

### CLOWN BOX

This electronic box with a clown face has several features that make it a good toy selection for a child with physical disabilities.

1. Only a light touch is necessary to activate any of the four switch panels.

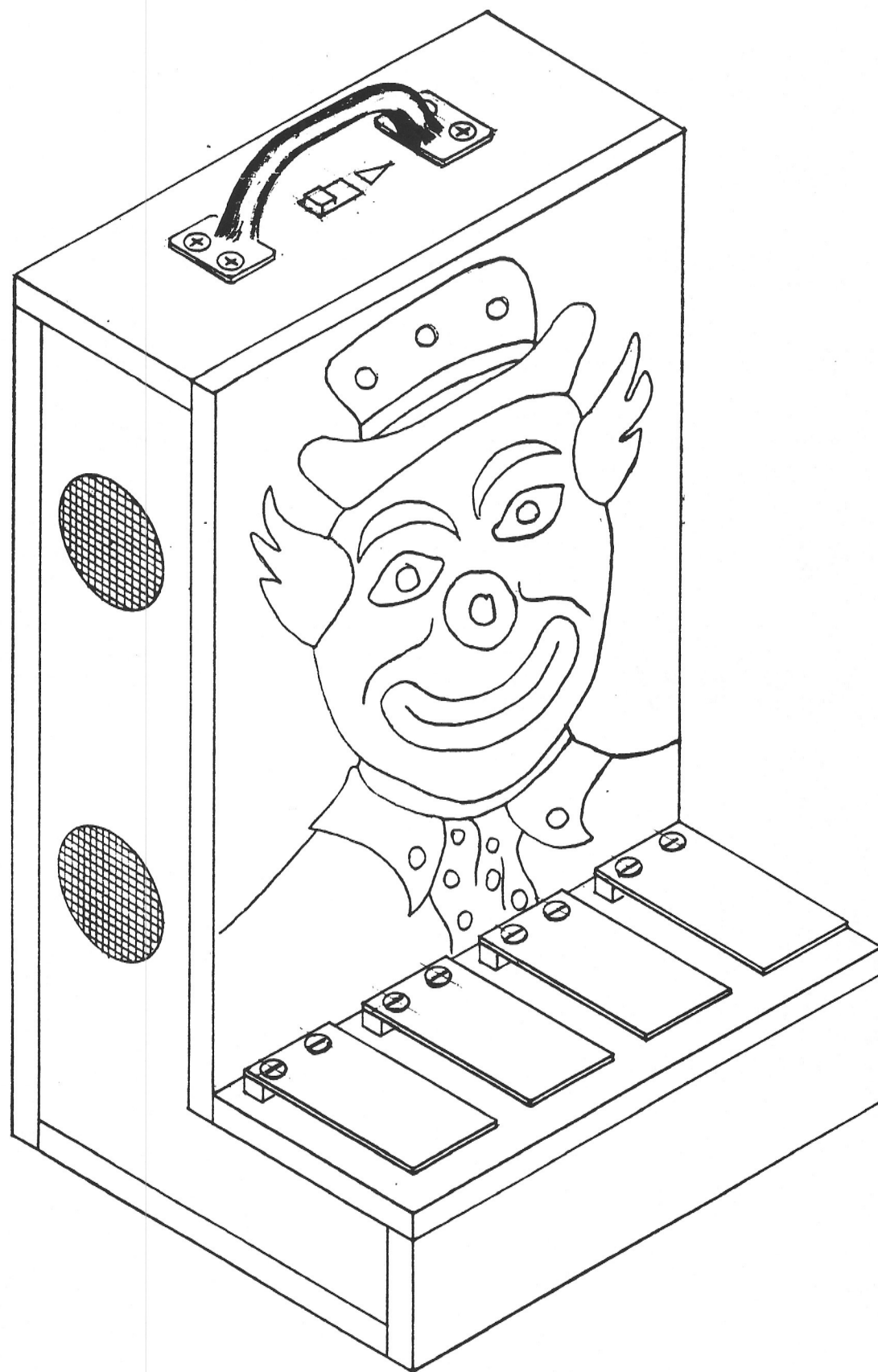
2. The switch panels are right in front, so even a child who has difficulty extending his arms will be able to reach them.

3. Pressing a brightly colored switch panel activates an area of the clown face that is similarly colored.

4. In addition to turning on lights on the clown face, pressing a switch panel results in a chime sound, a beep, a rattle, or a buzz.

5. More than one switch panel can be pressed at the same time and the resulting noise-and-light combination makes for great fun!

A small off-on switch is located under the carrying handle on top of the box. Switching to "off" after use assures that the batteries won't be used up if an object is accidentally laid on one of the switch panels.



Materials needed:

- Approximately 2' x 2' of 3/8" birch plywood
- Elmer's Carpenter's glue
- Varathane enamel or equal in 4 colors: red, blue, green and yellow
- Varathane gloss varnish or equal
- Seven 1" x #4 flat head wood screws
- Four pieces of aluminum screen wire, 3" x 3"
- Hot melt glue
- Four push switches. See pages 9 and 10 for details.
- One buzzer, Radio Shack #273-053
- One chime, Radio Shack #273-067
- One Piezo buzzer, Radio Shack #273-065
- Three threaded flashlight lamps, Radio Shack #272-1132
- Three threaded lamp sockets, Radio Shack #272-354
- Three green LED, Radio Shack #276-022A
- Three yellow LED, Radio Shack #276-021A
- Vibrator motor. See page 9 and 12 for details.
- Several feet of 22 gauge stranded wire, Radio Shack #278-1307
- Four pieces 1 1/4" x 2 1/2" x 1/16" Lexan, clear
- Four pieces 1 1/4" x 5/16" x 1/4" Lexan, clear
- Plexiglass cement or "Superglue"
- One 6" length of 1/4" O.D. x .040 wall clear plastic tube
- One 6" length of 5/16" O.D. x 3/16" I.D. clear plastic tube
- One 6" length of 3/8" O.D. x 1/4" I.D. clear plastic tube
- One 3/8" x #6 pan head sheet metal screw
- One 3/4" x #6 machine screw
- Two pieces .027" or .030" aluminum of size and shape as detailed on pages 11 and 12 (suggest using cut-off piece of gutter)
- Twelve 1/4" x #4 pan head sheet metal screws
- Eight 5/8" x #4 pan head sheet metal screws
- Three 1/4" x #2 (or cut to required size)
- One piece "Perfboard", Radio Shack #276-1395
- One piece 1 1/4" O.D. x 1" I.D. x 3 7/8" long Lexan tube
- One piece beryllium copper or brass shim stock for battery contact in battery tube. See page 11 for detail.
- One piece 22 gauge stainless or galvanized sheet metal 2 1/2" x 1 5/8" for battery door. See page 6 for detail.
- Rosin core solder
- One sash handle

Tools needed:

- Table saw
- Sander
- Electric drill and drill bit set
- Screwdriver, ruler, wire cutting pliers
- Hot melt glue gun
- Tin snips
- Soldering iron
- Flat file and round file
- Varnish brush and artist brush
- Carbon paper

Construction suggestions:

While this toy is not an easy one to make, it has been simplified with the unusually complete set of detailed drawings.

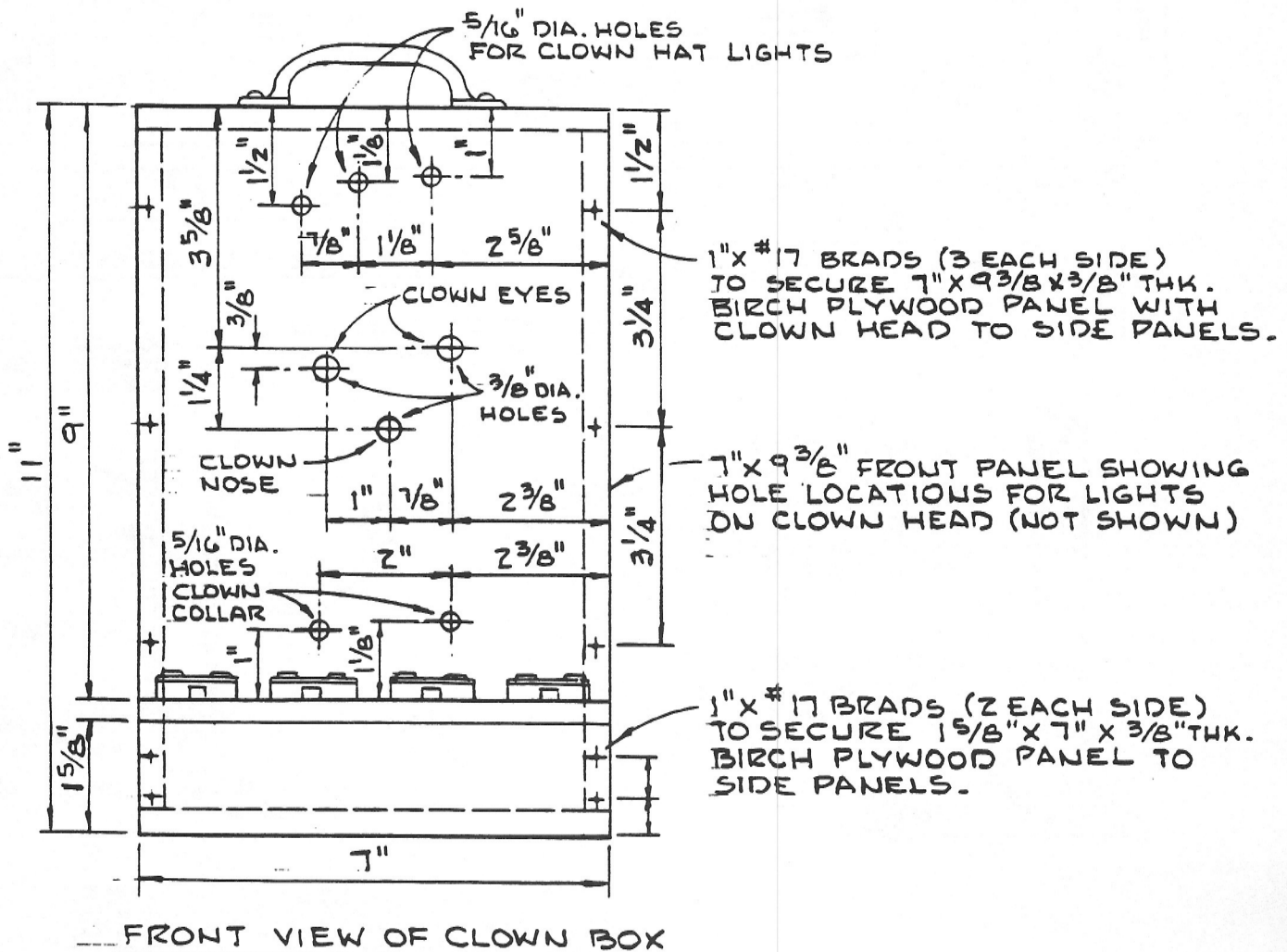
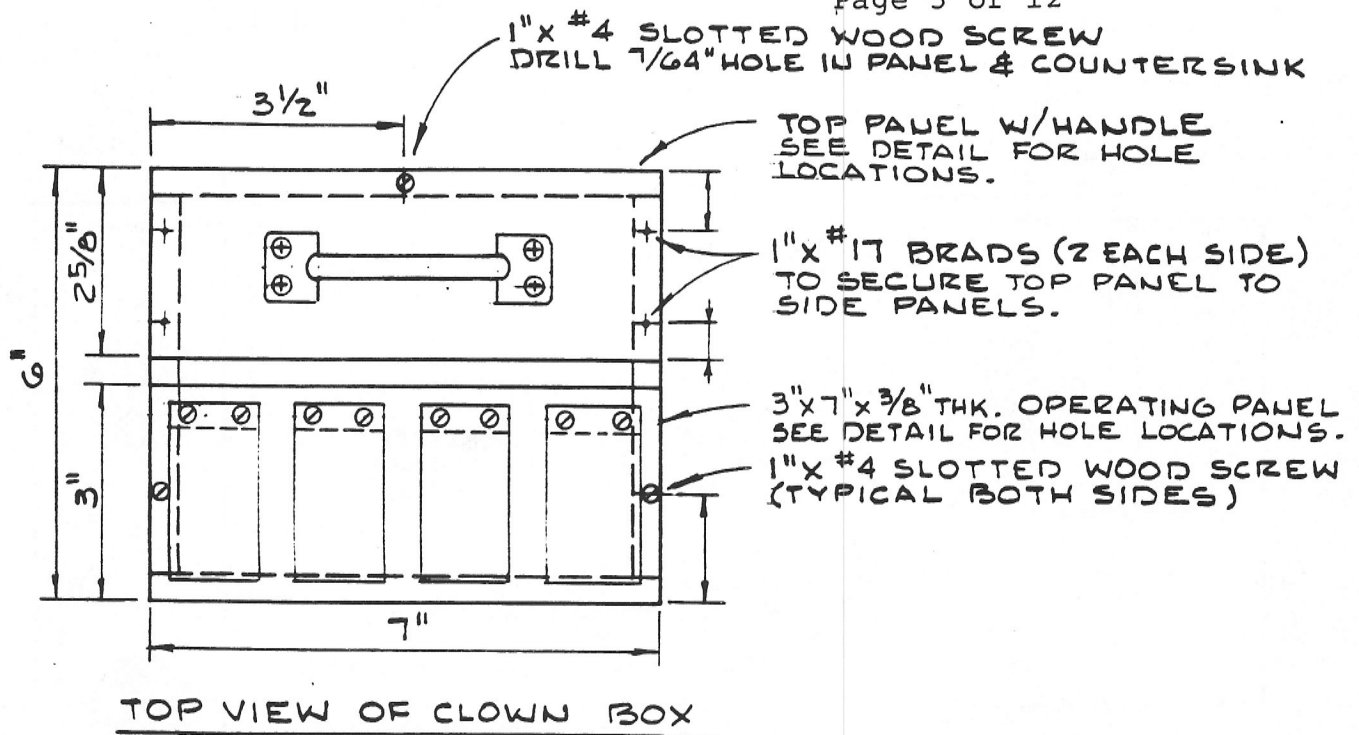
As with many of these toys, it is probably a good idea to make four at once, especially if several will be needed. This will help to conserve time and energy in buying parts and assembling materials.

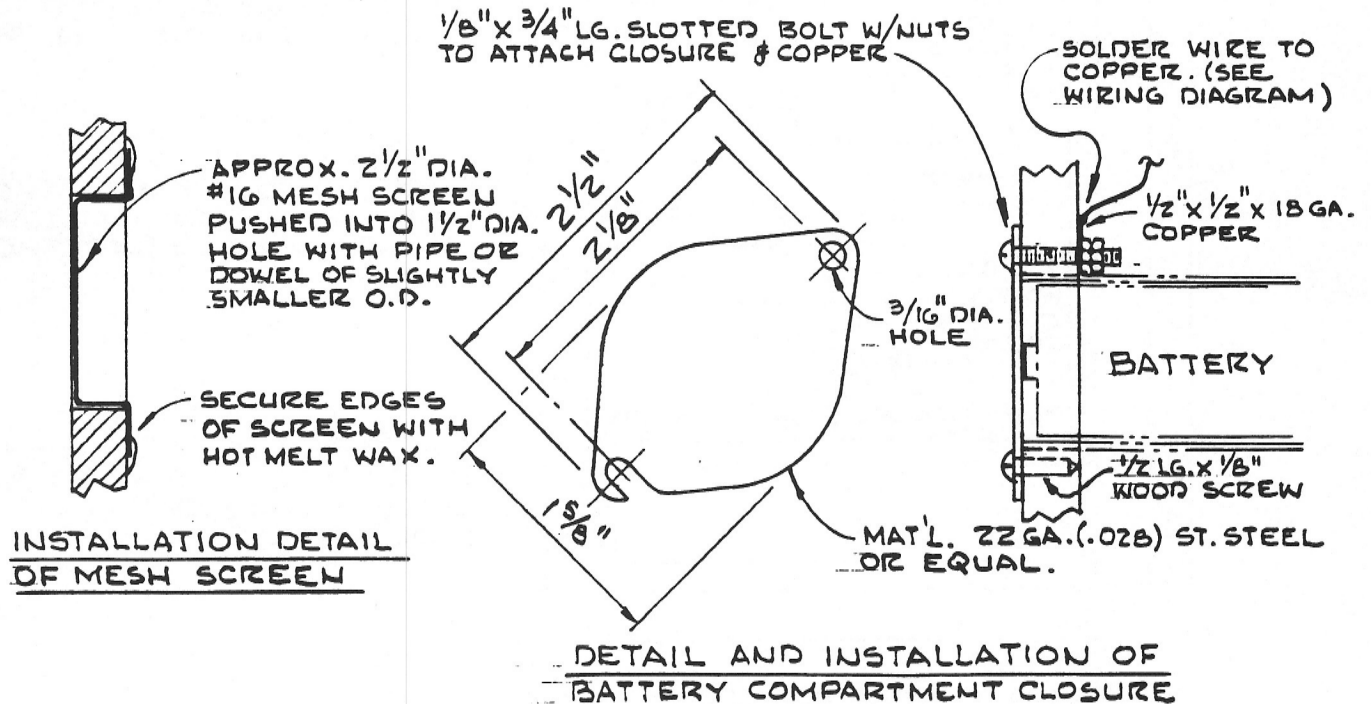
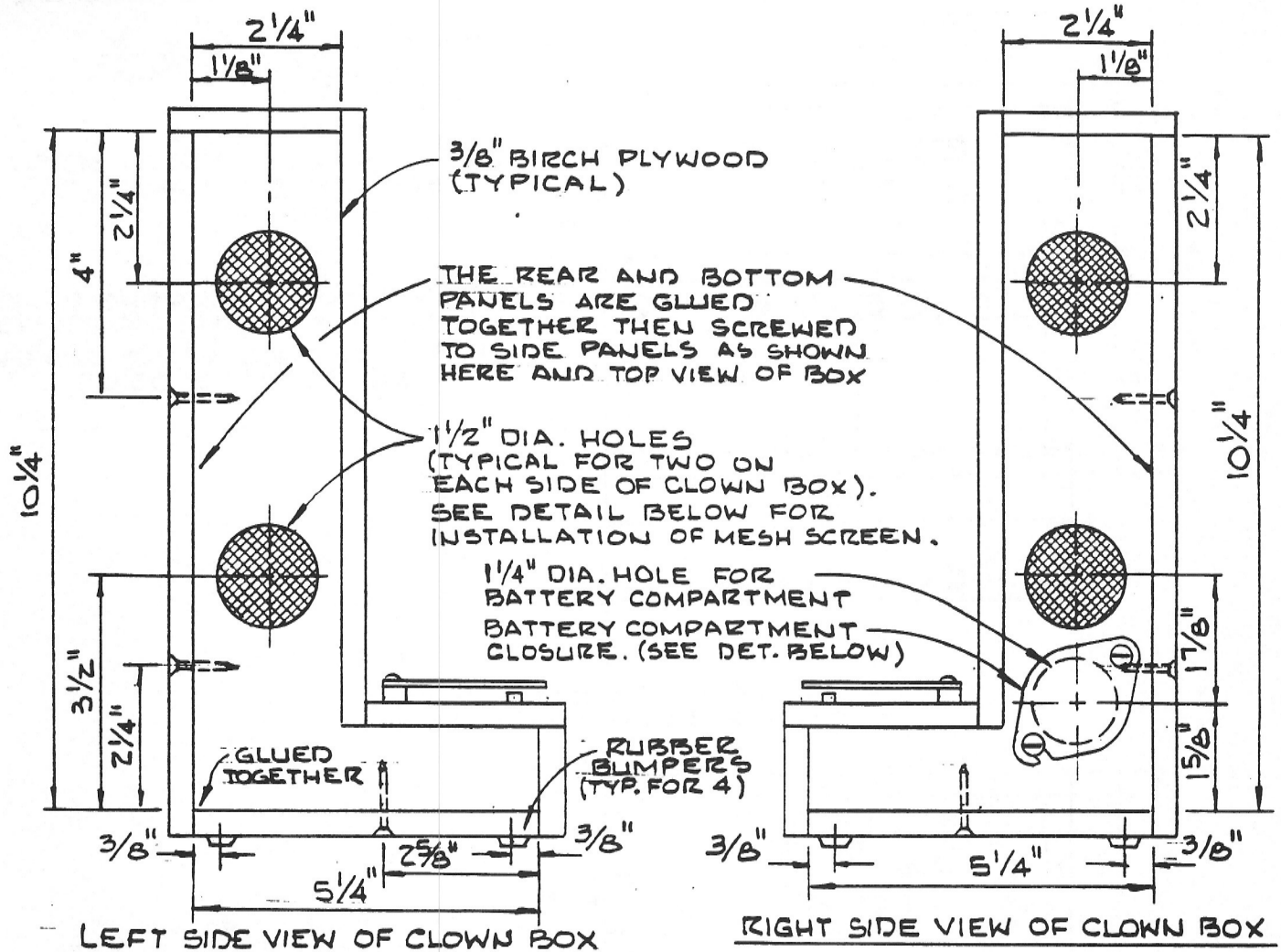
Make up the boxes first. Before assembly, trace the face from page 7 and, using the noted color scheme, paint the clown face on the front pieces and drill all the holes. Then glue and screw all the pieces together except for the backs and the bottoms.

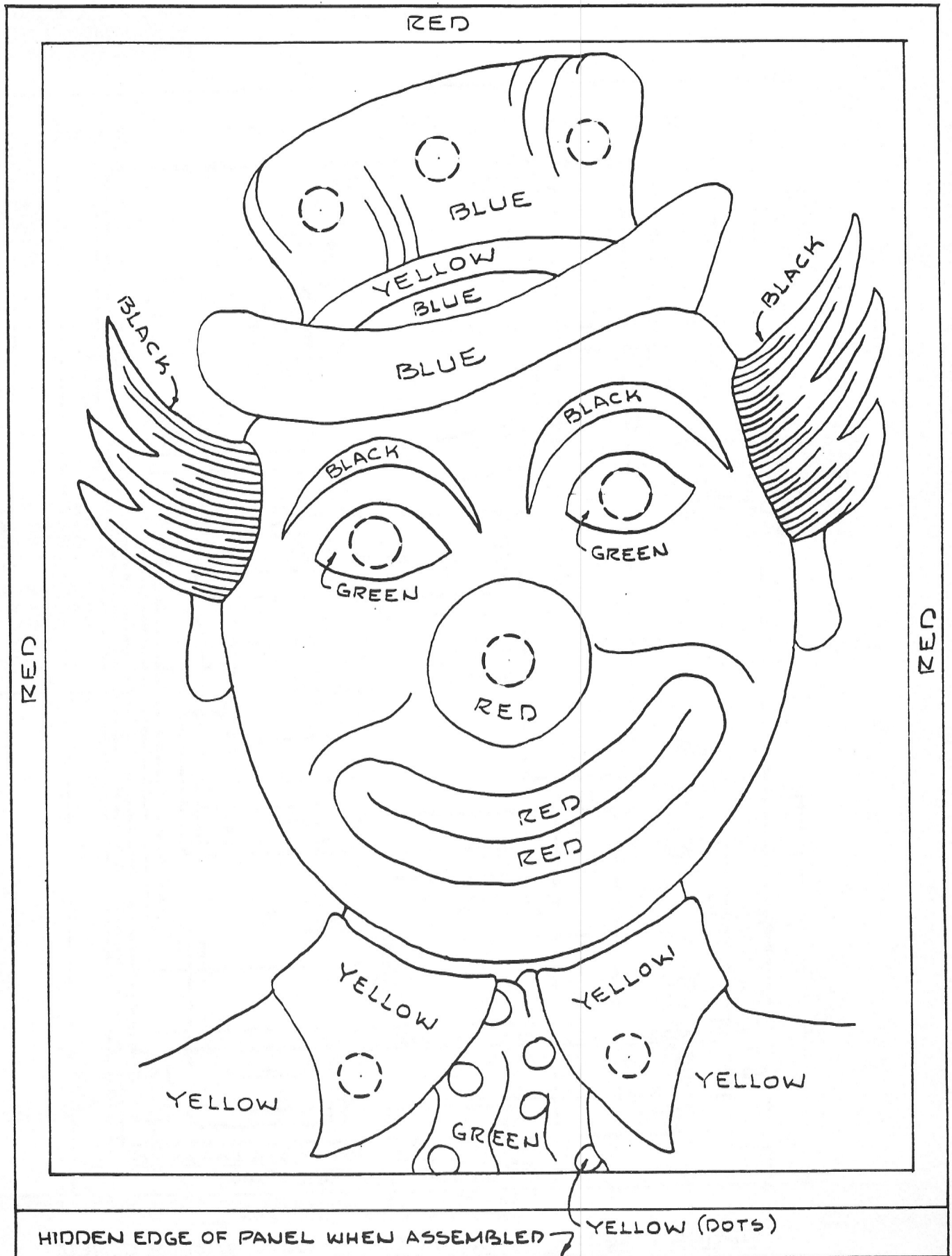
Assemble and install the plastic and electronic components and wiring as detailed on the following pages.

Screw the bottoms and the backs on to the boxes and varnish carefully.



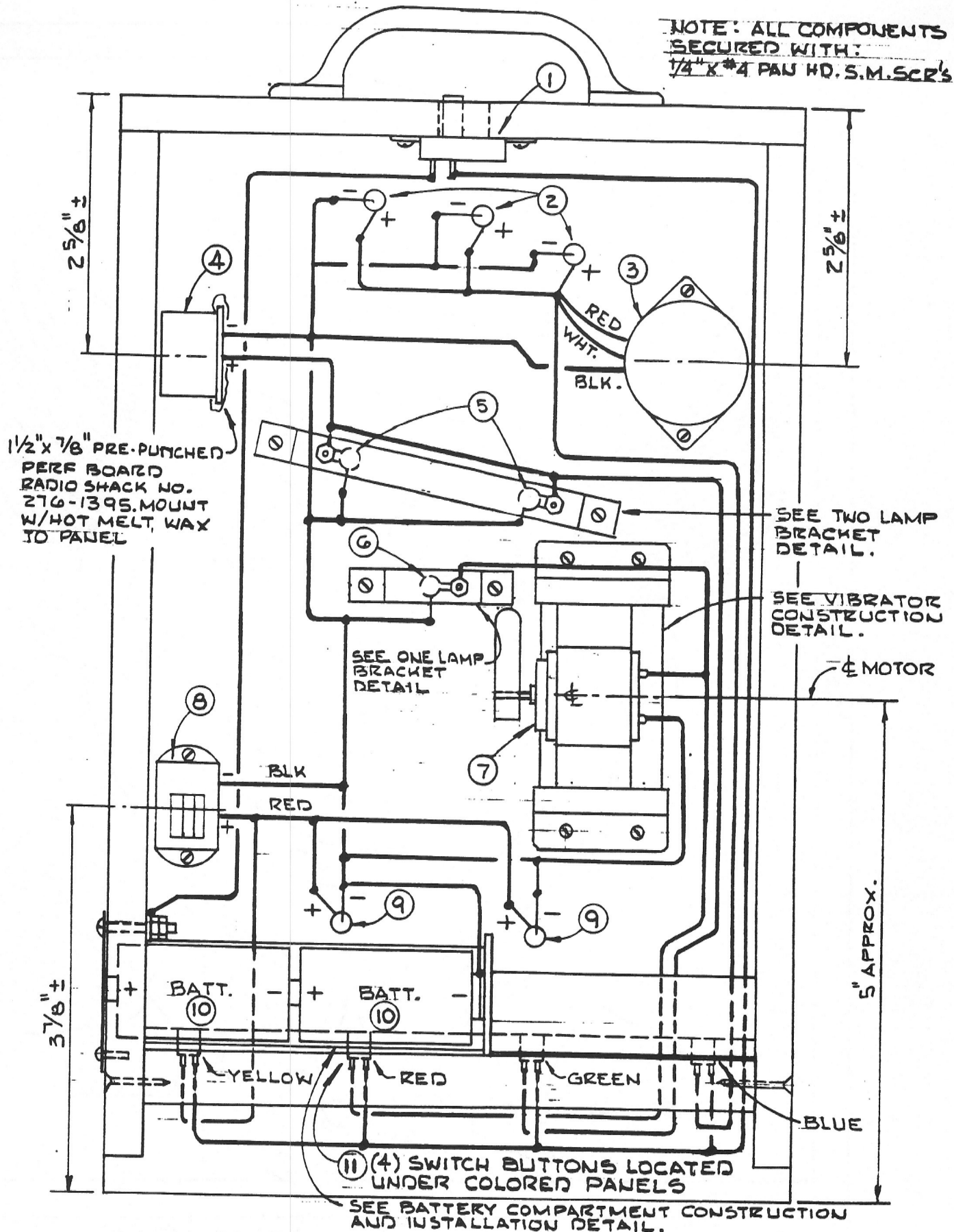






FULL SIZE CLOWN HEAD (COLOR AS SHOWN)  
TRANSFER CLOWN TO PLYWOOD PANEL WITH CARBON PAPER - BLACK LINES

NOTE: ALL COMPONENTS  
SECURED WITH:  
1/4" X #4 PAN HD. S.M. SCREWS



WIRING DIAGRAM - SHOWING CLOCK BOX W/BACK COVER  
REMOVED - SEE IDENTIFICATION OF COMPONENT ON NEXT PAGE

LIST OF NUMBERED COMPONENTS  
INSIDE CLOWN BOX (SEE WIRING DIAGRAM)

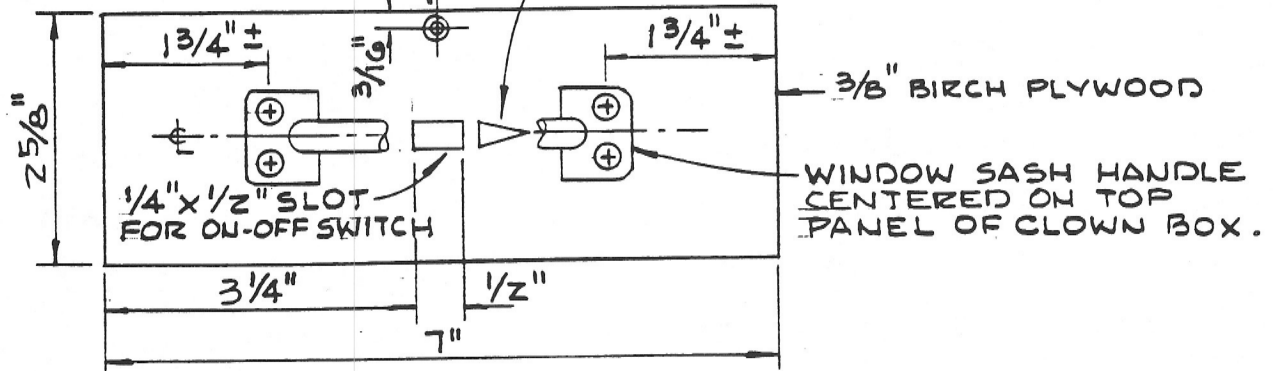
- ① SLIDE SWITCH - SPST RADIO SHACK #275-401
- ② 3 YELLOW LED - RADIO SHACK #276-OZ1A (HAT)
- ③ ELECTRONIC CHIME - RADIO SHACK #273-067
- ④ PIEZO BUZZER - RADIO SHACK #273-065
- ⑤ LAMPS - RADIO SHACK #272-1132 AND SOCKETS #272-354
- ⑥ LAMP - RADIO SHACK #272-1132 AND SOCKET #272-354
- ⑦ VIBRATOR MOTOR - MABUCHI RE-56 - JOHN J. MESHNA JR. INC.  
SEE DETAIL OF MOTOR MOUNTING  
19 ALLERTON ST.  
LYNN, MA. 01904  
CATALOG NO. SP-40  
FALL 1985 - PAGE 38  
ITEM NO. H-56-19
- ⑧ BUZZER - RADIO SHACK #273-053
- ⑨ 2 GREEN LED - RADIO SHACK #276-OZ2A (COLLAR)
- ⑩ 2 C SIZE BATTERIES
- ⑪ 4 SWITCHES - ALCO CAT. NO. SP-119  
JOHN J. MESHNA JR. INC.  
SURPLUS ELECTRONIC MAT'L.  
P.O. BOX 62  
EAST LYNN, MA. 01904

NOTES:

ALL WIRE IS 22 GA.  
SOLDER ALL CONNECTIONS.  
SECURE LOOSE WIRING TO PANEL WITH HOT MELT WAX.  
SECURE COMPONENTS W/ 1/4" - #4 PAN HEAD S.M. SCREWS.

DRILL  $\frac{7}{64}$ " HOLE AND  
COUNTERSINK FOR  
1" X #4 WOOD SCREW

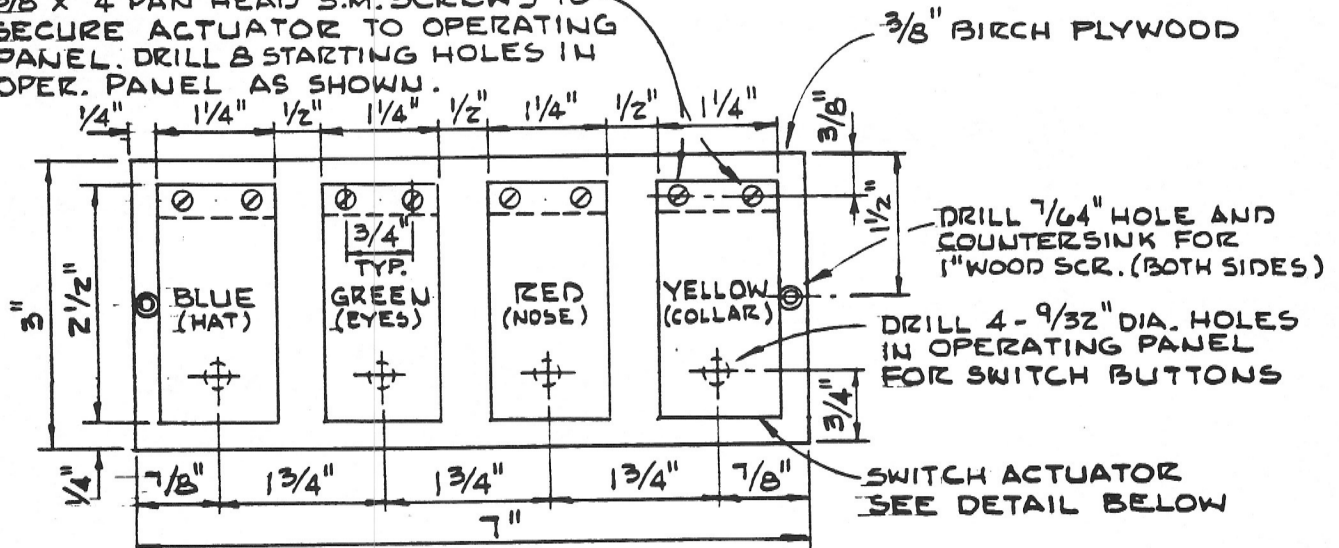
PAINT RED ARROW TO SHOW  
DIRECTION FOR PUTTING SWITCH  
IN ON POSITION.



DETAIL OF 2 5/8" X 7" TOP PANEL WITH HANDLE

SEE TOP VIEW OF CLOWN BOX  
FOR MOUNTING LOCATION

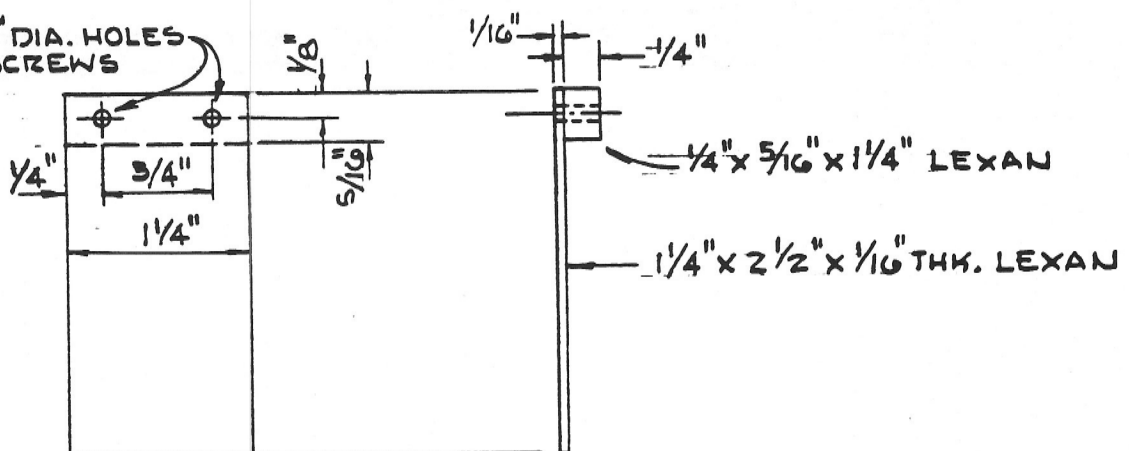
5/8" X #4 PAN HEAD S.M. SCREWS TO  
SECURE ACTUATOR TO OPERATING  
PANEL. DRILL 8 STARTING HOLES IN  
OPER. PANEL AS SHOWN.



DETAIL OF 3" X 7" CONTROL PANEL

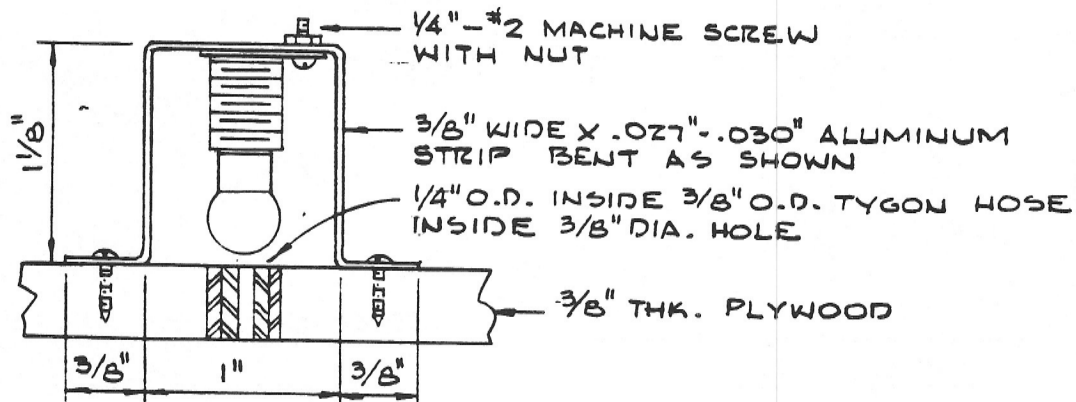
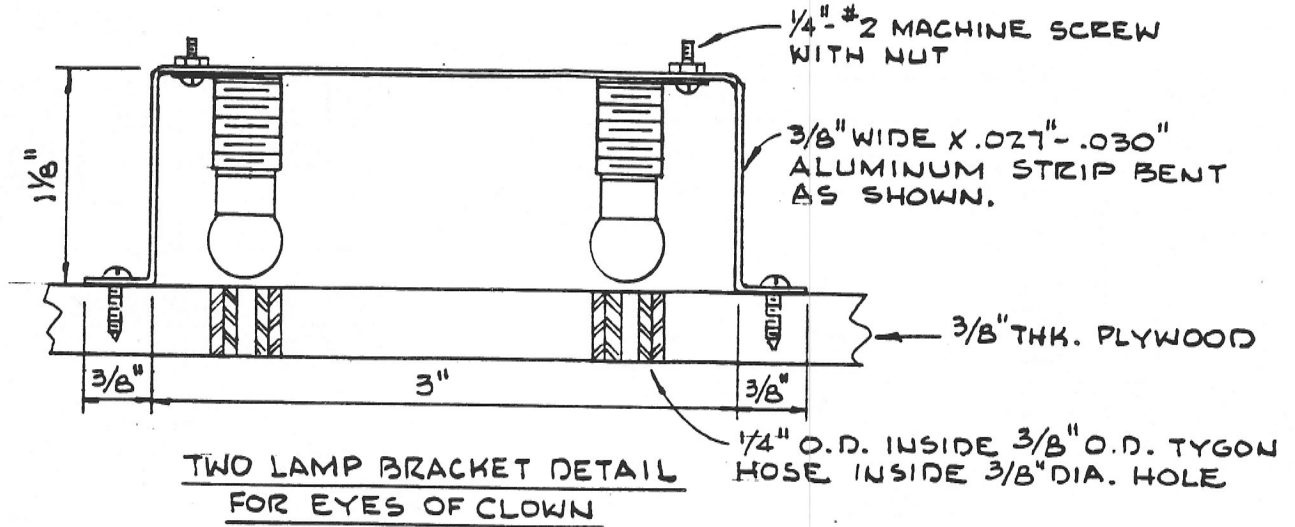
SEE TOP VIEW OF CLOWN BOX  
FOR MOUNTING LOCATION

DRILL  $\frac{3}{32}$ " DIA. HOLES  
FOR S.M. SCREWS

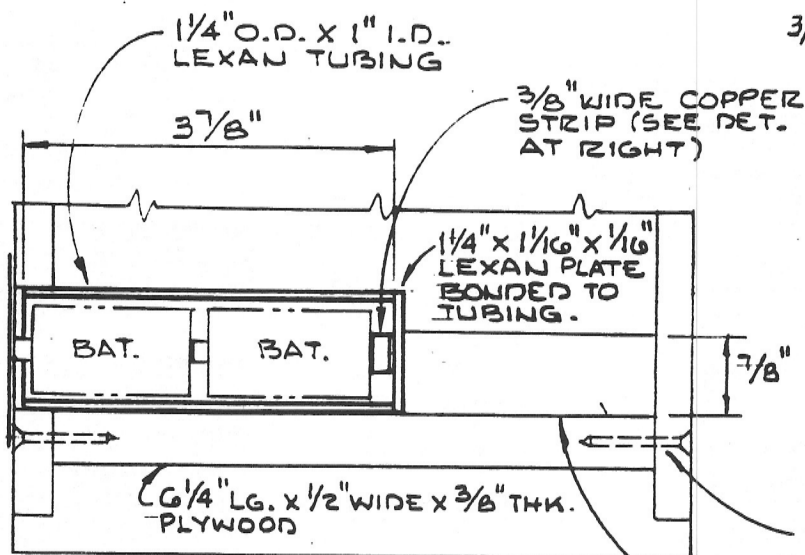


TOP AND SIDE VIEW OF SWITCH ACTUATOR

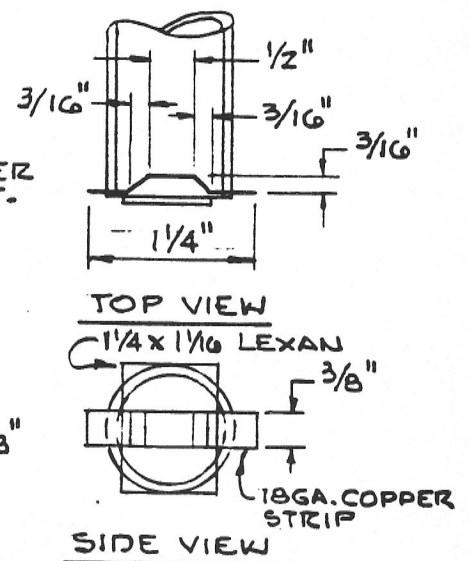




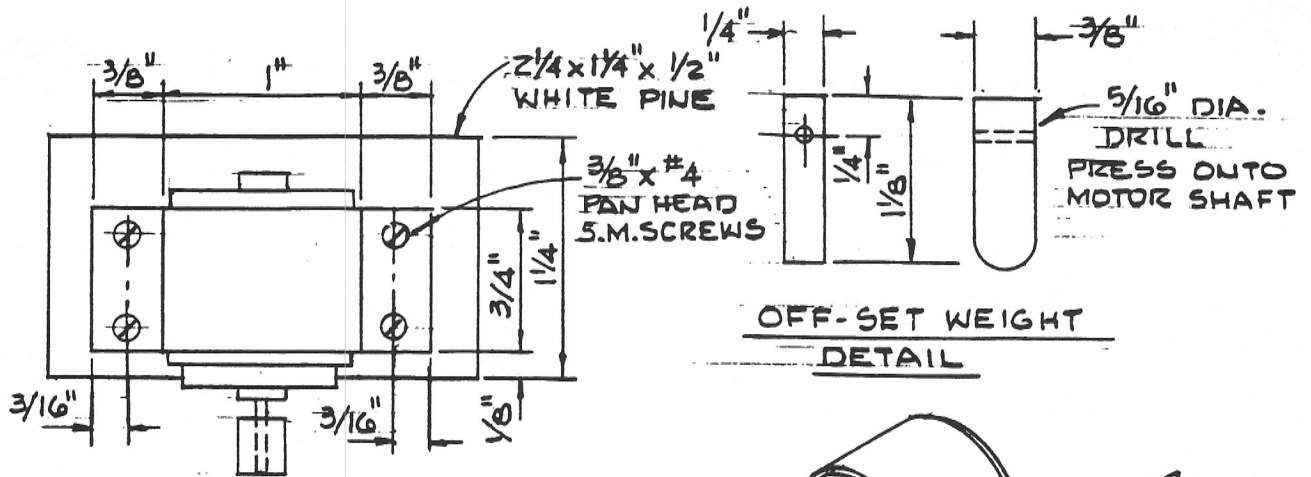
ONE LAMP BRACKET DETAIL FOR NOSE OF CLOWN



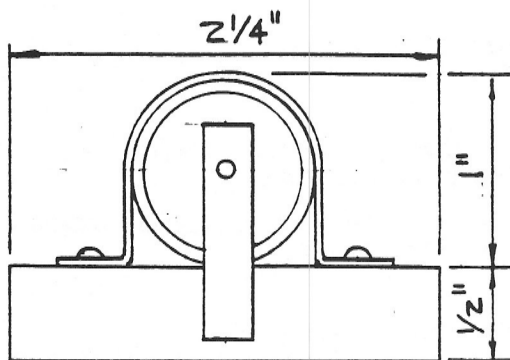
INSTALLATION DETAIL OF BATTERY COMPARTMENT



SECURE PLYWOOD PIECE W/ 1" x #4 SLOTTED WOOD SCREWS (ONE EACH SIDE).  
1/8" x 1/2" WOOD PIECE TO HOLD BATT. COMPARTMENT IN PLACE

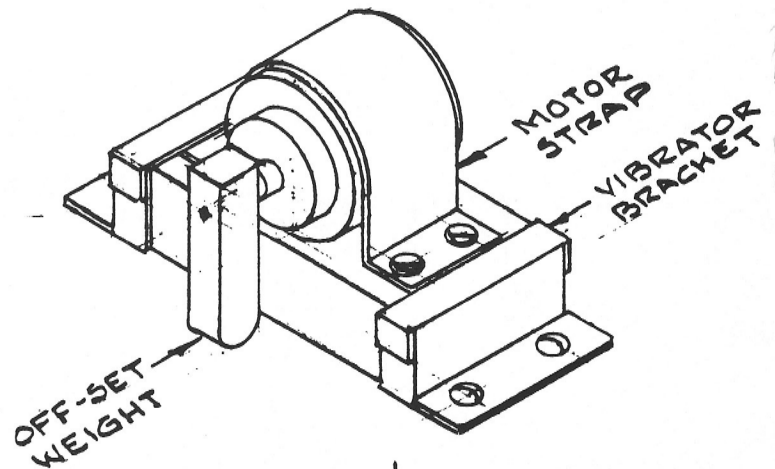


TOP VIEW

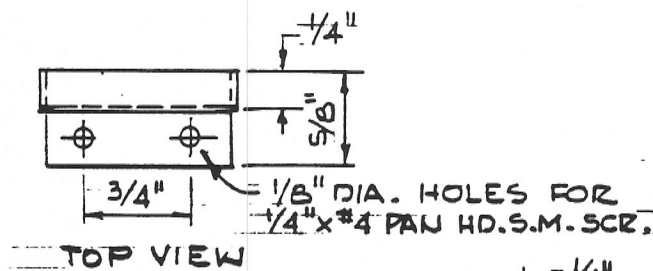


FRONT VIEW

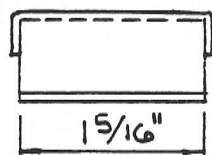
VIBRATOR MOTOR ASSEMBLY



VIBRATOR ASS'Y WITH BRACKET



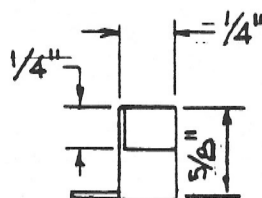
TOP VIEW



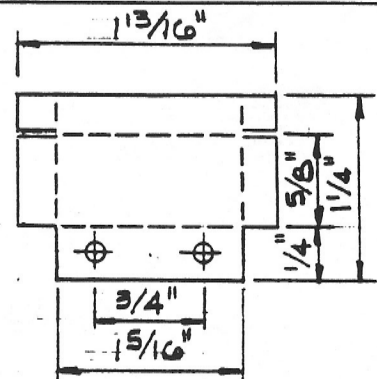
FRONT VIEW

VIBRATOR BRACKET DETAIL

(2 REQ'D)



SIDE VIEW



VIBRATOR BRACKET BEFORE FORMING

# MATERIAL:

MOTOR STRAP AND VIBRATOR BRACKET: .027"-.030" ALUMINUM  
OFF-SET WEIGHT: 1/4" LEXAN (POLYCARBONATE).  
MOTOR - MABUCHI RE-56  
JOHN J. MESHNA JR. INC.  
19 ALLERTON ST.  
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