M. R. HARRISON.

DOLL HAND.

APPLICATION FILED NOV. 16, 1916.

1,287,008. Patented Dec. 10, 1918.

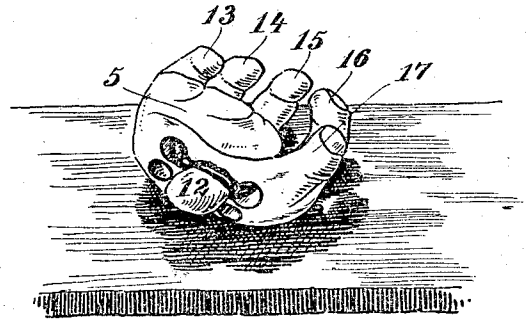


Fig. 1.

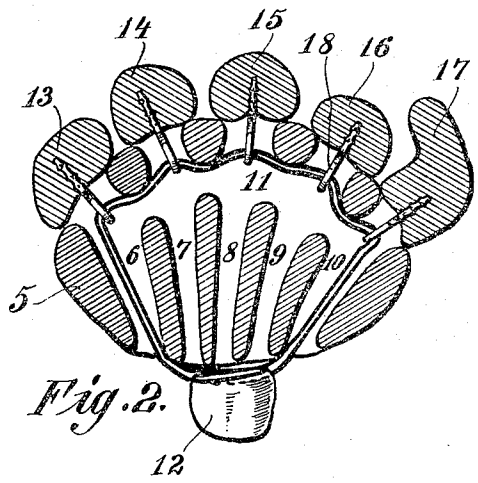


Fig. 2.

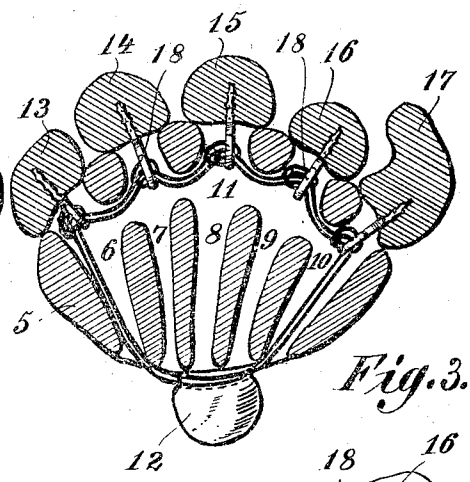


Fig. 3.

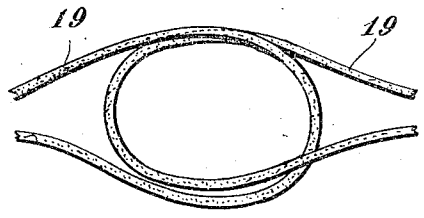


Fig. 4.

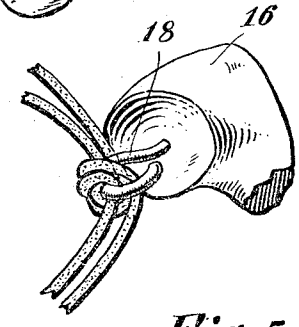


Fig. 5.

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UNITED STATES PATENT OFFICE.

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DOLL-HAND.

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To all whom it may concern:

Be it known that I, MARTHA R. HARRISON, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Doll-Hands, of which the following is a specification.

A purpose of my invention is to provide a doll hand having a body portion and a number of digits carried thereby and movable relatively thereto independently of each other, each digit having a proximate normal position which it normally tends to assume and to which it tends to return when displaced, the several digits being so connected to the body portion as to form therewith, when in their respective normal positions, a closed hand or a clenched fist.

Another purpose of my invention is to so connect the thumb and fingers to the body portion of the hand that these parts are held together with some degree of resilience accompanied by more or less passiveness to changes in relative position, in such manner as to simulate the action of corresponding parts of an infant's hand.

A further purpose of my invention is to render life-like the pressure exerted by the thumb and fingers whenever these members are displaced but slightly from any given relative positions in which they may be set.

In the accompanying drawing, in which like letters indicate like parts in all the views, I show one practical embodiment of the invention.

Figure 1 is a perspective of a doll's hand, made according to my invention.

Fig. 2 is a section through the hand, showing one way of securing the thumb and fingers in position.

Fig. 3 is a section similar to Fig. 2, but showing another way of securing the thumb and fingers in position.

Fig. 4 is a detail view, showing a portion of the elastic band for holding the thumb and fingers in position.

Fig. 5 is a detail view, showing a fastening used in the structure employed in Fig. 3.

The body portion of the hand appears at 5, and is provided with five passages, 6, 7, 8, 9, 10, disposed radially, and with a connecting or cross passage 11, into which the several passages 6, 7, 8, 9, 10 all merge. The body portion 5 is further provided with a knob 12, by aid whereof the hand as a whole may be mounted upon the doll's forearm, in the usual or any desired manner.

The fingers are shown at 13, 14, 15, 16, and the thumb at 17. These are in this instance each made in a single piece, and provided with a screw eye 18.

In the form shown in Fig. 2, I employ a band 19 of soft rubber, to connect the thumb and fingers with the body member 5. For this purpose one closed end of the band is passed loosely around the base of the knob 12, so as to assume the form indicated in Fig. 4. The band is now threaded through the passage 10 and the thumb 17 mounted upon it. Next it is threaded through the adjacent part of the passage 11 and out again at the outer end of the passage 9, and the fore finger 16 is mounted upon it. Then it is threaded in and out and thus carried along through the passage 11 each of the fingers 15, 14, 13 in succession being mounted upon it. Finally the free closed end is slipped over the base of the knob 12. The two closed ends of the rubber band will then appear as indicated in Fig. 4. The band is stretched tightly at each successive step during this operation. If the fingers be connected as indicated in Fig. 2, the band, (which of course is double) is merely threaded through each eye 18. If the connection of the fingers be made as indicated in Fig. 3, the band is first threaded outwardly through a passage 6, 7, 8, 9 or 10, so as to leave a portion of the band loosely protruding—that is, extending radially outward from a hole in the body portion of the hand. Next this protruding portion is bent back upon itself and thus formed into a loop, which is then thrust through the eye 10. The tip end of the band is still free, however, and is now brought around and through the loop. A simple knot is thus formed, as indicated in Fig. 5. By stretching the band at each step before the knot is tied, the band is rendered taut and the digits are thus held resiliently upon the body member 5. The total length of the band is so apportioned relatively to the size of the various other parts that when the band is in position it will hold the digits with just sufficient tightness to enable their movements to be life-like when they are shifted passively from one position to another.

When the hand is finished it is mounted upon a doll's forearm in the usual or any preferred manner, the knob 12 serving, if

desired, as the ball portion of a two-part joint, sometimes called a doll joint.

I have found that the thumb and fingers, if mounted as above described, may be grasped by the operator, pried open gently and placed about an article, such as an apple or a bottle, and that the article is held or clasped in a manner simulating that employed by a living child. I have also discovered that if the operator takes hold of the article and removes it, the doll fingers and thumb have a noticeable tendency to cling to it. The resilience and power of the rubber band, acting upon the artificial thumb and fingers, causes them, when the rubber band is stretched slightly more than usual, to press a little harder than usual in an effort to resume their respective normal positions. The net result is that the operator, in removing the apple or other article, experiences a sensation as if the doll's hand were clinging on to it with life-like reluctance.

The hand as a whole is so arranged as to appear graceful when the parts occupy their respective normal positions. In the particular instance here shown, a chubby little hand is shown with the fingers gracefully closed—a chubby fist of artistic form. As different kinds of anatomical members movable relatively to each other, may be given different graceful poses, however, I do not limit myself to the mechanism of a hand.

The spirit of my invention is intended to cover any group of mechanism built up of anatomical parts, so arranged collectively as to have predetermined relative normal positions suggestive of graceful pose, and into which the anatomical parts move automatically when displaced and afterward released.

I claim:—

1. In a doll mechanism the combination of a body portion provided with a number of radiating passages and with a cross passage merging into said radiating passages, a number of digits each having an eye, and a rubber band threaded through all of said passages and through each of the eyes, in order to connect the digits with the body portion.

2. In a doll's hand the combination of a body portion provided with a knob, said body portion being further provided with a number of passages radiating from said knob and with a cross passage merging into said radiating passages, a number of digits separate from said body portion and located in proximity to the outer ends of said radiating passages, and a rubber band looped around said knob and threaded through the passages, said digits being connected to said rubber band at different points along its length.

3. In a doll's hand, the combination of a body portion provided with passages, a single band of resilient material threaded through said passages, and a number of digits separate from said body portion and separately connected to different portions of said band.

4. In a doll's hand, the combination of a body portion provided with a number of radiating passages, a rubber band threaded through said passages and a number of digits separate from said body portion and from each other, the several digits being connected to different portions of said band and located in proximity to the outer ends of said radiating passages, said body portion and said digits being so shaped as to form collectively a structure analogous to a child's hand and having normally a predetermined graceful pose, which, under tension of said band, is automatically resumed when the digits are displaced from it relatively to the body portion.

5. In a device of the character described the combination of a body portion representing a comparatively large anatomical member, a number of smaller members separate from said body portion and from each other, resilient connections from said last mentioned members to said body portion, said body portion and said members being so shaped as to form collectively a structure analogous to a part of a living child and having normally a predetermined graceful pose which, under tension of said resilient connections, is automatically resumed when said members are disturbed in position relatively to said body portion.

MARTHA R. HARRISON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."