

WC-6A WORD COUNTER

DESCRIPTION AND PRINCIPLES OF OPERATION

1. GENERAL

1.01 This section provides a description and the principles of operation of the WC-6A word counter, which is an on-line unit operating at speeds of 60, 75, or 100 wpm and which can be used with either 5- or 8-level code.

1.02 The counter is designed to register one unit (one word) for every six teletypewriter characters transmitted.

2. DESCRIPTION

2.01 The WC-6A word counter is 4 inches high by 4-1/2 inches wide by 6-3/4 inches deep, and weighs about 6 pounds.

2.02 There is no physical connection between the counter and a teletypewriter. The only connections required are line and power.

2.03 The word counter may be table-mounted or rack-mounted. Parts for mounting the word counter in a 19-inch relay rack provide spaces for one, two, or three word counters in a height of 5-1/4 inches. The parts include rack mounting plates for mounting the units and apparatus blanks to fill unused spaces.

2.04 The word counter motor will operate on 105- to 125-volt 60-cycle power. It is an induction motor and the speed is sufficiently constant for the word counter to operate correctly with bias or end distortion in the signal up to 40 per cent marking or spacing when used with 5-level code. Distortion tolerance is slightly less with 8-level code.

2.05 Interchangeable gears couple the motor to the control shaft for various teletypewriter speeds. Gears for various speeds are identified by color; white for 60 wpm, red for 75 wpm, and blue for 100 wpm. The speed of the gear in use may be determined by the color as seen through the air vent in the right-hand side of the cover. The unused gears are stored inside the cabinet in a special gear storage holder.

2.06 The maximum count is 99,999 and the counter automatically resets to zero on the next character received. On Bell System models it is possible to reset the counter to zero at any time by use of that part of the periphery of the reset knob which protrudes through a slot in the front panel. Other models can be provided without the slot and knob, but with an access hole in line with the counter shaft to permit insertion of a tool for resetting.

2.07 Below the counter dials in the front panel is a toggle switch which controls ac power to the motor and the panel light. The motor and the light go on and off simultaneously.

2.08 A transmitter line relay in the circuitry eliminates inductance and permits satisfactory operation in a neutral circuit at 20 or 60 ma without readjustment. The only precaution needed is that the word counter must be connected to the signal circuit in the correct polarity, as indicated on the cover nameplate.

2.09 The word counter is furnished complete except for power and line cords, which can be ordered separately. The cords should be connected to the terminal block in accordance with the diagram shown on the rear of the cover, clamped by means of the cable clamps provided, and routed to exit through the slot in the cover.

3. PRINCIPLES OF OPERATION

3.01 The counter assembly is driven by the control shaft through 10:1 gears. A friction clutch in the control shaft is alternately blocked or cleared for counter rotation by means of the selector magnet, which is controlled by the teletypewriter signal line. The control shaft makes 1/6 of a revolution for each teletypewriter character, and registers one unit on the counter (1/10 revolution) for each six teletypewriter characters.

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3.02 The magnet armature has two portions capable of blocking clutch and counter rotation. Under normal signal conditions, only one of these stops the clutch. This occurs during marking (current on) condition of the line.

3.03 If an open-line condition should occur, the second blocking portion of the armature extension will block clutch and counter revolution

until line current is restored. This prevents registering false counts during open-line conditions.

3.04 The counter must be connected to the line circuit in the proper polarity.

3.05 Figures 1 and 2 show the locations of the component parts of the word counter.

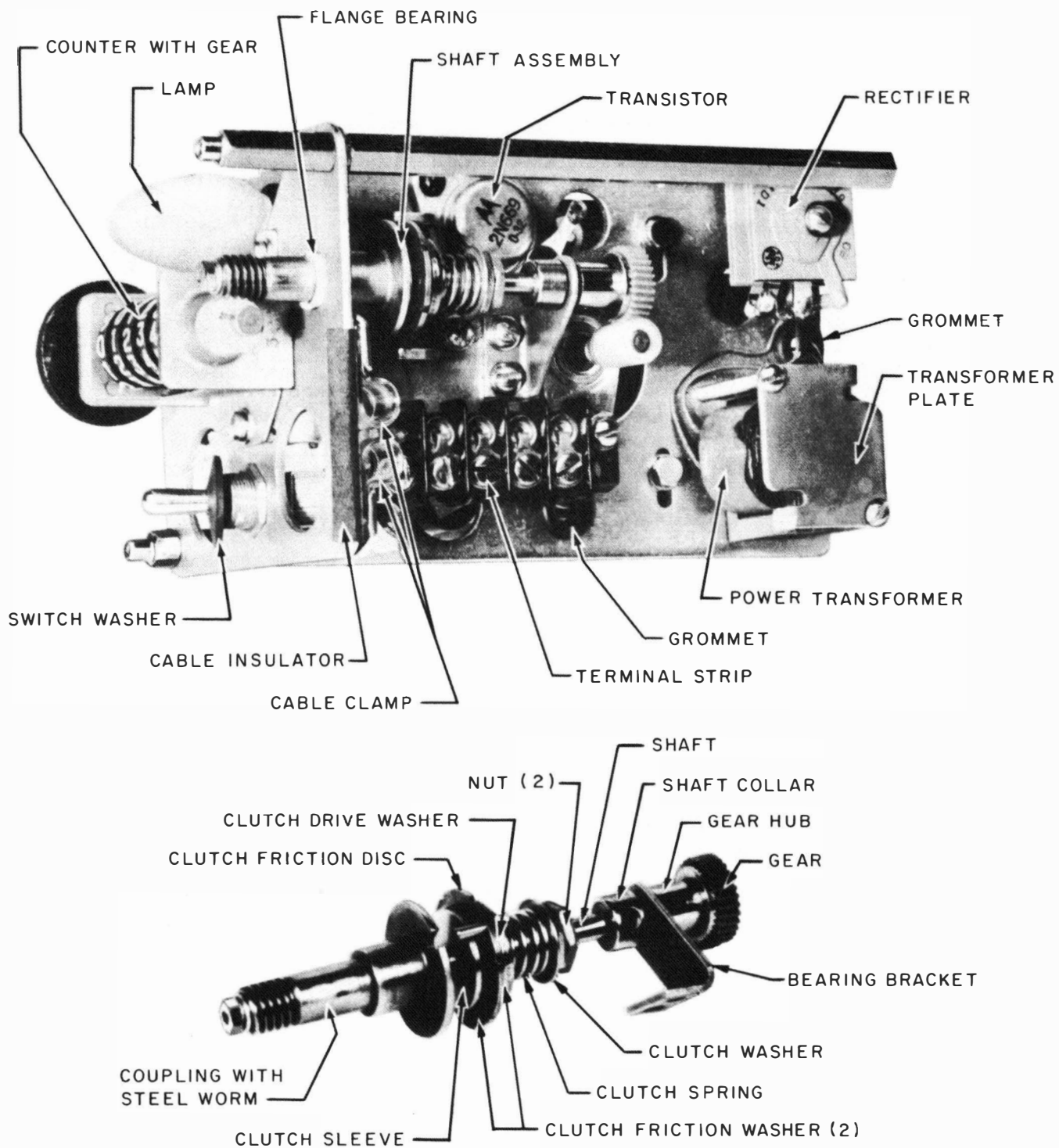


Figure 1 - Left-side Frame Components

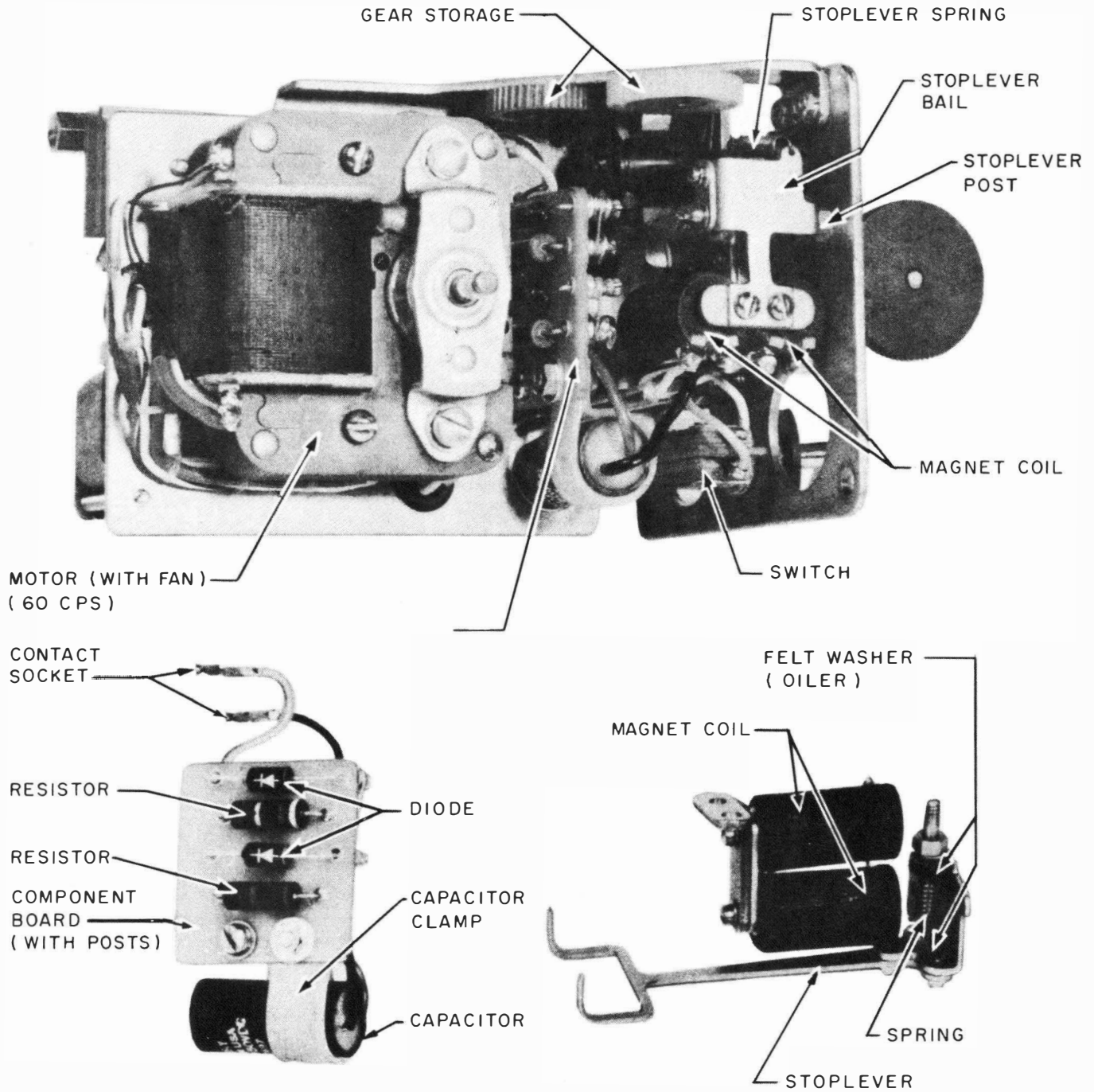


Figure 2 - Left-side Frame Components