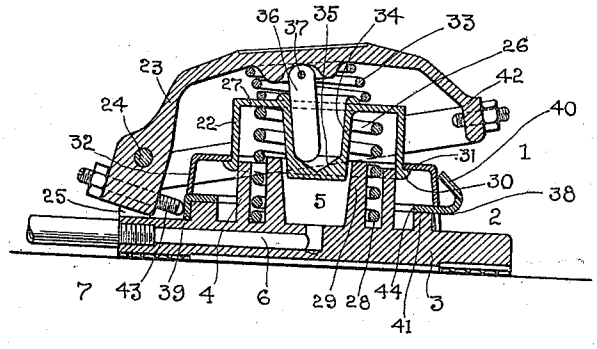
C. SCHIFFL.

CONTROLLING DEVICE.

APPLICATION FILED JULY 20, 1910.

1,222,034.

Patented Apr. 10, 1917.



Witnesses:

Robert Sutphen

Dyer Smith

Inventor:

Charles Schiffl

by Francis T. Chase

his Atty.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES SCHIFFL, OF WEST ORANGE, NEW JERSEY, ASSIGNOR TO NEW JERSEY PATENT COMPANY, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CONTROLLING DEVICE.

1,222,034. Specification of Letters Patent. Patented Apr. 10, 1917.

Application filed July 20, 1910. Serial No. 572,796.

To all whom it may concern:

Be it known that I, CHARLES SCHIFFL, a citizen of the United States, and a resident of West Orange, in the county of Essex and State of New Jersey, have made a certain new and useful Invention in Controlling Devices, of which the following is a description.

My invention relates to devices for controlling the starting and stopping of mechanism, particularly phonographs. In the operation of phonographs used for dictation purposes, it is necessary to start and stop the machine a great many times. My invention relates to a pneumatic foot operated device of this character, and my object is to improve such devices in various ways to be hereinafter more fully pointed out and to render the same efficient, durable and compact. Other objects of my invention reside in the construction of parts and combinations of elements to be hereinafter more fully pointed out and particularly described in the appended claims.

My device consists essentially of a coacting piston or plunger and cylinder, foot-operated in one direction to cause by pressure the operation of the piston in a cylinder underneath the phonograph to start the machine, the plunger and cylinder moving relatively to each other in the opposite direction upon the release of the foot pressure by means of spring pressure or the like to operate the piston in the cylinder under the machine by suction to stop the phonograph. My improved device is provided with a pivoted member adapted to be operated by the foot of the operator and to press upon the plunger to depress the same to start the phonograph, the latter being stopped by the release of the foot pressure and upward movement of the plunger. In order that stopping may be instantaneous and that the upward movement of the plunger may not be so gradual if the operator's foot should move upwardly very slowly as to prevent the stopping of the machine, I prefer to provide devices by which the plunger will be given a sudden upward jump or impulse to stop the phonograph with certainty regardless of the speed with which the foot operated pivoted member moves upwardly. I also prefer to use a hollow plunger which is mounted to reciprocate upon the outer surface of a stationary coacting cylinder, instead of having the plunger reciprocate inside the cylinder, as is common. By this means, material and weight may be saved in the plunger and other useful effects obtained, as will hereinafter be pointed out. I also preferably provide a device for applying pressure centrally to the plunger and at a point considerably below the center of gravity thereof, so that the same will have no tendency to bind in its movement over the stationary guiding surface. My construction is also preferably so arranged that lubricating material employed between the sliding surfaces cannot find its way into the air passages, and I preferably provide an improved shield for keeping the lubricated surfaces free from dirt. My construction is designed to be low and broad in order that it may be easy to operate and impossible to overbalance.

In order that a clearer understanding of my invention may be had, attention is hereby directed to the accompanying drawings forming part of this specification, and in which the figure represents a vertical central cross section through a pneumatic foot-operated device embodying my invention.

Referring to the drawings, the controlling device represented as a whole by the numeral 1 is provided with a stationary member 2 having a broad circular base 3, adapted to rest upon the floor. A short circular cylinder 4 rises from the base 3 within which is provided chamber 5 connected by passage 6 extending through base 3 with pipe or hose 7 which leads to the starting and stopping cylinder on the phonograph or other mechanism.

Hollow plunger 22 is mounted to reciprocate upon the outer surface of stationary cylindrical portion 4 of the controlling device 1. A broad foot-operated inverted-cup-shaped member 23 extends above the top of plunger 22 and is adapted to be operated by the foot of the operator to depress the plunger to move the same inwardly. Foot-operated member 23 is pivoted adjacent its periphery, as at 24, to bracket 25 rising from base 3 and is arranged to partially inclose the plunger 22 and the parts on the base 2. Plunger 22 is normally held in its upper or outer position by any suitable resilient means, such as the coiled spring 26

interposed between the under side of the top 27 of plunger 22 and stationary member 2 of the device. I prefer to provide a deep continuous groove or recess 28 in the upper surface of stationary cylinder 4 between the outer surface thereof and the chamber 5 in order that lubricating material used upon the outer surface of cylinder 4 may not find its way into chamber 5 and air passage 6. As illustrated, this groove 28 takes the form of a deep annular space, hollow cylinder wall 29 being provided thereby between chamber 5 and the same. I preferably mount the lower end of spring 26 within this annular space 28. Upward or outward movement of plunger 22 is stopped at the proper point by the coaction of a lug or flange 30 formed upon the lower end of the outer surface of plunger 22 with flange 31 of shield 32 which extends upwardly from base 3 and entirely surrounds stationary cylinder 4, thus protecting the latter from dirt, the inner surface of flange 31 of shield 32 contacting the outer surface of cylinder 22.

Pivoted foot piece 23 extends above top 27 of cylinder 22, a light spring 33 being interposed between the two. Pressure is transmitted from foot piece 23 to plunger 22 preferably by the following means:— Plunger 22 has depending centrally from the under side of top 27 thereof a cylindrical or thimble-shaped portion 34 open at the top and having a bottom inside surface 35 slanting toward the center. A rod 36 is pivoted at 37 to the under side of the center of foot piece 23 and hangs within the central aperture of thimble 34, its lower end being rounded and normally resting against the inclined surface 35. By this construction the necessary horizontal movement of the upper central portion of the member 23 relatively to the plunger 22 takes place with substantially no friction. When foot piece 23 is depressed by the foot of the operator, the lower end of member 36 slides down the inclined surface 35 to the center thereof, spring 33 being compressed at the same time, and pressure then applied to plunger 22 to cause the same to move downwardly over the outer surface of cylinder 4, the pressure being applied to the plunger 22 through member 36 in the central vertical axis of the plunger. It also will be noted that the point of application of the force to plunger 22 is considerably below the center of gravity of the plunger and is substantially in line with the lower or forward end of the plunger, the result being that the plunger 22 moves over the outer surface of cylinder 4 without tendency to bind, the plunger practically being pulled downwardly rather than pushed. It should be noted that since foot piece 23 oscillates about a center, considerable pressure would be exerted upon plunger 22 at an angle to the axis thereof if foot piece 23 were allowed simply to press upon the upper surface 27 of the plunger. Or if foot piece 23 were not provided and the foot applied directly to the upper surface 27 of the plunger, there would be considerable tendency to bind. With the present construction, an operator may press his foot upon any part of the circular upper surface of foot piece 23 with the invariable result of imparting pressure to plunger 22 centrally and in such a manner as to prevent binding of the same.

In order that upward or outward movement of the plunger may be sufficiently quick under all circumstances to cause the operation of the starting and stopping mechanism I preferably provide the following devices:—

A horizontally slidable member 38 having at one side a down-turned flange 39 and at the other side an upwardly inclined and rounded flange 40 is slidably mounted upon annular lug 41 of foot piece 23. Slide 38 is in the form of an annulus or ring, the flanges 39 and 40 extending outwardly from the same through openings in shield 32 upon diametrically opposite sides. Foot piece 23 is provided with adjustable set screws or similar devices 42 and 43 adapted to coöperate with flanges 40 and 39 upon ring 38. When foot piece 23 is depressed, screw 42 contacts the inclined surface of flange 40 of the ring 38 moving the same to the left, referring to the drawing, this movement being so timed that the inner circular edge 44 of member 38 moves above lug 30 on plunger 22 as the latter descends, thus latching the plunger in locked position. When the foot pressure is released from member 23, however, the latter moves upwardly to some extent because of the expansion of spring 33 interposed between the foot piece of cover 23 and the top 27 of plunger 22, screw 43 carried by cover 23 moving to the right to force member 38 in the same direction, edge 44 of member 38 moving off of lug 30 on plunger 22 and releasing the same. Thereupon the strong spring 26 operates to move plunger 22 violently upward or outward. Thus, it will be seen that plunger 22 necessarily has a sudden upward movement regardless of how slowly the operator may release his foot pressure upon cover 23.

It will be understood that my invention is not confined to the particular specific embodiment described, but that it is as broad as are the appended claims.

Having now described my invention, what I claim and desire to protect by Letters Patent is:—

1. In a device of the class described, the combination with a cylindrical member and a plunger coacting therewith, of a pivoted inverted cup-shaped member partially in-

closing the said cylindrical member and plunger and adapted to impart relative movement thereto, substantially as described.

2. In a device of the class described, the combination with air compressing means comprising a cylindrical member and a plunger coacting therewith, of a pivoted inverted cup-shaped member partially inclosing the said cylindrical member and plunger and adapted to produce a relative movement in one direction between the same, and resilient means for producing a relative movement in the opposite direction between said cylindrical member and plunger, substantially as described.

3. In a device of the class described, the combination of a stationary member, a movable hollow plunger coacting with said member and provided centrally thereof with a thimble the bottom of which extends to a point substantially in line with the forward end of said plunger, resilient means for resisting movement of said plunger in one direction axially of said stationary member, and means for moving said plunger against the action of said resilient means, said second named means being applied at the bottom of said thimble, substantially as described.

4. In a device of the class described, the combination of a stationary member, a movable hollow plunger coacting with said stationary member and provided centrally thereof with a thimble the bottom of which extends to a point substantially in line with the forward end of said plunger, resilient means for resisting movement of said plunger in one direction axially of said stationary member, and a foot lever for moving said plunger against the action of said resilient means, said foot lever being applied at the bottom of said thimble, substantially as described.

5. In a device of the class described, the combination of a stationary member, a movable plunger coacting with said stationary member, resilient means for resisting movement of said plunger in one direction axially of said stationary member, and a cup-shaped foot lever partially inclosing said stationary member and plunger, and adapted to move said plunger against the action of said resilient means, said lever being applied to said plunger at a point substantially in line with its forward end, substantially as described.

6. In a device of the class described, the combination of a stationary member, a movable hollow plunger coacting with said stationary member, and provided centrally thereof with a thimble, the bottom of which extends to a point substantially in line with the forward end of said plunger, resilient means for resisting the movement of said plunger in one direction axially of said stationary member, and a foot lever for moving said plunger against the action of said spring, said foot lever being provided with bearing means engaging the bottom of said thimble but not secured to the latter, substantially as described.

7. In a device of the class described, the combination of a stationary member and a plunger coacting therewith, means coacting with said plunger to move the same in one direction, resilient means having a constant tendency to move the same in the opposite direction, means for locking said plunger against movement in the last named direction, and means coacting with said first named means to set said locking means in operative position and to release the same, substantially as described.

8. In a device of the class described, the combination of a stationary member and a plunger coacting therewith, means coacting with said plunger to move the same in one direction, resilient means having a constant tendency to move the same in an opposite direction, means for locking said plunger against movement in the last named direction, and means coacting with said first named means to release said locking means, substantially as described.

9. In a device of the class described, the combination of a stationary member, a plunger coacting therewith, said plunger having a lug formed thereon, a sliding latch adapted to move over said lug when said plunger is in its inner position, means for applying inward pressure to said plunger, resilient means for moving said plunger outwardly, and means for moving said latch out of contact with said lug when inward pressure on said plunger is released, substantially as described.

10. In a device of the class described, the combination of a stationary member, a movable plunger coacting with said stationary member, means for locking said plunger in its inner position, resilient means for moving said plunger outwardly, a member for applying pressure to said plunger to move the same inwardly, resilient means between said pressure applying member and said plunger, means coacting with said pressure applying member for setting said latching means in operative position, and means coacting with said pressure applying member for releasing said latching means when said pressure applying member has been moved a substantial distance in the direction permitting outward movement of said cylinder, substantially as described.

11. In a device of the class described, the combination of a stationary member having a cylindrical portion, a plunger coacting with said cylindrical portion, and an inverted cup-shaped member partially inclosing said cylindrical portion and said plun-

ger and adapted to impart a relative movement thereto, said cup-shaped member being pivoted adjacent its periphery to said stationary member, substantially as described.

12. In a device of the class described, the combination with air compressing means comprising a cylindrical member and a plunger coacting therewith, of an inverted cup-shaped member partially inclosing said cylindrical member and plunger and adapted to produce a relative movement in one direction between the same, and resilient means for producing a relative movement in the opposite direction between said cylindrical member and plunger, said cup-shaped member being pivotally connected adjacent its periphery to said cylindrical member, substantially as described.

13. In a device of the class described, the combination of a stationary member, a movable plunger coacting with said stationary member, resilient means for resisting movement of said plunger in one direction axially of said stationary member, and a cup-shaped lever partially inclosing said stationary member and plunger and adapted to move said plunger against the action of said resilient means, said lever being applied to said plunger at a point substantially in line with its forward end and being pivoted adjacent its periphery to said stationary member, substantially as described.

14. In a device of the class described, the combination of a stationary member having a cylindrical portion, a plunger coacting with said cylindrical portion, and an inverted cup-shaped member partially inclosing said cylindrical portion and said plunger and adapted to impart relative movement thereto, said cup-shaped member being pivoted adjacent its periphery to said stationary member and having an anti-frictional bearing connection with said plunger, substantially as described.

15. In a device of the character described, in combination, a movable hollow cylindrical plunger, a stationary cylindrical member with a passageway leading from the interior thereof, said plunger being slidably mounted upon said member, means resiliently resisting the downward movement of said plunger with respect to said member, said plunger having a downwardly extending central cupped portion, a member pivoted to said stationary member and extending above said plunger, and a member pivoted to the under side of said pivoted member, extending down into said cupped portion and adapted to contact the bottom thereof, to transmit downward pressure from said pivoted member to said plunger, substantially as described.

16. In a device of the character described, in combination, a movable hollow plunger, vertically positioned, closed at the top and open at the bottom, and having a central downwardly extending hollow portion open at the top and closed at the bottom, a stationary member comprising a portion having a chamber therein with a passageway leading therefrom, said plunger and portion having a sliding fit, a member pivoted to said stationary member extending above said plunger, means connected to said pivoted member extending down into said downwardly extending portion of said plunger and adapted to bear upon the bottom of the interior thereof, and spring means interposed between said stationary member and said plunger, substantially as described.

17. In a device of the character described, in combination, a base member comprising a vertical cylinder having a chamber therein open at the top with a closed passageway leading from said chamber, the upper face of said cylinder having a deep groove or recess formed therein between said chamber and the outer surface of said cylinder, and a hollow cylindrical plunger open at the bottom and closed at the top, slidably mounted upon the outer surface of said cylinder, substantially as described.

18. In a device of the character described, in combination, a stationary cylindrical member with a passageway leading from the interior thereof, a movable plunger adapted to coact with said member, means resiliently resisting the downward movement of said plunger with respect to said member, means latching said plunger in lowered position, means for applying downward pressure to said plunger, and means for unlatching said plunger after cessation of downward pressure thereon to permit sudden upward movement thereof, substantially as described.

19. In a device of the character described, in combination, a stationary cylindrical member with a passageway leading from the interior thereof, a movable plunger adapted to coact with said member, a member coacting with said plunger to transmit pressure thereto to force the same in one direction, resilient means having a constant tendency to move said plunger in the opposite direction, and means restraining movement of said plunger in said last named direction until said pressure-transmitting member has moved somewhat in the same direction and for then permitting sudden movement of said plunger in said direction, substantially as described.

20. In a device of the character described, in combination, a stationary cylindrical member with a passageway leading from the interior thereof, a movable hollow plunger open at the bottom, slidably mounted upon the outer surface of said member, said plunger having a lug formed thereon, a sliding latch adapted to move over said lug when said plunger is in lowered position,

spring means for moving said plunger upwardly, and means for moving said latch out of contact with said lug when downward pressure on said plunger is released, substantially as described.

21. In a device of the character described, in combination, a stationary cylindrical member with a passageway leading from the interior thereof, a movable hollow plunger open at the bottom, slidably mounted upon the outer surface of said member, said plunger having a lug formed thereon, a sliding latch adapted to move over said lug when said plunger is in lowered position, spring means for moving said plunger upwardly, a foot piece extending above and bearing upon said plunger for transmitting downward pressure thereto, means carried thereby for moving said latch over said lug when said plunger is in lowered position, and means for moving said latch away from said lug after said foot piece has started moving upwardly, substantially as described.

22. In a device of the character described, in combination, a stationary cylindrical member with a passageway leading from the interior thereof, a movable hollow plunger open at the bottom, slidably mounted upon the outer surface of said member, said plunger having a lug formed thereon, a sliding latch adapted to move over said lug when said plunger is in lowered position, spring means for moving said plunger upwardly, a pivoted foot piece extending above said plunger, a spring interposed between said foot-piece and plunger for transmitting downward pressure to said plunger, means carried by said foot piece for forcing said latch over said lug when said plunger is in lowered position, and means carried by said foot piece for forcing said latch away from said lug after said foot piece has moved a certain distance upwardly from its lowest position, substantially as described.

23. In a device of the character described, in combination, a stationary cylindrical member with a passageway leading from the interior thereof, a movable hollow plunger open at the bottom, slidably mounted upon the outer surface of said member, and a stationary guard surrounding said cylindrical member and contacting the outer surface of said plunger, substantially as described.

24. In a device of the character described, in combination, a stationary cylindrical member with a passageway leading from the interior thereof, a movable hollow plunger open at the bottom, slidably mounted upon the outer surface of said member, said plunger having a lug formed upon the outer surface thereof, a stationary guard surrounding said cylindrical member and having an inwardly directed flange contacting the outer surface of said plunger above said lug, and spring means for forcing said plunger upwardly, substantially as described.

This specification signed and witnessed this 14th day of July, 1910.

CHARLES SCHIFFL.

Witnesses:
DYER SMITH,
DELOS HOLDEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."