

8. Double-Tray Book Box Design

Many books in a large library or from a collection requiring protective boxes may not require the somewhat elaborate boxes that have been described earlier in this volume. The simpler double-tray or "clam shell" box is a common design that has been used by bookbinders for decades. It is a simple and efficient design suitable for small books with paper text blocks and leather, paper, or cloth covers. This design would be unsuitable for vellum-covered books or vellum text blocks because it does not provide the pressure needed to prevent warping. (Modifications such as fastenings at the fore edge could be added to prevent warping.) The double-tray box is composed of two trays that interlock, with a case wrapped around their outside. A slight "square" on the fore edge facilitates opening. The Library of Congress has developed an efficient method of construction from this basic design. Other designs and construction methods are used at the Newberry Library.

The essential features of the double-tray box construction are:

1. Books may be measured in their stack location, so that boxes for them can be made in a workshop without the volumes being present.
2. Two work sheets will be used to determine the dimensions for the boards, covering material, and lining material. This system is only efficient if the same type of board, covering material, and lining material are used for a series of boxes. Otherwise, allowances must be made each time different materials are introduced. This is more fully explained below under work sheets for the double-tray box.

3. Standard measurements are within 1/16 inch. Measurements which fall in between must always be carried to the larger 1/16 inch. If this standard is carefully followed, the boxes will never be too small and less than 1/16 inch larger. This has been found to be an acceptable tolerance. It allows one to use the measuring gauge on board shears, which are normally calibrated in 1/16 inch; this saves time and avoids introducing inaccuracies by marking the measurements in pencil on the boards themselves.

4. All materials are cut at one time, then assembled. If many boxes are being made, all the materials for all the boxes should be cut as soon as the work sheets are filled out. This is an efficient and time saving assembly procedure.

5. Butt joints are used. A strong bond at the joint is essential. We recommend a fairly porous board, such as Davey board, for this box design, because its cut edges will bond well when glued to other boards.

The Measuring Device

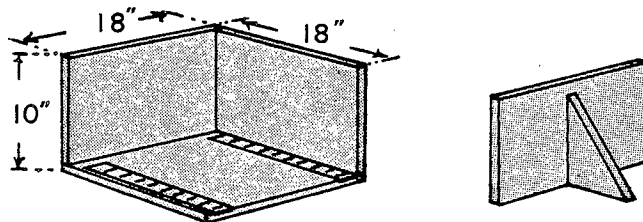
The function of the wooden measuring device is to measure quickly and efficiently the length, width, and height of the book to be boxed.

The size of the measuring device is determined by estimating the size of the volumes in a collection. To avoid making the device too cumbersome, large or heavy volumes, which normally require heavier custom-made boxes, should be measured differently.

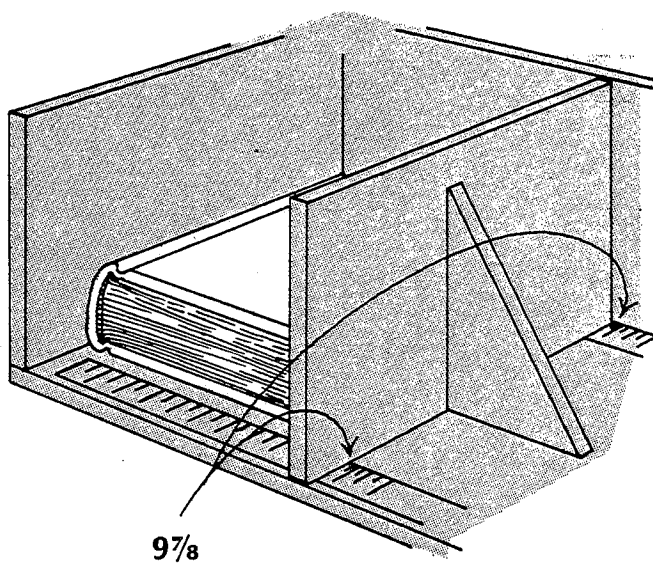
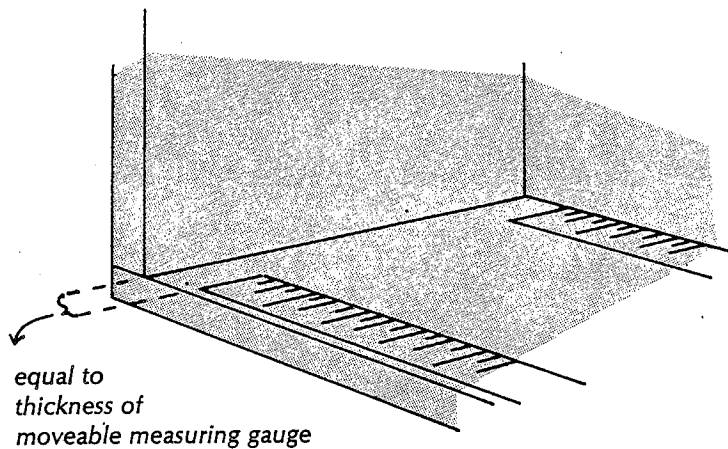
The most important requirements for the measuring device are that all its corners be right angles and that the measuring gauge be held at a 90° angle by the triangular back support.

To prevent warping, the wood used must be strong and well seasoned.

Two rules are set in the base of the measuring device. (See below.) Note that the rulers are set away from the wall. That distance is determined by the thickness of the measuring gauge. By placing the rulers as illustrated below, measurements can be taken from the outside of the measuring gauge.



Use the nearest squared off dimension. If the measurement falls in between always carry it to the larger 1/16 inch. The book shown below has a tolerance of 1/16th inch.



Work Sheets For the Double-Tray Box

Two work sheets will be needed. One work sheet is used to determine the board dimensions. The other work sheet is used to determine the dimensions of the covering material and the lining material included herein. Two blank work sheets can be copied and used when making double-tray boxes. These two work sheets must be filled out for each box. The board dimensions are derived by measuring the book. These figures are then used on the second work sheet to determine the dimensions of the covering and lining materials.

A. WORK SHEET FOR DETERMINING DIMENSIONS FOR DOUBLE-TRAY BOX BOARDS

The box may be made from a variety of materials, but it is recommended that only archival quality board and covering and lining material be used. After the materials have been chosen their thicknesses must be measured to obtain the primary allowance calculations listed on the work sheet. The calculations listed below are for a box constructed from a single thickness of board (wall, base, or case boards).

A = 2 thicknesses of board
plus 8 thicknesses of covering material
(allowance for 4 thicknesses of covering material for clearance)

B = 1 thickness of board
plus 4 thicknesses of covering material
(allowance for 2 thicknesses of covering material for clearance)

C = 2 thicknesses of lining material
plus 4 thicknesses of covering material
(allowance for 2 thicknesses of covering material for clearance)

D = 2 thicknesses of board
plus 8 thicknesses of covering material
(allowance for 2 thicknesses of covering material for clearance)

E = 1 thickness of board
plus 4 thicknesses of covering material
(allowance for 1 thickness of covering material for clearance)

F = 1 thickness of board
plus 4 thicknesses of covering material
(no allowance for clearance is needed)

$G = 1/16$ inch to create a slight lip at the fore edge.
Use a different figure if you want more or less lip.

$H = 1$ thickness of board

The allowances listed above are determined by the composition of the box: how many turn-ins there are and where they fall. To make a stronger box, the above calculations would have to be changed. For instance, you would double the thickness of the board at A, B, D, and E. All other boards (base and case) would retain their single thickness. This system is only efficient if the same type of board, covering material, and lining material is used for a series of boxes. Otherwise, the primary calculations need to be altered each time one of the materials changes.

At the Library of Congress, a series of work sheets are kept with primary calculations listed for the boards, walls, covering material, and lining material. (See sample 1.)

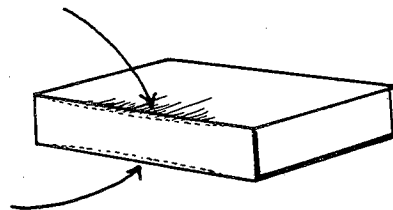
Fill in the primary calculations on the work sheets. In the upper left-hand corner of the work sheet, state the type of board, the thickness of the walls, and the covering and lining material to be used.

Cut small samples of all the materials to be used and calculate the primary allowances. Always go to the next highest $1/16$ inch if the dimension falls in between. Enter the figures on your work sheet.

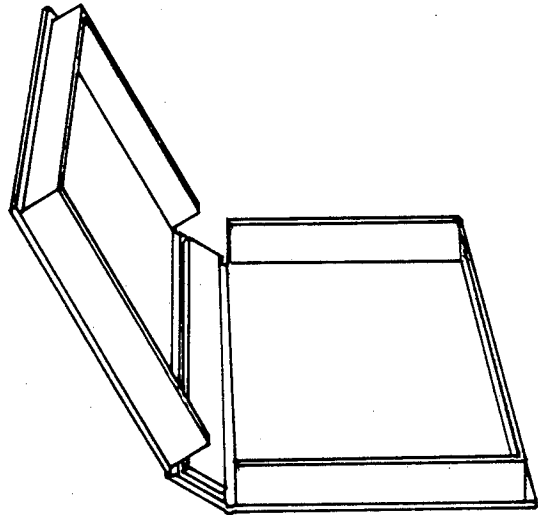
Use this sheet as a master and make copies of it for all the boxes to be made from the materials you have listed on your work sheet.

CONSTRUCTION DESIGN ADDENDA FOR THE DOUBLE-TRAY BOOK BOX

Large double-tray book boxes may sag when pressure is exerted along their spine edges: (1) the dimensions of the book are such that it is narrowest at the spine, (2) the $1/16$ -inch leeway in the design may create a gap between the cover of the book and the top of the box, and (3) since there are no spine walls in the base tray of the box, there is no inner reinforcement to counteract the sagging.



To correct this sagging problem, an extra double thickness of covered board can be added to the spine wall as the final stage of construction. The length and width dimension of this board could be equal to the length dimension of the book and to the height dimension of the inside covered wall of the base tray. Remember that adding this board will automatically necessitate changing the allowance calculation for B on the "Work Sheet for Determining Dimensions for Double-Tray Box Boards." Add two thicknesses of board plus two thicknesses of covering material to that calculation.



B. WORK SHEET FOR DETERMINING DIMENSIONS FOR DOUBLE-TRAY BOX COVERING MATERIAL AND LINING MATERIAL

The given figures in this work sheet allow for turn-ins of approximately $\frac{3}{4}$ inch and a generous $\frac{5}{16}$ inch for the two joint measurements. (If more than $\frac{3}{4}$ -inch turn-ins are needed or if double-thickness walls are used, the $1\frac{1}{2}$ -inch figures must be increased.) (See Sample 2.)

Materials

ADHESIVE	An internally plasticized polyvinyl acetate aqueous emulsion
BOARD	Gold or Red Label Davey board
COVERING MATERIAL	Starch-filled buckram

**FILLER BOARDS or
WOODEN BLOCKS**

Scrap board cut to the inner dimensions of the base or lid trays. Get enough to fill the trays and extend $\frac{3}{4}$ -inch above the walls.

Wooden blocks cut to a similar height and varying lengths and widths to accommodate the inner dimensions of the base or lid trays

LINING MATERIAL

Neutral color handmade paper or alkaline-buffered paper, or neutral color felt

Operational Sequence

I. MEASURE THE BOOK

II. FILL OUT THE WORKSHEETS

- A. For the boards
- B. For the covering and lining material

III. CUT THE MATERIALS

- A. Boards
- B. Covering material
- C. Lining material

IV. ASSEMBLE THE BOX

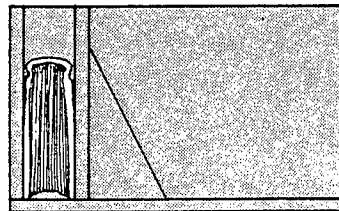
- A. Assemble the boards for the trays
- B. Cover the trays
- C. Cover the case
- D. Attach the trays to the case
- E. Attach the spine lining
- F. Attach the lining material

I. Measure the Book

Place the book in the measuring device, a right-angled two-sided box with rulers inset in the base. Use a movable measuring gauge to hold the book in place and to obtain accurate squared measurements.

Measure the length and width of the book. It is important that the measurements be squared off to the larger dimension. For the thickness (height) measurement, place the book on its spine or fore edge, against the wall of the box and measure it with the movable measuring gauge.

If the measurement falls in between, always go to the next larger 1/16 inch. After measuring, note down the length, width, and height of the book. These measurements should be written on the "Work Sheet for Determining Dimensions for Double-Tray Box Boards."



II. Fill Out the Work Sheets

A. FOR THE BOARDS

The work sheet has already been filled out partially. The upper left corner lists the specific materials chosen. The primary calculations for material allowance have been filled in at A, B, C, etc. The dimensions of the book are listed under length, width, and height. (See p. 256)

Moving down the sheet, add the figures in the columns under length, width, and height. Add the figures consecutively, working down each column.

Fill in the rest of the work sheet.

B. FOR THE COVERING AND LINING MATERIAL

The work sheet for the boards is the source for this work sheet. Refer to that work sheet to find the "height of Spine Board," the "width of Tray 2," the "length of Tray 2," etc. Fill in this information. (See p. 258)

Add the lines of figures to arrive at the totals for the width and length for each piece you need.

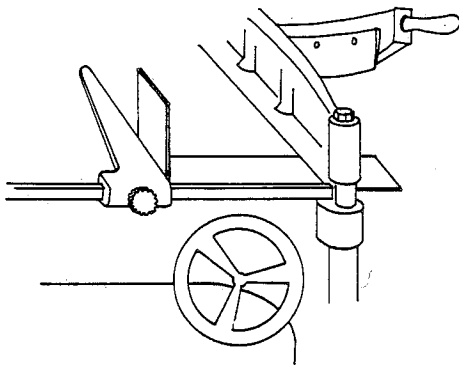
III. Cut the Material

A. BOARDS

Looking at the work sheet for board measurements, note that the figures (dimensions) increase toward the bottom of the page. This coincides with the dimensions of the box. Therefore, the most economical way of cutting the boards is to begin with

the case. Remember that the board grain should run from head to tail on the case and base boards for trays 1 and 2. The wall board grain runs parallel to the length of the walls.

If you have board shears, do not mark the boards with a pencil—a pencil line often makes a wider mark than necessary, creating inaccuracy. If possible, do all your cutting with board shears, using the cutter gauge. First cut one board the length of the case. Then turn the board and cut the two case pieces and one spine board. Next, cut a board the height of tray 2 with the board shears. Turn the board again and cut the base piece and the three wall pieces for tray 2. Trim the lengths of the head and tail wall pieces to the appropriate size after you complete the overall cutting. Follow the same directions for tray 1.



Now cut the head and tail wall pieces for both trays. For tray 2, one wall piece will be used at the fore edge and should remain as is. The spine to fore edge (length) measurement of the other two boards is the width of the tray 2 base piece minus 1 thickness of wall board. Again, use the board shears to obtain this measurement. Place the tray 2 base piece in the board shears with the spine edge against the lowered cutting blade and the left side against the adjustable back gauge. Remove the base piece, leaving the back gauge in place. Take a sample piece of wall board and place it upright against the back gauge. Then place the wall board to be trimmed against the upright board, clamp it in place, and cut it. See the illustration to the left.

Cut the second wall board the same way. For tray 1, adjust the back gauge measurement to the width of the base piece for tray 1 and cut the length of the wall board as described above.

Now you have cut all the board pieces. Label each board with a pencil mark so that they do not get mixed up. You should have eleven pieces of board.

B. COVERING MATERIAL

Make sure that all the figures on the work sheet for the width and length measurements of the covering and lining material have been added correctly.

First, cut two pieces of covering material for the walls. The long cut should run parallel with the machine direction or selvage of the roll of cloth. Next, cut a piece for the case and a piece for the spine lining. For these two pieces the machine direction of the cloth should run head to tail.

You now have four pieces of covering material.

Work sheet for determining dimensions for boards of Double-Tray Box

BOARD: _____

Control No. _____

Wall board: single thickness _____ or double thickness _____

Base board: " " _____ " " " _____

Title of book for label:

Case board: " " _____ " " " _____

COVERING MATERIAL: _____

LINING MATERIAL: _____

	Length	Width	Height	
BOOK DIMENSIONS =	_____	_____	_____	
	+ (A)	+ (B)	+ (C)	
TRAY 1 (base) Dimensions	= _____	= _____	= _____	= TRAY 1 (base) Height (Cut 3)
	+ (D)	+ (E)	+ (F)	
TRAY 2 (lid) Dimensions	= _____	= _____	= _____	= TRAY 2 (lid) Height (Cut 3)
	+ O	+ 1/16 (G)		
CASE DIMENSIONS (Cut 2)	= _____	= _____		
	+ O		+ (H)	
SPINE BOARD Dimensions	= _____		= _____	

Work sheet for determining dimensions for boards of Double-Tray Box

BOARD: DAVEY BOARD Control No. 003607

Wall board: single thickness or double thickness _____

Base board: " " _____ " " " _____

Case board: " " _____ " " " _____

Title of book for label:

SALICETUS

COVERING MATERIAL: BUCKRAM

ANTIDOTARIUS

LINING MATERIAL: FELT BACKED W. LIGHTWEIGHT PERMALIFE PAPER

ANIMAE

HAGENOVAE

1494

THATCHER 208

BOOK DIMENSIONS =

Length	Width	Height
<u>5 ¹⁴/₁₆</u>	<u>4 ⁴/₁₆</u>	<u>1 ³/₁₆</u>

+ <u>4 ¹/₁₆</u> (A)	+ <u>3 ¹/₁₆</u> (B)	+ <u>2 ¹/₁₆</u> (C)
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TRAY 1 (base) Dimensions

= 6 ²/₁₆

= 4 ⁶/₁₆

= 1 ⁵/₁₆

= TRAY 1 ^{WALL}(base) Height (Cut 3)

+ 4 ¹/₁₆ (D)

+ 3 ¹/₁₆ (E)

+ 3 ¹/₁₆ (F)

TRAY 2 (lid) Dimensions

= 6 ⁶/₁₆

= 4 ⁹/₁₆

= 1 ⁸/₁₆

= TRAY 2 (lid) Height (Cut 3)

+ 0

+ 1 ¹/₁₆ (G)

CASE DIMENSIONS (Cut 2)

= 6 ⁶/₁₆

= 4 ¹⁰/₁₆

+ 0

+ 2 ¹/₁₆ (H)

SPINE BOARD Dimensions

= 6 ⁶/₁₆

= 1 ¹⁰/₁₆

Work sheet for determining dimensions for covering material and lining material of Double-Tray Box

COVERING MATERIAL

- 1) Cut two pieces to cover walls:

WIDTH = height of Spine Piece x 2 _____
 plus 1-8/16" for turn-ins _____
 Total = _____

LENGTH = width of Tray 2 (lid) x 2 _____
 plus length of Tray 2 (lid) _____
 plus 1-8/16" for turn-ins _____
 Total = _____

- 2) Cut one piece to cover case:

WIDTH = width of Case Piece x 2 _____
 plus height of Spine Board _____
 plus 2 joints (5/16") _____
 plus 1-8/16" for turn-ins _____
 Total = _____

LENGTH = length of Case Piece _____
 plus 1-8/16" for turn-ins _____
 Total = _____

- 3) Cut one piece for spine lining:

WIDTH = height of Spine Board _____
 plus 2 joints (5/16") _____
 plus 1-8/16" for turn-ins _____
 Total = _____

LENGTH = length of book _____
 Total = _____

LINING MATERIAL

Cut two pieces for lining inside of trays:

WIDTH = width of book _____
 minus 1/16" _____
 Total = _____

LENGTH = length of book _____
 minus 1/16" _____
 Total = _____

Work sheet for determining dimensions for covering material and lining material of Double-Tray Box

COVERING MATERIAL

- 1) Cut two pieces to cover walls:

$$\begin{aligned} \text{WIDTH} &= \text{height of Spine Piece} \times 2 && \underline{3 \frac{4}{16}} \\ &\text{plus } 1\text{-}8/16\text{" for turn-ins} && \underline{1 \frac{8}{16}} \\ \text{Total} &= && 4 \frac{12}{16} \end{aligned}$$

$$\begin{aligned} \text{LENGTH} &= \text{width of Tray 2 (lid)} \times 2 && \underline{9 \frac{2}{16}} \\ &\text{plus length of Tray 2 (lid)} && \underline{6 \frac{6}{16}} \\ &\text{plus } 1\text{-}8/16\text{" for turn-ins} && \underline{1 \frac{8}{16}} \\ \text{Total} &= && 17 \end{aligned}$$

- 2) Cut one piece to cover case:

$$\begin{aligned} \text{WIDTH} &= \text{width of Case Piece} \times 2 && \underline{9 \frac{4}{16}} \\ &\text{plus height of Spine Board} && \underline{1 \frac{10}{16}} \\ &\text{plus 2 joints (} 5/16\text{"}) && \underline{5/16} \\ &\text{plus } 1\text{-}8/16\text{" for turn-ins} && \underline{1 \frac{8}{16}} \\ \text{Total} &= && 12 \frac{11}{16} \end{aligned}$$

$$\begin{aligned} \text{LENGTH} &= \text{length of Case Piece} && \underline{6 \frac{6}{16}} \\ &\text{plus } 1\text{-}8/16\text{" for turn-ins} && \underline{1 \frac{8}{16}} \\ \text{Total} &= && 7 \frac{14}{16} \end{aligned}$$

- 3) Cut one piece for spine lining:

$$\begin{aligned} \text{WIDTH} &= \text{height of Spine Board} && \underline{1 \frac{10}{16}} \\ &\text{plus 2 joints (} 5/16\text{"}) && \underline{5/16} \\ &\text{plus } 1\text{-}8/16\text{" for turn-ins} && \underline{1 \frac{8}{16}} \\ \text{Total} &= && 3 \frac{7}{16} \end{aligned}$$

$$\begin{aligned} \text{LENGTH} &= \text{length of book} && \underline{5 \frac{14}{16}} \\ \text{Total} &= && \end{aligned}$$

LINING MATERIAL

- Cut two pieces for lining inside of trays:

$$\begin{aligned} \text{WIDTH} &= \text{width of book} && \underline{4 \frac{4}{16}} \\ &\text{minus } 1/16\text{"} && \underline{1/16} \\ \text{Total} &= && 4 \frac{3}{16} \end{aligned}$$

$$\begin{aligned} \text{LENGTH} &= \text{length of book} && \underline{5 \frac{14}{16}} \\ &\text{minus } 1/16\text{"} && \underline{1/16} \\ \text{Total} &= && 5 \frac{13}{16} \end{aligned}$$

C. LINING MATERIAL

Cut two pieces of lining material to the dimensions designated at the bottom of the work sheet. The grain should run head to tail.

You now have two pieces of lining material.

IV. Assemble the Box

A. ASSEMBLE THE BOARDS FOR THE TRAYS (DIAGRAMS 90–92)

See diagrams 90 and 91. Look over the plan for the double-tray book box. Note that the walls of the trays are glued to the top of the base pieces.

See diagram 92. Separate the board pieces into two piles for tray 1 and tray 2. Assemble one tray at a time. Glue the wall boards on the appropriate edges and make them abut at the corners while resting on top of the base pieces.

Make two trays.

B. COVER THE TRAYS (DIAGRAMS 93–99)

The following directions apply to both trays.

1. Cover the outside of the tray by wrapping one piece of material around the walls. See diagram 93.

Position the cloth strip so that it extends approximately $\frac{3}{4}$ inch below the bottom and beyond the spine edge of the tray walls.

2. Bottom turn-ins for the tray

Turn the tray over and cut the covering material at the bottom fore edge corners as shown in diagram 93.

After cutting the covering material at the corners, reglue the unattached covering material and turn it in.

3. Tray wall turn-ins

Make all the cuts in the covering material before doing any gluing or turning in.

Follow the directions for cutting the covering material for butt-jointed corner C (on diagram 94 and 95) and for flat right angle corner B (on diagram 96).

See diagram 97. All the cuts have been made. Glue down the flaps in the numerical order indicated.

See diagram 98. This close-up shows how to turn in the flaps at butt-jointed corner C. The head or tail wall turn-in must be glued down first. The fore edge turn-in is cut so that when it is glued in place the 45°-angle cuts form neat diagonal lines across the wall corner and at the inside corner base. See the close-up in diagram 99.

See diagram 99. The fore edge flap is always glued down last. You have now covered the tray.

Repeat these instructions for the second tray.

C. COVER THE CASE (DIAGRAM 100)

See diagram 100. Assemble the two case pieces, the spine board, and the covering material.

The joint width is the most difficult dimension to determine accurately. The following is a standard measurement for this box. Experience and experimentation will provide more accurate measurements.

Joint width Equal to the thickness of the board used in the case plus 7 thicknesses of covering material.

Glue the covering material onto the three boards.

To make the four outside corner turn-ins, follow the directions in diagram 100.

After cutting the covering material at the corners, reglue the unattached covering material and turn it in.

You have now completed the case.

D. ATTACH THE TRAYS TO THE CASE (DIAGRAM 101)

Glue the bottom of each covered tray onto the covered case. The trays must be attached firmly to the case. To achieve this, fill the trays with boards and place the assembled trays in a press, maintaining pressure for at least 20 minutes. (The filler boards must be higher than the tray walls.)

Two methods are described below. Pick the one which applies to your situation.

METHOD ONE

1. If the opened box is smaller than your press plate, you can attach the two trays at the same time. You can use filler boards stacked to the height of each tray. Then place the entire opened box in the press and leave it under pressure for at least 20 minutes.

2. If only one tray will fit into the press, place each assembled tray under pressure separately.

These instructions must be executed in relative haste because the adhesive must not dry before the trays are put in the press. Apply glue to the bottom of the covered base tray (tray 1) and place it on the base case board centered head to tail and flush with the spine edge of the base case board.

Apply glue to the bottom of the covered lid tray (tray 2) and place it on the lid case board, flush with the head, tail, and spine edge.

Fill both trays with boards, up to $\frac{3}{4}$ inch above the walls. (Each pile must be the same height.) Place the filled trays in the press and leave them under pressure for at least 20 minutes. NOTE: If too much adhesive has been used, the trays will slip out of position. Make sure the adhesive is evenly distributed before you position the trays. The pressure should be gentle initially and increased slowly to avoid any slippage in the press.

METHOD TWO

Apply glue to the bottom of the covered base tray (tray 1) and place it on the base case board centered head to tail and flush with the spine edge of the base case board.

Place filler boards within the tray and have them extend at least $\frac{3}{4}$ inch above the walls of the tray. Place the filled trays in the press and leave it under pressure for at least 20 minutes. Be sure the tray does not slip out of position when the press is tightened.

Glue the bottom of the covered lid tray (tray 2) onto the lid case board flush with the head, tail, and spine edge.

Place filler boards within the tray and have them extend at least $\frac{3}{4}$ inch above the walls of the tray. Place the filled tray in the press and leave it under pressure for at least 20 minutes. Be sure the tray does not slip out of position when the press is tightened.

Now you have attached both trays to the case. See diagram 101.

E. ATTACH THE SPINE LINING (DIAGRAM 101)

After you attach the trays to the case, glue down the spine lining covering material. It should be the same length as the inside of the base tray. Position it approximately $\frac{3}{4}$ inch into the base tray and rub it tightly into the joints as you pull it across the spine case board and onto the lid tray.

You are now ready to line the box.

NOTE: It is important to attach the lining material shortly after you attach the trays to the case. The base of each tray needs to be lined or it may warp. The lining helps to eliminate this warping.

F. ATTACH THE LINING MATERIAL (DIAGRAM 102)

The lining material has been cut to the size of the book. Glue one piece onto the base of the base tray. This piece should cover the base completely. Glue the other piece of the material onto the base of the lid tray, flush with the spine edge and centered upon the head, tail, and fore edge walls.

You have now finished the box. Place a light weight on each tray and allow the opened box to dry completely before inserting the book.

DIAGRAM 90 An Opened Double-Tray Book Box

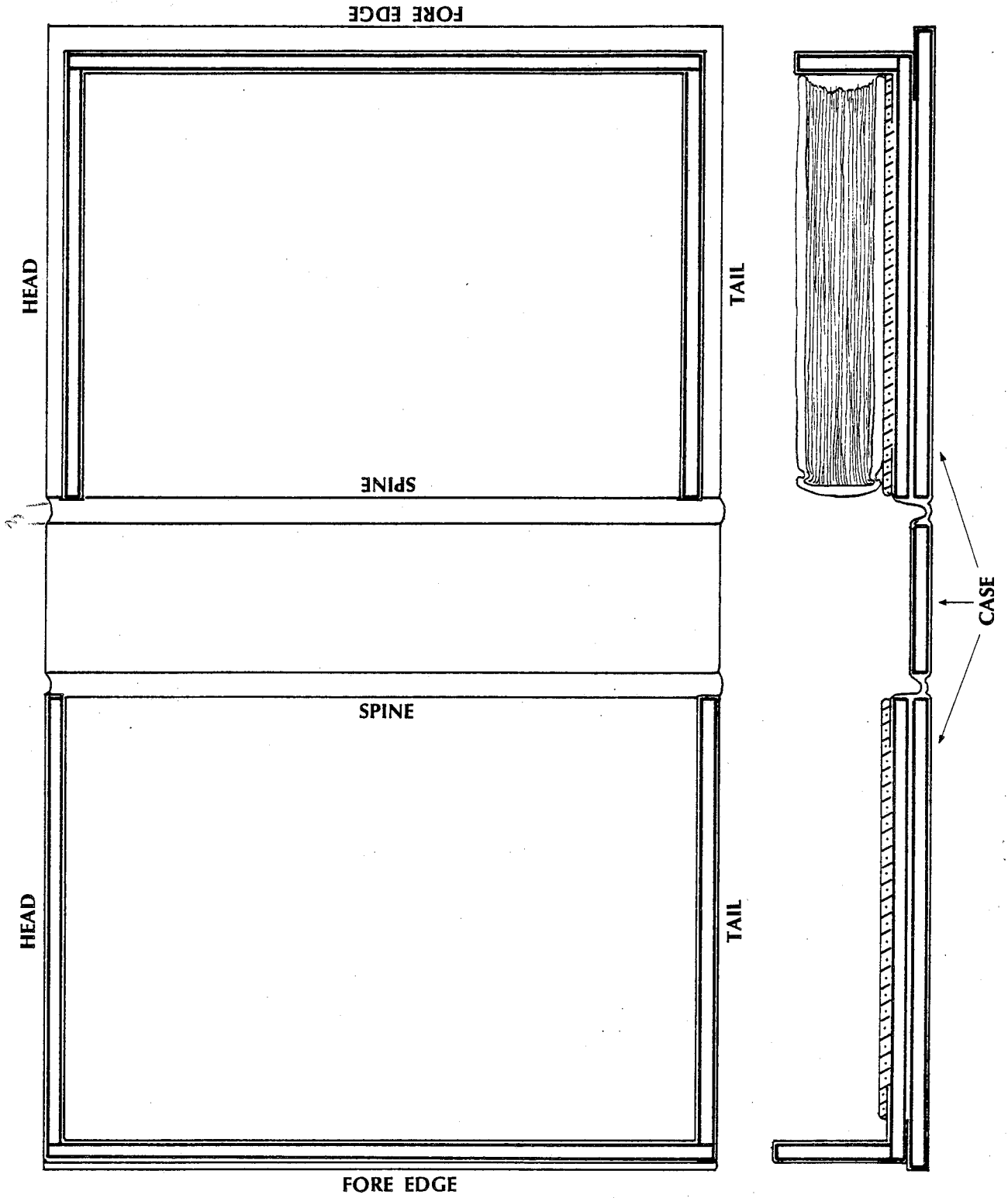


DIAGRAM 91 Tray Spine Elevation

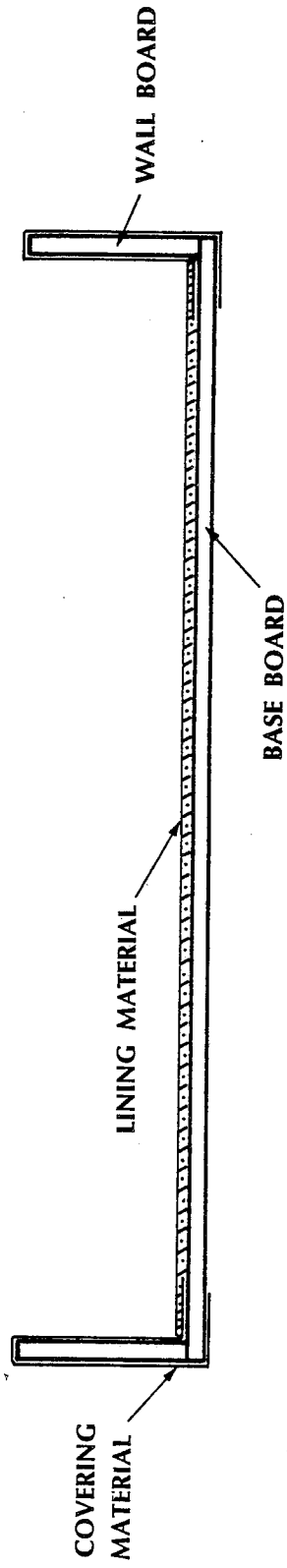


DIAGRAM 92 Assemble the Boards to Make the Trays

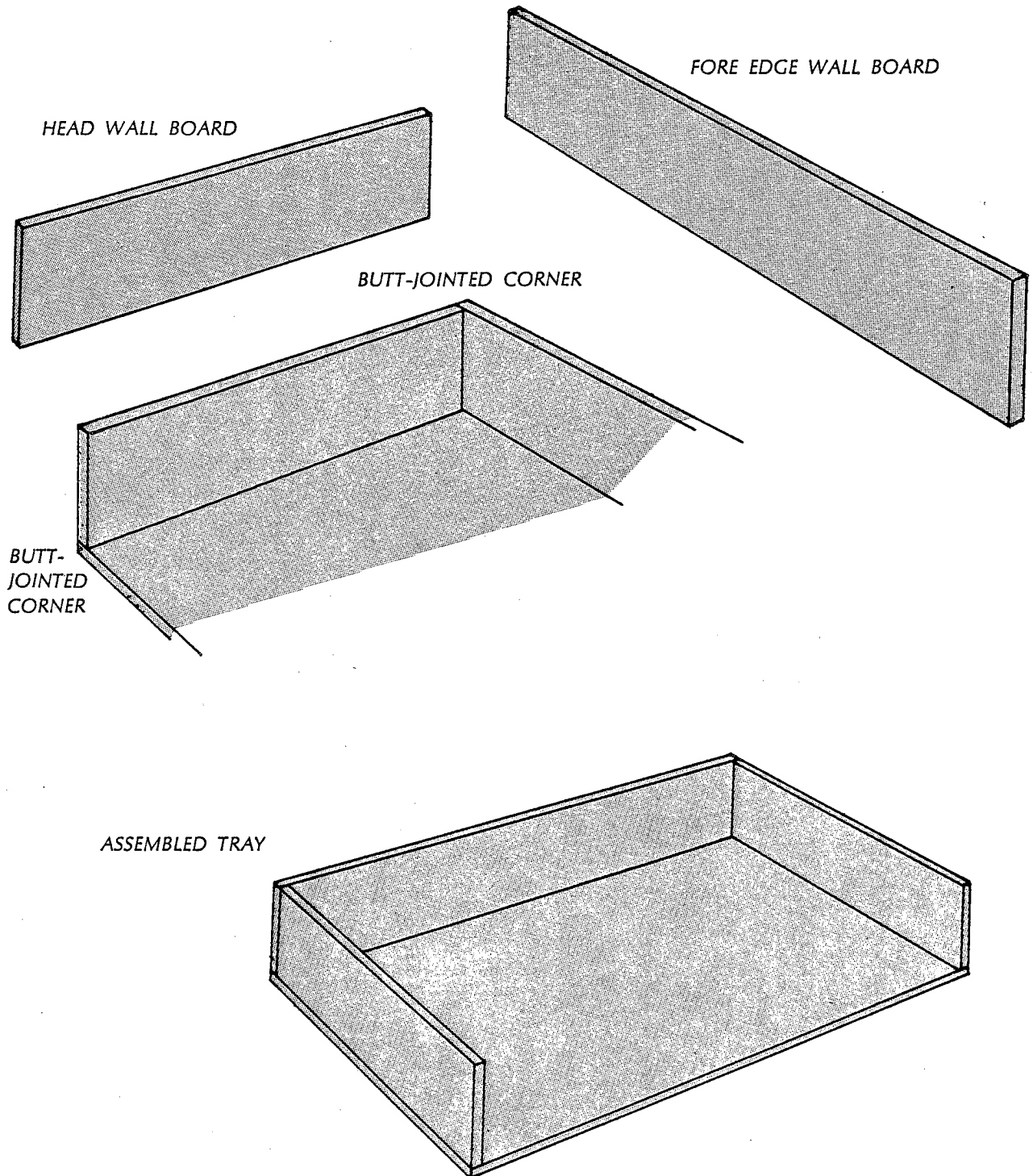
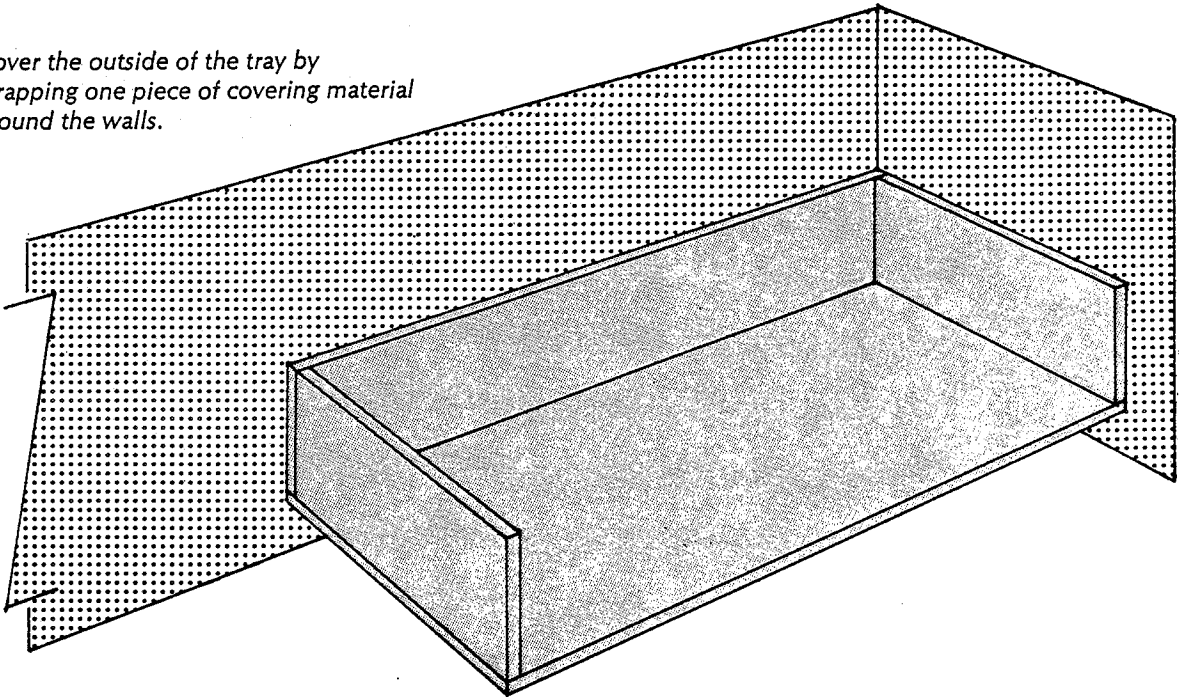
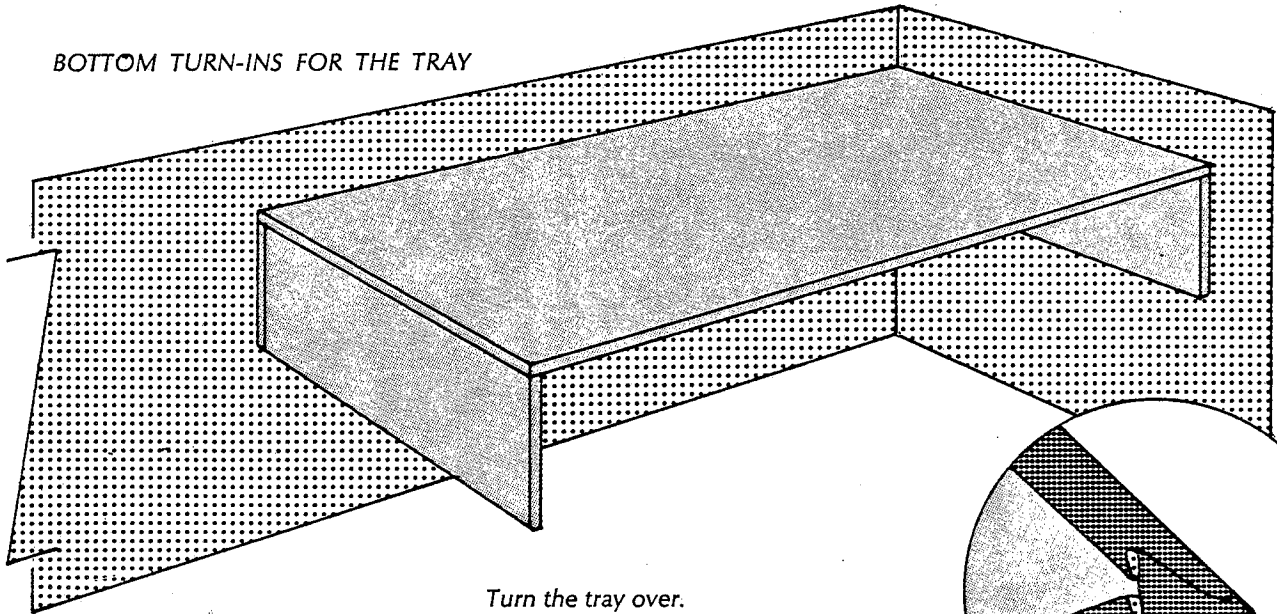


DIAGRAM 93 **Cover the Trays**

Cover the outside of the tray by wrapping one piece of covering material around the walls.



BOTTOM TURN-INS FOR THE TRAY



Turn the tray over.

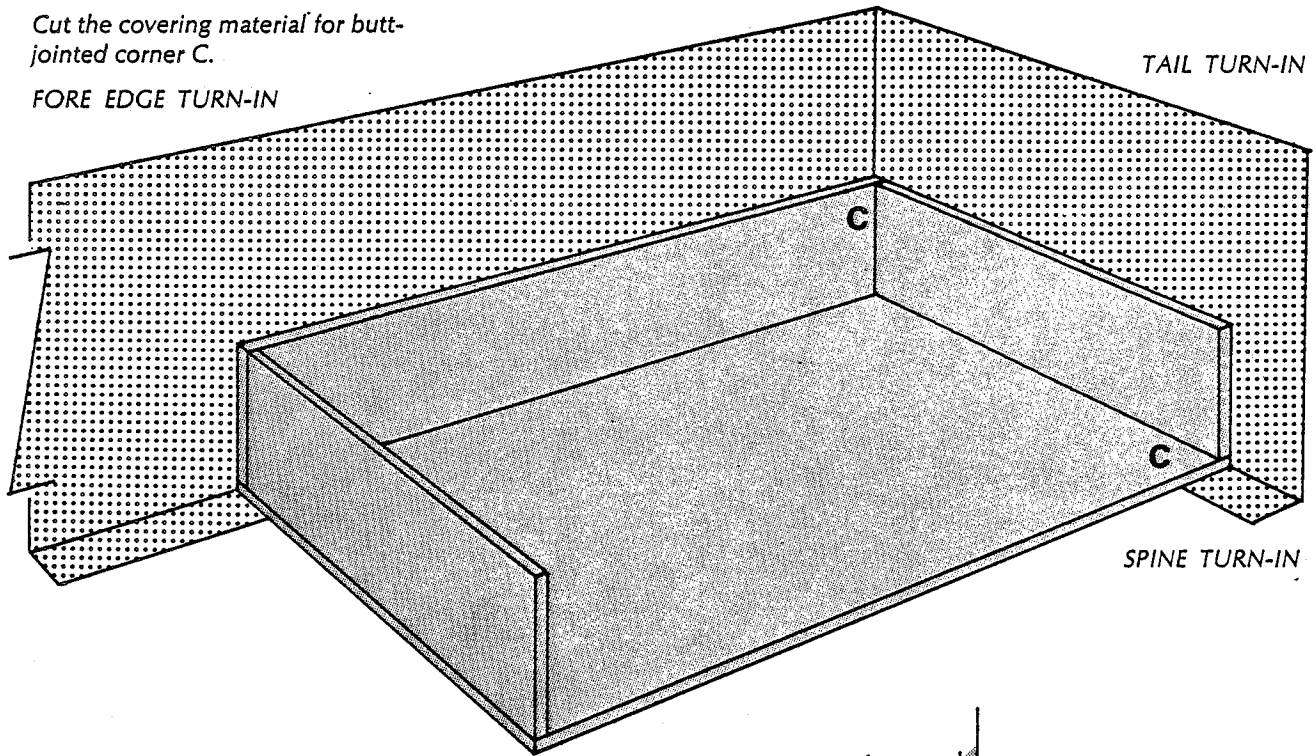
Pinch the covering material together at the corner as shown.

Cut away the excess covering material with a pair of scissors. Do not expose the board at the corner of the tray.

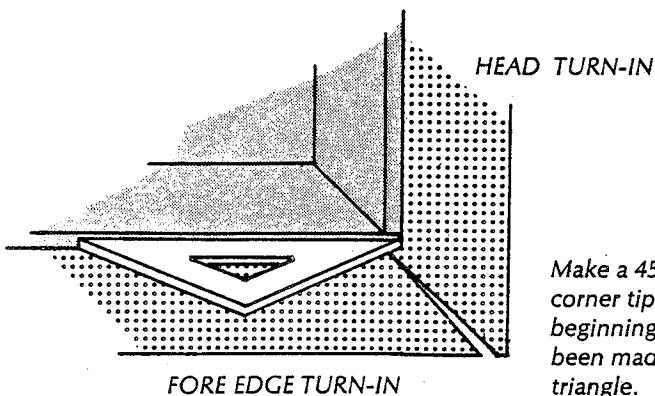
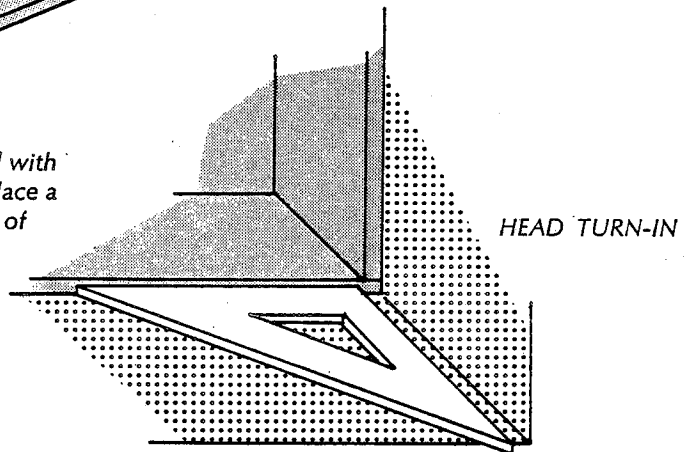
DIAGRAM 94 **Cover the Tray**

Cut the covering material for butt-jointed corner C.

FORE EDGE TURN-IN



Place the tray on the fore edge wall with the covering material facing you. Place a triangle at a right angle to the edge of the tray as shown.



This distance is a fraction larger than the thickness of the vertical wall.

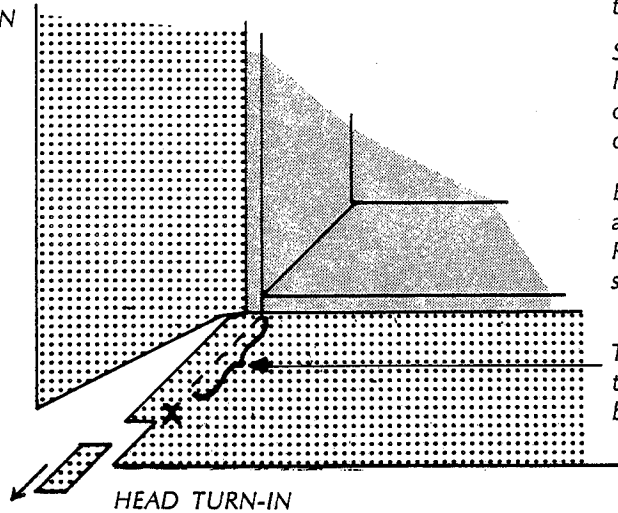
Using a scalpel, start to cut a distance away from the wall edge which is equal to the thickness of the horizontal wall.

Make a 45° angle cut starting at the corner tip of the box and extend it to the beginning of the cut which has already been made. Note the placement of the triangle.

DIAGRAM 95 **Cover the Tray**

Cut the covering material for butt-jointed corner C.

FORE EDGE TURN-IN



HEAD TURN-IN

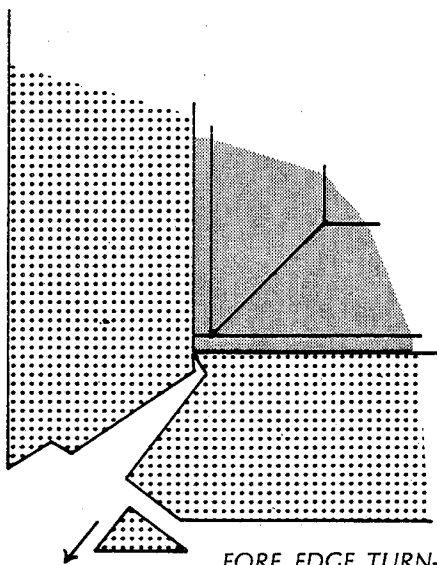
Turn the tray onto its head or tail wall to make the next cut.

Extend the dotted line straight out from the inside of the corner.

Start to cut at a distance equal to the height of the tray wall plus the thickness of the board as indicated by X on the diagram.

Beginning at X, make a short second cut at a right angle to the previous cut. Remove a tab of covering material as shown.

This distance is equal to the height of the tray wall plus the thickness of the board.

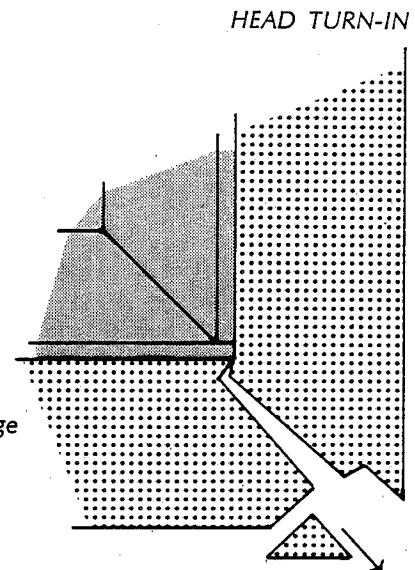


FORE EDGE TURN-IN

Turn the tray back onto its fore edge wall to make the last cuts.

Start to cut at a distance equal to the height of the tray wall plus a thickness of board. Cut on a 45° angle.

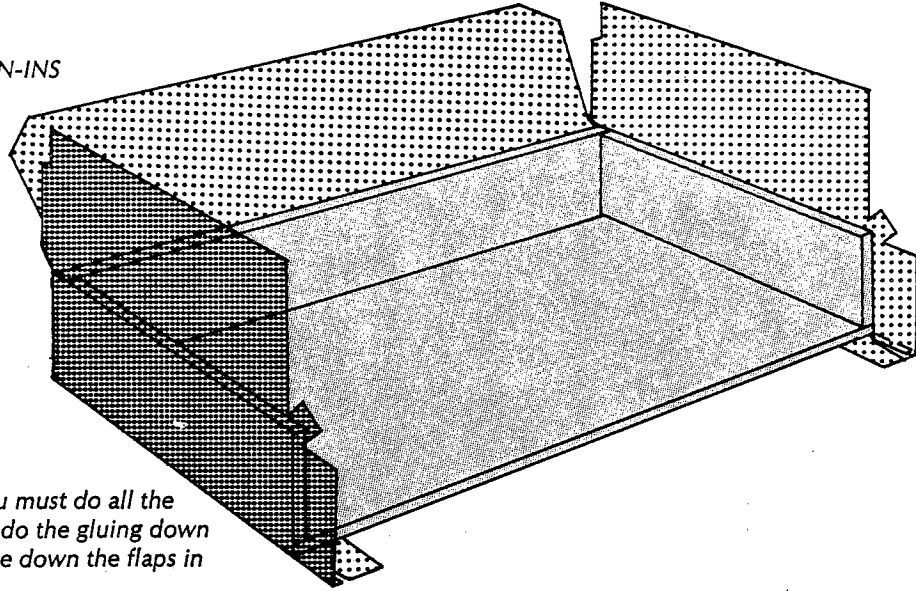
NOTE: The second cut is a mirror image of the first cut. Make both cuts on the covering material for the fore edge turn-in.



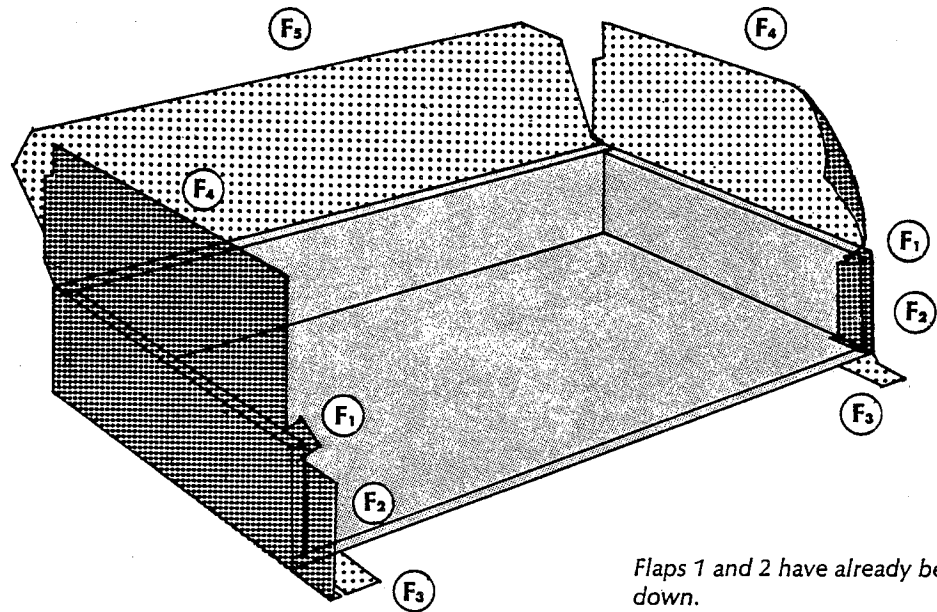
FORE EDGE TURN-IN

DIAGRAM 97 **Cover the Tray**

TRAY WALL TURN-INS



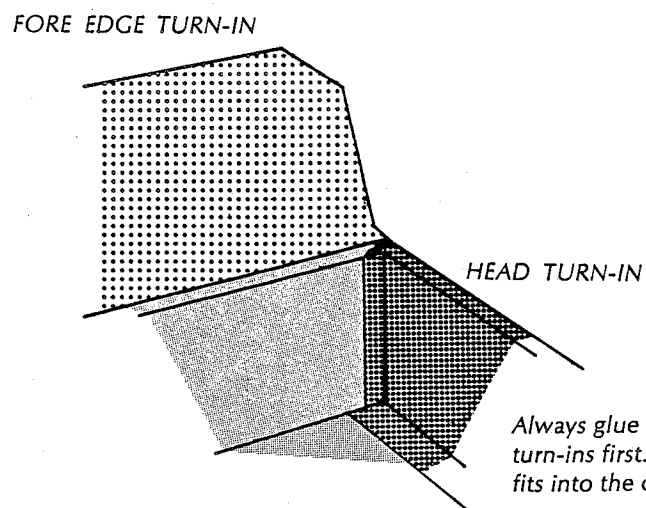
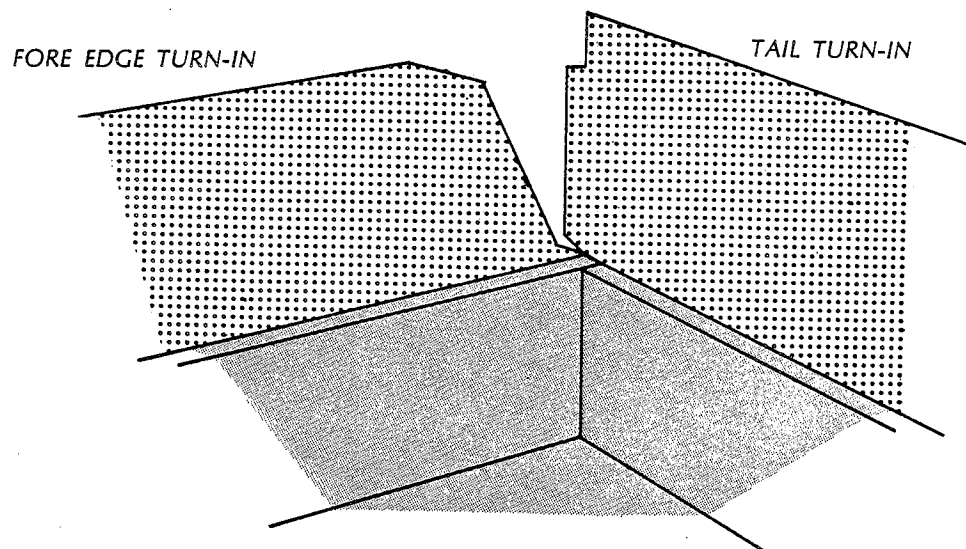
Remember that you must do all the cutting before you do the gluing down and turning in. Glue down the flaps in numerical order.



Flaps 1 and 2 have already been glued down.

DIAGRAM 98 **Cover the Tray**

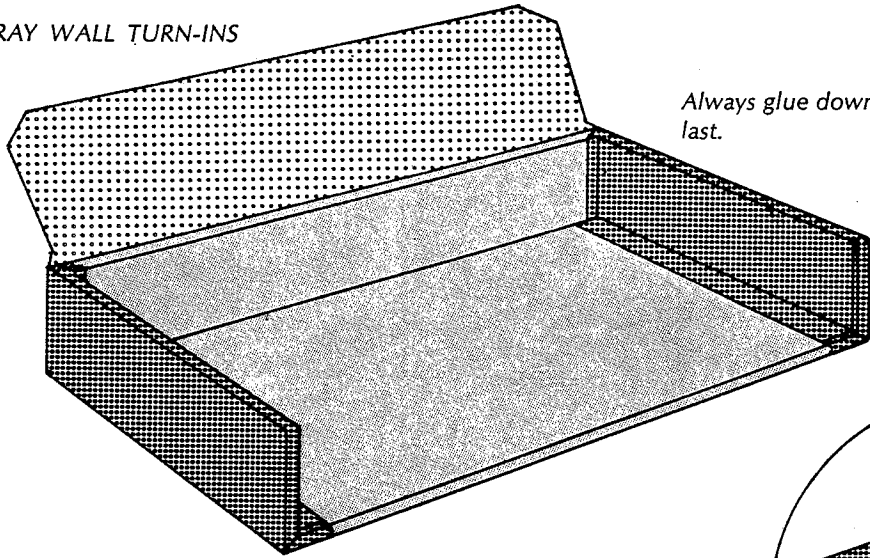
TRAY WALL TURN-INS FOR BUTT-JOINED CORNER C



Always glue down the head and tail turn-ins first. Note how the shaped cut fits into the corner of the base.

DIAGRAM 99 **Cover the Tray**

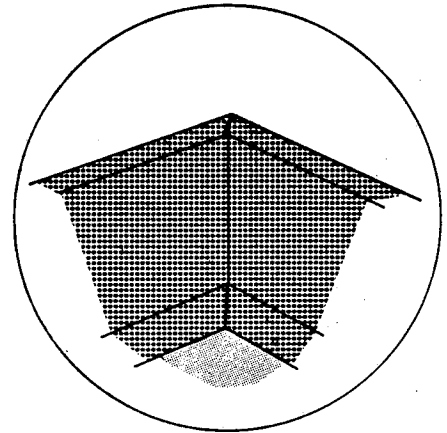
TRAY WALL TURN-INS



Always glue down the fore edge flap last.

This is a close-up of the covered butt-jointed corner.

NOTE: The angled cuts made on this turn-in produce neat diagonal lines across the wall corner and at the inside base of the corner.



COVERED TRAY

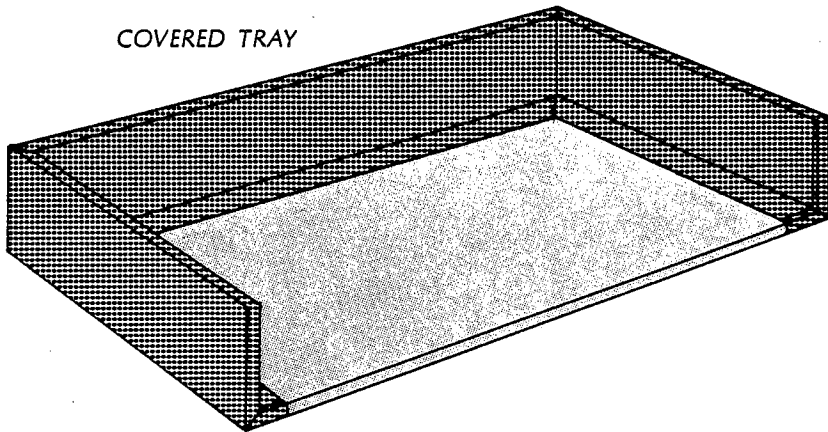
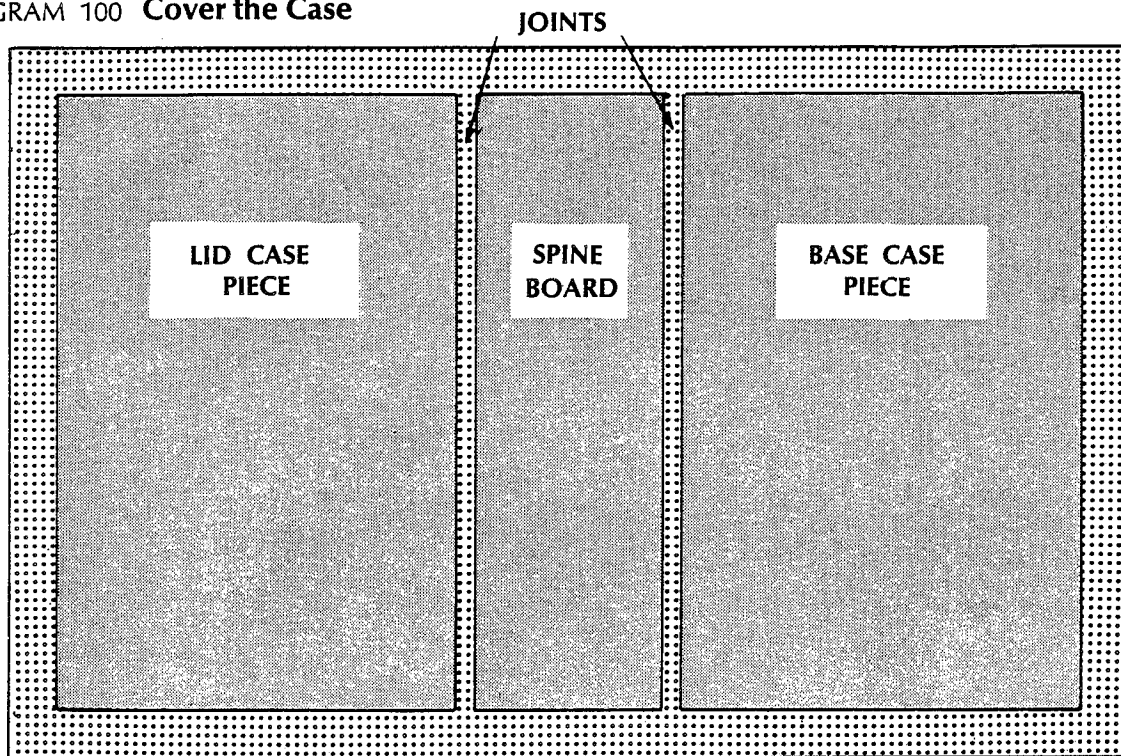
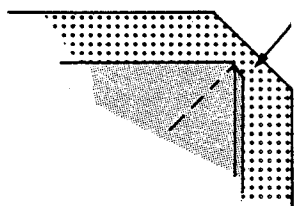


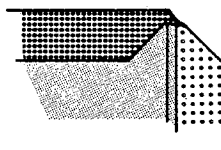
DIAGRAM 100 Cover the Case



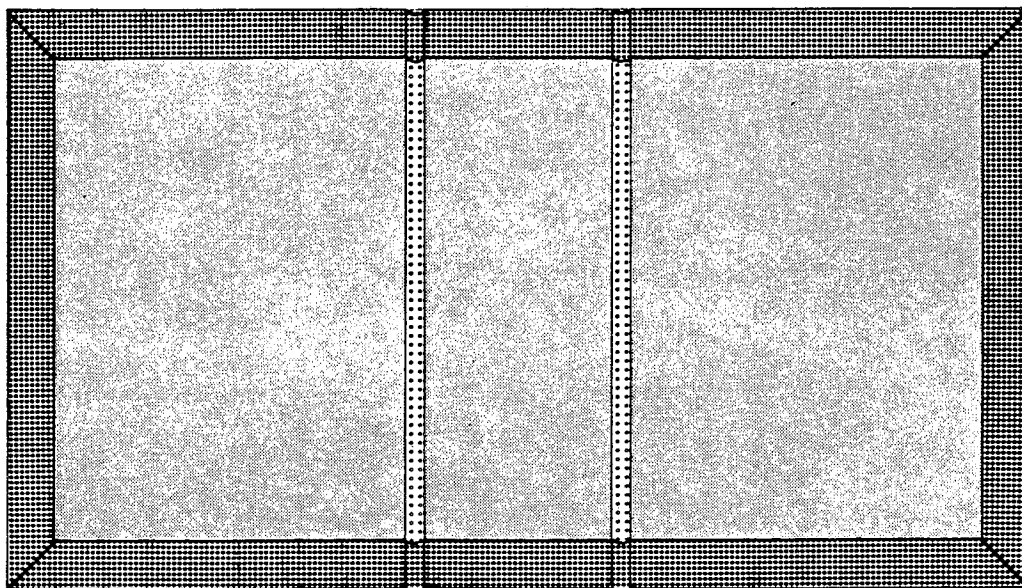
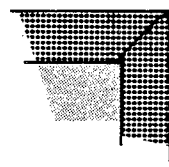
The corner cut is perpendicular to an imaginary line that bisects the corner of the board.



This distance equals 2 thicknesses of board.



Attach the covering material to the top and sides of the board at the corner before turning in the last flap.



NOTE: Be sure to make clean cuts and a neat turn-in, as the fore edge tips of the base case board will still be visible after the tray is attached.

DIAGRAM 101 Cover the Spine

After you glue the covered trays onto the covered base, glue on the spine covering piece.

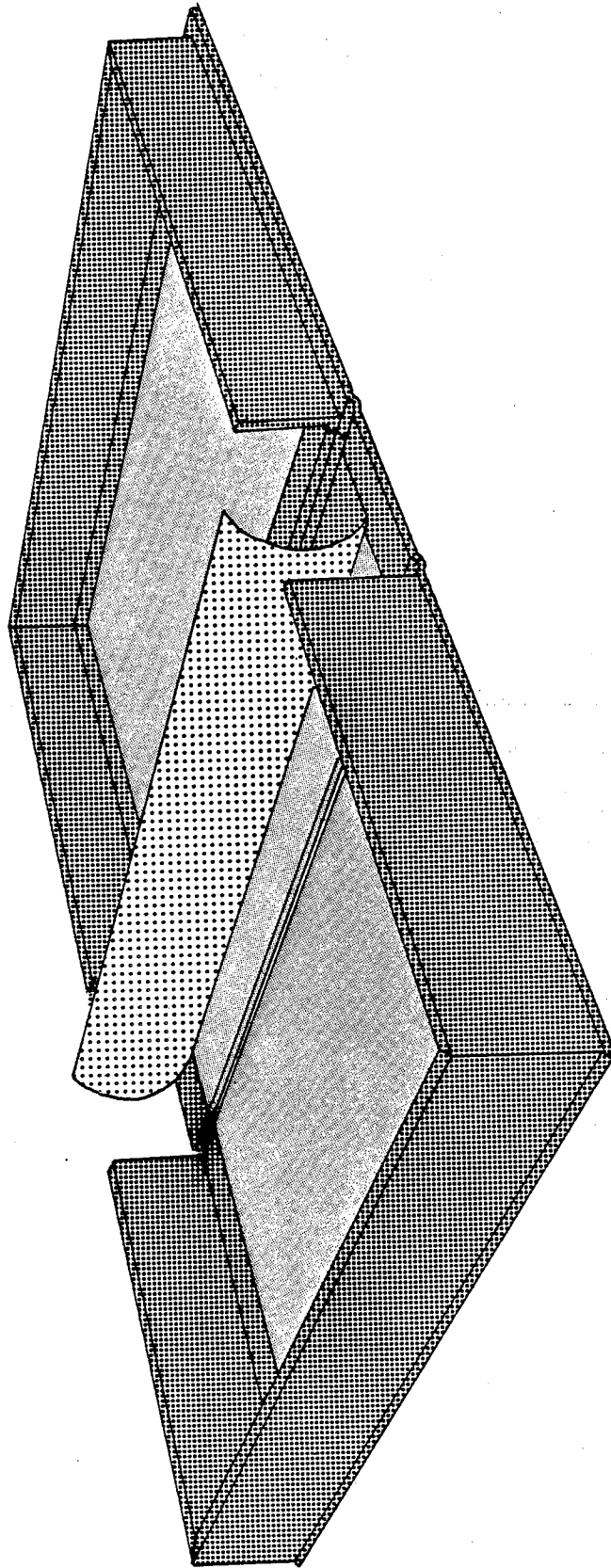


DIAGRAM 102 A Completed Double-Tray Book Box

