10 AND 11 TYPE BELLS
AND
10 TYPE BUZZERS
REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

1.01 This section covers 10 and 11 type bells and 10 type buzzers and replaces specification X-70303-01, issue 2-D.

1.02 Reference shall be made to Section 020-010-711, covering General Requirements and Definitions for additional information necessary for the proper application of the requirements listed herein.

1.03 Part 1, "General" and Part 2, "Requirements" form part of the Western Electric Co. Inc. Installation Department handbook.

2. REQUIREMENTS

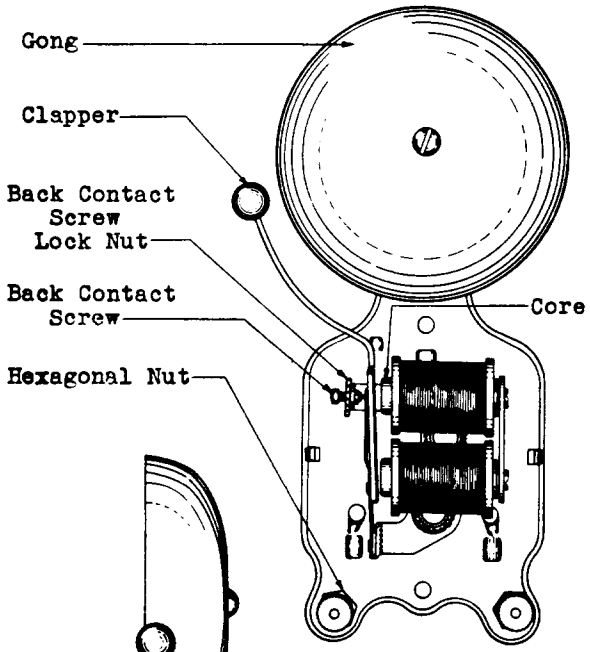

Fig. 1

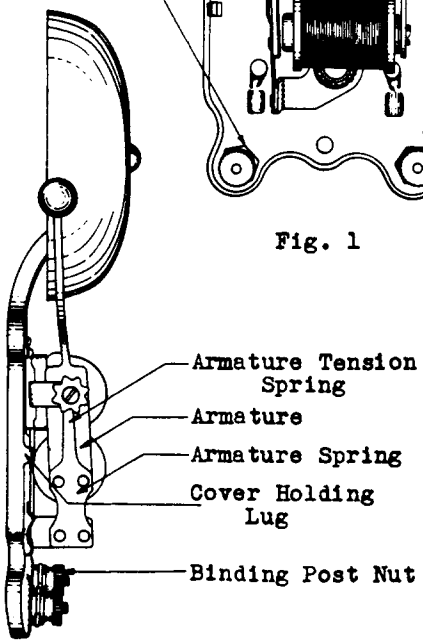

Fig. 2

2.01 Cleaning The bell or buzzer shall be cleaned in accordance with the section covering cleaning procedures for relay contacts and parts.

2.02 Cover Fit The cover shall be securely held in place by the cover holding lugs. Gauge by feel.

2.03 Clearance Between the Clapper and the Slot in Cover (10 and 11 Type Bells Only) During the normal operation of the bell there shall be a perceptible (min. 1/32") clearance between the clapper and the slot in the cover. Gauge by eye.

2.04 Electrical Requirements The bell or buzzer shall give a good signal when the circuit in which it is used is closed. The bell or buzzer is designed to give a good signal on both the minimum and maximum voltages listed in the following table.

Code No.	D.C. Operating Voltage Min.	Rated	Max.
BELLS			
10-A	2	3	5
10-B	3	7	10
10-C	10	15	20
10-D	15	24	40
10-E	24	36 & 48	60
11-B	3	7	10
11-D	15	24	40
BUZZERS			
10-A	2	3	8
10-B	4	7	15
10-C	10	15	20
10-D	15	24	40
10-E	20	36 & 48	60

3. ADJUSTING PROCEDURES

TOOLS

Code No.	Description
46 or 102	Wrench - 3/8" Hex. Socket
363	Spring Adjuster
-	Bell System Cabinet Screw-driver - 3-1/2" per A.T.&T. Co. Dwg. 46-X-40
-	Bell System P-Long Nose Pliers - 6-1/2" per A.T.&T. Co. Dwg. 46-X-56

3.01 CLEANING (Rq.2.01)

M-1 Clean the bell or buzzer in accordance with the section covering cleaning procedures for relay contacts and parts.

3.02 COVER FIT (Rq.2.02)

M-1 If the cover is loose on the cover holding lugs adjust it as follows: Grasp the slotted sides of the cover between the thumbs and forefingers of both hands and bend the sides outward as required.

3.03 CLEARANCE BETWEEN THE CLAPPER AND THE SLOT IN COVER (10 AND 11 TYPE BELLS ONLY) (Rq.2.03)

3.04 ELECTRICAL REQUIREMENTS (Rq.2.04)

M-1 General Failure of a bell or buzzer to give a good signal is usually due either to loose connections, broken leads, loose back contact screw, excessive or insufficient armature travel, excessive or insufficient armature spring tension or a distorted clapper (10 and 11 type bell only). It will be necessary to balance the armature travel and armature spring tension against each other. In checking for any of the above, remove the cover and proceed as follows:

M-2 Wiring Examine the bell or buzzer to determine whether the leads from the windings and armature to the binding posts, from the winding to the back contact or the wires connecting the two windings are broken.

M-3 Remove the binding post nuts and see whether or not the hexagonal nuts are tightened securely against the insulators. If necessary, securely tighten the nuts with either the No. 46 or No. 102 wrench.

M-4 Loose Lock Nut Failure of the back contact screw to be held firmly in place will result in the bell or buzzer giving a poor signal. To remedy this condition, tighten the lock nut by turning it as far as possible toward the right with the 6-1/2" long nose pliers.

M-5 Failure to Operate If no leads are broken and all connections are tight, but the armature fails to show any tendency to move toward the cores when the circuit is closed, it is an indication that the armature travel or armature spring tension is excessive.

M-6 If the armature travel is apparently excessive, reduce it as follows: Loosen the lock nut by turning it in a counter clockwise direction with the long nose pliers and then turn the back contact screw in a clockwise direction with the 3-1/2" cabinet screwdriver until the travel is such that the bell or buzzer operates satisfactorily when the circuit is closed. When the back contact screw has been set in the proper position, fasten the lock nut securely by turning it in a clockwise direction. Note at this time that when the armature is moved against the core there is an appreciable separation between the armature spring and the back contact.

M-7 If the armature travel is satisfactory, the failure to operate is probably due to excessive tension of the armature spring. Reduce the tension of the spring by adjusting it close to the base of the spring with the No. 363 spring adjuster as shown in Fig. 3. Take care not to kink the spring in making this adjustment.

3.03-3.04 (Continued)

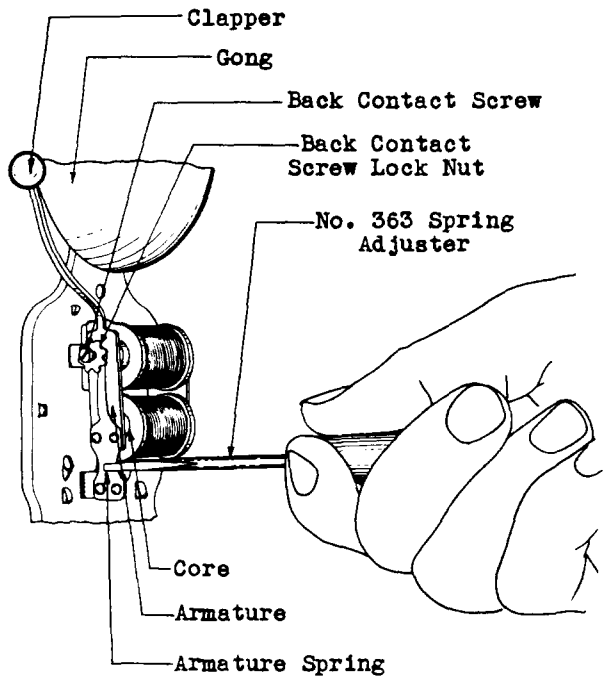

Fig. 3 - Method of Tensioning Armature Spring

M-8 Failure to Release Failure of the bell or buzzer to give a good signal may be due to the armature travel being too small, thereby causing the armature to stick against the core when the circuit is closed, or it may be due to the armature spring tension being insufficient.

M-9 If the armature travel is insufficient, increase the travel as follows: Loosen the lock nut as indicated in M-6 and turn the back contact screw in a counter-clockwise direction with the 3-1/2" cabinet screw-driver until the travel is such that when the circuit is closed it will give a satisfactory signal. After the proper setting of the back contact screw has been obtained, fasten the lock nut securely so as to prevent the back contact screw from moving out of position.

M-10 If the armature travel is apparently satisfactory, the failure to release is probably due to insufficient tension of the armature spring. To increase the armature spring tension, adjust it close to the base of the spring with the No. 363 spring adjuster as shown in Fig. 3. Take care in making this adjustment not to kink the spring.

M-11 If the sound is not loud enough, increase the tension of the armature tension spring by applying the No. 363 spring adjuster close to the base as shown in Fig. 4, and giving the adjuster a slight twist in a direction which will increase the pressure of the spring against the back contact screw. If the sound is too loud decrease the tension of the spring. Take care not to kink the spring in making this adjustment.

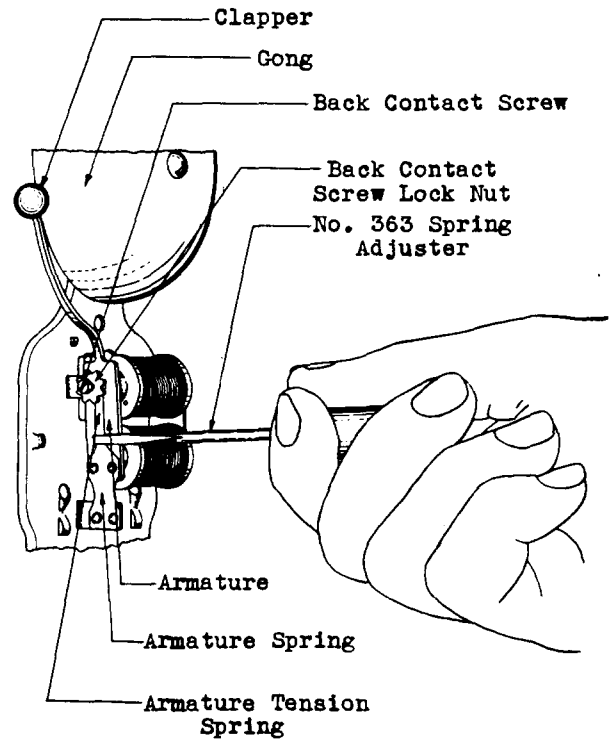

Fig. 4 - Method of Tensioning Armature Tension Spring

3.03-3.04 (Continued)

M-12 After the above adjustments have been made, replace the cover and operate the bell. If the bell does not operate satisfactorily, it may be due to the clapper striking the edge of the cover. If this occurs, remove the cover and adjust the clapper as required with a pair of long nose pliers.

M-13 If the armature vibrates uniformly but the clapper does not strike the gong, bend the clapper as required with the long nose pliers applied as shown in Fig. 5.

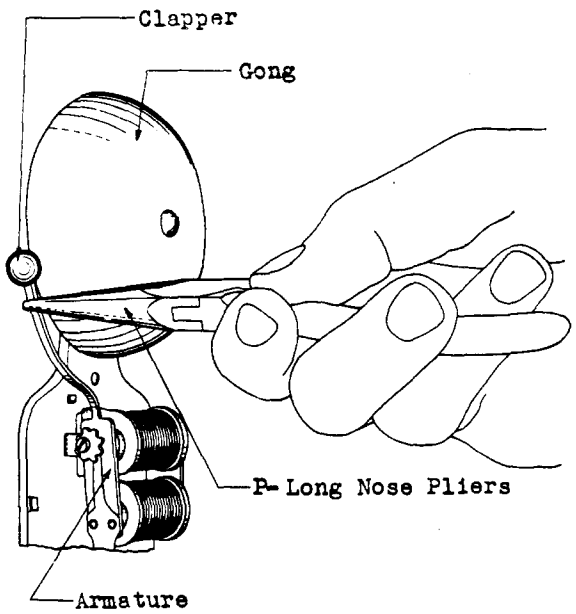

Fig. 5 - Method of Adjusting for Clapper Movement