Herschede/Revere
Electric Grandfather Clock Manual

Revere Clocks

REVERE
Telechron
MOTORED

SERVICE MANUAL

THE REVERE CLOCK COMPANY
CINCINNATI 6, OHIO

ROGER GORDON
Fine Clockmakers Since 1976

Revere Clocks

SERVICE MANUAL

INTRODUCTION

These movements are carefully made and assembled by expert clock-makers. After thorough inspection a complete running test is made to observe any defects. They are then mounted into cases and chime hammers are adjusted. The next step is a general inspection of the casing, dial and parts entering into the mounting of the movement into the case. The clock is then given another running test and a careful final inspection before it is packed. Every effort is made to ship each clock in the best possible condition.

Occasionally, due to rough handling, it is possible that some part may become disarranged and need a little adjustment. Each clock should be tested by the retailer before he delivers it to the consumer; at least, it should be plugged in and the hands moved around for a few hours allowing it to chime at each quarter. When the retailer has alternating current in his store he should endeavor to run each clock at least a few hours and if possible 24 hours. Careful attention should be given to the instruction on inside of back door before attempting to set up the clock.

When unpacking mantel clock remove with care the wood block that holds the chime bars secure while clock is being shipped. If the clock operates satisfactorily by moving the hands forward the sound of the chime should be particularly noted. If they do not sound clear, see that all hammers are ⅛" away from the chime bars and are directly over the center øf the bar. All bars should be straight in line. If a bar should touch the case when vibrating bend it down slightly by pressing gently at the point where bar joins chime holder. Bend sideways if bars should touch each other.

CONTENTS

MANTEL MODEL

FLOOR MODEL

EXPLANATION OF

Electric Five Tube FLOOR CLOCK MOVEMENT

CHIME CONTROL

See Figure 6, Page 13

The chime is controlled by the four pins, A, B, C, D on the lifting disc "E." A, B,C and D operate the first, second, third and fourth quarter chimes respectively.

These pins move the lifting lever "F" to the right, permitting the shifting lever hook H to drop over pin J on the shifting arm K. The lift should be far enough to permit $\frac{1}{32}$" clearance between the pin J and hook H *and each pin should be tested.*

Pin D operates the self-adjusting feature at the hour which will be explained later. If the lift is not enough to afford the above clearance the lifting lever F should be bent slightly to the left and, if too much, bend to right at the end that comes in contact with the lifting pins A, B, C and D.

As the lifting lever F drops off one of the pins on the lifting disc E it is pulled back almost to its original position by the small coiled spring L and since the shifting lever G has hooked the shifting arm K by its pin J, the shifting arm K is pulled with it towards the left of the movement. The lower pin M on the shifting arm K is then pulled out of the slot in the locking disc and is held out until the locking disc has turned far enough to be sure that when the shifting lever G is released the pin will not drop back again into the same slot but will rest on the circumference of the locking disc N. The shifting lever G is released by the pin S which makes one revolution for each bar (four notes) chimed and lifts the lever so that the hook H is released from the pin J. The lifting lever will then go completely back to its original position against its banking pin T. When it is in this position the hook H should rest on top of the pin J while the clock is chiming.

The shifting arm K has a double duty. It engages the chime gear arm pin U through its slot; also the lower pin M holds gear arm gear W into mesh while chiming by resting on the circumference of locking disc N. There should be slight play between the locking disc N and pin M. The locking disc turns as the chimes operate and as the slots come into position the pin M will drop and the gear W on gear arm V, is pulled out of mesh by the coiled spring X attached to it on inside of movement plate. This spring should be just strong enough to safely disengage the gear W from the center wheel Y. The lift lever spring L which pulls the chime gear arm gear W into mesh can be as strong as desired but must be strong enough to pull the chime gear W safely into mesh. If the gear arm spring X is too weak the gears will not come out of mesh and the clock will continue to chime. If the gear arm spring X is stronger than the lifting lever spring L it will resist the lifting lever spring L and pin M will not be completely pulled out of the slot in the locking disc and as the gears are in mesh the disc will turn and bind itself on pin M and the clock will stop.

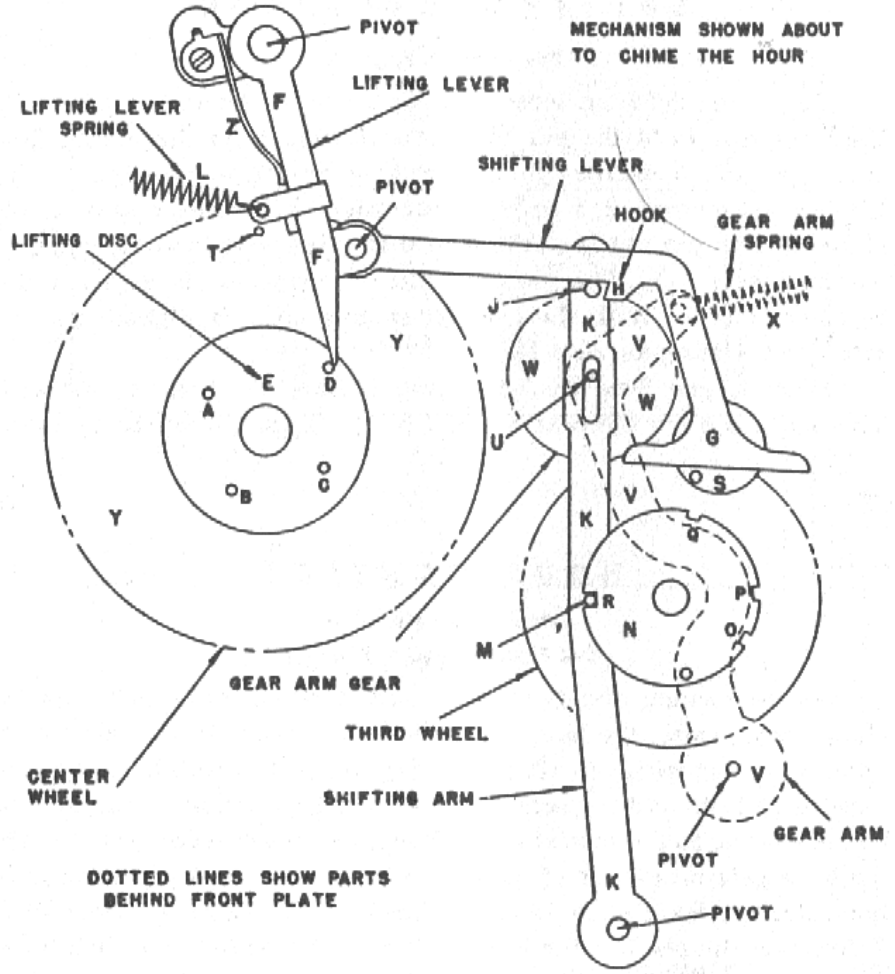


Figure 6

SELF ADJUSTING FEATURE

The locking disc N determines the proper quarters on the chimes by the distance between the slots. Three of these slots, O, P, Q, are the same depth. These three represent the first, second and third quarter chimes respectively. The fourth or deep slot R represents the hour or fourth quarter chime. When the pin M of the shifting arm K is in the slot R it takes a longer movement of the lifting lever F to disengage it from the slot than it does to disengage the pin M from slots O, P, Q. Pins A, B, C on the lifting disc will disengage the shift arm pin M from the three quarter slots O, P, Q, but will not disengage it if it is in the deep or hour slot R. The hour pin D because of its position on the lifting disc has a longer throw and is the only pin that will permit the shifting lever hook H to drop behind the pin J when pin M is in the hour or deep slot on the locking disc. This is the self-adjusting feature as the four quarter bars will only chime at the hour.

SETTING CYLINDER

See Figure 7, Page 15

To set the cylinder, loosen the set screw in the stopping disc N. Turn the disc until the pin M on the shifting lever drops into first quarter slot O. Turn the cylinder until the row of pins are found that lift hammer levers 1, 2, 3 and 4 in succession. When this row is found, place the first pin (1) in position so that it is about to strike the first hammer lever (1). The pin 1 should be about $\frac{1}{16}$" away from the hammer lever 1. With the cylinder in this position, tighten the set screw in the stopping disc N.

Newest type floor clock movements have the first pin marked. This mark is a red dot next to pin 1 on the right side of the cylinder.

HOUR CONTROL

Left Side of Movement

See Figures 8 and 9, Page 17

As the locking disc N revolves and starts on the fourth quarter chime, pin 1 raises the hour release lever 2, whose head 7 raises rack hook 3, by engaging pin 18, permitting the rack 4 to fall the correct number of teeth and the rack arm 5 to take its position on the snail 6, corresponding to the correct hour. The hour release lever head 7 holds the hour gear arm 8 out of mesh by sliding over pin 9 when the rack hook starts to leave pin 9. As the chime is ended the hour release lever 2 drops off the pin 1 in the locking disc N and permits the rack hook pin 12 to fall in the teeth of the rack 4. The hour release lever 2 is moved back to its original position by spring 11 and the hour gear arm 8 is released and the small gear 19 is pulled into mesh with center wheel Y by the coiled spring 13 attached to arm 8 and the strike begins. This spring 13 should be just strong enough to pull the gear 19 safely into mesh. The gathering pallet 14 begins to turn and makes one revolution every time the hour strikes once and its pin 15 gathers one tooth every revolution. As each tooth on the rack 4 is gathered the rack hook pin 12 drops behind it and prevents the rack from returning to its original position. After all the teeth have been gathered the rack hook 3 drops to its original position, striking hour gear pin 9, disengaging the hour gear arm wheel 19 from the center wheel. The spring 16 on the rack hook 3 should be strong enough to overcome the spring 13 on the gear arm 8 and disengage gear 19 from the center wheel Y. If the hour gear arm spring 13 is stronger than rack hook spring 16 it will be impossible for the rack hook 3 to push the gear 19 out of mesh and the strike will continue to operate.

Turn to Page 16

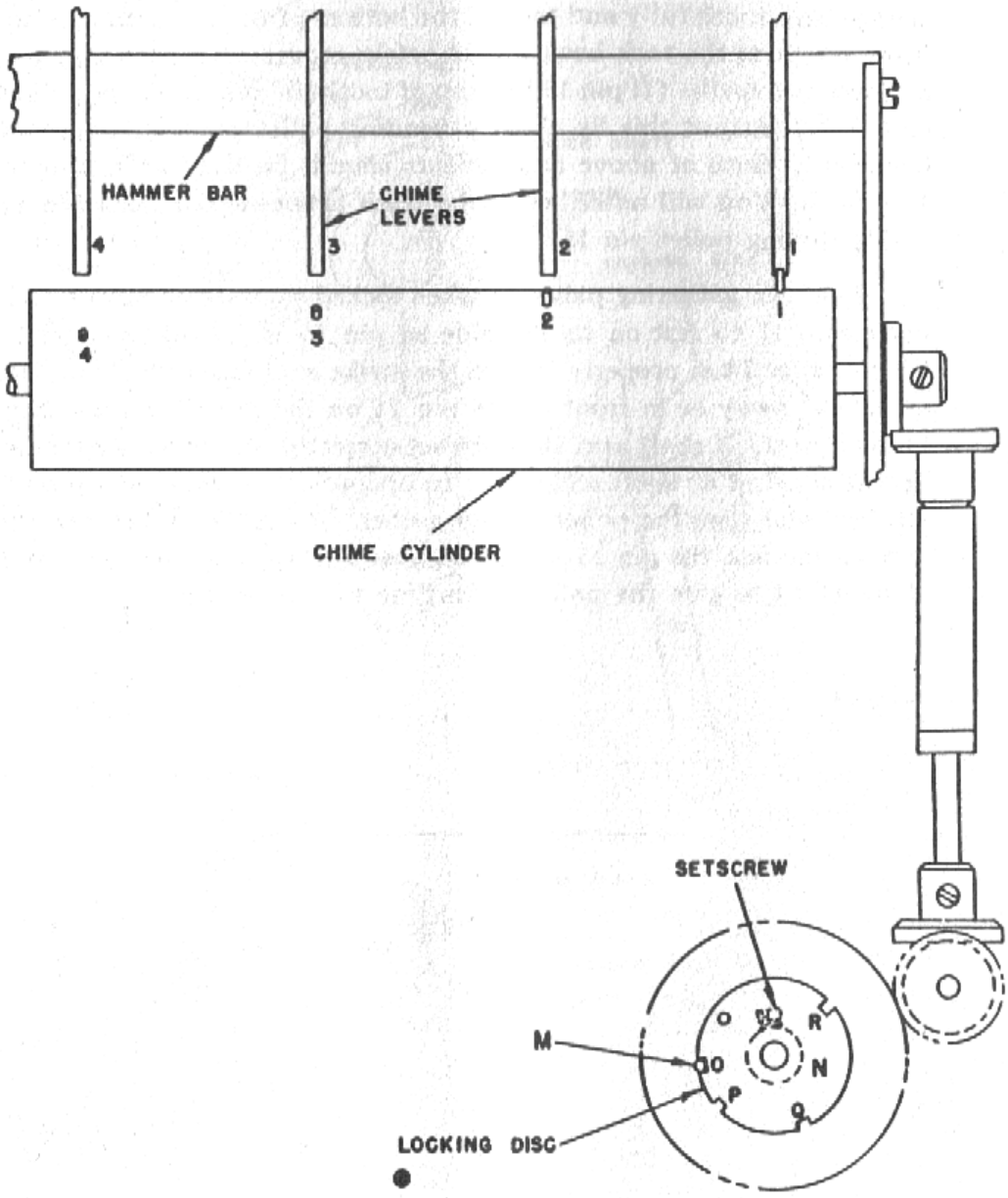

HAMMER BAR
CHIME LEVERS
4
3
2
1
4
3
2
1
CHIME CYLINDER
SETSCREW
M
LOCKING DISC
O
P
Q
R
N

Figure 7

The rack hook pin 12 should rest in the bottom of the rack teeth when rack arm 5 is properly set to engage a step on snail 6. Adjust this when minute hand is at 12 by slightly moving rack arm 5, being careful not to loosen friction. The gathering pallet pin 15 should engage each tooth fully and toward the bottom of the tooth and gather just enough so the rack hook pin 12 safely moves over one tooth but not over two teeth. (If pin 15 hits top of tooth the movement will bind and stop.) Adjust this by slightly bending pallet pin 15 forward or backward. Both of above adjustments should be tried at 1, 3, 6, 9, 12 o'clock. You will note there are 4 teeth between rack hook pin 12 and gathering pallet pin 15.

The hour gathering pallet 14 when locked should permit the rack hook arm 17 to rest on its flat side so pin 15 is free of rack teeth. When pallet 14 is properly locked the strike shaft arm 20 should be about $\frac{1}{32}$" away or in front of the pin 21 on the pin wheel, which is to lift it next. If shaft arm 20 is not set correctly, the pallet 14 should be pulled off of its shaft and reset. In operation, the hammers should fall first and then the pallet should gather. If the pallet 14 does not lock on the flat, the pin 15 should be bent slightly towards the center of pallet 14 to give the pallet more time to lock.

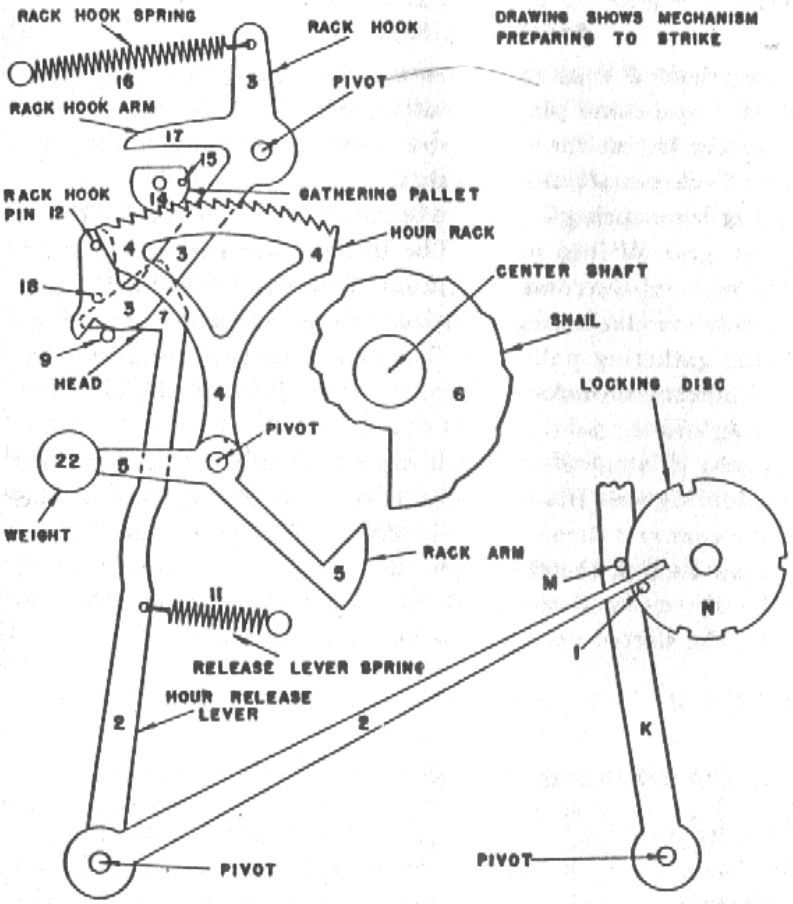
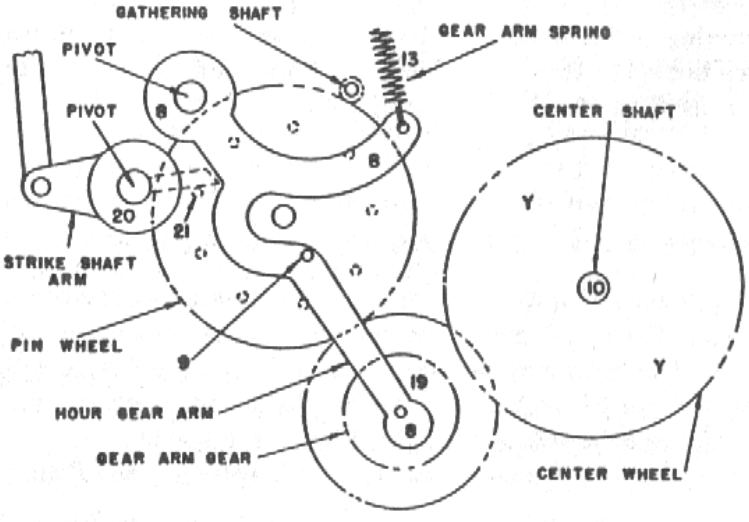


Figure 8



THESE PARTS ARE IMMEDIATELY BEHIND FRONT PLATE. COMPARE GATHERING SHAFT AND CENTER SHAFT POSITIONS

Figure 9

IF CLOCK FAILS TO CHIME

See Figure 8, Page 17

1. Lifting lever F may not throw over far enough to let shifting lever hook H drop behind pin J in shifting arm K. Bend lifting lever F slightly to the left at the end where it comes in contact with the lifting pins. Each pin should be tested.

2. Lifting lever spring L may be broken or too weak and will not pull gear arm gear W into mesh. The lifting lever spring L should be strong enough to overcome the spring X on the gear arm V. Cut one or two coils to make spring L stronger or replace with new spring.

3. Chime gathering pallet pin S may not be set correctly. Pin should be at bottom with slack taken up when pin M is in one of the slots in locking disc N.

4. Cylinder drive gear on side of movement may be loose on the cylinder shaft. Tighten the set screw that is on the bushing of the cylinder drive gear and then reset cylinder. See Figure 7, Page 15.

5. The meshing of the chime gear arm gear W with center wheel Y should be about ⅔ of the tooth so they will not bind. This is controlled by the slotted ex-center behind shifting arm K.

IF CLOCK CONTINUES TO CHIME

1. Cylinder may not be set correctly. See Figure 7, Page 15.

2. Gear arm spring X may be too weak to pull gear arm V out of mesh. Strengthen spring by cutting off two or three coils. See Figure 6, Page 13.

3. Gathering pallet S may be loose on shaft and won't release shifting lever hook H. Reset with pin to bottom and tighten pallet by driving it on its shaft. See Figure 6, Page 13.

IF CLOCK STOPS ON CHIME

1. Lifting lever spring L may not be strong enough to overcome gear arm spring X to pull pin M completely out of its slot in the locking disc N. The teeth may be slightly in mesh and the disc N will turn, locking the pin M against the slot in disc N. Strengthen lever spring L by cutting off a coil or two. See Figure 6, Page 13.

2. Rotor unit may be weak. Unit must be replaced. See Figure 1, Page 3.

3. Chime hammer may be adjusted too strong. See Paragraph "Testing The Chimes," Page 23.

IF CLOCK FAILS TO STRIKE

See Figure 9, Page 17

1. The meshing of the hour arm gear 19 with center wheel Y should be about ⅔ of the tooth, so they will not bind. This is controlled by the slotted ex-center behind hour release lever head 7.

2. Hour release lever spring 11 may be too weak to return lever to its original position. Strengthen spring by cutting off a coil or two or replace.

3. Hour release lever 2 may fail to raise rack hook 3 high enough to let rack 4 fall. Correct this by bending hour release lever 2 at point it contacts pin 1.

4. Rack may fail to drop. (a) The hour gathering pallet pin 15 may not be set correctly, resting in teeth keeping rack 4 from dropping. Reset hour gathering pallet 14. (b) Strike shaft pin 20 may be resting on pin 21 which load backs up gathering pallet pin 15 into rack teeth when rack is ready to fall. Reset.

5. Gear arm spring 13, may be too weak to pull gear arm gear 19 into mesh with center wheel Y. Strengthen spring by cutting off two or three coils or replace.

IF CLOCK CONTINUES TO STRIKE

See Figure 8, Page 17

1. Hour rack hook spring 16 may be too weak to disengage the gear arm gear 19 from center wheel Y. Strengthen spring 16 or replace.

2. Hour gathering pallet 14 may be loose on its shaft and won't gather the rack teeth. Reset.

IF CLOCK STOPS ON STRIKE

1. Hour rack 4 may not be set correctly and gathering pallet pin 15 may be hitting on top of the teeth. Reset. See Figure 8, Page 17.

2. Rotor unit may be weak. Replace. See Figure 1, Page 3.

3. If the hands do not move or there is any variance of time, but the clock is running, tighten the friction on the minute tube by tapping the bushing on the side opposite the tube. This friction washer is behind large gear next to lifting disc E.

4. If the minute hand moves at the same speed as the second hand remove the minute tube and ream it out a little so that it spins freely but without play on the center shaft.

5. If th hour gathering pallet 14 continues jumping when hour should strike, spring 13 is not strong enough to hold gears 19 and Y in mesh. Strengthen spring by cutting off two or three coils, so it will safely pull gear arm gear 19 into mesh with center wheel. There also may be a bind between the two gears on the gear arms. Bend arm slightly towards front plate to give more play between gears.

HOW TO ADJUST
FLOOR CLOCK PENDULUM

1. Friction of star wheel should be very slight. The friction spring controls this friction with the collar that screws on bushing. After the required friction is established fasten collar with the small set screw.

2. Each point of star (five points) should have a polished surface.

3. The steel flange on pendulum fork should have a heavy friction although it should be possible to move it.

4. When pendulum is swinging each point of star should come in contact with the steel flange on fork about $\frac{1}{32}$" from end of steel flange. If higher than $\frac{1}{32}$" pendulum will have longer swing and may stop if star hits too high.

5. When each point of starwheel comes in contact with steel flange on fork, it will be noticed, if friction is correct, that the star wheel will back up slightly before releasing.

6. If it is necessary to move steel flange, hold fork with one hand and with the other force the flange until proper stroke is secured.

7. If adjustments are correct, pendulum will swing about three inches across the case.

8. Newer model clocks have a pendulum operating stud instead of steel flange shown in Figure B. The pendulum in this case must be adjusted by the beat adjusting disc located on the pendulum rod which controls how far up on the operating stud the star wheel teeth will hit.

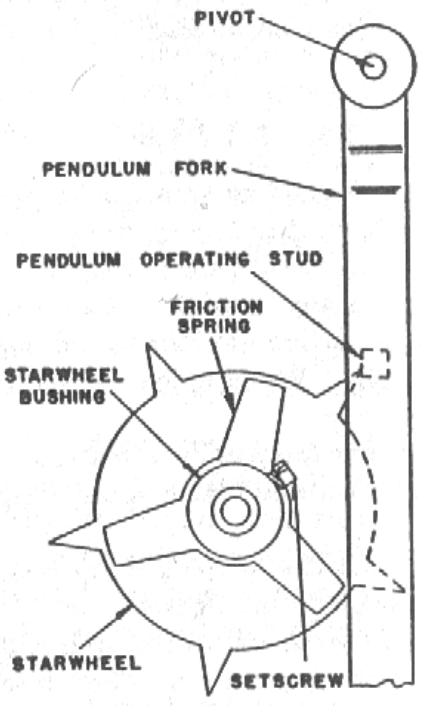


Figure A
NEWER MODELS

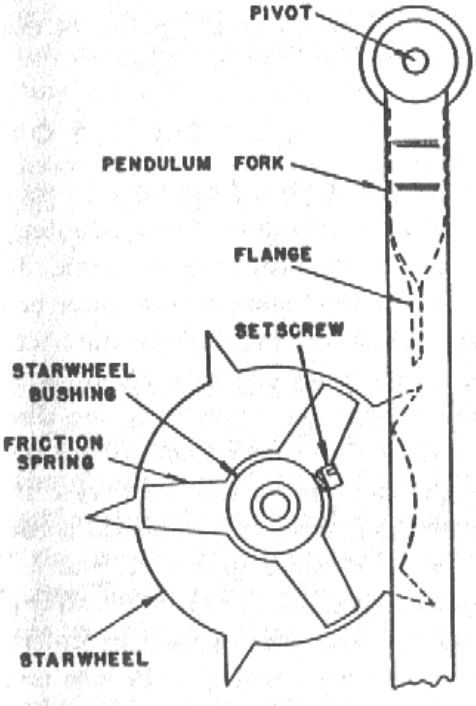


Figure B
OLDER MODELS

Setting Up Directions for FLOOR CLOCKS

UNPACKING THE CASE

Each clock is packed in four packages consisting of 2 wooden boxes and two cartons — all packages for the same clock bear the same serial number as $\frac{436}{2345}$. The greatest care should be taken in removing the clock case from the packing box. First, the nails that hold the braces in place should be carefully removed before attempting to release them from their fastenings. Damage to the case is chiefly due to careless removing of the braces. Keys for doors are wrapped in package tacked on center brace. Look carefully for case ornaments.

REMOVING TOP OF CASE

Place the clock case near the location selected for it. If the case has a removable hood, take it off to simplify installation of the movement. If the case, so to speak, is a one-piece case, remove cloth frame from back of case and the top or roof, with or without the front moulding attached. This gives free access to the space to be occupied by the movement and for inserting tubes and attaching electric cord.

PLACING MOVEMENT

The Revere Telechron Motored Tubular Chime Movement will run only on 110 volt, 60 cycle, alternating current circuits and should be connected to a circuit which is constantly alive. Make sure that there is no switch that is likely to be opened so as to deprive it of current. Movement is marked with name of case. Remove cardboard from behind hammer springs. After removing 4 screws in bottom of seat board place the movement in position on the brackets and fasten the screws in the holes provided for them. Loosen screws in terminal block at back of movement and attach ends of electric cord.

The thin cords that are attached to the hammers on the rack should have sufficient slack to allow the hammers to be ⅛" from the bell when at rest. The dial should not be removed for this or subsequent assembling.

HANGING TUBULAR BELLS

Assort the five tubular bells. They are labeled in sets with the name of the case. Each set is tuned in harmony to a predetermined pitch and may vary, even if only slightly, from other sets. Hang the bells on the racks provided for them, beginning with the shortest bell at the right and ending with the longest one at the left of the rack as you face the clock. Hang them in the order of their length and stretch the cord well over the two (2) round head pins, and in such a manner that the knot comes above the center of the bell. Each bell should then be directly behind a hammer. The cord should not touch the bells except at the points where it passes through. Each bell should hang perfectly perpendicular to avoid striking each other when vibrating while chiming. This can be done by pulling the knot one way or the other. The chime tubes are very accurately tuned in sets and then numbered at the top side of the tube. Hour tube has no number but has a tag. NOTE: — It is more convenient to put the tubes into the case if the cloth back frame is removed.

LEVEL CLOCK

The clock should stand firmly on the floor and should be perfectly level in both directions, from left to right, and front to back, using large spirit level to prove it. This is necessary for proper operation of pendulum.

TESTING THE CHIMES

The clock is now in position to test the chimes. After turning on the current move the minute hand forward till it passes the next quarter and it will begin to chime. If any of the bells produce a tone too loud or too weak, adjust the hammer springs either closer to the bell, which produces a louder tone, or away from the bell, which will weaken the tone. Use our patented adjusting thumb nut, which greatly simplifies the adjustment of the springs. *CAUTION*: — Do *not adjust springs for too loud a tone as this will produce a harsh thud and will strain the mechanism and very possibly stop the chime. A pleasing mellow tone is proper.*

Be sure the hammers are ⅛" from the tubes at rest.

SETTING THE HANDS

After the chimes are tested, the hands should be set to correct time by moving the minute hand forward. Chimes and hour strike will automatically adjust themselves at next hour. Chimes sometimes do not operate when adjusting.

SETTING THE MOON

Be sure the moon spring and shift lever are not wedged between the face of the moon disc and dial. The figures and lines on the moon arch do not indicate a calendar month, but do indicate a lunar or moon month, which has 29½ days. Should the moon phase not correspond with the correct age, which may be obtained by consulting an almanac or calendar, then revolve the moon disc, which is done by a slight pressure of the finger on the disc, turning to the right, and proceed until an imaginary line drawn through the center of the moon phase comes in the right position with the arch. For example, if the moon is 12 days old and the arch indicates it 20 days old, revolve the disc until the imaginary line comes in line with 12 on the arch. When the moon is once set correctly it will remain so if the clock is kept running continuously.

PENDULUM AND WEIGHTS

Pendulum and weights are placed in Revere Telechron Motored Floor Clocks to supply the authentic traditional touch always associated with grandfather clocks. Neither have any bearing on the operation of the movement. Screw the suspension spring onto the pendulum rod and hang in position. The pivots of the spring should set firmly in the slots provided for them in the bridge on back of movement. The pin attached to the brass disc should be placed in the slot in the brass fork. The frictioned revolving star wheel operates the pendulum and should contact the blue steel impulse arm about $\frac{1}{32}$" from the bottom edge when pendulum is at rest. If necessary the amount of contact can be adjusted by loosening the thumb screw holding disc and moving disc to left to secure a greater impulse or to right to secure a lesser impulse. Swing pendulum gently and the slightly frictioned star wheel will continue to operate it. Hang weight cords on hooks under movement board with cord encircling pulley.

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