Sept. 27, 1932. G. J. SALIBA ET AL 1,879,522

SOUND RECORD SLOT MACHINE

Filed July 17, 1930 3 Sheets-Sheet 1

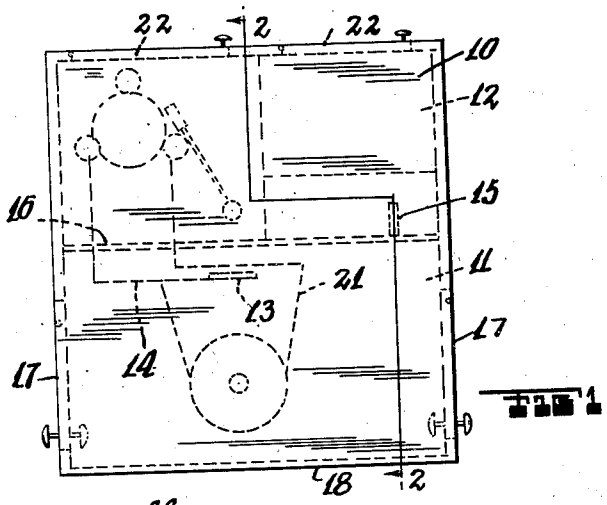


FIG. 1

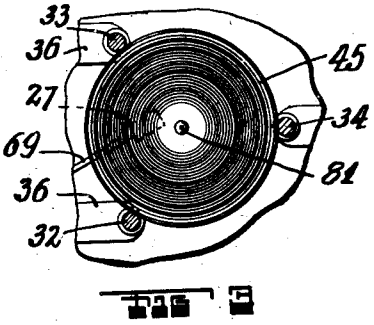


FIG. 3

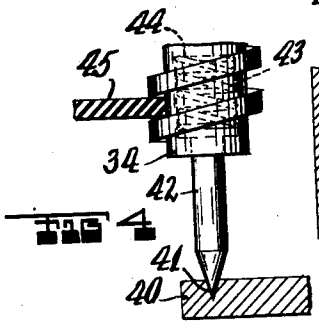


FIG. 4

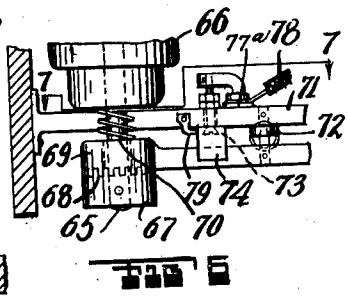


FIG. 5

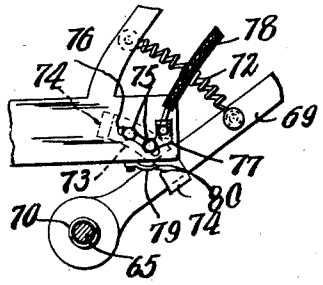


FIG. 7

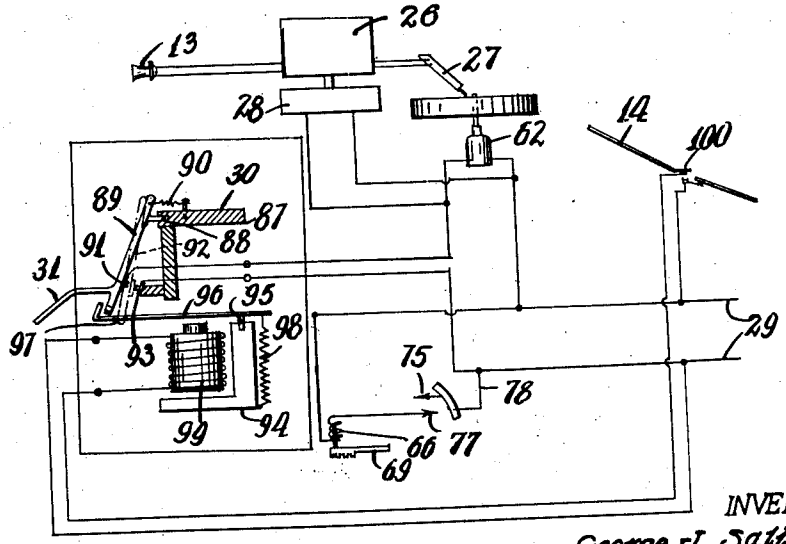


FIG. 8

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SOUND RECORD SLOT MACHINE

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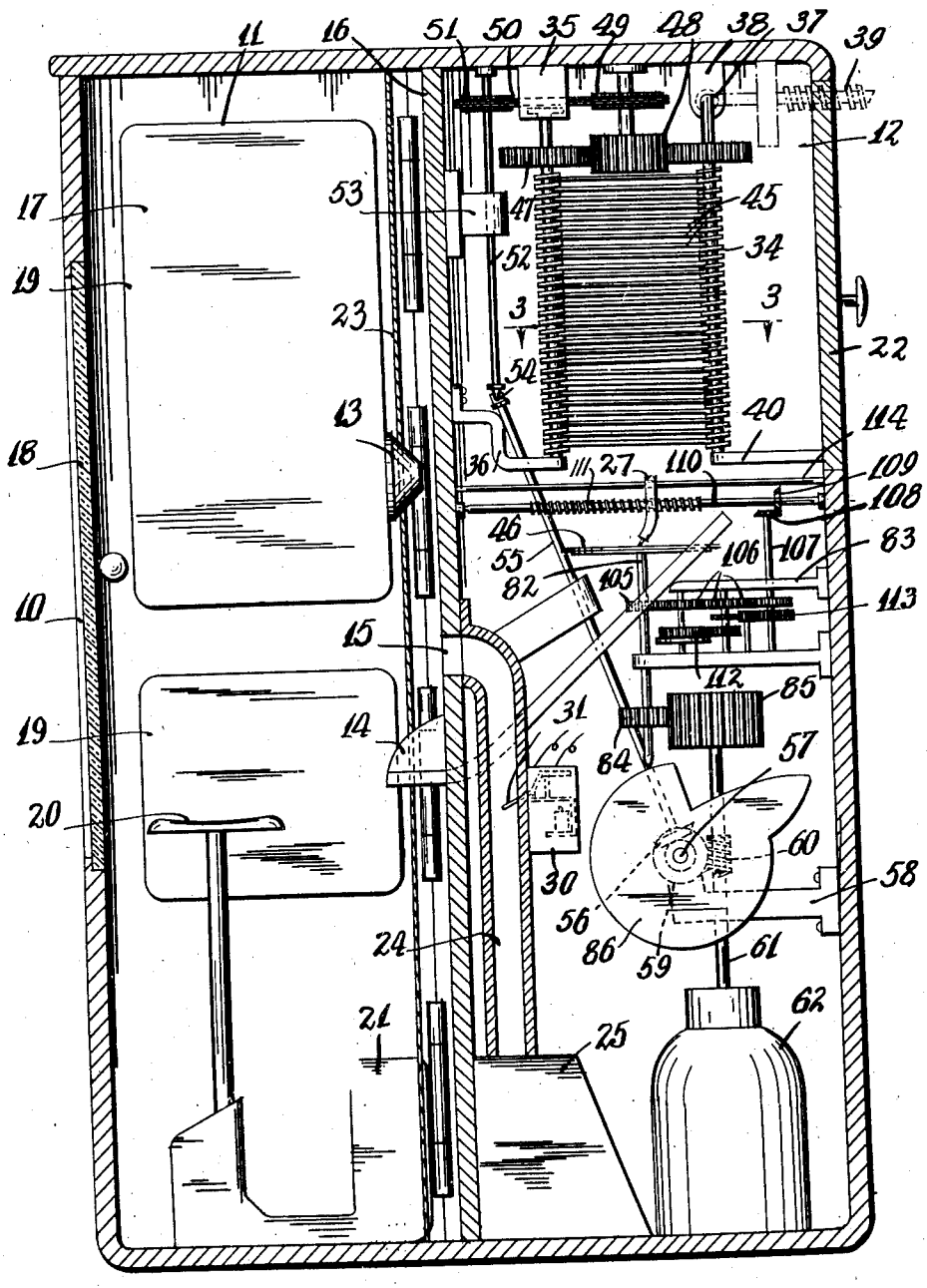


FIG. 2

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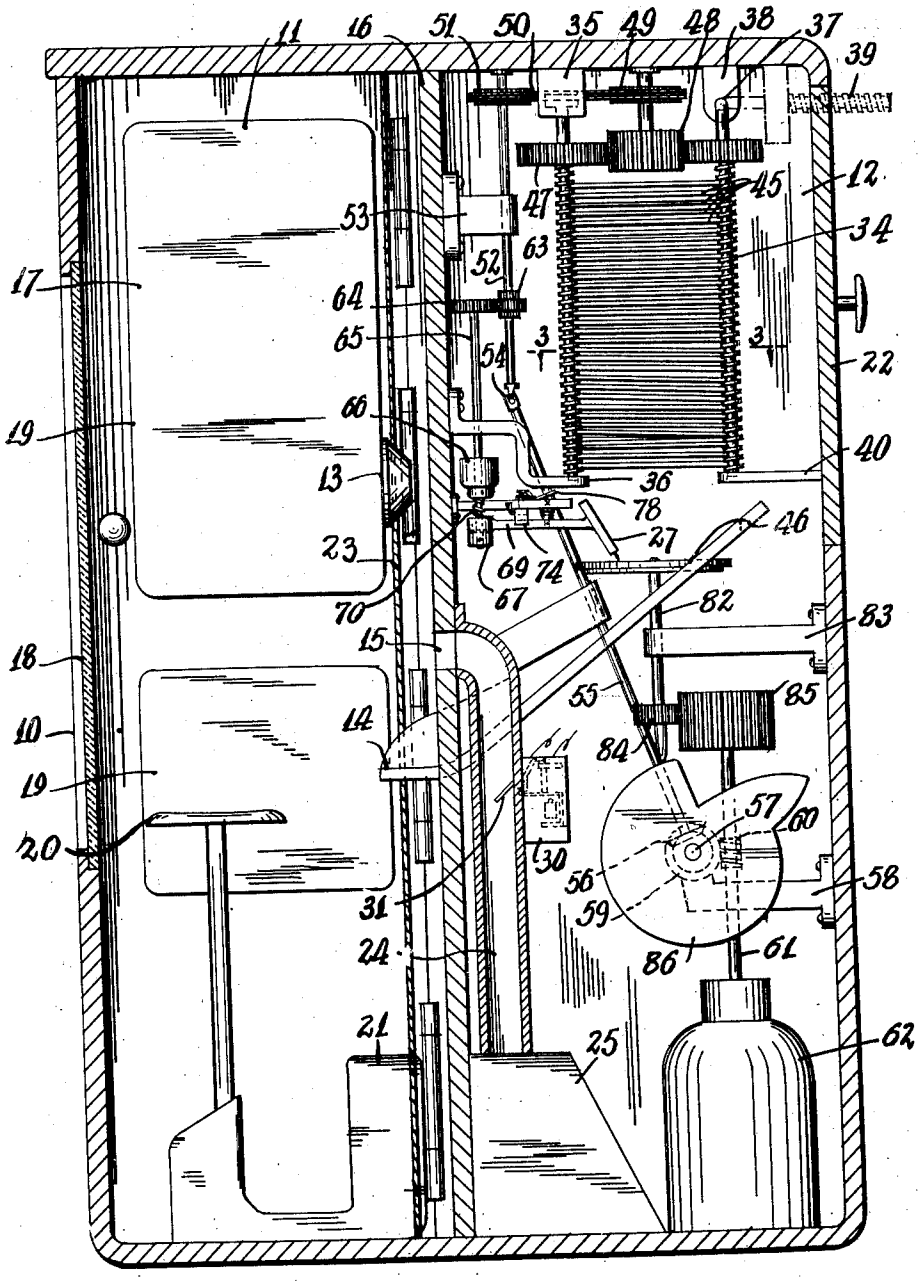


FIG 5

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UNITED STATES PATENT OFFICE

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SOUND RECORD SLOT MACHINE

Application filed July 17, 1930. Serial No. 468,747.

This invention relates to new and useful improvements in an automatic slot machine for recording the human voice, music and other audible sounds on discs or other records and films.

The invention has for an object the provision of a device of the class mentioned which is of simple durable construction, dependable in use and efficient in action, and which can be manufactured and sold at a reasonable cost.

The invention proposes a booth having a sound compartment and an apparatus compartment, a microphone supported in said sound compartment, and apparatus within said apparatus compartment for automatically recording from said microphone and upon conclusion ejecting the record through a chute to said sound compartment, upon the insertion of a coin through a slot in said sound compartment.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:—

Fig. 1 is a plan view of a device constructed according to this invention.

Fig. 2 is a transverse vertical sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary horizontal sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary enlarged detailed view of a portion of Fig. 2.

Fig. 5 is a view similar to Fig. 2, but illustrating a modification.

Fig. 6 is a fragmentary enlarged detailed view of a portion of Fig. 5.

Fig. 7 is a horizontal sectional view taken on the line 7—7 of Fig. 6.

Fig. 8 is a schematic wiring diagram of the device.

The automatic slot machine comprises a booth 10 having a sound compartment 11 and an apparatus compartment 12, a microphone 13 supported in said sound compartment 11, and apparatus within said apparatus compartment 12 for automatically recording from said microphone and upon conclusion ejecting the record through a chute 14 to said sound compartment, upon the insertion of a coin through a slot 15 in said sound compartment.

The booth 10 is shown rectangular in plan view. It is provided with a vertical partition 16 for dividing it into the compartments 11 and 12. The sound compartment 11 is sound proof and of sufficient size so that one or more persons may be comfortable therein. It is provided with side doors 17 and a front window 18. The doors are shown formed with glass panels 19. A seat 20 is arranged within the sound compartment 11 so that a person may be comfortably seated. This seat has a foot rest 21 at its bottom. The apparatus compartment 12 is provided with several doors 22 for access to repair or take care of the apparatus. The supporting of the microphone 13 is accomplished by a vertical wire 23 strung from the top to the bottom of the sound chamber 11, and the microphone should be frictionally engaged upon the vertical wire so that it may be manually moved to a comfortable height. The slot 15 connects with a coin chute 24 which discharges into a coin box 25.

The apparatus within said compartment for automatically recording from said microphone comprises a vacuum tube amplifier 26 electrically connected with the microphone and with an electric recorder 27. These units may be of any conventional design and construction, generally known. A vacuum tube power unit 28 is shown connected with the amplifier and connected for receiving current from live leads 29. A coin control switch 30 is attached upon the chute 24 and has a finger 31 extending into the coin chute for engagement by a passing coin. Both the vacuum tube amplifier and the vacuum tube power unit are of the conventional type, and therefore not illustrated in the drawings.

The apparatus within the compartment 12

also includes means for storing records. This means is shown to comprise three vertical screws indicated by reference numerals 32, 33 and 34, respectively. These screws are arranged upon the circumference of a circle. Two of the screws, namely 32 and 33, are rotatively supported at their tops by engaging in blocks 35 supported to the top of the compartment 12. Brackets 36 rotatively support the bottom ends of the screws 32 and 33 and are themselves supported upon the partition 12. The screw 34 is rotatively mounted upon a finger 37 which is pivotally mounted on a lug 38 projecting from the top of the booth. This pivotal mounting is such that the screw 34 may be moved to a position as indicated by the dot and dash lines 39 in Fig. 2. The bottom of the screw 34 is rotatively supported upon a bracket 40 attached on the booth 10. The bracket 40 is formed with a niche 41 receiving a pointed plunger 42 slidably mounted in the bottom of the screw 34 and normally urged outwards by an expansion spring 43 housed within a cavity 44 in the bottom of the screw. The plunger 42 normally holds the screw in the vertical and whenever it is desired it may be manually moved up so that the screw may be swung to the horizontal as shown at 39. A plurality of records 45 are shown supported between the threads of the screws 32, 33 and 34.

The apparatus within the compartment 12 also includes a means for positioning one record on a turn table 46 for coaction with the electric recorder 27. This means comprises gears 47 attached upon each of the screws 32, 33 and 34 and meshing with a master gear 48 upon a spindle rotatively mounted in the top of the booth 10 and supporting a sprocket wheel 49 engaged by a chain 50 extending over a second sprocket wheel 51 fixed upon a shaft 52 which is rotatively supported by a standard 53 on the partition 16. A universal joint 54 connects the shaft 52 with another shaft 55 carrying a bevel gear 56 meshing with another bevel gear attached upon a shaft 57. This shaft is rotatively supported in a standard 58 attached on the booth 10. A worm wheel 59 is fixed upon the shaft 57 and meshes with a worm pinion 60 on a shaft 61 of an electric motor 62.

The apparatus within the compartment 12 also includes means for advancing the electric recorder 27 over the face of the record on the turntable 46 and upon conclusion automatically returning to initial position. This means comprises a stem 82 supporting the turntable 46 and rotatively mounted in a standard 83 which is attached within the casing. The lower end of this stem rests upon a cam 86. A gear 105 is fixed upon the stem 82 and in the normal recording position of the turntable 46 meshes with a train of gears 106 connected with a shaft 107 carrying a bevel gear 108 meshing with a bevel gear 109 fixed upon a rotative mounted rod 110 having a threaded portion 111 threadedly engaging the said electric recorder 27.

In a lowered position of the turntable 46, that is, when it discharges a finished record, the gear 105 meshes with a gear 112 of a gear speed increase system terminating in a gear 113 fixed upon the shaft 107. This latter gear system is so arranged that the rotations of the shaft 107 will be opposite to that had when the gear 105 meshes with the system 106.

During operation of the turntable 46 in its normal recording position, the electric recorder 27 slowly moves across its face and accomplishes recording. This slow motion is obtained through the drive mechanism which includes the gear 105 on the stem 82. When the cutout portion of the cam 86 is reached so that the stem is lowered, the gear 105 then engages gear 112 of the speed increase system which terminates in gear 113 so as to rotate the rod 110 very rapidly in the opposite direction and reset the electric recorder to its initial position. The electric recorder 27 is shown slidably mounted upon a rod 114 so that it may not rotate together with the rotations of the rod 110, but must travel along the latter rod.

The apparatus within the compartment 12 in the embodiment shown in Fig. 8 also includes a modified means for advancing the electric recorder 27 over the face of a record on the turn table 46 and upon conclusion automatically returning to initial position. This means comprises a pinion 63 fixed upon the shaft 52 and meshing with a gear 64 fixed upon a spindle 65 rotatively mounted through the core of an electro magnet 66 which is attached upon the partition 16. A collar 67 is attached upon the extended end of the spindle 65 and is formed with radial teeth 68 upon its top face engaging complementary teeth in a radial arm 69 which supports the said electric recorder 27. A spring 70 is coaxially arranged on the spindle 65 and acts between the electro magnet 66 and the radial arm 69 for normally urging the teeth into engagement with the teeth 68.

An arm 71 projects from the partition 16, and a spring 72 is connected between the arm 71 and the radial arm 69 for normally urging the radial arm to a position in which the electric recorder 27 is off from the turn table 46. A switch pole 73 is slidably mounted upon the arm 71 and has its ends 74 downturned and straddling the radial arm 69 so that upon reaching either end of its stroke the radial arm moves the pole. The slidable mounting of the pole is accomplished by screws 75 projecting from the pole 73 and engaging through an arcuate slot 76 formed in the arm 71. One of the screws 75 constitutes a contact and is engageable against a contact finger 77 in one position of the pole 73. The contact 77 is insulated from the arm 71 by

a washer 77ª and is connected to a lead 78. A spring catch 79 mounted upon the arm 71 is engageable with niches 80 upon the slidable pole 73 to hold it so that the contact 75 engages the contact 77 or is out of engagement with the contact. The electro magnet 66 is connected in series with the switch 77, 75, and both of these elements are connected in parallel with the power leads 29. When the solenoid 66 is energized, it draws the radial arm 69 upwards so that the teeth of the radial arm disconnect with the teeth 68 of the collar 67.

The turn table 46 is provided with a top peg 81 engageable through a central opening in one of the records 45 and with a supporting stem 82 rotatively mounted in a standard 83 supported in the booth 10. A pinion 84 is fixed upon the stem 82 and meshes with a gear 85 on the shaft 61 of the motor 62. A cam 86 is fixed upon the shaft 57 and engages against the bottom of the stem 82 to hold the stem in various elevated positions. The cam has a portion coaxial with the shaft 57 which constitutes the normal recording position of the stem 82, that is, the proper supporting of the stem so that the recorder 27 may engage the record upon the turn table. The cam also has a depressed or cutout portion so that when this portion is reached the turn table is dropped for discharging the record as hereinafter explained, and the cam also has a raised portion for raising the stem 82 to lift the turn table up for receiving one of the records held by the storing means. The raised portion is not necessary and may be omitted.

The said chute 14 is inclined and terminates at its inner end in fingers encircling the turn table 46 so that when the turn table is lowered a record resting upon the turn table will be dropped upon the chute and thus be discharged. The said coin switch 30 comprises a standard 87 attached within a casing which is attached on the chute 24. This standard pivotally supports at 88 a member 89, which has an extension constituting the finger 31. A spring 90 acts between the member 89 and the standard 87 for normally urging the finger 31 into the coin chute. The member 89 supports a contact 91 engageable in a depressed condition of the member 89 as indicated by the dot and dash lines 92 with a stationary contact 93.

The contacts 91 and 93 constitute a switch in series in a circuit including the power leads 29, the electric motor 62 and the power unit 28. Another standard 94 is attached to the casing of the switch and pivotally supports at 95 a finger 96 formed with an opening 97 for receiving the member 89 and holding the latter member in the position indicated by the dot and dash lines 92. A spring 98 normally holds the finger 96 in its operative position. An electro magnet 99 is located beneath the finger 96 so that upon being energized draws the finger to release the member 89. The electro magnet 99 is connected in series with a switch 100 arranged on the chute 14 and so constructed that when a record is discharged through the chute, this latter switch is momentarily closed. The switch 100 and the electro magnet 99 is connected in parallel with the live leads 29.

The operation of the device may be traced by assuming that no records 45 are supported upon the storing means, that the member 89 is free, that the stem 82 is in the depressed portion in the cam 86, and that the radial arm 69 is in a position off from the turn table. The first thing necessary is the engaging of records 45 within the holding means. This is accomplished by opening one of the doors 22 and pivoting the screw 34 to the dot and dash position 39. Then with a suitable holding jack records are placed against the screws 32 and 33, and next the screw 34 is lowered to its vertical position so that the records 45 are properly clamped as shown in Fig. 2. In order to insure the correct positioning of the records, suitable guide cuts must be arranged upon the screws. Details of this are not necessary since it will be obvious to any person skilled in the art.

The device is now in condition for operation. A person may now enter the booth through one of the doors 11, then deposit the correct coin through the coin slot 15. This coin passes through the chute 24 and discharges into the coin box 25. In passing through the chute it acts against the finger 31 so as to move the member 89 to the position indicated by the lines 92. This closes the switch 91, 93 and closes a circuit through the power supply 28 and through the electric motor 62. The power supply delivers power to the amplifier 26 and a person may talk through the mircophone 13 for actuating the recorder 27.

As the motor 62 operates, it transmits rotations to the shaft 57. Rotations from this shaft are transmitted to the screws 32, 33 and 34 which rotate so that all of the records 45 simultaneously move downwards. Rotation of the shaft 57 causes the cam 86 to turn and since the stem 82 was in the extreme lowered portion of the cam it is now raised to the extreme elevated portion for positioning the turn table 46 immediately adjacent the lowest record 45. By this time the lowest record is dropped by the rotating screws 34. Continued rotation of the shaft 57 lowers the stem 82 to the normal recording position of the cam 86. Rotations from the electric motor 62 are also transmitted to rotate the turn table 46. The turn table is now in its normal recording position and rotating.

The radial arm 69 was slowly moving into recording position and now is in recording position so that the electric recorder 27 en-

gages upon the record on the turn table. The radial arm 69 will continue in its slow travel across the surface of the record. A person within the booth may now talk and have his voice recorded on the record. Motion of the radial arm 69 is received from rotations from the shaft 52. These rotations are transmitted to the stem 65 and to the collar 67. Since the collar 67 is directly coupled to the radial arm, it moves the radial arm very slowly.

When the radial arm has reached the end of its recording position, that is, when the recorder 27 is at the inner position on the record, it moves the pole 73 so that the switch 75, 77 is closed. The spring 79 holds the pole 73 in its new position. When the switch just mentioned is closed a circuit is closed through the electro magnet 66 which draws the radial arm 69 upwards against the downward action of the spring 70. Upon disengagement from the teeth 68, the spring 72 moves the radial arm into its initial or idle position. In this position it acts against one of the downturned ends 74 of the pole 73 and moves the pole so that the switch connection 75, 77 is broken. The spring 79 holds the pole 73 in this new position. When the switch 75, 77 is opened, the electro magnet 66 loses its energy and spring 77 reengages the radial arm so that the teeth 68 are again engaged.

By this time the cam 86 has reached the position where the stem 82 drops into the lowered portion of the cam. Thus the turn table 46 is lowered and the record upon the turn table discharged through the chute 14. As the record passes through the chute, it closes the switch 100 which momentarily energizes the electro magnet 99, moving the finger 96 to release the member 89 which is extended by the spring 90. The extension of the member 89 breaks the circuit at the points 91, 93 so that the power is cut from the power supply 28 and also from the electric motor 62. The device is now in its initial condition.

While we have shown and described the preferred embodiment of our invention, it is to be understood that we do not limit ourselves to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent is:—

1. An automatic slot machine for recording the human voice, music and other audible sounds on discs or other records, comprising a booth having a sound compartment and an apparatus compartment, a microphone supported in said sound compartment, and an apparatus within said apparatus compartment for automatically recording from said microphone, means for ejecting the record through a chute to said sound compartment, means for operating the ejecting means, and a vertical wire strung in the sound compartment, said microphone frictionally engaging on said wire for adjustments to a proper recording height.

2. An automatic slot machine for recording the human voice, music and other audible sounds on discs or other records, comprising a booth having a sound compartment and an apparatus compartment, a microphone supported in said sound compartment, and an apparatus within said apparatus compartment for automatically recording from said microphone and means for ejecting the record through a chute to said sound compartment, means for operating the ejecting means, said microphone being movably adjusted for adjustments of proper recording heights.

3. In a sound reproducing device, a means for storing phonograph records, comprising vertical screws arranged upon the periphery of a circle for engaging the peripheries of records and supporting the records, one of said screws is hingedly suspended to allow the insertion of the said record, said hinged suspension accomplished by a finger rotatively supporting said vertical screw, and a lug pivotally supporting said finger.

4. In a sound reproducing device, a means for storing phonograph records, comprising vertical screws arranged upon the periphery of a circle for engaging the peripheries of records and supporting the records, one of said screws is hingedly suspended to allow the insertion of the said record, and means for rotatively latching said hingedly supported screw in a vertical position.

5. In a sound reproducing device, a means for storing phonograph records, comprising vertical screws arranged upon the periphery of a circle for engaging the peripheries of records and supporting the records, one of said screws is hingedly suspended to allow the insertion of the said record, and means for rotatively latching said hingedly supported screw in a vertical position, comprising a pointed plunger rotatively mounted in the bottom of said screw, means for normally urging said plunger outwards, and a bracket formed with a niche for receiving the pointed plunger.

6. An automatic slot machine for recording the human voice, music and other audible sounds on discs or other records, comprising a booth having a sound compartment and an apparatus compartment, a microphone supported in said sound compartment, and an apparatus within said apparatus compartment for automatically recording from said microphone and means for ejecting the record through a chute to said sound compartment, means for operating the ejecting means, said apparatus including means for advancing an electric recorder over the face of the record on the turn table and upon con-

clusion automatically returning to initial condition comprising a radial arm supporting said electrical recorder and having teeth engaging complementary teeth on a collar fixed on a stem connected for slow rotations, an electro magnet for disengaging the radial arm from the teeth upon energization, means for moving the radial arm into an initial condition upon being released, and a switch for closing the circuit through the electro magnet and cutting the circuit as the radial arm reaches its end and initial positions.

7. An automatic slot machine for recording the human voice, music and other audible sounds on discs or other records, comprising a booth having a sound compartment and an apparatus compartment, a microphone supported in said sound compartment, and an apparatus within said apparatus compartment for automatically recording from said microphone and means for ejecting the record through a chute to said sound compartment, means for operating the ejecting means, said apparatus including a turn table rotatively supported on a slidable stem engaging against a cam for maintaining a normal recording position, assuming a raised position to receive records, and assuming a depressed condition for the discharge of the records.

8. In a sound reproducing device, a means for storing phonograph records, comprising vertical screws arranged upon the periphery of a circle for engaging the peripheries of records and supporting the records, one of said screws is hingedly suspended to allow the insertion of the said record.

9. In a sound recording device, a means for storing phonograph records, blank discs and the like, comprising vertical screws arranged upon the vertices of an equilateral triangle and engaging the peripheries of said records, discs and the like, and forming the sole means of support for the latter, and means for rotating the screws for discharging the lowest record or disc.

10. An automatic slot machine for recording the human voice, music and other audible sounds on discs or other records, comprising a booth having a sound compartment and an apparatus compartment, a microphone supported in said sound compartment, and an apparatus within said apparatus compartment and having a coin slot extending into the second compartment and for automatically recording from said microphone, means for storing phonograph records, blank discs and the like, comprising vertical screws arranged upon the periphery of a circle for engaging the peripheries of said records, discs and the like, and forming the sole means of support for the latter, and means for rotating the screws for discharging the lowest record or disc, and means for ejecting the record or disc through a chute to said sound compartment upon insertion of the coin through a slot in said sound compartment.

In testimony whereof we have affixed our signatures.

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