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MUSICAL SUPPORTING ARRANGEMENT

Filed March 18, 1949

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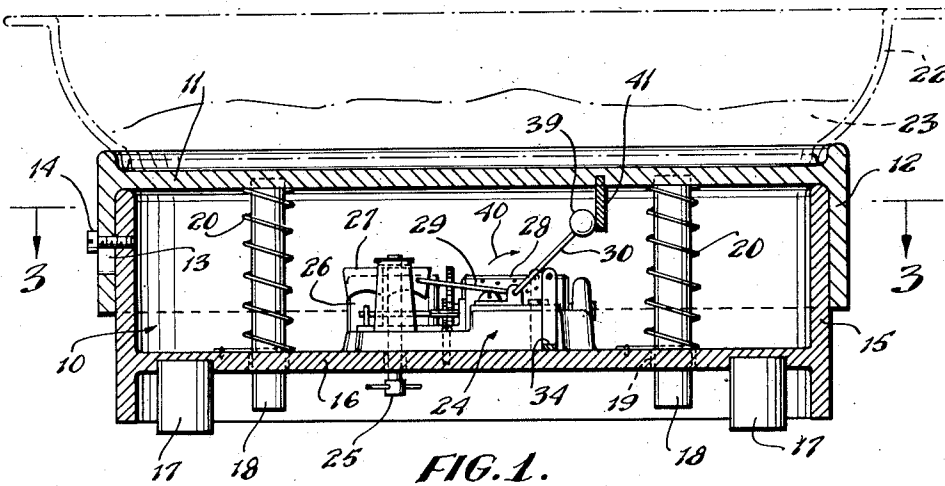
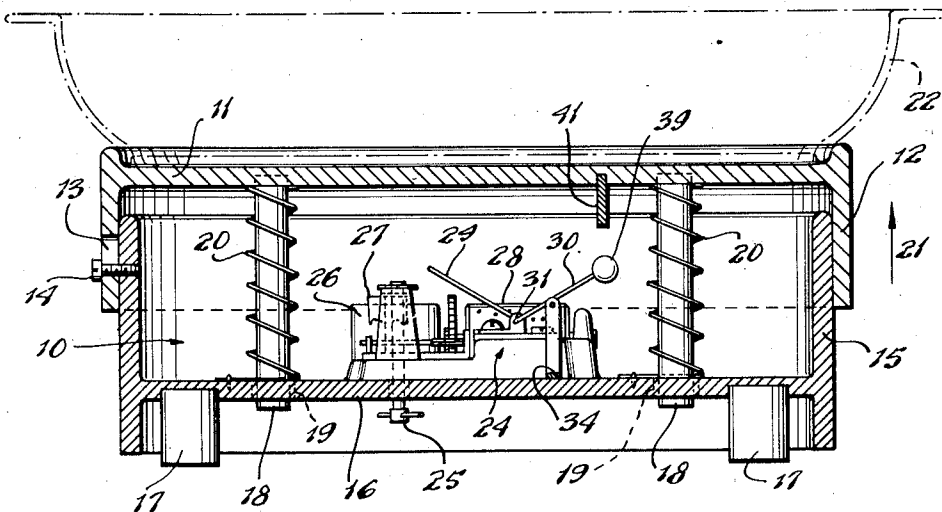


FIG. 2.



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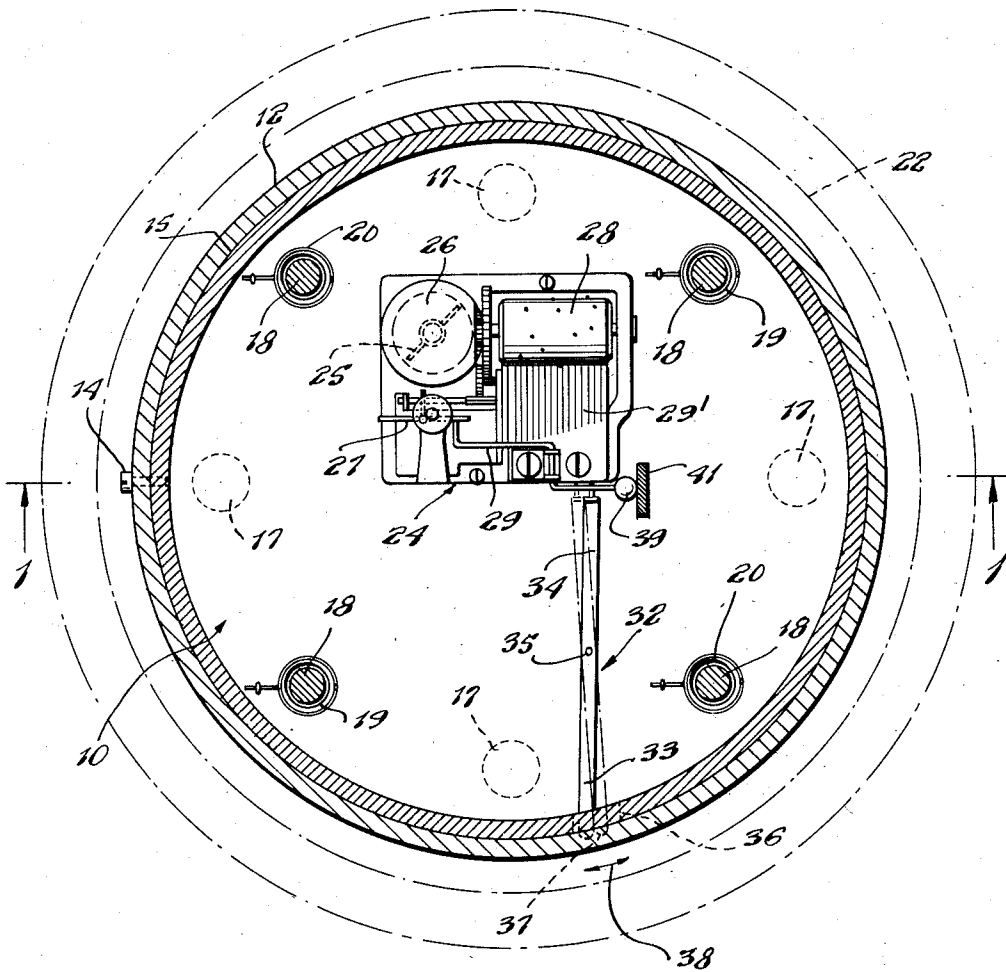


FIG. 3.

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MUSICAL SUPPORTING ARRANGEMENT

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Application March 18, 1949, Serial No. 82,038

20 Claims. (Cl. 84—95)

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Our present invention relates to musical supporting arrangements, and more particularly to automatic musical supports for plates and the like.

It is an object of our invention to provide a musical plate holder which is constructed so that it does not play when the plate is filled, but starts to play automatically when the food contained in the plate diminishes to a certain predetermined extent during eating.

A further object of our present invention is to provide an arrangement of the above type which is constructed so that operation of the musical movement cannot be stopped after it has been released by depression of the plate.

With the above objects in view our present invention mainly consists of a musical supporting arrangement comprising in combination a hollow base, a support mounted on the hollow base slidably in vertical direction, lifting means mounted in the hollow base and engaging the support tending to permanently raise the same to a predetermined raised position, a spring operated musical apparatus within the hollow base, and releasing means for the spring operated musical apparatus, the releasing means being actuated by the support so as to permit operation of the spring operated musical apparatus when the support reaches during raising by the lifting means the predetermined raised position.

In accordance with a preferred embodiment of our invention, we employ a hollow base which is open at its top, and with a flat support fitting on the upper rim of the hollow base and provided with an annular flange engaging the outer face of the hollow base so as to hold the support on the hollow base slidably in vertical direction.

Furthermore, in order to obtain level positioning of the flat support mentioned above, we have found it advisable to provide as lifting means, a plurality of spiral springs mounted in the hollow base along the wall of the same and engaging the bottom face of the flat support, permanently tending to lift the same.

The releasing means mentioned above include, in accordance with a preferred embodiment of our invention, a blocking member arranged within the hollow base movable between blocking position blocking operation of the spring operated musical apparatus, and releasing position permitting operation of the spring operated musical apparatus, and actuating means mounted on the support movably together with the same and constructed so as to hold the blocking member in blocking position while the support is located

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under the predetermined position, and to permit movement of the blocking member into releasing position when the support reaches during raising by the lifting means the predetermined raised position.

In order to prevent unintentional operation of the musical apparatus before placing the filled plate on the support, or after doing so, due to shaking of the entire device, we also provide hand operated operating means arranged within the hollow base and projecting outwardly through an opening in the wall of the base, the hand operated operating means being manually movable between operative position holding the blocking member in blocking position, and non-operative position permitting movement of the blocking member into releasing position.

Of course, it is advisable to provide some kind of moving means, e. g. a small weight permanently tending to move the blocking member from blocking into releasing position.

As stated above, it is of great importance to prevent stopping of operation of the musical apparatus after start of the operation by unintentional depression of the plate, e. g. by placing a spoon, knife or fork thereon. This object is attained by using as actuating holding means, e. g. a holding projection mounted on the support movably together with the same, and constructed so as to hold the blocking member against action of the moving means in blocking position while the support is located under the predetermined raised position, and to permanently disengage the blocking member for movement by the moving means into releasing position outside of the path of said holding means when the support reaches during raising by the lifting means the predetermined raised position.

The novel features which we consider as characteristic for our invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its methods of operation, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

Fig. 1 is an elevational section through our new musical plate holder along line 1—1 of Figure 3, with the support in blocking position;

Fig. 2 is an elevational section through the plate holder similar to the one shown in Figure 1, with the support in releasing position; and

Fig. 3 is a horizontal section through the plate holder shown in Figures 1 and 2, along line 3—3 of Figure 1.

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As shown in the drawing, our new plate holder includes as main elements, a hollow base 10, and a flat support 11 slidably mounted on the base 10 by means of the annular flange 12 forming part of the support 11.

The support 11 is prevented from sliding off base 10 by means of slot 13 provided in the annular flange 12, and screw 14 passing through slot 13 and screwed into the cylindrical wall 15 of the base 10.

The base 10 is provided also with a bottom wall 16 supported by small cylindrical legs 17, as shown in the drawing.

In accordance with our invention, we provide four pins 18 mounted in the support 11, extending downwardly into the hollow base 10, and projecting through guiding openings 19 provided in the bottom wall 16 of the base.

Lifting means consisting of four spiral springs 20, each surrounding one of the pins 18 are arranged within the hollow base in the manner shown in Figures 1 and 2. These springs permanently tend to raise the support 11 in direction of arrow 21.

We wish to stress that it is of great importance that these springs be chosen and adjusted so that they are not strong enough to raise the plate 22 placed on the support 11 when filled with food as indicated at 23 in Figure 1, but that they are strong enough to raise the support together with the base when the same is empty as shown in Figure 2, or the amount of food has diminished by eating, to a predetermined extent.

Our new arrangement also includes a musical apparatus 24 of well-known type. This musical apparatus 24 includes a winding member 25, a spring motor 26, a governor 27, a drum 28, and reeds 29 of well-known type. The governor 27 consists of a double vane which is rotated by the spring motor 26 during operation of the musical apparatus.

In order to block operation of the musical apparatus, we provide a double armed blocking lever including the lever arms 29 and 30. This blocking lever is pivoted at 31 to the base and movable between blocking position shown in Figure 1 with arm 29 in the path of rotation of governor 27, and releasing position shown in Figure 2 with arm 29 turned out of the path of rotation of governor 27.

In order to manually block movement of the musical apparatus, we provide the double armed operating lever 32, composed of the operating lever arm 33 and the blocking lever arm 34, and pivoted at 35 to the bottom wall 16 of the base.

The operating lever arm 33 projects outwardly through the opening 36 in the wall 15 of the base 10, and its projecting end 37 is manually turnable to and fro in direction of arrow 38.

The blocking lever arm 34 is movable by turning of the projecting end 37 of the lever arm 33 from its non-operative position shown in Figure 3 in full lines into operative position shown in dotted lines, and back. In non-operative position, shown also in Figure 2, the blocking lever is adapted to move outside of the path of the governor 27 while location of the blocking lever arm 34 in the position shown in dotted lines in Figures 1 and 3 forces the blocking lever to stay in blocking position.

We wish to note that in order to impart to the blocking lever the tendency to turn from blocking into releasing position, we provide at the end of the lever arm 30 the weight 39 permanently

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tending to turn the blocking lever in direction of arrow 40.

The automatic holding means mentioned above include the projection 41 cooperating with the weight 39 as will be described further below in detail.

Our new musical support arrangement operates as follows:

Before start of operation the manually operated lever 32 is turned into its operative blocking position shown in Figures 1 and 3 in dotted lines. Then, the spring motor 26 is wound by means of the winding member 25.

Next, the plate 22 is filled with food 23, and placed upon the support 11. In this position the arrangement is ready for operation.

As the next step, the lever 32 is manually turned into releasing position shown in full lines in the drawings.

In this position, as evident from Figure 1, the lever arm 34 does not block turning of the blocking lever. This lever is, therefore, theoretically free to turn.

However, it is prevented from such turning by the holding projection 41 against which the weight 39 abuts, while the support 11 is in its depressed position shown in Figure 1. Thus, in this position, the musical apparatus is prevented from operation.

During eating, the food diminishes in the plate 22, and thereby the same becomes lighter and lighter.

Consequently, the springs 20 will slowly raise the plate until the same reaches the predetermined raised position shown in Figure 1. In this position, or slightly before attaining this position, the projection 41 will be raised to such an extent that the weight 39 can slip past it, drop down, and thereby turn the lever arm 29 of the blocking lever into releasing position outside of the path of the governor 27. This will result in free rotation of the governor, and consequent operation of the musical apparatus.

It should be stressed that our new arrangement is constructed so that depression of the plate 22 and support 11 after disengagement of the projection 41 and weight 39 will not result in renewed blocking of operation of the musical apparatus since the once released weight 39 has dropped outside of the sphere of influence of the projection 41, and cannot again be engaged by the same.

In order to stop operation of the musical apparatus, it is necessary to manually move the operating lever 32 back into its blocking position shown in dotted lines.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of supporting arrangements differing from the types described above.

While we have illustrated and described the invention as embodied in musical plate holders, we do not intend to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of our invention.

Without further analysis, the foregoing will so fully reveal the gist of our invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention, and therefore, such adaptations should and are intended

to be comprehended within the meaning and range of equivalence of the following claims.

What we claim as new and desire to secure by Letters Patent is:

1. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support tending to permanently raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; and releasing means for said spring operated musical apparatus, said releasing means actuated by said support so as to permit operation of said spring operated musical apparatus when said support reaches during raising by said lifting means said predetermined raised position.

2. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; a plurality of spiral springs mounted in said hollow base along the wall of the same and engaging the bottom face of said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; and releasing means for said spring operated musical apparatus when said support reaches during raising by said spiral springs said predetermined raised position.

3. A musical supporting arrangement comprising in combination a hollow base being open at its top; a flat support fitting on the upper rim of said hollow base and provided with an annular flange engaging the outer face of said hollow base so as to hold said support on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support tending to permanently raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; and releasing means actuated by said support so as to permit operation of said spring operated musical apparatus when said support reaches during raising by said lifting means said predetermined raised position.

4. A musical supporting arrangement comprising in combination a hollow base being open at its top; a flat support fitting on the upper rim of said hollow base and provided with an annular flange engaging the outer face of said hollow base so as to hold said support on said hollow base slidably in vertical direction; a plurality of vertically arranged spiral springs mounted in said hollow base along the wall of the same and engaging the bottom face of said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; and releasing means actuated by said support so as to permit operation of said spring operated musical apparatus when said support reaches during raising by said lifting means said predetermined raised position.

5. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus

and releasing position permitting operation of said spring operated musical apparatus; and actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined position and to permit movement of said blocking member into releasing position when said support reaches during raising by said lifting means said predetermined raised position.

6. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; hand operated operating means arranged within said hollow base and projecting outwardly through an opening in the wall of said base, said hand operated operating means manually movable between operative position holding said blocking member in blocking position and non-operative position permitting movement of said blocking member into releasing position; and automatic actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined position and to permit movement of said blocking member into releasing position when said support reaches during raising by said lifting means said predetermined raised position.

7. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; moving means permanently tending to move said blocking member from blocking into releasing position; and actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined position and to permit movement of said blocking member into releasing position when said support reaches during raising by said lifting means said predetermined raised position.

8. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; moving means permanently tending to move said blocking member from blocking into releasing

position; and actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined position and to permit movement of said blocking member into releasing position when said support reaches during raising by said lifting means said predetermined position.

9. A musical supporting arrangement comprising in combination a hollow base being open at its top; a flat support fitting on the upper rim of said hollow base and provided with an annular flange engaging the outer face of said hollow base so as to hold said support on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; hand operated operating means arranged within said hollow base and projecting outwardly through an opening in the wall of said base, said hand operated operating means manually movable between operative position holding said blocking member in blocking position and non-operative position permitting movement of said blocking member into releasing position; and automatic actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined position and to permit movement of said blocking member into releasing position when said support reaches during raising by said lifting means said predetermined raised position.

10. A musical supporting arrangement comprising in combination a hollow base being open at its top; a flat support fitting on the upper rim of said hollow base and provided with an annular flange engaging the outer face of said hollow base so as to hold said support on said hollow base slidably in vertical direction; lifting means mounted on said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; moving means permanently tending to move said blocking member from blocking into releasing position; and actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined position and to permit movement of said blocking member into releasing position when said support reaches during raising by said lifting means said predetermined raised position.

11. A musical supporting arrangement comprising in combination a hollow base being open at its top; a flat support fitting on the upper rim of said hollow base and provided with an annular flange engaging the outer face of said hollow base so as to hold said support on said hollow base slidably in vertical direction; a plurality of vertically arranged spiral springs

mounted in said hollow base along the wall of the same and engaging the bottom face of said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; hand operated operating means arranged within said hollow base and projecting outwardly through an opening in the wall of said base, said hand operated operating means manually movable between operative position holding said blocking member in blocking position and non-operative position permitting movement of said blocking member into releasing position; and automatic actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined position and to permit movement of said blocking member into releasing position when said support reaches during raising by said vertically arranged spiral springs said predetermined raised position.

12. A musical supporting arrangement comprising in combination a hollow base being open at its top; a flat support fitting on the upper rim of said hollow base and provided with an annular flange engaging the outer face of said hollow base so as to hold said support on said hollow base slidably in vertical direction; a plurality of vertically arranged spiral springs mounted in said hollow base along the wall of the same and engaging the bottom face of said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; moving means permanently tending to move said blocking member from blocking into releasing position; and actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined position and to permit movement of said blocking member into releasing position when said support reaches during raising by said vertically arranged spiral springs said predetermined raised position.

13. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; moving means permanently tending to move said blocking member from blocking into releasing position; and actuating means mounted on said support movably together with the same and constructed so as to hold said blocking member in blocking position while said support is located under said predetermined raised position and to permanently release said blocking member for

movement by said moving means into releasing position outside of the sphere of influence of said actuating means when said support reaches during raising by said lifting means said predetermined raised position.

14. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; moving means permanently tending to move said blocking member from blocking into releasing position; and holding means mounted on said support movably together with the same and constructed so as to hold said blocking member against action of said moving means in blocking position while said support is located under said predetermined raised position and to permanently disengage said blocking member for movement by said moving means into releasing position outside of the path of said holding means when said support reaches during raising by said lifting means said predetermined raised position.

15. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted on said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking lever movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; weight means permanently tending to move said blocking member from blocking into releasing position; and a holding projection mounted on said support movably together with the same and constructed so as to hold said blocking lever against action of said weight means in blocking position while said support is located under said predetermined raised position and to permanently disengage said blocking lever for movement by said weight means into releasing position outside of the path of said weight means when said support reaches during raising by said lifting means said predetermined raised position.

16. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking member movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; moving means permanently tending to move said blocking member from blocking into releasing position; hand operated operating means arranged within said hollow base and projecting outwardly through an opening in the wall of said base, said hand operated operating means manually movable between operative position holding said blocking member in blocking position and non-

operative position permitting movement of said blocking member into releasing position; and holding means mounted on said support movably together with the same and constructed so as to hold said blocking member against action of said moving means in blocking position while said support is located under said predetermined raised position and to permanently disengage said blocking member for movement by said moving means into releasing position outside of the path of said holding means when said support reaches during raising by said lifting means said predetermined raised position.

17. A musical supporting arrangement comprising in combination a hollow base; a support mounted on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking lever movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; weight means permanently tending to move said blocking lever from blocking into releasing position; hand operated operating means arranged within said hollow base and projecting outwardly through an opening in the wall of said base, said hand operated operating means manually movable between operative position holding said blocking lever in blocking position and non-operative position permitting movement of said blocking lever into releasing position; and a holding projection mounted on said support movably together with the same and constructed so as to hold said blocking lever against action of said weight means in blocking position while said support is located under said predetermined raised position and to permanently disengage said blocking lever for movement by said weight means into releasing position outside of the path of said holding projection when said support reaches during raising by said lifting means said predetermined raised position.

18. A musical supporting arrangement comprising in combination a hollow base being open at its top; a flat support fitting on the upper rim of said hollow base and provided with an annular flange engaging the outer face of said hollow base so as to hold said support on said hollow base slidably in vertical direction; lifting means mounted in said hollow base and engaging said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking lever movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; weight means permanently tending to move said blocking lever from blocking into releasing position; hand operated operating means arranged within said hollow base and projecting outwardly through an opening in the wall of said base, said hand operated operating means manually movable between operative position holding said blocking lever in blocking position and non-operative position permitting movement of said blocking lever into releasing position; and a holding projection mounted on said support movably together with the same and constructed so as to hold said blocking lever against action of said weight means in blocking

position while said support is located under said predetermined raised position and to permanently disengage said blocking lever for movement by said weight means into releasing position outside of the path of said holding projection when said support reaches during raising by said lifting means said predetermined raised position.

19. A musical supporting arrangement comprising in combination a hollow base being open at its top; a flat support fitting on the upper rim of said hollow base and provided with an annular flange engaging the outer face of said hollow base so as to hold said support on said hollow base slidably in vertical direction; a plurality of vertically arranged spiral springs mounted in said hollow base along the wall of the same and engaging the bottom face of said support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said hollow base; a blocking lever movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; weight means permanently tending to move said blocking lever from blocking into releasing position; hand operated operating means arranged within said hollow base and projecting outwardly through an opening in the wall of said base, said hand operated operating means manually movable between operative position holding said blocking lever in blocking position and non-operative position permitting movement of said blocking lever into releasing position; and a holding projection mounted on said support movably together with the same and constructed so as to hold said blocking lever against action of said weight means in blocking position while said support is located under said predetermined raised position and to permanently disengage said blocking lever for movement by said weight means into releasing position outside of the path of said holding projection when said support reaches during raising by said vertically arranged spiral springs said predetermined raised position.

20. A musical supporting arrangement comprising in combination a circular hollow base being open at its top; a circular support fitting

on the upper rim of said circular hollow base and provided with an annular flange engaging the outer face of said circular hollow base so as to hold said circular support on said circular hollow base slidably in vertical direction; a plurality of vertically arranged spiral springs mounted in said circular hollow base along the wall of the same and engaging the bottom face of said circular support permanently tending to raise the same to a predetermined raised position; a spring operated musical apparatus within said circular hollow base; a blocking lever movable between blocking position blocking operation of said spring operated musical apparatus and releasing position permitting operation of said spring operated musical apparatus; weight means permanently tending to move said blocking lever from blocking into releasing position; a manually operated operating member arranged within said circular hollow base and projecting outward through an opening in the wall of said base, said manually operated operating member manually movable between operative position holding said blocking lever in blocking position and non-operative position permitting movement of said blocking lever into releasing position; and a holding projection mounted on said support movably together with the same and constructed so as to hold said blocking lever against action of said weight means in blocking position while said circular support is located under said predetermined raised position and to permanently disengage said blocking lever for movement by said weight means into releasing position outside of the path of said holding projection when said circular support reaches during raising by said vertically arranged spiral springs said predetermined raised position.

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