

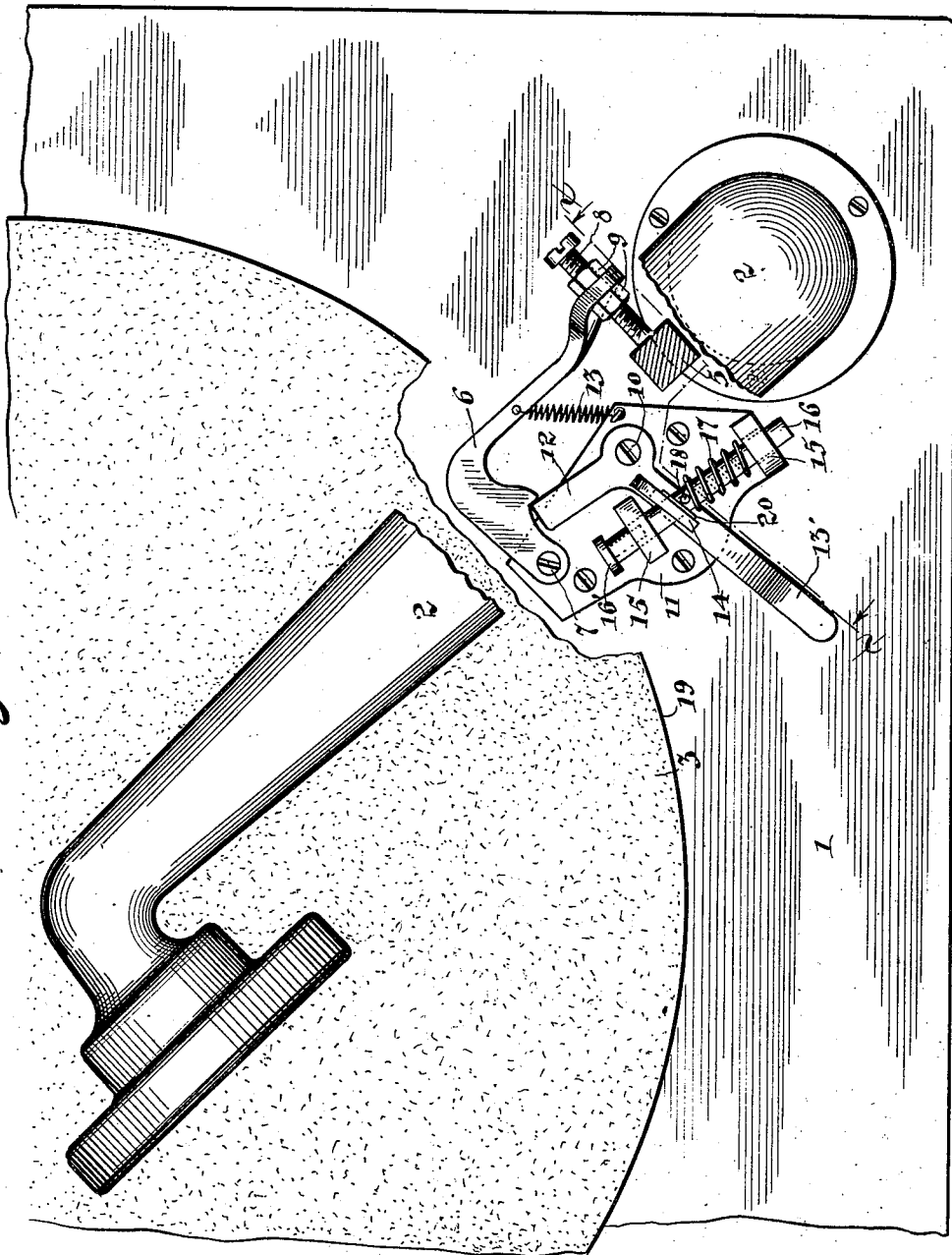
M. H. BAETZNER.
 AUTOMATIC GRAPHOPHONE STOP.
 APPLICATION FILED SEPT. 22, 1911.

1,065,578.

Patented June 24, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

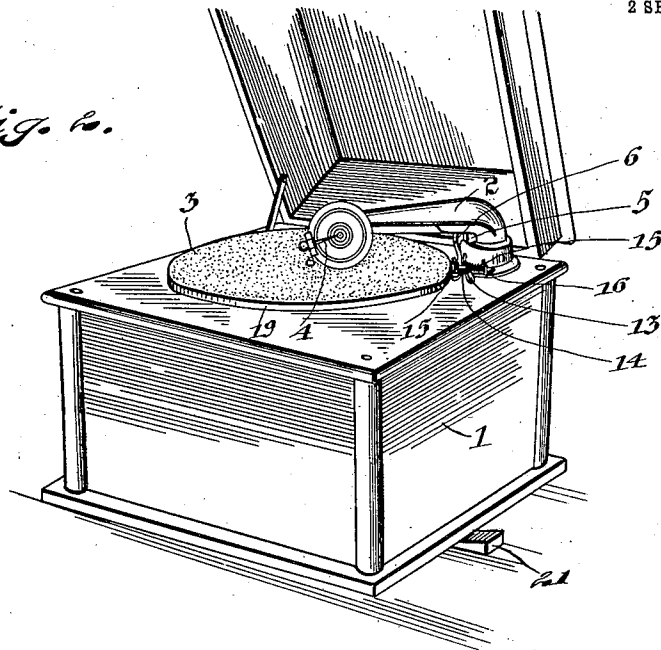
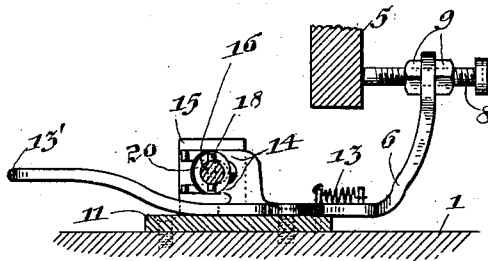


Fig. 3.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC GRAPHOPHONE-STOP.

1,065,578.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MAX H. BAETZNER, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Automatic Graphophone-Stops, of which the following is a specification.

My invention relates to improvements in automatic brakes for phonographs or graphophones or the like, the object being to provide a brake of this character which shall be susceptible of adjustment whereby the tone arm or horn of the graphophone shall be arrested at the proper moment for any given record.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a top plan view of a graphophone of the disk record type equipped with my invention, Fig. 2 is a perspective view of the graphophone showing the general arrangement of the trip-device employed in connection therewith, and Fig. 3 is a vertical section taken on line *x-x* of Fig. 1.

The preferred form of construction as illustrated in the accompanying drawings comprises a graphophone of the conventional form and supported by a stand 1. The tone arm 2 or that portion of the horn which extends above the stand 1 is swiveled to said stand to swing in a horizontal plane, this being the preferred construction. The mouth of the horn is invisible and extends from the swiveled portion of the tone arm of the horn into the interior of the stand 1. The turn-table 3 which is of the usual construction is mounted upon the stand 1, and on it the record disk plate, not shown, is carried. The needle point 4 provided at the exterior extremity of the tone arm 2 of the horn is adapted to be swung into inoperative position as shown in Fig. 2, the operative position of said needle point being vertical and over the record plate carried by the turn-table 3. In playing a piece of music the needle point 4 is brought to the exterior of the disk record and gradually moves radially during the playing of the record, consequently the arm 2 is actuated by the needle point 4 in the usual manner. Unless an au-

tomatic stop is provided the turn-table 3 will continue to rotate after the music has been played, thereby being apt to produce disastrous results. The automatic stop of the present invention comprises a depending block 5 positioned under the tone arm 2 adjacent the swivel connection thereof, said block being clearly illustrated in the several views. This block is positioned as near the center of rotation of the arm 2 as possible in order that the needle point which traverses the groove of the record shall have sufficient leverage to readily operate the stop device. Cooperating with the block 5 is a trip arm 6 which is pivoted to the top of the stand as at 7 and provided with an adjusting screw 8 which is arranged tangentially to the path of rotation of the block 5 and adapted to contact with the same at the proper moment during its revolution. Lock-nuts 9 are provided on the adjusting screw 8 in order that the same shall be held rigidly in position at the free end of the trip arm 6. The trip arm 6 is in the form of a bell crank, but the pivot thereof is at one extremity as shown in Fig. 1. A bell crank lever is pivoted to the top of the stand 1 as at 10, there being a plate 11 screwed to the stand top in order to reinforce the pivots 7 and 10. The short arm 12 of the bell crank lever is adapted to be in normal engagement with the trip arm 6, a helical tension spring 13 connected with said trip arm being adapted to maintain said engagement. The long arm 13' or free end of the bell crank lever constitutes a finger-piece by means of which the same is readily manipulated by the operator. Formed integral with the finger-piece 13' and extending upwardly therefrom is a fork 14 having horizontally disposed sides, said fork being clearly illustrated in side elevation in Fig. 3. Extending upwardly from the plate 11 on opposite sides of the finger-piece 13' are perforated lugs 15 in which is slidably mounted a horizontally disposed spring-pressed brake pin 16, the same being arranged radially to the turn-table 3, and the spring 17 thereon abutting one of the lugs 15 as illustrated in Fig. 1. The other end of the spring 17, which is a compression helical spring, abuts a diametrically disposed pin 18 which projects from opposite sides of the brake pin 16 and is adapted to move said brake pin toward the periphery 19 of the turn-table 3 by cooperating with

the spring 17. In the normal position of the parts as shown in Fig. 1 the spring 17 is prevented from acting on the pin 18 since the short arm 12 of the bell crank lever is in engagement with the trip arm 6, but upon disengagement of said trip arm from the arm 12 it is apparent that the spring 17 will expand and force the head 16' of the brake pin 16 into engagement with the periphery 19 of the turn-table 3, thus arresting the rotary motion of the same. Interposed between the diametric pin 18 and the fork 14 is a washer or collar 20 which is provided to render the connection of the pin 18 with said fork more durable.

The mode of operation is as follows: Assuming that a record plate has been placed upon the turn-table 3 and that the latter has been given a rotary motion, then the needle point 4 is engaged with the record plate adjacent the periphery thereof in the usual manner. During the playing of the music the arm 2 gradually moves toward the center of the plate, consequently the block 5 will approach the adjustable screw 8. When the block 5 contacts with the screw 8 after the music has been rendered the block 5 will effect slight oscillation of the trip arm 6, whereupon the short arm 12 of the bell crank will be disengaged therefrom. This action causes the release of the spring 17 which immediately expands and forces the head 16' of the brake pin 16 into engagement with the periphery 19 of the turn-table 3, thus retarding and arresting its motion by frictional contact. One side of the graphophone casing is elevated slightly by means of a block or wedge 21 so that upon the graphophone needle leaving the grooves in the disk after the rendition of a record the same will engage an inclined smooth surface and be carried toward the center of the disk by gravity. The momentum of the tone arm thus developed by gravity furnishes the power necessary for moving or oscillating the trip arm. The weight of the tone-arm also facilitates this action, since a certain amount of power is necessary to overcome the inertia of said arm. The adjusting screw 8 may be suitably adjusted for any given plate used on the machine as aforesaid.

Due to the proximity of the contact block 5 to the center of rotation of the tone arm 2 this stop device is very sensitive and efficient in its operation.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable

of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims. For instance in the construction shown the lever 6 is arranged for contact with the block 5. It is understood that if desired said lever may be extended so that the same will contact directly with the tone arm.

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

1. An automatic brake comprising a spring held trip lever adapted to oscillate about a stationary pivot and provided with an adjustable screw at the free end thereof; a bell crank lever the short arm of which is held in normal engagement with said trip arm and the long arm of which constitutes a finger piece; a fork formed in rigid relation with said finger piece and having horizontally extending sides; a spring pressed pin having a brake head and held in inoperative position by said fork; and means engaging said screw to operate said trip arm, substantially as described.

2. An automatic brake comprising a trip arm; an adjustable screw on the free end of said trip arm; a bell crank lever having a short arm for engagement with said trip arm and a long arm constituting a finger piece; a tension helical spring arranged in connection with said trip arm and adapted to maintain the engagement thereof with said lever; a fork provided on the upper side of said finger piece and having horizontally extending sides; a spring pressed pin having a brake head; a diametric pin provided in said spring pressed pin; a collar engaging said diametric pin and disposed on the side of said fork opposite said head, said diametric pin thus holding said head in inoperative position during the engagement of said trip arm with said bell crank lever, the construction being such that when said trip arm is tripped, the spring on said spring pressed pin will cause the operative engagement of the head; and automatic means adapted to engage said screw and trip said trip arm, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MAX H. BAETZNER.

Witnesses:

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