NUMBER NETWORK FRAME
313A AND 313B PANELS
PIECE-PART DATA AND REPLACEMENT PROCEDURES
NO. 1 CROSSBAR OFFICES
ARRANGED FOR ANI-TYPE B

1. GENERAL

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of the 313A and 313B panels. It also covers the approved procedures for replacing these parts.

1.02 This section is reissued to include piece-part data and replacement procedures for the three types of network assemblies available. Figures have been added to show the latest equipment design.

1.03 The 313A and 313B panels are used in the J95109 number network frame which is part of the automatic number identification equipment in No. 1 Crossbar Offices.

1.04 Part 2 of this section covers ordering information for those parts which are practical to replace in the field in the maintenance of the above apparatus. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called Piece-Part Data.

1.05 Part 3 of this section covers the approved procedures for the replacement of the parts covered in Part 2. This information is called Replacement Procedures.

2. PIECE-PART DATA

2.01 The figures included in this section show the replaceable parts in their proper relation to the other parts of the apparatus. The piece-part numbers of the various parts are given together with the names of the parts as listed by the Western Electric Company Merchandise Department. When these names differ from those in general use in the field, the latter names in some cases are shown in parentheses.

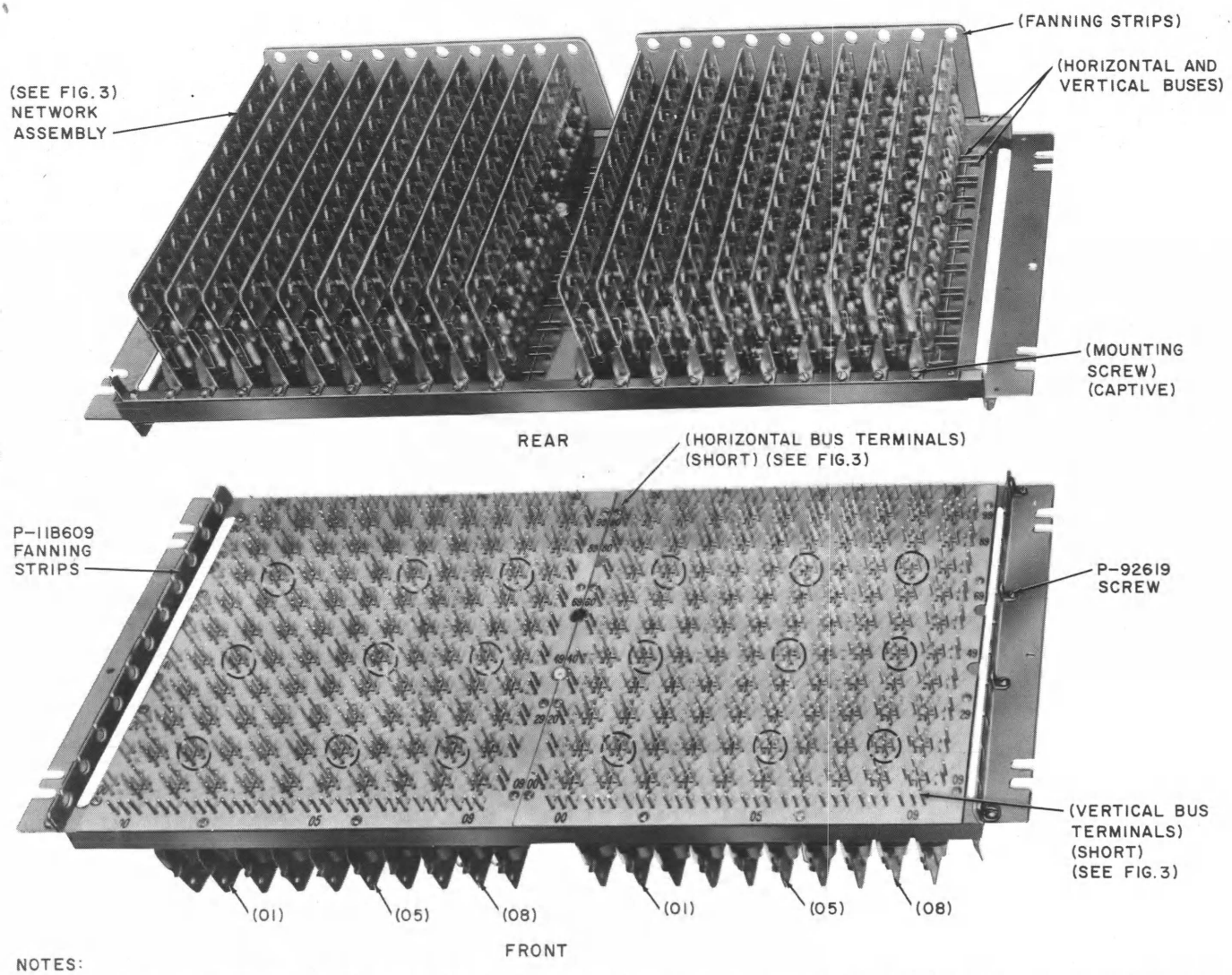
2.02 Information enclosed by parentheses ( ) is not ordering information. This information may be references to notes, parts referred to in other portions of the section and not considered replaceable, or part names in general use in the field if these names differ from those assigned.

2.03 When ordering piece parts for replacement purposes, give both the number and name of the piece part. For example: "P-11B623 Network Assembly." Do not refer to the BSP number or to any information shown in parentheses following the piece-part numbers.

2.04 The early design of the 313A network panel was such that the panels could be bowed inward by the wrapping tool while placing cross-connections. This bowing resulted in crosses between network terminals and buses. To overcome this, bushings were placed on certain terminals of particular network assemblies in each panel [Fig. 1 and 2(A2)]. On panels of later design, the terminals were made with a longer shoulder [Fig. 2(B1)] which reduced this bowing and should have eliminated the need for bushings. However, bowing was not entirely eliminated and a new bushing [Fig. 2(B2)] or a mylar strip [Fig. 2(B3)] was used on the panels, the strip being used for panels in the field. Fig. 2(C) shows the latest type terminal which eliminates the need for either bushing or mylar strip. Network assemblies of early design used a spring clip to hold the capacitor. This clip is not provided on the later design.

2.05 The three network assemblies are

(1) P-11B623 network assembly for the earlier vintage number network frames. See Fig. 4.



NOTES:

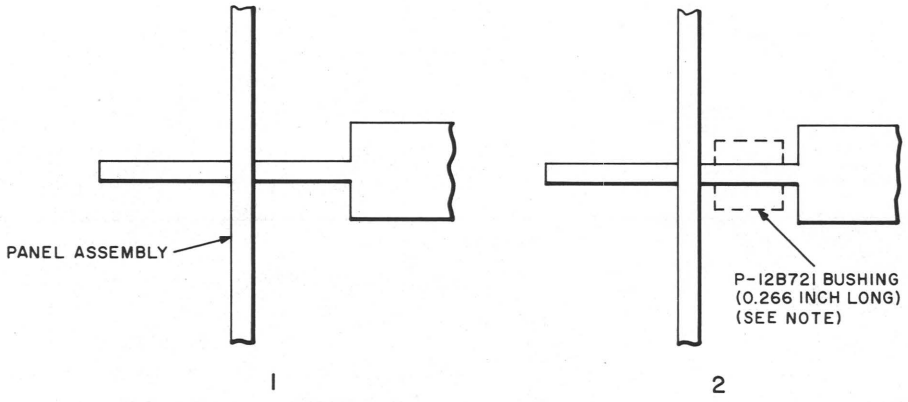
1. CIRCLED (0) POSITIONS SHOW THE LOCATIONS OF NETWORKS ON WHICH BUSHINGS P12B721 OR P40Y018 ARE USED DEPENDING ON PERIOD OF MANUFACTURE. (POSITION NUMBERS 11, 15, 18, 41, 45, 48, 71, 75, AND 78).
2. PANELS HAVING BUSHINGS P12B721 (0.266 IN. LONG)(FIG. 2(A2)) HAVE A 1/8 IN. BLACK DOT ON THE REAR OF THE CENTER STRIP OF THE PANEL AND LOCATED APPROXIMATELY 2 IN. ABOVE THE BOTTOM. PANELS WHICH HAVE HAD THESE BUSHINGS INSTALLED IN THE FIELD HAVE A 3/16 IN. DIAMETER BLACK CIRCLE. PANELS HAVING BUSHINGS P40Y018 (0.065 IN. LONG) (FIG. 2B2) HAVE A BLACK X IN THE SAME LOCATION.
3. PANELS INCORPORATING THE LATER TYPE TERMINAL (FIG. 2B1) HAVE A 1/8 IN. BLACK DOT ON THE REAR OF THE CENTER STRIP OF THE PANEL AND LOCATED APPROXIMATELY 2 IN. BELOW THE TOP.
4. PANELS INCORPORATING THE (MYLAR) STRIP P44F147 (FIG. 2(B3)) WILL HAVE NO MARKING SINCE IT IS VISIBLE

Fig. 1—313-Type Panel—Front and Rear Views—313A Panel Shown

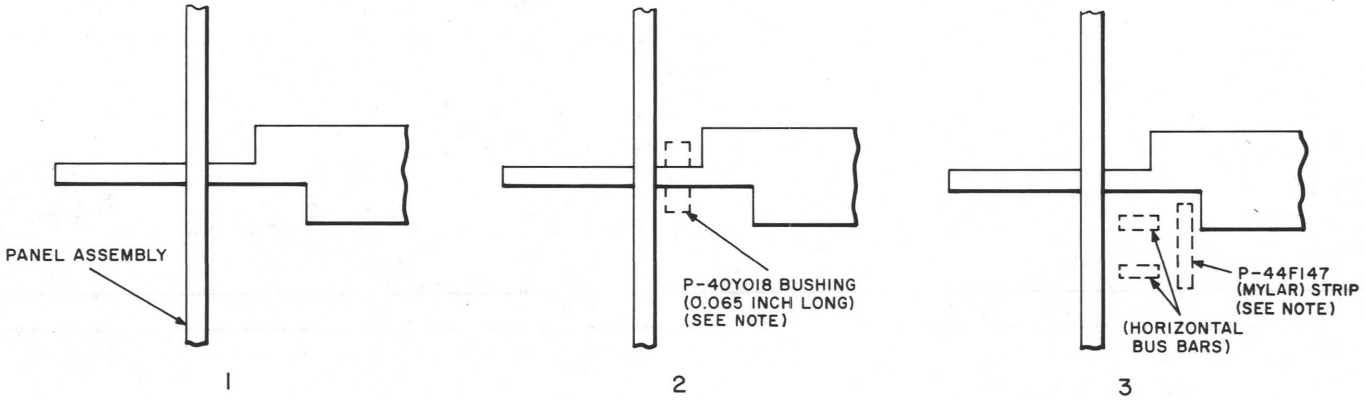
(2) 840138010 network assembly for intermediate vintage number network frames. See Fig. 5.

(3) 840138317 network assembly (which will replace the above two). See Fig. 6.

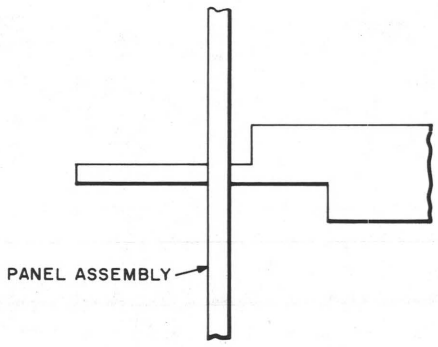
The three number network assemblies are interchangable except that the P-11B623 will not fit into frames designed for the latter two because of a large capacitor contained on it.◀



A-EARLY DESIGN TERMINAL



B-LATER DESIGN TERMINAL



C-LATEST DESIGN TERMINAL

NOTE:
SEE FIG. 1 FOR TERMINALS WITH BUSHINGS AND METHOD OF IDENTIFYING PANELS.

Fig. 2—Number Network Terminal Design, Bushings & Strip

3. REPLACEMENT PROCEDURES

3.01 List of Tools and Materials

CODE OR SPEC. NO	DESCRIPTION
TOOLS	
—	Long-Nose Pliers
—	5-Inch Diagonal Pliers
—	6-Inch C Screwdriver
KS-14440,L1	Soldering Copper
MATERIALS	
P-43D018 (As req'd.)	Bare Strap Wire
P-43D019 (As req'd.)	Black Strap Wire
P-43D020 (As req'd.)	White Strap Wire
P-44F147 (As req'd.)	Mylar Strip
—	14 Sleeving
—	24 BU Wire, Red

3.02 No replacement procedures are specified for screws and other parts where the procedure consists of a simple operation.

3.03 If a terminal or terminals on a network assembly are defective, the entire assembly must be replaced. This requires disconnecting the networks from a maximum of ten customer lines. While these lines are disconnected, plant and traffic measurements may be affected. ANI calls originated from lines associated with these networks or calls terminated (with AIS) to intercepted lines associated with these networks will be operator identified at the CAMA/TSP/AIC office. Local instructions should be followed in notifying other offices or departments affected by this work before starting and after completing this work. When the networks are reconnected, automatic number identification will be resumed.

Caution: Grounding or crossing the leads removed from the networks may cause an out-of-service condition on a line or interference with service calls.

3.04 Wrap or unwrap connections in accordance with Section 069-132-811. Do not make any soldered connections on this panel except as indicated in 3.13. If, due to several network assembly replacements, the sleeve connection cable leads are too short to make a solderless wrapped connection, an extra length of wire shall be spliced to the short lead in accordance with Section 069-132-811.

Network Assembly

3.05 Record the cross-connection arrangements for the ten numbers on the network assembly to be changed. Remove all bus and network strapping from the terminals on the front of the panel for the ten numbers on the vertical assembly to be replaced. Unwrap the wires in accordance with Section 069-132-811 avoiding crosses and grounding. Do not bend, twist, or distort the terminals. On the 313A panels if a PBX number of a PBX group arranged for billing to a single directory number is involved, the wires must be patched around in accordance with the notes on SD-95813-01.

3.06 Cut, as close to the insulation as possible, the ten subscriber sleeve connections from the terminals on the rear of the vertical network assembly being removed. Be careful not to cross adjacent terminals. As each sleeve connection is cut, slide an insulating sleeve over the cut end. Bend the end of the wire and the sleeve so as to prevent its falling off.

Note: A piece of 14 sleeving may be used for this purpose.

3.07 Using the 6-inch C screwdriver, loosen the top and bottom captive mounting screws for the network assembly from the panel. Remove the network assembly by pulling directly to the rear of the panel.

3.08 Mount a new network assembly in the same relative position as the one removed, fastening it with the two captive screws supplied with the assembly.

Note: A bushing (0.266 of 0.065 inch long, depending on period of manufacture) may have been installed over certain terminals on the defective network assembly. Also, some network assemblies may have had a mylar insulating strip instead of the bushing placed

between the horizontal bus bars and the terminals in the field. These bushings or mylar strips are not required on the replacement assembly since the latter will normally have terminals of the latest design.

3.09 After the network assembly has been replaced, skin the end of an individual sleeve connection wire after removing the insulating sleeve. Each sleeve connection should be wrapped to its proper network before skinning another lead in order to avoid crossing with adjacent sleeves. Any necessary slack may be obtained by removing the ten wires involved from the adjacent fanning ring.

3.10 Finger dress the subscriber sleeve cable wires close to the path of the cable and fanning ring. Replace all network and bus connections on the front of the panel including any PBX connections bridged using proper strap wires.

Note: These straps are a part of the storage container.

Bus Terminal (Fig. 3)

3.11 Terminals which have been broken from the bus cannot be replaced.

3.12 To remake the connection which is broken, unwrap the other end of wire which is wrapped to the network terminal. Discard this wire. Using a sufficient length of insulated-type BU, 24-gauge red wire, make the connections from the affected network terminal to the nearest outside vertical or horizontal bus mutiple terminals used in secondary network connections. This connection should always be made to the same bus which had the broken terminal. The red wire will indicate that the connection was a repair and is therefore nonstandard.

Capacitor and Resistor for P11B623 Network Assemblies (Fig. 4)

3.13 To replace a capacitor or resistor, remove the affected network assembly as covered in 3.05 and 3.07. Note whether bushings have been installed over any of the terminals, or whether a mylar insulating strip has been placed between the horizontal bus bars and the terminals, since these must be in place when the assembly is remounted. Cut the defective capacitor or resistor leads as close to their respective terminals as possible. If a capacitor is being replaced and a clip was provided to mount the capacitor, remove and discard the clip. Remove the defective part and insert the terminal leads of the new part in one of the two small holes provided in each terminal. Solder the leads to the terminals, dress the leads, and remount the network assembly. Replace the network and bus connections.

NOTE:
NETWORK TERMINALS ARE SLIGHTLY LONGER THAN OTHER TERMINALS.

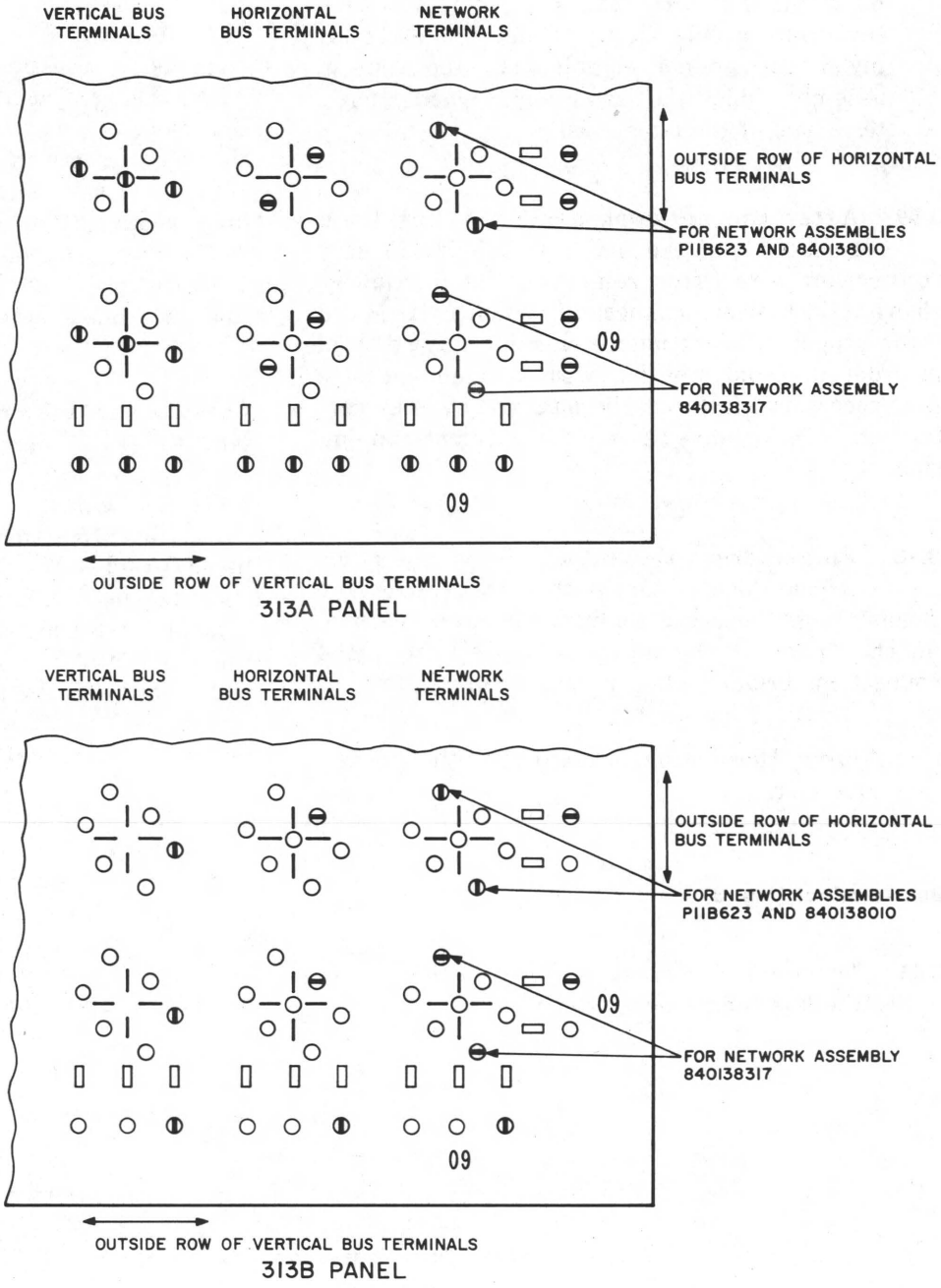
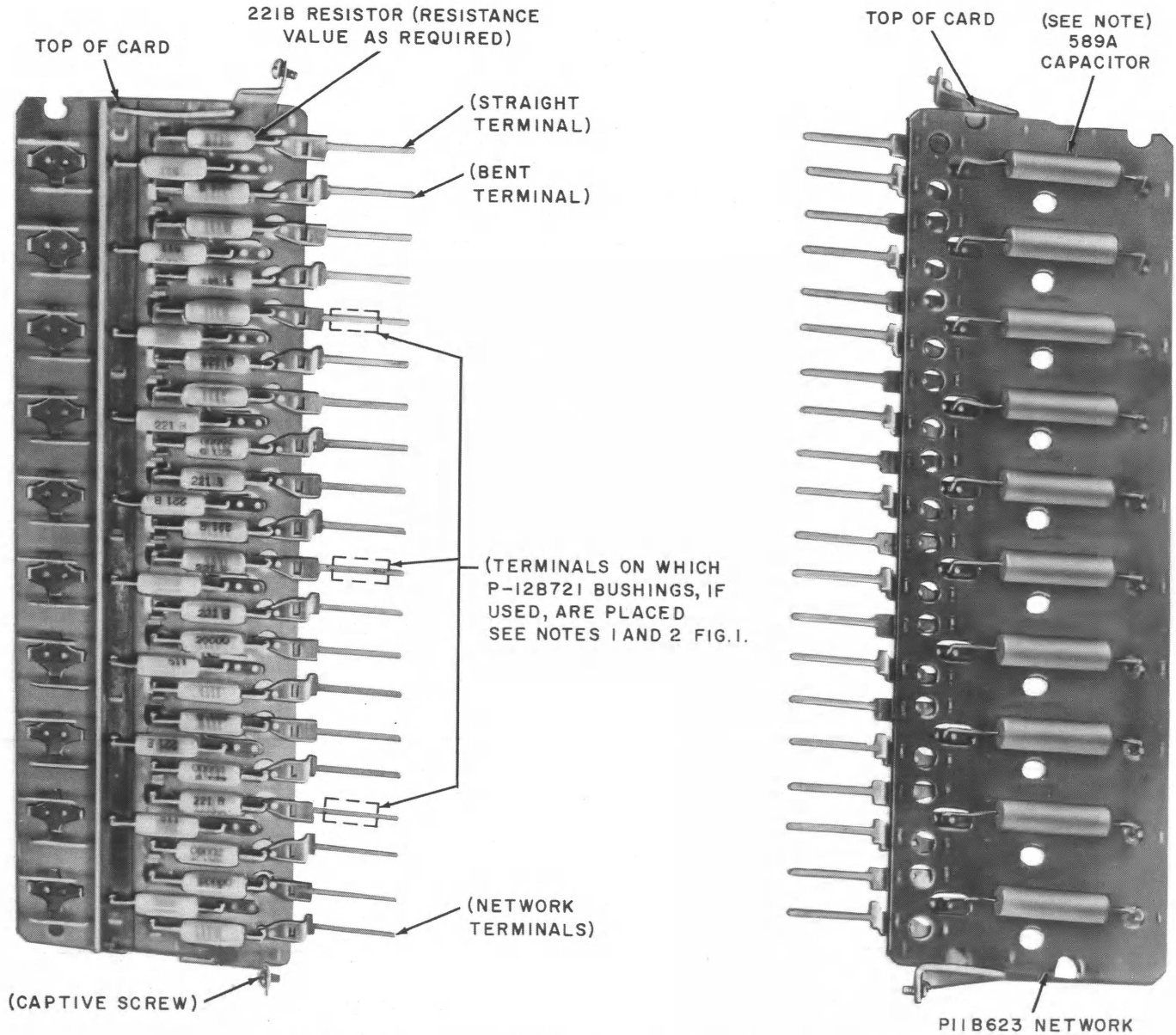


Fig. 3—View of Terminal Ends—Lower Right Corner Shown



NOTE: EARLY NETWORK ASSEMBLIES WERE EQUIPPED WITH 542P CAPACITORS AND SPRING CLIPS FOR HOLDING CAPACITORS. IF CAPACITOR IS REPLACED, CLIP IS DISCARDED AS IT IS NOT REQUIRED. REPLACEMENT FOR THE 542P CAPACITOR IS THE 589A CAPACITOR.

Fig. 4—P11B623 Network Assembly

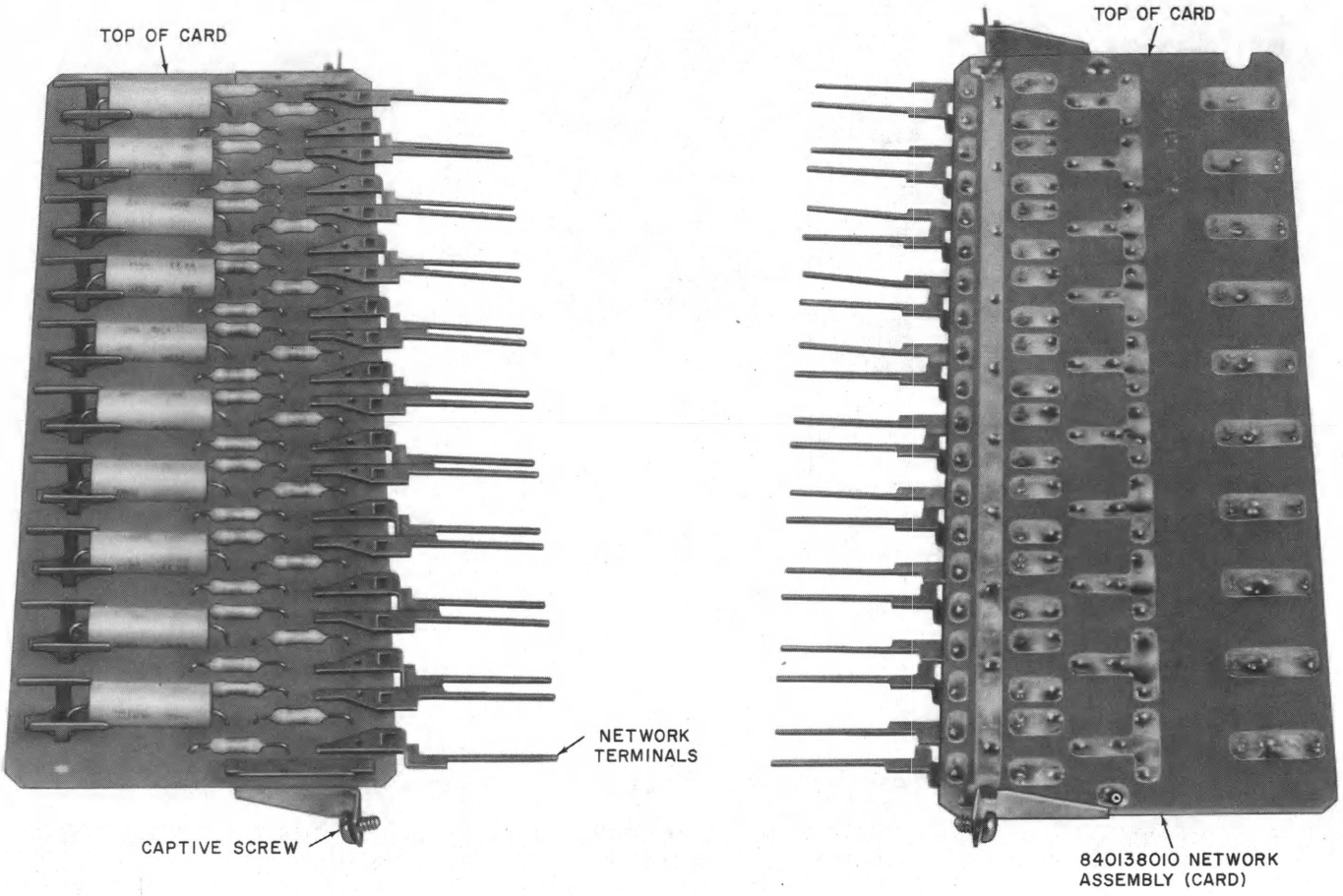


Fig. 5—840138010 Network Assembly

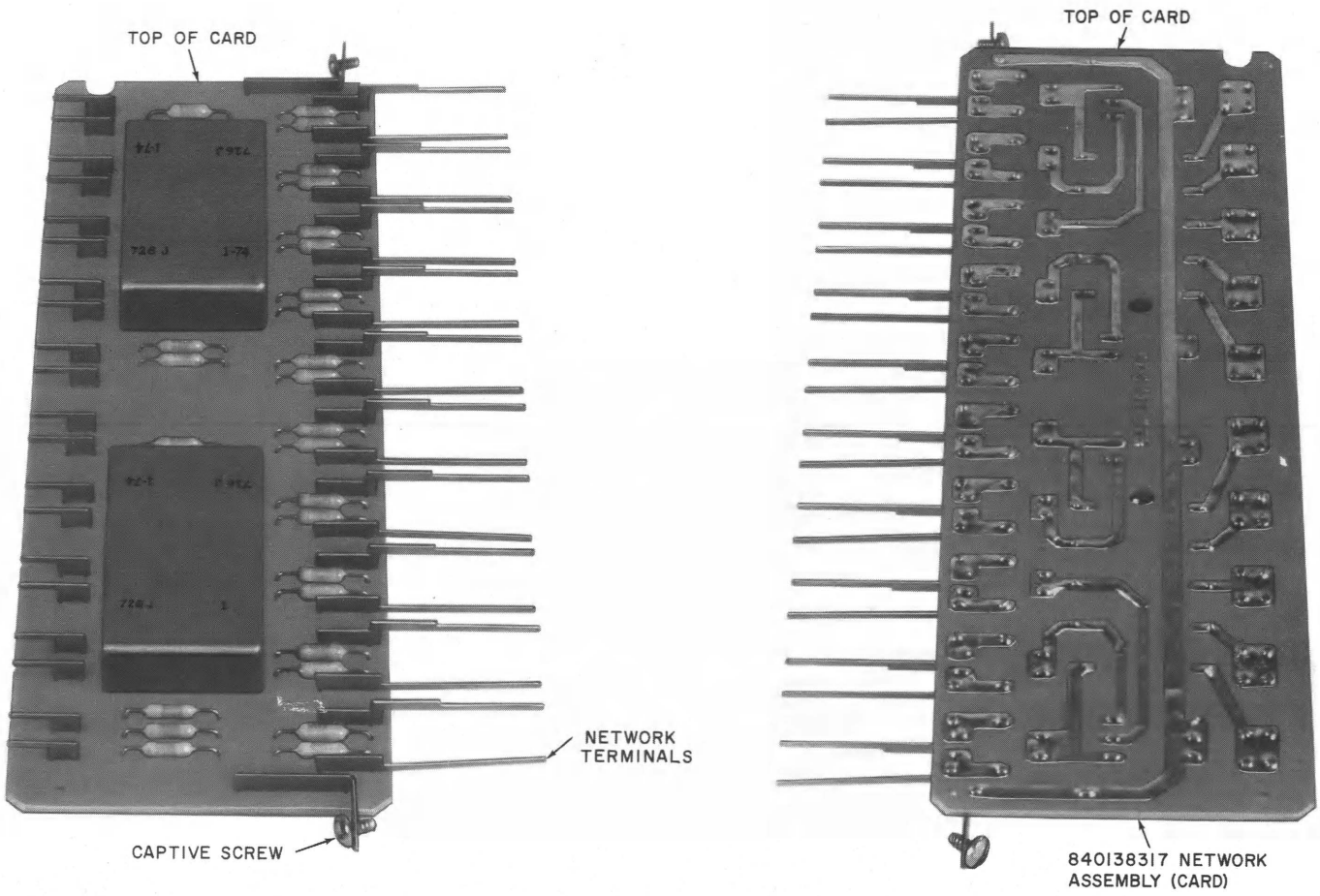


Fig. 6—840138317 Network Assembly