Nov. 14, 1961 C. G. STALL 3,008,246

EDUCATIONAL PEG RECEIVING TOY

Filed July 28, 1960 2 Sheets-Sheet 1

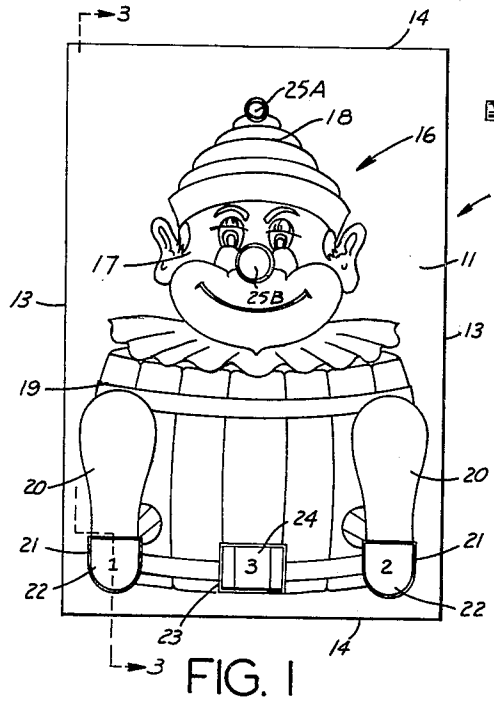


FIG. 1

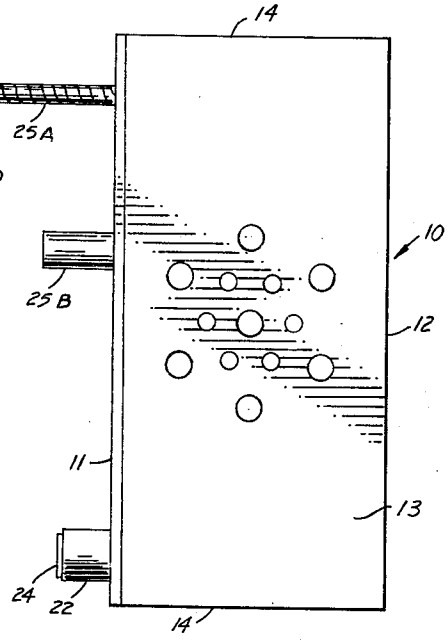


FIG. 2

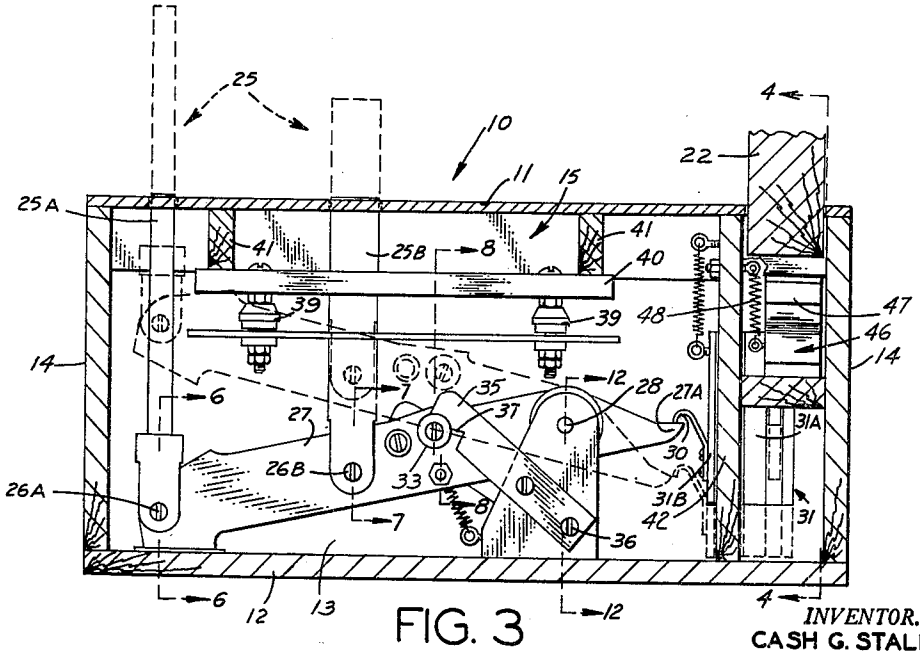


FIG. 3

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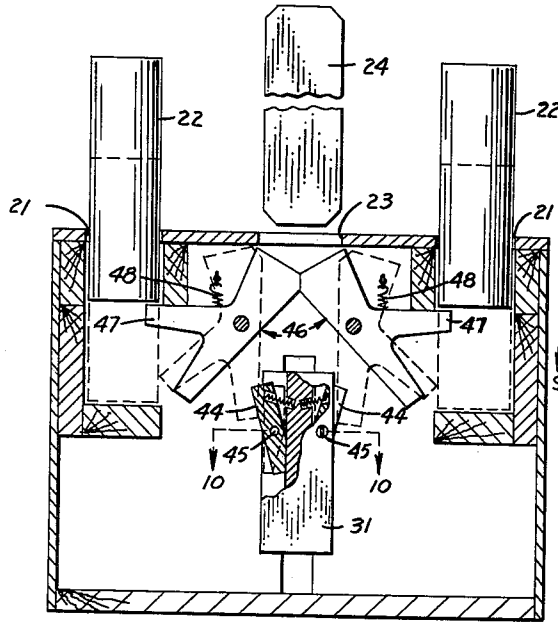


FIG. 4

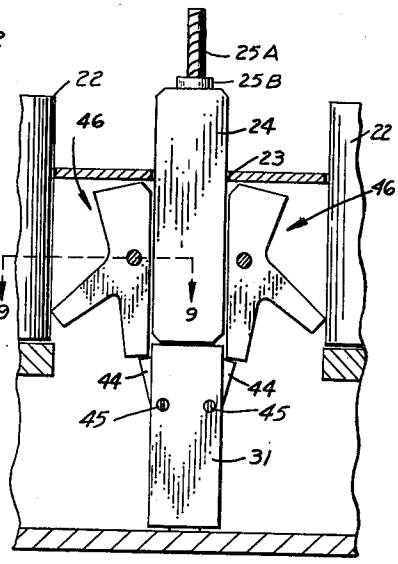


FIG. 5

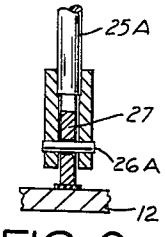


FIG. 6

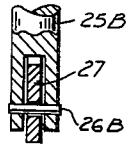


FIG. 7

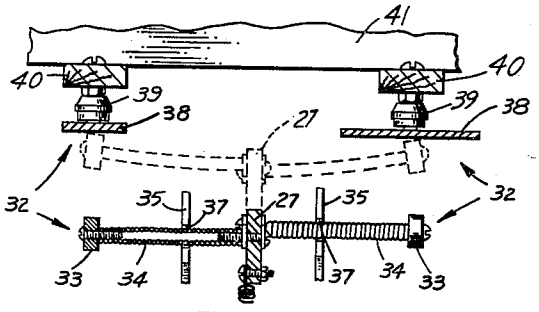


FIG. 8

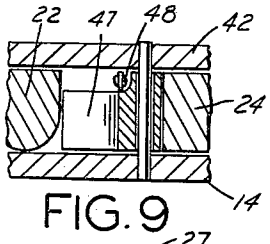


FIG. 9

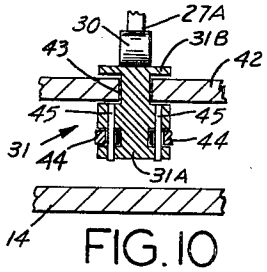


FIG. 10

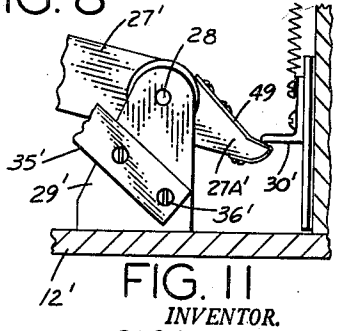


FIG. 11

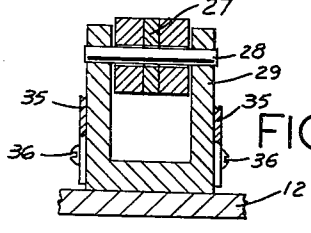


FIG. 12

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EDUCATIONAL PEG RECEIVING TOY

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Filed July 28, 1960, Ser. No. 45,971
6 Claims. (Cl. 35—22)

The present invention consists of an educational action toy including a housing provided with a plurality of recess-defining portions removably receiving therein a corresponding plurality of insert members. One of the recess-defining portions comprises an operating recess-defining portion and the insert member insertibly cooperable therewith comprises an operating insert member which, when inserted thereinto under the proper conditions, will cause response member means slidably carried by the housing to move from a lower depressed or unactuated position into an upper extended or actuated position.

In one preferred form of the invention, this is also accompanied by the emission of sound produced by sound-producing means carried within the housing and operated only at the time that the response member means is moved from the lower depressed or unactuated position into the upper extended or actuated position.

In one specific preferred form of the invention, the top surface of the housing is provided with means depicting or simulating any type of figure such as a clown, or the like. In this preferred form, the upwardly extendable response member means may effectively comprise a portion of the means simulating a figure. For example, in one form of the invention wherein the top surface of the housing carries means simulating a clown wearing a clown's hat, the upwardly extendable response means includes two vertically slidably directed pins, one simulating the clown's nose and the other simulating a tassel carried at the top of the clown's hat, and each being upwardly extendable from the clown's face and hat, respectively, when the operating insert member is downwardly inserted fully into the operating recess-defining portion after certain preconditioning operations have been performed.

In one preferred form of the invention, others of the recess-defining portions may effectively comprise preconditioning recess-defining portions adapted to insertibly receive auxiliary preconditioning insert members which act to effectively override and move into inoperative position stop means which normally prevent said operating insert member from being inserted into the operating recess-defining portion. In other words, it is necessary to first insert the auxiliary preconditioning insert members before it is possible to insert the operating insert member for respectively causing the response member means to be moved from the normal lower depressed or unactuated position into the upper extended or actuated position referred to above, which action is accompanied by the production of sound by the sound-producing means. This teaches a small child that a sequence of operations must be performed in the proper sequence in order to bring about a desired response. In keeping with this, the upper ends of the insert members are appropriately numbered, with the operating insert member bearing the highest numerical designation.

It is an object of the present invention to provide an educational action toy of the character referred to above which is of extremely simple, cheap, foolproof construction such as to be conducive to widespread use of the device.

Further objects are implicit in the detailed description which follows and will be apparent to persons skilled in the art after a careful study thereof.

For the purpose of clarifying the nature of the present invention, two exemplary embodiments are illustrated in the hereinbelow-described figures of the accompanying two sheets of drawings and are described in detail hereinafter.

FIG. 1 is a top plan view of one illustrative embodiment of the present invention.

FIG. 2 is a right side elevational view of the embodiment shown in FIG. 1.

FIG. 3 is a view, partly in section and partly in side elevation, of the device taken in the direction of the arrows 3—3 of FIG. 1 along a plane immediately inside of the left side wall of the housing. This view shows in solid lines the moving parts in unactuated positions and shows said parts in broken lines in actuated positions. Also, for reasons of drawing simplification and clarity, the side wall ventilation holes are not shown.

FIG. 4 is a sectional view taken in the direction of the arrows 4—4 of FIG. 3. This view shows moving parts in solid lines in unactuated positions and shows certain of said moving parts in broken lines in actuated positions. Furthermore, this view shows the operating insert member in removed or exploded relationship with respect to the operating recess-defining portion of the housing.

FIG. 5 is a fragmentary view similar to the central portion of FIG. 4 and shows the apparatus after the operating insert member has been downwardly inserted into the operating recess-defining portion of the housing and has abutted and downwardly moved the slidably mounted actuating member into its lowermost or actuated position. This has been allowed by reason of the fact that the two side preconditioning auxiliary insert members have been moved downwardly so as to rotate the two opposed stop means from the solid line positions shown in FIG. 4 into the solid line positions shown in FIG. 5.

FIG. 6 is an enlarged fragmentary sectional view taken in the direction of the arrows 6—6 of FIG. 3 and shows the pivotal connection of the linkage member and one of the response members.

FIG. 7 is an enlarged fragmentary sectional view taken in the direction of the arrows 7—7 of FIG. 3 and shows the pivotal connection of the linkage member and the other response member.

FIG. 8 is a fragmentary view taken in the direction of the arrows 8—8 of FIG. 3 and shows, in solid lines, the unactuated position of the apparatus and shows, in broken line, the upper actuated position of the hammers of the sound-producing means which strike the vibratable elements and produce sound in response to upward actuation of the apparatus into the broken line positions shown in FIG. 3. Certain portions behind the plane of the section are not shown for reasons of drawing simplification and clarity.

FIG. 9 is a fragmentary sectional view taken in the direction of the arrows 9—9 of FIG. 5 and illustrates the detail of the pivotal mounting of one of the stop means.

FIG. 10 is an enlarged fragmentary sectional view taken in the direction of the arrows 10—10 of FIG. 4 and illustrates the vertically slidable mounting of the actuating member and also illustrates the pivotal mounting of the two locking dogs for locking the actuating member in the lower extreme actuated position shown in FIG. 5.

FIG. 11 is a fragmentary view similar to a portion of the apparatus shown in FIG. 3 and illustrating a slight modification of the engagement of the linkage means and the slidably mounted actuating member with respect to each other.

FIG. 12 is a fragmentary sectional view taken in the direction of the arrows 12—12 of FIG. 3 and illustrates the bifurcated yoke-mounting of the linkage member.

This view also illustrates the means for holding the resilient hammer means during a portion of the upward stroke of the linkage means and for releasing same at a certain point in the upward stroke thereof whereby to release the deflected hammer means for powerful upward impact against the sound-producing vibratable elements in the manner shown in broken lines in FIG. 8.

Referring to the figures for exemplary purposes, one illustrative embodiment of the present invention takes a typical exemplary form wherein it comprises a housing, indicated generally at **10**, which is of substantially rectangular parallelepiped shape having top and bottom walls **11** and **12**, side walls **13**, and end walls **14** all suitably joined together to define the hollow interior region **15** containing the operating mechanism of the toy. In the specific form illustrated, the top surface of the top wall **11** of the housing **10** is provided with means simulating the figure of a clown, as indicated generally at **16**, and comprising suitable markings depicting a clown's face **17**, a clown's hat **18**, a clown's body positioned within a simulated barrel indicated at **19**, and depicting the clown's feet **20**. It should be noted that the heel region of each of the markings depicting the clown's feet **20** comprises recess-defining portions **21** adapted to receive therein sequentially numbered auxiliary preconditioning insert members **22** for purposes which will be described in greater detail hereinafter.

It should also be noted that the top wall **11** of the housing **10** additionally has another recess-defining portion **23** adapted to removably receive therein an operating insert member **24** sequentially numbered with the last number of the sequence beginning with the sequential numbers carried by the auxiliary preconditioning insert members **22**, as best shown in FIG. 1.

The recess-defining portions **21** may be referred to as preconditioning recess-defining portions since it is necessary that the preconditioning insert means **22** be inserted therethrough in sequence before the insertion of the operating insert member **24** into the central operating recess-defining portion **23**, which, therefore, may be referred to as an operating recess-defining portion. This insertion sequence is necessary in order to operate the interior mechanism of the toy in a manner such as to cause response member means, indicated generally at **25**, to be moved from a normal lower depressed or unactuated position, as shown in solid lines in FIG. 3, into an upper extended or actuated position, as shown in broken lines in FIG. 3, while simultaneously emitting a sound created by sound-producing means contained within the housing.

In the specific form illustrated, it should be noted that the response member means **25** takes the form of an extendable manner **25A** effectively simulating a tassel portion of the clown hat depicted at **18** and additionally takes the form of another extendable member **25B** effectively simulating a nose portion of the clown's face depicted at **17**.

Each of the response member means **25A** and **25B**, respectfully, is pivotally connected by pivot pin means **26A** and **26B**, respectively, to linkage means comprising a linkage lever means **27**, which is pivotally mounted on a pivot pin **28** carried by a bifurcated split yoke **29** mounted on the bottom wall **12** of the housing **10**. The linkage lever means **27** has an engaging trip portion **27A** positioned on the opposite side of the pivot pin **28** from the portion pivotally carrying the upwardly directed and extendable response members **25A** and **25B**; said engaging trip portion **27A** being positioned in the path of downward travel of an engaging catch means **30** carried by a vertically slidably mounted actuating member **31** whereby downward slidable movement of said actuating member **31** from the upper unactuated position shown in solid lines in FIGS. 3 and 4 into the lower position shown in broken lines in FIG. 3 and in solid lines in FIG. 5 will effectively pivot the linkage lever means **27** from the unactuated position shown in solid lines in FIGS. 3 and 8 into the upper actuated position shown in broken lines in FIGS. 3 and 8 whereby to move the response member means **25** from the lower depressed or unactuated positions shown in solid lines in FIG. 3 into an upper extended or actuated position as shown in broken lines in FIG. 3. This also acts to operate the sound-producing means, indicated generally at **32** in FIG. 8. Said sound-producing means consists of hammer means **33** resiliently mounted by spring means **34** to the linkage lever means **27** and normally restrained or held in a lower position by holding means comprising the notched members **35** fastened as indicated at **36** to the split or bifurcated yoke **29** with the notches **37** engaging and holding the springs **34** during a portion of the upward movement of the linkage lever means **27** and finally releasing same abruptly at a certain point during the upward actuating stroke of the linkage lever means **27**, which then causes the hammers **33** to be abruptly resiliently snapped upwardly into forcible contact with the two sound-producing vibratable elements **38** which are carried by suitable mounts **39** fastened to a pair of laterally spaced longitudinal members **40**, which in turn are separated by a pair of longitudinally spaced members **41** mounted underneath the top wall **11** of the housing **10**.

It should be noted that the engaging catch means **30** is so arranged with respect to the engaging trip portion **27A** as to clear and release same when the actuating member **31** reaches its lowermost extreme actuated position as shown in broken lines in FIG. 3 and in solid lines in FIG. 5. This allows the linkage lever means **27** to drop back to its former lowermost depressed or unactuated position as shown in solid lines in FIG. 3 and to, thus, also return the response members **25** to their lowermost unactuated and nonextended positions as shown in solid lines in FIG. 3.

The vertically slidably mounted actuating member **31** consists of a front portion **31A** mounted on the front side of a vertical partition **42** carried within the housing **10** between top and bottom walls **11** and **12**, respectively, thereof and a rear portion **31B** positioned on the rear side of said vertical partition **42** with an interconnecting portion extending through a vertical slot **43** in said partition **42** whereby to effectively vertically slidably mount the actuating member **31** for upward and downward reciprocating motion between the upper unactuated position shown in solid lines in FIGS. 3 and 4 and the lower actuated position shown in solid lines in FIG. 5 and shown in broken lines in FIG. 3.

It should be noted that the front portion **31A** of the actuating member has retaining or locking dogs **44** which are pivotally mounted on pivot pins **45** for movement between inoperative position as shown in broken lines in FIG. 4 and operative position as shown in solid lines in FIGS. 4 and 5. In particular, it should be noted as best shown in FIG. 5, that these locking dogs **44** act to retain the actuating member **31** in the lowermost depressed actuated position as shown in broken lines in FIG. 3 and in solid lines in FIG. 5, which normally occurs only when the operating insert member **24** is inserted downwardly through the operating recess-defining portion **23** into contact with the top end of the vertically slidably mounted actuating member **31**, as is best shown in FIG. 5. This is only possible when the stop means indicated generally at **46** is moved from the closed position shown in FIG. 4 into the inoperative or open positions shown in FIG. 5. This is accomplished by insertion of the auxiliary preconditioning insert members **22** downwardly into the corresponding preconditioning recess-defining portions **21** from the upper positions shown in solid lines in FIG. 4 into the lowermost positions shown in broken lines in FIG. 4 which will cause said insert members **22** to strike the projections **47** of the pivotally mounted levers comprising the stop means **46** whereby to move them against the action of the biasing springs **48** from the closed positions shown in solid lines in FIG. 4 into the open inoperative positions shown in broken

lines in FIG. 4 and in solid lines in FIG. 5, which will allow the central operating insert member 24 to be downwardly inserted through the operating recess-defining portion 23 into abutment with the top of the actuating member 31 whereby to slidably downwardly move it into the lowermost actuated position shown in solid lines in FIG. 5 and in broken lines in FIG. 3 whereby to upwardly project the response members 25A and 25B and whereby to cause the hammers 33 to strike the sound-producing vibratable elements 38 in the general manner hereinbefore described.

FIG. 11 is a fragmentary view similar to a portion of the apparatus shown in FIG. 3 but illustrating a slightly modified engaging trip portion 27A' and a slightly modified engaging catch means 30'. In this modification the engaging trip portion 28A' has a cover 49 fastened thereover to minimize wear, and the engaging catch means 30' is differently shaped from the engaging catch means 30 shown in FIG. 3 whereby it does not slip off of the tip of the engaging trip portion 27A' in the manner hereinbefore described in connection with the first form of the invention. Therefore, in this modification, the response means coresponding to those shown at 25 in FIG. 3 do not drop back to depressed unactuated position until the insert members are removed.

It should be understood that the figures and the specific description thereof set forth in this application are for the purpose of illustrating the present invention and are not to be construed as limiting the present invention to the precise and detailed specific structure shown in the figures and specifically described hereinbefore. Rather, the real invention is intended to include substantially equivalent constructions embodying the basic teachings and inventive concept of the present invention.

I claim:

1. An educational action toy, comprising: a housing provided with operating recess-defining means and preconditioning recess-defining means; operating insert means adapted to be controllably inserted into and removably received by the operating recess-defining means; preconditioning insert means adapted to be controllably inserted into and removably received by the preconditioning recess-defining means; stop means normally extending into said operating recess-defining means in the path of travel of the operating insert means and preventing same from being inserted fully thereinto, and including inactivating means for effectively overriding and moving into inoperative position said stop means in response to insertion of the preconditioning insert means into the preconditioning recess-defining means whereby to allow said operating insert means to be fully inserted into said operating recess-defining means; an actuating member carried by the housing and having at least a portion extending into said operating recess-defining means for forcible abutment by said operating insert means when forcibly inserted fully into said operating recess-defining means after said stop means has been rendered inactive and for movement thereby toward an actuated position; response member means slidably carried by said housing for movement between a lower depressed unactuated position and an upper extended actuated position; and linkage means effectively connected to said response member means and having a projecting engaging trip means positioned adjacent to said actuating member for engagement and actuation thereby when said actuating member is moved into said actuated position by said operating insert means, said actuating member being provided with engaging catch means engageable with said projecting engaging trip means during movement of said actuating member toward actuated position whereby to pivot said linkage means and said response member means into upper actuated position.

2. Apparatus of the character defined in claim 1, including sound-producing means operated in response to actuation of said linkage means and said response member means into the upper actuated position whereby to produce an audible sound simultaneously therewith.

3. Apparatus of the character defined in claim 1, including sound-producing means operated in response to actuation of said linkage means and said response member means into the upper actuated position whereby to produce an audible sound simultaneously therewith, said sound-producing means comprising at least one vibratable sound-producing element mounted within the housing and at least one hammer means carried by the linkage means and provided with means for holding it during a portion of the upward actuating movement of said linkage means and for then releasing it for forcible impact against said vibratable sound-producing element.

4. Apparatus of the character defined in claim 1, wherein said projecting engaging trip means of said linkage means is pivotally mounted for arcuate movement between an unactuated position, an actuated position, and a release position immediately beyond said actuated position, and wherein said engaging catch means of said actuating member is slidably mounted for movement between an unactuated position in engagement with said projecting engaging trip means, an actuated position in engagement with said projecting engaging trip means, and a release position arcuately disengaged from said projecting engaging trip means whereby to allow said linkage means and said response member means to return to depressed unactuated position.

5. Apparatus of the character defined in claim 1, including: spring means biasing said actuating member away from said actuated position toward a normal position for abutment by said operating insert means when inserted into said operating recess-defining means; and spring means resiliently biasing said linkage means toward depressed unactuated position.

6. Apparatus of the character defined in claim 1, wherein the top surface of the housing is provided with means simulating a figure, with said upwardly extendable response member means simulating at least a portion thereof.

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