Nov. 25, 1947. J. D. STIRISS 2,431,351

COIN REGISTER BANK

Original Filed July 15, 1937 2 Sheets-Sheet 1

Fig. 1.

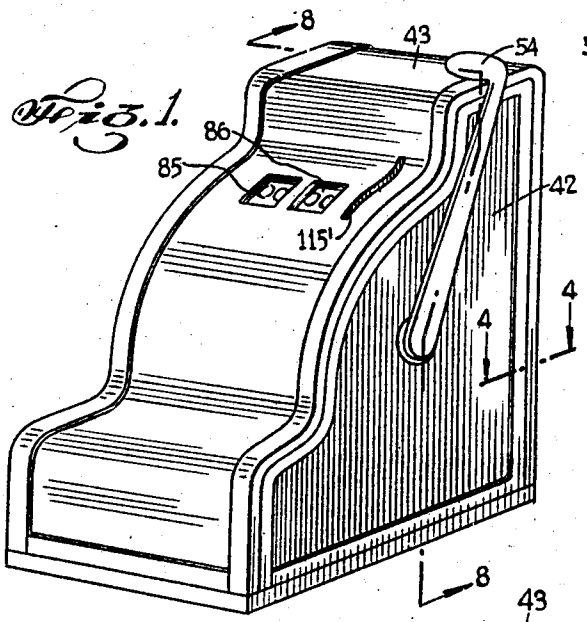


Fig. 2.

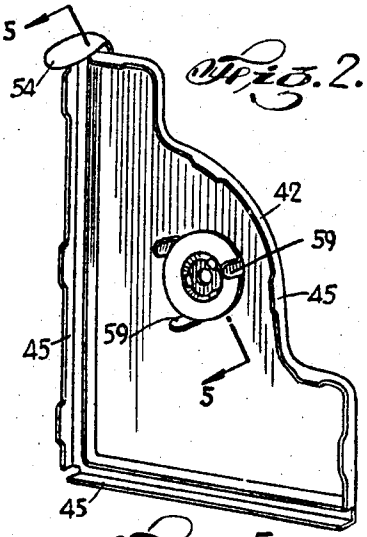
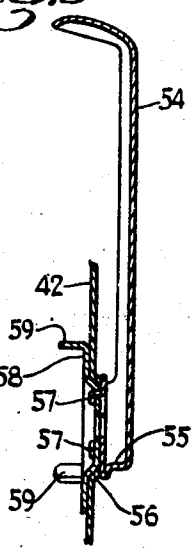


Fig. 5



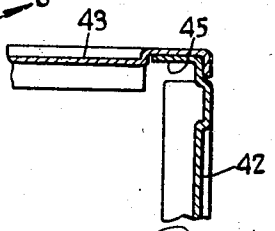


Fig. 4.

Fig. 3.

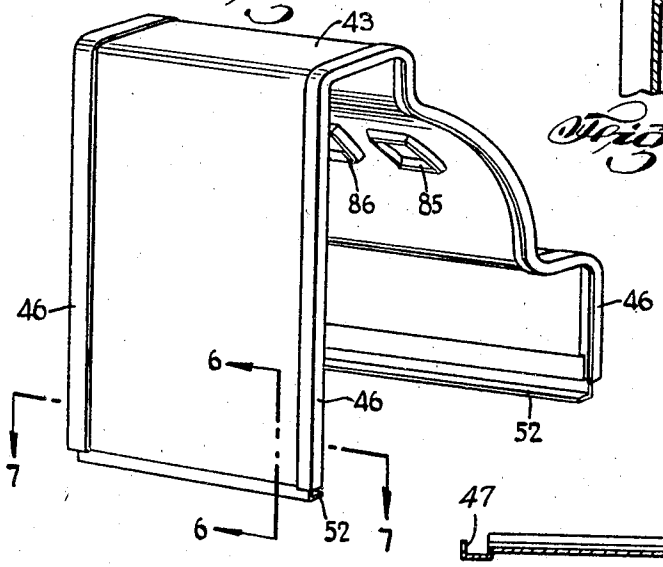




Fig. 7.

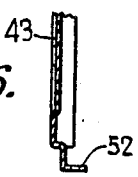


Fig. 6.

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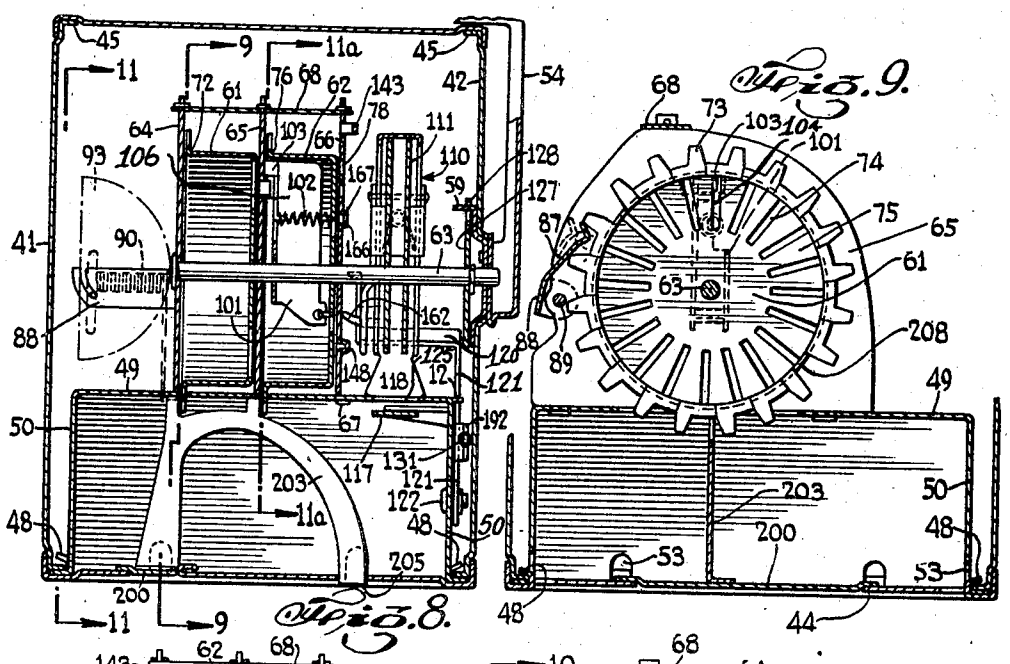


Fig. 8.

Fig. 9.

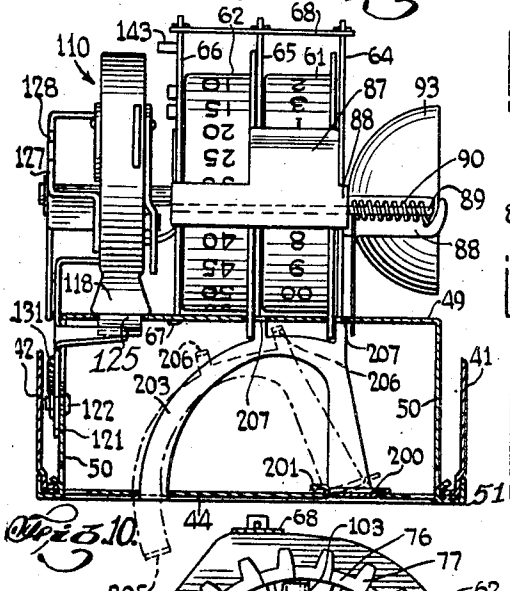


Fig. 10.

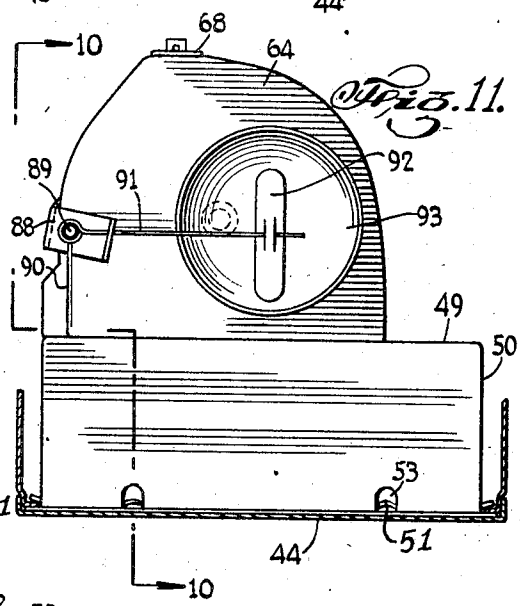


Fig. 11.

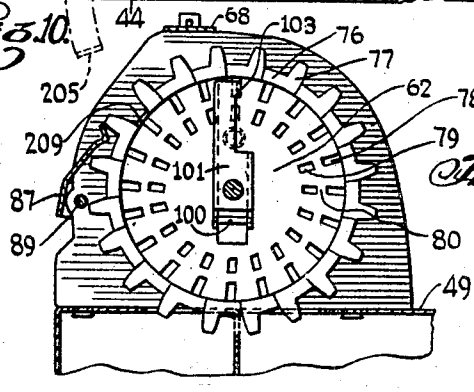


Fig. 11a.

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COIN REGISTER BANK

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Application November 7, 1941, Serial No. 418,125, Patent No. 2,392,424, dated January 8, 1946, which is a division of application Serial No. 153,727, July 15, 1937, now Patent No. 2,262,475, dated November 11, 1941. Divided and this application October 25, 1944, Serial No. 560,241

2 Claims. (Cl. 232—4)

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This application is a division of my application No. 418,125, filed November 7, 1941, Patent No. 2,392,424, January 8, 1946, which is a division of application No. 153,727, filed July 15, 1937, Patent No. 2,262,475, November 11, 1941.

This invention relates to multiple coin register banks, and more particularly to toy register banks, and has among its objects a novel improved and simplified construction of a coin register bank and its casing.

A distinct object of the invention is a toy coin register bank in which all the principal cooperating elements of its structure and mechanism are made of sheet metal by stamping, bending and similar forming operations.

The foregoing and other objects of the invention will be best understood from the following description of exemplifications thereof, reference being had to the accompanying drawings, wherein

Fig. 1 is a perspective view of a three coin register bank exemplifying the invention;

Fig. 2 is a perspective view of a side wall of the bank;

Fig. 3 is a perspective view of the cover of the bank;

Fig. 4 is a cross sectional view through the bank casing structure along line 4—4 of Fig. 1;

Fig. 5 is a cross sectional view of the side wall of the casing structure along line 5—5 of Fig. 2;

Fig. 6 is a detailed cross sectional view of the wall formation of the cover along line 6—6 of Fig. 3;

Fig. 7 is a similar view along line 7—7 of Fig. 3;

Fig. 8 is a vertical cross sectional view through the assembled register bank structure;

Fig. 9 is a cross sectional view of the structure along line 9—9 of Fig. 8;

Fig. 10 is a partially cross sectional view of the structure along line 10—10 of Fig. 11;

Fig. 11 is an elevational view of the mechanism along line 11—11 of Fig. 8; and

Fig. 11*a* is a cross sectional view similar to Fig. 9 along line 11*a*—11*a* of Fig. 8.

Although the various novel features of the invention are not limited to any specific arrangement of a toy coin register bank, I shall describe them in connection with an exemplification in the form of a toy three-coin register bank shown in the drawings. It comprises an outer casing 40 shown in Figs. 1 to 11*a* formed of two side walls 41, 42 and a cover 43 which are joined by the base 44 into a unitary structure. The opposite side walls 41, 42 are formed of sheet metal and have inwardly bent flanges forming ribs 45 along the edges of the walls. The cover 43 shown in Fig. 3 is formed of an elongated sheet metal strip that has its longitudinal edges bent into reinforcing channel members 46 which fit over the ribs 45 of the side walls 41, 42 so that upon

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inserting the ribs into the channels the side walls 41, 42 and the cover 43 are joined into a self-supporting structure. The base plate 44 is formed of a solid sheet plate sheared, drawn and bent to provide along its four sides recessed channel members 47 and projecting lugs 48 along the interior sides of the channel members 47 (Figs. 8 and 9). A coin box 49 is formed of a sheet metal plate having downwardly bent side walls 50 terminating into outwardly projecting flanges 51 which fit into the recesses between the ridges 47 and lugs 48 of the base.

To assemble the several elements of the casing, the coin box 49 is mounted on the base plate 44 so that its flanges are gripped within the recesses between the ridges 47 and projecting lugs extending along the edges of the base plate. The two side walls 41, 42 are then mounted adjacent the walls of the coin box 49 by inserting the bottom ribs 45 of the side walls into the channel recesses 46 of the base plate, the bottom ribs of the side walls lying above the flanges 51 of the coin box.

The cover 43 is then slipped over the side walls 41, 42 and the channels 46 along the edges of the cover are forced over the ribs 45 extending along the edges of the side walls, while the inwardly projecting flanges 52 at the front and rear edge of the cover 43 are forced into the recesses between the ridges 47 and the lugs along the front and rear sides of the base plate over the front and rear flanges of the coin box. The so assembled casing members are then joined into a strong self-sustaining casing structure by bending the inwardly projecting base plate lugs 48 extending along the recessed edges of the base plate, over the inwardly extending flanges 45 of the side walls, and through lug holes 53 in the side walls of the coin box, over the outwardly extending flanges of the coin box, so as to clamp the coin box, the side walls as well as the cover wall to the reinforced edges of the base without rivets or other special fastening means.

As shown in Figs. 2, 5 and 8, a register operating handle 54 of sheet metal, shown in detail in Fig. 4, has its lower end formed into a cup-shaped pivot member 55 which is pivotally mounted in an opening 56 in the side wall 42 of the casing by clamping the lugs 57 projecting from the base of the pivot member in slits of the clutch washer 58 mounted on the inner side of the wall. The clutch washer has inwardly projecting claws 59 for engaging and operating the coin registering and controlling mechanism mounted inside the casing by swinging the lever forwardly from its upward position and returning it to its normal upward position.

As shown in Figs. 8 to 11*a*, the coin box 49 constitutes the sole support of the coin registering and coin deposit mechanisms which are as-

sembled on the coin box 49 before assembling the casing structure.

The coin registering mechanism comprises two revolvably-mounted, differentially-operative registering drums or numeral wheels 61, 62 journalled on a shaft 63 extending through openings of three guide walls 64, 65, 66 of sheet metal which are mounted on the top of the coin box 49 by the locking engagement of bottom lugs 67 with slits in the top of the coin box and are braced at the top by a strap 68 in the way shown in Figs. 8 and 9. The left drum 61 shown in Fig. 9, which serves as the dollar drum, for instance, is formed of a sheet member bent to form a cylindrical cup having an outwardly projecting annular guide flange 72 terminating into a set of ratchet teeth 73, the face of the drum cup having along its periphery a plurality of radial register slots 74 subdividing the periphery into a predetermined number of register segments 75, in the way shown in Fig. 9. The right drum 62, which serves as the nickel drum, for instance, is similarly formed into a cylindrical cup having an outwardly projecting annular guide flange 76 terminating into a plurality of outwardly projecting teeth 77, the peripheral portion of the cup face being provided with two sequences of radial register slots 78, 79 separated by an annular guide strip 80 extending between the sequences of register coupling slots 78, 79, in the way shown in Fig. 11*a*.

The sequences of register coupling slots on the two register drums 61, 62 correspond to the sequences of register numbers provided on the cylindrical peripheries of the two drum cups. Thus, as indicated in Fig. 10, the periphery of the nickel cup 62 has a sequence of twenty register numbers 0, 5, 10, . . . 90, 95, and the dollar cup 61 has two consecutive sequences of numbers 1 to 10 corresponding to the twenty register coupling slots of the two cups, so that in advancing either one or the other cup to the next higher number on its periphery, the periphery is advanced by the same peripheral distance to bring the next higher register number in front of the register windows 85, 86 on the cover 43 of the casing. The dollar drum 61 and the nickel drum 62 are formed from simple flat sheet metal stampings.

The register drums 61, 62 are held in their proper angular position in which the register numbers, visible through the register windows 85, 86, indicate the amount deposited in the coin box, through the engagement of the teeth 73, 77 of the two drums with a drum pawl 87 forming a part of a sheet metal member 88 which is journalled on a pawl shaft 89 on the rear of the guide walls 64, 65, 66 and is actuated by a biasing spring 90 fastened to the coin box to press the pawl projection into engagement with the teeth of the register drums in the way shown in Figs. 9 and 10 and permit either one or both register drums to be rotated on the drum shaft 63 and selectively advanced by one or more register segments. The pawl biasing spring 90 has a projecting bell arm 91 carrying a sheet metal bell hammer 92 for sounding a bell 93 suitably mounted on a lug extending from the guide wall 64 so as to hit the bell each time the drum pawl is raised by a drum tooth when one of the two register drums 61, 62 is advanced to the next higher registering position.

As shown in Figs. 8 and 9, on a lug 100 formed on the inner cup face of the nickel drum 62 is pivotally mounted a claw arm 101 and a spring

102 which presses a claw 103 projecting from the end of the arm against an annular claw path on the adjacent intermediate guide wall 65 along which the claw rides during the rotation of the nickel drum 62 so as to normally prevent the claw 103 from engaging a register slot 74 of the dollar cup and thus couple the dollar drum 61 to the nickel drum 62. A short slot 104 through the nickel drum guide plate 65 at one portion of the annular claw path permits the nickel drum claw 103 to enter one of the register slots 74 in the dollar drum 61 after a full sequence of registrations have advanced the nickel drum by a complete revolution (corresponding to one dollar) so as to couple the dollar drum 61 to the nickel drum 62 and advance the dollar cup to the next higher registering position. In the further rotation of the nickel drum 62, a cam projection 106 formed on the guide wall 65 is engaged by the edge of the claw arm 101 as soon as the dollar cup has been advanced to the next higher position, withdrawing the claw 103 from its coupling engagement with the slot 74 of the dollar drum 61, and bringing it back to its retracted position in which it rides along the annular path of the guide plate until the nickel drum completes another revolution.

The selective coupling mechanism of the dollar drum 61 with the nickel drum 62 through the action of simple sheet metal elements formed by simple shearing and bending operations secures automatic advancement of the dollar drum 61 by one register segment 75 to its next higher registration position for each complete revolution of the nickel drum 62. Selective automatic advancement of the nickel drum 62 in accordance with the character of the deposited coin is effected by a coin deposit and control mechanism in the form of a chute unit 110 which is pivotally mounted on the drum shaft 63 adjacent the outer guide wall 66 of the nickel drum 62 in the way shown in Figs. 8 and 10. The coin deposit and control uint 110 comprises a coin chute 111 formed of sheet metal walls 112 and an arched channel member 114 arranged to guide a coin dropped into it towards a coin stop 120 formed by a bridge section of a cam lever 121 pivotally mounted on the adjacent side wall 50 of the coin box 49.

The chute walls 112 have journalling openings fitting over the drum shaft 63 to permit forward rotation of the chute 111 from its normal coin receiving position in which the end of the rearward chute arch projection 118 forms a chute stop which rests across a coin inlet slot 125 of the coin box 49 so as to prevent dropping out of coins through the coin inlet slot 125 of the coin box 49 when the coin box is held in inverted position.

As shown in Fig. 10, a bracket 127 of sheet metal is secured to the front wall of the chute 111 and is journalled on the drum shaft 63 in front of the chute so as to provide an additional journalling support for the chute structure. The bracket is also provided with peripheral slots 128 adapted to be engaged by the clutch claws 59 of the operating lever 54 journalled in the side wall 42 of the register casing so that by swinging the operating lever the chute may be rotated on the drum shaft 63 from its normal coin receiving position to its forward position for depositing a coin dropped into the chute 111 into the coin box 49 and registering the deposited coin on the registering mechanism in the way described hereinbefore.

As shown in Figs. 8 to 10, the base plate 44

which forms the bottom wall of the coin box 49 is provided with a door 200 which is hinged on two hinge lugs 201 extending from the edge of the door opening. The door 200 is provided with an arcuate bolt strip 203 extending through a slit 204 in the base and terminates in a lug 205 which swings the door to its closed position when the register is placed on a support. The upper arched portion of the door bolt 203 is provided with two bolt projections 206 which are normally locked by the peripheral flanges 72 and 76 of the dollar and nickel drums 61, 62, respectively. To permit opening of the door after a predetermined amount of coins has been deposited in the box, for instance, ten dollars, short peripheral portions 208 and 209 of the drum flanges of the several drums 61, 62 are cut out so that when the drums are brought into a predetermined registering position corresponding to a predetermined amount of coins deposited in the coin box, the cutouts 208 and 209 of the two drums will be aligned with the two bolt projections 206 of the door bolt 203 and permit the door to be swung open for removing the deposited coins.

In the particular exemplification of the invention shown in the drawings, with the coin box door arranged to be opened after depositing ten dollars, the flange 76 of the nickel drum 62 is provided with one cutout 209, the flange 72 of the dollar drum 61 is provided with two cutouts 208, and the drums are so mounted that the cutout 209 of the nickel drum 62 and one or the other cutout 208 of the dollar drum 61 are aligned in the path of the bolt projections 206 to permit opening of the coin box door.

The foregoing arrangement of the door and the door bolt assures that after the door has been opened and the coins removed, the positioning of the bank on a support automatically pushes the end of the door bolt back into the coin box and closes the door. Simultaneously, the two bolt projections 206 are brought into the locking position adjacent the flanged edges of the drum cups and are automatically locked upon the deposit of one coin and remain locked until a predetermined amount of coins has been deposited in the coin box.

It will be apparent to those skilled in the art that the novel principles of the invention disclosed herein in connection with specific exemplifications thereof will suggest various other modifications and applications of the same. It is accordingly desired that in construing the breadth of the appended claims they shall not be limited to the specific exemplifications of the invention described herein.

I claim:

1. In a coin registering device a casing comprising a substantially rectangular bottom wall of sheet material having portions of its four edges bent to form four upwardly facing channel-like bottom wall recesses; a cover formed of an integral elongated sheet member bent to form rear, top, and front wall sections of said casing; portions of the opposite longitudinal side edges of said cover being bent to form inwardly facing channel-like cover recesses; portions of the bottom edges of said rear wall section and of said front wall section being laterally bent to form a pair of opposite bottom flanges shaped for interfitting insertion into one pair of opposite bottom-wall recesses so as to be retained thereby against lateral movement; a pair of opposite upstanding sheet-material side walls having laterally bent bottom flanges along the bottom edges and laterally bent side flanges along side edges thereof shaped for interfitting insertion into the other pair of bottom-wall recesses and into a pair of said cover recesses, respectively, so as to be retained thereby against lateral displacement; a coin compartment wall extending below said cover and formed of a substantially rectangular sheet member having along two opposite edges downwardly projecting wall extensions terminating in two laterally bent compartment wall flanges; flanges of said compartment wall overlapping one pair of the other bottom flanges within two opposite bottom-wall recesses and being shaped so as to be retained therein against lateral movement; deformed portions of said bottom wall in the region of its recessed edges constituting junction elements for clamping the bottom flanges of said cover, said side walls and said compartment walls to said bottom wall so as to form therewith a substantially rigid self-supporting structure.

2. In a coin registering device a casing comprising a substantially rectangular bottom wall of sheet material having portions of its four edges bent to form upwardly facing channel-like bottom wall recesses; a cover formed of an integral elongated sheet member bent to form rear, top, and front wall sections of said casing; portions of the opposite longitudinal side edges of said cover being bent to form inwardly facing channel-like cover recesses; portions of the bottom edges of said rear wall section and of said front wall section being laterally bent to form a pair of opposite bottom flanges shaped for interfitting insertion into one pair of opposite bottom-wall recesses so as to be retained thereby against lateral movement; a pair of opposite upstanding sheet-material side walls having laterally bent bottom flanges along the bottom edges and laterally bent side flanges along the side edges thereof shaped for interfitting insertion into the other pair of bottom-wall recesses and into said cover recesses, respectively, so as to be retained thereby against lateral displacement; a coin compartment wall extending below said cover and formed of substantially rectangular sheet member having along two opposite edges downwardly projecting wall extensions terminating in two laterally bent compartment wall flanges; said compartment wall flanges overlapping the pair of bottom flanges of said side walls within two opposite bottom-wall recesses and shaped so as to be retained therein against lateral movement; deformed portions of said bottom wall in the region of its recessed edges constituting junction elements for clamping the bottom flanges of said cover, said side walls and said compartment wall to said bottom wall so as to form therewith a substantially rigid self-supporting structure.

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