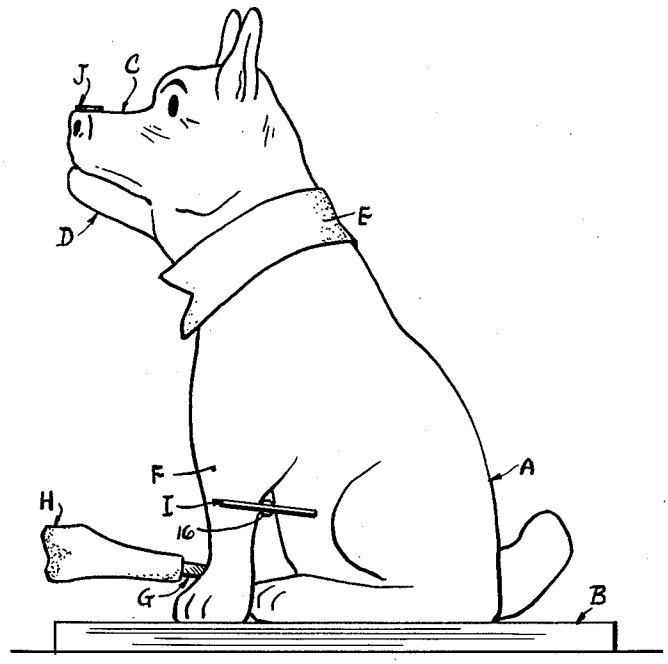
April 29, 1952 H. A. KIESELHORST 2,594,448

TOY DOG-BANK

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FIG 1



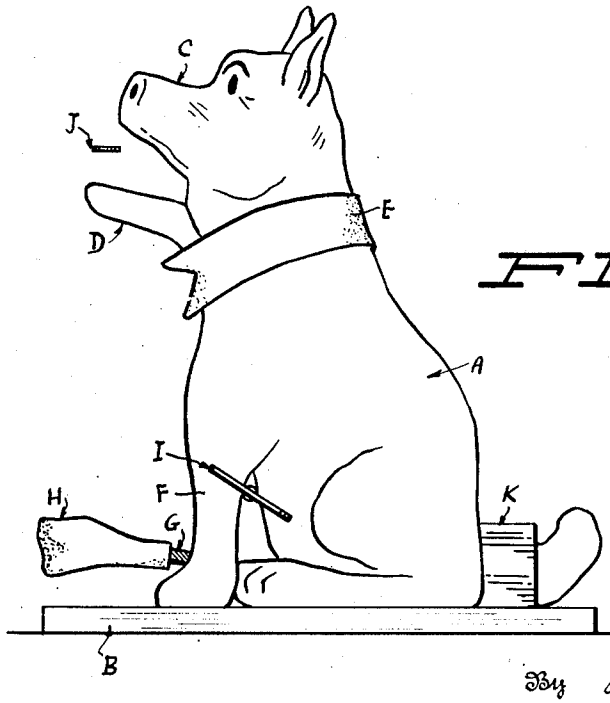


FIG 2

Inventor

HENRY A. KIESELHORST

By A. G. Fisher

ATTORNEY

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TOY DOG-BANK

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FIG 3

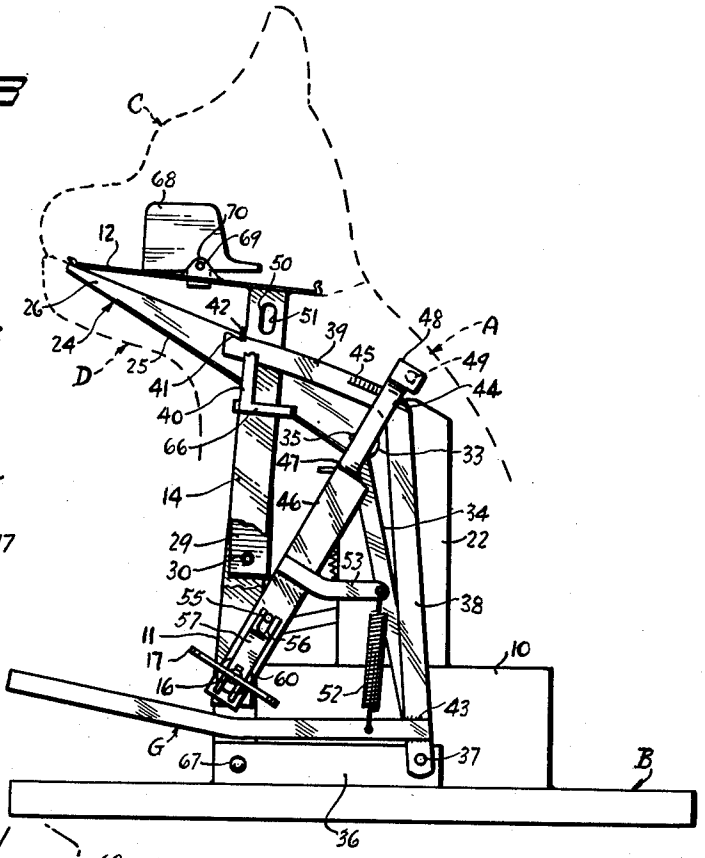


FIG 5

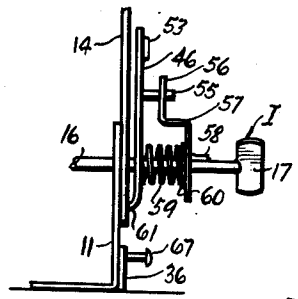
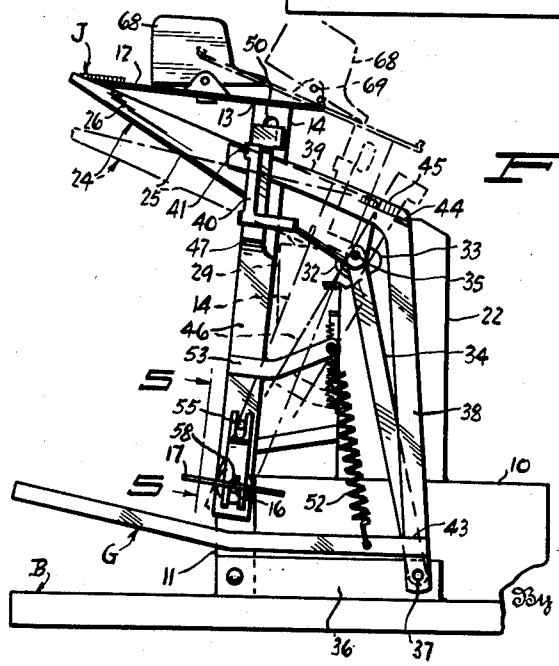


FIG 4



Inventor

HENRY A. KIESELHORST

Attorney

April 29, 1952 H. A. KIESELHORST 2,594,448

TOY DOG-BANK

Filed May 5, 1950 3 Sheets-Sheet 3

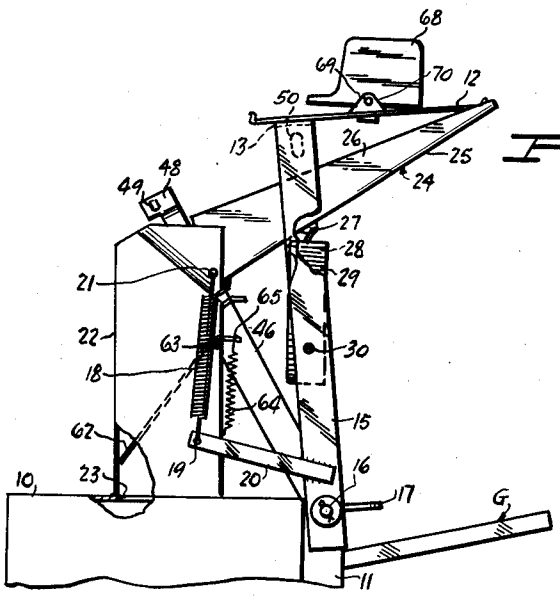
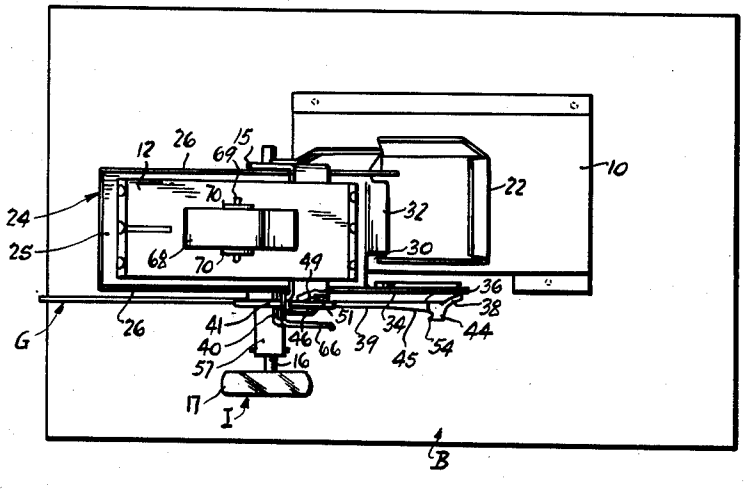


FIG 6

FIG 7



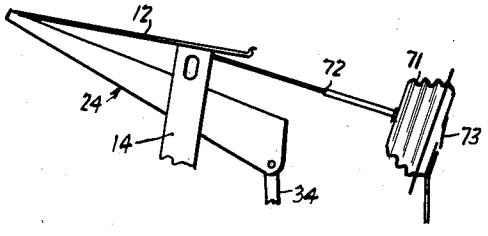


FIG 8

Inventor
HENRY A. KIESELHORST

By A. G. Fisher

ATTORNEY

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UNITED STATES PATENT OFFICE

2,594,448

TOY DOG BANK

Henry A. Kieselhorst, Richmond Heights, Mo., assignor to June K. Kieselhorst, St. Louis, Mo.

Application May 5, 1950, Serial No. 160,286

9 Claims. (Cl. 46—4)

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This invention relates generally to improvements in toys and more particularly to toy banks.

The primary object of my invention is to provide a novel, attractive and entertaining toy bank simulating an animal in appearance and designed to "snap" up and swallow the coin to be saved. In its preferred, although not necessarily its only, form the invention is embodied in a toy dog, and the user places a coin or other object upon the nose of the dog and then, upon touching a trip or release member, the dog very realistically snaps up and swallows the coin, there being a receptacle provided for the accumulation and later, authorized removal of the banked or collected objects.

The invention further has as an important object the provision of a toy dog bank which is extremely natural in its action and which teaches the child a valuable lesson on the behavior characteristics of the animal. To anyone who has seen a dog trained to hold a desired object, such as a small piece of meat, on its nose until its master gives it permission to snap it up and eat it, the action of the toy is startlingly realistic. I furthermore preferably arrange a simulated bone as the trip or release for initiating the snapping action, thus teaching the child that to touch the pet's bone is to cause it to snap or bite.

Still another object of my invention is to provide an action, or inside actuating mechanism, for a toy bank of this kind which is comparatively simple in construction but which above all is completely positive and fool-proof in its operation, and capable of imparting a realistic action to the jaw and mouth of the animal as it swallows the coin or other object.

These and other objects of the invention will be made apparent in the course of the following detailed specification wherein reference is had to the accompanying drawing, in which—

Figure 1 is a side elevation of a toy embodying my invention and a coin being placed on the nose.

Figure 2 is a similar view but showing the coin in the process of being snapped up and swallowed. In this view also the drawer in which the coins are collected is shown as partially pulled out for removal.

Figure 3 is an enlarged side elevation of the operating or actuating mechanism for the toy, the upper part of the dog body being shown in dotted lines.

Figure 4 is a similar side view of the operating mechanism, showing the same as set or cocked ready for action, and also showing in dotted lines

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the position assumed by certain of the parts during the snapping and swallowing action.

Figure 5 is a fragmentary frontal elevation along the line 5—5 in Figure 4.

Figure 6 is a view similar to Figure 3 but taken from the opposite side of the operating mechanism, and with a lower portion of the base omitted.

Figure 7 is a plan view of the operating mechanism as it is shown in Figure 3.

Figure 8 is a detail, schematic view of a modified form of upper jaw retard means.

Referring now more particularly and by reference characters to the drawing, I have shown my invention in Figures 1 and 2 as arranged in the simulated body of a dog A, in a seated position, arranged on a base B, and this body is made of papier-mâché, molded plastic or the like, suitably shaped and naturally colored. The dog has a movable upper jaw and head C and lower jaw D, the junction between which and the body may be concealed by a simulated collar E. Projecting from between the dog's forelegs F is a trip arm G on which is mounted a simulated bone H, and from one side there projects a cocking member I. The operation of the mechanism is such, as will presently appear, that a coin J or similar object placed on the nose of the dog will be "snapped" up and swallowed, and will find its way finally into a drawer K which may be opened as suggested in Figure 2 for removal of the accumulated coins. A suitable lock (not shown) may be provided to prevent unauthorized opening of the drawer but since the precise construction of this lock is not material to an understanding of my invention, it is not detailed herein.

In snapping up and swallowing the coin J, the upper jaw C of the dog moves sharply back and its return is momentarily retarded, while the lower jaw D moves almost straight downward and then returns. These motions are brought about and properly timed and related by an action or actuating mechanism arranged in the body of the toy as will now be described.

This mechanism is shown in Figures 3–7 and is mounted upon the base B and has as its foundation a frame or assembly including a housing 10 open at one end to receive the drawer K and closed at its opposite, forward end. Secured rigidly to the base, forward of the housing 10, is a U-shaped bracket having transversely spaced, upturned arms 11. An upper jaw member 12 of rectangular shape is secured to the top 13 of an inverted U-shaped support or carrier having downwardly turned legs 14—15 posi-

tioned at lower ends alongside the bracket arms 11. These lower ends of the legs 14—15 are pivotally mounted on a cocking shaft 16 journaled crosswise through the arms 11, the shaft extending well out to one side of the assembly and being provided with a crank or thumb-piece 17 at its extremity, forming the cocking member 1 aforesaid.

The carrier thus supports the upper jaw member 12 for forward and rearward swinging movements above the base B but the jaw is normally urged forward to the normal position shown in Figures 3 and 6 by a retractile coil spring 18 (Figure 6). The lower end of this spring 18 is hooked at 19 in the rear end of an arm 20 secured to and extending rearwardly from the carrier leg 15 while the upper end of the spring is hooked at 21 in the side of an upright stationary coin chute 22 secured atop the housing 10. This chute is rectangular in cross section and at its lower end registers with an opening 23 in the top of the housing so that coins dropped into the open upper end of the chute may fall into the drawer K which is placed in the housing. The upper jaw 12 stands a considerable distance from and forward of the top of the chute.

Located below the upper jaw and projecting forward from the upper end of the chute 22 is a trough-shaped lower jaw member 24, which is positioned between the carrier legs 14—15 and has a bottom 25 and upstanding, forwardly tapering sides 26. This lower jaw inclines upwardly and forwardly to meet the upper jaw 12 at its forward end and some distance rearwardly the lower jaw is secured at 27 (Figure 6) to the top 28 of an inverted U-shaped lower jaw carrier having depending legs 29 located immediately within the upper jaw carrier legs 14—15. Pivots 30 connect the legs 29 to the legs 14—15 a short distance below the lower jaw, the legs 29 being comparatively short as clearly shown. The forward, upper side of the coin chute 22 is open at 31 (Figure 7) and the rear end of the lower jaw 24 has a lip extension 32 entering this opening but the jaw is offset laterally so that one side 26 may project rearwardly alongside the chute as seen in Figures 3 and 7. Also as there shown, this side of the chute 22 is notched out at 33 to provide clearance for the lower jaw. At this side of the assembly a tie link 34 is pivoted at 35 to the rear end of the lower jaw 24 and extends downwardly alongside the chute 22 and housing 10 terminating inwardly of a base bar 36 secured on edge atop the base B alongside the housing. A pivot 37 connects the lower end of the link 34 to the base bar 36 and thus the link may swing forwardly and rearwardly at its upper end for a purpose presently to appear.

Also pivoted at 37 to the base bar 36 is the lower end of a trip lever 38 which extends upwardly alongside the coin chute 22 and has an upper forwardly turned end 39 which is arcuate in shape. The forward extremity of this arcuate end 39 of the trip lever passes alongside the upper jaw carrier leg 14 and loosely into a rectangular yoke 40 projecting outwardly from that leg. The upper edge of the trip lever end 39 has a catch notch 41 and in the normal position of the parts, this notch engages the upper edge 42 of the yoke 40 (Figure 3). The trip arm G is secured at 43 to the lower end portion of the trip lever 38 above the pivot 37 and projects forwardly from the mechanism above the base B. The trip lever 38 at its upper extremity and at the junction with its arcuate forwardly turned end 39 has a laterally projecting stop 44 and forwardly thereof an outwardly and rearwardly angling cam surface or rib 45.

A cocking lever 46 is pivoted at its lower end on the cocking shaft 16 and at its upper end is laterally offset and then inset at 47 so as to clear the end 39 of the trip lever 38 while bringing the upper end 48 of the cocking lever inward into the same plane as the trip lever. On its inside surface the inset cocking lever end 48 has a catch 49 adapted, in the cocked position of the parts (Figure 4), to enter an opening 50 in the upper jaw carrier leg 14 and to catch against the rear edge 51 of that opening. The cocking lever 46 is normally swung rearward at its upper end by a retractile coil spring 52 stretched between the trip arm G and a rearwardly projecting arm 53 secured to the cocking lever. Thus in the normal position of the parts (Figure 3) the cocking lever is swung back against the stop 44 and to ensure that the lever will not fly past the stop, the latter has a forwardly projecting lip 54, appearing in Figure 7.

The cocking lever 46 near its lower end and above the shaft 16 carries an outwardly turned pin 55 with which is engaged the forked upper end 56 of an actuator 57 forked at its lower end to straddle the shaft but secured firmly to the shaft as seen at 58. Between the actuator 57 and adjacent lower end of the leg 14 an expansion coil spring 59 (Figure 5) is placed around the shaft 16 and, bearing between a washer 60 and the lever 46, urges the latter inwardly on the shaft against the adjacent bracket arm 11. The lower end of the lever 46 is turned in at 61 to bear against the leg 14 with minimum resistance to swinging movement of the leg, and the actuator obviously serves to lock the leg to the cocking shaft but the spring 59 permits limited play of the lever axially of the shaft.

Coins dropping through the open upper end of the chute 22 are held against return by a trap door or flap 62 located angularly in the chute and pivoted at 63 upon a cross pin. A very light retractile coil spring 64 is stretched between a forwardly turned upper end 65 of this flap (projecting, of course, through an opening in the chute) and a lower point on the chute. This spring will hold the flap closed but will allow it to swing open as a coin drops downward. See Figure 6.

The yoke 40 has a rearwardly turned lower finger 66 acting as a retainer to hold the upper end of the cocking lever 46 against outward, lateral escape. A stop pin 67 is mounted on the base bar 36 to limit downward movement of the trip member G so that it cannot strike the base. These are among the features which contribute to the fool-proof operation of the mechanism.

With the parts in the positions shown in Figure 3, the mechanism is first cocked, bringing the parts to the positions shown in full lines in Figure 4. This is accomplished by grasping the cocking thumb-piece 17 and turning it counterclockwise, swinging the cocking lever 46 forward at its upper end until its catch 49 snaps into the opening 50. The spring 59 permits the upper end of the cocking lever to move outward as the catch is so engaged, and the spring 52 is stretched by this action. A coin J, or other object, may now be placed on the forward end of the upper jaw 12 and the trip arm G depressed to set the mechanism in action. The depression of the trip arm swings the trip lever 38 forward at its upper end and its curved end 39 moves

downward freeing the notch 41 from the yoke edge 42. The cocking lever 46 remains locked to the upper jaw carrier, however, and as the notch 41 is thus disengaged, the stretched spring 52 pulls this assembly sharply rearward, as indicated in dotted lines in Figure 4. This motion takes place about the axis of the shaft 16 and is fast enough that the upper jaw is pulled out from beneath the coin J. At the same time the rearward movement of the upper jaw carrier legs 14—15 swings the lower jaw carrier legs 29 about their pivots 30, and the jaw about its pivot 35, and moves the forward end of the lower jaw 24 downward. There is, necessarily, a slight rearward swinging component in this lower jaw movement but it is so slight that the lower jaw remains well forwardly projected so that the coin may fall into it and slide rearward off the lip 32 and down into the chute 22 from whence it falls into the drawer K in the housing 10.

As the connected cocking lever 46 and upper jaw carrier approach the limit of their rearward swing, the cocking lever rides onto the cam surface 45 which crowds the lever outward until the catch 49 is disengaged from the opening 50. As this occurs the spring 52 holds the cocking lever 46 back against the stop 44 and the spring 18, which is weaker than the spring 52, now reasserts itself and pulls the upper jaw carrier back in a forward direction. This forward motion moves the upper jaw forward and the lower jaw upward until they return to starting positions, and the notch 41 again locks the assembly in this position ready for the next operation.

Time is required for the coin to be sure and fall into the lower jaw after the upper jaw swings back and dislodges the coin, and I, therefore, provide means for momentarily retarding the forward return motion of the upper jaw to ensure this proper operation. In its preferred form, this retard means consists of a hammer or weight 68 pivoted on a cross pin 69 carried by ears 70 struck up in transversely spaced relation from the upper jaw. The weight of the hammer is so distributed about the axis of the pin 69 that the hammer rocks over forward in the normal position. Now, as the upper jaw moves rearward and again starts forward, the inertia of the hammer will cause it to tilt sharply rearward with a sharp hammering effect on the jaw. This action very momentarily delays the forward return motion of the jaw, giving the coin time to fall into the trough-like lower jaw as will be clearly apparent.

Alternatively I may employ a retard means operating in some fashion by air, whether it be a bellows, an air cylinder having a sort of dashpot action, or an air pouch. As seen in Figure 8, a bellows-like pouch 71 is attached by a connecting rod 72 to the leg 14 of the carrier for the upper jaw 12 and is arranged with an outwardly opening flap valve 73 so that air may escape freely from the pouch as the jaw 12 moves rearwardly but will be hindered in its return to the pouch as the jaw moves forward again. A number of similar arrangements are, of course, possible and are considered as within the scope of my invention.

In practice, the mechanism constructed as thus described, is mounted with the toy body A and the jaws 12 and 24 are respectively secured to the jaws C and D to impart the described motions thereto. The action of the jaws is thus made so realistic, and are carried out so quickly that the toy will have reality and be extremely attractive to children. The toy is also instructive, teaching saving and a respect for animals. The mechanism is shaped to fit very nicely the papier-mâché dog body in a seated, erect posture, but I do not limit myself to such material or such use.

In the operation of this device it will be seen from an inspection of Fig. 4, wherein is shown in full lines the jaws 12 and 24 closed, and in dotted lines these jaws open, with the upper jaw 12 retracted and the lower jaw 24 moved downward, that this action results from the inward and forward inclination from the vertical of the tie-link 34 at its pivotal connection with the rear end of the lower jaw 24, and the inward and rearward inclination of the carrier elements 14—15 and the lower jaw carrier 28 which slidably supports the forward end of the lower jaw 24. Thus with the mechanism in normal position the jaws stand closed, but when the trip-arm G is depressed, the elements 34, 14—15, and 28 all are released and move rearwardly under the action of the spring 52, and the tie-rod 34 moves toward a vertical position, thus elevating the rear end of the lower jaw 24 and correspondingly lowering and opening the forward or mouth-end thereof, while simultaneously the lower jaw carrier 28 slides rearwardly and downwardly and thus operates to further open the lower jaw 24. This action of the lower jaw occurs simultaneously with the retraction of the upper jaw 12 as slidably supported on the carrier 28.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A toy of the character described, comprising a body having movable upper and lower jaws, means supporting the upper jaw for forward and rearward movements, means supporting the lower jaw for up and down movements, cocking means for placing the jaws under spring tension, release means for releasing the jaws whereby the upper jaw will move rearward as the lower jaw moves downward, and means for retarding the return forward and upward movement of the jaws.

2. A toy mechanism of the character described, comprising in combination, a frame, an upper jaw, a carrier for the upper jaw pivoted on the frame and supporting the jaw for forward and rearward swinging movements, a lower jaw located below the upper jaw, a carrier secured to the lower jaw and pivoted on the upper jaw carrier to move therewith, a link pivotally connected between the lower jaw and frame and operative to move that jaw substantially straight downward and upward as the upper jaw moves respectively rearward and forward, and means for moving the jaws.

3. A toy mechanism of the character described, comprising in combination, a frame, an upper jaw, a carrier for the upper jaw pivoted on the frame and supporting the jaw for forward and rearward swinging movements, a lower jaw located below the upper jaw, a carrier secured to the lower jaw and pivoted on the upper jaw carrier, a link pivotally connected between the lower jaw and frame and operative to move that jaw substantially straight downward and upward as the upper jaw moves respectively rearward and forward, a spring arranged to normally urge the upper jaw forward, trip mechanism for releasably holding the upper jaw in its forward position, and a cocking mechanism movable into position for pulling the upper jaw rearward, said

cocking mechanism including a spring stronger than the spring urging the upper jaw forward.

4. A toy mechanism of the character described, comprising in combination, a frame, an upper jaw, a carrier for the upper jaw pivoted on the frame and supporting the jaw for forward and rearward swinging movements, a lower jaw located below the upper jaw, a carrier secured to the lower jaw and pivoted on the upper jaw carrier, a link pivotally connected between the lower jaw and frame and operative to move that jaw substantially straight downward and upward as the upper jaw moves respectively rearward and forward, a first spring operatively arranged to urge the upper jaw forward, a second and stronger spring and means for manually applying the tension thereof to the upper jaw to move the latter rearwardly, and a trip mechanism for releasably holding the jaws in place against the tension of the second spring.

5. A toy mechanism of the character described, comprising in combination, a frame, an upper jaw, a carrier for the upper jaw pivoted on the frame and supporting the jaw for forward and rearward swinging movements, a lower jaw located below the upper jaw, a carrier secured to the lower jaw and pivoted on the upper jaw carrier, a link pivotally connected between the lower jaw and frame and operative to move that jaw substantially straight downward and upward as the upper jaw moves respectively rearward and forward, spring means for urging the upper jaw forwardly, a trip member pivoted on the frame and having a notch for engaging a part of the upper jaw carrier, a cocking member and means for manually positioning the same, the said cocking member having a catch for also engaging a part of the upper jaw carrier, and a spring stronger than the first-mentioned spring means and connected to said cocking member and tensioned to swing the upper jaw rearwardly when the said trip member notch is released from the carrier for the upper jaw.

6. A toy mechanism of the character described, comprising in combination, a frame, an upper jaw, a carrier for the upper jaw pivoted on the frame and supporting the jaw for forward and rearward swinging movements, a lower jaw located below the upper jaw, a carrier secured to the lower jaw and pivoted to the upper jaw carrier to move therewith, a link pivotally connected between the lower jaw and frame and operative to move that jaw substantially straight downward and upward as the upper jaw moves respectively rearward and forward, spring means for urging the upper jaw forwardly, a trip member pivoted on the frame and having a notch for engaging a part of the upper jaw carrier, a cocking member and means for manually positioning the same, the said cocking member having a catch for also engaging a part of the upper jaw carrier, a spring stronger than the first-mentioned spring means and connected to said cocking member and tensioned to swing the upper jaw rearwardly when the said trip member notch is released from the carrier for the upper jaw, and a stop and cam on the trip member operative to release the cocking member catch from the upper jaw carrier as the jaw moves rearwardly whereby said spring means may return the jaw forward again.

7. A toy mechanism of the character described, comprising in combination, a frame, an upper jaw, a carrier for the upper jaw pivoted on the frame and supporting the jaw for forward and rearward swinging movements, a lower jaw located below the upper jaw, a carrier secured to the lower jaw and pivoted to the upper jaw carrier to move therewith, a link pivotally connected between the lower jaw and frame and operative to move that jaw substantially straight downward and upward as the upper jaw moves respectively rearward and forward, spring means for urging the upper jaw forwardly, a trip member pivoted on the frame and having a notch for engaging a part of the upper jaw carrier, a cocking member and means for manually positioning the same, the said cocking member having a catch for also engaging a part of the upper jaw carrier, a spring stronger than the first-mentioned spring means connected to said cocking member for swinging the upper jaw rearwardly when the said trip member notch is released from the carrier for the upper jaw, a stop and cam on the trip member operative to release the cocking member catch from the upper jaw carrier as the jaw moves rearwardly whereby said spring means may return the jaw forward again, the lower jaw being trough-shaped and having an open rear end, and an upright chute having an open upper end communicating with the rear end of the lower jaw.

8. A toy mechanism of the character described, comprising in combination, a frame, an upper jaw, a carrier for the upper jaw pivoted on the frame and supporting the jaw for forward and rearward movements, a lower jaw located below the upper jaw, a carrier secured to the lower jaw and pivoted to the upper jaw carrier to move therewith, a link pivotally connected between the lower jaw and frame and operative to move that jaw substantially straight downward and upward as the upper jaw moves respectively rearward and forward, spring means for urging the upper jaw forwardly, a trip member pivoted on the frame and having a notch for engaging a part of the upper jaw carrier, a cocking member and means for manually positioning the same, the said cocking member having a catch for also engaging a part of the upper jaw carrier, a spring stronger than the first-mentioned spring means connected to said cocking member and tensioned to swing the upper jaw rearwardly when the said trip member notch is released from the carrier for the upper jaw, a stop and cam on the trip member operative to release the cocking member catch from the upper jaw carrier as the jaw moves rearwardly whereby said spring means may return the jaw forward again, and a hammer weight pivoted on the upper jaw and unbalanced about its pivot to normally tilt forward but to swing back sharply and impart a hammer blow to the jaw as it moves rearward and starts back forward to thus momentarily retard the forward movement.

9. A toy mechanism of the character described, comprising in combination, a frame, an upper jaw, a carrier for the upper jaw pivoted on the frame and supporting the jaw for forward and rearward swinging movements, a lower jaw, a carrier secured to the lower jaw and pivoted to the upper jaw carrier to move therewith, a link pivotally connected between the lower jaw and frame and operative to guide that jaw substantially straight downward and upward as the upper jaw moves respectively rearward and forward, spring means for urging the upper jaw forwardly, a trip member pivoted on the frame and having a notch for engaging a part of the upper jaw carrier, a cocking member and means for manually positioning the same, the said cocking member having a catch for also engaging

a part of the upper jaw carrier, a spring stronger than the first-mentioned spring means connected to said cocking member and tensioned to swing the upper jaw rearwardly when the said trip member notch is released from the carrier for the upper jaw, a stop and cam on the trip member operative to release the cocking member catch from the upper jaw carrier as the jaw moves rearwardly whereby said spring means may return the jaw forward again, and an air container connected to the upper jaw to be collapsed and having a valve to retard the inflow of air and the air expelled as the jaw moves rearward as the jaw moves forward to retard that motion.

HENRY A. KIESELHORST.

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