ADJUSTABLE FRAME FOR EFFIGIES

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Fig. 1.

Fig. 2.

Fig. 3.

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This invention relates to improvements in adjustable stretchers or frames for determining the outlines of effigies, dolls or parts thereof.

With this object in view, I provide a substantially loop shaped distortable stretcher frame on which the casing of the effigy, such as the covering of a doll's head, may be mounted. This frame is preferably of some semi-rigid but flexible material such as a steel spring or a thin strip of wood or whalebone which may be readily pressed into any of a series of desired shapes and which has usually a tendency to resume one normal shape. In accordance with the present invention, the said stretcher frame is retained in its distorted position by means of an auxiliary frame connected therewith. The auxiliary frame is preferably divided into two or more jointed sections and its purpose is four-fold; first it serves to hold the resilient loop in its distorted position; second, it limits the distortion to a predetermined extent; third, it reinforces and supports the resilient loop against the forming of reverse curves or what may be called collapsing; and fourth, it positively transmutes compression along one axis into extension along the other axis, which enables a firm friction to be used without danger of collapsing the thin outer loop, as is somewhat the case in the other forms lacking the jointed frame within the resilient loop.

The collapsible frame forming the object of the present invention is an improvement on the frame structure disclosed in my copending application Serial No. 605,466, filed Dec. 7, 1922, and is adapted for any or all uses described in detail in said copending application.

The various features of the present invention will more readily appear from the following detailed description of a preferred embodiment and the appended claims.

The drawings illustrate a collapsible frame embodying the various features of the present invention. The effigies for which such frame may serve as a mounting are not illustrated. Reference may be had for such illustration to my said copending application. Fig. 1 is a front view of the frame in normal position; Fig. 2 is a sectional view along lines 2—2; Fig. 3 is a front view of the frame in one distorted condition, and Fig. 4 is a view of an effigy in the form of a human face supported on a frame.

The frame consists of a resilient loop 1 held together by a suitable clamp such as plates 2—2 which are riveted at 3. The clamp and the ends 24 of the frame 1 are suitably formed for attachment to the body or other portion of the effigy.

Within the loop 1 an auxiliary frame consisting of rigid links 4, 5, 6 and 7 is provided for the purpose of holding the loop 1 in its distorted positions. Each link 4—7, is slightly bent to form an elbow at its center and when the ends of the joints are placed together, the jointed or toggle frame will form substantially an octagon. The ends of the links are hinged together to form this toggle frame on pins 8, 9, 10 and 11. The links may be rotated on these pins, and the pins also serve for holding the loop 1 close to the hinge points or toggle joints by means of straps 12, 13, 14 which surround loop 1 and engage the ends of the pins. The pin 8 hinges the lower ends of the links 4 and 7 to a fixed hinge plate 15, held by rivets 3—3 in the center of the clamp formed by the plates 2—2 and loop 1. The upper end of the hinge plate 15 is properly curved at 16 encircling the pin 8.

In addition to coupling the adjacent ends of the links 5 and 4 and the strap 12 the pin 9 carries also the curved end of a friction bar 17. Pin 11, in addition to coupling links 6 and 7 and strap 14, carries the curved end of a second friction bar 18. The free end of the bar 18 is T-shaped before bending, and has ears 19 which are bent up to straddle the bar 17. The free end of the bar 17 is also T-shaped, the ears 20 of the T being bent down to straddle the bar 18. The bar 18 is slotted to receive a screw 21 which traverses substantially H-shaped friction plates 22, of fibre or hard leather or suitable friction material, which bear against the upper and lower faces of the bar 18. These friction plates engage the bent-down ears 20 of the bar 17. By means of a coiled spring 23 one end of which bears against the head of the screw and the other against the lower friction plate 22, a definite pressure may be obtained and maintained between the friction 110.
bar 18 and the friction plates 22 on each side thereof. The end of the screw 21 may be pinched or upset when a proper adjustment has been made.

5 When the loop 1 is distorted into the shape shown in Fig. 3,—usually by pressure applied at or near strap 13 and exerted toward clamp 2—2, then the links 4, 5, 6 and 7 will move with it until they assume the position shown in this figure. The contact of ears 19 with the edges of friction plates 22, if the frame be further distorted, will prevent indefinite distortion in this direction. As soon as the pressure is released, notwithstanding the tendency of the springy material of loop 1 to assume its normal position, the friction plates 22 will hold the bars 17 and 18 in their relatively displaced positions and will therefore hold the toggle frame and the loop 1 in the position shown in Fig. 3. If the loop 1 is distorted in the opposite way by causing pins 9 and 11 to approach each other, the ends of the bars 17 and 18 will separate but the friction between plates 22 and bar 18 will still serve to hold the whole assembly in its new distorted position. The distortion in this opposite direction is of course again limited: by the striking of ears 19 and plates 22 on the hinges respectively about pins 9 and 11.

20 Depending on the shape of the auxiliary frame 4—7, and the number and location of the joints therein, the loop 1 may be pressed into any desired and predetermined shape. Furthermore, the proportions of the bars 17 and 18 and of the links 4, 5, 6 and 7 may be greatly varied, depending on the representation and distortion desired. Thus if bars 17 and 18 are much shortened a very long narrow oval will result which may be distorted or varied chiefly in width.

25 In Fig. 4 is illustrated a distortable covering 25 mounted on a frame (not shown) and provided with markings 26 indicating the features of a doll. The bend or elbow in the center of links 4, 5, 6 and 7 is for the purpose of reinforcing the loop 1. The same object might be accomplished by other suitable means.

30 While I prefer to provide an auxiliary jointed frame of rigid material within a loop shaped resilient frame, the invention may be practiced also without the latter by mounting the covering of the effigy directly on the jointed frame of rigid material. Furthermore, the frictional means by which the jointed frame sections are held in their distorted positions may be modified in various forms without departing from the spirit of the present invention. The number of outer links most suitable is four as shown, nevertheless more may be used in constructing a frame according to this invention if a suitable number of friction members and limiting stops are provided so that the distortions of the frame as a whole may be suitably limited.

35 Fig. 4 shows the appearance of an effigy of the human face mounted on a frame constructed according to my invention.

40 What I claim is:

1. A stretcher frame, rigid sections hinged together into a loop, friction means comprising a pair of spring pressed blocks to hold these sections in any assumed position, and an effigy attached to said sections.

2. In a stretcher, rigid links, joints connecting adjacent links, friction means holding said joints against acting until sufficient force is applied, stops to limit the motions of said links about said joints, and a flexible casing defining an effigy mounted on said links and distortable in response to said motions.

3. In combination, a plurality of rigid links hinged together into a substantially loop-shaped frame, a semi-flexible loop around said frame of links supported and reinforced thereby, means including a friction member connected with said frame to maintain the links in any form imparted thereto, and a flexible effigy operatively mounted on the frame in such a manner as to vary its shape depending on the form imparted to the frame.

4. In combination, a double toggle frame, means including a friction member attached to a plurality of points on said frame for holding it as set, stops for limiting the movement of said toggle frame in both directions, a semi-rigid loop surrounding said toggle frame, an attachment between said loop and said toggle frame, and a flexible casing defining an effigy stretched over said loop.

5. A distortable stretcher for a distortable casing defining an effigy comprising a closed frame of four links, four hinges for said links, a frictionally telescopic member connecting two diagonally opposite hinges, and a flexible loop attached around said frame to smooth the outline.

6. In a collapsible frame, a substantially loop shaped frame capable of distortion in the plane of the loop, a rigid frame divided into jointed sections and connected with points on the periphery of the loop shaped frame, a frictional connection between the jointed sections of the rigid frame, and a distortable material defining an effigy stretched on said loop.

7. In a distortable stretcher, a substantially loop shaped resilient frame capable of distortion in the plane of the loop, a jointed rigid frame connected with a plurality of points on the loop shaped frame, two bars connected with the rigid frame at different points, a frictional connection between said bars, and a distortable material defining an effigy stretched on the loop.
8. In a collapsible frame for effigies, a substantially loop shaped frame of resilient material capable of distortion in the plane of the loop, a jointed frame of links connected with a plurality of points on said loop shaped frame, a bar, a connection between one end of said bar and the jointed frame, a second bar, a connection between one end of the second bar and an opposite point of the jointed frame, and a frictional connection between the free end of one of said bars and the other bar.

In witness whereof, I hereunto subscribe my name this sixth day of December, 1922.

EDWIN BIRD WILSON.