C. F. HAMILTON.

PHONOGRAPH.

APPLICATION FILED DEC. 30, 1908.

920,134. **Patented May 4, 1909.**

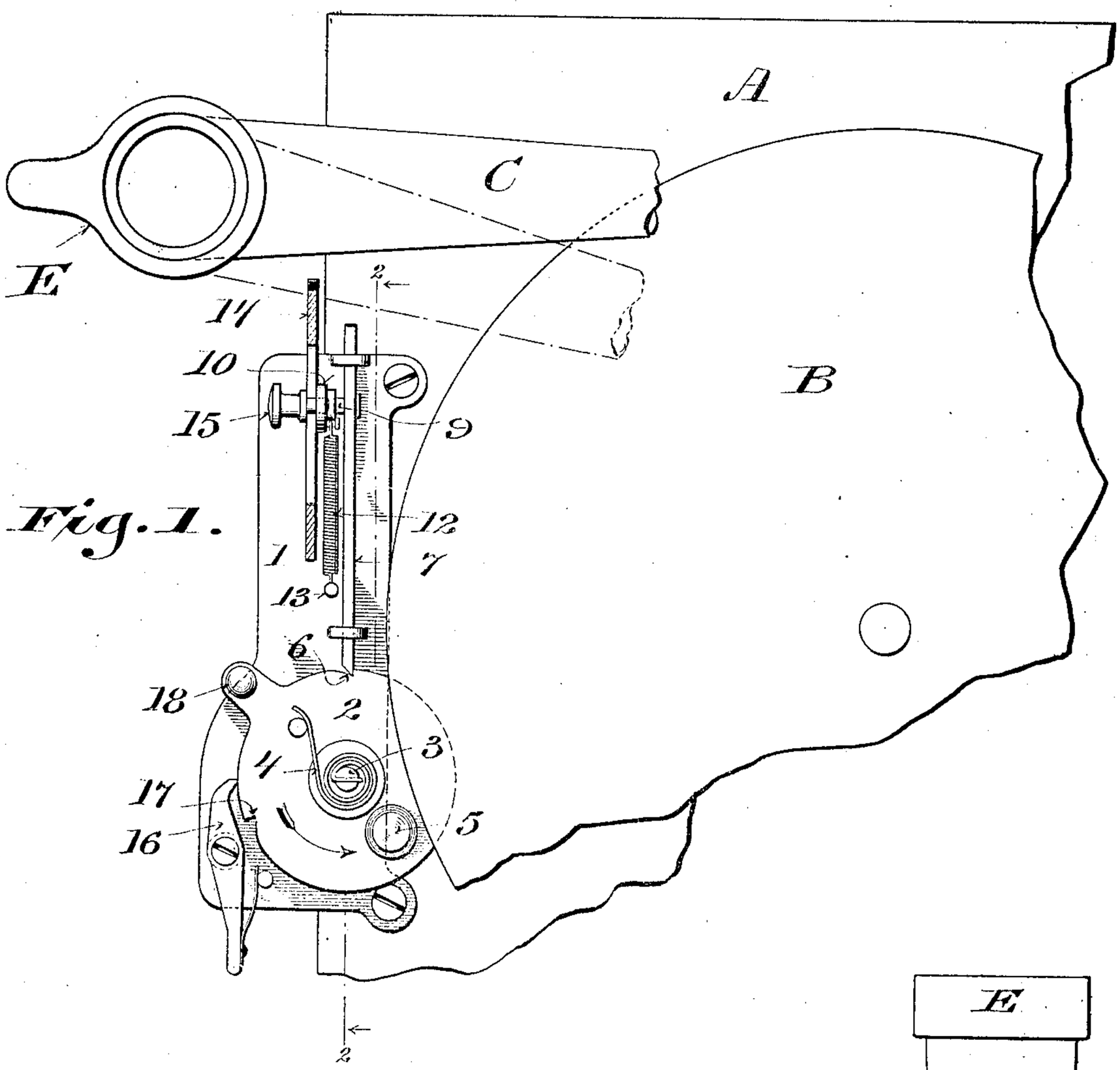

Fig. 1.

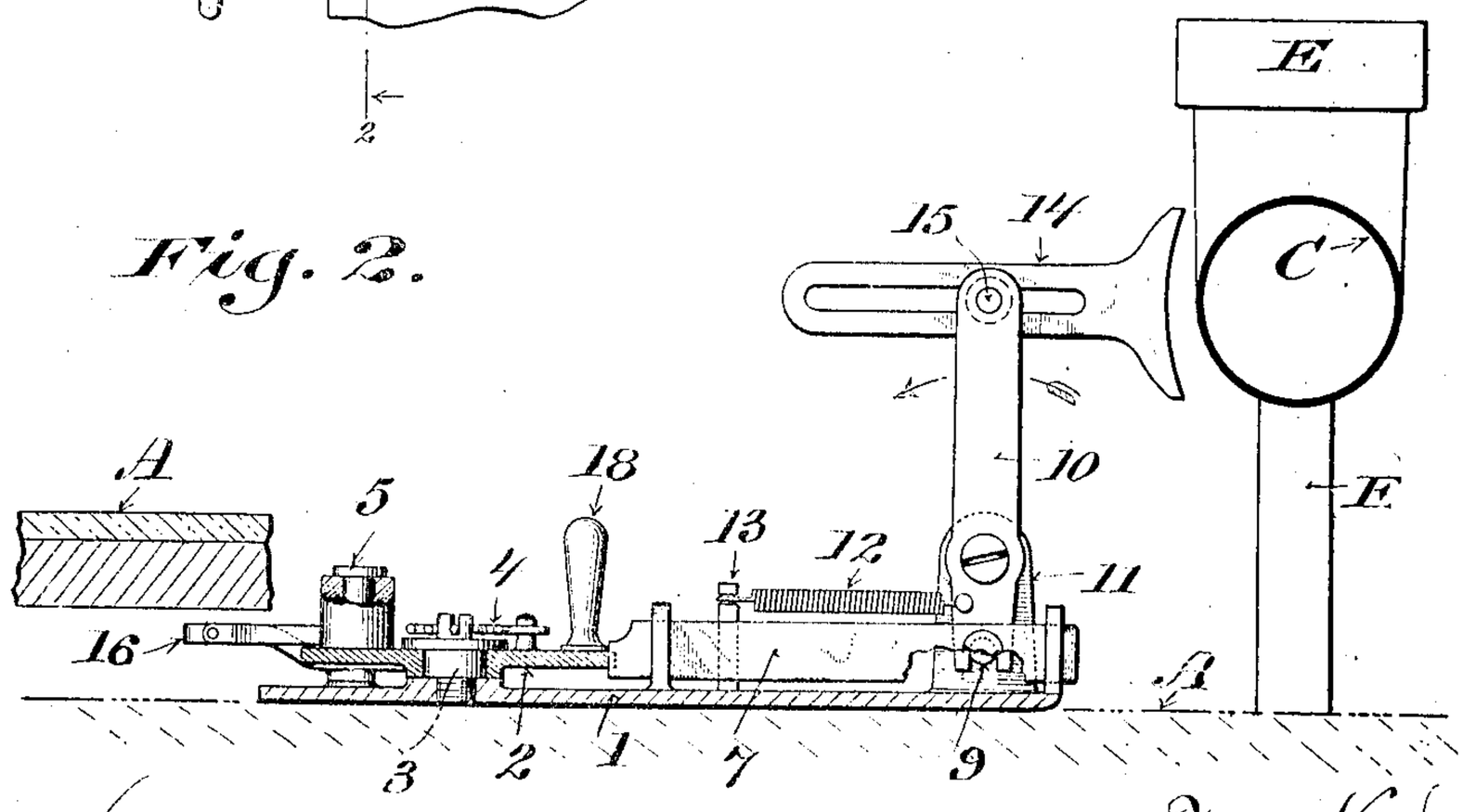

Fig. 2.

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UNITED STATES PATENT OFFICE.

CLAUDE F. HAMILTON, OF ATHENS, WISCONSIN, ASSIGNOR OF ONE-HALF TO JOHN C. NUERNBERG, OF ATHENS, WISCONSIN.

PHONOGRAPH.

No. 920,134. Specification of Letters Patent. Patented May 4, 1909.

Application filed December 30, 1908. Serial No. 470,081.

To all whom it may concern:

Be it known that I, CLAUDE F. HAMILTON, a citizen of the United States, and resident of Athens, in the county of Marathon and State of Wisconsin, have invented certain new and useful Improvements in Phonographs; and I do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention is to provide simple and durable automatic stop-mechanism for disk phonographs or like instruments, the stop-mechanism being controlled by the swinging-arm with which said instruments are provided, whereby the disk is checked against rotation when the swinging-arm has reached the end of the record upon said disk.

The invention therefore consists in certain peculiarities of construction and combination of parts as hereinafter described in connection with the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a plan view of so much of a disk phonograph as is necessary to illustrate its connection with an automatic stop-mechanism, embodying the features of my invention, which stop-mechanism is shown attached to the box of the phonograph with parts broken away and parts in section, to more clearly define the structural features, and Fig. 2, a sectional elevation of the same, as indicated by line 2—2 of Fig. 1.

Referring by characters to the drawings, A indicates a portion of a phonograph-box containing the driving-mechanism of a record-disk B, and 3 indicates the usual swinging-arm, which arm carries the diaphragm-head, (not shown) the arm being swiveled in a standard E attached to the box. Secured to the top of the box A, is a base-plate 1, upon which is revolubly mounted a wrist-plate 2, the latter being trunnioned upon a stud 3, fast in the base-plate, and provided with a kerfed head for the reception of one end of a delicate flat coiled spring 4. The spring is wound under slight tension and its outer end is anchored by a stud which projects from the wrist-plate. A pin 5 extends from the said wrist-plate upon the same approximate plane as the disk B and adjacent its circumferential edge, the pin being provided with a jacket of rubber or other suitable fibrous material constituting a brake-shoe, adapted to be forced against the edge of said disk.

The peripheral edge of the wrist-plate is provided with a notch 6, which notch is designed to be engaged by one end of bolt 7 being slidably mounted in ear extensions of the base-plate. The opposite end of the bolt carries a pin 9 that is fitted within the slotted end of a lever 10, the latter being pivotally hung upon a standard 11, which rises from the base-plate. A coil-spring 12 is connected to the lower arm of the lever 10 and a fixed stud 13 carried by the base-plate, by means of which spring-connection the bolt 7 is held against the peripheral edge of the wrist-plate. A slotted tappet-finger 14 is secured to the end of the upper arm of lever 10, by means of a thumb-screw 15, which screw passes through the slot in the tappet-finger and an aperture in said lever, whereby said tappet-finger may be adjusted relative to the movement of the swinging-arm with which it has engagement when the latter has moved to a position where a record upon the disk is approximately concluded.

When it is desired to eliminate the automatic stop-mechanism, in case of a repeater-mechanism being used in connection with the instrument, it can be readily effected by a spring-controlled dog 16, which dog, as shown, is arranged to engage a notch 17 in the wrist-plate, the engagement being accomplished by means of a handle 18 carried by said wrist-plate for convenience in revolving the latter until the notch 17 and nose of the dog have registered. It will be observed that when this shift of the wrist-plate by hand takes place, the brake-shoe is carried away from the record-disk and is locked. The handle 18 is also utilized to reset the wrist-plate after each automatic stop, the set being effected by turning said wrist-plate so as to move the brake-shoe from its engaged position with the adjacent edge of the disk, and with this movement it will be seen that this bolt 7 will lock in its notch 6, and the disk being free to revolve, the instrument will start.

From the foregoing it is apparent, that should the parts be in the position shown in Fig. 1, the record disk will revolve and move the swinging-arm towards the tappet-finger. Now when the arm has approximately completed its movement, it will strike the tappet-finger, which movement in turn causes the bolt to withdraw from its notch in the wrist-plate and thus permit coil-spring 4 to

force the brake-shoe against the edge of the record disk, whereby the same is instantly stopped. Stoppage of the disk is not dependent upon the tension of the spring 4, which tension may be only sufficient to throw the rubber jacketed pin 5 into frictional engagement with said disk. This is due to the fact that the disk and wrist-plate 2 are revolved in the same direction, the rotation of said disk tending to crowd the pin toward a radial line intersecting the axis of the aforesaid disk and wrist-plate. The engaging action consequently has the effect of cramping this pin, a yield of its rubber jacket being the result, whereby a positive lock is obtained independent of the initial spring-controlled movement of the wrist-plate. By utilizing the spring-pressure as a motive power to only throw the pin into engagement with the disk, it will be seen that the force required to trip said spring will be materially lessened, whereby no detrimental effect is had upon the motion of the horn, which motion is acquired through its needle engaging the minute spiral threads of the disk. The swing-arm can after being stopped then be moved over to the starting-position, and the automatic stop-mechanism being reset, the instrument is again ready to be put in motion. By employing an automatic mechanism, as shown and described, it will be understood that damage to the record-disk and machine is avoided.

I claim:

1. In a disk phonograph having a swinging-arm, a spring-controlled rotatory wrist-plate disposed adjacent to the edge of the phonograph-disk and adapted to have rotation in the same direction as the latter, a brake-shoe carried by the wrist-plate for engagement with the edge of said phonograph-disk, means for locking the wrist-plate, whereby the brake-shoe is held from engagement with said disk, and a tappet in connection with the disk-locking means in the path of travel of the swinging-arm, whereby release of said locking means is effected when said swinging-arm engages the tappet.

2. In a disk phonograph having a swinging-arm; an attachment comprising a rotatory spring-controlled notched wrist-plate disposed adjacent to the edge of the phonograph disk and adapted to have rotation in the same direction as the latter, a brake-shoe carried by the wrist-plate for engagement with the edge of said phonograph disk, a spring-controlled bolt for engagement with the notch in said wrist-plate, a lever in connection with the bolt, and a tappet carried by the lever, the tappet being arranged in the path of travel of the swinging-arm.

3. In a disk phonograph having a swinging-arm; an attachment comprising a rotatory spring-controlled notched wrist-plate disposed adjacent to the edge of the phonograph disk and adapted to have rotation in the same direction as the latter, a brake-shoe carried by the wrist-plate for engagement with the edge of said phonograph disk, a spring-controlled bolt for engagement with the notch in said wrist-plate, a lever in connection with the bolt, a tappet carried by the lever, the tappet being arranged in the path of travel of the swinging-arm, and normally controlled locking means in connection with the aforesaid wrist-plate, whereby the wrist-plate brake-shoe is held against operation.

4. In a disk phonograph having a swinging-arm; an attachment comprising a base-plate secured to the phonograph box, a rotatory spring-controlled notched wrist-plate mounted upon the base-plate, the wrist-plate being disposed adjacent to the edge of the phonograph disk and adapted to have rotation in the same direction as said phonograph disk, a normally releasable locking-dog for engagement with one of the wrist-plate notches, a vertically disposed brake-shoe carried by said wrist-plate for engagement with said phonograph disk, a slidable spring-controlled bolt carried by said base-plate for engagement with a notch of the aforesaid wrist-plate, a controlling lever for the bolt in pivotal-connection with the aforesaid base-plate, and an adjustable tappet carried by the lever disposed in the path of travel of the swinging-arm.

5. In a disk phonograph having a swinging-arm; an attachment comprising a pivoted wrist-plate located adjacent to the edge of the phonograph disk, a brake-shoe in connection with the wrist-plate for engagement with the phonograph disk edge, an actuating spring for said wrist-plate adapted to exert power thereon in the same direction as that of the travel of the phonograph disk, a locking mechanism for the wrist-plate, and releasing means in connection therewith disposed in the path of travel of the swinging-arm of the phonograph.

In testimony that I claim the foregoing I have hereunto set my hand at Athens, in the county of Marathon and State of Wisconsin in the presence of two witnesses.

CLAUDE F. HAMILTON.

Witnesses:

FRANK F. CHESAK,

J. C. NUERNBERG.