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(12) **United States Design Patent**  
**Khina**

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(54) **HELICAL FLUTE END MILL**

(57) **CLAIM**

(75) Inventor: **Alexander Khina**, Kfar Vradim (IL)

The ornamental design for a helical flute end mill, as shown and described.

(73) Assignee: **Iscar, Ltd** (IL)

(\*\*) Term: **14 Years**

**DESCRIPTION**

(21) Appl. No.: **29/338,456**

(22) Filed: **Jun. 11, 2009**

(51) **LOC (9) Cl.** ..... **15-09**

(52) **U.S. Cl.** ..... **D15/139**

(58) **Field of Classification Search** ..... D8/70;  
D15/21, 138, 139, 140; 83/845; 403/381;  
407/33, 34, 42, 54, 63, 110, 113, 114, 115;  
408/210–214, 219, 224, 226–230, 240  
See application file for complete search history.

FIG. 1 is a first side view of a helical flute end mill showing my new design.

FIG. 2 is a front perspective view of a helical flute end mill showing my new design.

FIG. 3 is a top view of a helical flute end mill showing my new design; and,

FIG. 4 is a bottom view of a helical flute end mill showing my new design.

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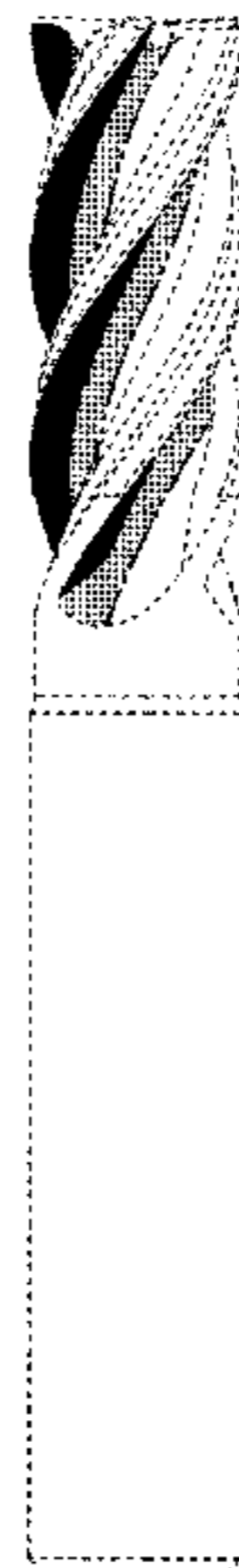
The black portions represent a helical stripe of a first color, which extends along a portion of the rake surface of each flute of the helical flute end mill. The black portions are bounded on one side by a corresponding helical cutting edge and its adjacent land surface. The black portions are bounded on the other side by a second color seen on the surface of each flute, the second color being represented by the stippled area. A broken line associated with the stippled area helps identify the surface of a corresponding flute and represents that the stippled area extends across the remainder of that flute. The first color represented by the black portions is different from the second color represented by the stippled portions. The first color and the second color may each be any color, including black, so long as they differ from one another and are suitable for distinguishing the two portions.

The shank of the helical flute end mill, contours associated with each flute, and the tip of the helical flute end mill are shown in dashed lines, depict unclaimed environmental subject matter and form no part of the claimed design. The dashed dot dashed lines depict the boundaries of the claimed design and form no part thereof.

(Continued)

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**1 Claim, 3 Drawing Sheets**



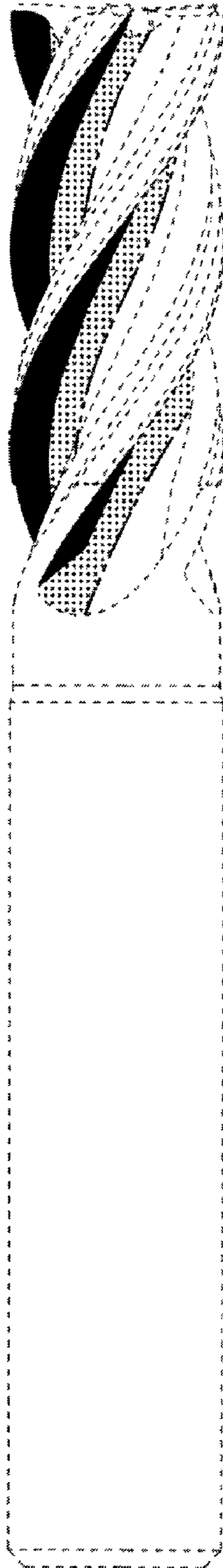
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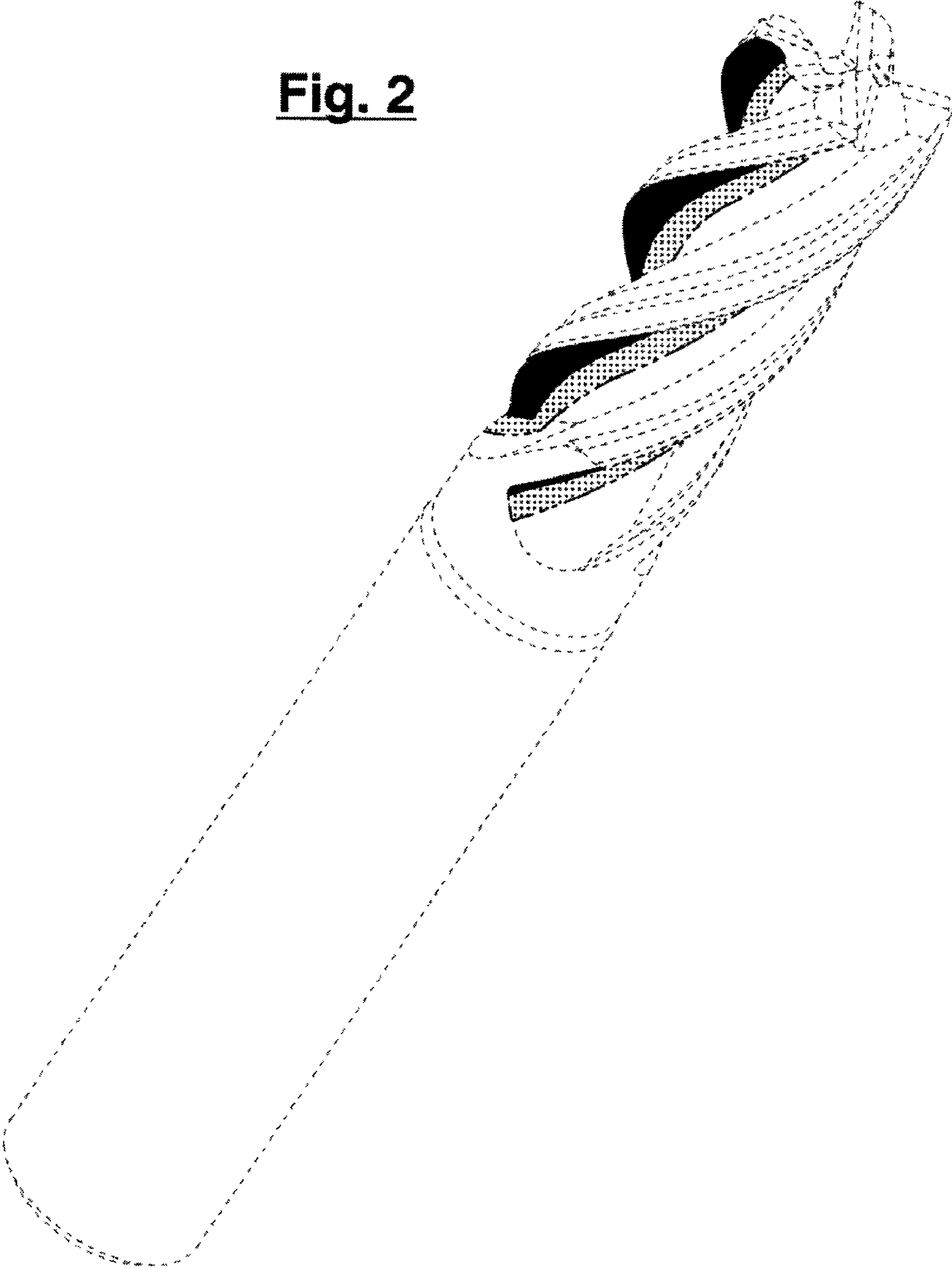
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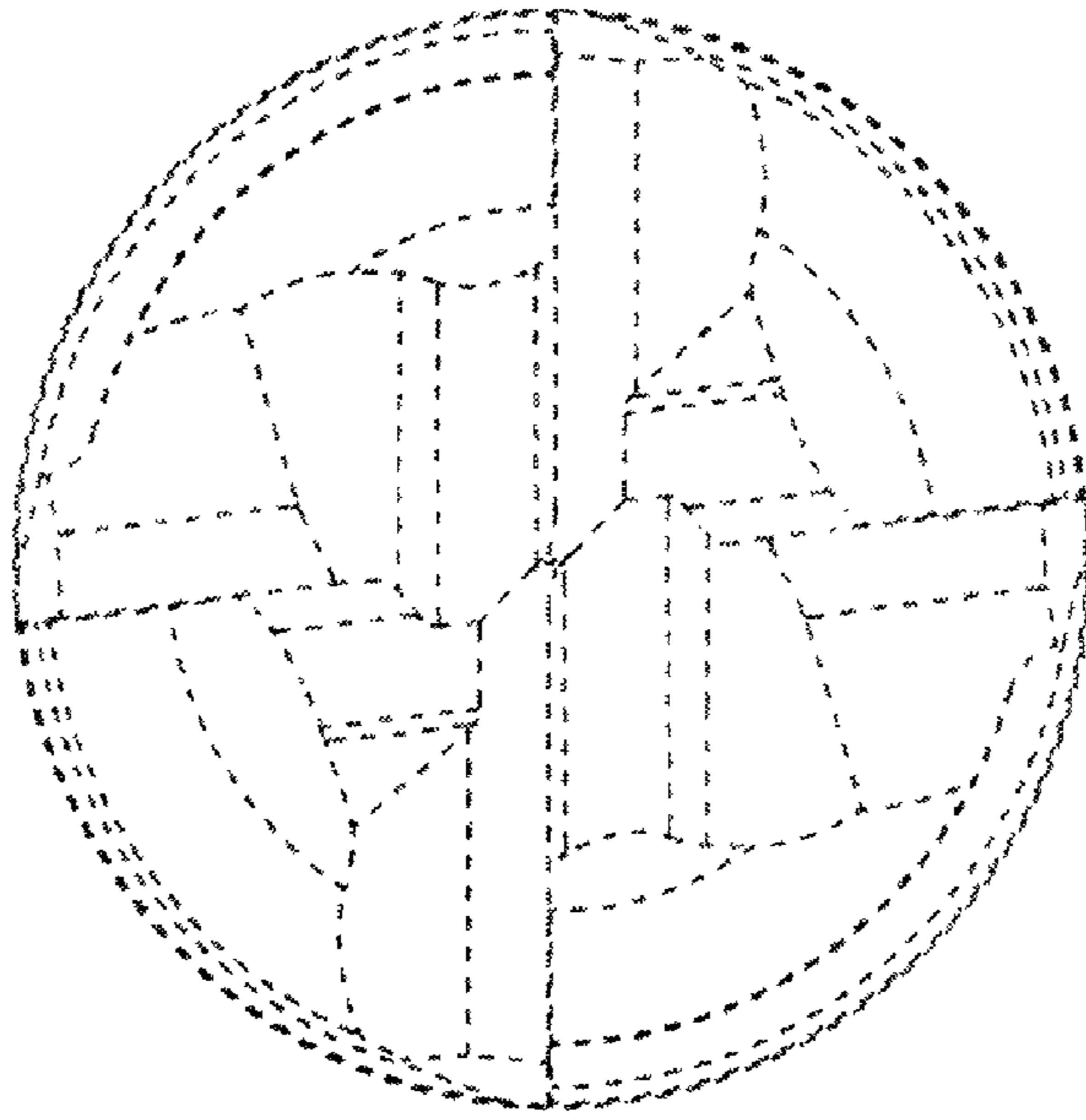


**Fig. 1**

**Fig. 2**



**Fig. 3**



**Fig. 4**

