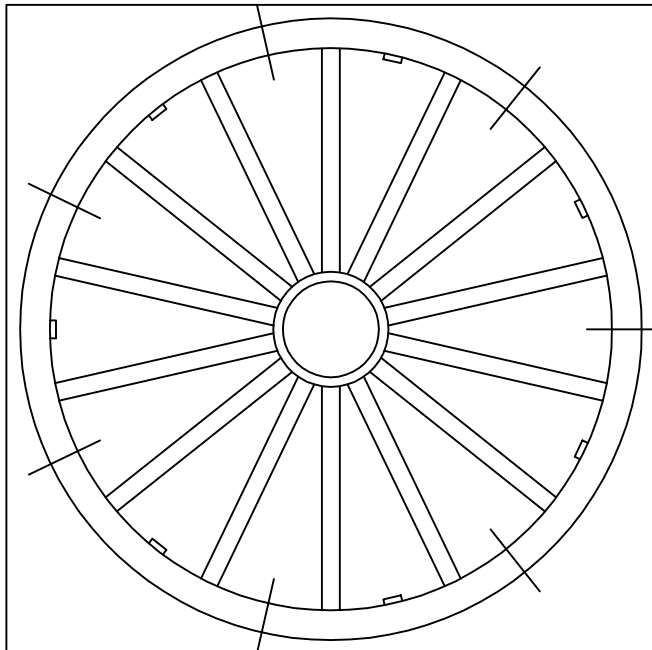


ASSEMBLY PATTERN, CUT OUT, REMOVE CENTER HOLE, AND AFFIX TO JIG WITH A FEW SPOTS OF GLUE

## GUNS OF HISTORY

WHEEL CONSTRUCTION PATTERN

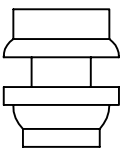
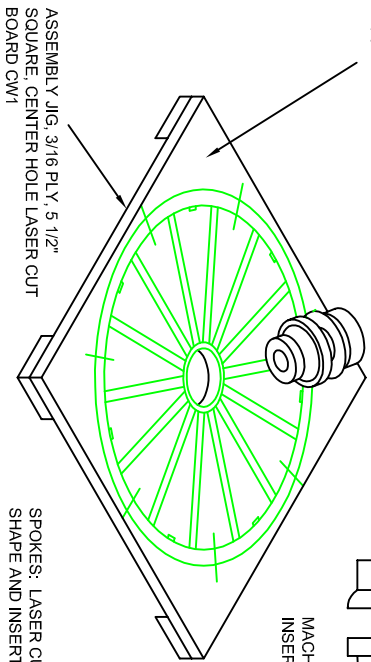


ASSEMBLY PATTERN, CUT OUT, REMOVE CENTER HOLE, AND AFFIX TO JIG WITH A FEW SPOTS OF GLUE

## GUNS OF HISTORY

WHEEL CONSTRUCTION PATTERN

PAPER ASSEMBLY PATTERN SUPPLIED:



OUTBOARD END  
NOTE THAT OUTBOARD END GOES DOWN

MACHINED METAL HUB  
INSERT IN CENTER HOLE

RISER BLOCKS SUPPLIED, BOARD CW1  
GLUE TO UNDERSIDE OF JIG

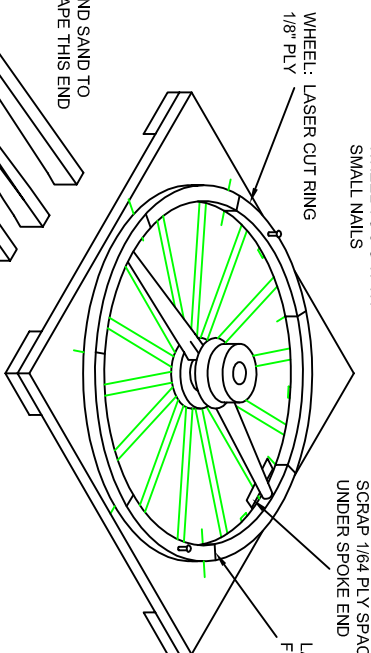
SPOKES: LASER CUT, 3/32 BASSWOOD, BOARD CW2  
SHAPE AND INSERT IN HUB, BUTT TO WHEEL

NOTE THAT SPOKES ARE NOT SYMMETRICAL

THIS SIDE UP

CARVE AND SAND TO  
OVAL SHAPE THIS END

COVER PATTERN WITH  
WAXED PAPER  
DRILL AND SECURE  
WHEEL TO JIG WITH  
SMALL NAILS

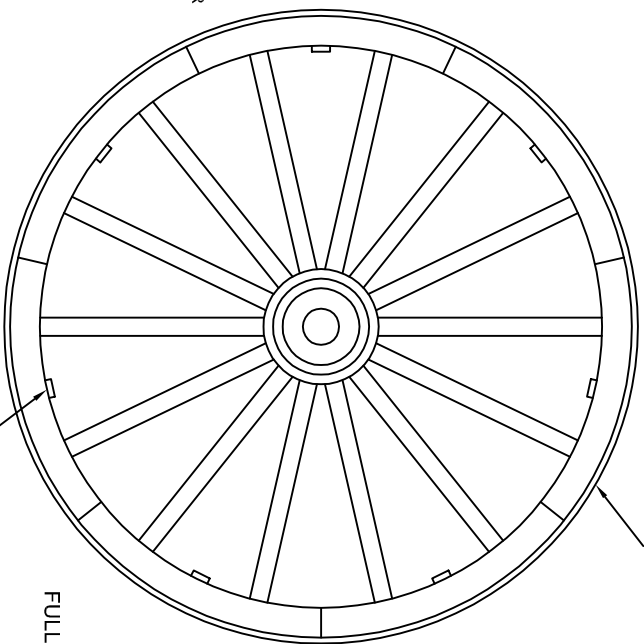
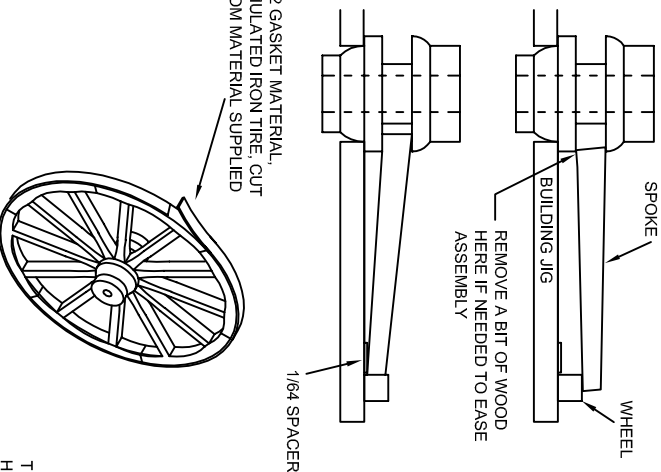


SCRAP 1/64 PLY SPACER  
UNDER SPOKE END

LASER ENGRAVED  
FELLE JOINT MARKS

IRON TIRE, CUT FROM  
GASKET MATERIAL SUPPLIED

1/32 GASKET MATERIAL,  
SIMULATED IRON TIRE, CUT  
FROM MATERIAL SUPPLIED



FULL SIZE

THE IRON TIRES WERE SECURED TO THE WHEEL WITH FLAT  
HEAD BOLTS AND SQUARE NUTS ON THE INSIDE OF THE  
WHEEL. CUT SIMULATED NUTS FROM STRIP STOCK SUPPLIED

FOR ADDED DETAIL, LIGHTLY CUT FELLE JOINT  
MARKS AROUND WHEEL WITH RAZOR SAW OR KNIFE  
CUT OUT CENTER HOLE IN PATTERN. TACK GLUE TO  
JIG. COVER PATTERN WITH WAXED PAPER. DRILL  
AND FASTEN WHEEL TO PATTERN WITH SMALL NAILS  
PROVIDED.

CARVE AND SAND SPOKES AS SHOWN. FIT AND  
INSERT EACH SPOKE IN HUB, THEN BUTT TO WHEEL  
GLUE IN PLACE USING A GAP FILLER CA GLUE  
THE 1/64 SPACERS WILL CENTER THE SPOKE ON THE  
WHEEL

WHEN ALL SPOKES ARE IN PLACE, APPLY THIN CA ALL  
AROUND HUB AND TO EACH SPOKE END AT WHEEL,  
TURN WHEEL OVER AND REPEAT

FILL NAIL HOLES AND FINISH WHEEL. THEN APPLY 1/8  
WIDE STRIP IRON TIRE. CUT FROM GASKET MATERIAL  
SUPPLIED

### PARTS LIST

- LASER CUT BOARD CW1, 1/8 PLY
- LASER CUT BOARD CW2, 3/32 BASSWOOD
- MACHINED HUBS (2)
- BLACK GASKET MATERIAL 1/2" X 11"
- STRIP WOOD 1/32" X 3/32" X 6"
- 1/64" PLY, 3/16" X 3"
- BRASS NAILS, 1/2", (4)
- PATTERN SHEET (1)

# GUNS OF HISTORY

CANNON CARRIAGE WHEEL CONSTRUCTION

BOB CRANE 2010

© MODEL EXPO, INC.

# GUNS & HISTORY

## AMERICAN CIVIL WAR

### 6-POUNDER

### JAMES

#### WOOD CARRIAGE ASSEMBLY INSTRUCTIONS

##### **AXLE (See Drawing #1)**

From WP 3332 5/16" x 5/16" x 3" cut piece 2-3/4" long. Sand two sides until piece fits snugly into notch on underside of trails. Find center at each end by marking two diagonals corner to corner and carefully drill a 3/16" diameter hole 7/16" deep in each end.

Glue 3/16" diameter by 1-5/16" long brass rod in each end leaving 7/8" protruding.

Cut two strips of gasket material 1/8" wide and glue around ends of wooden axle.

- Optional. Drill a small blind hole in the center of each face. Cut nails to 1/8" long, retaining the heads and glue into holes.

##### **TRAILS (See Drawing #2)**

Three laser cut pieces will make up the trails. Left and right trails are 3/16" thick and center trail is 1/8" thick.

Before any assembly, take the elevator screw and housing, file the screw head square to fit notch on the top of the center trail. Next — mark the top of the center trail for the hold-down pins of the elevator screw housing. 1/16" diameter holes will be drilled 1/8" deep after the trails have been laminated together.

Mark holes for rope cleats in center trail. File and sand the edges of the three trail pieces to remove laser burns where they will be visible after completion. Final sanding will be done after lamination. The left and right trails should be filed and sanded to the dimensions shown in the top view of the assembly, tapering so they are flush in the tow bar and skid. Carefully file the left and right trail ends so that the tow bar and skid can slide on after the trails are assembled.

Clamp left cheek to left trail using the axle for alignment making sure bottom edges are flush. Mark the holes in cheek onto the trail, disassemble and drill a blind hole in each location into trail.

**Note.** Only the two front holes in left trail.

Repeat procedure with right cheek and trail for three holes. Dry fit the various castings that will be attached to the trails making sure the holes are the correct size.

Glue the three trail pieces together using the axle to maintain alignment.

Sand top, bottom and front until all surfaces are level with each other.

Drill the holes for the elevating screw and housing pins and the rope cleats.

Cut two pieces 9/32" x 9/32" square from gasket material and glue one on each side of trails as shown. Drill small blind holes in four corners and glue in four cut off brass nails. Paint and glue bottom trail angle into position as shown.

## **CHEEKS (See Drawing #1)**

File and sand the back edge of each cheek so it is half round. In outside faces, locate and drill blind holes for spike rings, cap chain posts and linstock. Check castings and file as necessary to fit.

Lightly sand faces to remove laser burn marks. Edges can be sanded to remove loose material. It is not necessary to remove all black marks as edges will be covered.

Take 1/8" wide strips of gasket and, starting in front of axle notch, carefully glue to the edge of each cheek. At the trunnion notch press material into place with the 1/4" diameter trunnion until the glue has set. Continue to the back then cut and sand to the shape of the radius.

Glue another piece from the axle notch to the back on the bottom edge of the cheek and again sand to match the radius.

**Note:** Be sure to leave space on each side of axle notch to allow for side shackle installation.

Now drill blind holes for trunnion cap pins (two per cheek) and drift rods (five per cheek). Drill blind hole for piton in bottom of each cheek as shown.

Glue pieces of 16 gage brass wire into holes for cap chain posts, trunnion cap pins and drift rods. Allow approximately 3/32" to protrude at cap chain posts and trunnion cap pins and 1/16" at drift rods. Glue square washers from gasket material on drift rods.

Glue three #6 washers to inside face of each cheek after painting them black. Center washers on drift pin holes.

**Optional.** On front face of each cheek drill six blind holes and insert cut off brass nails leaving heads exposed.

## **WHEELS (See Assembly Drawing)**

Hubs should be painted before assembling the wheels. Spray hubs with aluminum primer then apply finish color of your choice.

Assemble both wheels in accordance with drawing instructions.

## **ASSEMBLY**

Glue five drift pins of 16 ga. Brass wire into trails (2 left and 3 right). They should be long enough to extend approximately 1/16" beyond the outside face of the cheeks when assembled to the trails and axle. Glue a short piece of 16 gage brass wire in the back hole on the left trail extending 3/32" from the face of the trail.

Center axle in notch on trail assembly and glue.

Finish all woodwork using satin varnish or finish of your choice.

Slide each cheek onto the drift pins and glue into place.

Glue square washers from gasket material on drift pins protruding through cheeks.

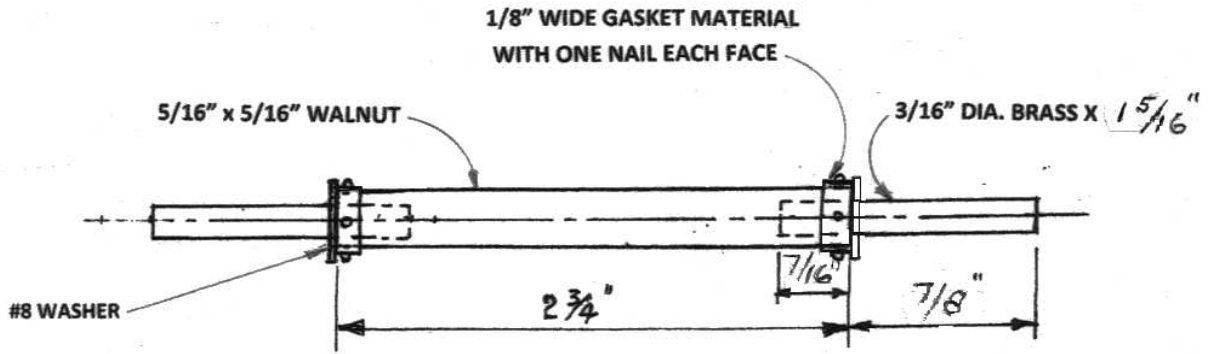
Glue bottom trail angle into position as shown.

Slide one #8 washer on each axle and glue.

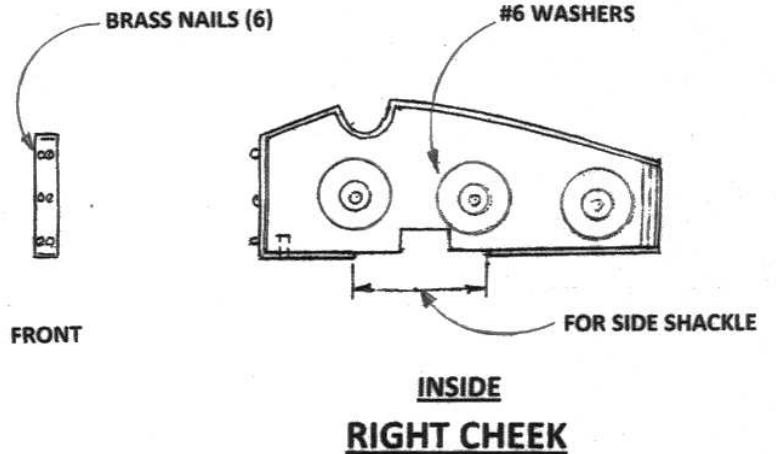
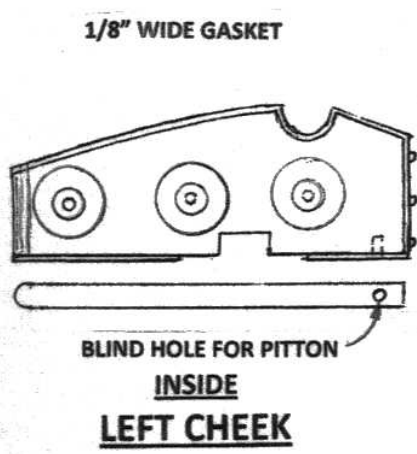
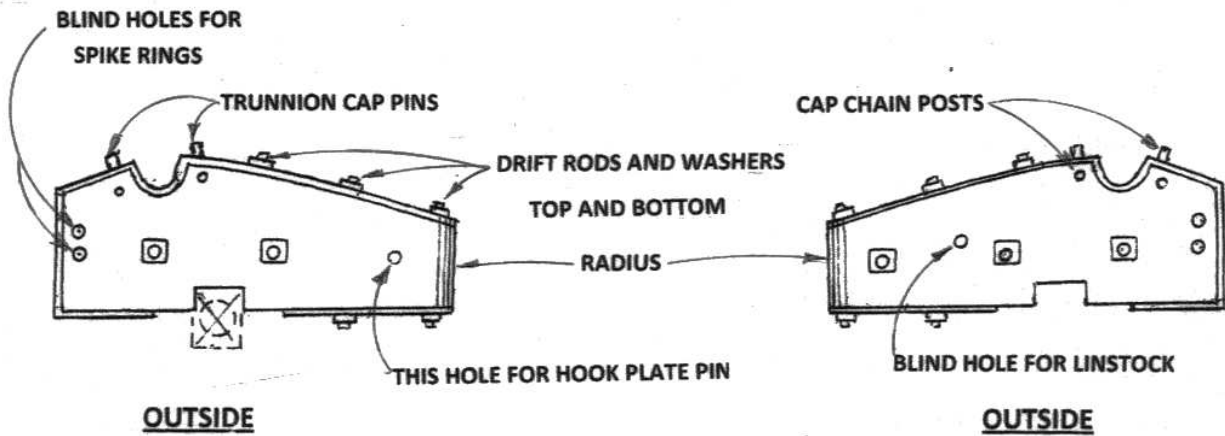
Install wheels on axles and glue cap and fid on each axle.

Follow other directions enclosed to install all other castings, etc. in their respective positions.

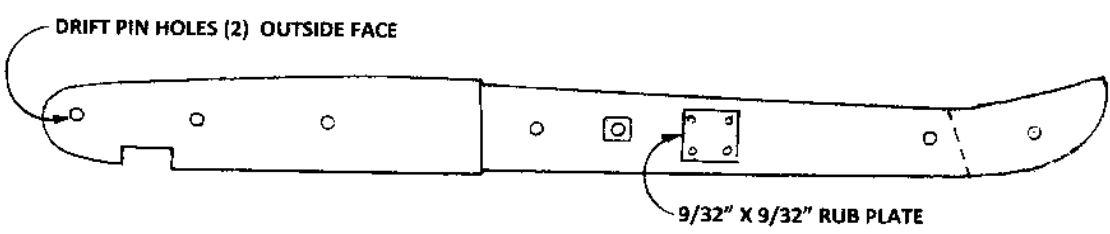
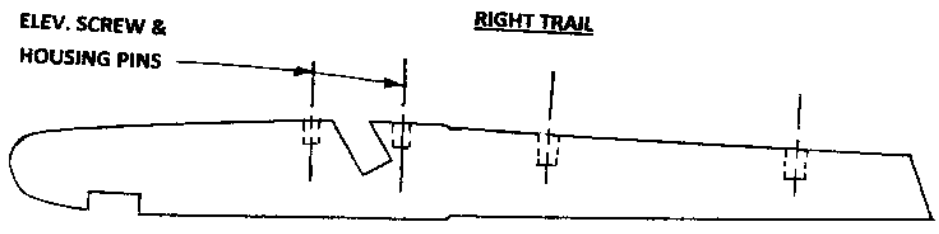
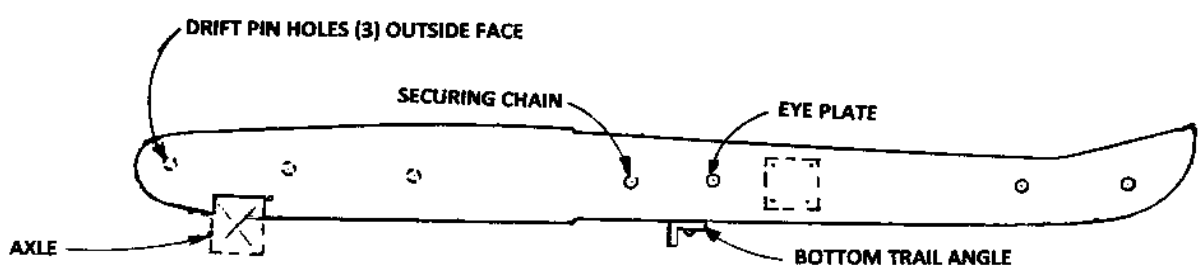
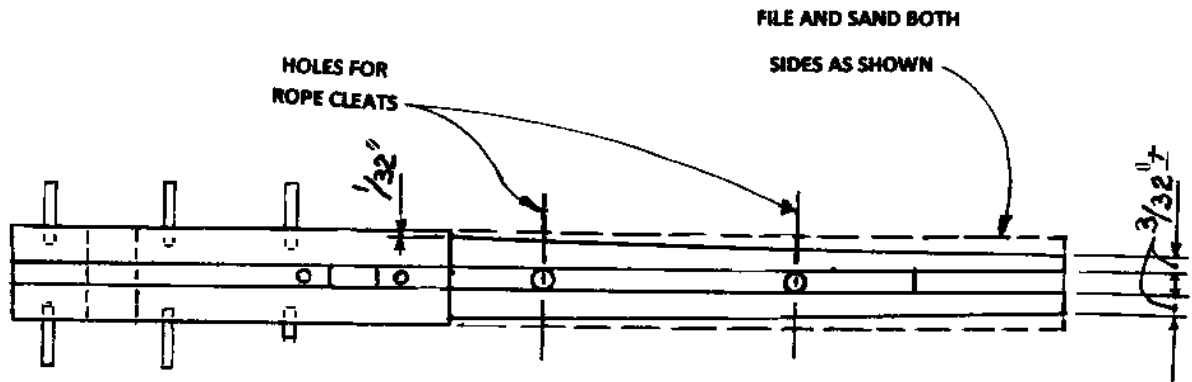
# WOOD CARRIAGE #1



## AXLE



# WOOD CARRIAGE #2



## TRAILS