American Telephone and Telegraph Company
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BELL SYSTEM PRACTICES
Teletypewriter and Manual
Telegraph Station and PBX
Installation and Maintenance

ADDENDUM P38.901
Issue A, May 1959
Long Lines Department
Dist. Class. 600AC

TELEGRAPH

LINE FEED COUNTER

NO. 19 TELETYPEWRITER SET

1. GENERAL

1.00 This addendum supplements Section P38.901, Issue B.

1.01 This addendum is issued to:

(a) Replace Engineering Staff Drawing 20403-106 with a Western Area Drawing WA-13516 in accordance with the program to disburse these drawings.

(b) Correct a difficulty in assembly of the Line Feed Counter.

2. MATERIAL REQUIREMENTS

2.01 In the set of special contacts described in Figure 1 the TP 1051 screw was TP1026. Additional dimensions are shown in mounting detail shown in Figure 3.

7. REFERENCES

7.01 Change this paragraph to read "Figures 1 to 10 inclusive are reproduced from Western Area Drawing WA-13516".

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SECTION P38.901
Issue B,1-21-52
Long Lines Department
Dist. Class. 602.05AC

TELEGRAPH

LINE FEED COUNTER

NO. 19 TELETYPEWRITER SET

1. GENERAL

1.00 This issue supersedes Issue A and Addendum, Issue A.

1.01 This section provides information for modifying and installing a TP92996 electric impulse counter so that it will register the number of line feed combinations selected on the 15 perforator-transmitter associated with a 19-type teletypewriter set.

1.02 The arrangement consists essentially of an end-of-line indicator and special contacts so installed that the operation of the line feed key lever will close the contacts allowing the counter magnet to be energized. A manually operated pair of contacts which will cause the indicator to restore to zero are also provided.

1.03 The wiring is so arranged that line feed combinations will be recorded only when the perforator control key is in the "Tape" position.

1.04 This section covered the addition of the line feed counter on 19-type teletypewriter sets involving 19A tables it is reissued to make it applicable for such sets mounted on a metal table such as the XRT205 table.

2. MATERIAL REQUIREMENTS

2.01 The material required for this line feed counter for mounting on a 19-A table is as follows:

1 set of special contacts as described in Figure 1.
1 special bracket as described in Figure 2.
1 special mounting plate as described in Figure 3.
1 TP92996 electric impulse counter and accessories.
1 551A key (push button).
1 TP96883 terminal.
2 12F connecting blocks.
2 2956 Bryant receptacles.
2 2958 Bryant plugs.
2 TP8254 cable clamps.
1 TP101456 screw.
2 TP1169 screws.
1 TP125229 nut.
4 TP7002 washers.
3 TP2191 lock washers.
2 TP8539 screws.
2 TP3598 nuts.
2 TP3897 bushing.
3 10 x 1½" RHW screws. (P-210193)
2 6 x 1" RHW screws. (P-149671)
4 TP6346 screws.
1 TP74685 contact spring.
1 TP7399 spring stiffener.
1 TP7398 plate.
2 TP1245 screws.
2 TP2382 lock washers.
1 5 x 3/4" RHW screw.
2 TP4293 insulators.

2.02 The material required for this line feed counter for mounting on a metal table (XRT205) is as follows:

1 set of special contacts as described in Figure 1.
1 special bracket as described in Figure 8.
1 special mounting plate as described in Figure 3.
1 TP92996 electric impulse counter and accessories.
1 551A key (push button).
1 TP96883 terminal.
2 12F connecting blocks.
2 2956 Bryant receptacles.
2 2958 Bryant plugs.

2 TP8254 cable clamps.
1 TP101456 screw.
2 TP1169 screws.
1 TP125229 nut.
4 TP7002 washers.
3 TP2191 lock washers.
2 TP8539 screws.
2 TP3598 nuts.
4 TP6346 screws.
1 TP74685 contact spray.
1 TP7399 spring stiffener.
1 TP7398 plate.
4 TP1245 screws.
4 TP2382 lock washers.
2 TP112626 nuts.
2 TP4293 insulators.
3 No. 6-5/8" Type Z self tapping screws. (P-423355)
4 No. 8-1" Type Z self tapping screws. (P-405647)

3. MODIFICATION OF INDICATOR

3.01 If the impulse counter is received wired, rewire as shown in Figures 4-A, 4-B and 4-C, using 18 gauge deltabeston radio hook-up wire.

4. INSTALLATION

4.01 Using a No. 27 drill, drill two holes in the TP83352 perforator-transmitter retaining plate as shown in Figure 5. Care should be taken that the condenser form underneath this plate is not injured.

4.02 Assemble the contact parts as shown in Figure 1 and mount in the holes drilled as described in Paragraph 4.01, using TP1169 screws.

4.03 Fasten the modified counter to the special bracket (Figure 2 for 19A tables, Figure 8 for metal tables) using two TP1245 screws and two TP2382 lock washers.

4.04 Fasten the special mounting bracket with counter to the front right corner of the table as indicated in Figures 6, 7 and 9. (use 10 x 1½" RHW screws for 19A tables and TP1245 screws, TP2382 lock washers and TP112626 nut for metal tables.)

Note: Due to manufacturing variations the position of the bracket will depend on the particular installation involved. In view of this, the line feed counter should be fastened to the bracket and its exact position determined by trial with the teletypewriter set assembled. The line feed counter should be in line with the character counter and clear it by approximately two inches. Allowance should also be made for the overhang of the copy holder.

4.05 For 19A tables, attach the two 12F connecting blocks to the outer surface of the bracket using TP6346 screws per Figure 7; for metal tables, use P-405647 (No. 8-1" self tapping) screws per Figure 10.

4.06 Complete the connections to the various parts as shown in Figures 4-A, 4-B and 4-C.

4.07 In spare position No. 50 of the TP74589 terminal block assembly on the No. 15 perforator-transmitter, mount the TP96883 terminal by means of the TP1262 screw and TP125229 nut.

4.08 In spare position No. 50 of the TP74053 slip connection mounting plate assembly, (corresponding to that chosen in Paragraph 4.07), mount the TP74685 contact spring, TP7399 spring stiffener TP4293 insulator and TP7398 plate using the TP8539 screws, TP3897 bushings, TP2191 lock washers and TP7002 washers.

4.09 To complete wiring for installation of terminal (Paragraph 4.07) run wires from special contacts installed on perforator-transmitter retaining plate to terminal of terminal block assembly on perforator-transmitter as shown in Figure 4-A, forming wire as shown in Figure 4-C.

4.10 To complete wiring for installation of slip connector (Paragraph 4.08), cut the existing power loop provided between Terminals 31 and 36 on the No. 15 base at a point near the line relay bracket and tape the end of wire connected to Terminal 36. Run the wire connected to Terminal 31 through the existing hole in the base casting at this point and connect to terminal in slip connector, as shown in Figure 4-A.

4.11 To connect the 551A key (push button), remove the center cover screw which permits removal of the cover and exposes the contact terminals and mounting holes. Locate about ½ inch below table top as shown in Figure 10.

4.12 When using a 19A table, bore a 1 inch hóle in the upper right-hand corner of the table panel, as shown in Figure 7, to accommodate the plug for the wires from teletypewriter Terminals 24 and 25.

5. ADJUSTMENTS

5.01 Make adjustments on the counter in accordance with standard instructions so that the lamp will light on the particular line feed operation specified in the Service Order.

5.02 With the contact clearance as specified in Paragraph 5.03, the counter contacts should close just before the punch magnet contacts close and remain closed during the closure of the "U" bar contacts.

5.03 There shall be a gap of .010 to .020 inch between the contacts when in the unoperated position. Adjust by bending the stiffener and lower contact spring.

5.04 Care should be taken that the upper contact spring is in good condition since there is no stop for it and a tension cannot, therefore, be specified.

5.05 The contact spring shall lie flat against its stiffener and it shall require not more than ½ ounce applied vertically on the end of the lower spring to just separate the spring from the stiffener. Adjust by bending the lower spring. Check the adjustment specified in Paragraph 5.03.

6. OPERATING DESCRIPTION

6.01 When the contacts on the keyboard are closed by depressing the line feed key, the circuit through the counter magnets will be closed, causing the indicator to operate and record.

6.02 On the specified number of line feed operations, the cam on the indicator will have reached the position where the lamp contacts will close, showing that the indicator must be restored to zero at that point or a specified number of operations later, depending upon the customer's requirements.

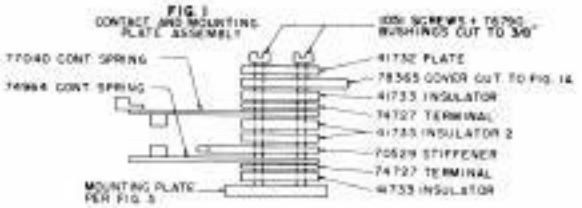
6.03 The indicator is restored to zero by pressing the push button which will close the circuit through the release magnets, which, when energized, draw up the locking pawl thus permitting the indicator spring to restore it to zero.

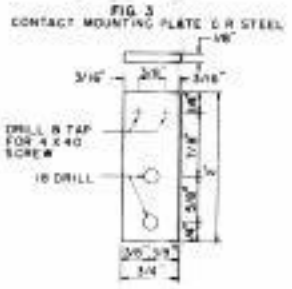
6.04 In case a line feed operation has been performed in error and it is voided on the tape by back spacing and blanking out, it will be necessary to make a note of this and allow for it on the indicator reading, since the indicator cannot be stepped back.

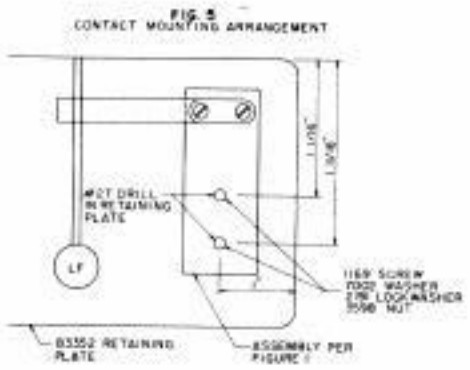
6.05 If this situation should occur, the indicator and forms can be again synchronized by restoring the indicator to zero at the end of the form then under preparation.

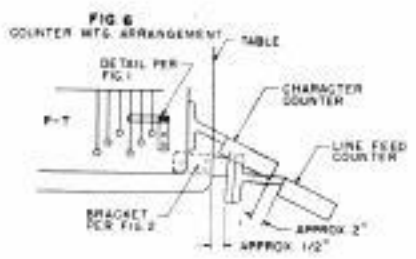
7. REFERENCES

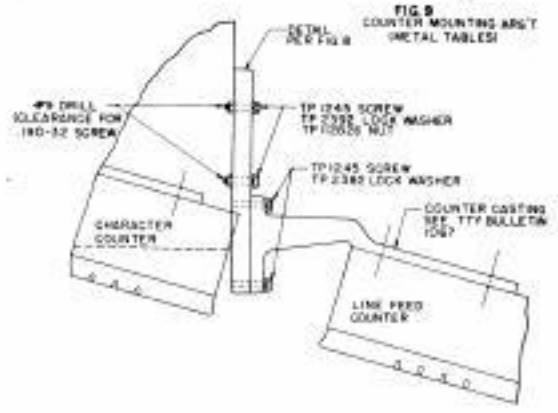
7.01 Figures 1 to 10 inclusive are reproduced from Long Lines Drawing 20403-106.

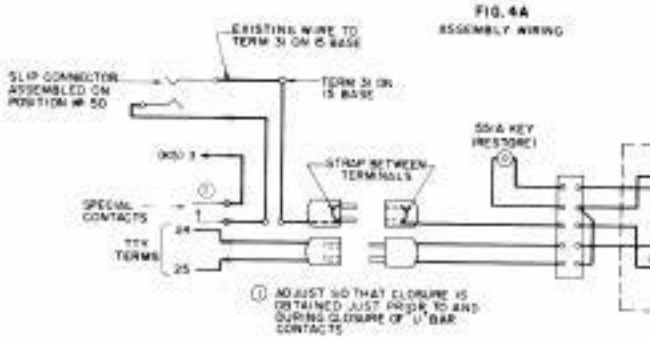


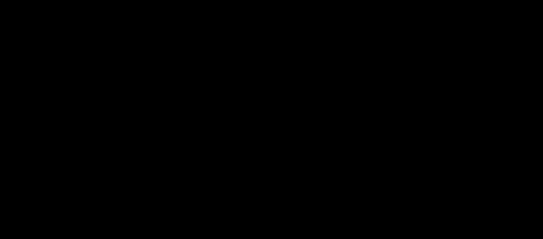


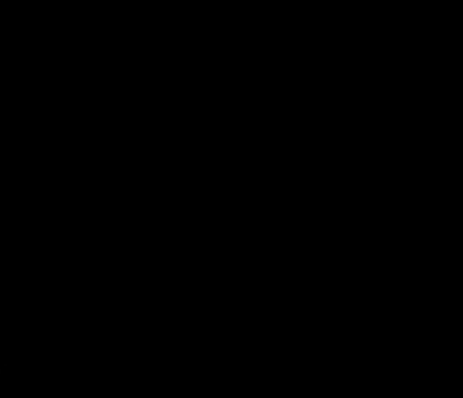


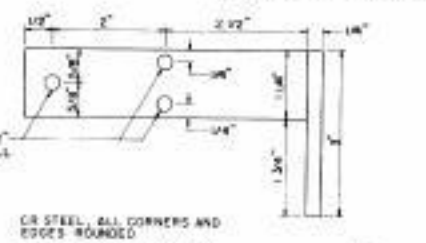


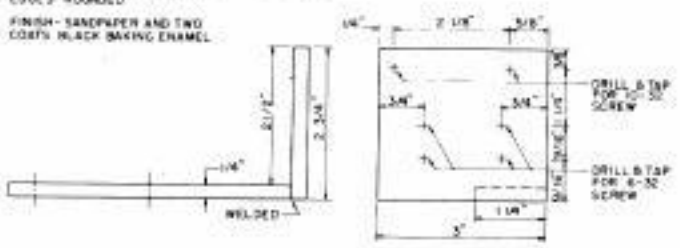


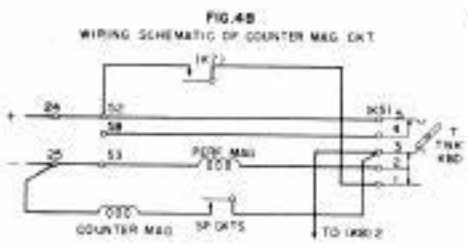


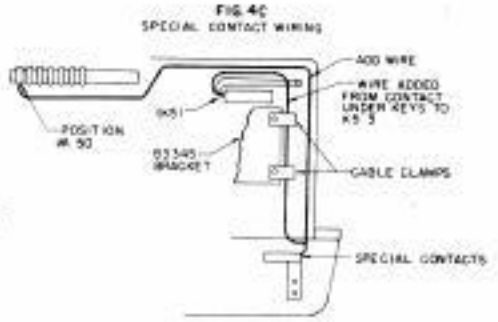


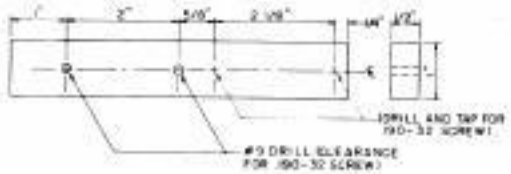












Drawing revised to reflect changes in Figure 1 and 3.

FIG. 1
CONTACT AND MOUNTING PLATE ASSEMBLY

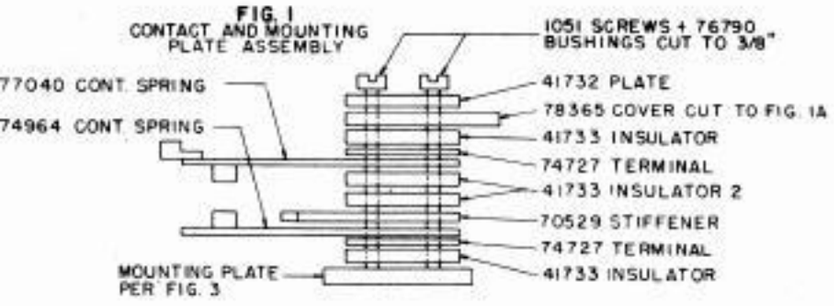


FIG. 3
CONTACT MOUNTING PLATE C.R. STEEL

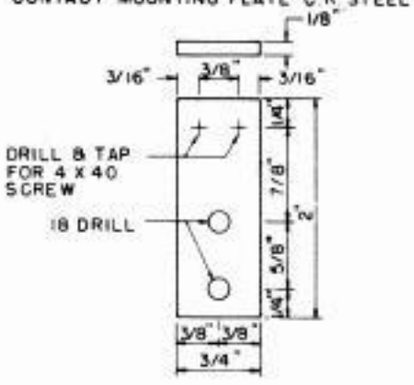
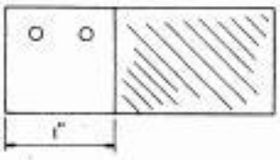


FIG. 1A



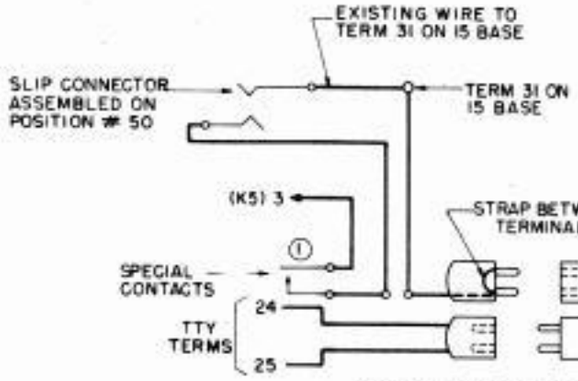
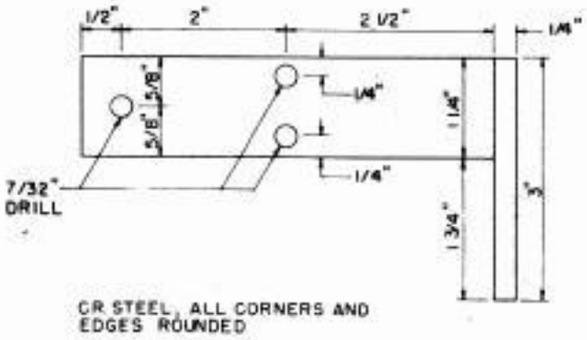


FIG. 2
COUNTER MOUNTING BRACKET



CR STEEL, ALL CORNERS AND EDGES ROUNDED

FINISH- SANDPAPER AND TWO COATS BLACK BAKING ENAMEL

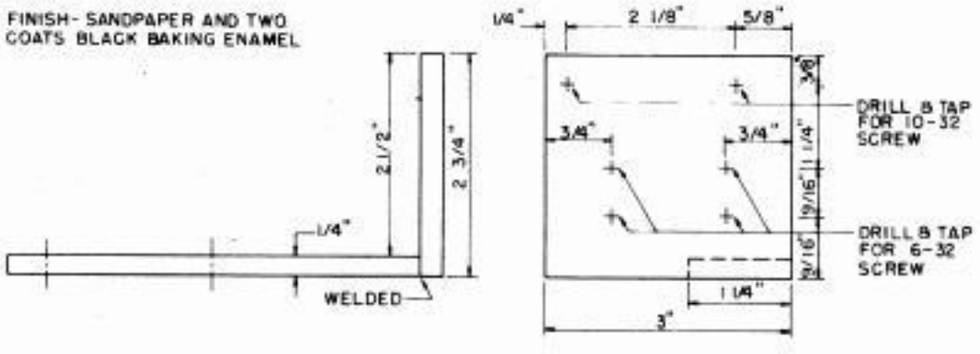


FIG. 4
WIRING SCHEMATIC OF

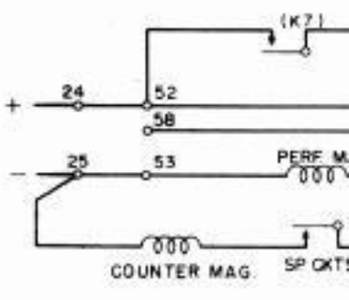


FIG. 5
CONTACT MOUNTING ARRANGEMENT

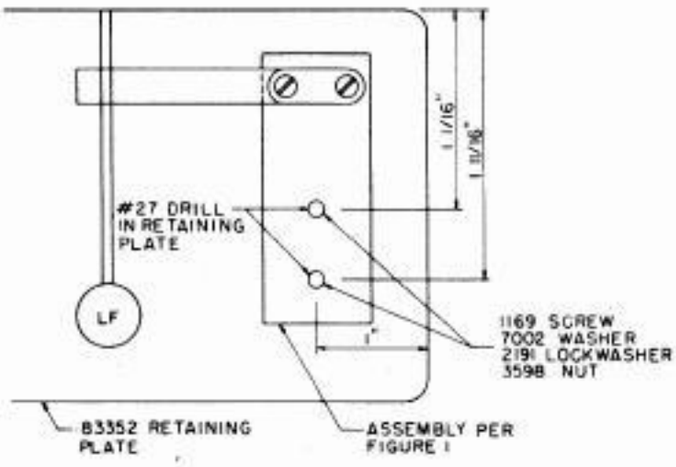


FIG 6
COUNTER MTG. ARRANGEMENT

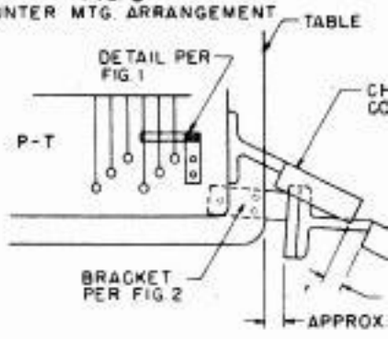
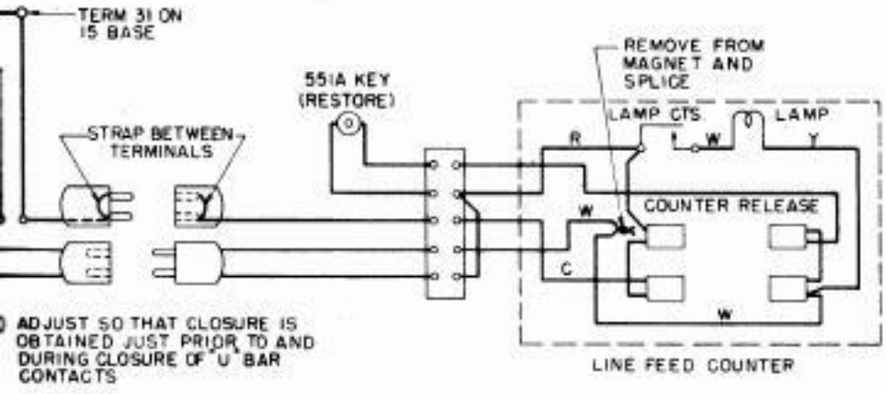


FIG. 4A
ASSEMBLY WIRING



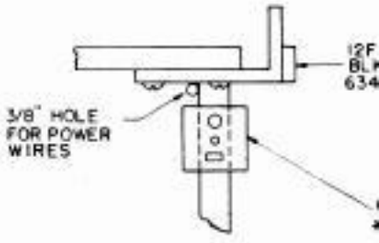


FIG. 4B
WIRING SCHEMATIC OF COUNTER MAG. CKT.

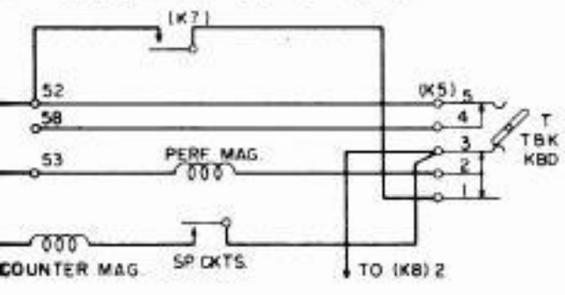
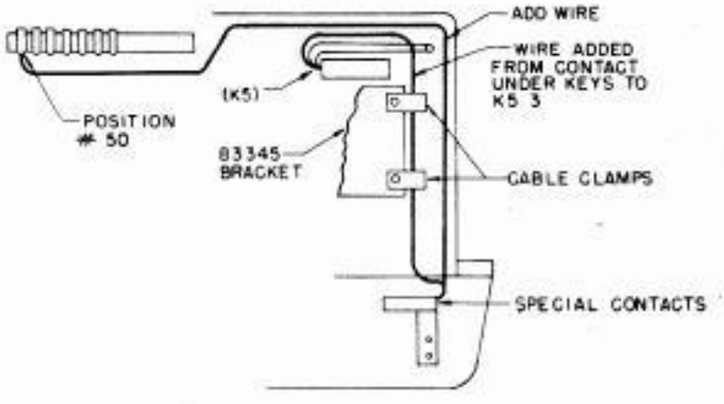


FIG. 4C
SPECIAL CONTACT WIRING



Drawing revised to reflect changes in Figure 1 and 3.

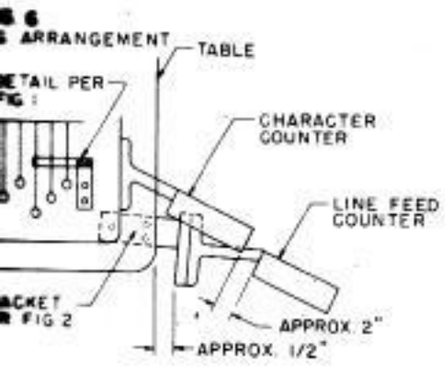


FIG. 9
COUNTER MOUNTING ARG'T
(METAL TABLES)

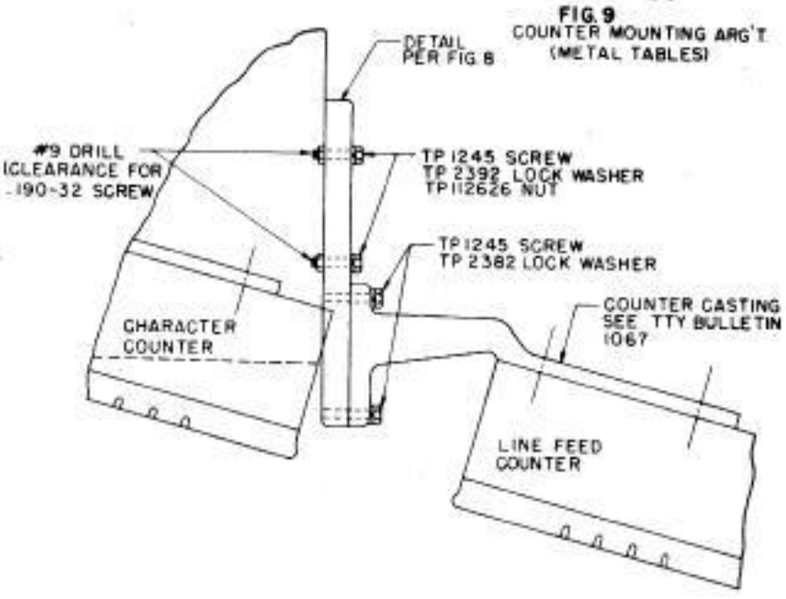


FIG. 7
ACCESSORIES MOUNTING
ON 19A TABLE

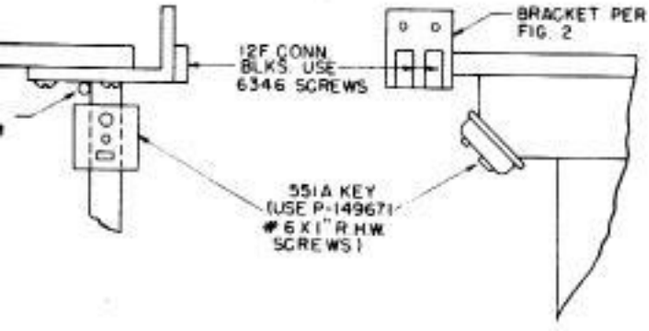


FIG. 10
ACCESSORIES MOUNTING ARG'T
(METAL TABLES)

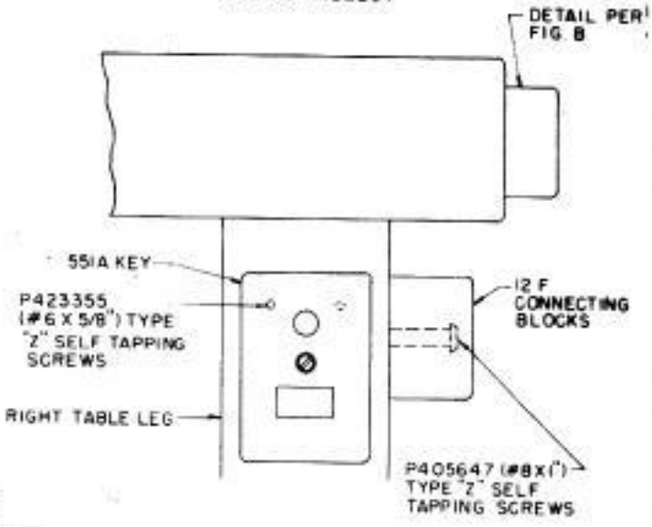


FIG. 8
COUNTER MOUNTING BRACKET (METAL TABLES)
CR STEEL, ALL CORNERS AND EDGES ROUNDED
PAINT TO MATCH FINISH OF TTY APP