Aug. 5, 1958 E. HANDLER 2,846,222

MUSICAL TOY WITH MOVABLE SET

Filed May 21, 1954 4 Sheets-Sheet 1

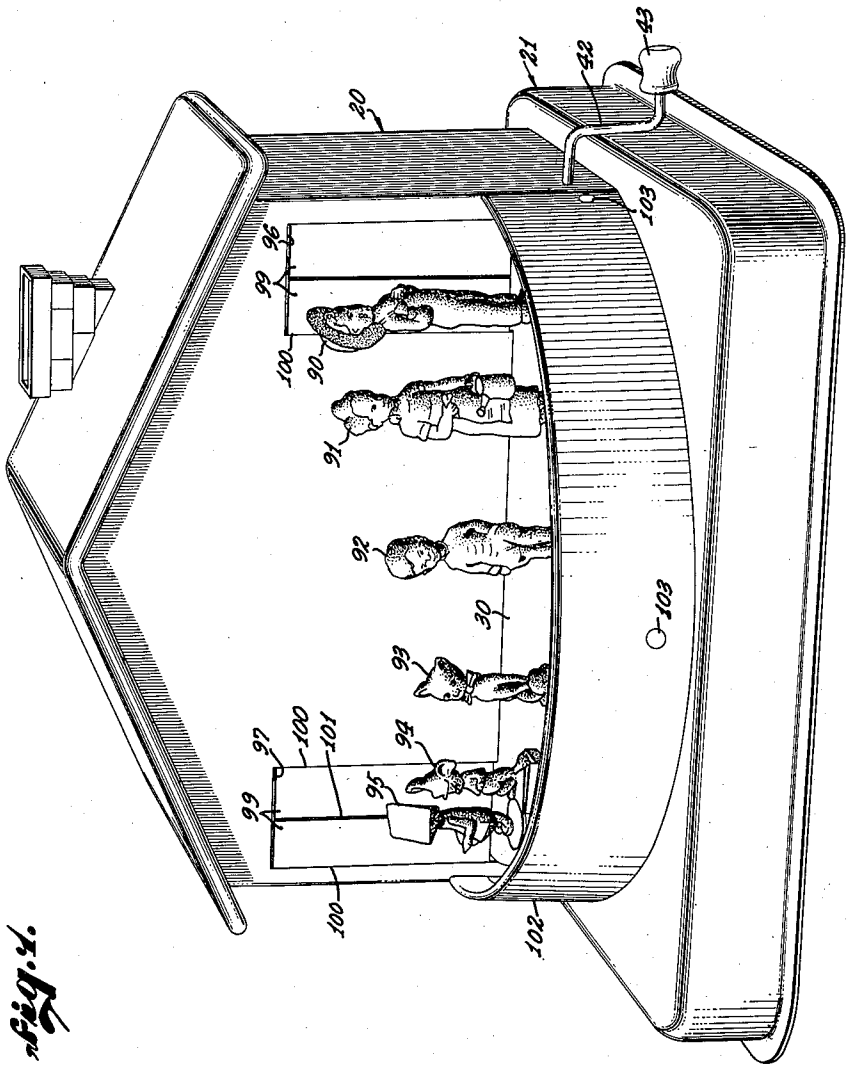


Fig. 1.

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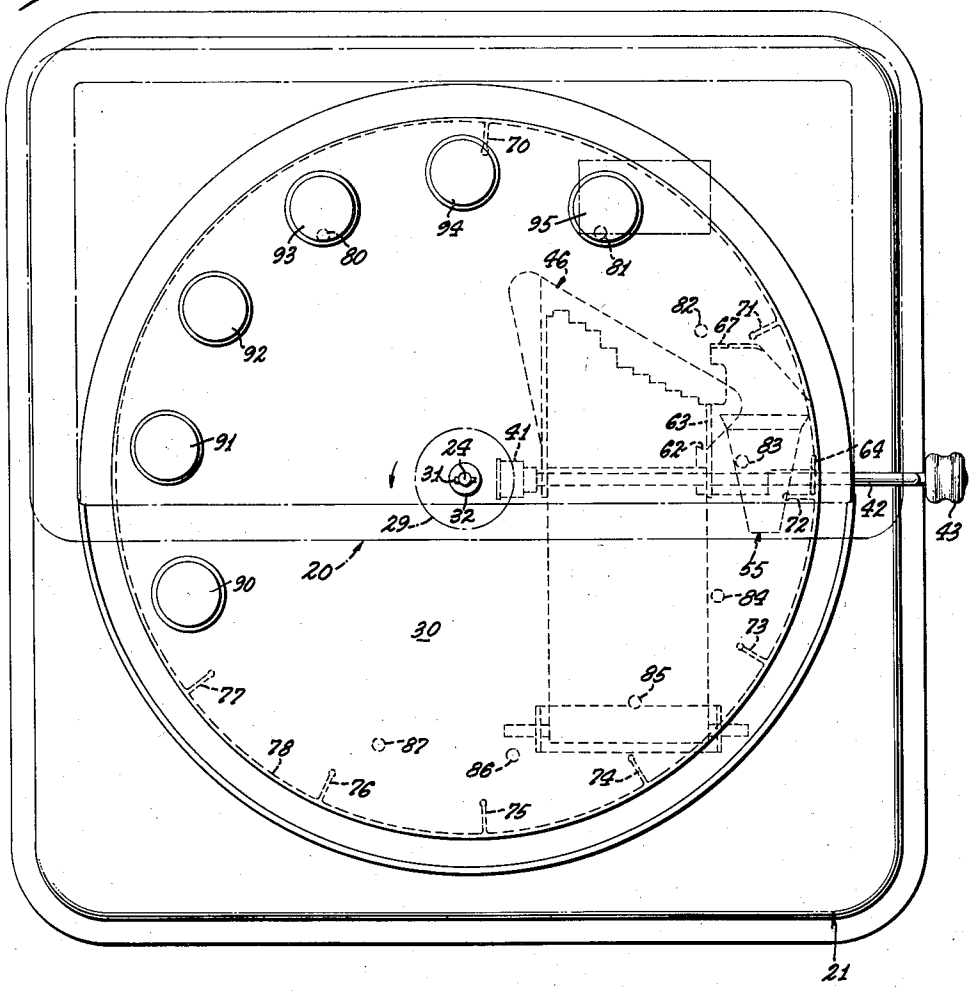
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Fig. 2.



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Fig. 3.

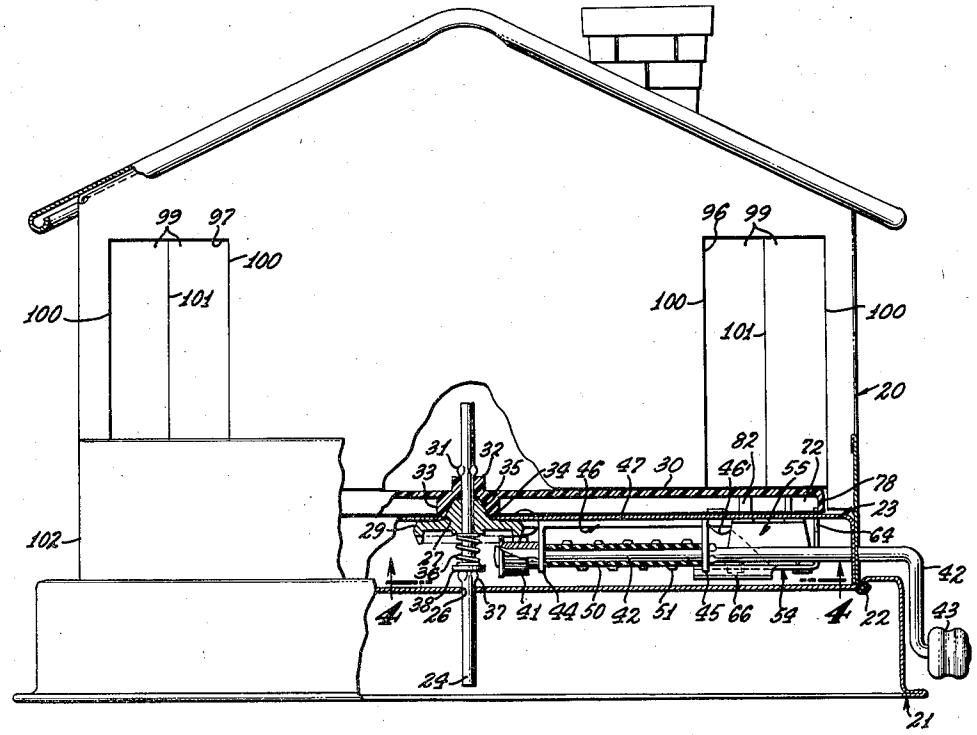


Fig. 4.

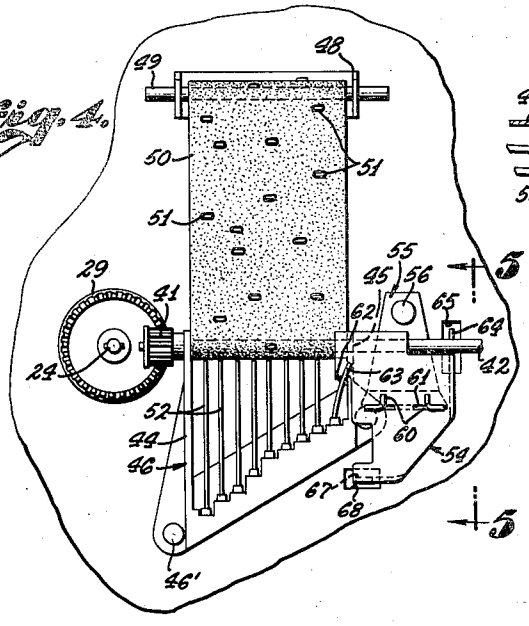
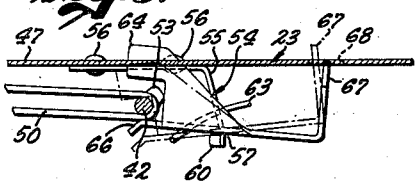


Fig. 5.



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fig. 6.

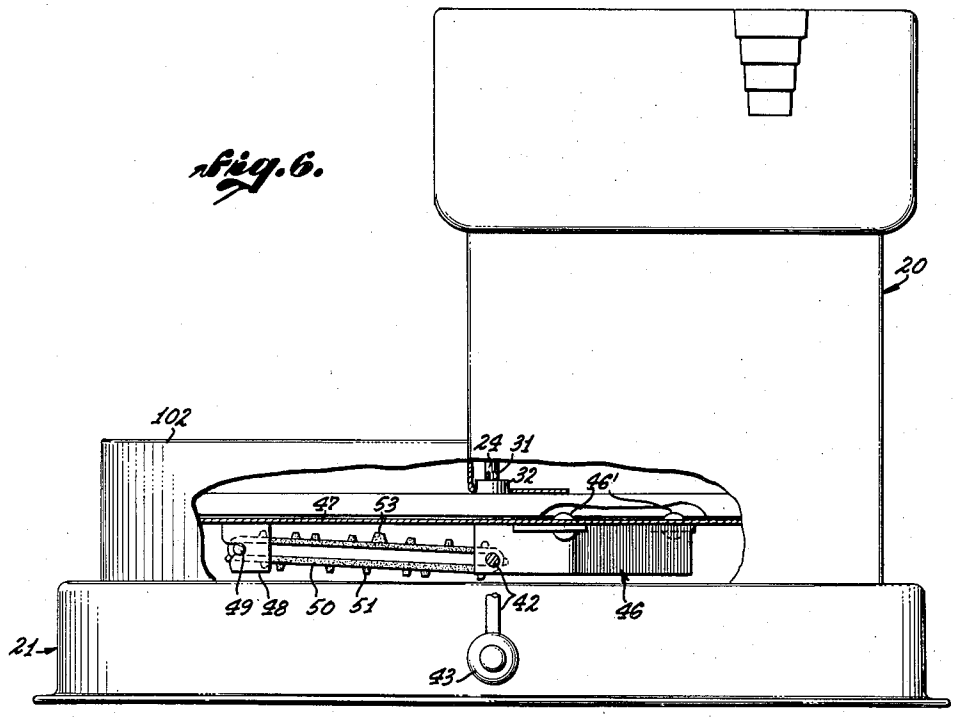
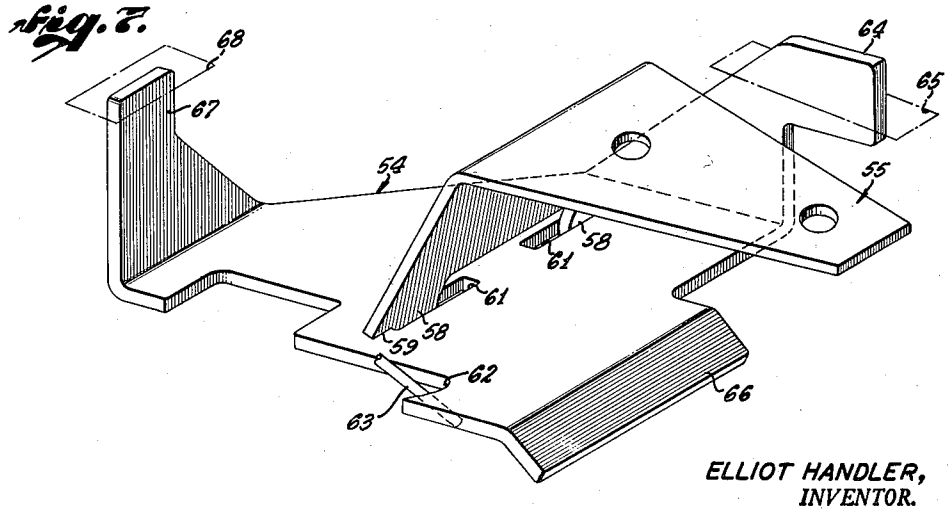


fig. 7.



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MUSICAL TOY WITH MOVABLE SET

Elliot Handler, Los Angeles, Calif.

Application May 21, 1954, Serial No. 431,349

5 Claims. (Cl. 272—31)

This invention relates to animated toys and particularly to an animated musical toy wherein the animation comprises changing of the appearance of a scene on a movable stage, preferably in accompaniment with music synchronized with the animation.

This invention has among its objects the provision of a new and improved toy construction of simple operation comprising a minimum number of operative parts adapted to accomplish the intended general purposes with a minimum of production cost.

Another object of the invention is the provision of a musical toy of new and improved construction incorporating a music-making mechanism of a type exemplified in Duncan Patents Nos. 2,504,666 and 2,649,652, for example, with means for rotating a stage and indexing changes in the scenery thereof at predetermined intervals during the playing of a preselected tune.

Another further object of the invention is the provision in a musical toy of means displaying the characters or episodes corresponding to a story, particularly to a nursery to passages or sequences in the jingle, rhyme, or the like, are activated or make their appearance on the stage, or both, in cadence with the music.

By the instant embodiment it is intended to provide a mode of successive appearance, either individually or collectively, of a group of characters illustrating the nursery rhyme or jingle, "Farmer in the Dell," by means adapted to cause their selective animation and appearance or disappearance in accompaniment with a repetition of the well-known child verse and music by that name.

It is also among the objects of the invention to provide improvements over prior art devices heretofore intended to accomplish generally similar purposes; to provide an improved stage, drive means, stopping means and tripping means associated therewith; and to provide new and improved screening means for a portion of the display, scene, or group of characters, at preselected intervals.

With these and other objects in view, the invention consists of the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter set forth, pointed out in the appended claims, and illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a perspective view of a toy embodying this invention.

Figure 2 is a top view thereof.

Figure 3 is a front view, parts being cut away to show details of the operative mechanism.

Figure 4 is a bottom sectional view taken as on a line 4—4 of Figure 3.

Figure 5 is a vertical sectional view taken as on a line 5—5 of Figure 4.

Figure 6 is a view as of the right-hand side of Figure 1, parts being cut away to show some details of the operative mechanism.

Figure 7 is an enlarged detailed view of an operative portion of the tripping and stopping mechanism comprising a portion of the operative mechanism of this invention.

Referring more particularly to the drawings, which are set forth for purposes of illustration but not of limitation, there is shown a house **20** simulating a farmer's cottage, composed as of sheet metal mounted as on a base **21** as by means of conventional metal ears and slots **22**. The house **20** and the base **21** constitute a frame which houses the remainder of the toy.

Also mounted in optionally similar fashion upon the base **21** is a housing **23**, likewise optionally of sheet metal. A vertical axle **24** is preferably rotatably mounted as by means of an aperture **26** in the base **21**, and an opening **27** in the housing **23** which also accommodates the upper end of a gear member **29**.

A stage platform **30** of disc-like configuration is likewise preferably rotatably mounted upon the axle **24**. The stage platform **30** is horizontally disposed and is held upon the axle **24** against vertical axial removal as by means of upset ear portions **31**. Said stage **30** is formed as with a central boss **32**, normally engaged against the ears **31**, and a downwardly depending boss **33** having a frusto-conical face **34** adapted to receive and make frictional clutching engagement with a frusto-conical face **35** formed in the upper end of said gear member **29**. Said frictional engagement is maintained as by a compression spring **36** retained upon the axle **24**, by other ears **37** outstruck therefrom and a thrust washer **38**.

The gear teeth of gear **29** engage a pinion **41** of a crank shaft **42** having an operating handle **43** thereon. Said crank shaft is mounted for rotation in the depending frame members **44** and **45** of a cast metal comb **46**, for example, of the type described in said patents of Duncan above referred to, which is secured as by rivets **46'** to the underside of the top **47** of the housing **23**. A bracket **48** likewise secured to the underside of the top of the housing **23** rotatably confines an axle **49** around which a rubber belt **50** is trained. Said belt **50** is normally stretched between the crank shaft **42** and said axle **49**, so that rotation of the crank shaft will turn the belt **50**. Rubber protuberances **51** on the belt pluck selected wires **52** of the musical comb **46** for playing, in this instance, the melody "The Farmer in the Dell." One of the protuberances, **53**, on the belt is enlarged for the purpose of tripping, at a predetermined interval in the playing of the tune, a tiltable stop member **54**. Said stop member is pivotally secured to a bracket **55** riveted as at **56** to the underside of the top **47** of the housing **23**. The pivotal connection is formed at **57** by means of a tongue formed in the bracket **55**, said tongue being in spaced parts **58**, as illustrated most clearly in Figure 7, preferably flanked by shoulders **59** and terminal ears **60** so as to permit pivotal movement of said stop member **54** by means of slots **61**.

The stop member **54** is notched as at **62**, and one of the springlike wire teeth **52**, individually designated at **63**, is engaged in said notch **62**, thereby normally urging said stop member to a position of maximum clockwise rocking movement around said tongues **58**, to a position shown in solid outline in Figure 5, wherein a stop portion **64** extends upwardly through a slot **65** in the top of the housing **23**. Upon rotation of said belt and said enlarged protuberance **53** to a position of engagement against a lip **66** on the stop member **54**, the stop member is tilted against the tension of said spring wire **63** to a position, such as shown in dotted outline in Figure 5, wherein an opposite stop portion **67** extends upwardly through an aperture **68** in said top of the housing **23**, said stop portion **64** being in such event retracted below its opening **65**.

The movable platform **30** is formed with a plurality of depending stops **70, 71, 72, 73, 74, 75, 76, 77**, which like-

wise extend inwardly from the downturned rim **78** of the platform. Other stops **80**, **81**, **82**, **83**, **84**, **85**, **86**, and **87** depend from the platform **30**, at points spaced inwardly from said downturned edge **78** of the platform **30**. The "**70**" series of said stops is in circumferential alignment with the stop portion **64**, and the "**80**" series of said stops is in alignment with the stop portion **67** of said stop member **54**. Said stops **70**, etc., and **80**, etc., are arranged around the platform and relative to the stop member **54**, so that upon normal clockwise rotation of the crank, the platform **30** will be rotated in a counterclockwise direction as seen from the top, until the normally extended stop portion **64** is engaged against one of the stops **70**. Continued rotation of the crank **42** will cause rotation of the belt **50** and plucking engagement of the protuberances **51** thereon against the teeth **52** of the musical comb. Meanwhile, the clutch **34—35** will slip to permit the plaform **30** to remain stationary.

When the enlarged protuberances **53** on the musical belt engages against the lip **66** on the stop member **54**, the stop portion **64** will be retracted to its opening **65**, freeing the corresponding "**70**" series stop, and permitting continued rotation of the platform **30** until one of the "**80**" series stops engages against the stop portion **67** which, during the engagement of the enlarged protuberance **53** against the lip **66**, is extended through its opening **68**. Thus, the stop **67**, by its engagement against one of the "**80**" series stops on the platform, prevents undesired movement of the platform **30** during the interval when the stop portion **64** is retracted by means of the protuberances **53**. Such stoppage is only momentary, and in some applications of the described mechanism, such auxiliary stops **67** and the "**80**" series stops corresponding thereto may be omitted.

Stations **90**, **91**, **92**, **93**, **94**, and **95** are provided in circumferentially spaced relationship on the platform **30**, and figurines respectively designating a cheese, a mouse, a cat, a boy, a mother and a farmer, are secured to the platform **30** at said corresponding stations.

Rotation of the crank **42** and consequent rotation of the platform **30** carries the figurines into the house **20** through a door **96**, and upon their making a sufficient movement within the house **20** causes them to emerge through an opposite door **97**. The front of the house thereby serves as a screen or backstage drop. The screening effect is enhanced by the provision of a movable curtain or door panels **99** of a flexible material such as cellophane. The panels **99** may be hinged or otherwise secured, as by gluing, stapling, or the like, along the edges **100** of the doors **96** and **97**, so that their free edges **101** may be pushed open by the figurines as they rotate therethrough.

A shield **102**, secured as by rivets **103**, to the front of the housing **23**, hides the movement of the platform **30**, and provides a finished appearance. The shield, the base, the house **20** and the figurines **21** may be ornamented in any suitable fashion.

The operation of the instant embodiment of the invention above described is as follows:

Rotation of the crank **42** causes rotation of the musical belt **50**, whose plucking protuberances **51**, by their predetermined arrangement, play a tune on the musical comb **52**. Simultaneously, said crank rotation drives the gears **41** and **29**, which operates through the clutch faces **34** and **35** to rotate the platform **30**.

Initially, the figurines are all disposed within the house **20**. Rotation of the crank and belt, after a predetermined interval, carries the enlarged tooth **53** into engagement with the lip **66** of the stop member **54**. Immediately prior to such engagement, the stop portion **64** is extended and is engaged against the stop **71** to prevent normal rotation in a counterclockwise direction as viewed in either Figure 1 or 2.

Engagement of said enlarged tooth **53** with said lip **66** retracts the stop portion **64** and elevates the stop portion **67**. Retraction of said stop portion **64** permits rotation of said platform **30** in said counterclockwise direction until the stop portion **67** engages the stop **82**, assuming the crank **42** is being continuously rotated as intended. Such engagement of the stops **67** and **82** momentarily stops the rotation of the platform **30**, and once the tooth **53** has cleared the lip **66**, said stop **67** is retracted through the urgency of the spring wire **63** or its like, thereby releasing the stop **82** and freeing the platform for continued rotation, which, however, is promptly prevented by the engagement of the now elevated stop portion **64** with the succeeding stop **72**. In this position of the parts, as illustrated in Figure 2, the station **90** (the farmer) is exposed to view, having passed through the doors **99**. Such emergence is normally timed to the playing on the musical comb of the beginning of the first refrain, concluding "Heigh-ho, the merry-oh, the farmer in the dell." The farmer thus appears in the "dell."

As the musical belt and crank are further rotated, slippage again occurs in the clutch **34—35**, so that the platform is again held stationary until the enlarged tooth **53** on the musical belt retracts the stop portion **64**, holding the platform stationary through the slippage of said clutch.

Such engagement of the tooth again corresponds to the beginning of the next refrain, starting "The farmer takes a wife." The wife thereupon promptly appears and remains next to the farmer while the remainder of the refrain is played, and so on, the stop portions **64** and **67** operating substantially in the manner of an escapement mechanism, to halt the rotation of the platform at angularly separated positions corresponding to the "**70**" series stops **71**, **72**, **73**, **74**, **75**, **76** and **77**, and the associated "**80**" series stops **83**, **84**, **85**, **86** and **87**.

However, upon the emergence of the cheese **95** through the doorway **97**, the stop **77** is engaged by the stop portion **64**, and thereafter, upon release of the stop **77**, continued rotation of the crank carries the cheese in position **95** around until engagement of the stops **80** by the stop portion **67** and, immediately thereafter, engagement of the stop **64** with the stop **70**. The angular distance from the stop **77** to the stop **70** is such that the cheese is left standing alone immediately in front of the door **96**, which is the same position occupied by the farmer **90** in Figure 1 of the drawing. The cheese therefore stands alone during the playing of its refrain, at the conclusion of which the stop **70** is released by the stop **64**, and the stop **64** is engaged again with the stop **71**, whereupon the entire entourage becomes hidden within the house **20**. the entire cycle is then repeated as often as desired.

The stop **67** by its preliminary engagement with the respective stops of the "**80**" series, assists the wire **63** and cams the stop portion **64** effectively into its extended position as shown in solid outline in Figure 5.

This invention features the provision of a movable stage having thereon a plurality of figurines, or the like, adapted to move across the stage sequentially, and preferably intermittently, in a manner to correspond with and be synchronized with a musical melody played upon a musical belt driven by mechanism preferably utilized to energize the music-making element. It also features the provision of such a toy in which an element of surprise is introduced by the extraordinary animation, movement or treatment of one figurine (in this case, the cheese). In the illustrated embodiment, the cheese alone of all the figurines is left standing on the stage, and thereafter all of the figurines are caused to disappear.

Although I have herein shown and described my invention in what I have conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of my invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent structures and devices.

I claim:

1. A toy comprising a stage platform rotatably mounted for movement about a vertical axis, drive means for rotating said stage platform, stop means engaging said stage platform and normally holding the same against rotation, musical sounding means having a movable member energized by said drive means to play a melody, and tripping means mounted on said movable member for intermittently engaging and deactuating said stop means thereby permitting rotation of the stage, said musical sounding means being coordinated with said tripping means and stop means to play a melody between stops, said stage platform having display means thereon indicative of the subject matter of the melody played by said sounding means.

2. A toy as defined in claim 1, comprising: a frame simulating a scene illustrative of a story, the rotatable stage platform being mounted on said frame and including a plurality of objects spaced therealong also illustrative of the story, said frame including means for shielding said objects from view during a portion of the rotation of said stage platform, said stage platform comprising a substantially horizontally disposed disc-like member, said objects being mounted along an outer edge portion of said disc-like member, said shielding means being positioned across said disc-like member, whereby objects in front of said shielding means are visible and objects posed behind said shielding means at a circumferentially-spaced location on said disc-like member are hidden from view.

3. A toy as defined in claim 2, including yieldable normally closed door means in said shielding means, said door means being in the path of travel of said objects as they pass behind said shielding means, the door means being engageable by said objects to force them yieldably aside to permit said objects to pass through said door means.

4. A toy comprising a rotatably mounted stage platform, friction clutch means operatively associated with said platform, movable drive means for rotating said platform through said clutch means, stop means for normally holding said platform against rotation, said stop means including stop elements attached to said platform and a pivotally mounted stop lever yieldably loaded for normally engaging said stop elements thereby stopping rotation of said platform by producing slippage in the clutch means, tripping means movable with said movable drive means for intermittently engaging said stop lever and counteracting the load thereon for intermittent disengagement of said stop lever from said stop elements, and musical sounding means energized by said drive means to play a melody, said musical sounding means being coordinated with said tripping means and with said stop means to play a melody between stops, said stage platform having display means thereon indicative of the subject matter of the melody played by said sounding means.

5. The musical toy as defined in claim 4 wherein said musical sounding means includes a musical comb and a belt driven by said drive means and having means thereon for plucking engagement with the teeth of said comb, and wherein said tripping means comprises a protuberance on said belt.

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