CHAPTER 4

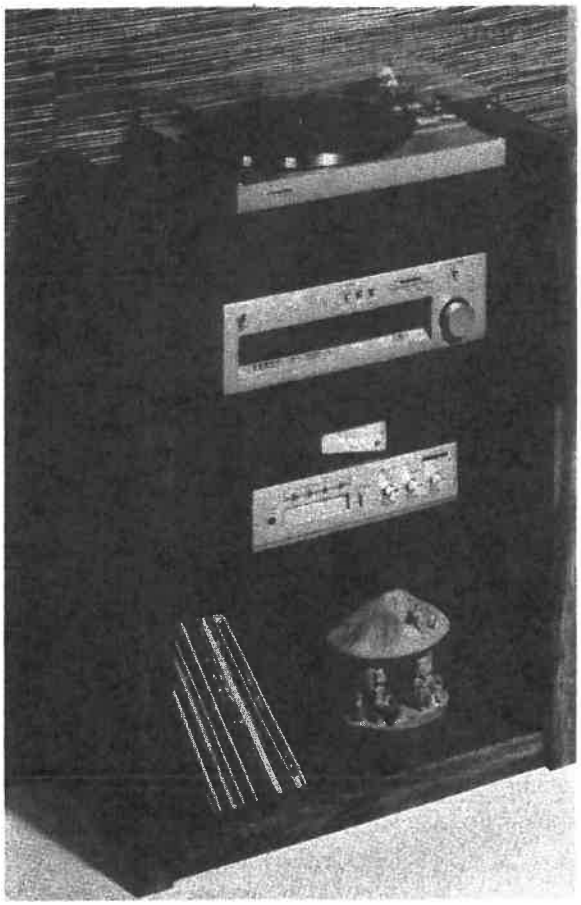
Design

What would you look for if you were going to buy a new bicycle? How would you choose among the different makes and models? Would you think about the color, size, and construction? Would you test the seat and the angle of the handlebars? Look at the tires and wheels? Check to see if the brakes work? You would certainly consider most of these things. Actually, what you'd be doing would be deciding *which design you liked the best.*

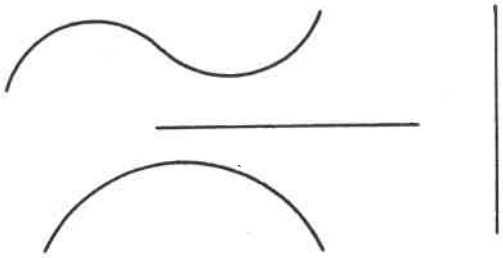
In the wood shop you also decide on the *design you like best.* When you choose a project, you must think not only about how it looks but also how well it works. A stereo cabinet, for example, ought to look good, but it's just as important that it hold the records well. Fig. 4-1. Sometimes a thing looks pretty good but isn't useful. Or it might do the job quite well but be made so poorly that it is ugly to look at. People choose the design they like best, that best meets their needs. If you don't like a design, you won't pick it.

Design, then, is what a thing looks like and how useful it is. In order to have good design, an object must be useful and beautiful. Design is a part of everything we make and use. It is not something you just study about. Houses, cars, bridges, and all other things that are built must first be designed by someone.

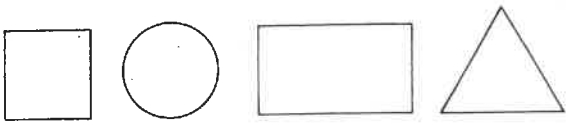
Choosing and making well-designed wood projects is not easy. However, studying this unit and looking at well-designed wood objects in magazines, books, and stores will be a big help to you. Soon you will begin to get a "feeling" for what is good and be able to discard what is poor.



4-1. ***This small stereo cabinet is designed for efficient use of space.***



4-2(a). ***Common kinds of lines.***



4-3. ***Common shapes.***

WHAT MAKES UP DESIGN?

Design is made up of certain elements. Every object has these elements. The way they are put together makes up the design of the object.

Line

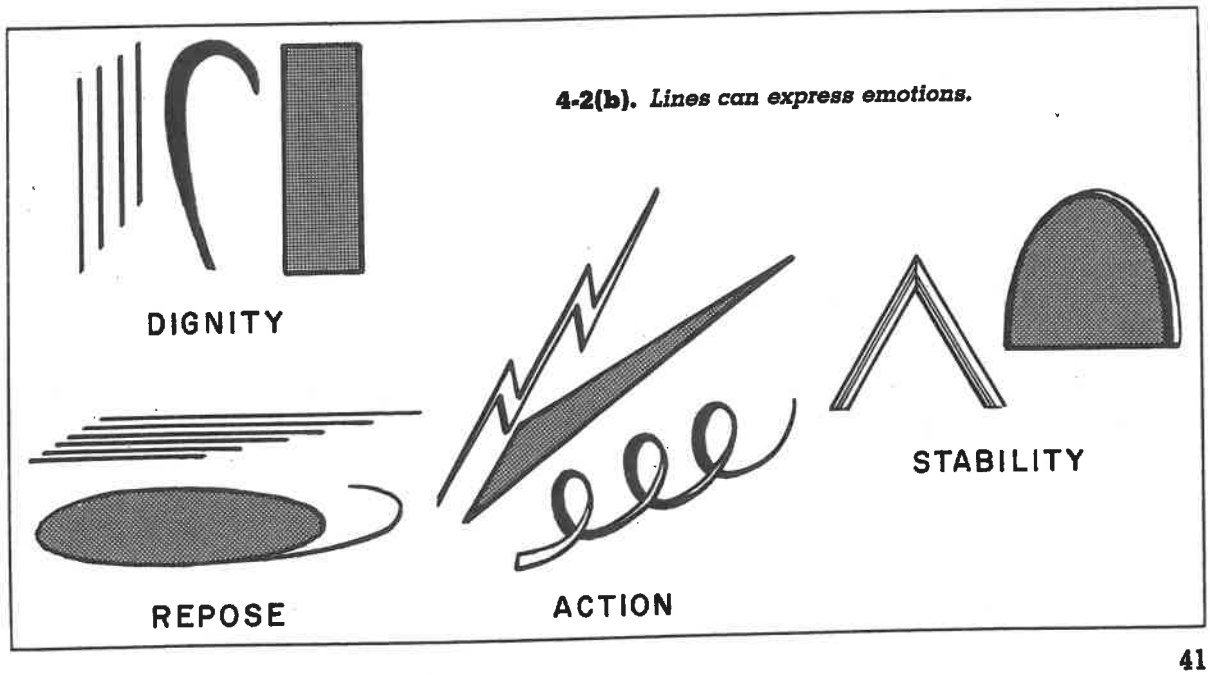
Lines enclose space to create shape. Lines can express feelings. For example, horizontal (across) lines appear restful. Vertical (up and down) lines appear to reach upward, and slanted lines seem aggressive. Wavy lines can express motion or rhythm. Lines can also imitate texture, light, or shade. Fig. 4-2.

Shape

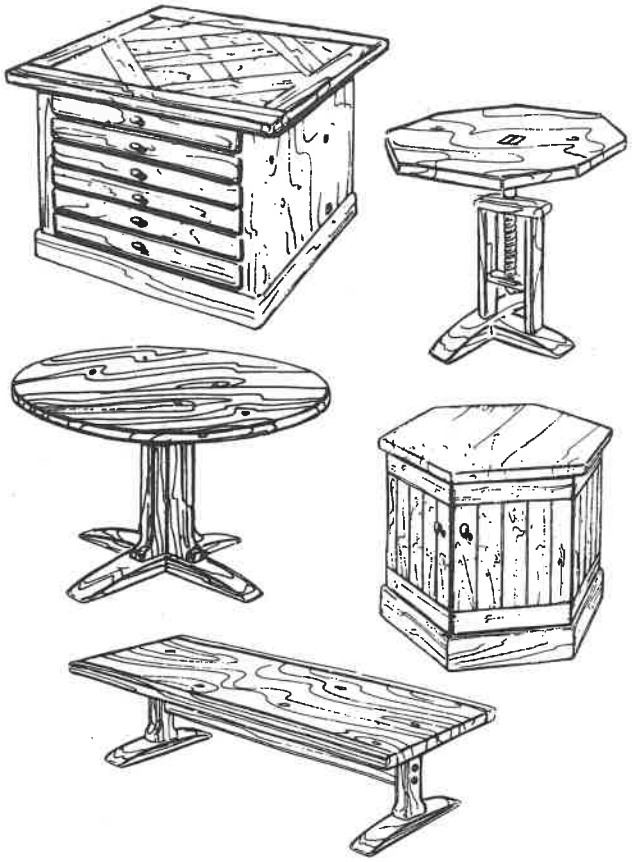
Shape is the space enclosed by lines. Some common shapes are the square, circle, rectangle, triangle, hexagon, and octagon. Fig. 4-3. You see shapes or parts of them wherever you look. Fig. 4-4.

Form

Shapes are combined to make up forms like cubes, pyramids, or spheres. These forms, or solids, are three-dimensional; that is, they have height, width, and depth. Fig. 4-5.



4-2(b). ***Lines can express emotions.***



4-4. ***What kinds of shapes can you see in these tables?***

Color

Color is an important element of design. Some colors give a warm feeling. Examples of warm colors are red, yellow, and orange. Green and blue are cool colors. Fig. 4-6. Woods have their own, natural colors. When you build a project, you can leave the wood natural or you can change the color with stains, paints, or enamels.

Tone and Texture

Tone is the light and dark, the shadow and brightness of an object. Texture is the makeup or grain of the material. Each wood has a different texture. Texture gives interest to a surface. There are many ways of adding or increasing texture. Fig. 4-7.

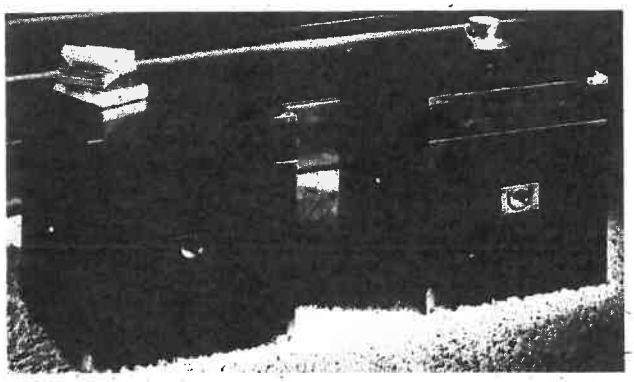
WHAT MAKES A DESIGN GOOD OR PLEASING?

It is hard to say exactly what makes one project attractive while another is not. There are many rules about this, but rules by themselves don't make good design. Well-designed modern furniture often doesn't follow all the rules. However, ugly objects are those that violate (break) the principles (basic rules) of good design. These are the principles:

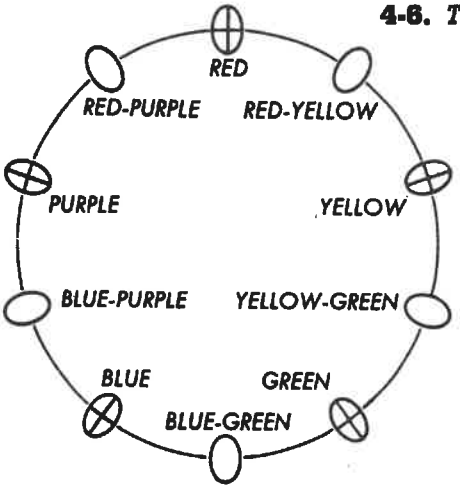
Proportion

Proportion is the way areas or parts of an object are related to each other. Some shapes have better proportion than others. For example, the rectangle has better proportion than the square. This is because the exact relationship between the height and width of a rectangle is not easily seen by the eye. The golden oblong is an example of good proportion. This is a rectangle with a proportion of about five to eight. For every five units of height, there are eight units of width. Fig. 4-8. Objects such as serving trays, bulletin boards, or picture frames with this proportion are pleasing to look at.

To divide this rectangle horizontally into three or four parts, place the largest at the bottom and make each of the next areas smaller. To divide the rectangle into three parts vertically, make the center area largest and the other two of equal size and shape. Fig. 4-9.

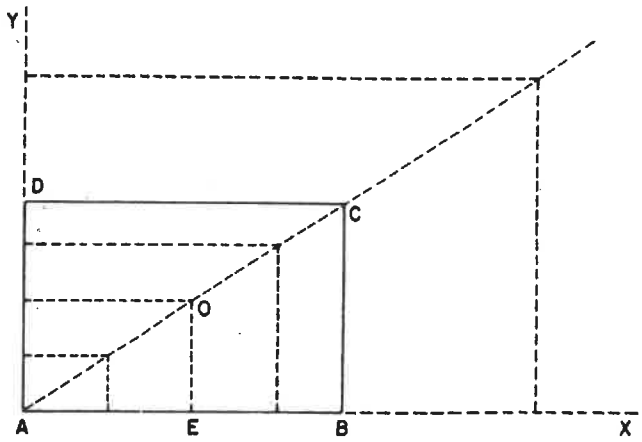


4-5. ***These trunks are perfect cubes.***

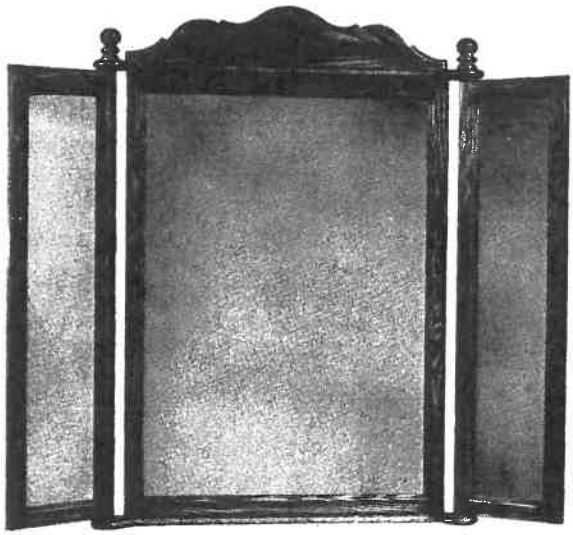


4-6. *This color wheel shows the relationships of different colors.*

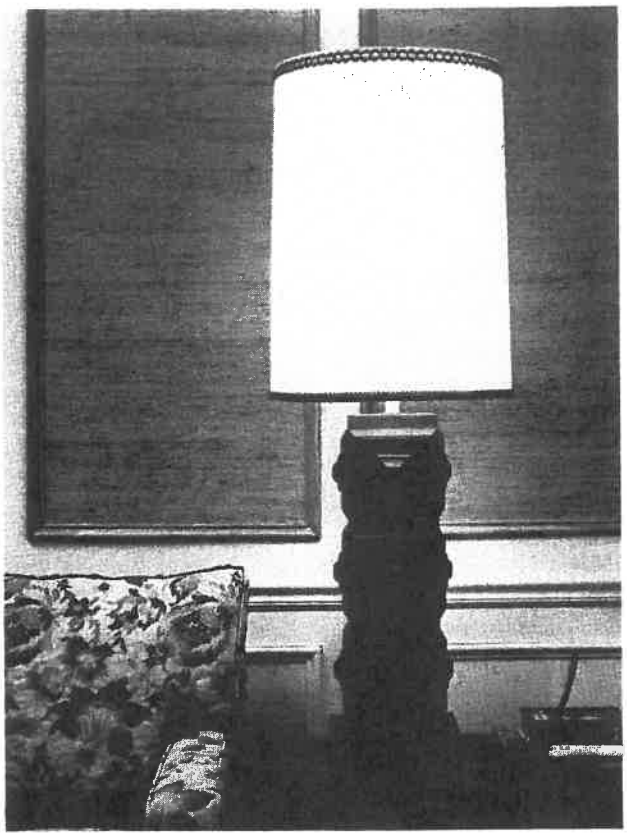
4-7. *The bold grain of this oak telephone cabinet gives it an interesting texture.*



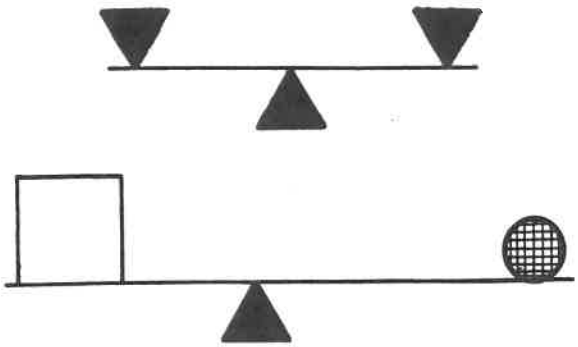
4-8. *Here is a way to enlarge a 5 × 8 proportion to whatever size you want. Make AB eight units long and BC five units high. Then lay off along the line AX any length you want, for example, AE. The distance for height, then, would be EO.*



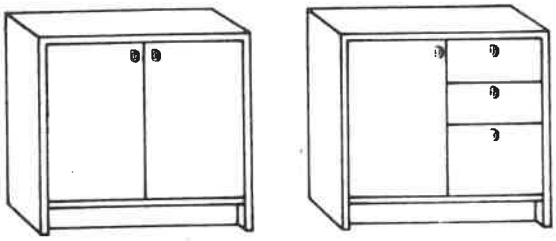
4-9. *This mirror is a rectangle divided into three parts.*



4-10. ***A well-proportioned lampshade and base.***



4-11. ***Formal balance (top) and informal balance (bottom).***



4-12. ***The cabinet on the left shows formal balance. The one on the right shows informal balance.***

Proportion is important when planning a project. For example, the shade for a lamp must be in good proportion to the base. Fig. 4-10. A large shade on a small base would look top-heavy.

Balance

Balance makes an article appear equal in weight on both sides. There are two kinds of balance: formal and informal. Fig. 4-11. An example of formal balance is a seesaw with two children of equal size using it. Two identical lamps on either end of a chest are in formal balance. In informal balance things appear to be balanced, or at rest, but they are actually not equal. Fig. 4-12.

Rhythm

The repetition of such things as shape, color, or line is rhythm. Fig. 4-13.

Harmony

Harmony is the way the parts of an object get along together. For example, an Early American leg on a Modern table would be out of harmony. A lacy lampshade would not be in harmony with a heavy base. When the parts go together well, the object has harmony. Fig. 4-14.

Emphasis

The point of emphasis catches your eye the first time you look. It is the center of interest or the

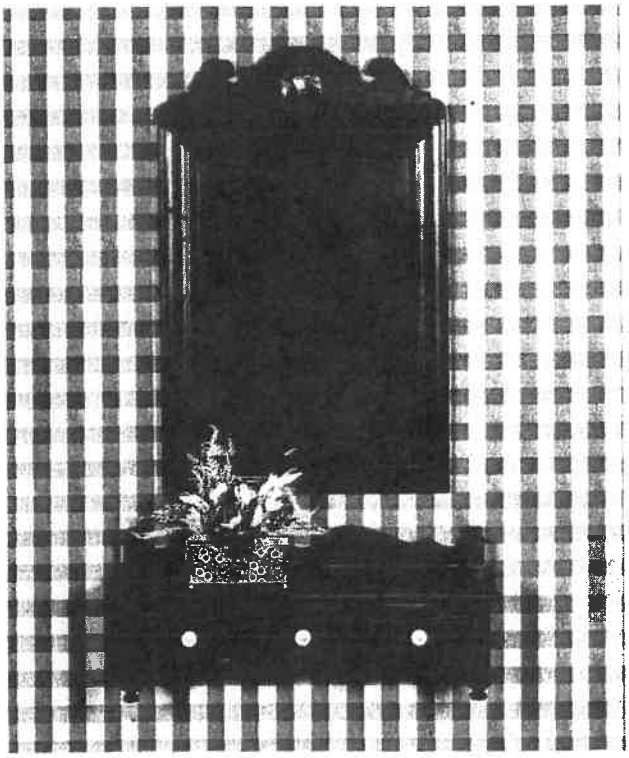
4-13. ***The tops of these tables illustrate rhythm.***

point of greatest importance. Sometimes an unusual shape provides the emphasis. At other times a beautiful piece of hardware or simply a fine finish is the point of emphasis. In Fig. 4-5, for example, your eyes are drawn to the hardware.

DESIGNING A PROJECT

It would be impossible to tell you everything you need to know in order to design good wood projects. Some people have more of a flair for design than others, but everyone can learn to appreciate a well-designed wood project. You will also learn to recognize poor design. Here are some guides to selecting and designing projects:

- Make sure the project meets a real need in your life. If it is a stool, for instance, it should be both sturdy and comfortable.
- The design should be up to date. Sometimes old designs are popular and therefore still up to date.
- The object should be made of the best materials for its construction, use, and appearance.
- The design should carry out the real purpose of the article. Look at the tools used in woodworking. See how well they have been designed to do their jobs.
- Use really beautiful woods as they are. Don't cover them with paint or a poor finish. Don't try to make woods seem to be what they are not. Pine can never look like mahogany.



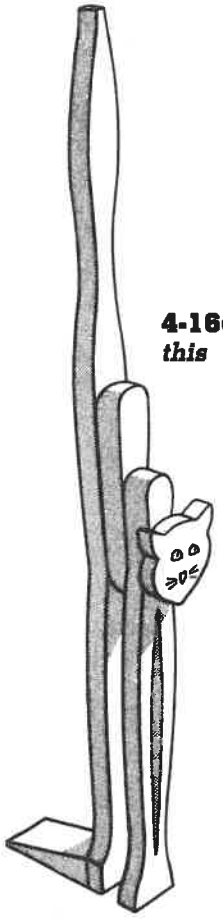
4-14. ***This mirror and shelf make a set. Their designs are in harmony with each other.***

4-15. ***Even a simple project must be well constructed.***

- Take time for good construction in making your projects. Make sure your project is assembled with the best methods. Fig. 4-15.
- Keep your project simple. Don't add a lot of frills.

HOW TO TELL IF A PROJECT IS WELL DESIGNED

Check your project with the following points in mind:

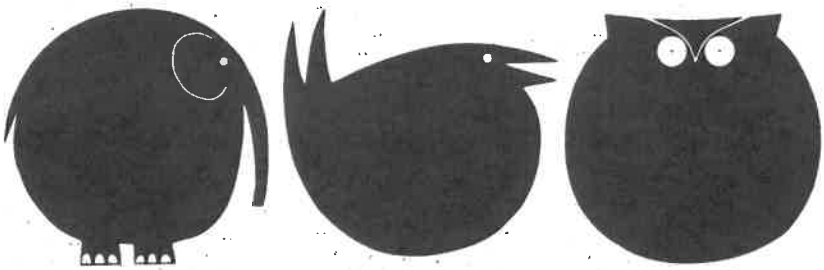


4-16(a). ***A door stop like this would be a novelty item.***

- **Does it do its job well?** A birdhouse must attract the kind of birds for which it has been built. A shoe rack must be a good shoe holder. If your project is functional (really does its job), then it is worthwhile.
- **Is it interesting?** A table lamp might give the proper light for reading but be uninteresting to look at. Give your project "personality" and style.
- **Is it well made?** A chair may be comfortable and attractive but have such poor joints that it comes apart in a short time. Many wood articles have the joint construction exposed to show how well they are made.
- **Does it make the best use of materials?** Most woods have a beautiful grain pattern and attractive natural color. Apply a finish that brings out the beauty of the wood. Of course, when a project is made of inexpensive wood, painting or enameling it a bright color adds to its appearance.

KINDS OF DESIGNS

The things you make in a wood shop can be grouped in this way:



4-16(b). ***These designs could be used for wall plaques or cutting boards.***

- Novelty items. These projects may be clever and popular without showing good design. For example, you could make bookends, a door stop, or a funny wall plaque. Fig. 4-16. Such projects don't have lasting value. You would probably use them for a while and then say, "Well, that was sure a lot of fun to make, but I'm tired of it now." Some of the plans in this book are novelties.
- Utility projects. These do a useful job. If they do it well, they are well designed. A fishing lure must be made of the right material and be the correct shape. So must a bicycle stand or a workbench. This kind of project must be strong and serviceable. Fig. 4-17.
- Artistic or decorative projects. These are such projects as chairs, tables, lamps, and cases. They should be a certain style. The most common styles are Modern (Contemporary), Early American, Colonial, and Traditional. Fig. 4-18. The design, the kind of wood, the finish, and the hardware make the differences in styles.

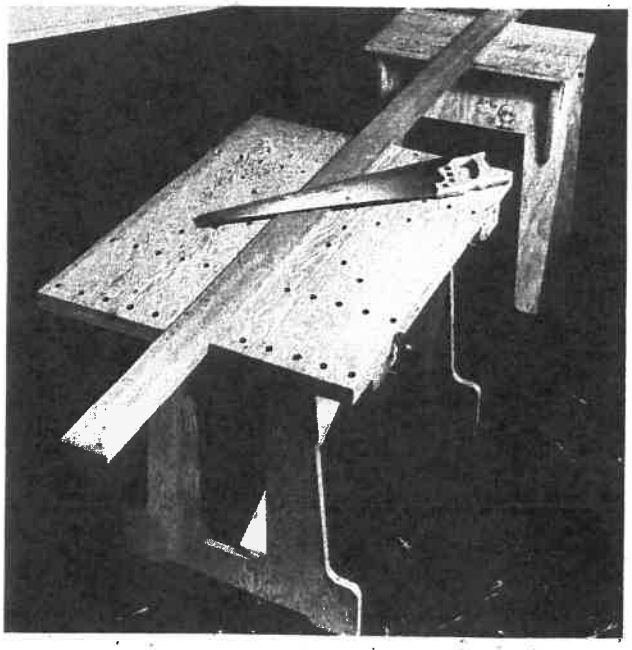
STEPS FOR DESIGNING A PROJECT IN WOODWORK

Let's suppose you decide to build something to hold books. You must first ask yourself how the books can be kept neatly arranged. Books can lie flat, stand upright, or lean at an angle. What kinds of things will hold books in these ways? There are book troughs, bookends, bookracks, book holders, and bookcases. Perhaps you can think of some others.

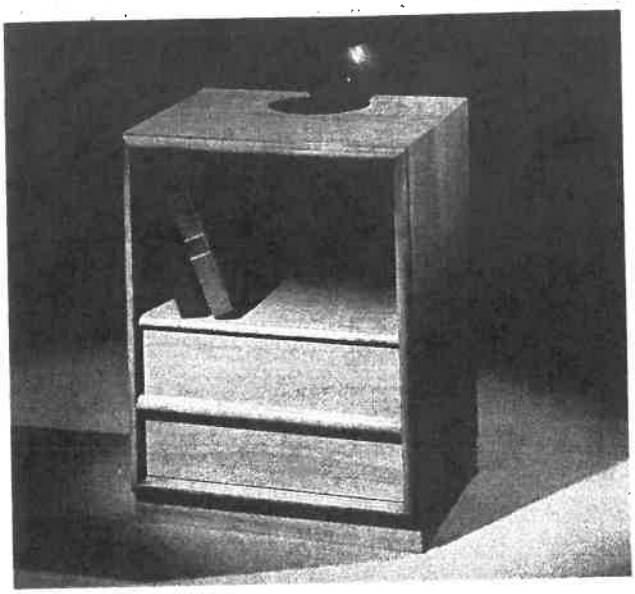
Next you should know how many and what size books you want to store. Most books are about 6½″ × 9½″ in size, although they vary from 5″ × 8″ to 10″ × 12″ and even larger.

Let us say you decide to build a bookcase.

1. You can make the shelves various distances apart to hold books of different heights. It is a



4-17. ***This workbench and stand are very practical utility projects.***



4-18(a). ***A modern nightstand.***

4-18(b). ***An Early American nightstand.***

mistake in design to have the shelves equally spaced.

2. Next you must decide on the appearance of the bookcase and the shape and size of each part.

3. You need to decide how the parts go together and make a sketch of your project.

4. You might at this point want to build a model.

5. Next comes a working drawing.

6. Last, prepare a bill of materials and write a plan sheet.

The next five chapters will explain how to draw and plan a project and how to get the materials for it.

QUESTIONS

1. Name the elements of design.
2. Name four common shapes.
3. How can you add color to a wood article?
4. What are the proportions of the golden oblong?
5. What is the difference between formal and informal balance?
6. Why shouldn't you put a lacy lampshade on a nautical (sea and ships) lamp? What principle of design would it violate?
7. How can you tell when a project is well designed?