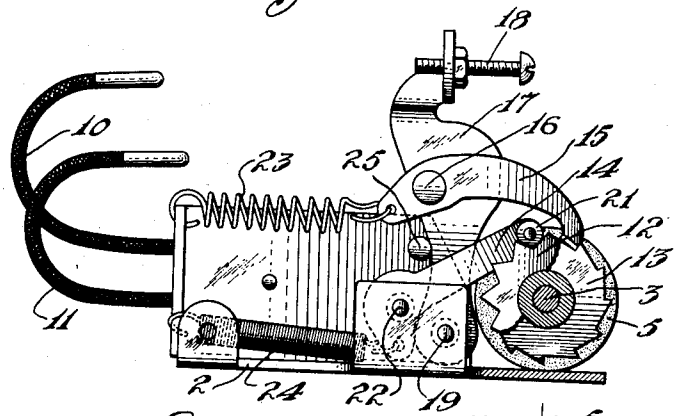


Fig. 4

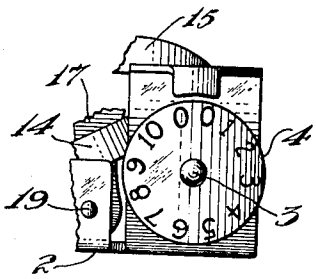
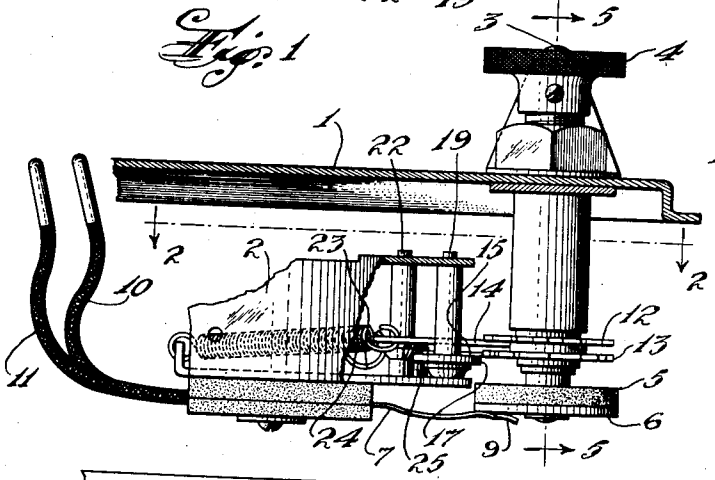


Fig. 1



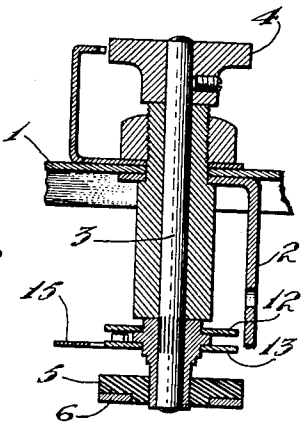


Fig. 5

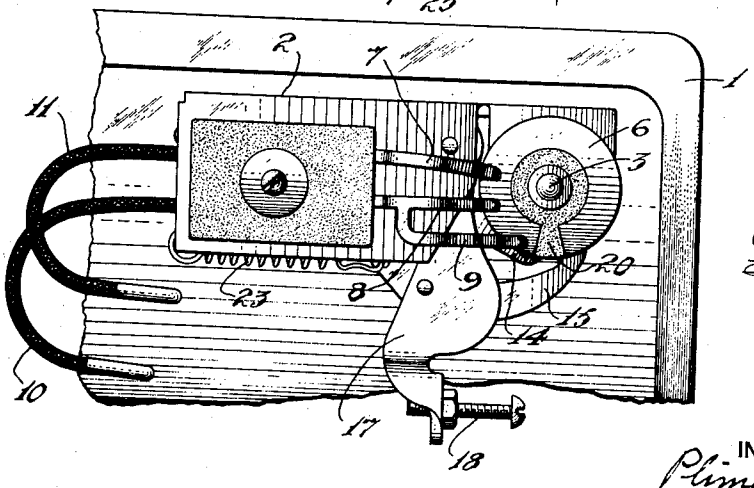


Fig. 3

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STOPPING DEVICE

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6 Claims. (Cl. 200—52)

This invention relates to automatic stopping devices which can be set to stop a machine after the performance of a predetermined number of operations.

In phonographs designed to automatically play a plurality of records consecutively, it is necessary to provide some means for stopping the machine after playing the desired number of records. Heretofore, such stopping devices have been somewhat complicated and formed a part of the phonograph mechanism which necessitated that the operation of the stopping device be dependent upon the proper operation of other parts of the phonograph.

It is an object of this invention to provide a stopping device which can be set to automatically stop a machine after the performance of a predetermined number of operations, and which device is independent in its operation of the machine being controlled.

A further object is the provision of an automatic stopping device which is especially adapted for use upon phonographs capable of playing a predetermined number of records consecutively. The device herein disclosed can be set so that after the playing of the predetermined number of records, the phonograph will be automatically stopped. The device can be readily attached to any phonograph without interfering with the operation of the phonograph.

A further object is the provision of an automatic stopping device which can be readily attached to machines of many types and set to stop the operation of a machine after the machine has made a predetermined number of movements.

These and other advantageous objects, which will later appear are accomplished by the simple and practical construction and arrangement of parts hereinafter described and exhibited in the accompanying drawing forming part hereof, and in which:

Fig. 1 is an elevational view of a device embodying the invention,

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1,

Fig. 3 is a bottom view of the device,

Fig. 4 is a plan view of a portion of the device, and

Fig. 5 is a sectional view taken on line 5—5 of Fig. 1.

Referring to the drawing, in Fig. 2 is shown an automatic stopping device which can be set to stop a machine after it has performed a predetermined number of operations. The device comprises a base plate 1 having depending therefrom a supporting bracket 2. A shaft 3 passes through base plate 1 and has attached thereto above the base plate 1, a knob 4 having marked thereon a plurality of numbers to indicate the number of operations to be performed before the machine is stopped. The opposite end of the shaft 3 is provided with a disc of insulating material 5 which carries thereon a metallic contact ring 6 having a break 20 therein. This ring engages a pair of contact fingers 7 and 8, the finger 8 having connected thereto an additional finger 9. The fingers 7 and 8 are connected by cords 10 and 11 to an electrical circuit in which is included the operating means of the machine to be automatically controlled.

Attached to shaft 3 are a pair of ratchet wheels 12 and 13, wheel 12 engaging a roller 21 on arm 14 pivoted at 22 and controlled by spring 24 to prevent rotation accidentally of the shaft while the ratchet wheel 13 engages the pawl 15, controlled by spring 23 and pivotally mounted at 16 to an arm 17 carrying an adjusting screw 18 which is adapted to engage a portion of the machine being controlled after the completion of each operation. The arm 17 is pivoted at 19 (see Fig. 2). When the screw 18 is engaged by a portion of the machine being controlled, it moves the arm 17 to cause the pawl 15 to move the ratchet wheel 13 one notch. The arm 17 is stopped in one direction by pin 25. This advances the position of the fingers 7 and 8 on the contact ring 6. This periodic advancing of the fingers 7 and 8 continues until the desired number of operations of the machine have been performed at which time the finger 7 will lie on the insulating material 5 in the break 20 in the contact ring 6, and thus break the electrical circuit to stop the operation of the machine.

By forming the contact finger 8 with an additional spaced finger 9, the break in the circuit will occur only when the contact finger 7 reaches the break in the ring 6. The space between the fingers 8 and 9 is larger than the width of the break 20 in contact ring 6 and consequently either finger 8 or finger 9 will be in engagement with the contact ring 6 at all times. By means of this arrangement, the circuit will be broken only when finger 7 is in the space 20.

When used in connection with a phonograph, the stopping device is positioned so that it will engage some part associated with the tone arm of the phonograph. As the tone arm is moved outwardly after the completion of the playing of a record, the members associated with the

tone arm engage the screw 18 to move lever 17 to advance the contact ring 6 one notch. The stopping device can be kept set to play a predetermined number of records automatically by adjusting the initial position of the contact ring with reference to fingers 7 and 8. This adjustment can be made by means of the knurled knob 4.

From the above description it will be seen that there has been provided a simple and effective device for automatically stopping a machine after the performing of a predetermined number of operations. The device can be readily attached to practically any machine without requiring alterations, or in any manner affecting the operation of the machine.

The foregoing disclosure is to be regarded as descriptive and illustrative only and not as restrictive or limitative of the invention of which obviously embodiments may be constructed, including many modifications, without departing from the spirit and scope of the invention herein set forth and denoted in the appended claims.

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

1. A device for automatically stopping a machine after the performing of a predetermined number of operations, comprising a shaft, a ratchet wheel attached to said shaft, a pivotally mounted pawl engaging said ratchet wheel, said pawl being positioned so that it will be engaged at the completion of each operation by a member of the machine being controlled, a disc of insulating material attached to the shaft carrying the ratchet wheel, an arcuate contact ring with a break therein carried by the disc of insulating material, a pair of contact fingers engaging said contact ring, said contact fingers being in an electrical circuit including the machine being controlled, a notched wheel on said shaft for setting the position of the contact ring relative to the contact fingers, and an arm engaging the notched wheel to maintain the wheel in a set position.

2. A device for automatically stopping a machine after the performing of a predetermined number of operations, comprising a shaft, a ratchet wheel attached to said shaft, a pivotally mounted arm having an adjusting screw at one end thereof, a pawl pivoted to said arm and engaging said ratchet wheel, said adjusting screw being positioned so that it will be engaged at the completion of each operation by a member of the machine being controlled, a disc of insulating material attached to the shaft carrying the ratchet wheel, an arcuate contact ring with the break therein carried by the disc of insulating material, a pair of contact fingers engaging said contact ring, said contact fingers being in an electrical circuit including the machine being controlled, a notched wheel on said shaft for setting the position of the contact ring relative to the contact fingers, and an arm engaging the notched wheel to maintain the wheel in a set position.

3. A device for automatically stopping a machine after the performing of a predetermined number of operations, comprising a shaft, a ratchet wheel attached to said shaft, a pivotally mounted pawl engaging said ratchet wheel, said pawl being positioned so that it will be engaged at the completion of each operation by a member of the machine being controlled, a disc of insulating material attached to the shaft carrying the ratchet wheel, an arcuate contact ring with a break therein carried by the disc of insulating material, a pair of contact fingers engaging said contact ring, said contact fingers being in an electrical circuit including the machine being controlled, a notched wheel on said shaft for setting the position of the contact ring relative to the contact fingers, and means to hold said notched wheel in a set position.

4. A device for automatically stopping a machine after the performing of a predetermined number of operations, comprising a shaft, a ratchet wheel attached to said shaft, a pivotally mounted pawl engaging said ratchet wheel, said pawl being positioned so that it will be engaged at the completion of each operation by a member of the machine being controlled, a disc of insulating material attached to the shaft carrying the ratchet wheel, an arcuate contact ring with a break therein carried by the disc of insulating material, a pair of contact fingers engaging said contact ring, said contact fingers being in an electrical circuit including the machine being controlled, a notched wheel on said shaft for the setting the position of the contact ring relative to the contact fingers, one of said contact fingers being divided into two parts spaced from each other a distance greater than the width of the break in the contact ring.

5. A device for automatically stopping a machine after the performing of a predetermined number of operations, comprising a shaft, a ratchet wheel attached to said shaft, a pivotally mounted pawl engaging said ratchet wheel, said pawl being positioned so that it will be engaged at the completion of each operation by a member of the machine being controlled, a disc of insulating material attached to the shaft carrying the ratchet wheel, an arcuate contact ring with a break therein carried by the disc of insulating material, a pair of contact fingers engaging said contact ring, said contact fingers being in an electrical circuit including the machine being controlled, and means for setting the contact ring in various positions relative to the contact fingers, one of said contact fingers being divided into two parts spaced from each other a distance greater than the width of the break in the contact ring.

6. In a device for automatically stopping a machine after the performing of a predetermined number of operations, a disc of insulating material, an arcuate contact ring with a break therein carried by said disc, and a pair of contact fingers engaging said contact ring, one of said contact fingers being divided into two parts spaced from each other a distance greater than the width of the break in the contact ring.

PLINY CATUCCI.