

W. A. GAY.

DOLL.

APPLICATION FILED FEB. 28, 1902.

NO MODEL.

Fig:1.

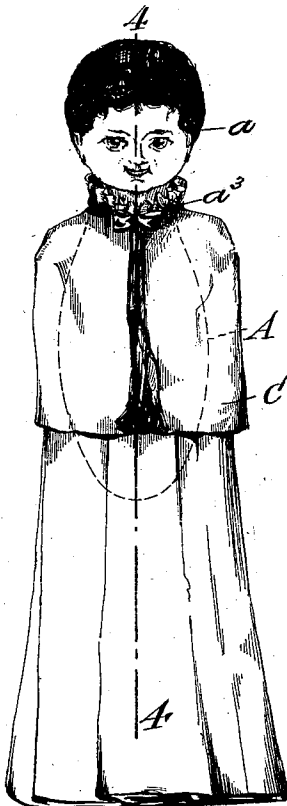


Fig:2.

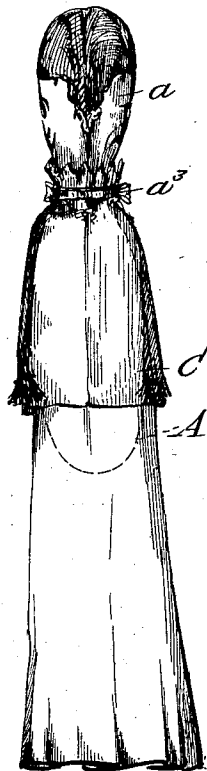


Fig:3.

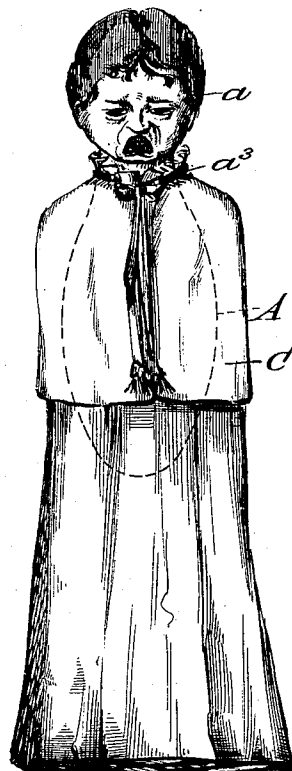


Fig:4.

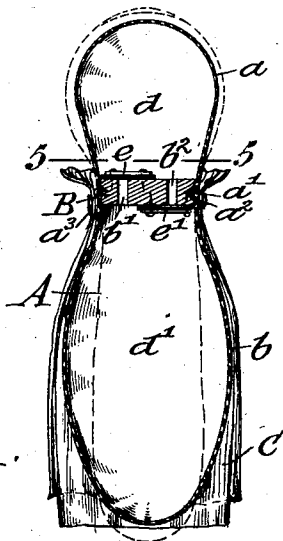


Fig:5.

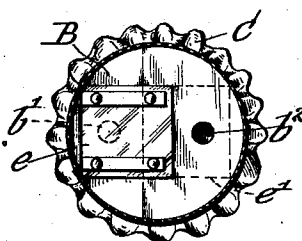
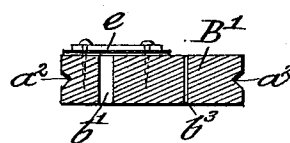


Fig:6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM ALFRED GAY, OF TERRYVILLE, CONNECTICUT.

DOLL.

SPECIFICATION forming part of Letters Patent No. 721,948, dated March 3, 1903.

Application filed February 28, 1902. Serial No. 96,172. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ALFRED GAY, a citizen of the United States, residing in Terryville, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Dolls, of which the following is a specification.

The object of the present invention is to provide a doll of more amusing and entertaining character for children than dolls of the ordinary construction; and for this purpose the invention consists, first, of a doll having an expansible head; secondly, of a doll having an expansible head in combination with a sound-producing device; and the invention consists, further, in certain other features of construction and combinations of parts which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a front view of a doll embodying my invention. Fig. 2 is a side view of the same. Fig. 3 is a rear view. Fig. 4 is a vertical section on line 4 4, Fig. 1. Fig. 5 is a horizontal section on line 5 5, Fig. 4; and Fig. 6 shows a modified form of the sound-producing device.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A indicates a hollow body of elastic material, such as rubber, which is sealed air-tight and maintained by the air within the same normally in the form shown. The upper portion *a* of this generally cylindrical body forms the head of the doll and for this purpose is of rounded shape, as shown. Upon the front of the head *a* is painted or printed the representation of an infant's face, preferably with a smiling expression, and upon the rear side of the head is painted or printed the representation of a similar face, but with a crying expression. The lower portion *b* of the inflated elastic bag or cylinder forms the body portion of the doll. Within the cylinder and dividing the same into two compartments, of which the head forms the smaller and the body the larger, is a diaphragm in the form of a disk B, of wood or other suitable material, which may be secured in position by cement before closing and sealing the elastic body A or which may be placed loosely in the body A, the same then filled with air and sealed, and the disk

then secured in position by means of a cord *a'*, passed around the body A and clamping the same into a groove *a*² in the periphery of the disk. Doll-clothing C may be applied to the exterior of the body A by a cord or band *a*³ or other suitable means.

The disk B is provided with two openings *b'* *b*², connecting the two compartments *d* *d'* within the bag. Over the opening *b'* is arranged on the disk a tongue *e*, which may consist of a piece of rubber secured to the disk by cement, tacks, or any other suitable means, said tongue being of such size as to close said opening and act as a valve preventing passage of air from the head into the lower compartment *d'*, but permitting passage of air into the head from the lower compartment *d'* when the body portion *b* is compressed. Over the opening *b*² is arranged a similar tongue *e'*, this tongue, however, being arranged at the other side of the disk and acting as a valve permitting passage of air from the head into the body portion, but preventing passage in opposite direction. The tongues *e* *e'* act not only as valves, however, but in connection with the disk-shaped diaphragm B constitute the sounding devices of the doll.

Such being the general features of the construction, to cause the doll to cry or emit a sound resembling the cry of an infant it is only necessary to compress by the hand either the upper portion of the head *a* or the lower portion *b*. Assuming, for example, that the lower portion *b* is compressed until in the position indicated in dotted lines in Fig. 4, by this operation air from the lower compartment *d'* is caused to flow through the opening *b'* in the direction of the arrow. The opening *b*² being during this operation closed by the tongue *e'*, the air lifts the tongue *e* sufficiently to pass between the same and the disk into the upper compartment *d* and by its passage causes the tongue to vibrate and give forth a crying sound. Entering the head the air causes the same to expand, so that the material of the head is placed under greater tension than that of the lower portion *b*. Upon removing the pressure air is forced by the contraction of the material of the head through the opening *b*², the opening *b'* being now closed by the tongue *e*. In like manner, as before with the tongue *e*, the air

now entering the compartment *d'* lifts and causes the tongue *e'* to vibrate and produce a crying sound. It is preferable to make the tongues *e e'* of slightly-different proportions or under slightly-different tension, so that the two sounds produced differ somewhat in tone and a more natural crying effect is produced. The effect of compressing the lower or body portion *b* of the doll, however, is not merely to produce a sound. When the body portion is compressed, the head is also expanded, and this expansion causes a change of form of the faces delineated upon the head *a*, the same being alternately enlarged and contracted upon the alternate expansions and contractions of the head as the toy is operated. Owing to the fact that the head is secured to the disk B, however, it does not expand so much at its lower portion as at the middle portion. Hence not only are the faces enlarged upon the expansion of the head, but by the unequal expansion the form of the face is changed and a different appearance produced. These changes of expression occurring simultaneously with the crying sounds produce a most amusing effect and render the toy an extremely interesting and attractive one to children, particularly when, as above referred to, the sounding devices are constructed so as to give forth upon the injection of air into the head a crying sound of one tone and upon ejection a crying sound of another tone.

Instead of compressing the body the head may be compressed, the tongues being then operated in reverse order to that described. If desired, either of the tongues may be omitted—as, for example, the tongue *e'*, the tongue *e* being employed as indicated in Fig. 6, in which case sound is produced only on the passage of the air from the body portion into the head, the diaphragm B' being in this case provided with an opening *b³* of smaller diameter than the opening *b'* for permitting return of the air. It is obvious that instead of delineating the face or faces upon the head of generally rounded form the head itself may be formed with a single face or a face at both sides or made of any other desired shape, with or without painting or printing upon the same. The body or bag A may be of any suitable size or shape, preferably, however, of generally elongated form and having greater capacity for air than that of the head, so that it may be easily grasped, and with each compression a considerable quantity of air may be injected into the head and permitted to be ejected therefrom.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A doll having an elastic and extensible body formed with valve-controlled communicating compartments permanently contain-

ing a mobile medium, and sound-producing devices adapted to be actuated by the motion of said medium upon compressing either compartment, substantially as set forth.

2. A doll having an elastic and extensible body permanently filled with air, a diaphragm dividing said body into two compartments, means in said diaphragm connecting said compartments and permitting the circulation of air between the same, and sound-producing valves controlling the circulation of air, substantially as set forth.

3. A doll having an elastic and extensible body permanently filled with air, a diaphragm dividing said body into two compartments, said diaphragm being provided with openings connecting said compartments to permit the transfer of air between the same, and sound-producing valves for said opening, substantially as set forth.

4. A doll having a hollow head and body portion of elastic and extensible material and filled with a constant quantity of air, a perforated diaphragm separating the head from the body portion and permitting the air to pass between said compartments, and sound-producing valves controlling the passage of air through said diaphragm, substantially as set forth.

5. A doll having a hollow head of extensible and elastic material, means connected with said head for retaining the same in an inflated condition, a hollow body portion connected with said head and also inflated, each of the compartments thereby formed serving to retain the other in inflated condition, and a sounding device between the head and body and adapted to yield a sound on the passage of air through the same from one to the other, substantially as set forth.

6. A doll having a hollow head of extensible and elastic material, means connected with said head for retaining the same in an inflated condition, a hollow body portion connected with said head and also inflated, each of the compartments thereby formed serving to retain the other in inflated condition, and a sounding device between the head and body, and adapted to yield a sound on the passage of air through the same from either the head to the body or the body to the head, substantially as set forth.

7. A doll having an expansible head, two faces, and a device for producing a crying sound, in combination with means for forcing air through the crying device into the head, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

WILLIAM ALFRED GAY.

Witnesses:

HENRY E. HINMAN,
JASON C. FENN.