United States Patent

Rodgers

[15] **3,691,675**

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[54] **JACK-IN-THE-BOX SOUNDER**

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[52] **U.S. Cl.**.....**46/118**, 46/146

[51] **Int. Cl.**.....**A63h 13/16**

[58] **Field of Search**.....46/118, 145, 146, 175

[56] **References Cited**

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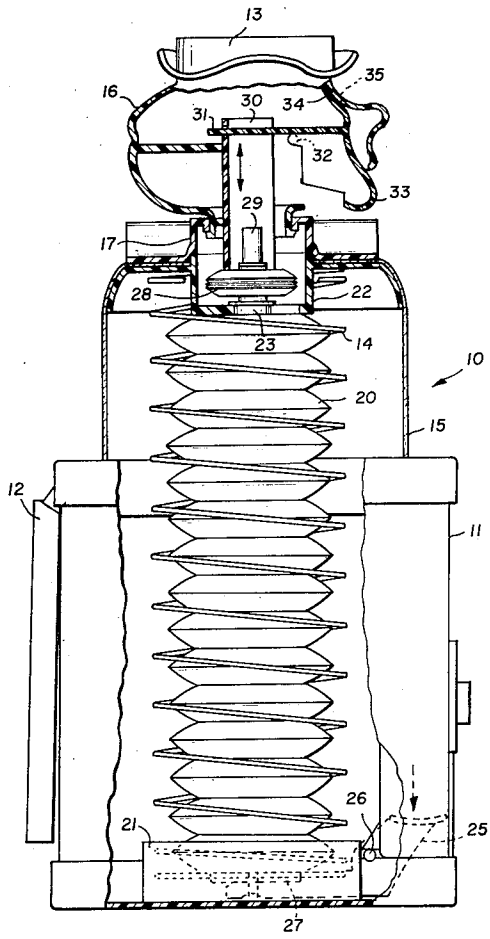
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[57] **ABSTRACT**

A jack-in-the-box is equipped with a bellows extending between the pop-up figure and the box so that the bellows is compressed when the figure is pushed into the box and expanded when the figure pops up. An air-operated sounder is arranged in a passageway from inside the bellows to outside the bellows for making a sound when air moves through the passageway. The passageway includes an expandible sleeve arranged for moving a feature of the pop-up figure, and a lever at the bottom of the bellows can be manually operated for compressing the bellows to operate the sounder.

8 Claims, 2 Drawing Figures



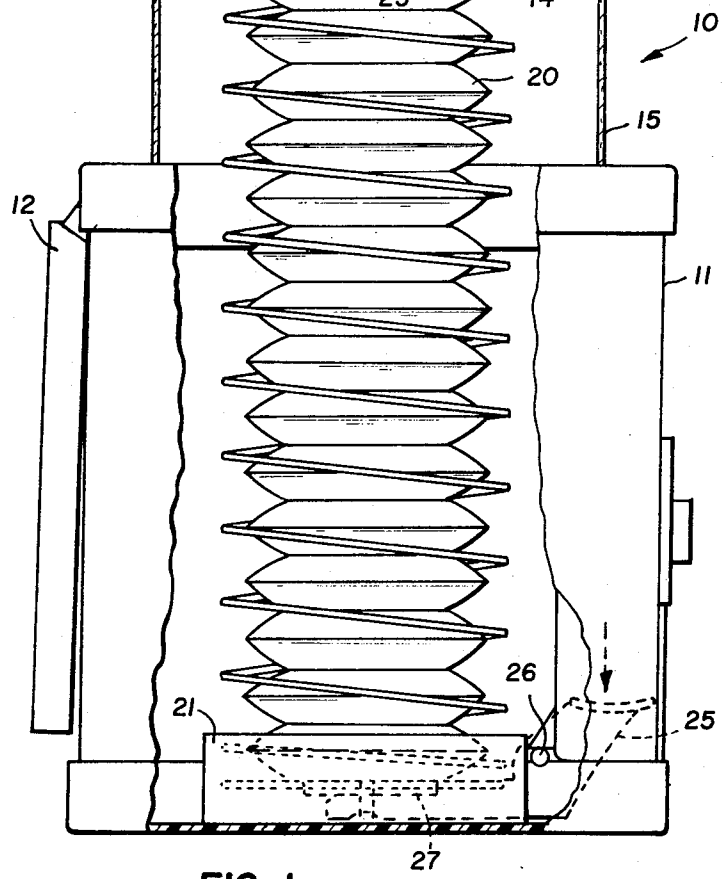


FIG. 1

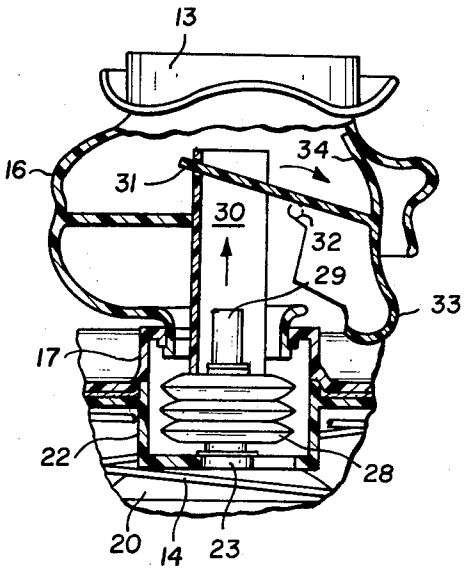


FIG. 2

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JACK-IN-THE-BOX SOUNDER

THE INVENTIVE IMPROVEMENT

Jack-in-the boxes are ancient toys and have become fairly standard in their operation. The invention involves a realization of a way to add to the interest and pleasure derived from a jack-in-the-box toy by adding sound and motion. The invention seeks to accomplish this in a simple, reliable, safe, and entertaining manner to result in a toy that is attractive and enjoyable.

SUMMARY OF THE INVENTION

The invention adds a bellows to a jack-in-the-box having a spring-biased figure that pops up from a box, and the bellows extend between the figure and the box to the compressed when the figure is pushed into the box and expanded when the figure pops up. An air passageway leads from inside the bellows to outside the bellows, and an air-operated sounder is arranged in the passageway for making a sound when air moves through the passageway.

DRAWINGS

FIG. 1 is a partially cut-away, elevational view of a preferred embodiment of the inventive jack-in-the-box; and

FIG. 2 is a fragmentary view of the upper portion of FIG. 2 showing operation of the toy.

DETAILED DESCRIPTION

Jack-in-the-box **10** as shown in the drawings includes a box **11** having a lid **12** and a pop-up figure **13** biased upward by a spring **14** for popping up out of box **11** when lid **12** is unlatched. A flexible sleeve **15** connects figure **13** to box **11** and limits the upward travel of figure **13**. The upper portion of figure **13** includes a simulated head **16** and neck **17** fixed to flexible sleeve **15**.

A bellows **20** extends from socket **21** at the bottom of box **11** up to housing **22** at the underside of the upper portion of figure **13**. Bellows **20** is arranged inside coil spring **14** as illustrated, and is compressed when figure **13** is pushed into box **11** and expanded when figure **13** pops up out of box **11**. The lower end of bellows **20** is preferably closed, and the upper end of bellows **20** is formed as a neck **23** secured in the bottom of housing **22**. Neck **23** forms part of an air passageway leading from inside bellows **20** to outside bellows **20**, and air rushes in and out of neck **23** as bellows **20** is expanded and compressed.

In addition to the compression and expansion of bellows **20** as figure **13** moves up and down, a lever **25** is mounted on pivot **26** near the bottom of box **11** and extends into socket **21** to raise plate **27** when the outer end of lever **25** is manually depressed as shown by the arrow. This action compresses bellows **20** to force air out through neck **23**.

An expandible sleeve **28** in the form of a smaller bellows has one end fitted securely in neck **23** and carries an air-operated sounder **29** in its other end. As bellows **20** expands during pop-up of figure **13** air is drawn through sounder **29**, sleeve **28**, and neck **23**, and sounder **29** preferably allows free air intake to bellows **20**. As bellows **20** is compressed by pressing figure **13** down into box **11** or operating lever **25**, air is expelled

out through sleeve **28** and sounder **29** which preferably makes a sound in the expelled air stream.

Air exhausted from bellows **20** not only operates sounder **29** but also expands sleeve **28** to the position shown in FIG. **2**. The expansion of sleeve **28** lifts pusher element **30** as shown by the arrow in FIG. **2**, and this raises a lever **31** mounted on a pivot **32** to lower a simulated jaw and mouth **33** of figure **13**. Hence, operation of sounder **29** is accompanied by a simulated opening of the mouth of figure **13**. Also, eyes **34** attached to jawpiece **33** and visible through eye openings **35** move when lever **31** is operated. Figure **13** then appears to move its eyes and open its mouth when sounder **29** actuates. This occurs either when lever **25** is depressed or when figure **13** is pushed back into box **11**. The noise from sounder **29** is preferably a moaning sound so that figure **13** appears to protest being pushed back into box **11**.

The inventive sounder mechanism can be incorporated into many types of jack-in-the-boxes, including those having music box elements and various mechanisms for unlatching lid **12**. Also, spring **14** and bellows **20** can be combined in a single unit structure, and sleeve **15** can be omitted. Many different features of figure **13** can be made movable in response to expansion of sleeve **28**, and many variations can be made leaving the operating functions of the inventive device.

Persons wishing to practice the invention should remember that other embodiments and variations can be adapted to particular circumstances. Even though one point of view is necessarily chosen in describing and defining the invention, this should not inhibit broader or related embodiments going beyond the semantic orientation of this application but falling within the spirit of the invention. For example, those skilled in the art will appreciate the many variations and substitutions that can be made in the inventive jack-in-the-box, and will understand how to adapt the invention to various jack-in-the-box toys.

I claim:

1. In a jack-in-the-box having a spring-biased figure arranged to pop up from a box, the improvement comprising:

a. a bellows extending between said figure and said box;

b. said bellows being compressed when said figure is pushed into said box and expanded when said figure pops out of said box;

c. an air passageway from inside said bellows to outside said bellows:

d. said air passageway including an expandible sleeve expanded by air exhausted from said bellows; and

e. an air-operated sounder arranged in said passageway for making a sound when air moves through said passageway.

2. The jack-in-the-box of claim **1** wherein one end of said sleeve is connected to an opening in said bellows, and said sounder is arranged in the other end of said sleeve.

3. The jack-in-the-box of claim **1** wherein said figure has a visibly movable feature, and including means responsive to said sleeve expansion for moving said feature.

4. The jack-in-the-box of claim **1** wherein said spring is a coil spring, and said bellows is arranged inside said spring.

5. The jack-in-the-box of claim 1 including manually operable means arranged for compressing said bellows to operate said sounder.

6. The jack-in-the-box of claim 5 wherein said air passageway includes an expandible sleeve expanded by air exhausted from said bellows, one end of said sleeve is connected to an opening in said bellows, and said sounder is arranged in the other end of said sleeve.

7. The jack-in-the-box of claim 6 wherein said figure has a visibly movable feature, and including means responsive to said sleeve expansion for moving said feature.

8. The jack-in-the-box of claim 7 wherein said spring is a coil spring, and said bellows is arranged inside said spring.

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