

(No Model.)

G. B. SHERMAN.  
WIRE FRAME FOR HAT BRIMS.

No. 294,515.

Patented Mar. 4, 1884.

Fig. 1.

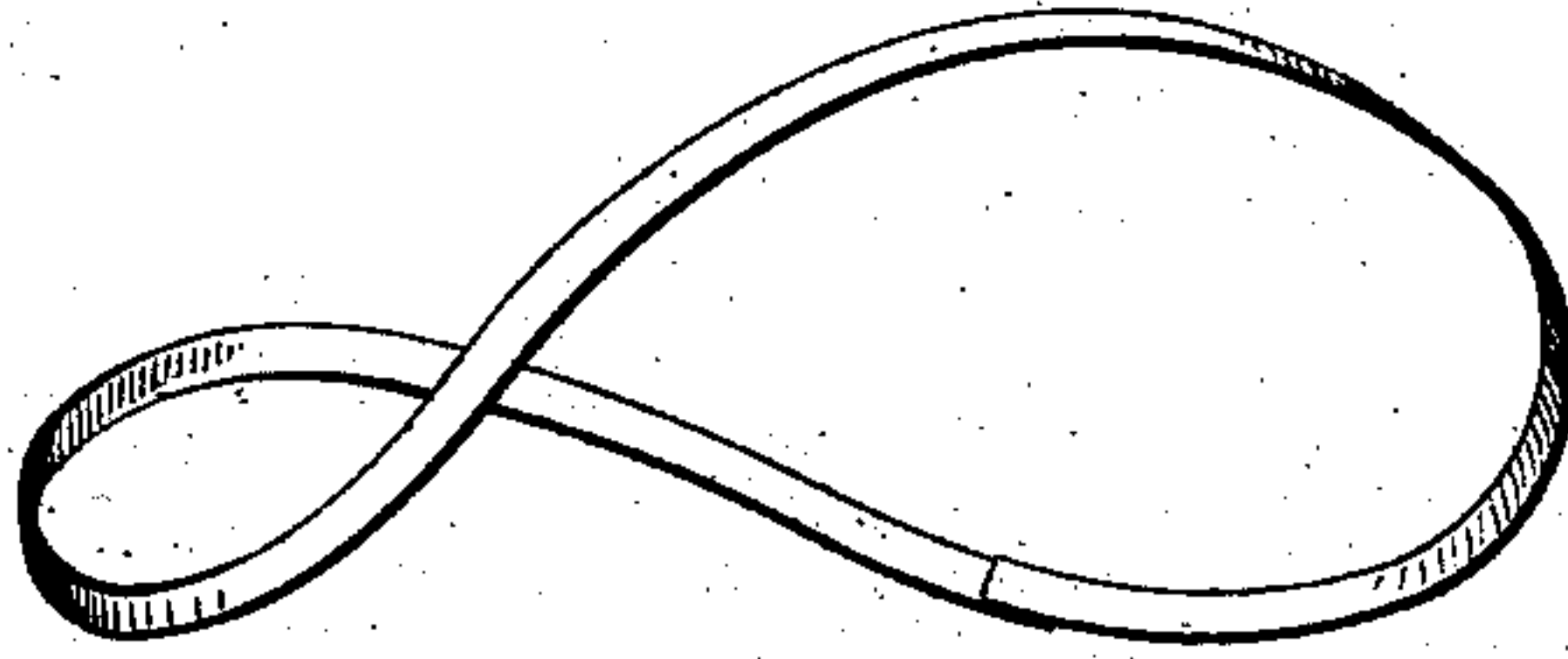


Fig. 2.

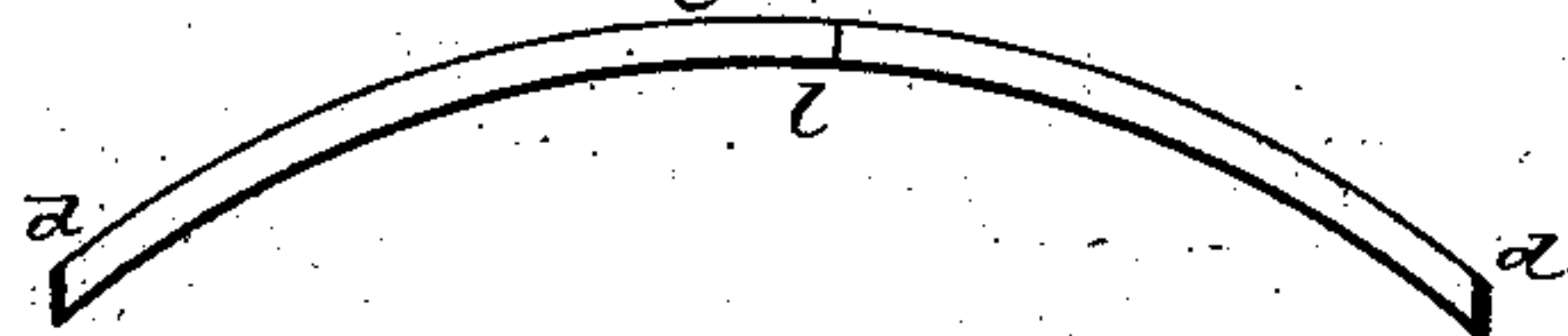


Fig. 3.

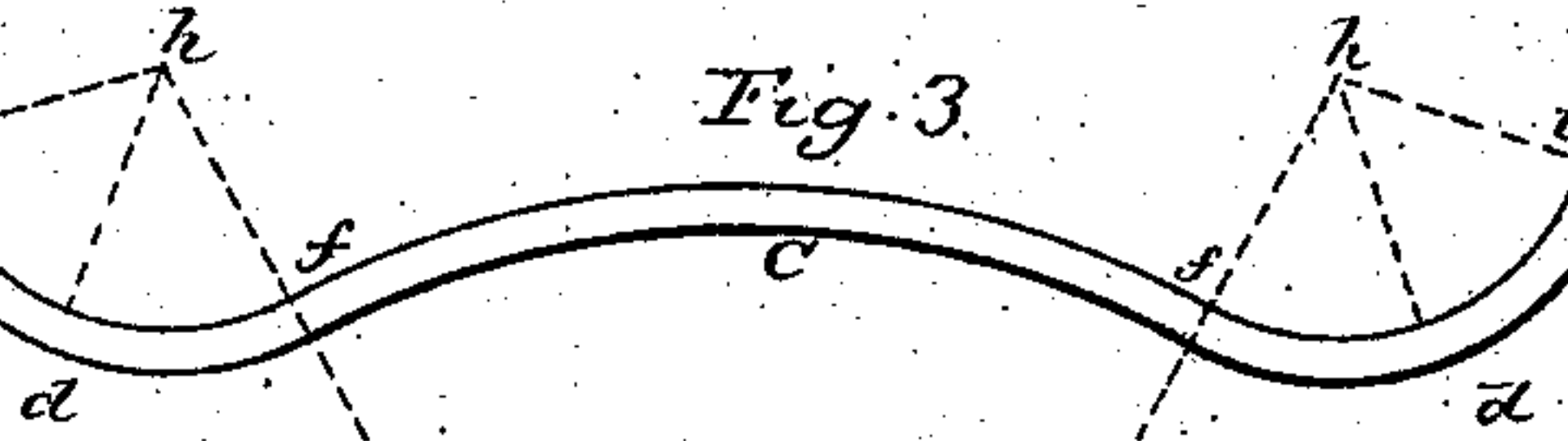


Fig. 4.

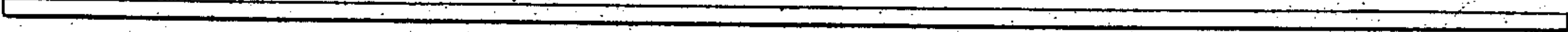


Fig. 5.

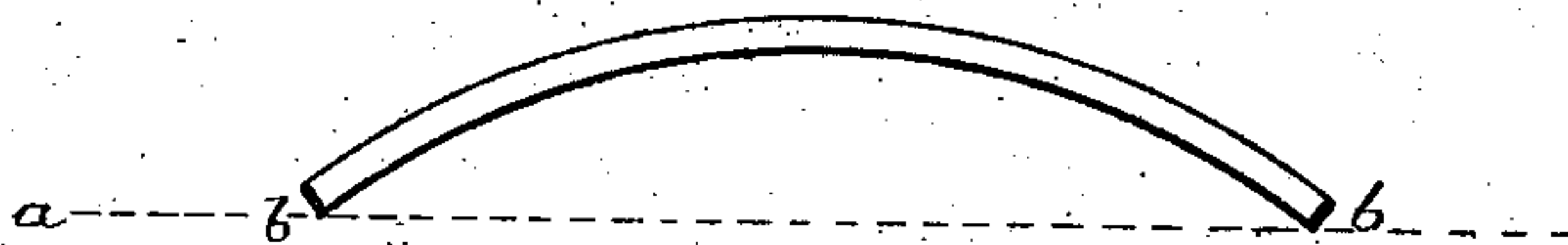
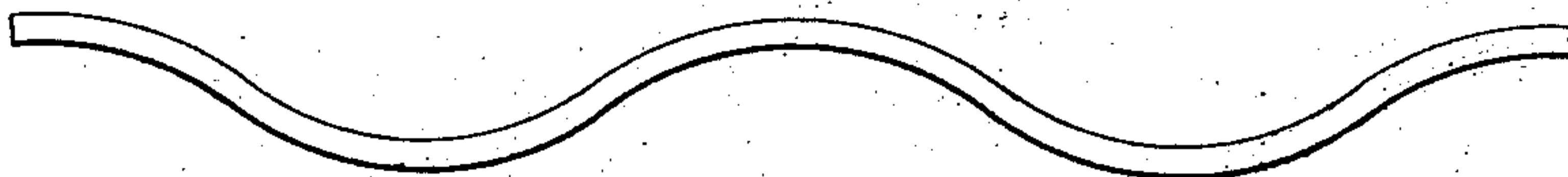


Fig. 6.



Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE B. SHERMAN, OF DANBURY, CONNECTICUT.

## WIRE FRAME FOR HAT-BRIMS.

SPECIFICATION forming part of Letters Patent No. 294,515, dated March 4, 1884.

Application filed December 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE B. SHERMAN, of Danbury, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Wire Frames for Hat-Brims; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of a complete frame; Fig. 2, a vertical section cutting through the front and rear centers; Fig. 3, the flat wire as bent edgewise preparatory to forming the hoop in elliptical shape; Fig. 4, the straight wire blank before the edgewise bend; Fig. 5, a vertical central section of a frame cutting through the center, front and rear, to illustrate the previous construction of this class of frames; Fig. 6, the flat wire as bent preparatory to forming the hoop round or circular.

This invention relates to an improvement in the wire frames which are introduced into hat-brims to give to them the required curvature or shape. These frames must have an outline corresponding to the shape of the outline of the brim, and also curved so as to give the proper dip to the brim, and made from tempered steel the wire must be treated to bring it into this compound curved shape. Flat tempered steel wire is the best material for the formation of these frames. Hitherto in the manufacture of such flat-wire frames they have been produced by taking a piece of flat wire of the length required to form the frame, and at two points in the wire, corresponding to points on the brim at each side diametrically opposite each other, giving a twist laterally to the wire at those points, which twist extends each way from those points until it dies out upon the flat wire. Then when the frame is bent into the hoop shape and the two ends secured together it curves from the horizontal plane *a*, as indicated in Fig. 5, so as to give a droop from the points where the twist is produced each way; but the flat surfaces of the wire always stand at right angles to the plane of the edge of the brim. This brings the wire substantially vertical at the sides, but at the front and rear the flat surface

of the wire inclines upward and outward, as seen in Fig. 5, *b b* indicating the section of the wire at the front and rear center. It is desirable to avoid this inclined surface of the frame, and to do so frames have been made from round wire bent or twisted to give the required shape, and because of the round shape of the wire a like surface is presented at all points. Round wire, however, is less desirable than flat, for the reason that the same weight of wire in flat shape gives a stronger support to the brim than round wire can do.

The object of my invention is to construct the frame from flat wire, so as to avoid the inclined position of the frame at the front and rear; and it consists in first bending the flat wire edgewise to give it the curvature which will produce the dip and without twist, then bringing the ends together to form a hoop shape, and so that the flat side of the wire will stand vertical at all points, as more fully hereinafter described.

I first cut a blank from flat wire of the length to form the frame, (see Fig. 4,) and then bend this blank edgewise, as seen in Fig. 3, and preferably so that the two ends will meet at the center on one side. In this case *c* is the center of one side, and midway from this point *c* each way will be the center of the front and rear, as indicated at *d d*. From the point *c* the wire is bent edgewise, and on a curve substantially from a center, *e*, the curve corresponding to the curve of the side of the brim, and extending to what may be called the "quarter-points" *f* of the brim, and from the points *f* on a reverse curve, as from a center, *h*, to a point, *i*, at the opposite side of the center *d*, corresponding to the points *f*, and from the points *i* to the end the bend is the same as that between the two points *f* to *c*. This done, the two ends are brought together and united, as at *l*, Figs. 1 and 2. Bringing the two ends together gives the hoop shape or outline of the brim. Were the radial line from the point *d* parallel with the radial line from the center *e*, as seen in Fig. 6, and the curves equal, as seen in that figure, then when the two ends are brought together the shape of the hoop will be a perfect circle; but by making the front and rear curves of shorter radius than the side



curves, and the central radial line inclined to the central radial line of the sides, as seen in Fig. 3, which throws up the end portions, the form of the frame when the ends are brought together is elliptical, as seen in Fig. 1. By giving this primary transverse bend to the flat wire when brought into the hoop shape, the flat sides of the frame at all points stand vertical, as indicated in Fig. 2. There is no twist put into the wire. It retains its same flat plane as when straight, and therefore gives the same support to the frame as it would were it a straight wire bent in a flat plane, none of its strength or force being lost, as must be the case where the wire is twisted, which twisting necessarily turns the wire into an inclined position at some points, while at other points it is vertical.

I claim—

1. The herein-described improvement in the method of making frames for hat-brims from flat wire, consisting in first bending the wire edgewise to give it a downward curve from the center sides toward the front and rear to the

quarter-points, and from those quarter-points reversely curved without changing the plane of the wire throughout its length, substantially as described.

2. The herein-described frame for hat-brims, consisting of a flat wire bent edgewise without turning the wire from its natural flat plane to give the droop to the front and rear, the flat surface of the frame being vertical at all points, substantially as described.

3. A frame for hat-brims, consisting of a flat wire bent edgewise without turning the wire from its natural flat plane, the bend alike on both sides from the center toward the front and rear, and around the front and rear the curve in the opposite direction to that of the sides, and upon a shorter radius, substantially as described.

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Witnesses:

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LEVI K. MANSFIELD.