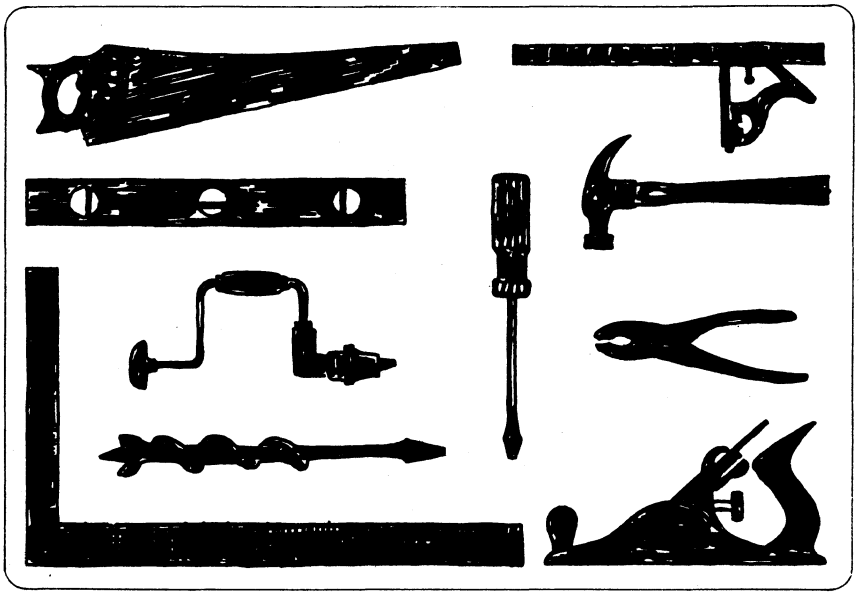
4-H

HANDICRAFT MANUAL

WOODWORK



Circular No. 366

OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE
COOPERATING WITH
UNITED STATES DEPARTMENT OF AGRICULTURE
EXTENSION SERVICE
SHAWNEE BROWN, DIRECTOR • STILLWATER, OKLAHOMA

4-H
HANDICRAFT MANUAL
woodwork

C. V. PHAGAN

Extension Agricultural Engineer

DIVISIONS OF PROJECT

Woodwork is an interesting and profitable activity for 4-H Club members who like to make things. There are two main divisions of this project, namely (1) Home Woodwork and (2) Farm Woodwork.

In **Home Woodwork** club members will make small articles of furniture and equipment used in the home. In **Farm Woodwork**, articles made will consist of equipment used in the yards, lots, and outbuildings, such as feeders and tool boxes.

PURPOSE OF PROJECT

1. Give club members training in the **selection, care,** and **use** of small hand tools commonly used on the farm and in the farm home.
2. Encourage club members to make **articles** and **equipment** that will be useful and beneficial in farm and home life.

GENERAL REQUIREMENTS

1. **Age Limits**—Club members between the ages of 10 and 21 are eligible to enroll in the 4-H Handicraft project.
2. **Tools and Work Space**—Club members should consult their parents regarding use of tools, or the purchase of additional ones. Arrangements should also be made for a table or work bench.

3. **Number Articles to be Made**—Club members must make at least three articles during the year. Articles selected may be those shown in this circular or those selected by local leaders and approved by county and home demonstration agents.

4. **Reports**—In the construction of each article, club members should keep a record of the number of hours and also enter the cost of materials. The record form for making reports is shown in the back of this circular.

5. **Exhibits**—Each club member should exhibit his or her best article at a fair or other public meeting.

JUDGING OF EXHIBITS

Divisions or Classes of Exhibits: There will be two main divisions for woodwork exhibits, namely (1) home woodwork and (2) farm woodwork.

Score Sheet for Judging Exhibits:

Evaluation of Article	**Possible Points**
(1) Workmanship a. Sturdy construction. b. Close fitting square joints. c. True plane surfaces. d. Smooth finish, free from nicks, notches, and scratches.	50
(2) Design of Article a. Balance, pleasing lines. b. Materials used.	20
(3) Value of Article	20
(4) Practicability (Usefulness, labor-saving, etc.)	10
TOTAL	100

SELECTION OF TOOLS

Good tools, kept in good condition, are essential to good workmanship. Club members need not buy a large number of tools for this project since there are usually a number of hand tools already available on the farm. Tools that are out of order should be repaired and sharpened to put them in good working condition.

When buying tools, it is advisable to choose well-known makes of good quality and proper size to use for general repair work on the farm. Some of the common types of wood working tools needed on the farm are illustrated in Figure 1. In addition to these

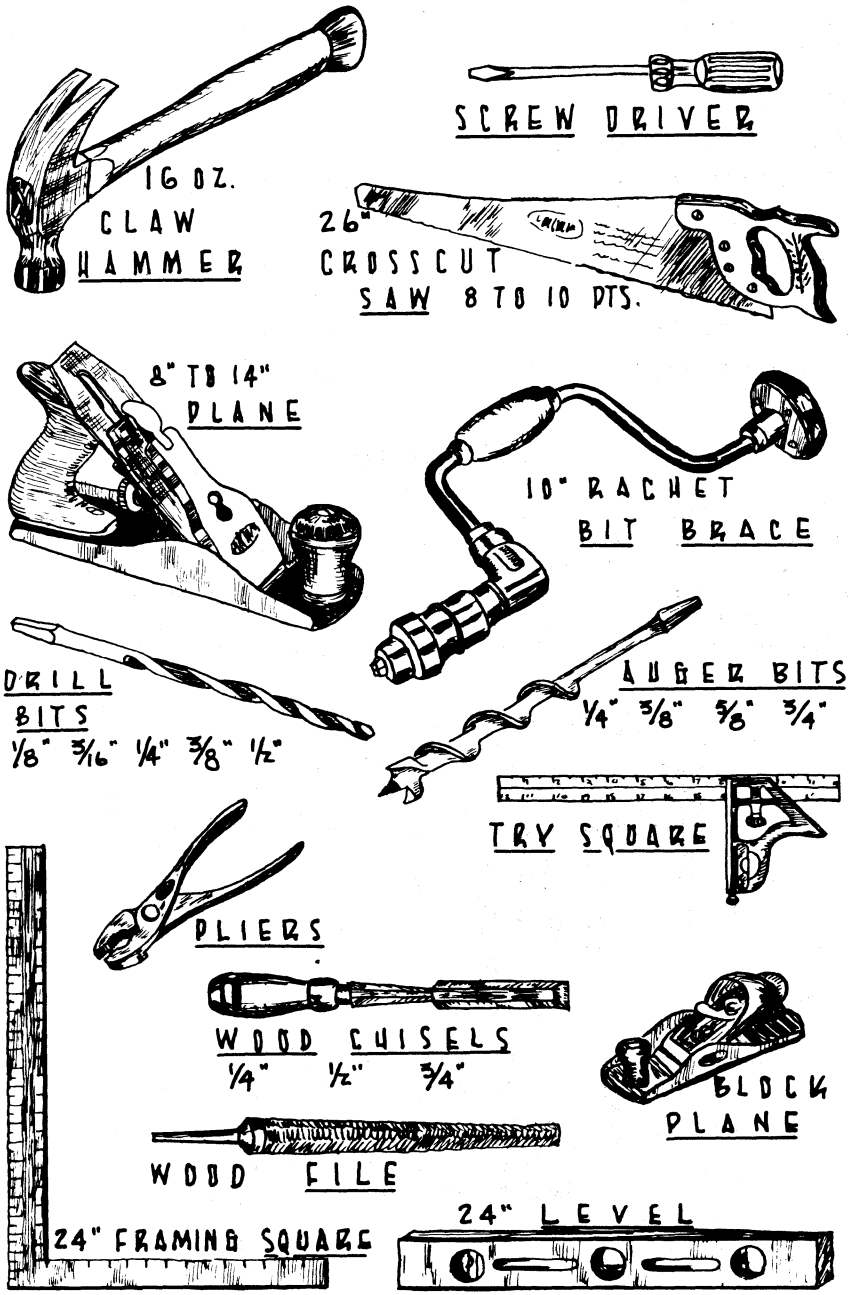


Figure 1—Some of the common tools that 4-H Club members use in handicraft work.

tools, club members may find the following list helpful in securing a more complete set of tools as a part of their shop equipment.

26-inch ripsaw, 5½ point
Backsaw for miter box
14-inch compass saw
Coping saw
Expansion bit, ⅞ inch to 3 inch
Sliding T-bevel
10-inch drawknife
Compass or keyhole saw
Countersink bit
Nail sets
10-inch flat file
Oil stone, 1"x2"x7"
Emery wheel for sharpening tools
Putty knife
Wood mallet

CARE OF TOOLS

"A place for every thing, and every thing in its place" is a good slogan for 4-H Handicraft workers. When your tools are not in use, keep them in a tool chest or in a tool rack close by the work bench. Figure 2 shows a portable type of tool cabinet that can be attached to the wall above the work bench or it can be made with a handle on top and carried from one place to another.

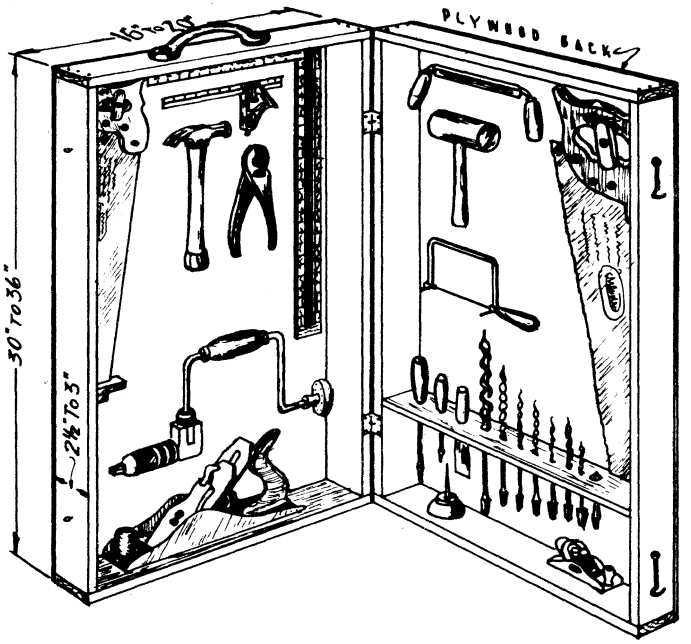


Figure 2—A convenient type of storage cabinet for carpentry tools.

SELECTION OF LUMBER AND MATERIALS

The grade and kind of lumber to be used in constructing any article will depend upon the kind of article made or how it will be used. A sawhorse or chick feeder, for instance, can be constructed of a lower grade lumber than would be required for a magazine rack or any other type of indoor furniture.

In selecting your lumber or finishing materials, consult with your parents, your local club leaders, or your county agents. Local paint dealers, lumber dealers, and carpenters will also be glad to advise club members about the selection of materials and methods of construction or finish.

THE USE OF TOOLS

THE SQUARE

The square is one of the basic tools in carpentry work. It is used for measuring distances in feet and inches, but one of its principal uses is in marking lumber for square end cuts and in checking lumber to see if it is square.

The framing square is used in marking framing lumber such as 2″x6″, 2″x10″, or any other lumber that is wider than about six inches. The try square is used primarily on finish lumber that is six inches or less in width.

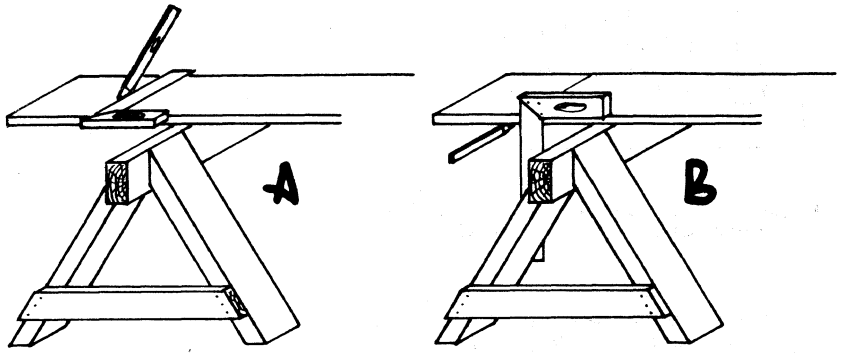


Figure 3—Showing important steps in marking lumber for square cuts with the saw.

To square the end of a board with a try square, place the handle firmly against the straight edge of the board with the blade at the desired place of cut and mark along the top of blade as shown in Figure 3A. After marking the face of the board, the handle of the square is then held firmly on the face with the top edge of the blade extending down the edge at the point where the face

mark was made (Figure 3B). These two square marks, when followed with the saw, will give a cut that is square to both faces and edges of the board, assuming that the board is of uniform thickness and width.

THE HAND SAW

There are two types of hand saws used for sawing wood. One is used to saw across the grain of the wood and the other to saw with the grain. The principal difference between these two saws is in the shape of the teeth. This difference is illustrated in Figure 4.

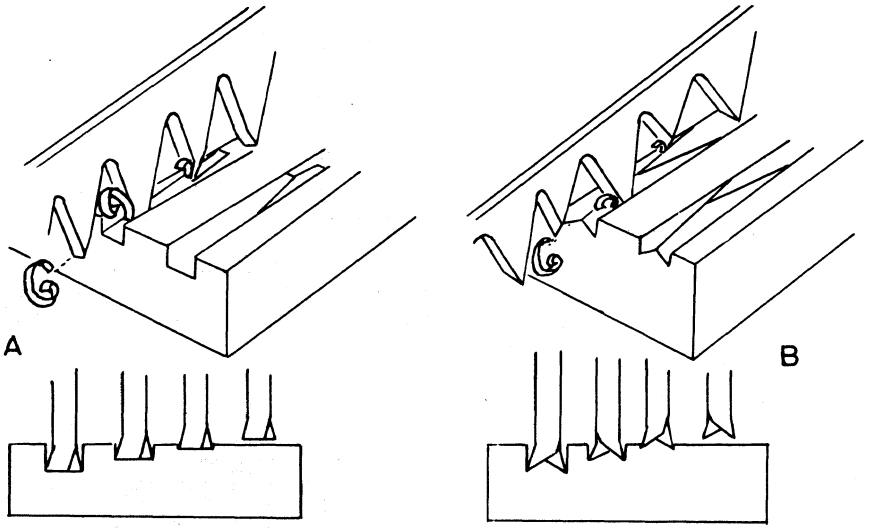


Figure 4—Showing difference in design or shape of saw teeth. A, chisel shaped teeth of ripsaw; B, angle pointed teeth of crosscut saw.

The crosscut saw is used for cutting across the grain or crosswise of the board. The front edges of the teeth are filed with a bevel. The bevel slopes in one direction on one tooth and in the opposite direction on the next tooth. This provides two parallel lines of sharp points to cut the wood fibers like knives and the teeth force out the wood between the two cuts.

The ripsaw is used for cutting with the grain or lengthwise of the board. The teeth are shaped like chisels with the cutting edge extending the full width of the tooth and at right angles to the saw blade.

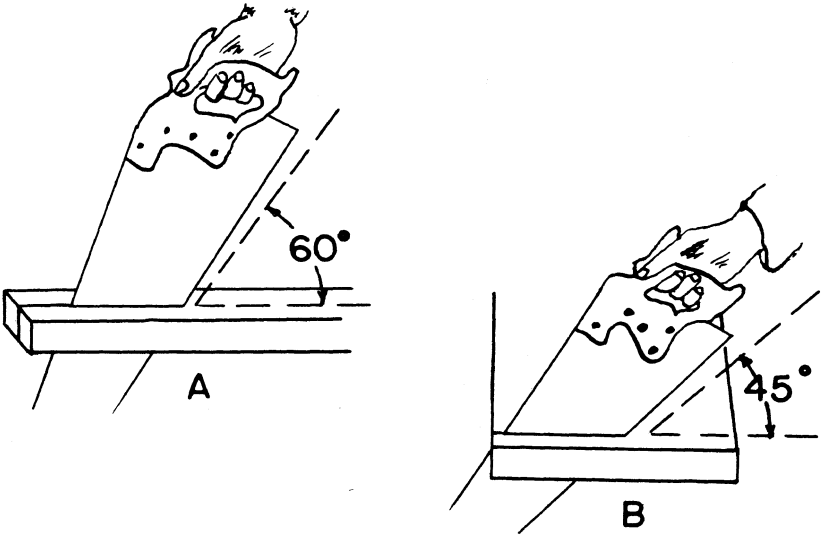


Figure 5—Showing proper positions for using the ripsaw at A, and the crosscut saw at B.

Using the Saw—The crosscut saw should be held at an angle of 45 degrees with the board, or half way between the horizontal and vertical. The ripsaw should be held at an angle of about 60 degrees with the board which is two thirds the distance or angle from horizontal to vertical.

The saw is started on the corner of the board that has previously been marked across the face and one edge. The thumb of the left hand is used for guiding the saw as it is pulled slowly on the marked lines.

After the saw is started, the operator uses long, easy strokes, doing the cutting on the push or down stroke. Keep the index finger along the side of the handle to help guide the blade. Do not crowd the saw by trying to saw too fast or by using too much pressure. Just before the board is sawed through, it is necessary to make short, easy strokes to prevent splintering or splitting of wood.

Club members who have had very little practice or experience with a saw should watch a good carpenter in his sawing operations. In this way many good lessons or pointers can be learned.

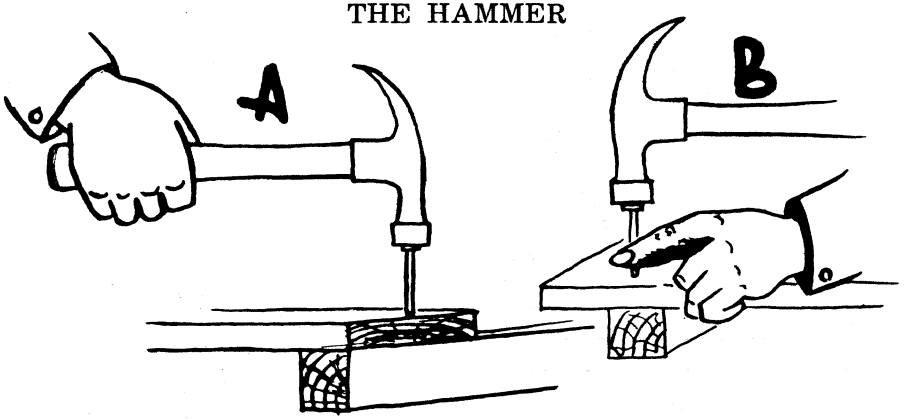


Figure 6—Showing correct method of holding and driving a nail.

The nail hammer, often called a claw hammer, is used for driving and drawing or pulling nails. When using the hammer to drive nails, grasp the handle firmly near the end as shown in Figure 6A. Force may be applied through the wrist, elbow, or shoulder. A light force is delivered by wrist action. A combination of wrist and elbow is used for more force, and for maximum force the wrist, elbow, and shoulder are all brought into action.

To drive a nail, hold it between the thumb and forefinger, near the head of the nail as shown in Figure 6B. Use light taps in starting.

To pull or draw a nail, see Figure 7. First slip the claw of the hammer under the nail head and pull until the hammer is almost vertical or straight up. Then to increase leverage and make it easier to completely draw the nail, use a block of wood under the head of the hammer.

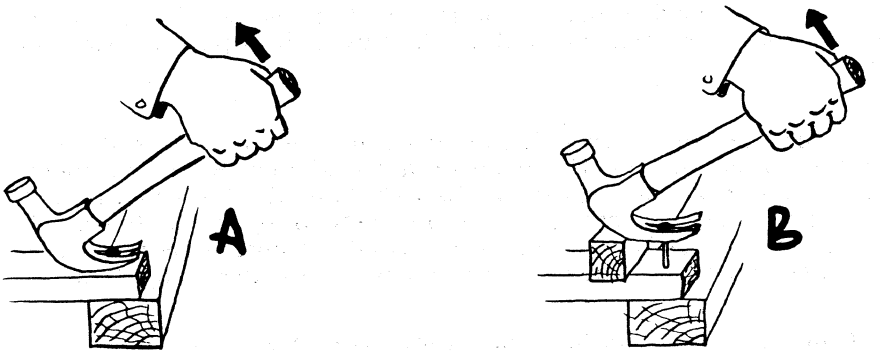


Figure 7—Showing methods of drawing a nail: A, starting position; B, final position.

PROPER USE OF OTHER TOOLS

Besides the hammer, saw, and square, club members will use many other tools in their handicraft projects, but space does not permit full explanation in the course of this circular. In the use of other tools, consult with your local leader, your county agent, or experienced carpenters. School shop instructors will also be glad to advise or assist club members in the selection and use of tools.

TEAM DEMONSTRATIONS

Handicraft work offers excellent oportunity for team or individual demonstrations. The use of the hammer, the saw, or the square, as described above are examples of good demonstrations.

Most of the exercises, or plans of articles in this circular are presented in simple demonstration form. The use of the article is the first logical explanation that should be made. Then comes materials, tools, and steps in making. In order to save time and keep plenty of action going, it may be necessary to have most of the parts or pieces already cut to proper length or size.

Successful demonstrations depend a great deal upon the choice of subject and plenty of preparation. The following suggestions can be used to good advantage:

Practice your demonstration.

Know your subject well, so you can talk easily and without the appearance of having memorized parts.

When you have partners, refer to each other by your given names.

Select and arrange your equipment to best advantage for ease in handling and so it will be attractive to the audience.

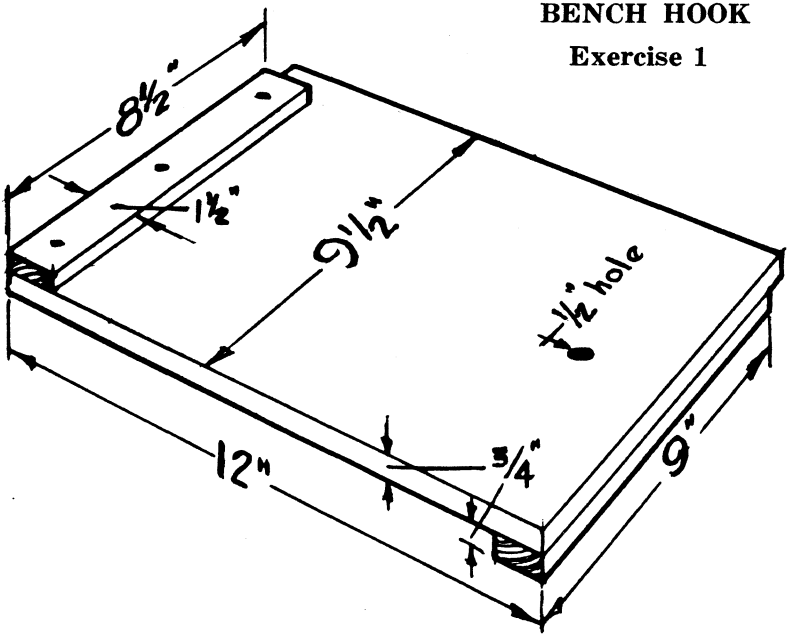
SELECTION OF EXERCISES

The woodworking exercises shown in this circular are suggestive of the many kinds of articles that club members can make. There are other sources of plans, however, from which selection can be made such as agricultural bulletins, farm magazines, shop books, and "craft" type publications usually found in news stands.

The important thing is to select articles that are practical and useful on the farm or in the home. The club member's previous knowledge or experience in the use of woodworking tools will, of course, be considered in the selection of projects.

BENCH HOOK

Exercise 1



Use of Bench Hook:

The bench hook should be one of the first pieces of equipment for the work shop. It is used for holding materials for sawing, chiseling, planing, or sanding.

Materials Needed:

1	piece	¾"x9½"x12"
1	piece	¾"x1½"x8½"
1	piece	¾"x1½"x9"
6		1¼" No. 10 flat head wood screws

Tools Needed:

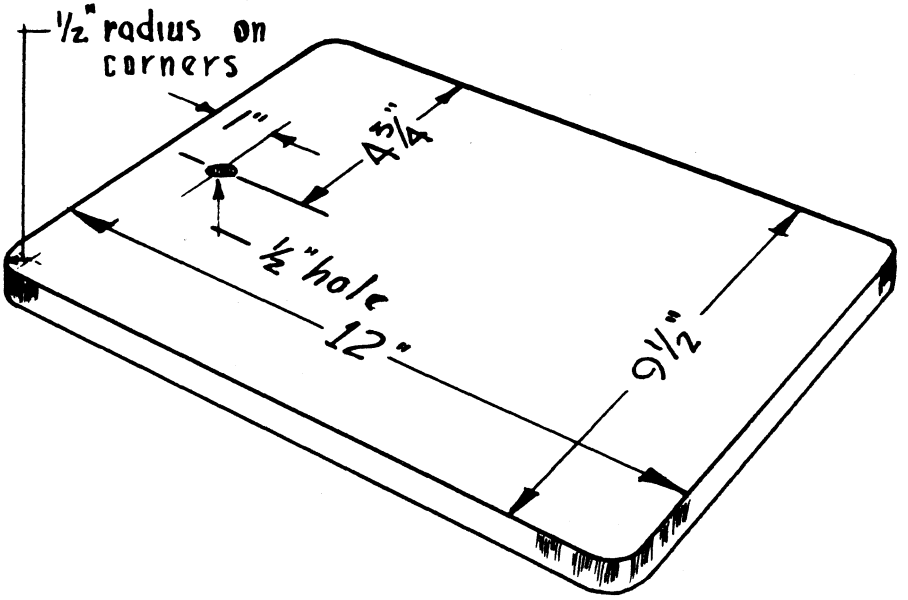
Saw, square, screw driver, brace, ⅛" bit, 3/16" bit, ½" bit, and countersink bit.

Steps in Making Bench Hook:

1. Mark and saw the three pieces of lumber to dimensions as given above.
2. With brace and 3/16" bit bore three holes in each of the end cleats as shown in plan. These holes are for the wood screws and should be the same size as the smooth shank of the screws.
3. Countersink holes with countersink bit so screws will fit flush.
4. Clamp or hold cleats in place and with nail or sharp object, mark location for screw holes in main board.
5. With ⅛" bit, bore marked holes, being careful not to bore holes more than about ½ inch deep.
6. Use screw driver in attaching cleats to board.
7. Bore ½" hole in board so hook can be hung up on nail.

CUTTING BOARD

Exercise 2



Use of the Cutting Board:

This is a handy piece of equipment for the kitchen. It is used to prevent the cutting knife from marring the table top when cutting bread, meat, vegetables, or any other food product. When not in use, it can be hung on the wall or on the side of a cabinet by means of a small hole that is bored in one end.

Materials Needed:

1 piece ¾"x9½"x12"

Make the board of sycamore, maple, cherry, or other close-grained wood. The board should be free from dents or cracks which would make it hard to keep clean.

Tools Needed:

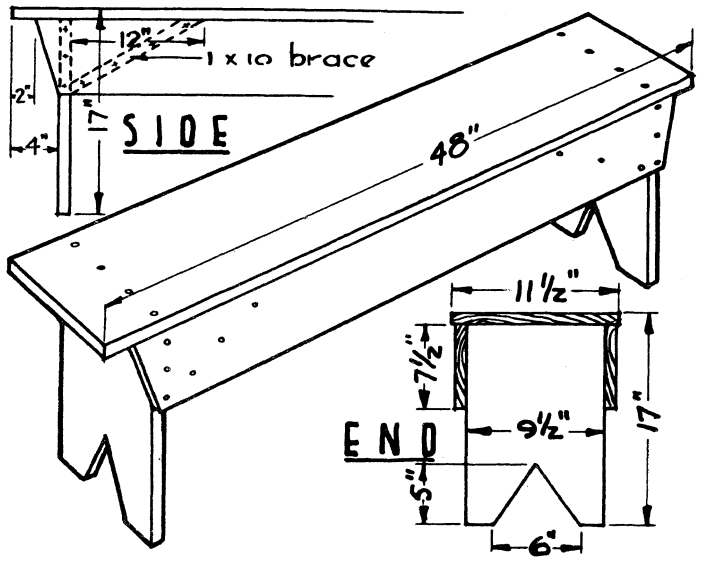
Saw, square, plane, brace and ½" bit, wood file.

Steps in Making Cutting Board:

1. Measure, mark, and saw board to dimensions shown.
2. Use a nickel or quarter for a guide in marking corners of board.
3. Bore the ½" hole, reversing the direction of boring when the point of the bit shows on the back side. This prevents splinting.
4. Plane the board if necessary to remove mill marks and rough edges.
5. Use a wood file to smooth corners and edges.
6. Finish by sanding the entire surface with fine sand paper.
7. Do not use paint or other finishing preparation.

WOODEN BENCH

Exercise 3



Use of Wooden Bench:

This bench can be used in a number of ways on the farm. It will make a good support for a flower box or flower pots. It may be used for the laundry tubs on wash day or for seating purposes in the dining room or kitchen.

Materials Needed:

1	piece	1″x12″x4′0″	top
2	pieces	1″x 8″x3′8″	sides
2	pieces	1″x10″x16¼″	ends or legs
2	pieces	1″x10″x16″	braces
¼	pound	6d finishing nails	
1	dozen	4d finishing nails	
		Paint or stain	

Tools Needed:

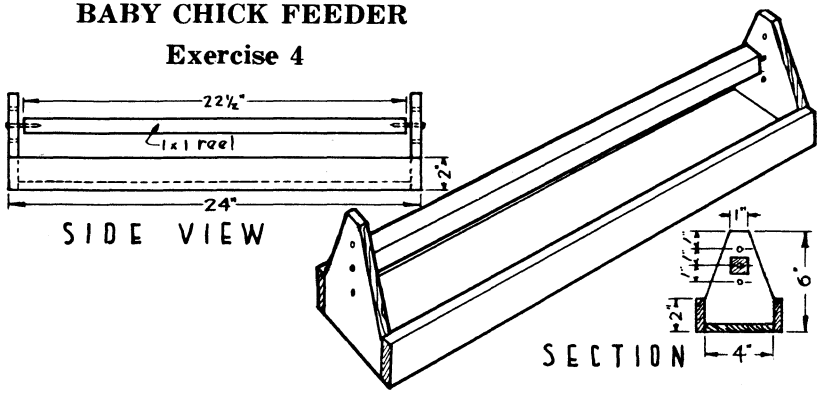
Hammer, saw, square, plane, wood file, nail set.

Steps in Making Bench:

1. Mark and saw lumber to dimensions shown above. Use good grade of well seasoned lumber.
2. Nail sides to end legs, being sure legs are square with sides.
3. Nail top in place.
4. Cut braces and nail in place.
5. Set nails with nail set and fill holes with putty or glue and sawdust paste.
6. Finish with sand paper and then paint or stain.

BABY CHICK FEEDER

Exercise 4



Use of the Feeder:

Each baby chick needs about one inch of feeding space for the first two weeks of its life. The 24 inch feeder shown here is designed for each 50 baby chicks. After two weeks, two feeders of this size are needed for each 50 chicks. When the chicks are four weeks old, use growing chick feeders as shown below.

Keep the feed clean and never fill the hopper more than three-fourths full. Adjust the reel to whatever position seems to work best. Place feeders near or partly under hover so chicks will eat readily.

Materials Needed:

1	piece	½"x4"x23"	bottom
2	pieces	½"x4"x6"	ends
2	pieces	½"x2"x24"	sides
1	piece	1"x1"x22½"	reel
2		1½" wood screws	
2	dozen	shingle nails	

Tools Needed:

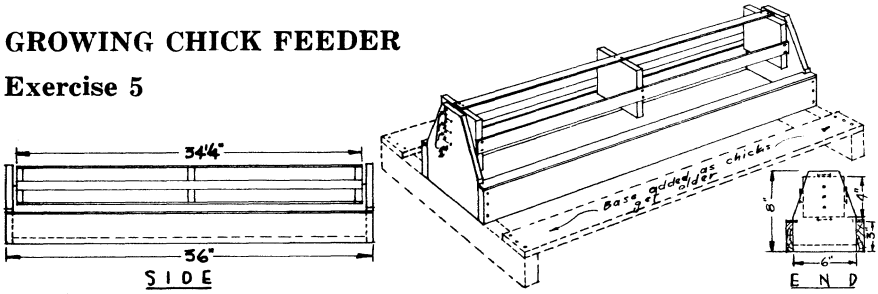
Hammer, saw, square, wood file, screw driver, brace, ⅛" bit, and ¼" bit.

Steps in Making Feeder:

1. Mark and saw the lumber to dimensions as shown above. Old wooden boxes may be salvaged for the necessary amounts of lumber.
2. Mark a center line down the middle of each end board and bore three ¼" holes one inch apart starting one inch from the top.
3. Nail ends to bottom and then nail sides in place.
4. Use ⅛" bit for boring screw guide holes in ends of reel. Be sure holes are straight so screws will hold reel in a free turning position.
5. Place reel and screws leaving ¼ inch clearance at each end of reel.
6. Use wood file to smooth up rough corners and edges.

GROWING CHICK FEEDER

Exercise 5



Use of Feeder:

This feeder will accommodate 100 chicks 2 to 4 weeks old, but more feeders should be added as the chicks become larger. When the chicks are 6 weeks old the feeder can be raised off the floor by placing a 2" x 4", 16 inches long under each end of the feeder. A 1" x 4", or similar piece of lumber, is then placed on each side where the chicks can stand while eating. The dotted lines in above plan illustrates this addition.

Never fill the hopper more than about two-thirds full. Adjust the reel to whatever position seems best.

Materials Needed:

1	piece	¾"x6"x34½"	bottom
2	pieces	¾"x6"x8"	ends
2	pieces	¾"x3"x36"	sides
3	pieces	¾"x4"x4"	reel blocks
4	pieces	plaster lath 34¼" long	reel
2	pieces	plaster lath 36" long	top edges of hopper
¼	pound	6d box nails	
3	dozen	shingle nails	
2		1¾" No. 10 R. H. screws	reel supports
2		2"x4"x16" }	base addition for older chicks
2		1"x4"x36" }	

Tools Needed:

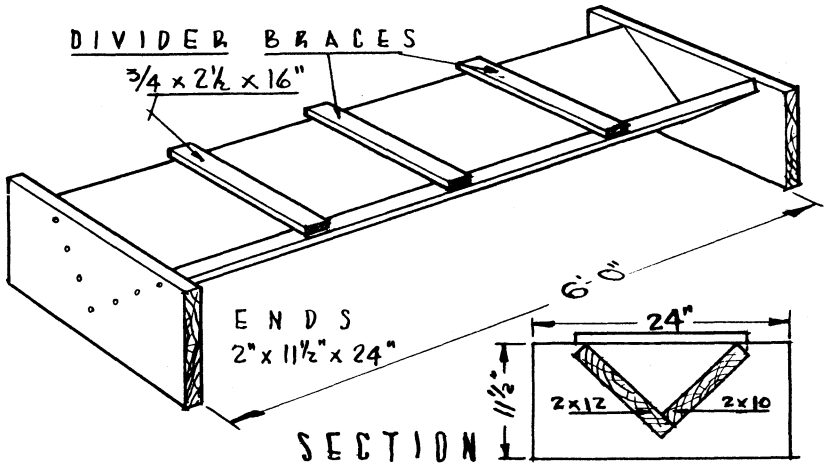
Hammer, saw, square, wood file, screw driver, brace, ¼" bit, and ⅛" bit.

Steps in Making Feeder:

1. Mark and saw lumber to dimensions shown above.
2. Mark a center line down the middle of each end board and bore three ¼" holes one inch apart, starting one inch from the top.
3. Nail ends to bottom, then nail sides in place.
4. Make reel using 4 laths and 3 square blocks as shown in plan.
5. Locate exact center of reel end blocks and bore ⅛" holes perpendicular to face of blocks.
6. Put reel in place using two 1¾" screws for supports.
7. Nail laths to top edge of sides. These extend over inside edge about ½ inch. These laths reduce the amount of wasted feed.
8. Use wood file to smooth up rough corners and edges.

HOG TROUGH

Exercise 6



Use of Hog Trough:

Every hog raiser needs a few good substantial hog troughs. They should be heavy or firmly anchored to prevent overturning. They should be tight enough to hold water and also provided with divided braces to prevent hogs from lying down in the trough. See back of this circular for additional trough plans.

Materials Needed:

Strong, durable wood such as oak.

1	piece	2″x 10″x6′0″	side
1	piece	2″x 12″x6′0″	side
2	pieces	2″x 12″x2′0″	ends
3	pieces	¾″x2½″x1′4″	braces
3	dozen	16d common nails	
2	dozen	8d common nails	

Tools Needed:

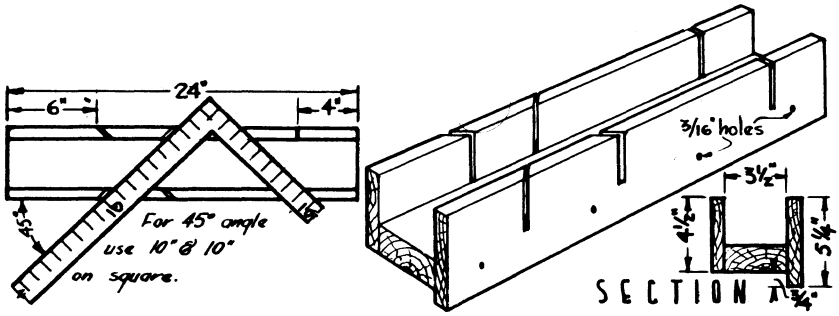
Hammer, saw, square, plane.

Steps in Making Trough:

1. Cut lumber to dimensions shown above. Be sure two sides are exactly same length.
2. Plane edge of 2″ x 10″ so it will fit against 2″ x 12″ without any crack showing.
3. Nail sides together.
4. Nail ends onto trough.
5. Cut notches in top edge of trough to receive divided braces and then nail braces in place.

MITER BOX

Exercise 7



Use of Miter Box:

The miter box is used as a guide for the saw in making square or angular cuts as used in window screens, picture frames, etc. The box should be built of smooth, well-seasoned, hard wood lumber. The front of the box extends 3/4 inches below the bottom so the box can be held securely against a bench or work table.

Materials Needed:

1	piece	1¾"x3¾"x24"	bottom (can be wider)
1	piece	¾"x5¼"x24"	front
1	piece	¾"x4½"x24"	back
8		1½" No. 10 F. H. wood screws	

Tools Needed:

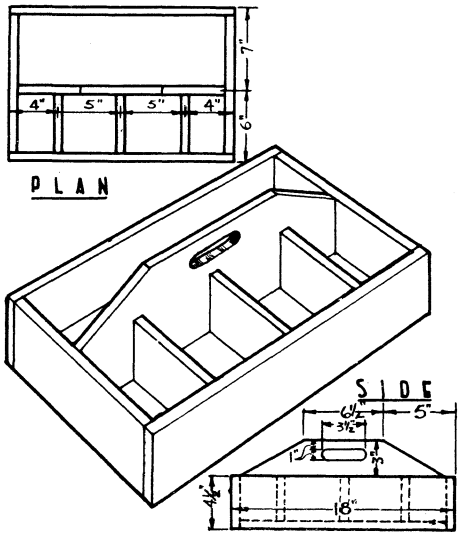
Hammer, saw, square, brace, ⅛" bit, 3/16" bit, countersink bit, and miter saw.

Steps in Making Miter Box:

1. Cut lumber to dimensions shown above. The two sides can be cut from one piece of 1" x 10".
2. Hold sides against bottom and mark location of holes for screws. Place holes six inches apart starting three inches from end. Alternate position of holes slightly so they don't come in straight line. Be sure to have front side extend ¾" below bottom.
3. Bore holes with 3/16" bit.
4. Hold sides in place again and use large nail to push through holes and mark location for holes in bottom.
5. Bore holes in bottom with ⅛" bit, making holes about ¾ inch deep.
6. Countersink holes in sides and then place screws with screw drivers.
7. Carefully mark locations for sawing cuts in box. The drawing illustrates method of holding framing square to get 45 degree angles.
8. Carefully make saw cuts using a sharp, fine-tooth saw or preferably a regular miter saw.

NAIL AND TOOL BOX

Exercise 8



Use of Nail Box:

This box is handy for carrying small hand tools, nails, bolts, and other items needed for doing odd jobs around the farm. The box should be made of smooth, well-seasoned pine or other light wood.

Materials Needed:

2	pieces	¾"x 4½"x18"	sides
2	pieces	¾"x 4½"x11½"	ends
1	piece	¾"x11½"x16½"	bottom
1	piece	¾"x 6½"x16½"	center partition
3	pieces	¾"x 3¾"x 5½"	nail partitions
4	dozen	6d finishing nails	

Tools Needed:

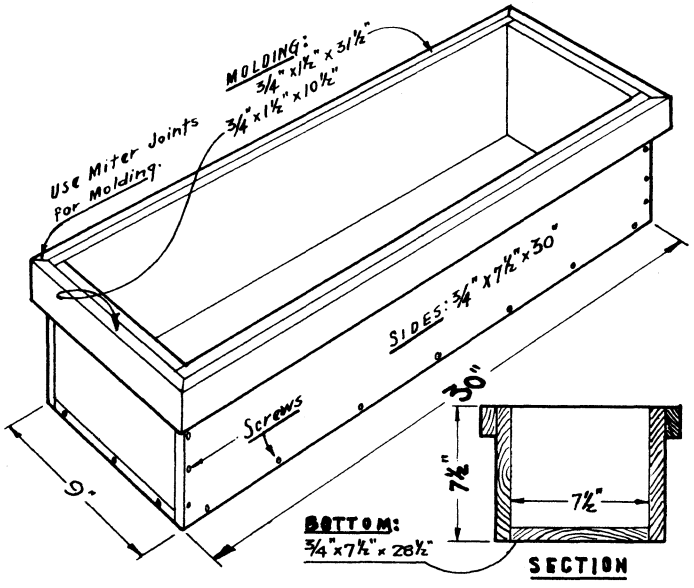
Hammer, saw, square, plane, brace, 1" bit and wood file.

Steps in Making Box:

1. Mark and cut lumber to dimensions as shown above.
2. To make handle, use a 1" bit to bore holes at each side and then use compass saw or chisel in cutting out remaining part. Use wood file in smoothing up and rounding edges of handle.
3. Nail ends in place.
4. Nail small partitions to side and middle partition before these parts are nailed to bottom and ends.
5. Use wood file in smoothing sharp edges and corners.
6. Give box two coats of green paint or a coat of linseed oil.

FLOWER BOX

Exercise 9



Use of Flower Box:

The flower box as shown here can be placed on a bench or bracket shelf beneath a window. It can also be located on the porch or any other place where it can receive fresh air and sunshine according to the needs of the flowering plants used. Flower pots or other suitable containers can be placed in the box, or the plants may be set directly in the box after it is filled with soil. The box should be made of decay resistant wood such as cypress. However, if it is properly painted and protected, it will last for several years if built of most any kind of well-seasoned wood.

Materials Needed:

1	piece	¾"x7½"x28½"	bottom
2	pieces	¾"x7½"x30"	sides
2	pieces	¾"x7½"x 7½"	ends
2	pieces	¾"x1½"x10½"	end molding
2	pieces	¾"x1½"x31½"	side molding
2½	dozen	1½" No. 10 R. H. wood screws	
3	dozen	6d finishing nails	
		Small can paint	

Tools Needed:

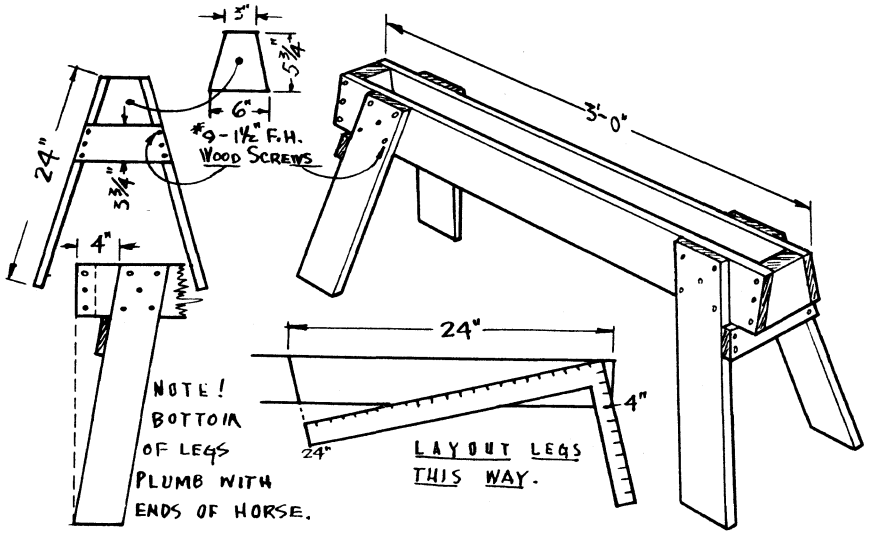
Hammer, saw, wood file, square, plane, screw driver, brace, ⅛" bit, and 3/16" bit.

Steps in Making Flower Box:

1. Mark and saw lumber to dimensions as shown above.
2. With plane and wood file, smooth edges of board to give good, close fits.
3. Bore 3/16" holes in edges of sides and ends for screws.
4. Paint edges of boards before assembling to make water-tight joints and to prevent rotting.
5. Use a few finishing nails to assemble and hold together while screws are being placed.
6. With screw holes as guides, use 1/8" bit in boring into edges of bottom and end boards. Bore only about 1/2 inch deep.
7. Put screws in place and tighten firmly with screw driver.
8. Add molding to top of box using finishing nails.
9. Sandpaper the entire box and apply two coats of paint.

SAWHORSE

Exercise 10



Use of Sawhorse:

No farm workshop is complete without at least two good sawhorses. The open-top sawhorse as shown here has many advantages. In the first place it is fairly simple to make. It is strongly constructed, light in weight, and permits vertical sawing between the two sides, making a convenient place to carry small tools or nails.

Materials Needed:

2	pieces	1¾"x5¾"x6"	end blocks
2	pieces	¾"x5¾"x3'	sides
4	pieces	¾"x3¾"x24"	legs
2	pieces	¾"x3¾"x14"	end braces
3½	dozen	1½" No. 9 F. H. wood screws	
2	dozen	6d finishing nails	
¼	pint	paint	

Tools Needed:

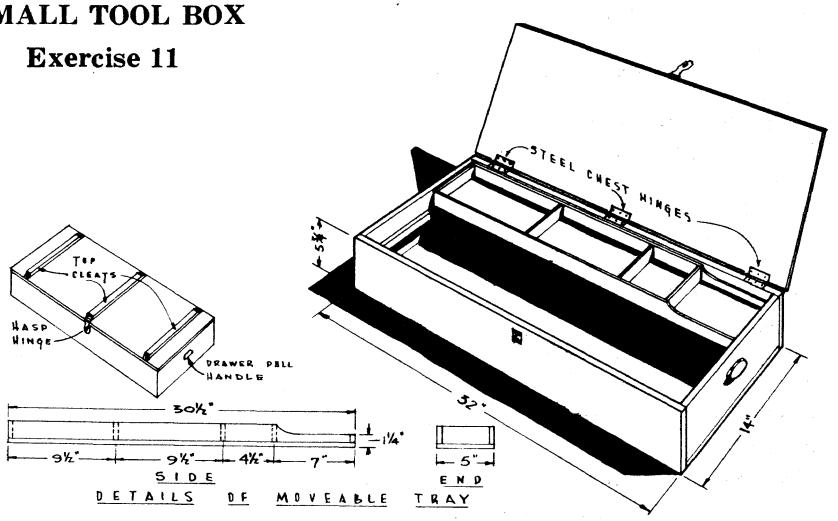
Hammer, saw, square, brace, 3/16" bit, ⅛" bit, countersink bit, screwdriver, wood file, and plane.

Steps in Making Sawhorse:

1. Mark and saw lumber to dimensions as shown above except end braces which should not be marked and cut until legs are in place.
2. With 3/16" bit bore holes for screws in legs and sides.
3. Nail side pieces to end blocks, using few finishing nails.
4. With ⅛" bit bore holes into end blocks through holes previously bored in sides. Make these holes only about ½ inch deep.
5. Countersink holes and place screws in firmly.
6. With plane, bevel top edges of sides making them level with tops of end blocks.
7. Mark locations for legs and nail each leg in place with two finishing nails.
8. Now attach legs with screws following procedure as when placing sides on end blocks.
9. Mark, saw, and attach end braces with screws.
10. With saw or plane, bevel top edges of legs making them level with tops of sides. (Legs may be sawed with proper angles when cut.)
11. Use wood file in rounding corners and smoothing rough places.
12. Paint desired color.

SMALL TOOL BOX

Exercise 11



Use of Tool Box:

One of the safest places to keep good hand tools is in a tool box under lock and key. This is especially true where it is necessary to move the tools from one job to another on the farm. The small box shown here is large enough for the average club member who wants to keep his tools in a safe place. The box can be made larger than shown if it is necessary to store more tools than the size will hold.

Materials Needed:

2	pieces	½"x 14"x32"	plywood, top and bottom
2	pieces	¾"x5¾"x32"	sides, or front and back
2	pieces	¾"x5¾"x12½"	ends
2	pieces	¼"x1¾"x30½"	tray sides
1	piece	¼"x 5"x30½"	tray bottom
5	pieces	¼"x1¾"x 4½"	tray ends and partitions
3	pieces	¾"x 2"x14"	top cleats
2	pieces	½"x 1"x12"	cleats for tray support
3	pieces	cleat and button for saw sizes as needed	
1	dozen	1½" No. 9 F. H. wood screws—fasten sides	
2	dozen	1¼" No. 8 F. H. wood screws—fasten bottom & top cleats	
3		steel chest hinges	
2		steel drawer pulls for handles	
1		hinge hasp for fastening box	
1	box	1" No. 16 wire brads	

Tools Needed:

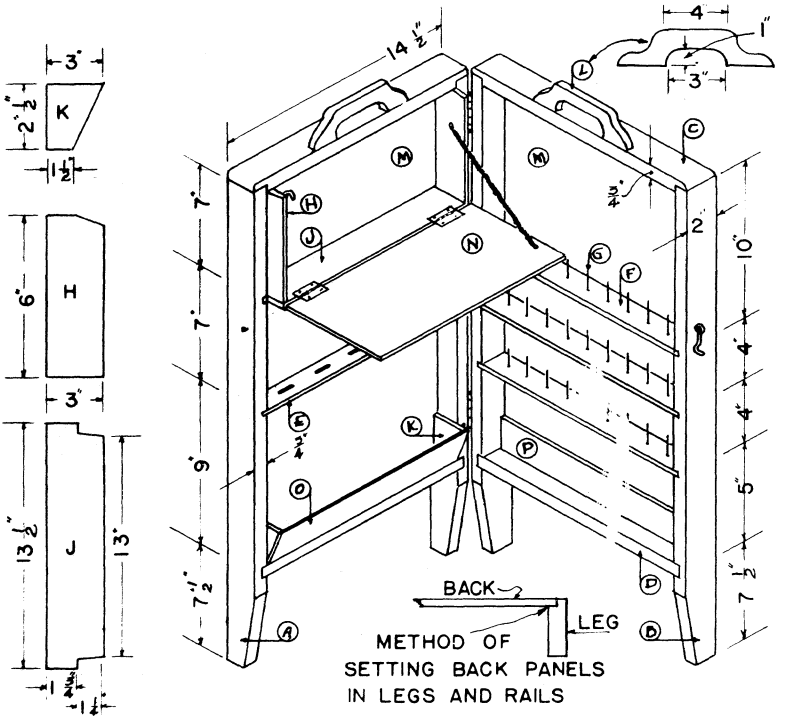
Hammer, saw, square, brace and bits to suit screws, screw driver, plane, and wood file.

Steps in Making Tool Box:

1. Mark and cut lumber to dimensions as shown above. If plywood is not available, one-half inch lumber can be used for top and bottom. If lumber is used, nailing cleats can be added to bottom for greater strength.
2. Fasten sides, ends, and bottom, using screws according to methods discussed in making saw horse.
3. Assemble tray as shown using 1″ wire brads. Note that one end of tray is shallow (about ¾ inch deep) to allow room for saw handle when lid is down.
4. Place tray cleat supports so top of tray is about ¼″ below top of box.
5. Place top cleats on lid using nails and screws. Let end cleats be approximately 3 inches from each end.
6. Place hinges and fastening hasp.
7. Place handles in ends of box.
8. Use wood file to smooth edges and sharp corners.
9. Box may be painted or stained.

SEWING CABINET

Exercise 12



Use of Sewing Cabinet:

Any person who sews would be glad to have this handy sewing cabinet. When opened as shown, it furnishes a convenient place for scissors, thread, and other equipment and supplies needed for sewing jobs in the home. When not in use, the cabinet can be closed and set inside a clothes closet or other out of the way place.

Materials Needed:

4	pieces	¾"x	2"x30½"	"A" and "B," legs
2	pieces	¾"x	2"x14½"	"C," top rails
2	pieces	¾"x	2"x13½"	"D," bottom rails
2	pieces	¾"x	2"x7"	"L," top handles
1	piece	¼"x	30"x36"	plywood or masonite tempered presdwood

This piece will be cut into the following pieces (pieces "H" and "K" may be ½" thick):

2	pieces	¼"x	13"x23½"	"M," back panels
4	pieces	¼"x	1¾"x13½"	"E" and "F," spool or scissors shelf
2	pieces	½"x	3"x 6¾"	"H," sides of hinged box
2	pieces	¼"x	3"x13½"	"J," bottom of hinged box
1	piece	¼"x	6½"x13"	"N," hinged lid
2	pieces	½"x	2½"x 3½"	"K," sides bottom hopper
1	piece	¼"x	3"x13"	"O," hopper front
1	piece	½"x	2"x13"	"P," masonite quarterboard for pin cushion
4	feet	⅛" dowel stick		"K," sides bottom hopper
2		1½"x 2" hinges		for legs
2		1⅜"x1½" hinges		for box lid
2		flat hooks		
		Short length of chain for box lid		
1	dozen	4d finish nails		
1	dozen	6d finish nails		
1	box	¾" No. 16 wire brads		
		Stain, varnish, or paint		

Tools Needed:

Hammer, saw, square, brace, ⅛" and 3/16" bits, screw driver, ¼" and ½" chisels, plane, and power saw for notching panel groove in legs and rails.

Steps in Making Cabinet:

1. Mark and cut out materials as given above.
2. Mark and cut notches in legs and rails.
3. Assemble legs and rails and place panels in back.
4. Place other items as shown in whatever order desired.
5. Use fine sandpaper in smoothing all surfaces, edges and corners.
6. Finish with stain, varnish, or paint as desired.

PLANS FOR OTHER HANDICRAFT PROJECTS

The following plans are given as suggestions for additional handicraft work. After studying each plan, club members can easily determine the practical use of the equipment, the materials and tools needed, and also the step by step procedure in making the article.

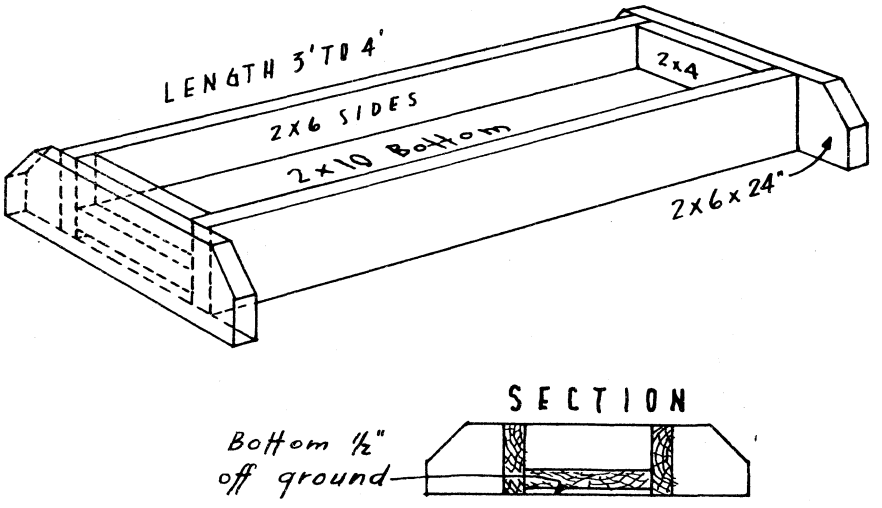


Figure 8—Flat bottom hog trough. An improvement for this trough would be the addition of 1" x 2" strips across the top to prevent hogs from lying down in the trough.

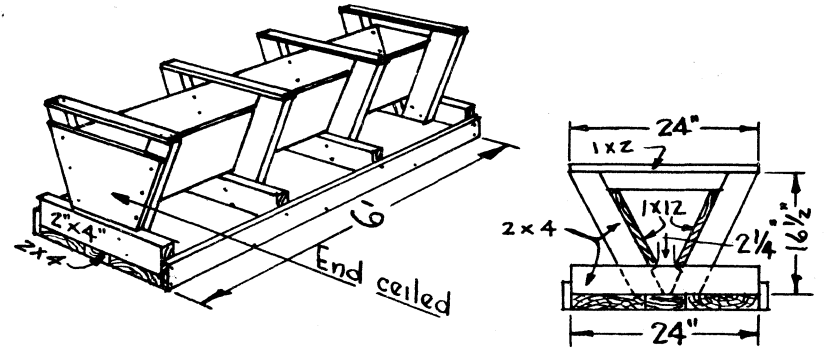


Figure 9—Hopper-type hog trough. This style of trough can be used for feeding slop, ground feed, and any kind of grain except corn on the ear. It is practically impossible for hogs to get their feet into this type of trough while eating.

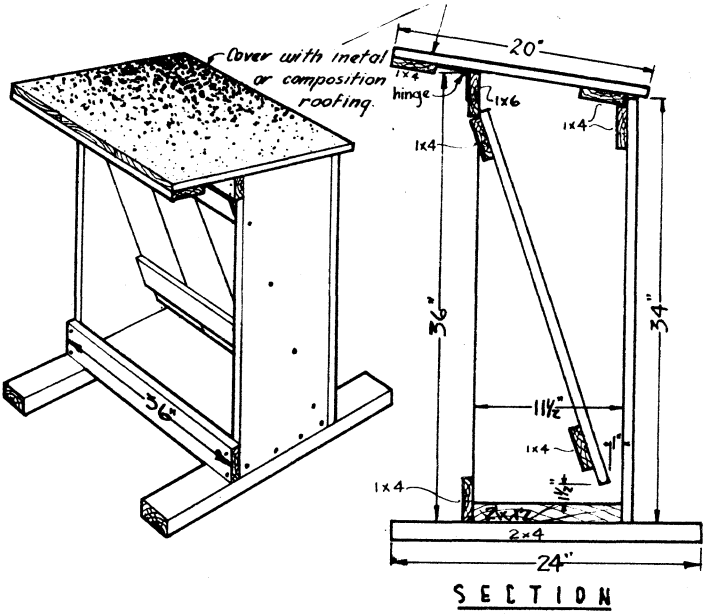


Figure 10—Self feeder for pigs. Partitions can be placed in the hopper for feeding minerals, supplement, and grain.

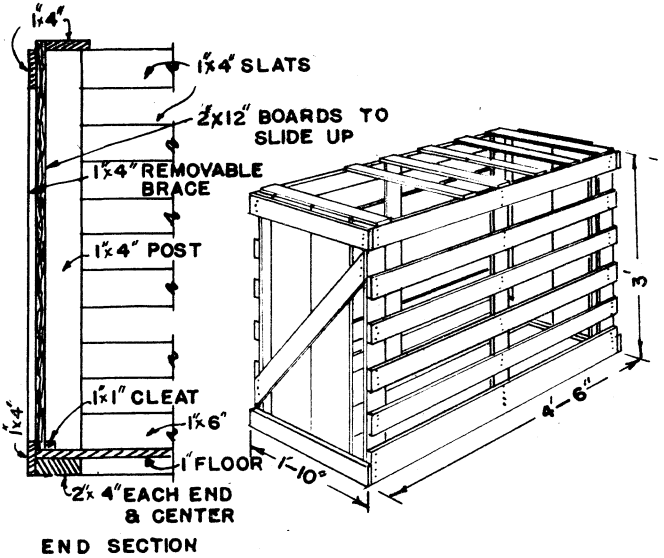


Figure 11—Shipping crate for hogs. This crate is designed for a 250-pound hog. It can be made larger or smaller according to the size of animal to be shipped.

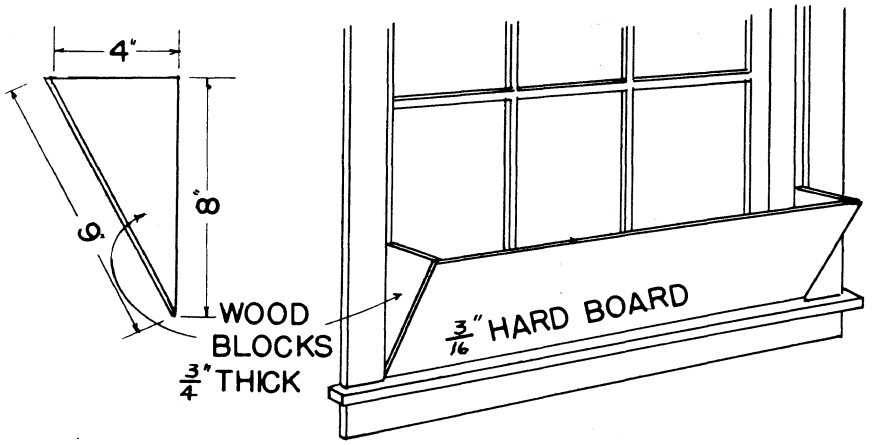


Figure 12—Window ventilator. This type of ventilator directs the incoming air upward and thus prevents direct draft.

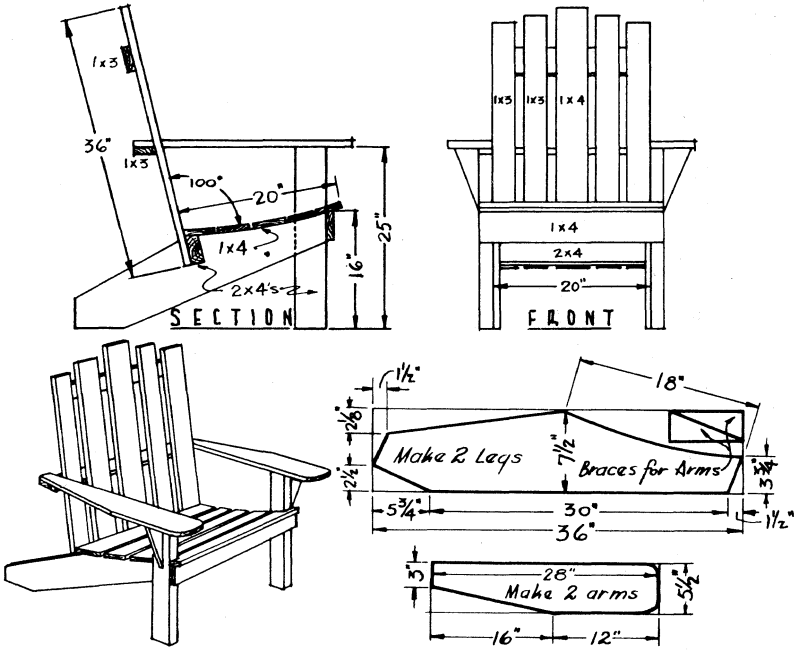


Figure 13—Lawn chair. The seat design on the legs of this chair can be changed to any style desired. Other designs would perhaps be more comfortable than the one shown.

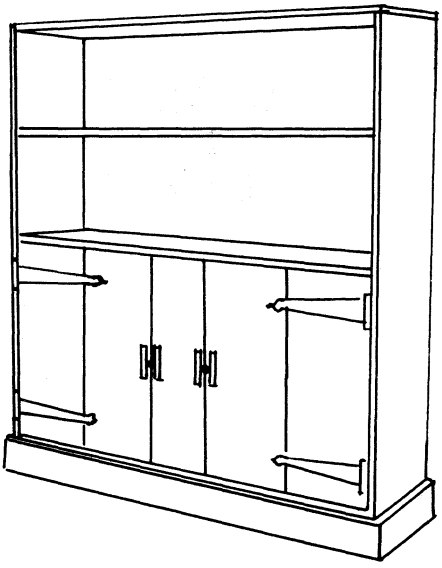


Figure 14

COLONIAL BOOK CASE

Simplicity of construction is the keynote of this attractive piece of furniture. It will serve equally well as a book case for the living room or den, or as a cupboard in the kitchen or breakfast room. Front and section views of this article are shown below.

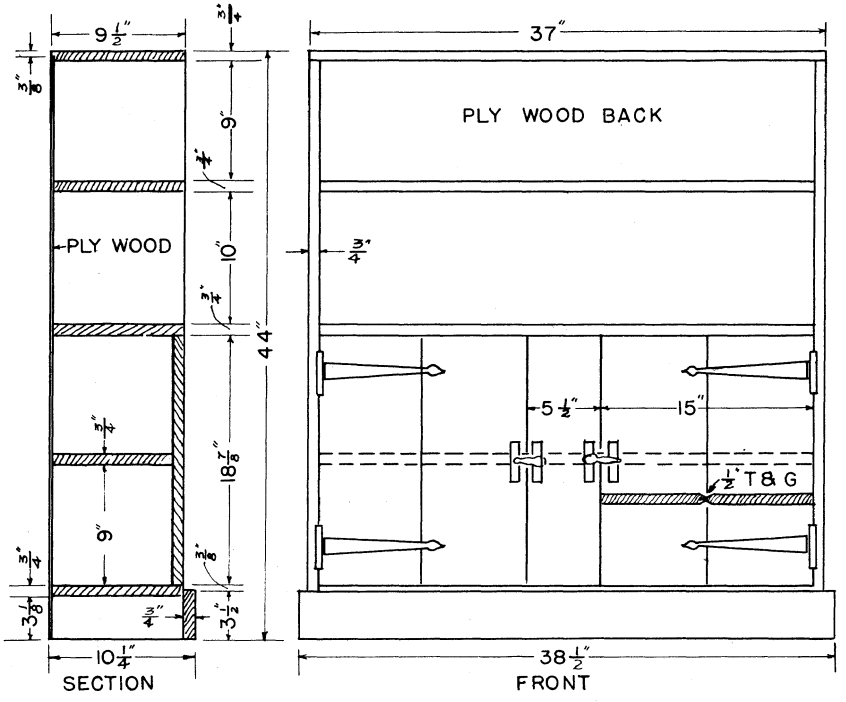


Figure 15—Front and section views of book case illustrated in Figure 14.

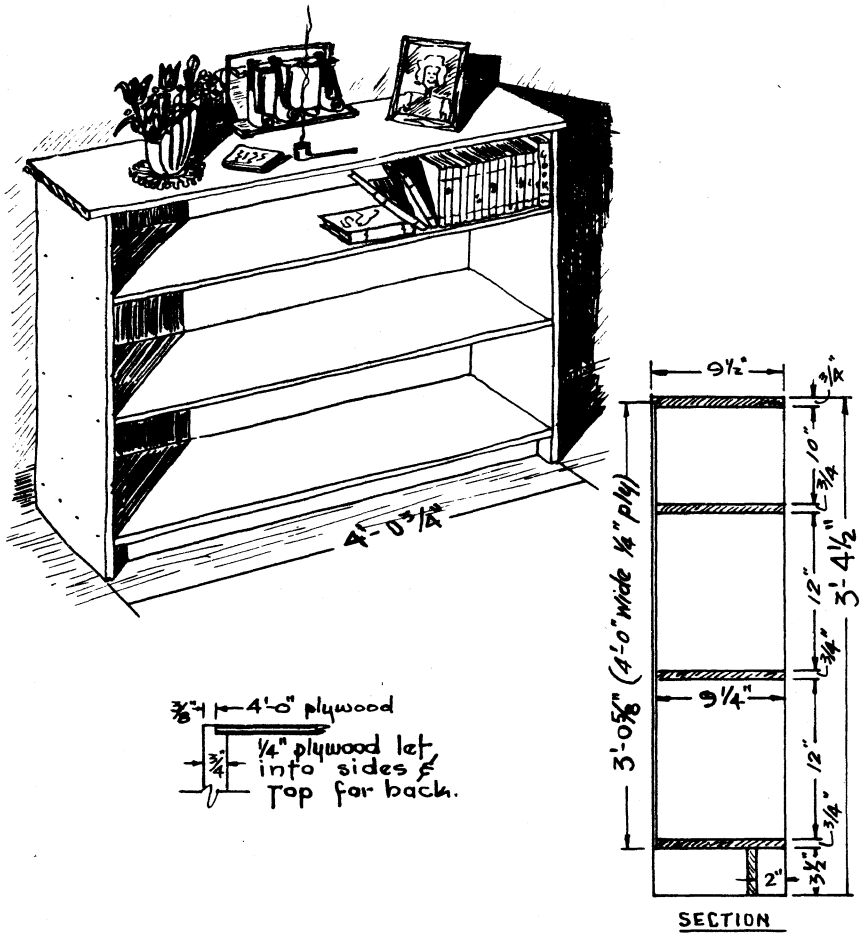


Figure 16

OPEN SHELF BOOK CASE

Most any farm home can make good use of this simple open shelf book case. It is designed for economy in use of materials, however, the over-all dimensions can be changed to fit some particular wall section. It may be desirable to make the case only two shelves high, especially if the unit is placed in front of a window with flower pots or decorative objects on top.

The case should be constructed of a good grade of well-seasoned lumber, such as yellow or white pine. It can be painted, stained, or varnished.

Records and Reports in Handicraft Project

4-H Club members should keep a record on each article made by recording the information asked for in the Handicraft Report Sheet. Standard notebook paper (8½ x 11) can be used for preparing report sheets. Use as many sheets as are necessary in reporting all work done.

HANDICRAFT REPORT SHEET

Report of handicraft work done during 19_____, by:

Name _____ Age _____

Address _____ County _____

Years in Club Work _____ Years in this Project _____

I. **First** Article Made _____

Total number hours worked on article _____

Total Cost of materials _____

II. **Second** Article Made _____

Total number hours worked on article _____

Total cost of materials _____

Note: Use additional space to record all articles made this year.

APPROVED: _____
Coach or Project Leader

APPROVED: _____
County or Home Demonstration Agent

Club Member's Story of Project

Write a brief report of your activities (not over 300 words) in this project, stating what you have learned and the value of the project to you. If possible, show picture or drawings of at least one article you have made.

Cooperative Extension Work in Agriculture and Home Economics, Extension Service, Oklahoma A. and M. College, and U. S. Department of Agriculture Cooperating, Distributed in the furtherance of the Acts of Congress of May 8 and June 30, 1914, Stillwater, Okla.