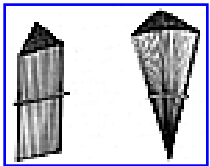


1107.30 **Persistence of Perpendicularity:** As the frequency of uniform spacing of the rods increases and as the ends are uniformly and infinitely extended, the distance each end must move to accomplish union is infinitely decreased. As this union takes place and the surface of the original triangle becomes a spherical-surface triangle of infinitely small dimension on an infinitely large sphere, the *chords* between the points of intersection of the rods' triangle's surface, and the *arcs* between the points of intersection, approach infinitely negligible difference. We discern that, while at the inflection point, the rods are at right angles to the chord-arc—"negligible"—mean; that they are not at right angles to the chord at the gathering-of-the-ends phase; and that they are always perpendicular to the mean-arc-chord "infinity"; and that *the condition of perpendicularity is persistent* throughout all the transformation phases. Perpendicularity does not "disappear" at the zero-inflection phase of inside-outing, or positive-to-negative transformation.



[Fig. 1107.31](#)

1107.31 The above development of our transformational projection model is that of a flexible and two-way steel rod-bristle brush with ends extending evenly—infinity—in opposite (double infinity) directions and infinitely tightly packed, the bristles being mounted in the steel triangle and its rubber-band-interlaced membrane, which is situated at a central position between two infinite ends and, perpendicular thereto, in both directions.

1107.32 Because the rubber bands seek the shortest distances between their respective points of interaction, and because the steel *arcs* (to which they are attached at uniform intervals) each *rotate* uniformly (as planes of great circles of the same series of commonly expanding or contracting spheres) away from the other *two sides* (of the basic articulatable steel triangle) *toward* one of which two (rotated away from the sides) each rubber band leads (from its own receding position on its awaywardly rotating arc), each band therefore yields elastically, in axial elongation, to permit the continued three-way awayness rotation. Each will persist in finding the progressive set of shortest distances between the points of the spherical triangle's respective perpendicular rod-penetrated surface.

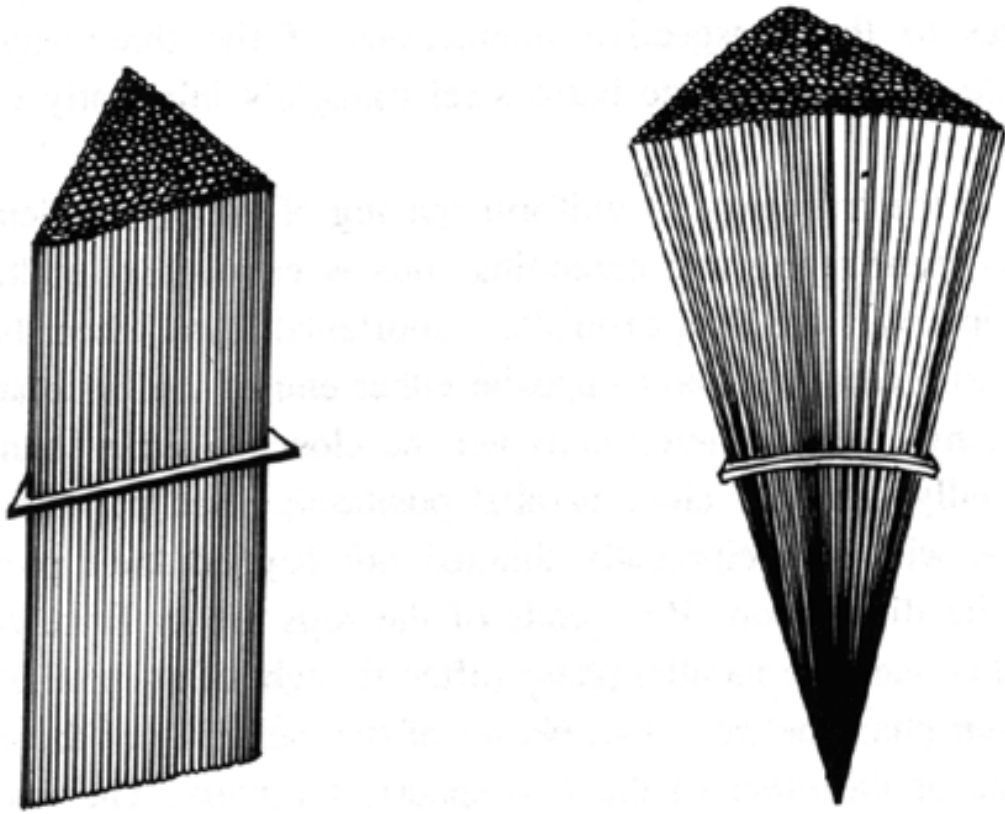


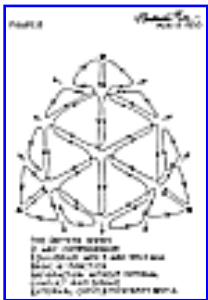
Fig. 1107.31.

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1107.40 **Three-Way Crossings: Zigzags:** Great circles represent the shortest distances between two points on spherical surfaces, and the chords of the arcs between points on spherical surfaces are the even shorter lines of Universe between those points. When the ends of the rods have been gathered together, the rubber bands will be found each to yield complexedly as an integrated resultant of least resistance to the other two bands crossing at each surface point of the grid. They yield respectively each to the other and to the outward thrusting of their rigidly constant steel rods, perpendicularly impinging from within upon the progressively expanding grid. The progressively integrated set of force resultants continuously sorts the rods into sets of rows in the great-circle planes connecting the uniform boundary scale subdivisions of the flexing and outwardly rotating steel-band arcs of the equi-side and -angle articulatable triangle.

1107.41 How do we know empirically that this force-resultant integration is taking place? The stresses pair off into identical zigzags of two-way stress in every chord, in identical magnitude, through the six-functional phases of the six right spherical triangles primarily subdividing the basic equi-side and -angle articulatable steel triangle!



1107.42 How do we know that this is true mathematically? Because the sum-total overall lengths of the vectors in direct opposition are identical, and the sums of their angles are identical!

[Fig. 1107.42](#)

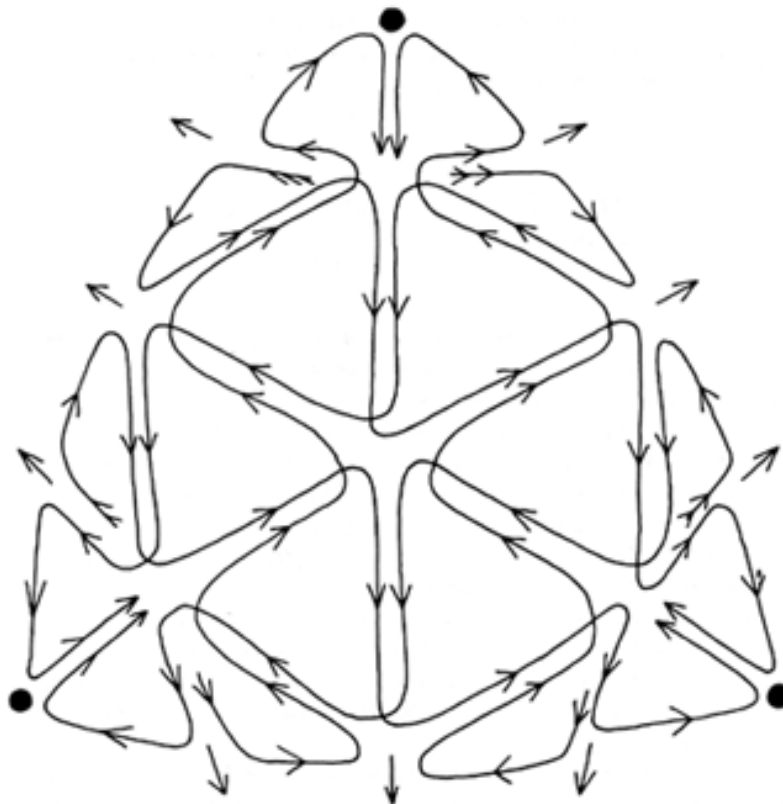
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[Next Section: 1110.00](#)

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FIGURE 8

*Buckminster Fuller*  
AUG 15 1950



THIS PATTERN SHOWS  
2-WAY COMPREHENSIVE  
EQUILIBRIUM WITH 3 WAY YIELD AND  
BASIC 6- FUNCTION  
SATISFACTION WITHOUT INTERNAL  
CONFLICT AND SINGLE  
EXTERNAL COMPLEMENTARITY NEXT  $\Delta$

Fig. 1107.42.