Dec. 25, 1928. 1,696,683

E. T. KIEFFER ET AL.

TALKING MACHINE

Filed July 31, 1923 3 Sheets-Sheet 1

Fig. 1.

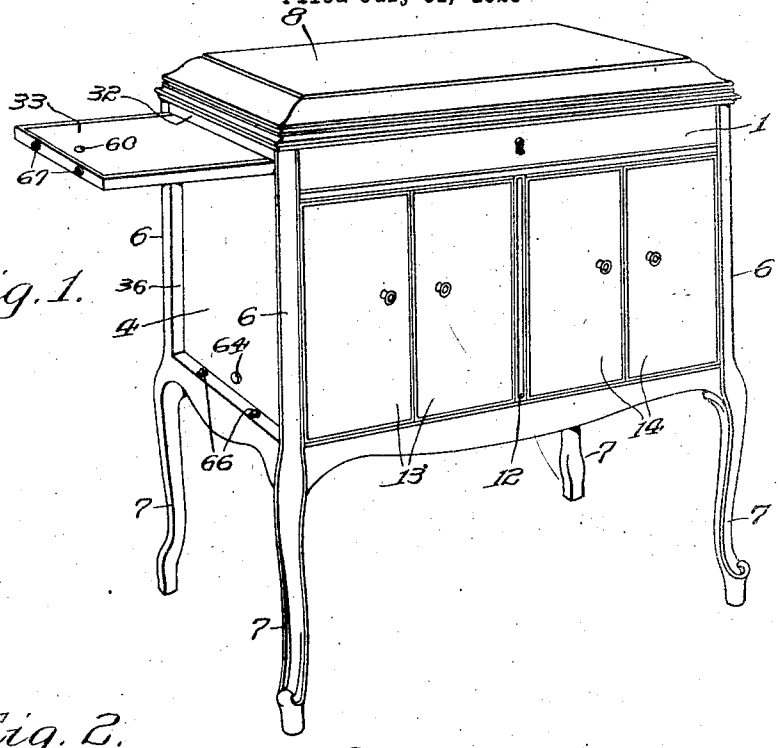
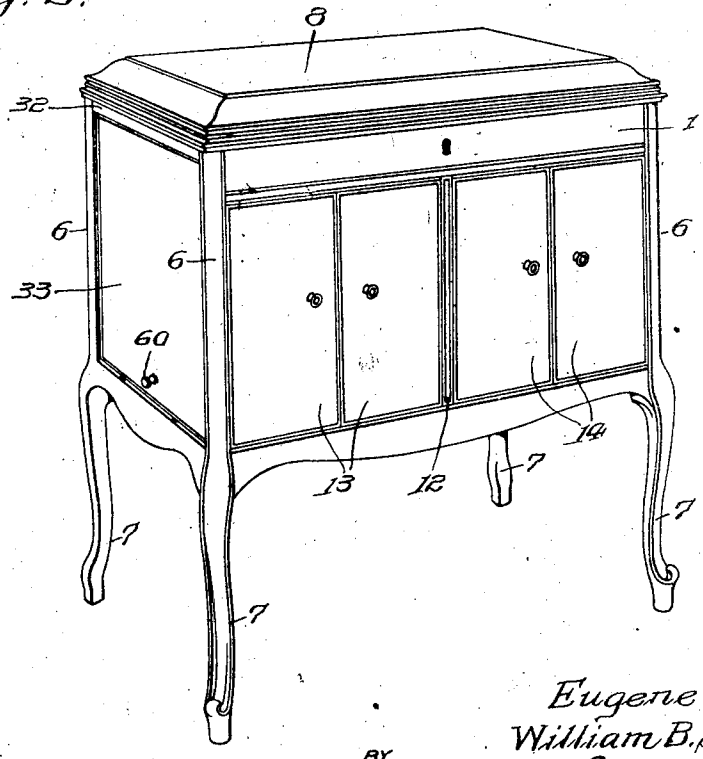


Fig. 2.



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Fig. 3.

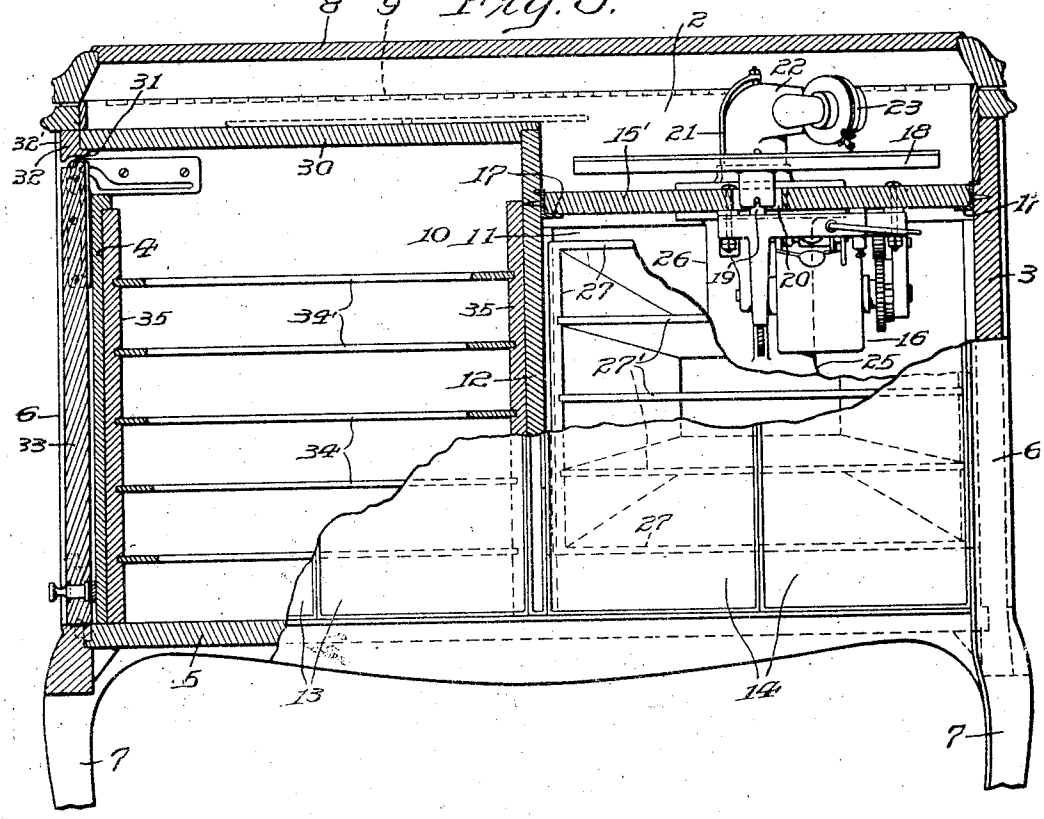
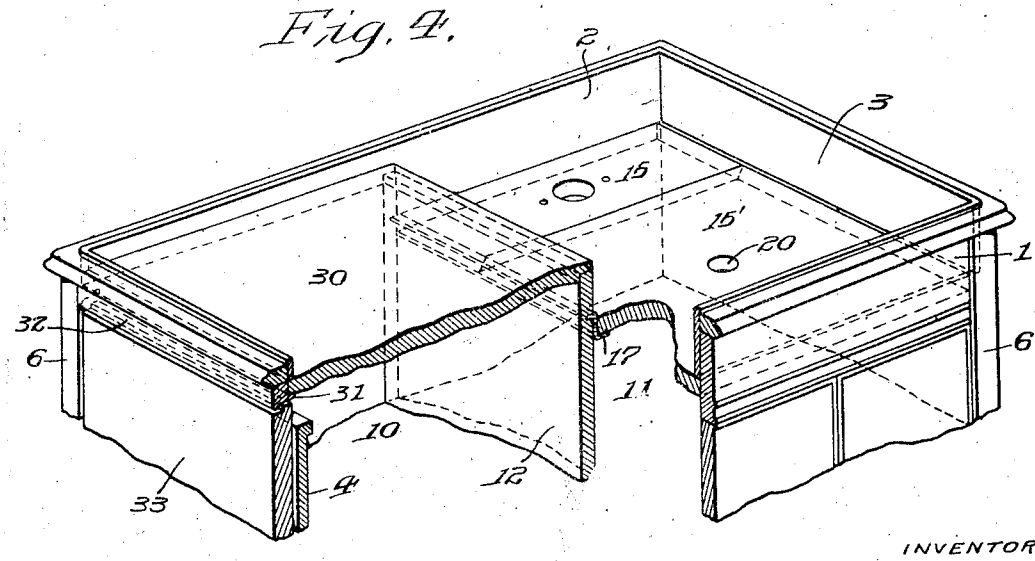


Fig. 4.



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Fig. 5.

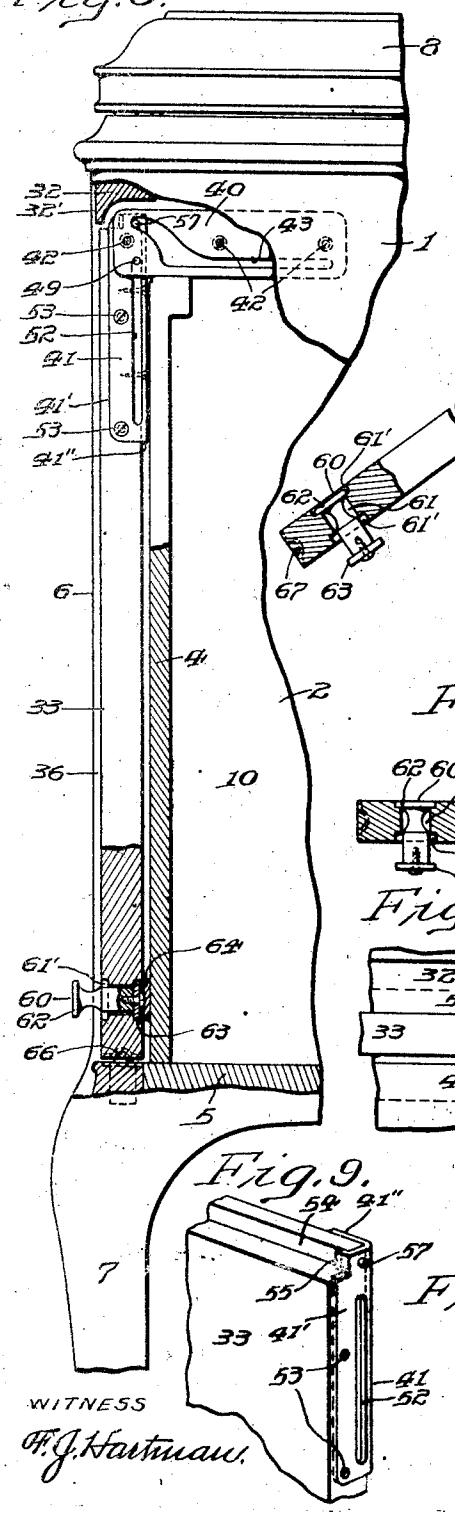


Fig. 6.

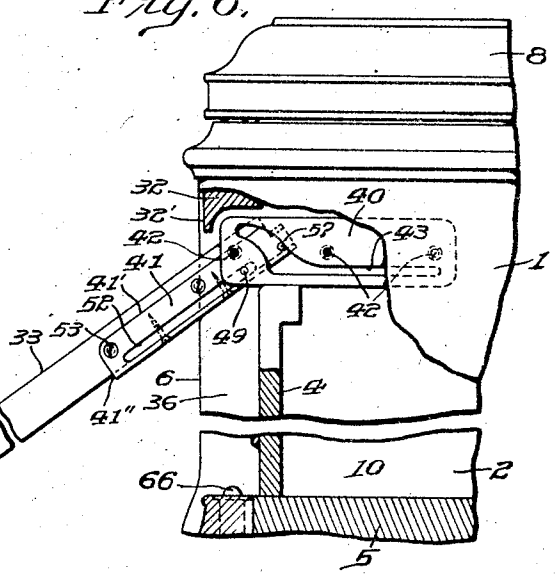


Fig. 7.

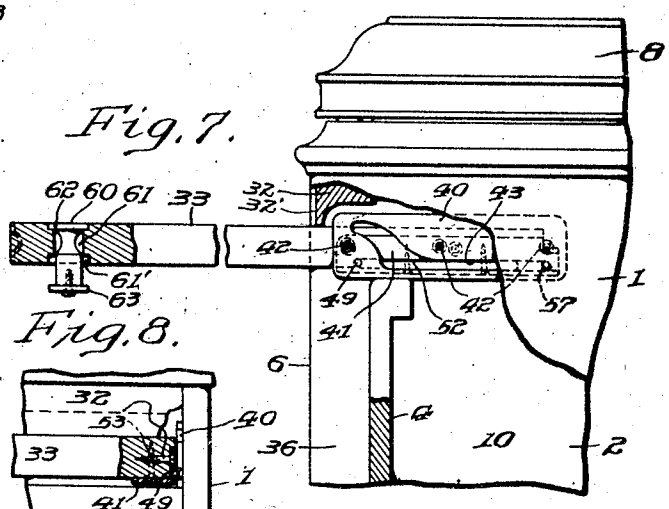
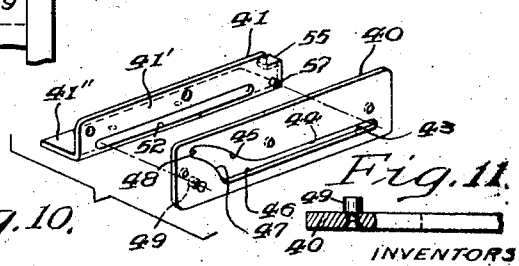


Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.



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UNITED STATES PATENT OFFICE.

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TALKING MACHINE.

Application filed July 31, 1923. Serial No. 654,840.

Our invention relates more particularly to talking machine cabinets, the inventive concept contemplating the provision in such cabinets of means for conveniently supporting talking machine records or other objects when desired, said means being so arranged as to be readily moved from operative to inoperative position, or vice versa, and so constructed and disposed with respect to other elements of the cabinet that when in inoperative position said means will substantially appear as an integral part of the cabinet and more particularly as one of the side walls thereof. To this end we provide a movable leaf or shelf suitably hinged adjacent one end of the cabinet in such manner that it may be readily moved from substantially horizontal position in which it is adapted to act as a support for records or other articles to a substantially vertical position, and so arrange the cabinet as to provide a depression or recess of suitable size and depth to substantially contain the leaf when in vertical position whereby the leaf under such conditions appears as one of the end walls of the cabinet.

The invention further contemplates the provision in a talking machine cabinet, and more particularly in that style of cabinet commercially known as a "console" type, of a platform or support adjacent but elevated above the plane in which the talking machine turntable or rotatable sound record support is positioned and adapted to furnish a convenient support for talking machine records or other articles and from which the records may be readily removed when desired, the platform or support being so disposed as to avoid the likelihood of the records which may be placed thereon being accidentally slid or otherwise moved substantially transversely to the direction of the tone arm, beneath or into contact with the turntable or other operative parts of the talking machine above the motor board.

Additionally, our invention embodies the provision of a novel form of hinge adapted for connecting the movable leaf with the body of the cabinet and a knob convenient for employment in moving the leaf, as well as other objects and novel features of construction, design and arrangement to which reference may be hereinafter made or which are apparent from the accompanying drawings forming a part hereof and in which we have illustrated a preferred form of the invention as embodied in a talking machine of the console type.

In the said drawings Fig. 1 is a perspective view showing the exterior of the talking machine cabinet with the swinging leaf in raised position and Fig. 2 is a similar view thereof showing the leaf in lowered position. Fig. 3 is an enlarged fragmentary view of the talking machine partially in vertical section and partially in front elevation with the swinging leaf in lowered position; Fig. 4 is a fragmentary perspective view of the body of the cabinet with the lid and operating mechanism entirely removed and particularly illustrating the arrangement of certain of the parts in the interior of the cabinet which are normally hidden from view when the lid is closed. Fig. 5 is a still further enlarged fragmentary view of an end of the cabinet showing the swinging leaf in lowered position and particularly illustrating the preferred construction of the hinge through the medium of which the leaf is operatively secured to the body of the cabinet, and Figs. 6 and 7 are substantially similar views respectively showing the leaf in partially lowered position and in fully raised position. Figs. 8 and 9 are fragmentary detail views illustrating the arrangement and construction of certain of the elements of the hinge; Fig. 10 is a composite perspective view showing both hinge elements removed from the portions of the cabinet to which they are respectively attached, and Fig. 11 is an enlarged fragmentary view through a portion of one of the elements. Like numerals are used to designate similar parts in the several figures.

Referring now more particularly to the drawings, the cabinet of the talking machine shown therein comprises front and rear vertically disposed walls 1 and 2, end walls 3 and 4 and a bottom 5, vertically extending corner posts 6 being arranged adjacent the points of intersection of the several walls to receive the ends of the latter in conformity with ordinary methods of cabinet construction, the whole thus forming a substantially rectangular and, in the form of the invention shown, longitudinally

elongated, hollow casing open at the top. The casing may be supported on legs 7 of any suitable form disposed at the corners thereof, extending downwardly therefrom and in effect forming extensions of the corner posts. A lid 8 may be hinged to the casing by a hinge 9 disposed along the upper edge of the rear wall 2 in such manner that the lid may be lifted to expose the interior of the casing or closed, as shown in the drawings, so as to cover the same when desired.

Means may be arranged in the cabinet so as to divide the same into separate chambers 10 and 11, said means preferably comprising a vertically disposed, transversely extending partition 12, and for giving access from the front of the cabinet respectively to the chambers thus formed, the lower portion of the front wall 1 is cut away and two pairs of doors designated as 13 and 14 are provided and hinged to the adjacent corner posts and to the front edge of the partition 12 so as to provide movable closures for the fronts of the chambers, one of which may be substantially occupied by the sound amplifier as hereinafter more fully described and the other utilized for the storage of sound records or other articles.

Disposed within the cabinet at a suitable distance above the bottom thereof and extending entirely across the upper part of the chamber 11 is arranged a motor board from which the operative parts of the talking machine are suspended. Conveniently this board may be divided longitudinally so as to form two sections 15, 15', the former being permanently secured in the rear part of the cabinet and the latter being removably secured in the front part thereof and serving to support the motor, generally designated as 16, which may be of any preferred construction. As illustrated, the section 15' of the motor board is shown as supported on substantially Z-shaped bars 17 secured to the partition 12 and wall 3, but any other suitable method of supporting the board may be employed if desired. Disposed generally above this portion of the motor board is the record support or turntable 18 which during the operation of the machine is rotated by the motor through the medium of a shaft 19 extending vertically through an aperture 20 in the board, while above the section 15 of the board is secured a bracket 21 from which is supported for horizontal movement a generally forwardly extending tone arm 22 to the extremity of which is secured the sound box 23 operative to support a stylus for cooperation with a disk record disposed on the turntable 18 when the machine is in operation. Conveniently supported from the under side of section 15 of the motor board is the sound amplifier, generally designated as 25, which may be of any preferred construction, that shown comprising a downwardly and forwardly curving portion 26, ordinarily of metal, and a forwardly extending substantially rectangular portion 27 provided with a plurality of vertically spaced, horizontally disposed partitions or sounding boards 27', ordinarily of wood, the cross sectional area of the amplifier gradually increasing toward the front of the cabinet so that at its forward end, which may lie quite closely adjacent the inner face of the doors 14, the amplifier substantially occupies the entire area bounded by the motor board, bottom 5, end wall 3 and partition 12, the amplifier, however, being preferably slightly spaced from these several parts. The motor, tone arm, amplifier and other associated parts just described may be of any preferred construction as will be readily understood by those familiar with the art and further description thereof herein is therefore deemed unnecessary.

The motor board is preferably arranged at such a height within the cabinet that the upper end of the partition 12, which terminates slightly short of the upper edges of the front and rear walls of the cabinet, extends for a relatively considerable distance thereabove and also above the upper surface of the turntable, and for closing the upper end of the chamber 10 a horizontally disposed partition or shelf 30 is arranged to extend thereover and completely fill the space between the front and rear walls and the upper end of the partition, the upper surface of this shelf being ordinarily substantially below the plane of the upper edges of the front and rear walls. It will be noted, however, that the end of the shelf 30 opposite to that adjacent the partition 12 is carried on a lip 31 or otherwise supported on a transversely extending cross member 32 arranged at a suitable height between the corner posts of the cabinet, the outer face 32' of the cross member occupying substantially the same relative position with respect to the corner posts as the outer face of the wall 3 does to the corner posts at the other end of the cabinet, and that the end wall 4 is inwardly offset from the plane of the outer face 32' of the cross member 32 for a distance slightly greater than the thickness of the swinging leaf 33 hereinafter described, the upper end of the wall terminating considerably below the lower face of the partition 30.

The chamber 10 provides a convenient receptacle for the storage of records, access being had thereto by means of the doors 13 and, if desired, to facilitate the disposition and support therein of record holding albums, a plurality of vertically spaced horizontal shelves 34 may be disposed in the chamber, the ends of the shelves being car-

ried in supports 35 respectively lying adjacent the partition 12 and wall 4 and grooved for the reception of the ends of the shelves. If desired the shelves and supports may be arranged to form a unit which can be easily slid in and out of the chamber through the doors 13.

Through the inward offsetting of the wall 4 to which reference has been made, a recess 36 is formed between the corner posts 7 on the left hand end of the cabinet viewed from the front, the upper face of the bottom 5 and the lower face of the cross member 32 which recess is adapted to contain the swinging leaf 33. This leaf, which is preferably of a size to substantially fill the recess, is preferably finished on its exterior or upper surface to conform with the finish of a corresponding portion of the end wall 3 at the opposite end of the cabinet so that when the leaf is swung substantially to vertical position and disposed in the recess, the appearance presented by that end of the cabinet is substantially similar to that presented by the opposite end, the clearance between the edges of the leaf and the walls of the recess being made as small as is commensurate with the free movement of the leaf, whereby no distinct crack or opening is readily visible between the parts.

As stated, the leaf is hingedly connected in such manner that it may be swung from vertical to horizontal position or vice versa and also retained in horizontal position when desired so as to serve as a support for records or other articles and for effecting this connection we prefer to utilize substantially the form of hinge illustrated more particularly in Figs. 5 to 11 inclusive to which reference will now more especially be made. Each hinge comprises a pair of cooperating elements respectively adapted to be secured to the inner face of the front or rear wall of the cabinet, as the case may be, and to the adjacent side edge of the leaf, and as the hinges are alike in all respects save that they are made as rights and lefts to facilitate their employment adjacent opposite edges of the leaf, the following description of one of them will serve equally for the other and thus is to be understood as applicable to either.

In its preferred embodiment the hinge comprises a guide or track plate 40 and a slide 41 both preferably formed of sheet metal. The track plate is of elongated rectangular form and adapted to be secured to the inner face of the front or rear wall of the cabinet near its upper extremity by wood screws 42 or in any other way. This plate is pierced or cut out adjacent its lower edge to form a horizontally disposed narrow elongated slot 43, the upper wall 44 of which toward its forward end is in turn cut away to form a generally forwardly and upwardly extending ogee curved surface or edge 45, while from its forward termination the lower wall 46 of the slot is curved upwardly and forwardly substantially on a circular arc to form a curved edge or surface 47 and then turned sharply rearwardly as at 48 to meet the forward end of the ogee surface 45. Substantially at the center from which the curved edge 47 is struck an inwardly projecting pin 49 is rigidly secured in the plate in any suitable manner as by heading over the end of the pin in a countersunk hole in the plate as clearly shown in Fig. 11, this pin being adapted for slidable engagement in a narrow slot 52 in the slide 41 now to be described. Preferably this slide comprises integral flanges 41′, 41″ disposed at right angles to each other and thus presents a generally L-shaped cross section so as to readily embrace the corner of the leaf 33 to which it is operatively secured by wood screws 53 extending through the slide or in any other suitable way. As in the preferred embodiment of the invention the upper edge of the leaf is rabbeted or chamfered on its forward side as at 54, the slide is preferably formed with a tab or flap 55 bent inwardly from the flange 41′ into parallel relation with flange 41″ so that when the latter is positioned against the rear or under face of the leaf adjacent the upper corner thereof, the tab will rest in the rabbet at the extreme upper corner of the leaf as clearly shown in Fig. 9, thus forming a neat finish and also protecting the corner of the leaf. Preferably, the flange 41′ is let into the leaf so as to bring the surface of the flange flush with the edge of the leaf as also best shown in said figure.

The flange 41′ is provided, as hitherto stated, with a narrow, longitudinally disposed closed slot 52 parallel to and adjacent the line of intersection of the two flanges, and is also provided with an outwardly directed pin 57 in alinement with the slot 52 and disposed near the rear end of the flange when viewed as in Fig 10, this pin being conveniently secured in the flange in a manner corresponding to that in which pin 49 is secured in the plate and being adapted for slidable engagement in the slot 43 thereof when the parts are in operatively assembled relation.

It will be understood that one of the slides 41 is attached to the leaf adjacent each of its upper corners as shown in Fig. 9 and that one of the track plates 40 is secured to the inner face of the front and another to the inner face of the rear wall of the cabinet near the upper extremities thereof, the parts being so assembled that the pins 57 respectively project into the slots 43 in the adjacent track plates and that the pins 49 project into the slots 52 in the adjacent slides. Under these circumstances the leaf 33 will

normally depend in a substantially vertical position in the recess 36, track plates 40 being so located as to effect this result, the pins 57 resting against the surfaces 48 and the pins 49 lying adjacent or at the upper extremities of the slots 52. When it is desired to employ the leaf as a support, the same may be swung upwardly to substantially horizontal position, pins 57 during this movement ordinarily traversing the curved surface 47 till they come to alinement with the slots 43, after which the leaf may be given a short inward horizontal movement to cause pins 57 to move toward the rear ends of the slots and bring the slides to a position in which the pins 49 rest adjacent the forward ends of the slots 52. The coaction of the pins with the walls of their respective slots is now effective to securely support the leaf in horizontal position as shown in Fig. 1 so long as it may be desired.

To return the leaf to vertical position the same is first pulled outwardly so as to bring pins 57 to substantially the termination of the horizontal surfaces 44 and then lowered, during which movement the pins ride along the ogee surfaces 45 till they reach the forward terminations thereof as the leaf assumes its vertical position.

In order to facilitate the operation of raising and lowering the leaf we preferably dispose a movable knob 60 in a bore 61 formed near the lower edge of the leaf, considered as in Fig. 5, and so arranged the knob that when the leaf is in horizontal position it automatically assumes a position substantially flush with the upper surface thereof and will automatically project above such surface when the leaf is in substantially vertical position. To this end we may enlarge the bore 61 adjacent its ends as at 61′ and provide the knob, which is of somewhat greater length than the thickness of the leaf, with flanges 62 and 63 at its opposite ends of such diameter as to readily seat in the enlarged portions of the bore but of greater diameter than the main portion thereof. Thus, when the leaf is raised and the knob released, the latter will fall vertically to the position shown in Fig. 7 thereby bringing its upper surface substantially flush with that of the leaf while when the leaf is swung to vertical position the lower end or flange of the knob will contact with the wall 3, or with a thin pad of felt or other resilient matter 64 preferably disposed thereon, so as to force the knob to the position shown in Fig. 2 in which it may be readily grasped by the fingers when it is desired to again raise the leaf. In order to maintain the leaf in vertical position when the machine is being moved or at such other times as may be necessary, we may dispose yielding retaining means such as spring pressed balls 66 in the path of the leaf and provide recesses 67 in the adjacent edge thereof for cooperation therewith in the well known manner. Conveniently these retaining means may be arranged to project into the recess 36 from the bottom wall thereof.

In order to permit the upper end of the leaf to be brought relatively close to the cross member 32 while affording sufficient room for the upper corner of the leaf to clear the latter when the leaf is raised, we preferably rabbet the upper corner of the leaf as at 54 as already described and provide the cross member with a downwardly depending lip 32′ which rests partially within the rabbet in the manner clearly shown in Fig. 5, the lip thus concealing the upper end of the leaf when in vertical position and substantially eliminating any visible gap or space between the parts.

It will be observed that in a talking machine having a cabinet constructed in the manner described, the inner or upper end of the leaf when the latter is raised is housed in the space provided beneath the shelf 30 and above the record supporting means contained in the chamber 14. Additionally, as a result of the elevation of the shelf 30 above the plane of the turntable, the shelf may be conveniently employed as a resting place for records during the operation of changing records or at other times when the talking machine is in use and that when so utilized a record which is disposed thereon may be readily picked up by slipping it in a direction transverse to the tone arm, toward the turntable for a short distance so as to assume substantially the position shown in dotted lines in Fig. 3, on one side of the forwardly extending tone arm 22, in which position the edge of the record overhangs the partition 12 and the operator may easily introduce his fingers beneath the projecting portion and raise the record from the shelf without either his fingers or the record coming into contact with the turntable or other operative parts of the machine above the motor board.

While we have herein described with considerable particularity a preferred embodiment of our invention as exemplified in a talking machine of the console type, we do not thereby desire or intend to restrict the use of the invention to any particular style or type of talking machine as the same is of utility with different types and may be readily embodied therein. Nor do we, by the foregoing description of a preferred embodiment of the invention or by the accompanying illustrations thereof, desire or intend to limit the invention to any precise details of construction, design or arrangemen of parts, as the same may be modified in different way and in various particulars without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described our invention, we claim and desire to protect by Letters Patent of the United States:

1. In a talking machine cabinet, the combination of front and rear walls and end walls extending therebetween closing said cabinet on he four substantially vertical sides thereof, one of said end walls being substantially flush with respect to the adjacent ends of the front and rear walls and the other end wall being inwardly offset with respect to the adjacent ends of the front and rear walls so as to provide a recess in the end of the cabinet, a movable leaf adapted to seat in and substantially fill said recess and when in said recess to impart to said end of the cabinet the same appearance that the first mentioned end wall imparts to the other end of the cabinet, and means for hingedly connecting said leaf to said cabinet to permit the lower edge of said leaf to be moved from its lowest position in said recess outwardly and upwardly to bring said leaf into a substantially horizontal position, and means concealed within said cabinet for supporting said leaf in said horizontal position.

2. A talking machine having front, rear and end walls closing said cabinet on the four substantially vertical sides thereof, one of said end walls being inwardly offset from the adjacent ends of the front and rear walls so as to provide a recess on the exterior of the cabinet, said end wall terminating below the upper edge of the other walls, a leaf fitting into said recess, means within said cabinet to hingedly secure the upper end of said leaf to the front and rear walls, to permit said leaf to be swung from a substantially vertical position within said recess to a substantially horizontal position; and to be moved when in said horizontal position, inwardly to thrust the hinged edge of said leaf into said cabinet behind and above said offset end wall; and to rigidly support said leaf in such horizontal position.

3. In a talking machine cabinet comprising front, rear and end walls, the combination of a board disposed within the cabinet spaced below the tops of said walls and adapted to support a motor, a shelf also within the cabinet disposed in a plane above that of said board and forming a chamber below said shelf, a riser between said board and shelf; said board, said shelf and riser together forming a partition across the entire space in said cabinet bounded by said walls, one of said end walls being offset inwardly with respect to the adjacent ends of the front and rear walls to provide a recess in one end of the cabinet, a swinging leaf fitting said recess and hinging means connecting the upper edge of said leaf with said cabinet, and whereby said leaf may be swung upwardly from a substantially vertical position within said recess to a substantially horizontal position, said hinging means permitting a bodily movement of said leaf, when said leaf is in a horizontal position, inwardly with respect to the cabinet to move the hinged end thereof into said chamber beneath said shelf, said hinging means being also operative to retain said leaf in said horizontal position when the hinged end thereof is within said chamber.

In witness whereof, we have hereunto set our hands this 27th day of July, 1923.

EUGENE T. KIEFFER.
WILLIAM B. STEVENSON.