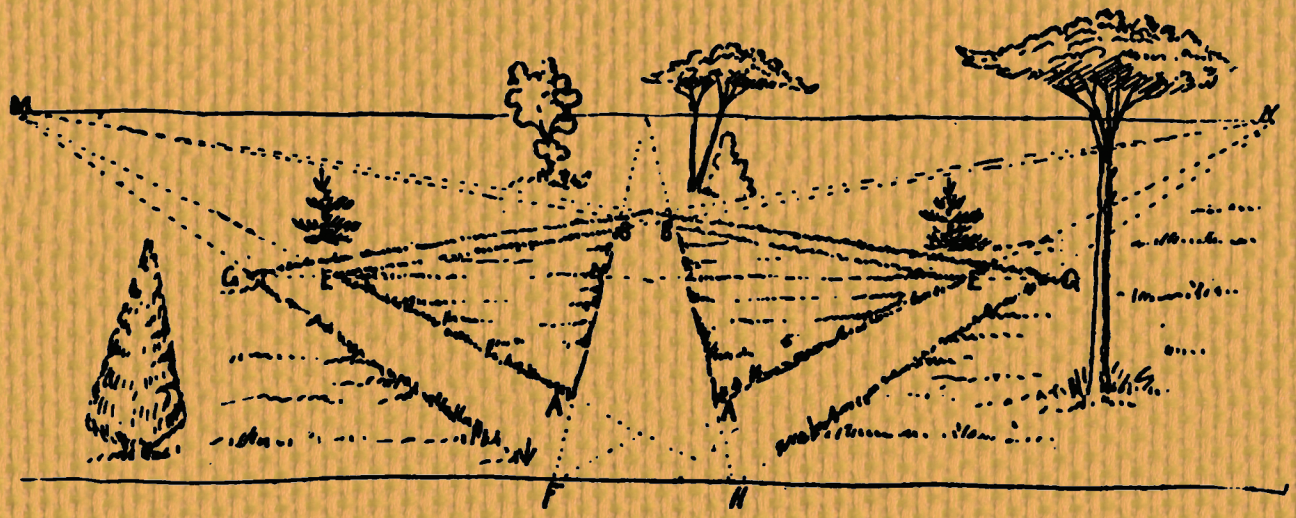
Drawing Simplified



D. R. Augsburg

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Drawing Simplified

PREFACE.

The entire system of DRAWING SIMPLIFIED is divided into two books:

(1) "Drawing Simplified."

(2) "Elementary Drawing Simplified."

DRAWING SIMPLIFIED is a regular and complete course in *Representative Drawing* adapted for the intermediate and grammar grades. and for the self-instruction of teachers.

This book is divided into four parts, each part representing one year of work in the common schools.

They are:

Part I. The Cube and its applications.

Part II. The Cylinder and its applications.

Part III. The Triangular Prism and its applications.

Part IV. Light, Shade, Shadow and Reflections.

These parts go into the hands of the pupil as a text-book to be studied and lessons learned after the same manner as lessons in arithmetic.

The four parts are bound together in one volume for the use of teachers.

ELEMENTARY DRAWING SIMPLIFIED is a teacher's hand-book fox Primary Drawing. It is designed to show teachers how to teach drawing in the primary grades. Each step is fully illustrated and carefully graded. It does not go into the hands of the pupil at all, but guides the

teacher step by step through the first four grades.

A knowledge of "Drawing Simplified" is necessary for successful work in "Elementary Drawing Simplified."

The same general plan is pursued through both books, and the same principles followed and used over and over in all of their applications.

The whole system is based on three type forms:— The cube, the cylinder, and the triangular prism, which are made the basis of all forms.

SUGGESTIONS TO TEACHERS.

MATERIALS. - The materials necessary for work are: (1) A model for each pupil and one for the teacher, (2) a medium soft pencil, (3) a rubber eraser, and (4) paper.

MODELS. - Models may be made out of card or pasteboard, cut out of plaster of Paris, paraffin, chalk, or clay, or whittled from wood. These models should be used continually in the class, and all questions referred to it. There will be a strong tendency to neglect the use of the model. This must be overcome. The pupil should be led to acquire the habit of seeking the model to help him out of difficulties, especially those involving principles. If this is done, the understanding will be clearer and the work thorough.

TEXT-BOOK. - Each pupil should have a textbook of his own as soon as he is able to understand one. Some teachers take the place of the textbook themselves and impart to the class all they know of the subject. This is right in the primary grades and may work fairly well with teachers of marked ability in the upper grades, but at the best, the knowledge will be fragmentary and the work unsatisfactory.

PLAN OF WORK. - (1) Point out and explain to the class the principle from the model. (2) Illustrate the principle on the blackboard by means of drawings. This may be reversed, with the principle explained first from the drawings on the blackboard and then verified by the model. (3) The pupil should explain the same principle from the model and illustrate it on the blackboard by drawings. (4) The principle should then be used to draw objects similar to the model.

PROBLEMS. - A clear understanding of the problems is the basis of thorough work in drawing. *Do not hasten to picture-making*. Use the greater part of the time with drill work in the problems. Draw each problem in at least four positions and often in the whole nine. You cannot fail if you do this.

COPYING. - Do not tolerate copying without understanding. It is time wasted. Teach your pupils to work independently from the principle. Then drawing will mean something to them and be a pleasure; otherwise, it is drudgery and a waste of time.

STRAIGHT EDGE. - Do not allow the use of the ruler or straight edge. Let each pupil depend on his unaided hand and eye. After control over the hand has been gained so that the execution is accurate and correct, then there will be time enough to teach the use of the ruler and straight edge.

THE BLACKBOARD. - Much of the classwork should be at the blackboard. No work will show to the teacher the pupil's knowledge so plainly or accurately or give the pupil greater confidence and independence than work at the blackboard before the class.

DRAWING FROM THE OBJECT. - It is of little use for the pupil to draw from nature or the real object until he has some knowledge to draw with, some principles that will aid him to draw intelligently. Nature's laws are so subtle that a pupil cannot understand them by copying; they must be explained and carefully verified first. Blindly copying from nature is but a step higher than blindly copying from a picture. Neither will alone teach the pupil to draw intelligently. By such methods, the pupil, through repeated failure, soon dislikes drawing. The method also requires too much time. A better plan is to commence with the idea of principle and always keep the idea behind the drawing as a propelling force. This may be done by using the type form or model and the blackboard together, using one to explain the other and then applying the knowledge to similar forms.

THE FOUNDATION. - Four studies are the foundation of all other branches; they are number, language, drawing, and music. These studies take more time to master because they are the basis of whole departments. They are not like algebra, geography, physiology, etc., but are the basis of these studies. *For this reason, the drawing class should meet every day*. In proportion as a thorough knowledge of the fundamentals is acquired, the time for the mastery of all the other branches may be shortened.

SIZE OF DRAWING. - In general, the size of the paper determines the size of the drawing. This is not arbitrary, however. A drawing with a lead pencil should be at least two by three inches for a single object and eight by ten inches on the blackboard. The habit of making very small drawings should be discouraged.

WHAT A PUPIL SHOULD KNOW IN DRAWING. - A pupil should not only know how to draw objects placed before him but *his own thoughts as well*. He should (1) be able to draw the object as placed before him, (2) draw from memory, and (3) draw from the imagination.

FORM STUDY AND DRAWING.

THE CUBE.

THE CUBE is the basis of forms having straight lines and square corners.

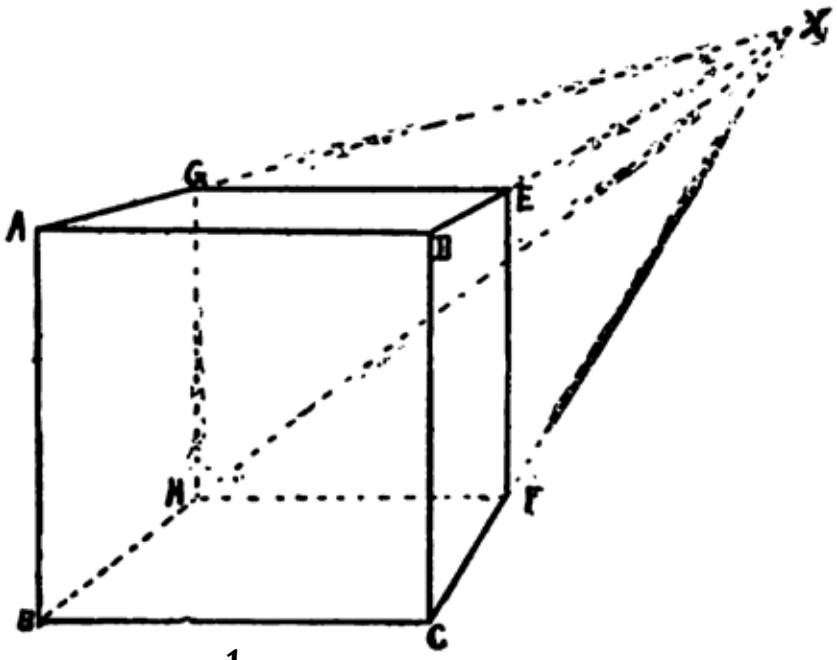
The *top face* of the cube is the basis of all square or rectangular *horizontal surfaces*, such as fields, floors, streets, etc.

The *side face* of the cube is the basis of all square or rectangular *vertical surfaces*, such as walls, sides of buildings, etc.

The *inside* of a hollow cube or box is the basis of all enclosed cubical or rectangular spaces, such as rooms, halls, tunnels, etc.

The *square or rectangle* is the most prominent figure.

The first difficulty the beginning student of drawing meets is to *represent distance away on a flat surface*, to represent apparent thickness where there is no *real* thickness. For example, there is no trouble to represent the square face, ABCD (Fig. 1). The difficulty begins when the attempt is made to represent the receding faces DEFC and ADEG. This difficulty must be overcome before much progress in drawing can be made, and to accomplish this end is the first object of the following problems.



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GENERAL DIRECTIONS.

THE CUBE[1] (Fig. 1) is composed of three classes of lines: (1) vertical lines, (2) horizontal lines, and (3) receding lines.

THE VERTICAL LINES A B, E F, G H[2], and D C are drawn parallel with the sides of the paper on which the drawing is made.

THE HORIZONTAL LINES AD, BC, GE, and HF are drawn parallel with the top and bottom of the paper on which the drawing is made.

1 A rectangular-shaped box of any kind may be used instead of a cube. It should be held in the hand in the same position as the one represented in the problem. Reference to this box will greatly aid in understanding the problems.

2 The dotted lines G H, F H and B H cannot be seen in the real cube unless it is transparent. They are represented here to show their position and to represent all the lines of the cube.

THE RECEDING LINES DE, CF, AG, and BH are drawn from the corners A, B, C, and D to the point X, which is called the Centre of Vision[3] (C. of V.). The receding lines represent *distance away or thickness*. When the drawing of the cube contains both vertical and horizontal lines, the receding lines converge at the C. of V.

These receding lines converging at the C. of V. represent lines in nature that are parallel, and they are spoken of in drawing as parallel lines[4].

Thus the cube has twelve lines, three classes of lines, with four lines in each class, and the lines of each class are parallel.

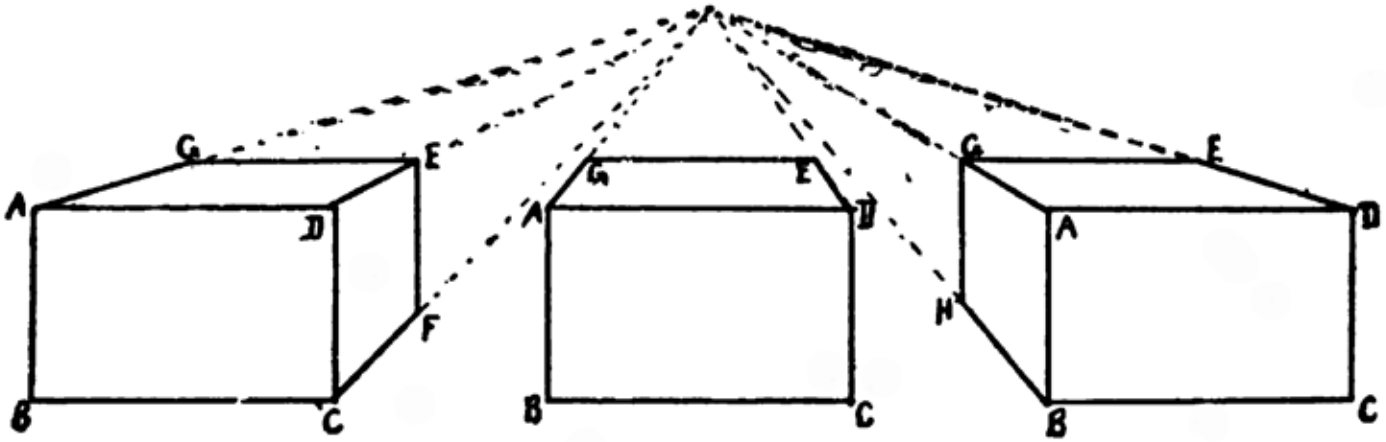
Each corner of the cube is formed by a vertical, a horizontal, and a receding line, though often only two of these lines can be seen, as at corners B, F, and G where the third line is hidden by the body of the cube.

All proportions and measurements are to be judged by the unaided eye, and each line should be drawn with the unaided hand. For example, after drawing the square ABCD (Fig. 1) and the receding lines to the C. of V., the point E must be chosen by means of the unaided eye[5]. It may be taken for granted that if the drawing looks right, it is right.

3 The C. of V. is the point directly opposite the eye.

4 All receding lines that converge to the same point represent parallel lines.

5 There will be a strong tendency to exaggerate the distance on these receding lines. It may be overcome by going to the other extreme.



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PROBLEMS.

PROBLEM 1. FIG. 2. – *Draw a box*[6] *below the level of the eye* (C. *of* V.)[7].

(1) Draw the nearest face of the box ABCD. (2) Place the C. of V. (3) From the corners A and D, draw receding lines to the C. of V. (4) Choose the point E and from it draw the horizontal line GE. (5) Take the real box and hold it before your eye in the same position, and study it, pointing to an edge on the real box and then to the corresponding line in the drawing.

6 A box is preferable to a cube. A common chalk box is an excellent model.

7 The term " eye" " instead of the plural eyes is used because the place of observation is supposed to be a point. The C. of V. and the eye of the observer are opposite points, but being in line with each other are represented by the same point. This point is called the C. of V. when the point beyond the object represented is referred to, and "the eye," or the eye of the observer when the point this side of the object represented is referred to. The object represented is between the eye and the C of V.

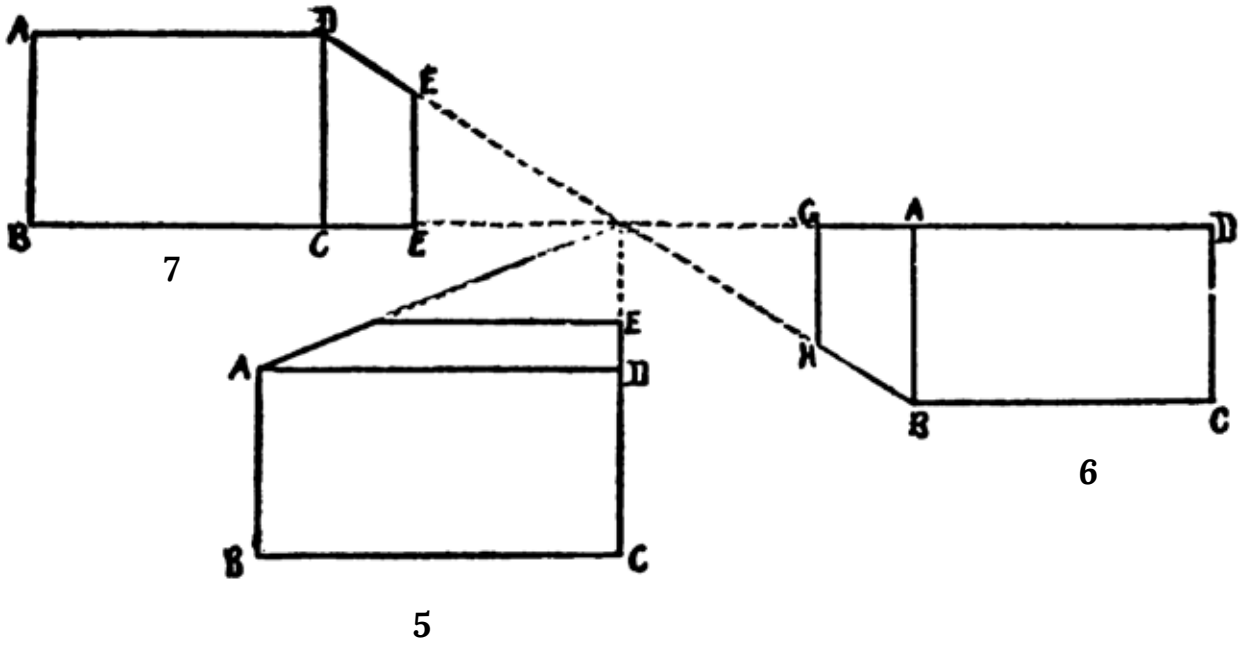
PROBLEM 2. FIG. 3. - *Draw a box below and at the left of the eye.*

(1) Draw the nearest face of the box ABCD. (2) Place the C. of V. (3) From the corners A, D, and C draw receding lines to the C. of V. (4) Choose the point E and from it draw a vertical and a horizontal line to F and G. (5) Take the real box and hold it in the same position at the left and below the eye, and study it.

PROBLEM 3. FIG. 4. - *Draw a box below and at the right of the eye.*

(1) Draw the front face of the box ABCD. (2) Place the C. of V. (3) From the corners A, B, and D draw receding lines to the C. of V. (4) Choose the point G and from it draw a vertical line to H and a horizontal line to E. (5) Compare the drawing with the real box held in the same position.

Observe that the receding lines in the above problems slant upward from the corners that they start from.



PROBLEM 4. FIG. 5. - *Draw a box with the right side directly below the eye.*

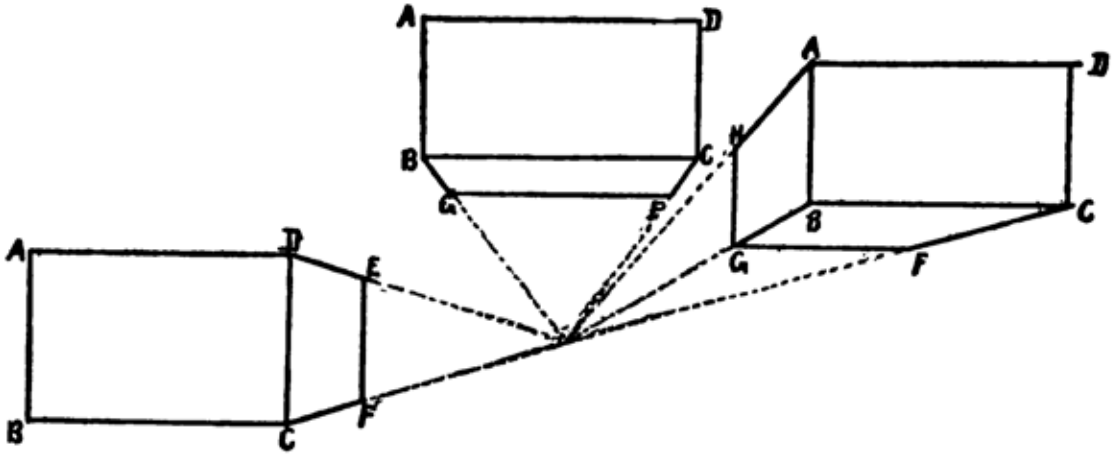
Observe that the receding line DE, being directly in line with the eye, is vertical and in line with the vertical line DC. See this point on the real box by holding it in the same position.

PROBLEM 5. FIG. 6. - *Draw a box at the right of the eye with the top face on a level with the eye.*

(1) Draw the front face of the box ABCD. (2) Place the C. of V. (3) From the corners A and B draw receding lines to the C. of V. (4) Choose the point G and from it draw a vertical line to H. (5) Observe that the receding line AG is horizontal and in line with the horizontal line AD. (6) Observe this on the real box.

PROBLEM 6. FIG. 7. - *Draw a box at the left of the eye with the bottom face on a level with the eye.*

Observe that the receding line CF is horizontal and in line with the horizontal line BC. Observe this on the real box.



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PROBLEM 7. FIG. 8. - *Draw a box above the eye.*

(1) Draw the front face of the box ABCD. (2) Place the C. of V. (3) From the corners B and C draw receding lines to the C. of V. (4) Choose the point G and from it draw a horizontal line. (5) Hold the real box in the same position and study it.

PROBLEM 8. FIG. 9. - *Draw a box*[8] *at the right and above the eye.*

(1) Draw the front face of the box ABCD. (2) Place the C. of V. (3) From corners A, B, and C draw receding lines to the C. of V. (4) Choose the point G and from it draw a vertical line and a horizontal line. (5) Study the real box in the same position.

PROBLEM 9. FIG. 10. - *Draw a box at the left of the eye*[9].

Observe that all of the receding lines of Figs. 8 and 9 slant downward from the corners that they start from.

Thus we have the following laws governing receding lines:

(1) Receding lines below the level of the eye slant upward.

(2) Receding lines above the level of the eye slant downward.

(3) Receding lines on a level with the eye are horizontal.

(4) Receding lines directly in line with the eye are vertical.

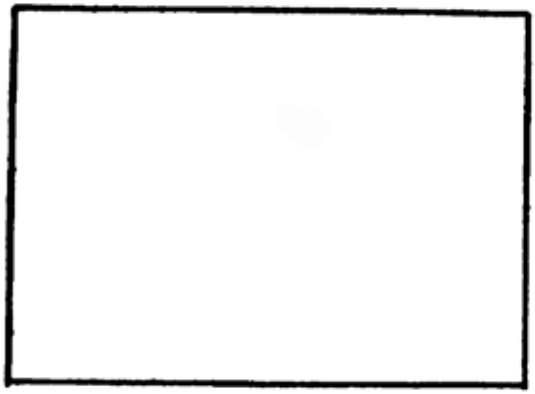
Prove these laws on the real box.

PROBLEM 10. FIG. 11. - *Draw a box directly in front of the eye.*

In this position, only the front face of the box can be seen. Hold the real box directly in front of the eye and see.

8 Care should be taken not to put the C. of V. too far from the box. It will look badly drawn.

9 By changing the C. of V. these problems may be changed indefinitely, thus making it impossible for the pupil to simply copy.



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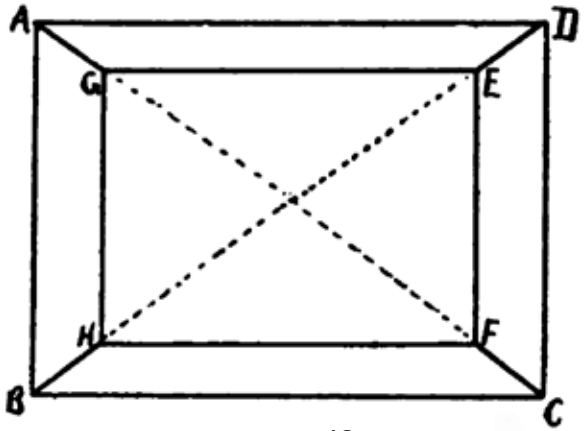

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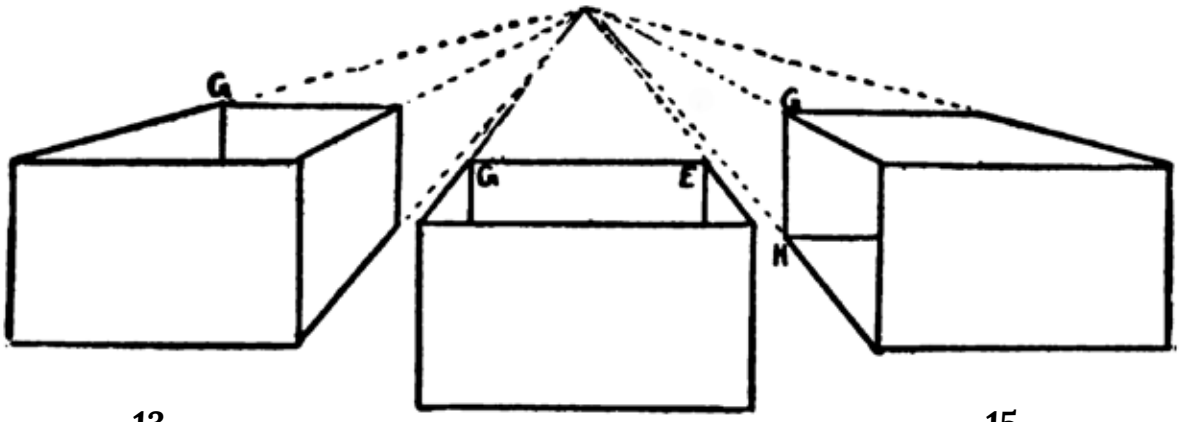
PROBLEM 11. FIG. 12. - *Draw a box directly in front of the eye with the front face removed so that the inside of the box can be seen.*

(1) Draw the front face ABCD. (2) Place the C. of V. (3) From the corners A, B, C, and D draw receding lines to the C. of V. (4) Choose the point E and from it draw a vertical and a horizontal line. (5) From G draw a vertical line meeting a horizontal line from F at H.



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PROBLEM 12. FIG. 13. - *Draw a box below and at the left of the eye and remove the cover from the top face showing the inside.*

(1) Draw the box. (2) From corner G draw a vertical line. (3) See real box in the same position.

Problem 13. - *Draw a box below and at the right of the eye and from the top face remove the cover showing the inside.*

Problem 14. - *Draw a box above and at the left of the eye and from the bottom face remove the cover showing the inside.*

PROBLEM 15. FIG. 14. - *Draw a box below the eye and remove the cover from the top.*

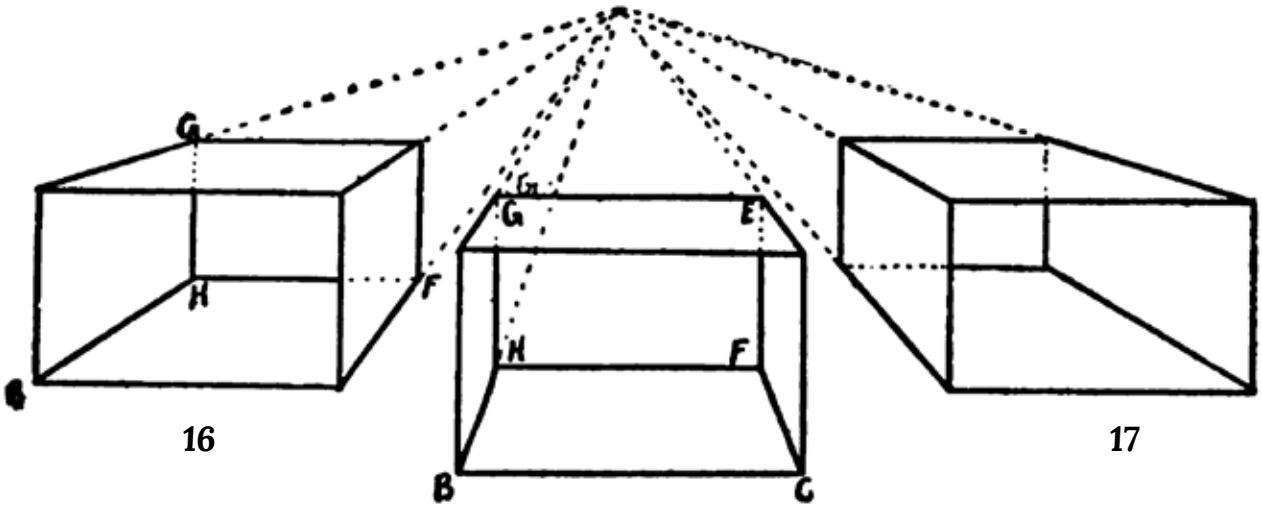
(1) Draw the box. (2) From corners G and E draw vertical lines. (3) See real box held in the same position.

Problem 16. - *Draw a box above the eye and from the bottom remove the cover.*

PROBLEM 17. FIG. 15. - *Draw a box below and at the right of the eye and remove the left side.*
(1) Draw the box. (2) From corner H draw a horizontal line. (3) See real box.

Problem 18. - *Draw a box below and at the left of the eye and remove the right side.*

Problem 19. - *Draw a box above and at the right of the eye and remove the left side.*



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PROBLEM 20. FIG. 16. – *Draw a box below and at the left of the eye and remove the front face showing the inside.*[10]

(1) Draw the box. (2) From corner G, draw a vertical line meeting a horizontal line from corner F, and a receding line from corner B at H. (3) Compare with the real box.

Problem 21. – *At the left and above the eye, draw a box and remove the front face, showing the inside.*

See the real box and Problem 20.

PROBLEM 22. FIG. 17. – *Below and at the right of the eye, draw a box and remove the front face, showing the inside.*

See the real box.

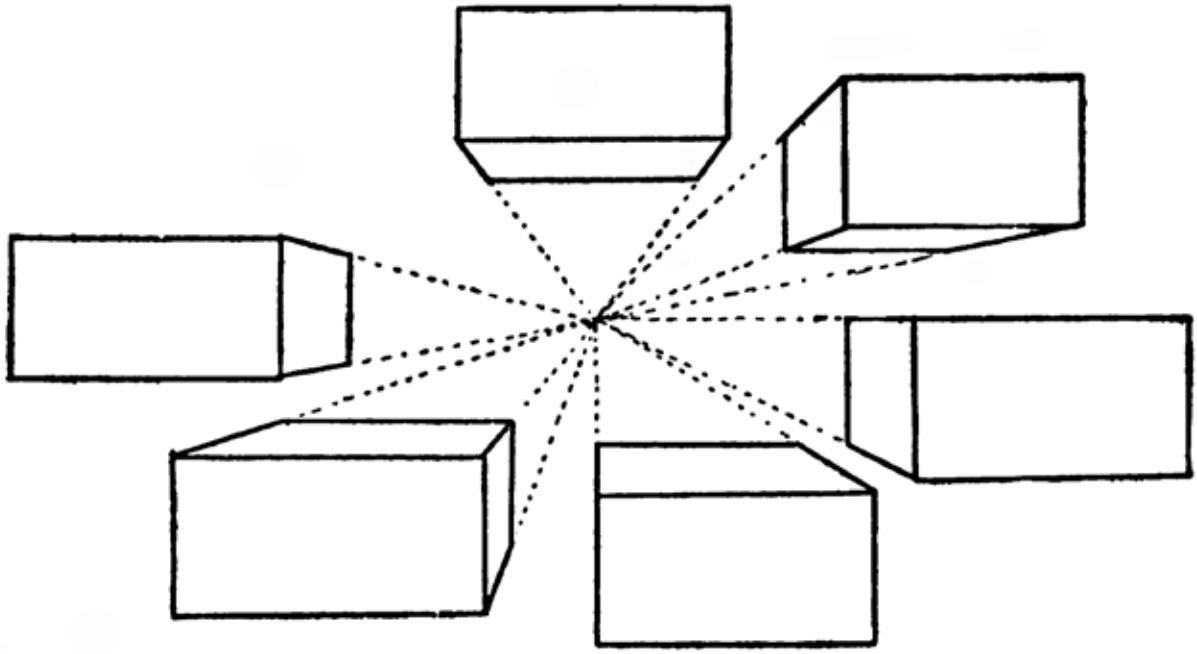
10 Observe that the lines that mark the inside of the box in Figs. 13–17 are drawn from those corners that show only two lines in the solid box or cube.

Problem 23. - *Above and at the right of the eye, draw a box and remove the front face, showing the inside.*

PROBLEM 24. FIG. 18. - *Draw a box below the level of the eye and remove the front face, showing the inside.*

(1) Draw the box. (2) From corners E and G, draw vertical lines, meeting receding lines from corners B and C at H and F. (3) Draw the horizontal line H F. (4) Compare with the real box.

Problem 25. - *Draw a box above the eye and remove the nearer end, showing the inside.*



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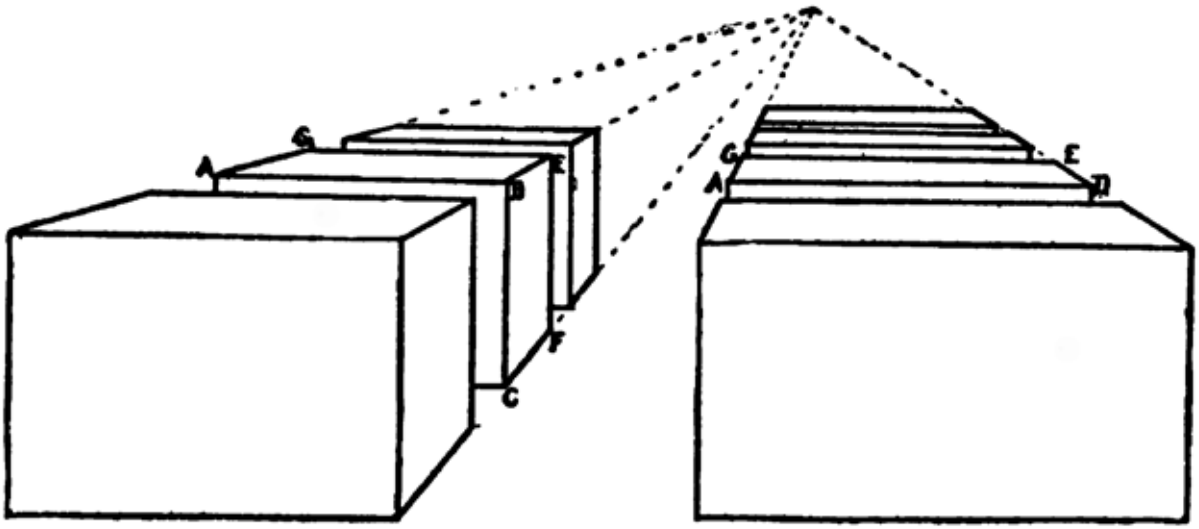
PROBLEM 26. FIG. 19. – *Around a center of vision, draw six boxes:*

(1) One below, with the left side directly below the eye.
(2) One at the right, with the top level with the eye.
(3) One at the right and above the eye.
(4) One above the eye.
(5) One at the left of the eye.
(6) One below and at the left of the eye.



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PROBLEM 27. FIG. 20. - *Below and at the left of the eye, draw a row of three boxes extending toward the C. of* V.

(1) Draw the first box. (2) Choose points D and E, and from each, draw a vertical and a horizontal line. (3) From A, draw a vertical line. (4) From C, draw a horizontal line. (5) Draw the third box in the same manner.

Observe that each box is smaller and each line shorter the farther the box is away.

Problem 28. - *Below and at the right of the eye, draw a row of four boxes extending toward the C. of V.* (See Problem 27.)

PROBLEM 29. FIG. 21 - *Below the level of the eye, draw a row of four boxes extending toward the C. of V.*

(1) Draw the nearest box. (2) Choose points A and G, and from each, draw a horizontal line. (3) From A and D, draw vertical lines. (4) Draw the third and fourth boxes in the same manner.

Problem 30. - *Above the level of the eye, draw a row of three boxes extending toward the C. of V.*

Problem 31. - *Above and at the left of the eye, draw a row of three boxes extending toward the C. of V.*

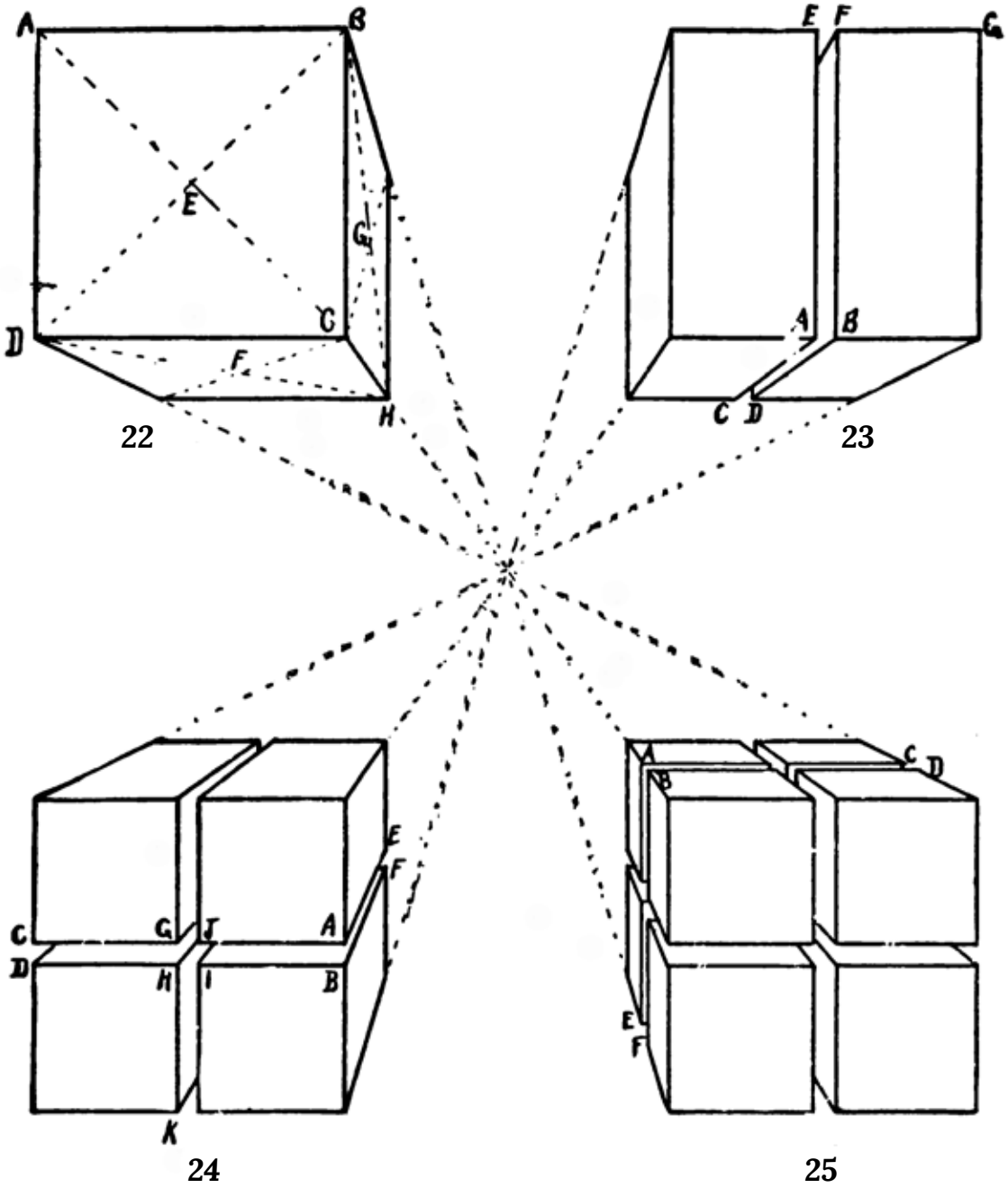
PROBLEM 32. FIG. 22. - *At the left and above the eye, draw a cube*[11].

(1) Draw the square A B C D. (2) Place the C. of V. and draw the receding lines. (3) Choose corner E at a point that will make it seem as long as the other edges of the cube. (4) Finish as in drawing the box. (5) By drawing diagonal lines across each face, the center of that face may be ascertained, as at E, F, and G.

PROBLEM 33. FIG. 23. - *Draw a cube and divide it into two parts.*

(1) Draw the cube. (2) Choose points A and B, and from each, draw a vertical and a receding line. (3) Erase the horizontal lines E F, A B, and C D. (4) From D, draw a vertical line. (5) From F, draw a horizontal line.

11 These problems are suitable for drill work at the blackboard. When drawing the box, you are confined to no particular length, height, or width, but when drawing the cube, all of these dimensions must look equal.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PROBLEM 34. FIG. 24. - *Draw a cube and divide it into four parts.*

(1) Draw the cube. (2) Divide it into two parts. (See Problem 33.)

(3) Choose points A and B, and from each, draw a horizontal and a receding line. (4) Erase the vertical connecting lines C D, G H, I A, B and E F. (5) From F, draw a horizontal line. (6) From D, G, H, I, and K, draw receding lines.

PROBLEM 35. FIG. 25. - *Draw a cube and divide it into eight parts.*

(1) Draw the cube. (2) Divide it into two parts. (See Problem 33.)

(3) Divide it into four parts. (See Problem 34.)

(4) Choose points A and B, and from each, draw a vertical and a horizontal line. (5) Erase the lines that connect the two parts. (6) From the side face, draw horizontal lines and from the top face, vertical lines.

(7) Observe that the lines from the top face are vertical lines, from the side face, horizontal lines, and from the front face, receding lines.

PROBLEM 36. FIG. 26. - *From each corner of a large cube, cut a small cube*[12].

(1) Draw the cube. (2) Choose points A, B, and C. (3) From A, draw a vertical and a receding line. (4) From B, draw a horizontal and a receding line. (5) From C, draw a vertical and a horizontal line. (6) Erase corner G, the corner of the large cube. (7) From E, draw a vertical line, from F a horizontal line, and from D, a receding line. (8) In the same manner, cut small cubes from the remaining corners in the order of their lettering I, J, K, L, M, and N.

The diagonal line G M marks a square on the receding face where it meets the receding lines at E and O.

12 Procure a large potato or apple, cut it to a square corner, like the corner of a cube, and out of this corner cut a small cube to use for reference. Hold the potato or apple with the cut-out part in the position of the cube you are cutting out in your drawing. Cut a potato likewise for Problems 27 and 28.