

(No Model.)

C. A. KIHLGREN.

MANIKIN, AUTOMATON, OR JOINTED DOLL.

No. 292,919.

Patented Feb. 5, 1884.

Fig. 1.

Fig. 2.

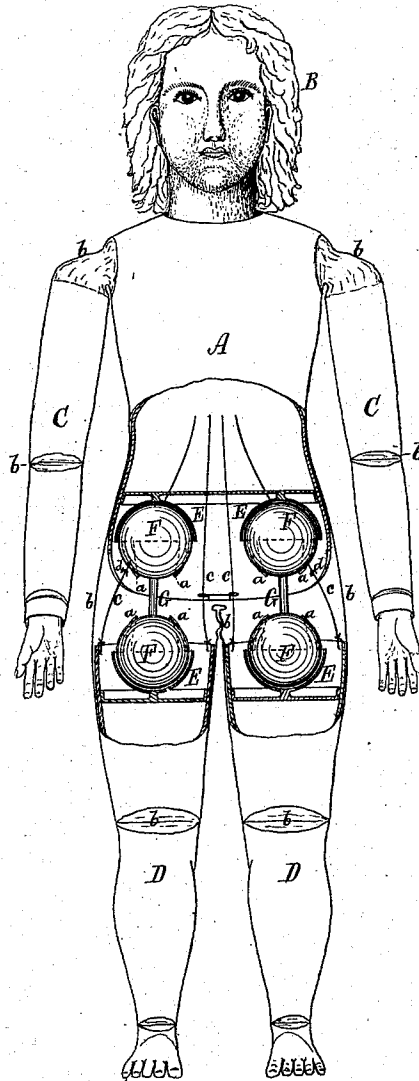
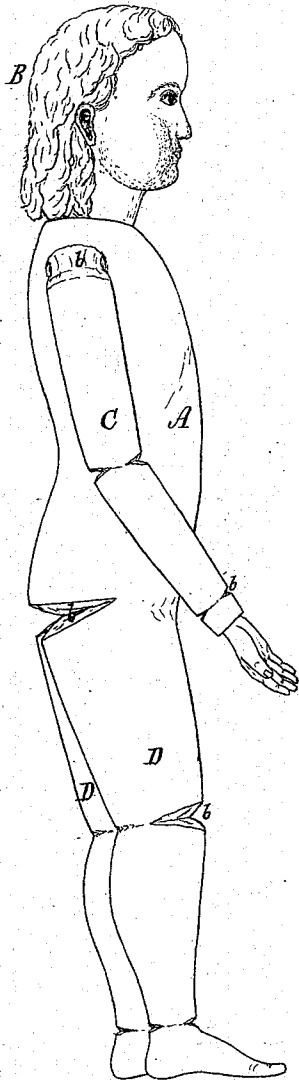


Fig. 3.

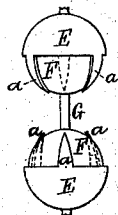
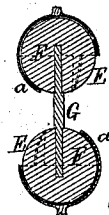


Fig. 4.



Witnesses.

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CARL AXEL KIH LGREN, OF BOSTON, MASSACHUSETTS.

MANIKIN, AUTOMATON, OR JOINTED DOLL.

SPECIFICATION forming part of Letters Patent No. 292,919, dated February 5, 1884.

Application filed October 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, CARL AXEL KIH LGREN, of Boston, in the county of Suffolk, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Manikins, Automata, or Jointed Dolls; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

10 Figure 1 is a side view of a doll provided with my invention. Fig. 2 is a vertical section of it. Fig. 3 is a side view, and Fig. 4 a vertical section, of the duplex cup or ball-joint used at the neck, the elbows, shoulders, hips, knees, and ankles of the figure, or either, as circumstances may require.

In the drawings the body or trunk of the doll or figure is shown at A, the head at B, each arm at C, and each leg at D.

20 In carrying out my improvement I compose any one or each of the joints of the manikin, as circumstances may require, or as it may be deemed advisable, of two cups and two connected balls, the said balls being within the cups and joined by a short shank extending from one to the other of such balls, all being as represented in the drawings, in which the two cups are shown at E E, the two balls at F F, and the connection or shank of such balls at G. Each cup is a hollow spherical segment in shape, and is provided with three tapering projections or prongs, *a*, extending from its edge at equal distances apart, and lapping on the spherical ball extending within the said cup, such projections being not only to hold the ball and cup in connection, but to allow of the shank being moved up to the edge of either cup. The two members or parts to be so jointed together—as the trunk and a thigh, or head and trunk, for instance—are each to be suitably recessed to receive within it one of the two cups, which is to be properly fastened in place. The two connected balls are next to be inserted in the cups, after which the prongs *a* of each cup are to be bent down up-

on the ball in it, so as to hold such ball in connection with the said cup and allow of the ball being turned or revolved therein. A figure having any one or more of its joints so made is to have to the space between the joints a cloth or yielding cover, *b*, to hide from view the parts of the joint; and in order to keep such covering suitably extended one or more flexile wires, *c*, may be attached to the edge of one of the jointed parts, and run through one or more eyes, guides, or staples, *d*, suitably arranged in the other of the jointed parts.

In a manikin or doll having its head, each arm, and each leg connected with the trunk or body by a duplex ball-joint, as described, and also having such a joint in each elbow and knee, much greater and more natural movements of its members can be effected than where each may be joined to another or the trunk by a single ball-joint.

I therefore claim—

1. An automaton, manikin, or doll having any two of its parts jointed together, combined by means of a duplex ball-joint, substantially, and arranged with them, as described.

2. The described duplex ball-joint, essentially as set forth, consisting of the two balls, their connecting-shank, and the two cups, arranged with the balls and having prongs to lap on them, as explained.

3. The combination, in a manikin or doll, of two members or parts thereof connected by a duplex ball-joint, as set forth, with a cloth or flexile covering extended from one to the other of such members or parts, and inclosing the space between them, and with one or more flexile wires projecting from the edge of one of such members or parts through a guide or guides in the other and arranged with the said covering, substantially as set forth.

CARL AXEL KIH LGREN.

Witnesses:

R. H. EDDY,
E. B. PRATT.