

Construction of the Golden Section Rectangle

The golden section rectangle is a ratio of the Divine Proportion. The Divine Proportion is derived from the division of a line segment into two segments such that the ratio of the whole segment, AB, to the longer part, AC, is the same as the ratio of the longer part, AC, to the shorter part, CB. This gives a ratio of approximately 1.61803 to 1, which can also be expressed $\frac{1+\sqrt{5}}{2}$

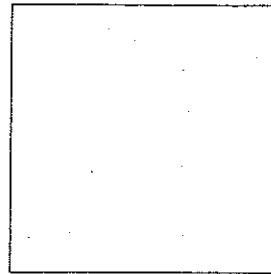
The Divine Proportion:



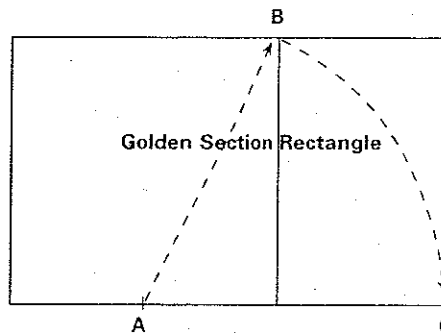
$$\frac{AB}{AC} = \frac{AC}{CB}$$

Golden Section, Square Construction Method

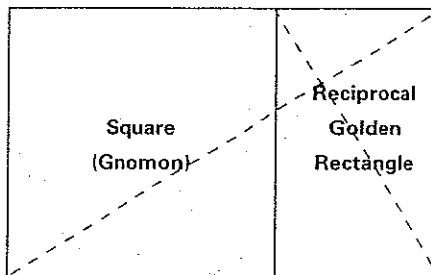
1. Begin with a square.



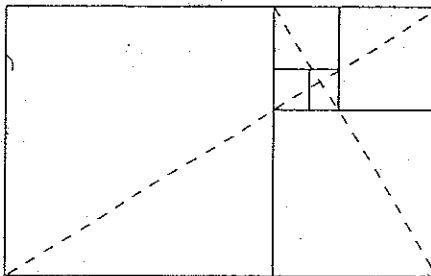
2. Draw a diagonal from the midpoint A of one of the sides to an opposite corner B. This diagonal becomes the radius of an arc that extends beyond the square to C. The smaller rectangle and the square become a golden section rectangle.



3. The golden section rectangle can be subdivided. When subdivided the rectangle produces a smaller proportional golden section rectangle which is the reciprocal, and a square area remains after subdivision. This square area can also be called a gnomon.



4. The process of subdivision can endlessly continue, again and again, producing smaller proportional rectangles and squares.



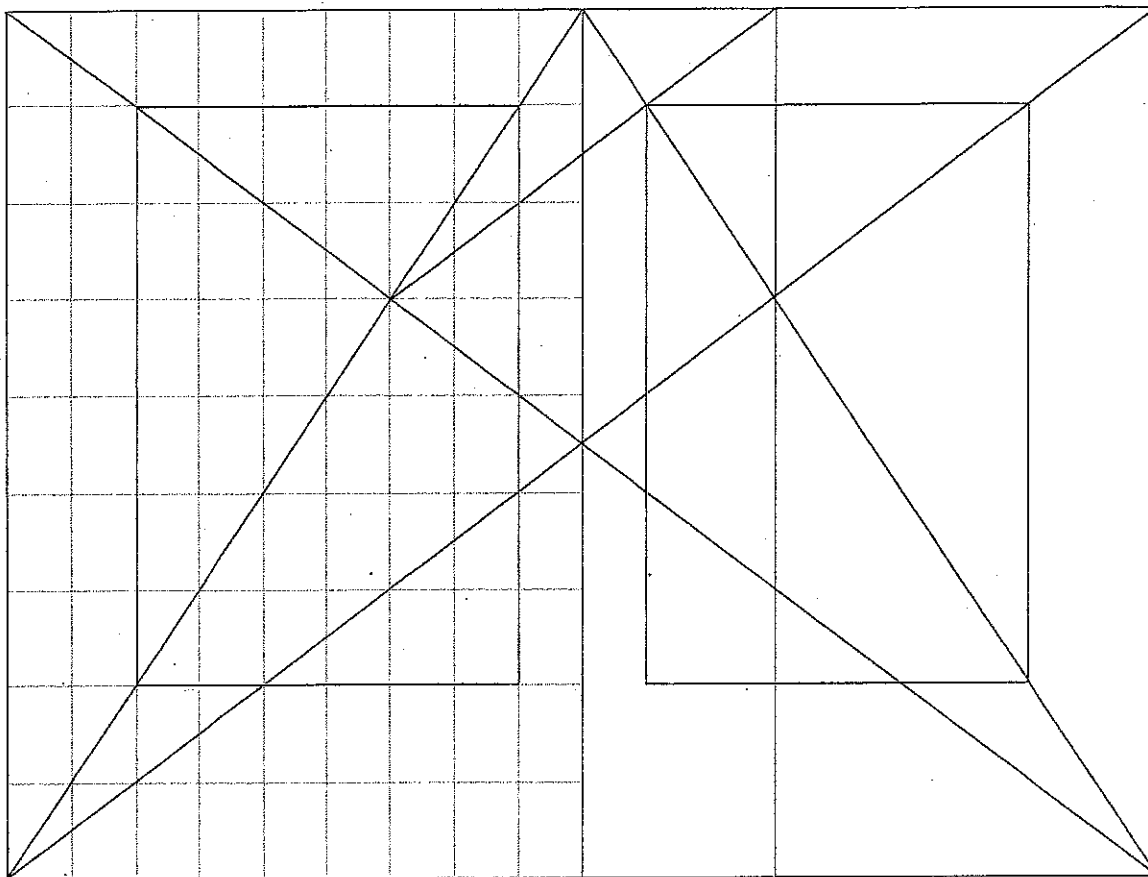


Figure 1

The Golden Canon

The diagram on the right shows the proportions of the page and its related type area as used in many medieval manuscripts and adopted by printers from Gutenberg onwards.

The diagonals of both the single and the double page are used as points of reference to create a unity across the spread.

The proportions of both the page and text area 2:3. The height of the text area equals the width of the page.

The height and width of the page may each be divided 9 times, creating 81 units in the proportions of 2:3.

Based on this grid, the margins are:

- inside, 1 unit wide.
- top, 1 unit deep.
- outside, 2 units wide.
- bottom, 2 units deep.

This gives margins of the relative proportions 2:3:4:6

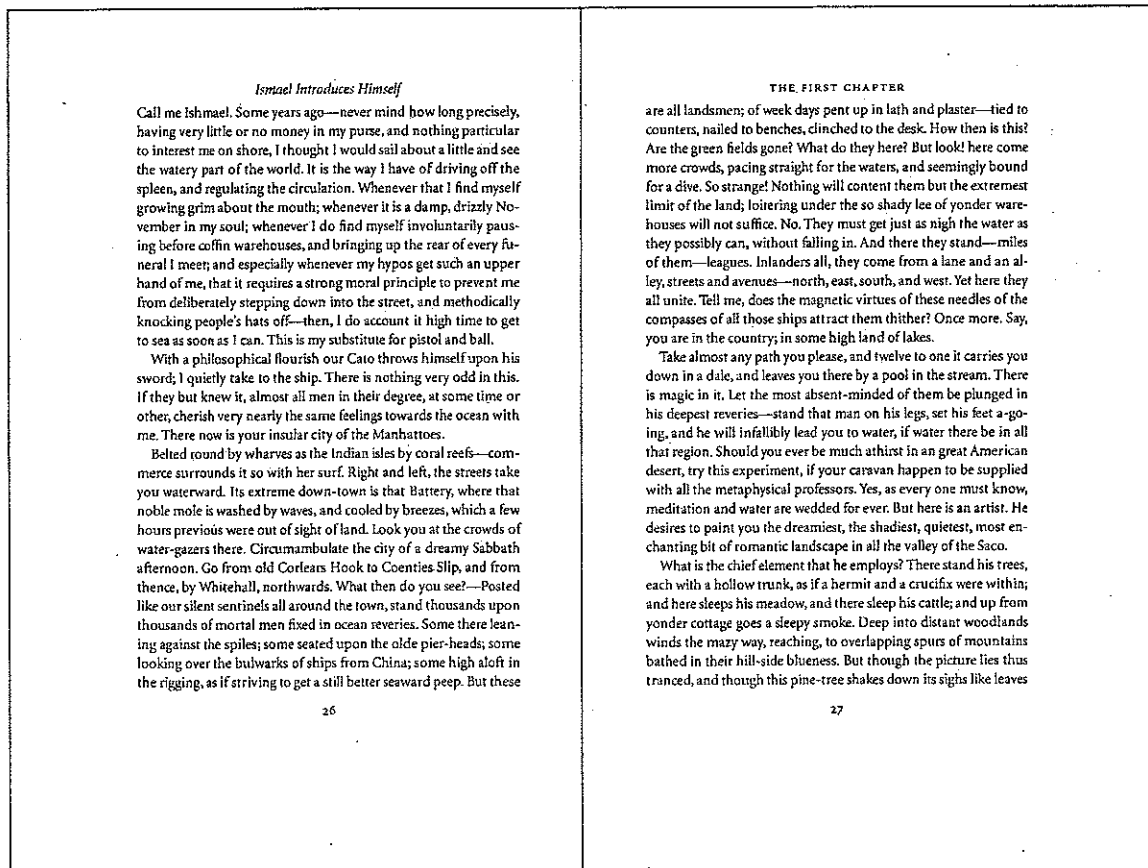


Figure 2

Text pages constructed on the Golden Canon

The top margin relates to the text block proper, discounting the running head and the page folio which are less dominant.

The type size, line spacing, and line length are well related to the page and its margins, creating an even color, and a horizontal rhythm that leads the eye across line.

Ismael Introduces Himself

Call me Ishmael. Some years ago—never mind how long precisely, having very little or no money in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world. It is the way I have of driving off the spleen, and regulating the circulation. Whenever that I find myself growing grim about the mouth; whenever it is a damp, drizzly November in my soul; whenever I do find myself involuntarily pausing before coffin warehouses, and bringing up the rear of every funeral I meet; and especially whenever my hypos get such an upper hand of me, that it requires a strong moral principle to prevent me from deliberately stepping down into the street, and methodically knocking people's hats off—then, I do account it high time to get to sea as soon as I can. This is my substitute for pistol and ball.

With a philosophical flourish our Cato throws himself upon his sword; I quietly take to the ship. There is nothing very odd in this. If they but knew it, almost all men in their degree, at some time or other, cherish very nearly the same feelings towards the ocean with me. There now is your insular city of the Manhattoes.

Belted round by wharves as the Indian isles by coral reefs—commerce surrounds it so with her surf. Right and left, the streets take you waterward. Its extreme down-town is that Battery, where that noble mole is washed by waves, and cooled by breezes, which a few hours previous were out of sight of land. Look you at the crowds of water-gazers there. Circumambulate the city of a dreamy Sabbath afternoon. Go from old Corlears Hook to Coenties Slip, and from thence, by Whitehall, northwards. What then do you see?—Posted like our silent sentinels all around the town, stand thousands upon thousands of mortal men fixed in ocean reveries. Some there leaning against the spiles; some seated upon the olde pier-heads; some looking over the bulwarks of ships from China; some high aloft in the rigging, as if striving to get a still better seaward peep. But these

THE FIRST CHAPTER

are all landsmen; of week days pent up in lath and plaster—tied to counters, nailed to benches, clinched to the desk. How then is this? Are the green fields gone? What do they here? But look! here come more crowds, pacing straight for the waters, and seemingly bound for a dive. So strange! Nothing will content them but the extremest limit of the land; loitering under the so shady lee of yonder warehouses will not suffice. No. They must get just as nigh the water as they possibly can, without falling in. And there they stand—miles of them—leagues. Inlanders all, they come from a lane and an alley, streets and avenues—north, east, south, and west. Yet here they all unite. Tell me, does the magnetic virtues of these needles of the compasses of all those ships attract them thither? Once more. Say, you are in the country; in some high land of lakes.

Take almost any path you please, and twelve to one it carries you down in a dale, and leaves you there by a pool in the stream. There is magic in it. Let the most absent-minded of them be plunged in his deepest reveries—stand that man on his legs, set his feet a-going, and he will infallibly lead you to water, if water there be in all that region. Should you ever be much athirst in an great American desert, try this experiment, if your caravan happen to be supplied with all the metaphysical professors. Yes, as every one must know, meditation and water are wedded for ever. But here is an artist. He desires to paint you the dreamiest, the shadiest, quietest, most enchanting bit of romantic landscape in all the valley of the Saco.

What is the chief element that he employs? There stand his trees, each with a hollow trunk, as if a hermit and a crucifix were within; and here sleeps his meadow, and there sleep his cattle; and up from yonder cottage goes a sleepy smoke. Deep into distant woodlands winds the mazy way, reaching, to overlapping spurs of mountains bathed in their hill-side blueness. But though the picture lies thus traced, and though this pine-tree shakes down its sighs like leaves