Feb. 12, 1929. 1,701,734

H. S. STEPHENS

SOUNDING FIGURE TOY

Original Filed Dec. 17, 1925 3 Sheets-Sheet 1

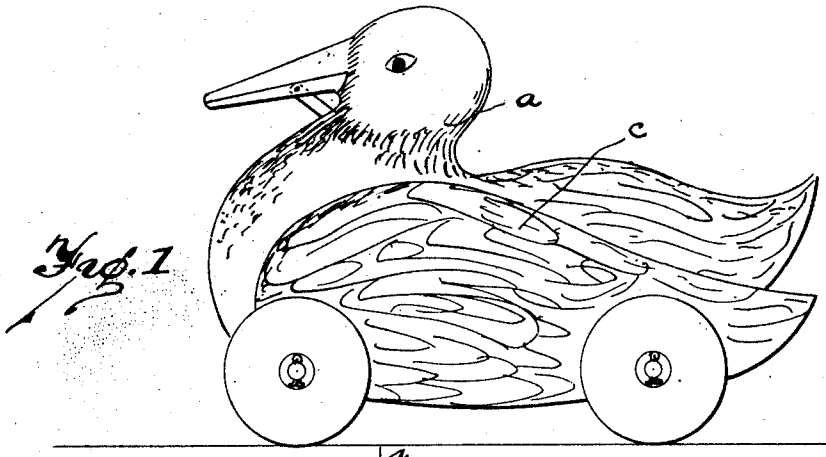


Fig. 1

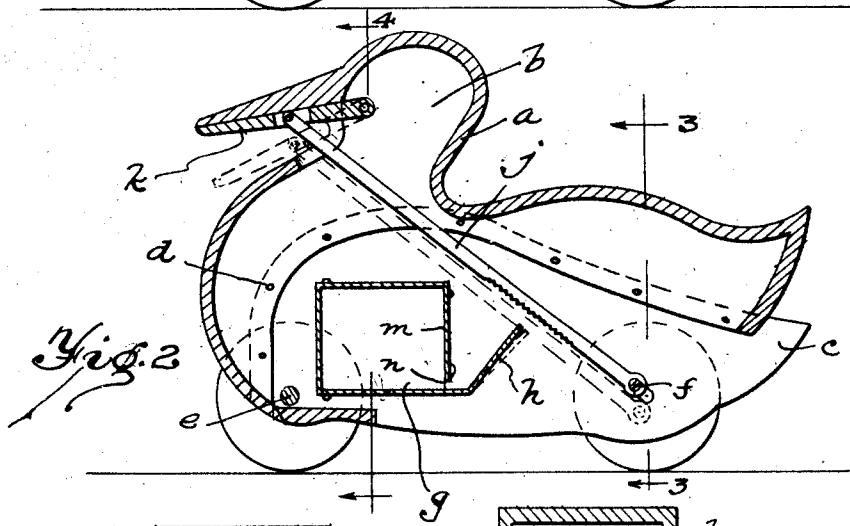


Fig. 2

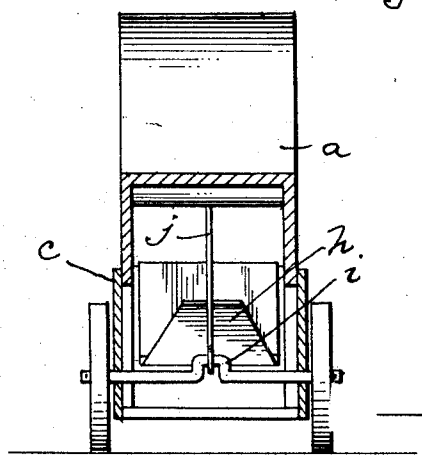


Fig. 3

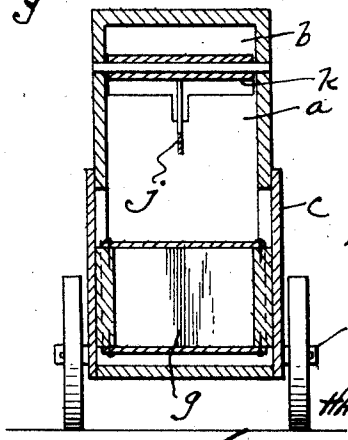


Fig. 4

INVENTOR.
HARRY S. STEPHENS.

BY Stuart G Barnes

ATTORNEY.

Feb. 12, 1929. 1,701,734

H. S. STEPHENS

SOUNDING FIGURE TOY

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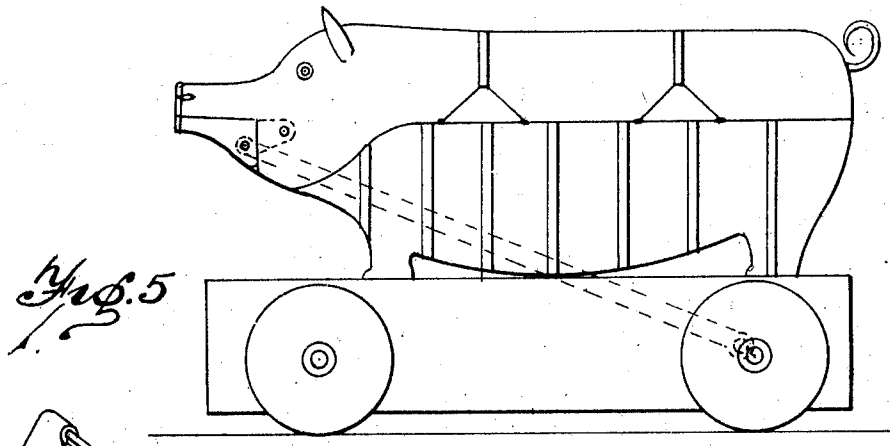


Fig. 5

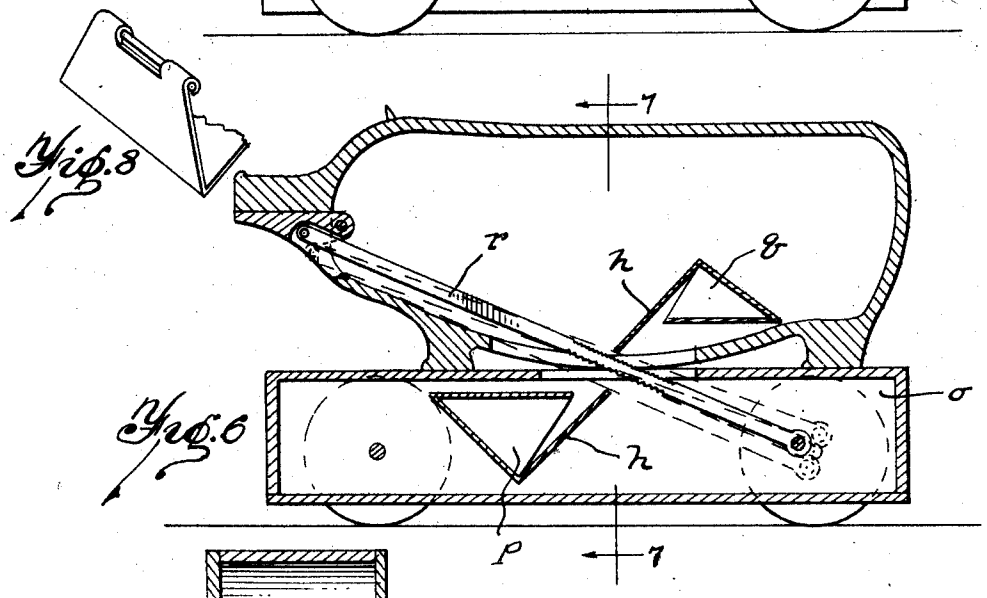


Fig. 8

Fig. 6

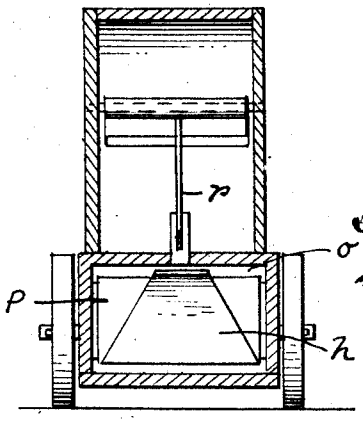


Fig. 7

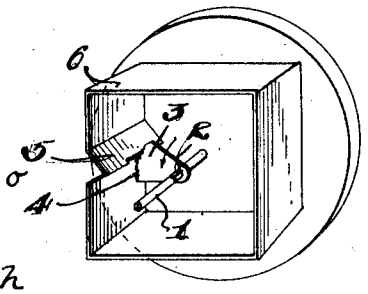


Fig. 12

INVENTOR.
HARRY S. STEPHENS.

BY Stuart C. Barnes
ATTORNEY.

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H. S. STEPHENS

SOUNDING FIGURE TOY

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Fig. 9

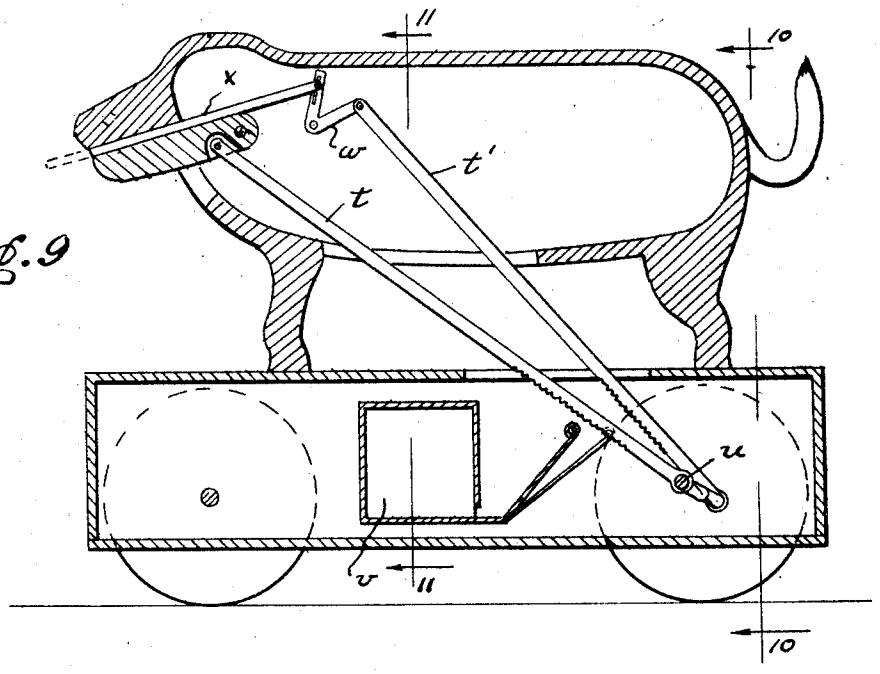


Fig. 10

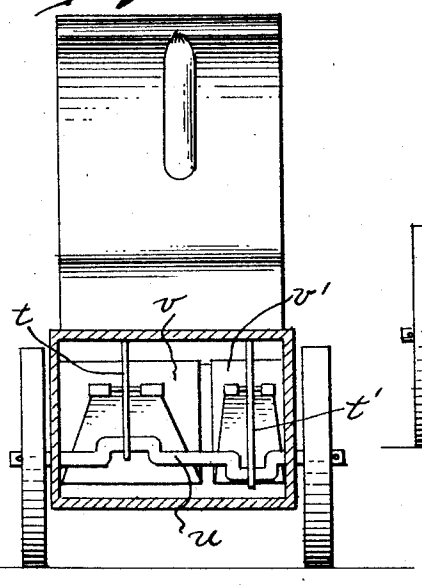
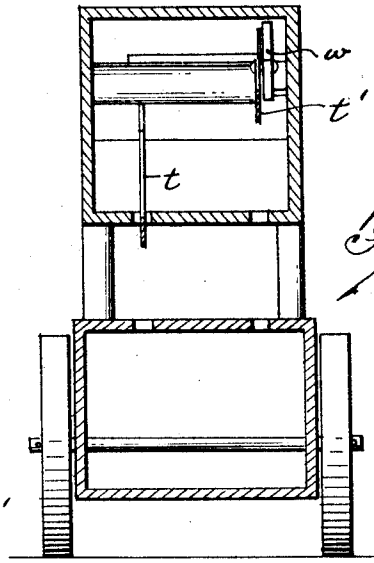


Fig. 11



INVENTOR.
HARRY S. STEPHENS.

BY Stuart C Barnes
ATTORNEY.

Patented Feb. 12, 1929. 1,701,734

UNITED STATES PATENT OFFICE.

HARRY S. STEPHENS, OF DETROIT, MICHIGAN.

SOUNDING FIGURE TOY.

Application filed December 17, 1925, Serial No. 75,938. Renewed August 16, 1928.

This invention relates to a mechanical toy, and more particularly to the construction of the sound producing mechanism.

The object of the invention is to construct a sound producing mechanism which is positive in its action and in which the chances for the device getting out of order and failing to work is reduced to a minimum. With this mechanism, I am able to produce a large variety of sounds for simulating the voices of many different kinds of animals. One of the advantages of using this sort of construction, is that it is possible to vary the tone, the length of sound, or to provide a combination of tones with a minimum amount of expense.

In the drawings:

Fig. 1 is a side elevation of a mechanical toy constructed to simulate a duck.

Fig. 2 is a vertical longitudinal section therethrough.

Figs. 3 and 4 are vertical transverse sections taken on the lines 3—3 and 4—4 of Fig. 2 respectively.

Fig. 5 is a side elevation of a mechanical toy showing a modified form of construction, the toy constructed to simulate a pig.

Fig. 6 is a vertical longitudinal section therethrough.

Fig. 7 is a section taken on the line 7—7 of Fig. 6.

Fig. 8 is a detailed perspective view of the resilient lip carried by the sound producing box.

Fig. 9 is a vertical longitudinal sectional view through another mechanical toy showing a modified form of construction in which a plurality of sounds are produced.

Figs. 10 and 11 are vertical transverse sectional views taken on the lines 10—10 and 11—11 of Fig. 9.

Fig. 12 is a modified form of construction.

Referring to the construction illustrated in Figs. 1 to 4 inclusive, I provide a body portion *a* formed of a built-up construction of boards or of a solid block of material (preferably wood), and which is provided with the hollow interior *b*. This toy is provided with the wings *c* secured to the side of the body portion *a* by a plurality of nails *d*. The toy is so constructed that these wings carry the front axle *e*, the rear axle *f* and also support the vibratory sound producing box *g* which is provided with the projected resilient lip *h*. The rear axle *f* is arched as at *i* and the serrated member *j* is secured at one end to this arch portion of the axle and at the other end to a hinged lower jaw *k*. As the toy is pulled along, the axle *f* is revolved and causes this serrated member to travel in a prescribed path, and the movement of this serrated member also opens and closes the mouth of the animal.

Fig. 2 shows how this serrated member or blade is adapted to engage this resilient lip *h* during part of its movement. The serrations engage this lip, and as the blade is moved, vibrations are set up in the box which consequently produces a sound. The construction of the sound box is such, that this sound produced, simulates the quack of a duck. By varying the size of the sound box, the thickness of the metal walls, the stiffness of the lip, or the pitch of the serrations on the blade *j*, it is possible to vary the tone of the sound produced. The finer the serrations, the higher pitched will be the tone, and the tone may be reproduced with the higher pitch by making the lip *h* more rigid, or providing thicker walls to the vibrating part of the sound box. Preferably, the sound box is almost completely closed by constructing the side *m* adjacent the lip *h* as shown in Fig. 2, which leaves a small opening *n* in this side which permits the sound to escape. Obviously the tone may be changed by varying the size of this opening.

With such a sound box, it is possible to obtain many different tones, from a deep growl to a high pitched squeal, the tone desired depending upon the character of the toy.

By a slight modification in construction, it is possible to multiply the sounds, and as illustration, I have shown in Figs. 5 to 7 inclusive, another mechanical toy which as illustrated, simulates a pig. In this toy I preferably use a large platform *o* which is preferably hollow and supports one of the sound boxes *p*. The other sound box *q* may be supported within the hollow interior of the body portion of the figure. I have shown these sound boxes of different sizes, and the blade *r* is provided with serrations on both edges, and this blade is arranged to travel in a prescribed path so as to engage the resilient lips *h* carried by each sound box during a part of its movement. On looking at Fig. 6 it will be seen how this blade alternately scrapes across the lips *h* carried by the two sound boxes and we have alternate

sounds produced, these sounds being governed by the construction of the sound boxes which are so designed as to produce sounds simulating the voice of the animal which the toy represents.

Figs. 9 to 11 inclusive, show a mechanical toy provided with a figure representing a dog. In this construction I have provided a pair of serrated members or blades t and t'. Each blade is secured to an arched portion of the rear axle u and these blades may be connected with the axle so as to work in unison, or one may be advanced with respect to the other, so as to produce alternate sounds. I have shown here (see Fig. 10), sound boxes v and v' of a different size, but obviously, they could be made identical in size and shape for producing the same tone if desired. I preferably attach the blade t' to some other movable part of the toy, and as shown, the blade t' is attached to the bell crank w, which in turn is secured to a sliding member x which represents the tongue of the animal. The movement of the blade t' rocks the bell crank and moves the tongue in and out. I conveniently attach the upper ends of these serrated blade members t and t' shown in the drawings, to a movable jaw and tongue, but obviously, it is not essential that they be attached to these, it being merely necessary that the upper end of this blade be guided in some manner so that as the lower end is moved by the crank shaft, it is carried into engagement with the resilient lip carried by the sound box, so as to produce the vibrations necessary for producing the sound required.

Fig. 12 shows a modified form of construction in which this intermittent sound may be obtained by another means. The axle 1 is squared as at 2 and secured on the squared portion is a member 3 serrated as at 4 which is arranged to engage the lip 5 of the sound box 6. As the toy rolls along the ground, the axle will revolve and periodically bring this member 3 into engagement with the lip 5 and will result in producing the same kind of a sound as produced by the reciprocating members shown in the preceding figures.

What I claim is:

1. A toy, having in combination a hollow body simulating a living animal, wheels on which the body is supported to travel along a surface, sound-producing means within the body comprising a plate arranged to emit sounds from the rapid vibrations of the plate itself, and connections between the wheels and the sound-producing means in the body for operating the same by rapidly vibrating the plate when the toy is caused to travel along a surface.

2. A toy, comprising a hollow body simulating a living creature, and provided with a movable part for simulating a natural movement, wheels on which the body is supported to travel on a surface, vibratory plate sound-producing means container within the body, and connections between the wheels and the movable part of the body drawn across the edges of the plate whereby the turning of the wheels causes both action of the sound-producing means and movement of the movable part of the body.

3. A toy, comprising a body having a simulation to a living thing, wheels on which the body can travel along a surface, sound-producing means within the body including a vibratory lip, the said body provided with a movable lower jaw and a serrated bar connecting between a wheel and the movable jaw and arranged to periodically be drawn across the vibratory lip when the toy is caused to move along a surface.

In testimony whereof I affix my signature.

HARRY S. STEPHENS.