Nov. 27, 1928. 1,693,157

F. J. RAUFFUS

DOLL

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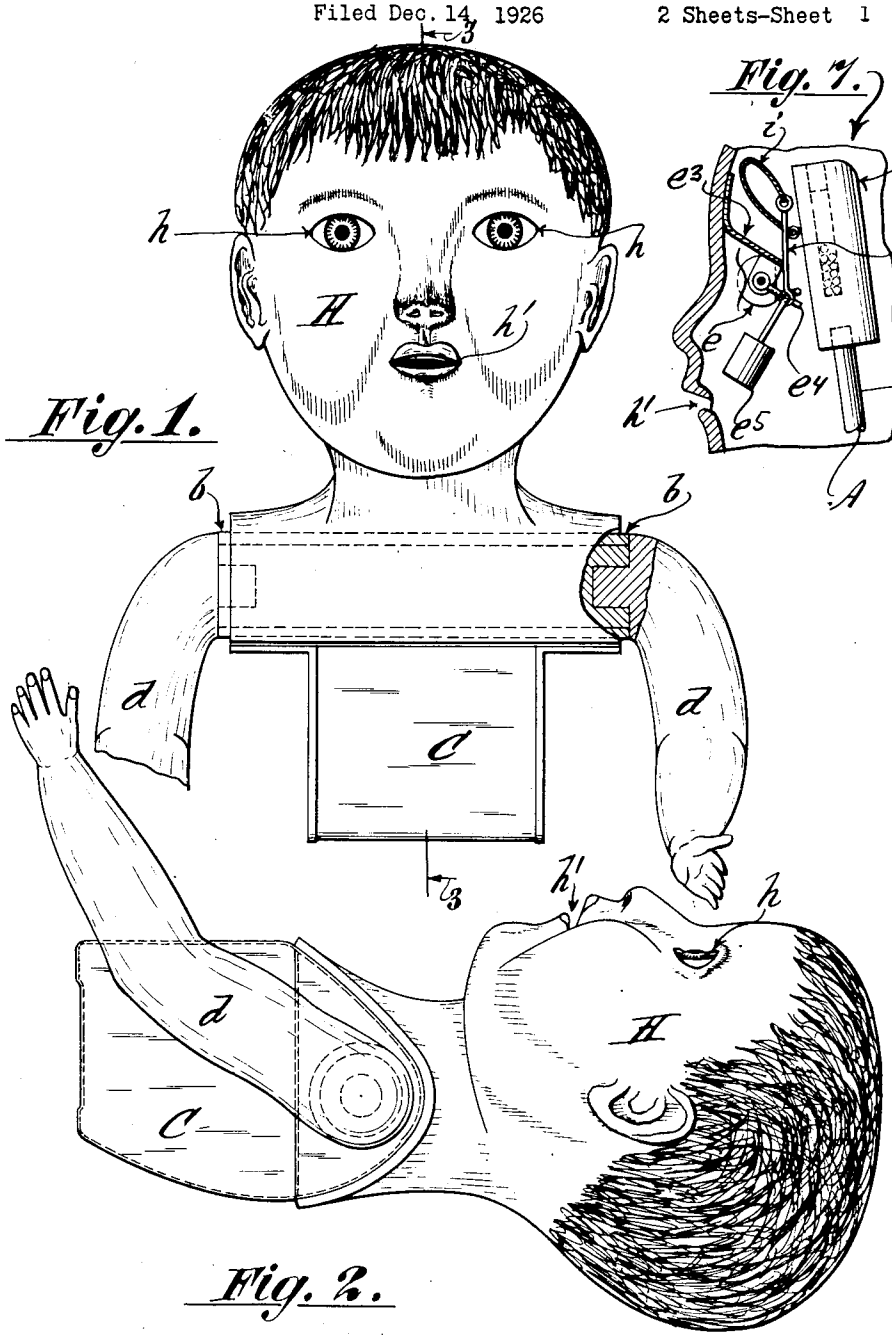


Fig. 1.

Fig. 2.

Fig. 7.

Inventor:
Fred J. Rauffus,
By his Attorney,
Leo. McHatt

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Fig. 3.

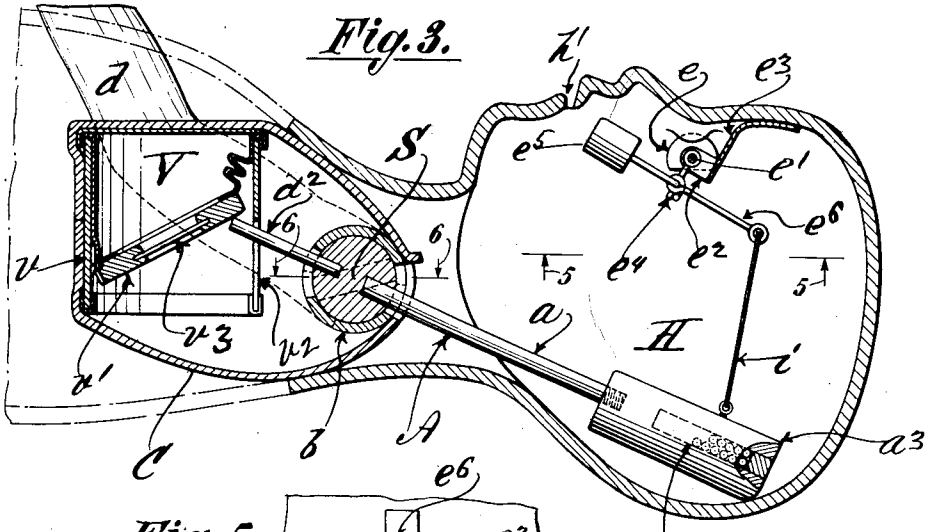


Fig. 5.

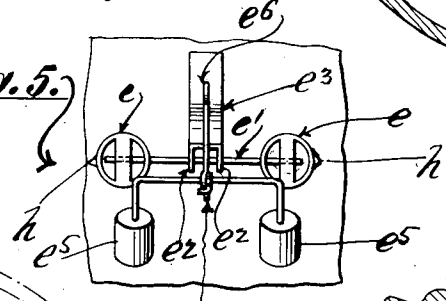


Fig. 4.

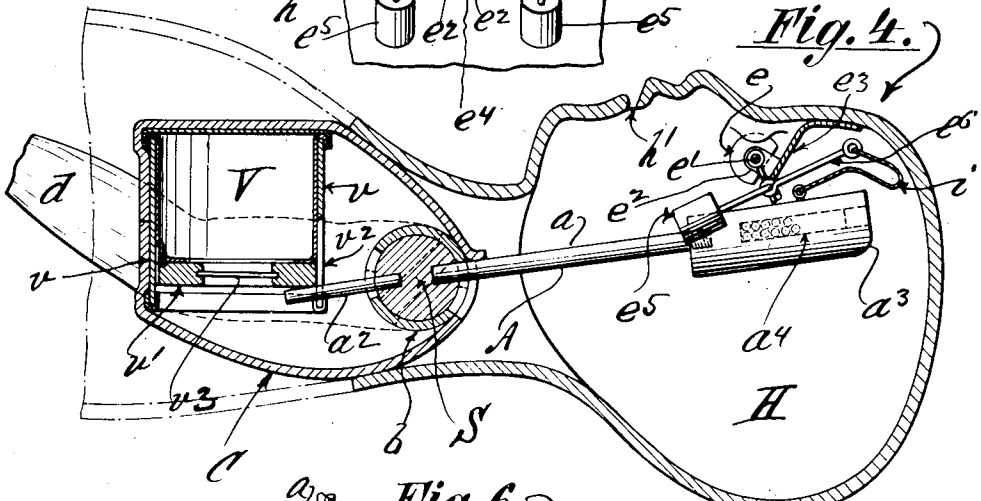
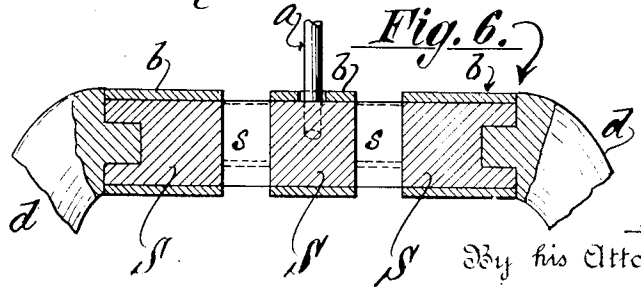


Fig. 6.



Inventor:
Fred J. Rauffus,
By his Attorney,
Leo. Wm. Hiatt

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UNITED STATES PATENT OFFICE.

FRED J. RAUFFUS, OF GREAT KILLS, NEW YORK.

DOLL.

Application filed December 14, 1926. Serial No 154,732.

My improvements relate to the class of dolls provided with automatically movable eyes and with automatic sound producing means; and are designed to render such dolls more effective in the simulation of infantile proclivities as hereinafter fully set forth, thereby enhancing their value and attractiveness as a source of interest and amusement,—the invention consisting essentially in the combination, arrangement and co-ordination of devices and appurtenances described and claimed specifically, and a distinctive feature in this connection being the utilization of the arms of the doll as auxiliary means for the actuation and control of the sound producer and of the eye mechanism, in the manner explained herewith.

In the accompanying drawings I illustrate a practical embodiment of the essential features of my invention as incorporated in and with a doll's head and adjacent parts, although I do not limit myself to the identical form and construction of parts shown by way of exemplification since changes may be made in minor details and equivalent mechanical expedients resorted to with like results, and without departing from the spirit and intent of my invention in this respect.

With this understanding:—

Fig. 1, represents a front view of a doll's head, neck, arms and voice casing, the same being shown in vertical position;

Fig. 2, is a side view thereof, positioned horizontally;

Fig. 3, is a sectional elevation taken upon plane of line 3—3, Fig. 1, with the arms raised;

Fig. 4, is a view like unto Fig. 3, but showing the position of the operative parts when the arms are depressed;

Fig. 5, is a rear elevation of the eye control mechanism;

Fig. 6, is a sectional detail taken upon plane of line 6—6, Fig. 3;

Fig. 7, is a sectional elevation in detail showing the position of the eye-control when the doll is held in a vertical position.

The hollow doll's head H, is of usual construction, provided with the eye-openings h, h, and mouth opening h', which openings in the arrangement shown in the drawings afford inlet and outlet of air to and from the so called "voice" device V, although this is not an indispensable feature, since provision may be otherwise made for air communication with the voice device V. As heretofore, the eyes e, e, are mounted on a rock shaft e', supported in bearing lugs e^2, e^2, formed for the purpose on a bracket e^3, secured to the inner side of the forehead, said rock shaft e', having an arm e^4, integral therewith to which the counterweights e^5, e^5, are secured to act as a gravity means tending to "close" the eyes when the doll is recumbent and open the eyes when the doll is upright, as will be seen by reference to the several views of the drawings. e^6 is an extension arm pivoted to a bearing in the arm e^4 which in turn is pivoted on the rock shaft e', which extension arm e^6 is linked with the long arm a of an auxiliary control lever A, by means of a flexible connection i, which lever arm A is part of a second gravity device capable of overbalancing the first gravity device, as will later appear. The arm e^6 has only a limited amount of free movement relatively to the arm e^4.

The said long arm a, of the auxiliary control lever A, is affixed to a rock shaft S, mounted in a tubular bearing b, affixed to the casing C, which encloses the voice device V, which casing C, is in turn affixed to the neck portion of the doll head H. The short arm a^2, of said voice-control lever A, is also affixed to the rock shaft S, and extends into the drum v, of said voice device V, contacting with the diaphragm-weight v', thereof, as shown in Figs. 3 and 4, of the drawings, the adjacent side of the drum v, being formed with a slot v^2, for the accommodation of said short arm a^2.

The arms d, d, of the doll are affixed to the ends of the shaft S, so that they may be utilized to rock the shaft S, against the resistance afforded by the long arm a, of the auxiliary control lever A, on the free end of which is secured a preponderant weight a^3, to counteract the weight of the arms d, d, and of the diaphragm v', of the voice device V, under certain conditions of use.

Said auxiliary control lever weight a^3, is preferably cylindrical in shape and formed with a longitudinal chamber a^4, containing metallic shift balls, as for instance shot of suitable size, which, by their shifting in position as the auxiliary control lever A, is inclined above or below the horizontal level when the doll is in recumbent position, as in Figs. 3 and 4, of the drawings, tend to accelerate the movement of said lever A. Thus, when the arms of the doll are depressed, as indicated in Fig. 4, the shot will roll to the inner end of the longitudinal chamber a^4, so as to lessen the leverage, whereas when the

arms are relieved of retaining pressure and free to rise to normal position, as in Figs. 2 and 3, the flow of shot to the outer end of the said chamber a^4, as in Fig. 3, will tend to accelerate the motion, and furthermore augment the pressure exerted by the short arm a^2, of the lever A, against the diaphragm weight v', of the voice device V, so as to accelerate the movement of said diaphragm weight v', in which the sound-reed v^3, is mounted in the usual manner, it being understood that said voice device V, as a unit is old in the art, and of well known construction and operation, the only difference being that in the present case the diaphragm weight v', is hinged to its drum v, at one side thereof.

In the case of an ordinary "sleeping doll" so called, the eyes close automatically when the doll is laid on its back. One object of my construction and arrangement of parts is to reverse this order of operation, and provide for the automatic retention of the eyes in open position when the doll is recumbent, with its arms raised as in Fig. 3, and this is accomplished by the auxiliary control lever weight a^3, which, as illustrated in said Fig. 3, counteracts the weight of the arms d, d, causing them to extend outward from the doll body, and also, acting through flexible connection c, and extension arm e^6, of the rock shaft e', counterbalancing the weights e^5, e^5, attached thereto, so that the eyes are maintained in open position until the doll is raised upright, or, if retained in recumbent position, until the arms d, d, are depressed as in Fig. 4, by any means, as by hand pressure applied thereto, or the imposing thereon of a coverlet or the like sufficient in weight to overcome the leverage exerted by the auxiliary control lever A, while the doll is in such recumbent position. When the arms d, d, are thus depressed the consequent rocking of the auxiliary control lever A, into the position shown in Fig. 4, causes the slack of the flexible connection c, so that the weights e^5, e^5, close the eyes e, e.

The act of placing of the doll in recumbent position causes the auxiliary control lever A, to move the voice diaphragm v', as indicated in Fig. 3, thereby causing the reed v^3, to sound, which the reed v^3, also does during the depression of the arms d, d, into the position shown in Fig. 4; the sound emanating from said reed v^3, passing through slots s, s, (Fig. 6) formed for the purpose in and through the rock shaft S, to the interior of the head H, and from thence out through the eye and mouth openings h, h, h'.

When the doll is held upright if it is tilted forward the reed v^3, of the voice device V, will be sounded as heretofore in dolls provided therewith; in addition to which function the reed v^3, may be actuated at any time through the medium of the arms d, d, irrespective of the position which the doll is made to assume.

It will be seen by the foregoing description that the only way in which sleep may be simulated when the doll is in recumbent position is to maintain the arms depressed, the design being to accomplish this by tucking the doll in a coverlet suitable for the purpose. Or if the doll is held in the arms of a child with the pretense of putting it to sleep the holding of the doll's arms in line with its body will effect the simulation of the desired result.

By reference to Fig. 7, of the drawings, it will be understood that when the doll is held upright, the flexible connection c, between the eye mechanism and the auxiliary control lever A, is slack, so that said eye mechanism is free to maintain the eyes in open position as heretofore independent of the auxiliary control lever A.

What I claim as my invention and desire to secure by Letters Patent, is:—

1. In a doll, a hollow head having eye openings, eyes pivoted in said head to swing to an "open" or "closed" position, a gravity means associated with the eye pivot and normally tending to close the eyes when the doll is recumbent and open said eyes when said doll is upright, a second gravity means associated with said first gravity means and normally overbalancing the same, to hold said eyes open when the doll is recumbent, and manually operable means associated with said second gravity means to move the latter to a position which will permit the first gravity means to operate to close said eyes when the doll is recumbent.

2. In a doll, a hollow head having eye openings, eyes pivoted in said head to swing to an "open" or "closed" position, a gravity means associated with the eye pivot and normally tending to close the eyes when the doll is recumbent and open said eyes when said doll is upright, a second gravity means associated with said first gravity means and normally overbalancing the same, to hold said eyes open when the doll is recumbent, and manually operable means associated with said second gravity means to move the latter to a position which will permit the first gravity means to operate to close said eyes when said doll is recumbent, a "voice" unit, and a connection between said unit and said second gravity means to operate said unit by the movement of said second gravity means.

FRED J. RAUFFUS.