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Notes on O. B. McClintock Clocks

by Jim West (TX)

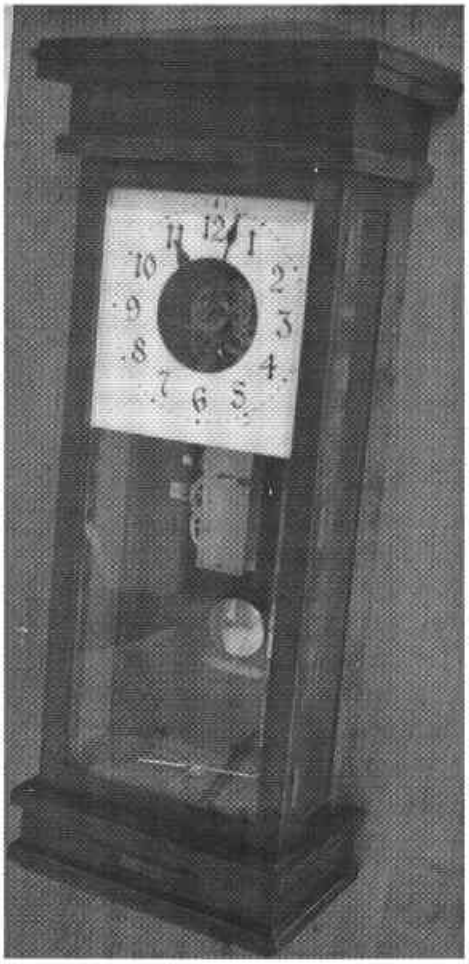
My interest in McClintock clocks began while I was gathering data on tower clocks on Texas Courthouses. (See NAWCC BULLETIN, February, 1988, Volume 30/1, #252.) In Texas, the courthouses in the smaller towns are usually located in the middle of the square, surrounded by the local bank and various businesses. I noticed that some of the banks had clocks, either on the corner or the front of the building, which were strike and chime. (The unusual chime of these clocks will be described in detail further along in the article.) These clocks served not only as timekeepers, but as advertisements, bearing the bank's logo.

I was even more impressed to find a two-dial McClintock (Figure 1) at the NAWCC National Convention in Buffalo in 1989. It was displayed with its master clock (Figure 2). As I let my interest in McClintock clocks be known, friends began sending me more information. Don Robinson of New Orleans sent me an article that was published in the New Orleans *Times-Picayune* about the Whitney Bank which used the McClintock clocks as its logo (Figure 3). Those who took the tower clock bus tour at the New Orleans National saw many of these fine Whitney clocks. (See the June 1992 BULLETIN, #278, p. 345, for more on the Whitney Bank and its McClintock clocks.)

I checked the Master Retrieval Index of the BULLETIN to see if there had been anything written or published on the McClintock clocks. The only thing I found was an article by Mrs. Virginia Timmons, who wrote about a McClintock clock that was installed in the center courtyard of an apartment complex in Houston, Texas. This clock had originally been on a bank in New Orleans. (See the April 1965 BULLETIN, #115, p. 767.) In addition, the Answer Box in the October 1967 BULLETIN #130, p. 1139, had an inquiry from a B.E.S., Hixson, TN, regarding a master clock. This lack of information motivated me to do some research and ask for help.

I was aided by Kathy Marquis, reference Associate with the Minnesota Historical Society, St. Paul, Minnesota, who furnished me information on O. B.

Left, Figure 1. McClintock-Loomis secondary clock on display at the 1989 NAWCC National in Buffalo, NY. Center, Figure 2. The McClintock-Loomis master clock at the 1989 National. Right, Figure 3. A Whitney National Bank clock of New Orleans. Most of their branch banks use the McClintock as their logo.



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O. B. McClintock Company

(INCORPORATED)

(Successors to McClintock-Loomis Company)

Manufacturers of Electrical Chime and Clock Systems Carry the Message of Minneapolis to All Parts of United States

O. B. McCLINTOCK
President and Treasurer O. B. McClintock Company

WHILE Minneapolis is celebrating her Golden Jubilee, thinking students of commercial conditions are looking back over that stretch of half a century, picking out for themselves the institutions and individuals directly responsible for this unprecedented growth and prosperity. True it is that many of the big things and unusual achievements have been brought about by pioneers who cast their lot with the community during its formative years, yet it has been the injection of pulsating, enthusiastic blood during later years that has maintained the prestige of the city and enabled it to cope with competing centers.

To the O. B. McClintock Company, successors to the McClintock-Loomis Company, and O. B. McClintock, its president, belongs the credit for creating the only business of its kind in existence—the manufacture of Electrical Chime and Clock Systems which ring out a reminder of Minneapolis every fifteen minutes in more than a thousand American cities. It is a Minneapolis company, and its virtue lies not only in perfecting an electrical chime and clock system that has won its way to national prominence on merit, but in the fact that these chimes are procurable only in Minneapolis. Wherever they adorn a bank building front they call attention of passing throngs to Minneapolis-made products. In the four corners of the United States, from Port Townsend, Wash., to Rockland, Maine, and from Fort Meyer, Florida, to Corpus Christi, Texas, and San Diego, California, these chimes and clocks not only advertise financial institutions in a dignified, impressive manner, but add to the refinement and culture of the community which they adorn. Conservative bankers of New England have adopted the McClintock chimes. Banks and trust companies of Pennsylvania, New York, Tennessee, California, Nebraska, and every other state of the union recognize the chimes as one of their chief advertising assets.

By combining a set of tubular chimes with illuminated clock dials and controlling both by an inside master clock the company has evolved a street clock that is at once attractive, artistic, and dignified. Brass, bronze, and copper beautify the housing of the chimes. Thanks of civic organizations and commercial bodies inevitably follow the installation of McClintock chime systems, and the unusual pulling power of advertising given the bank has caused the demand to make substantial gains.

Every quarter of an hour the chimes peal out the message of Minneapolis. They ring strongly and in tune with the familiar Westminster refrain:

Lord, through this hour
Be thou our guide,
So, by thy power,
No foot shall slide.

Everyone who has lived within sound of the bell of Westminster is familiar with the verse. The origin of the carillon has never been positively established. Some writers accredit it to a Mr. Crouch, who was a pupil of Dr. Randall, Regius Professor of Music. This, however, is disputed by other writers who accredit it to Dr. Randall's conception of the idea taken from a movement in the fifth bar of the opening of Haendel's Symphony, "I know that my Redeemer liveth." The chimes were first fitted to the clock of the University Church, Saint Mary's the Great, in Cambridge, and were long celebrated for their simple harmony, but were never copied until they were reproduced on a very large scale in the Victoria Clock Tower of the Houses of Parliament.

To Mr. McClintock belongs the distinction of having created two institutions which stand out as the only ones of their kind in existence—the O. B. McClintock Company and the American Bank Protection Company, manufacturers of burglar alarm systems. In 1901 Mr. McClintock came to Minneapolis to organize the burglar alarm company. In 1908 he resigned to create the company that bears his name and to manufacture electrical chime and clock systems which are carrying the glad gospel of Minneapolis to the four corners of the nation every fifteen minutes of the day and night.

Testimonials pour into the McClintock factory daily from all parts of the United States. The ringing of the McClintock chimes has inspired countless verses, many of which are worthy works. Will Allen Drumgoole, a lady of Tennessee, has written a series of these poetic compliments, one of the gems being her "Bells of Tennessee:"

The Bells of Tennessee

Oh! happy bells of Tennessee,
Ring soft your song of ecstacy—
Ring soft, ring low, ring loud, ring clear,
'Till all her listening children hear—
And far or near, on land or sea,
Each heart turns home to Tennessee.

Though far their wandering steps may roam,
Where glad suns smile, or shadows gloam,
In solitude, or sorrow's time,
Sweet mem'ry still shall hear your chime.
Ring soft, ring low, ring loud, ring free,
Sweet silver bells of Tennessee.

When Midnight's holy hour is near,
When Sorrow sheds her lonely tear,
And silence broods upon the deep—
Shall gentle Nature woo to sleep
With your sweet song of ecstacy
Dear happy bells of Tennessee.

COURTESY MINNEAPOLIS HISTORICAL SOCIETY

Figure 4.

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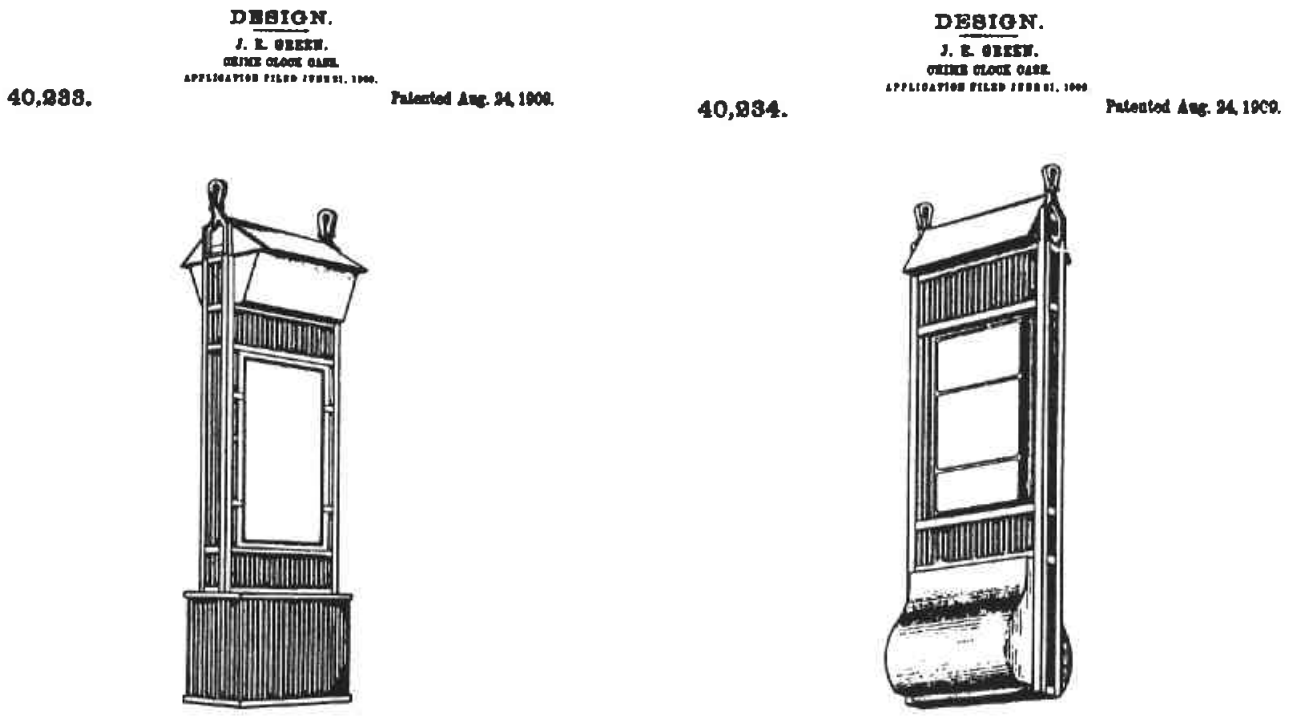

Figures 5 and 6. Design patents by J.K. Green.

McClintock and the associated companies that were listed in the Minneapolis City Directories.

I researched the microfilm files in the library in downtown Houston that contained the listings in *Thomas' Register of American Manufacturers.* My findings and those of Kathy's are shown in the chronology.

CHRONOLOGY

1901–The American Bank Protection Company was founded by O. B. McClintock to make burglar alarm systems.

1908–The McClintock-Loomis Company was founded to make electrical chime and clock systems.

1917–The company's name was changed to the O. B. McClintock Company.

World War II–McClintock made ammeters, ohm meters and volt meters for the war effort.

1948–McClintock purchased the Waltham Electric Clock Co. from the Waltham Watch Company to make electric alarm, kitchen, and wall clocks.

1949–The last listing for the O. B. McClintock Company in *Thomas' Register of American Manufacturers.*

1950–1953–No listings for either McClintock or Protection Equipment Company (a division of Diebold, Inc.) in *Thomas'.*

1951–The date 5-23-51, found on an engineering drawing of a chime clock movement by Diebold, Inc., indicates Diebold, Inc., had purchased the company from McClintock either in 1950 or 1951.

1954–The first listing for the Protection Equipment Company (PECO), the Chime Clock Division of Diebold, Inc., in *Thomas'.*

1965–The first listing for the Peco-McClintock Company in *Thomas'.*

1969–The last listing for the Peco-McClintock Company in *Thomas'.*

1989–The balance of the parts were sold to Lloyd Larish (MN) by Diebold, Inc.

One of the first pieces of information I received in response to my inqueries was sent to me by J. M. Kinabrew of New Orleans. It was a copy of an article that appeared on page 99 of the *Minneapolis Golden Jubilee 1867–1917* (Figure 4). The author is not known.

In 1901, Mr. McClintock came to Minneapolis and organized the American Bank Protection Company to manufacture burglar alarm systems. The 1926–27 *Sweet's Catalog,* on page A987, listed this company as the "O. B. McClintock Company," manufacturers of electrical bank vault protection equipment. The general offices and factories were in Minneapolis with branch offices in Los Angeles, San Francisco, and New York. Their product line included: complete electrical local bank vault burglar alarm systems, vault ventilators, and electrical tubular chime and clock systems.

THE McCLINTOCK-LOOMIS COMPANY

According to Kathy Marquis, the listing for the McClintock-Loomis Company first appeared in the *Minneapolis City Directory* in 1912. Its officers were: O. B. McClintock, President and Treasurer; Freeman L. Loomis, Vice-President.

Several patents were assigned to the McClintock-Loomis Company. (See Figures 5 and 6). Two were issued to J. E. Green in 1909 and was assigned to the McClintock-Loomis Company on different style outside clock cases. The design patents were No.'s 40,233 and 40,234. In 1912 a patent, No. 42,758 (Figure 7), was issued to E. M. Jones on another clock case which turned out to be one of the more popular models. This model (see Figure 8) was used as a logo by McClintock-Loomis on their envelopes.

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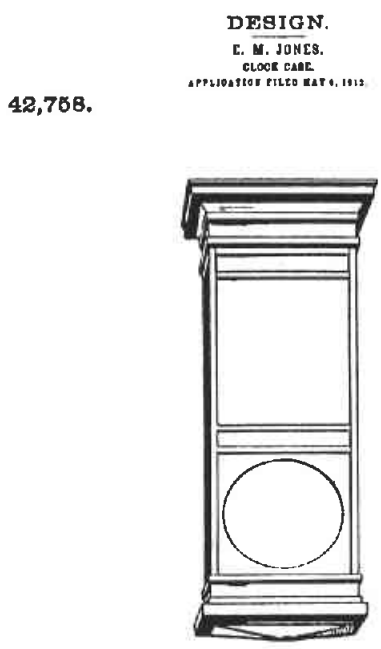
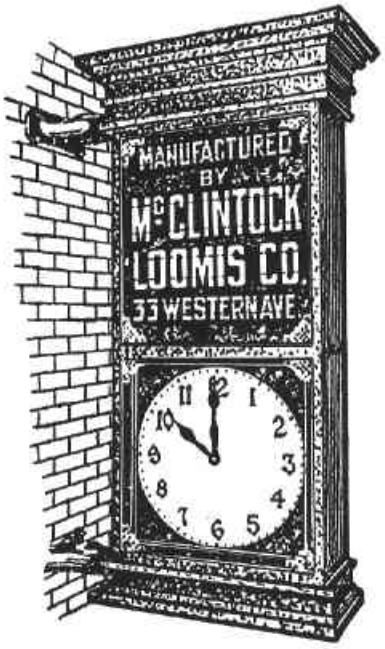
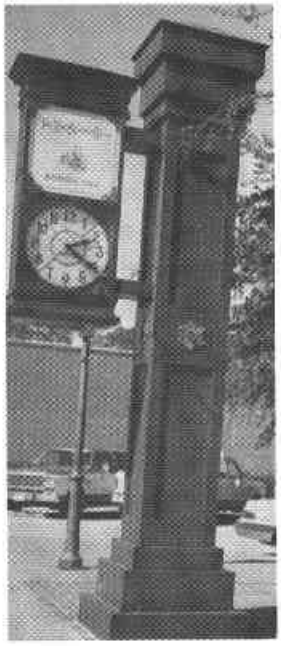






Left, Figure 7. Design patent No. 42,758 by E.M. Jones. Center, Figure 8. The McClintock-Loomis logo used on company envelopes. Right, Figure 9. The McClintock clock at Jefferson, Texas.

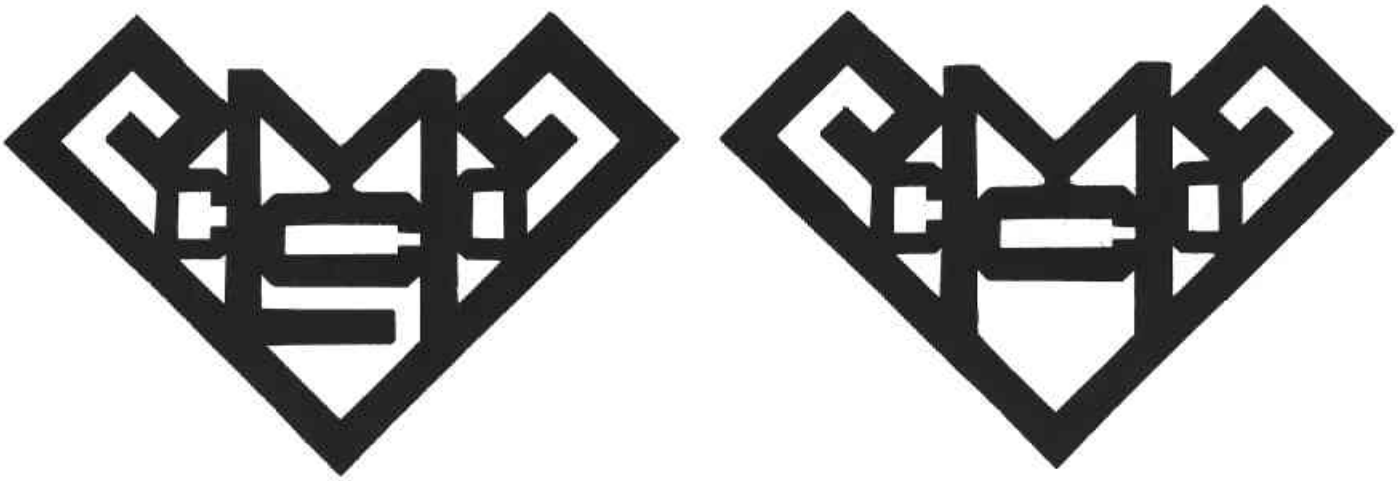
Figure 9 is an example of a McClintock-Loomis bank clock located in front of the First National Bank in Jefferson, Texas. The name McClintock-Loomis, Minneapolis, Minnesota, appears on the dials and the McClintock-Loomis logo (Figure 10A) in each of the corners. The "Mc" in the middle represents McClintock, and the letter "L" for Loomis is formed by adding a cross bar to the left leg of "M." The smaller letters "CO" are on the sides of "M." (Compare with Figure 10B after it became McClintock Clock Co.)

THE McCLINTOCK-LOOMIS MASTER CLOCK

The master clock for the McClintock-Loomis clock is composed of three separate movements: the master movement at the top of the case, the strike train in the center, and the chimes motor at the bottom (Figure 11).

The action of this whole movement centers on the upper movement. The upper glass ring is shown in its normal position in Figure 12. It rocks once each minute, and each time it rocks, an electrical contact is formed inside the glass ring which completes the circuit between the batteries and outside clocks (Figure 13). This sends the outside clocks ahead one minute. On some of the movements, this mercury contact was in the form of a tube (Figure 14). The chimes motor is tripped by means of a lower glass ring. This trip occurs at each quarter-hour and the spider (Figure 15) on the chimes motor advances to cause the ringing of the chimes and is stopped automatically until the master movement trips it again at the next quarter-hour.

Left, Figure 10A. McClintock-Loomis logo. Right, Figure 10B. After McClintock changed the name of the company from McClintock-Loomis to the O.B. McClintock Company, he had to redesign his logo, which appeared in the corners of the dials and signs of the outside clocks. To change the logo, all McClintock had to do was to cut off the lower horizontal bar of the letter "L".



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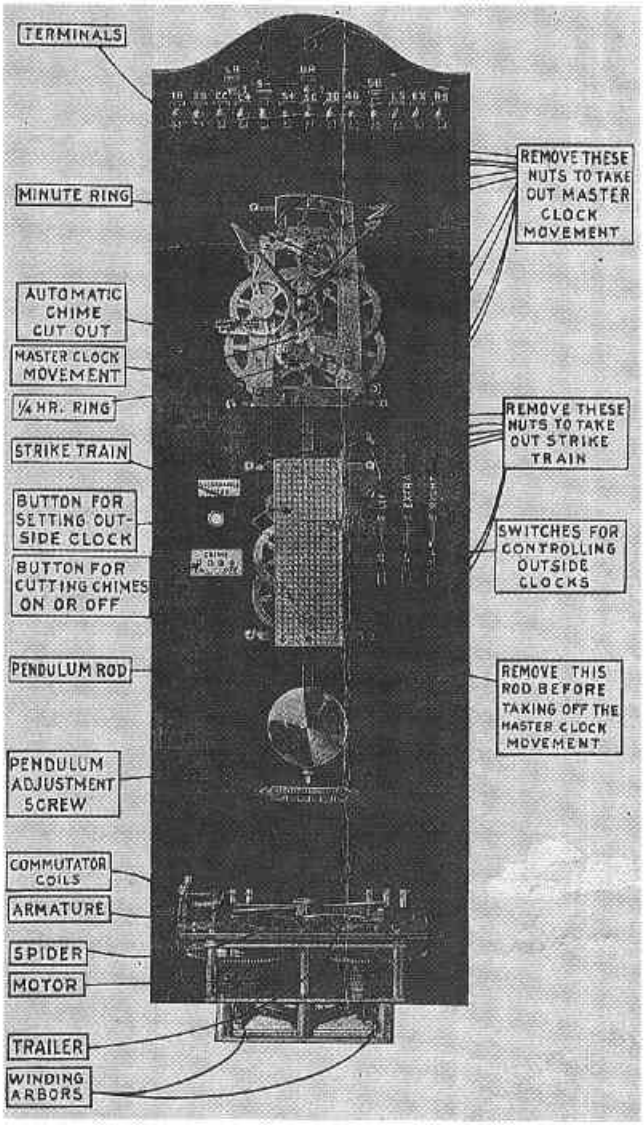
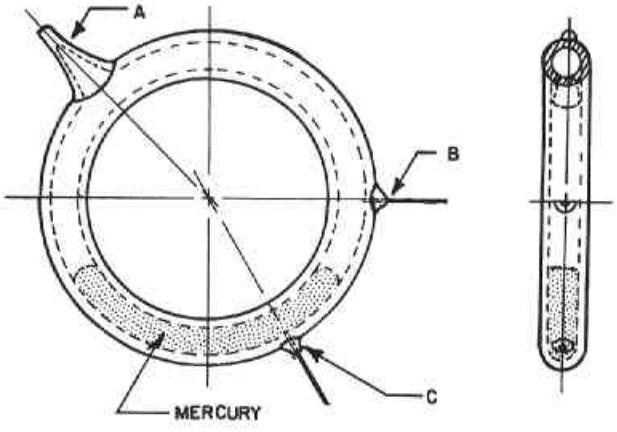


Figure 11. Schematic of the early McClintock-Loomis master clock from an instructional book.

Figure 12. The normal position for the mercury contact ring showing the mercury in contact with only one electrical contact.

A- Point where mercury was injected into glass ring.
B- Wire to secondary control switch.
C- Wire to fuse block and electrical supply.



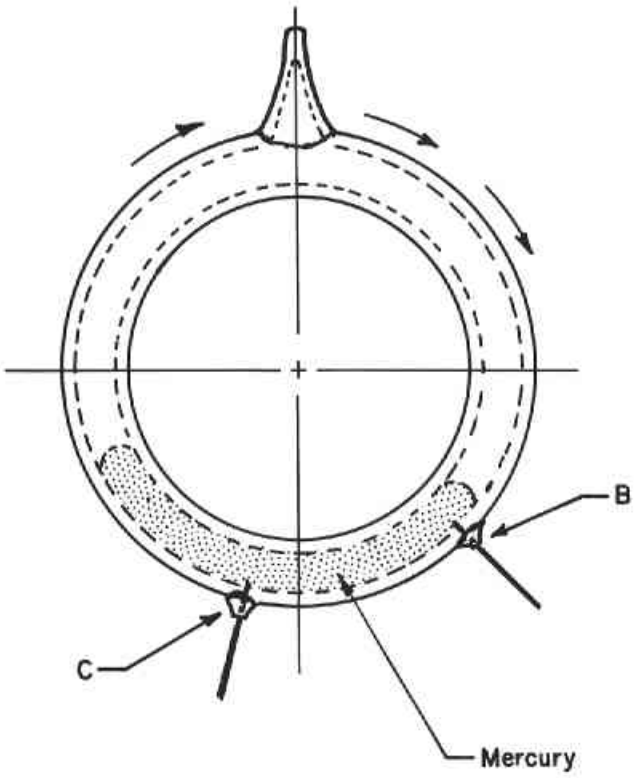


Figure 13. Mercury is in contact with both electrical contacts in this position only momentarily.

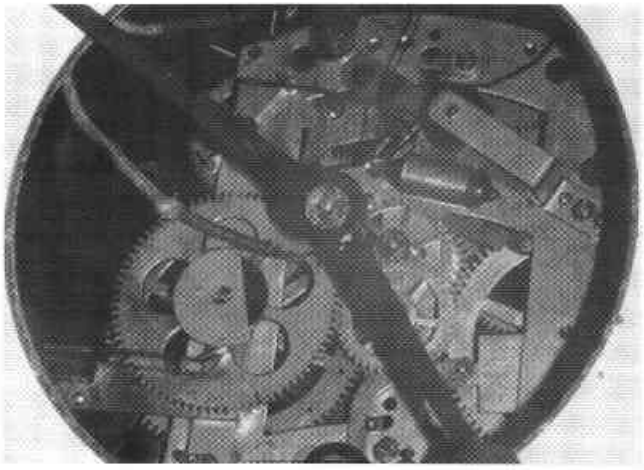
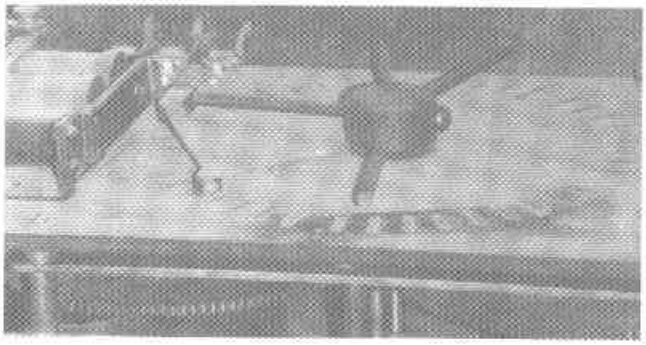


Figure 14. Upper glass ring.

Figure 15. Spider and commutator coils.



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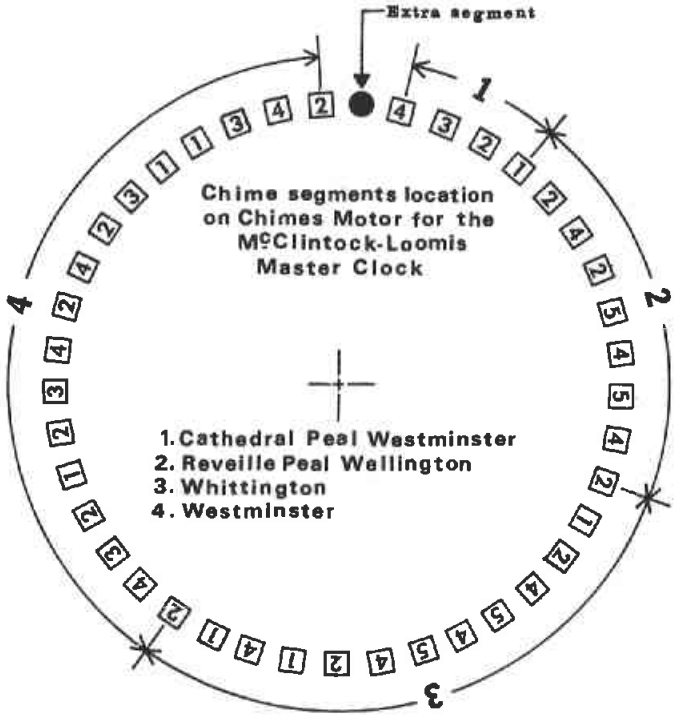
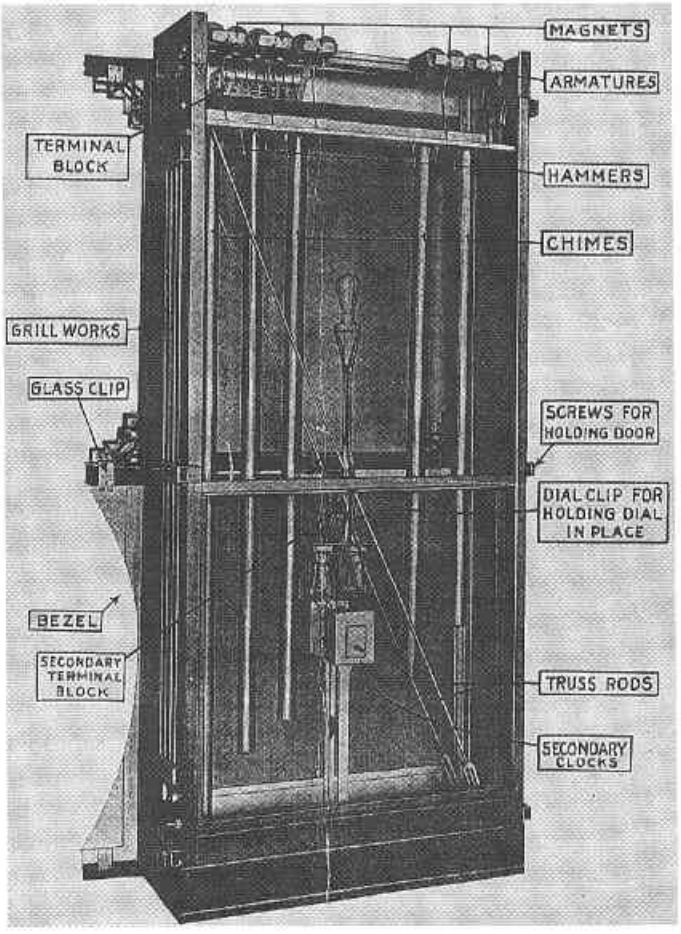


Figure 16. Chime segments location.

Figure 17. Schematic of the outside or secondary clock from an instruction book.



After the full sixteen chimes have been struck at the hour, the strike train is tripped as the trailer crosses an extra segment on the commutator (Figure 16).

Automatic Chime Cut-Out

The duty of the automatic chime cut-out is to automatically open the chimes circuit at night and shut off the chimes, and then turn them on again in the morning. During the day, the finger rides on the high part of the cam or brass section. Then during the night, it rides on the lower part. It is set to stop just after 10 p.m. and start chiming again at 7 a.m.

Secondary or Outside Clocks

The movement of the secondary or outside clock is accomplished, when operating normally, by the rocking of the glass ring in the top of the master movement as explained previously. When the ring rocks, contact is made between the contacts in the ring by the mercury which completes the circuit, energizing the magnets within the secondaries, and causing them to advance one minute at each contact. These secondary clocks can have two, three, or four dials.

Outside Chime Enclosure

The working parts of the outside chime enclosure (Figure 17) are all controlled by the master or inside clock. The action of the hammers is caused by the trailer passing over the contacts on the chimes motor (lower part of the master clock). A Seth Thomas Model 75 movement (Figure 18) is used to turn the commutator.

Power Unit

A cabinet housed the power unit and usually the master clock sat on top of it. However, there are some in which the master unit and the power unit were built in one cabinet. The unit usually consisted of two compartments, one containing the instruments and other equipment necessary to the power unit feature. This was the front compartment (Figure 19) with a bakelite panel on which the instruments were mounted. The other or back compartment contained nine dry cells producing 14 volts. These cells were connected in series to terminals leading from the front compartment.

The power unit was connected to 110-volt, 60-cycle city lighting circuit. A rheostat knob underneath the milli-

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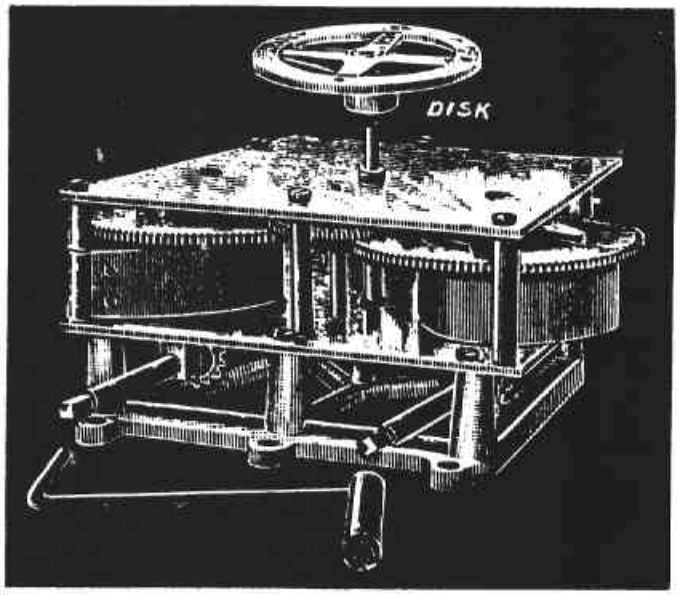


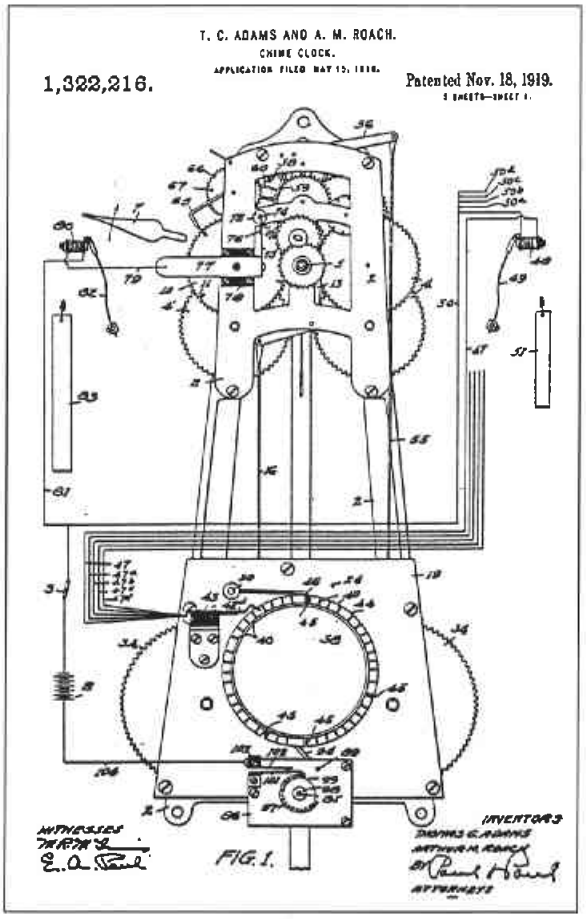
Above, Figure 18. Model 75 Seth Thomas movement that was used to turn the commutator in the chime motor. Below left, Figure 19. Lower compartment of a master unit. This unit has been modified, eliminating the batteries. Right, Figure 20. Patent No. 1,322,216 for the Model 75 chime clock.

ammeter was used to get the proper setting for a four- or two-dial clock. The correct setting was 15 for a four-dial clock and 12 for a two-dial clock. The power was developed so that in case of city power failure, the clock would continue to operate for a period of time.

Previous to the development of the above power unit, an "OB" battery and charger were used. This was not an ordinary storage battery and considerable precautions had to be taken with it. An acid solution could not be used, nor could a hydrometer or ammeter, in testing the battery. No one was to make any repairs on it, and if a new battery was needed, the company would send a new one—thus, the development of the power unit.

Chime Clock Patent

During the later years of the McClintock-Loomis operation, patent No. 1,322,216 (Figure 20) was issued to T. C. Adams and A. M. Roach on November 18, 1919, and was assigned to McClintock-Loomis. This was the forerunner of the Model 75 master unit for the O. B. McClintock Company.


T. C. ADAMS AND A. M. ROACH.
CHIME CLOCK.
APPLICATION FILED MAY 15, 1918.
1,322,216. Patented Nov. 18, 1919.
3 SHEETS—SHEET 1.
FIG. 1.
INVENTORS
WITNESSES

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Patents

The patents listed below were issued to McClintock-Loomis and to McClintock. Copies are available from the NAWCC Library at Columbia, Pennsylvania, for $3.00 each. Also included in the list is the patent on a clock motor that was patented by the Waltham Watch Company and was used by McClintock when he made electric clocks after World War II.

A set of instructions for the McClintock-Loomis master clock which has the spider (I call it a Model 74) is also available from the NAWCC Library.

Baker State Bank of Baker, Montana

At the 1992 NAWCC National in Chicago, I met Rollis Mann of Snohomish, Washington, at one of the talks on tower clocks. During our conversation, he told me he had some drawings and instructions for a McClintock-Loomis Westminster Chime Clock system on file at the Baker State Bank, dated 1915. He agreed to send copies to me for my research on the McClintock clocks.

The order for the clock, besides calling out the required components of the clock gave some dimensions which I thought were interesting: The master clock was to be of golden oak and the case to be 52 inches long and 16 inches wide. The master clock dial would be a 13-inch dial. Also, one battery case was ordered to contain the electrical power.

The secondary clock (Figure 21) was to be a two dial clock with 24-inch pearl glass dials. The clock case was to be 8′ long, 2-½′ wide, and 15″ deep. The secondary clock components were also included in the order. What surprised me was the cost of the clock system, only $500! The bank also agreed to pay for the freight and for the electrical work in connecting the clocks.

Figure 21. Author's interpretation of the logo on the Baker State Bank.

Years later, a set of instructions was given to the bank by a clock repairman. All I could decipher was "A HOUSE OF CLOCKS" on the bottom of the page. Apparently, this was after daylight savings time was started for it gave instructions for changing the clocks during seasonal changes. Also in the instructions for the day/night shut off, it stated that the clock would not chime for a 8-hour, 20-minute period each 24 hours.

THE O. B. McCLINTOCK COMPANY

The O. B. McClintock Company succeeded the McClintock-Loomis Company in 1917. The Minneapolis City directory listed the office at 139 Lyndale Avenue North and the factory at 1201 South Third in Minneapolis. The officers were listed as: O. B. McClintock, President and Treasurer; and Amasa McClintock (St. Louis), Vice President.

The 1926–27 *Sweet's Catalog*, page A987, listed the "O. B. McClintock Company" as manufacturers of electrical bank vault protection equipment and clock and chime systems. General offices were in Minneapolis, Minnesota, and branch offices in Los Angeles, California, 647 Santa Fe Avenue; New York, New York, 475 Fifth Avenue and San Francisco, California, 310 California Street. One paragraph stated: "McClintock clock and chime systems are provided for use where accuracy and long life are desired—particularly, outside clocks."

The American Bank Protection Company was listed as manufacturers of thermo-electric burglar alarm systems, steel filing equipment, safe deposit boxes and omnibuses, etc. The office was at 139 Lyndale Avenue and the factory at 1201 South Third, which are the same addresses as the O. B. McClintock Company.

The Minneapolis Golden Jubilee stated that McClintock resigned in 1908 from the American Bank Protection Company to form the McClintock-Loomis Company to manufacture electrical chime and clock systems. The article is most likely in error, as *Sweet's Catalog* clearly shows O. B. McClintock as still president of the American Bank Protection Company in 1928.

A letter that I obtained from the First National Bank of Palestine, Texas, dated March 18, 1924, indicated that the O. B. McClintock Company, Inc., was the manufacturer of complete electrical bank protection and electrical chime clock systems. They were also sole owners of the American Bank Protection Company

Patent No.	Patent Date	Assignor	Patent Title	Assigned to
40233	Aug. 24, 1909	J. E. Green	Design for a chime clock case	McClintock-Loomis Co.
40234	Aug. 24, 1909	J. E. Green	Design for a chime clock case	McClintock-Loomis Co.
42758	July 9, 1912	E. M. Jones	Design for a clock case	McClintock-Loomis Co.
62452	June 5, 1923	E. M. Jones	Design for a clock	D. B. McClintock Company
1322216	Nov. 18, 1919	T. C. Adams	Chime Clock	McClintock-Loomis Co.
2292265	Aug. 4, 1942	A. M. Roach Carpenter, F. S.	Clock Motor	Waltham Watch Company

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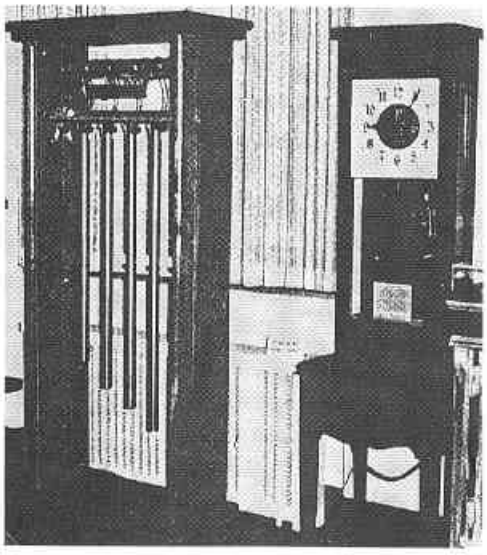

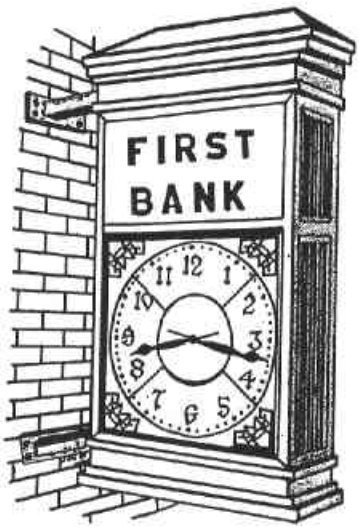

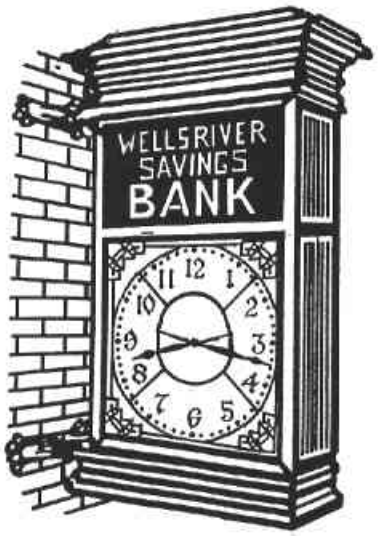

Left, Figure 22. Master clock and chimes. AWI Museum (from the November 1977 issue of Horological Times *with permission). Right, Figure 23. Drawings of 2-dial McClintock secondary clocks.*

and the Bankers Electrical Protection Company. An additional factory was listed at Linden and Aldrich North.

Elmer G. Crum, co-author with William Keller of *150 Years of Electric Horology,* writes on page 45: "McClintock also manufactured some safe clocks with the timing functions provided by a Seth Thomas #10 movement. The systems were custom-made with such levers and switches as required being added to the basic clocks." Was this the Banker's Electrical Protection Company? Perhaps some reader will clear the confusion.

On another letter dated February 1, 1937, the letterhead read: "O. B. McClintock Company"—Manufacturers of Complete Bandit Barrier Systems—Grade 'A' burglar alarms—Chime Clocks, Vault Ventilators—After Hour Depositories."

The 1939 *Minneapolis City Directory* listed the O. B. McClintock Company's officers as O. B. McClintock—President and Treasurer; H. E. Blair—Vice-President; R. W. Bentzen—Secretary and Assistant Treasurer; C. D. O'Kleffe—Assistant Secretary and Assistant Treasurer.

O. B. McCLINTOCK CLOCKS

Two, Three, and Four Dials

Orville R. Hagens, Curator of the American Watch Institute (AWI) Museum in Denver, Colorado, wrote in the November 1977 issue of *Horological Times* about the McClintock clock on display in the AWI Museum. The clock had been a gift from Charles M. Stevenson of Arvada, Colorado. The following are excerpts from his article, as well as descriptions of some O. B. McClintock clocks:

"We know that the McClintock clock [Figure 22] now in the museum was originally purchased by a bank and the bill of sale is dated 1920. A brief listing in Brooks Palmer's *Book of American Clocks* states 'at work, 1945, electric clocks.'

"McClintock Company was sold to Diebold, Inc., manufacturers of security alarm equipment over 30 years ago and continued the McClintock Co. as the Chime Clock Division of Protection Equipment Company. The McClintock clock incorporated alarm systems; chimes were optional. Most banks purchasing the master clock included the chime section for installation in their outside clocks, which were 2, 3, or 4 dials, mounted on the building or in street clocks."

Figure 24. Three-dial clock on Ruston State Bank, Ruston, Louisiana.

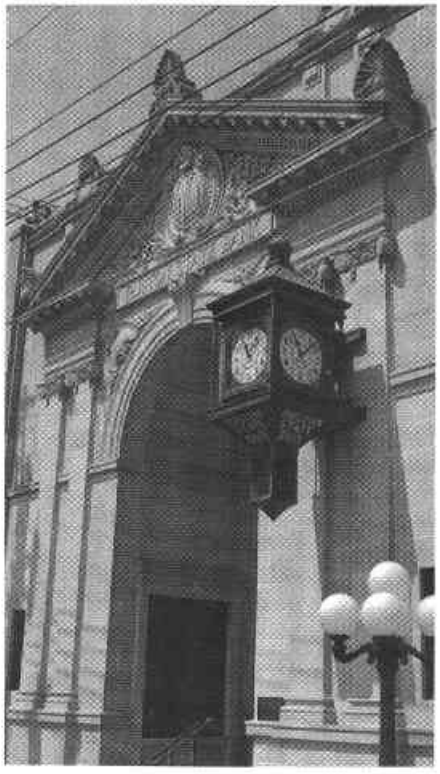

Figure 17 (p. 156), is a schematic of a 2-dial McClintock clock showing the locations of the outside clock's components. A drawing of 2-dial clocks is shown in Figure 13. The clock on the Ruston State Bank in Ruston, Louisiana (Figure 14) has three dials and the clock on the postcard of the State and Trust Bank, Highland, Illinois, has four dials (Figure 25.)

An unusual 4-dial post clock (Figure 26) is shown on a postcard which claims that Richland Springs, New York, has the first town clock of its kind in the United States. Presented by Thomas R. Procter to Richfield Springs in 1918, the clock was in a center of an intersection and showed the mileage to the various towns from Richfield Springs. It became a traffic hazard, and, as the automobile became more popular, the clock had to be moved to a corner.

The outside clock (Figure 27) in front of the Chamber of Commerce building in

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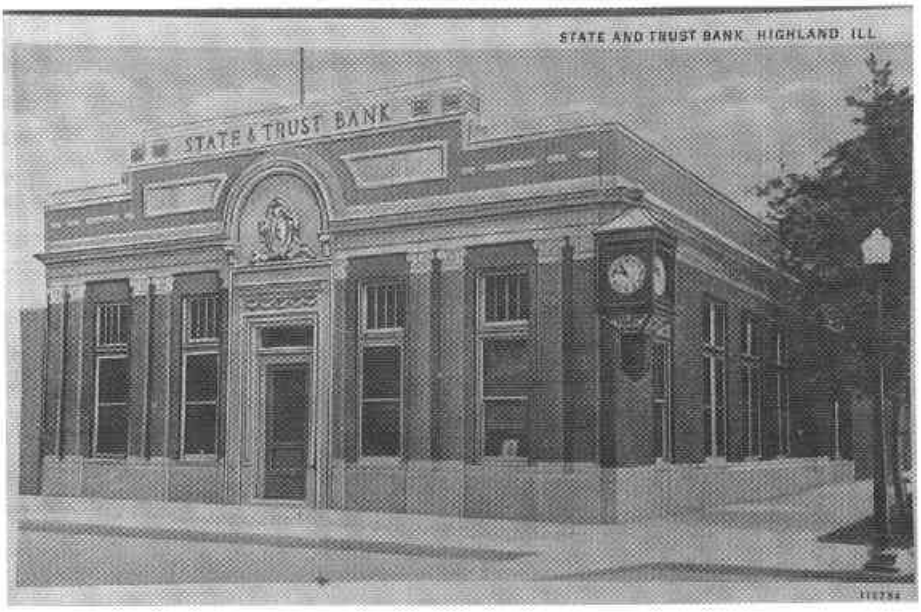

Figure 25. Four-dial clock, Highland, IL.

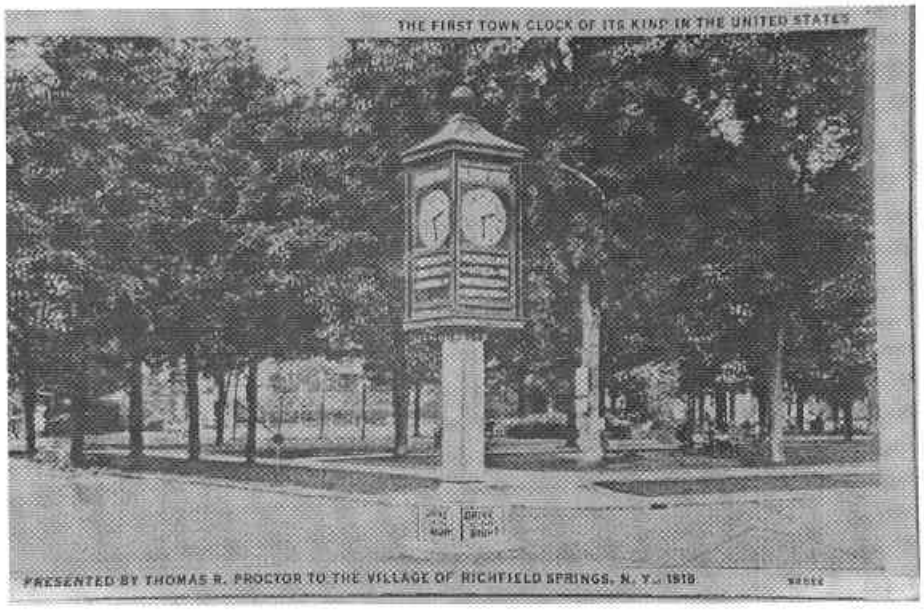

Figure 26. Town clock, Richfield Springs, NY.

Figure 27. Outside or two-faced secondary clock at Karnes City, TX.

Karnes City, Texas, is an example of a 2-dial post clock.

The article about the AWI McClintock continues:

"The clocks varied in price depending on the number of dials, illuminated signs, plus size of clock and chimes. A clock 10 ft. high, 69 in. wide and 28 in. deep, known as the 'Keasington' model, with time and temperature, listed for $11,360.00, chimes extra.

"We do not have a price list for the chimes, but it must have been considerable due to additional cost for installation of large tubes and complicated wiring."

"The case [see Figure 22] is walnut, measures 3 ft. 10 in. high by 17 ½ in. wide by 10 ¾ in. deep and weighs 70 lbs."

The master clock movements were made for McClintock by the Seth Thomas Clock Company, Thomaston, Connecticut. (Note: A master clock I have appears to be heavily stained to resemble dark walnut. The glasses are thick and have ½" bevels. The front glass is 33-⅝" high by 13-¼" wide. The two side glasses are both 33-⅝" high by 4-¼" wide.)

"The movement [of the AWI clock] is No. 2455, Model 85E, Seth Thomas custom and electric strike plate No. 2362B. Time movement is 8 × 5 in. and it has two time springs ½ in. in width. Chime movement is 8-½ in. by 7 in. and it has two springs, 1 in. width. Steel frame for movement is 21 in. in length. Weight of movements and frame is 21 lbs."

(Note: My master unit, Figure 28, is shown with the mercury contact missing and a close up of the modified 85E movement, Figure 29. The movement is numbered 2268 and the electric strike plate, B2185.)

The pendulum, from the center of the movement to the end of the rating screw

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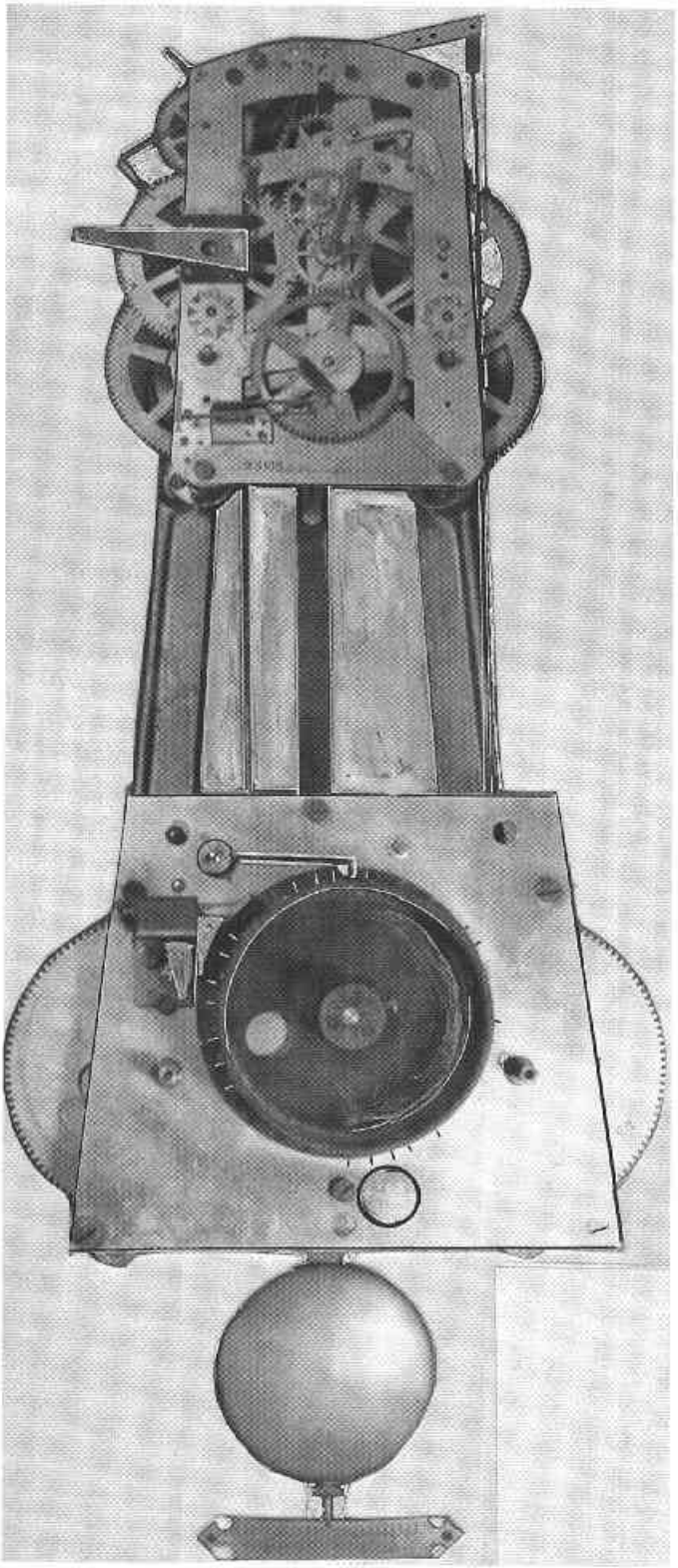


Figure 28. Model 75 master unit (mercury contact missing on movement).

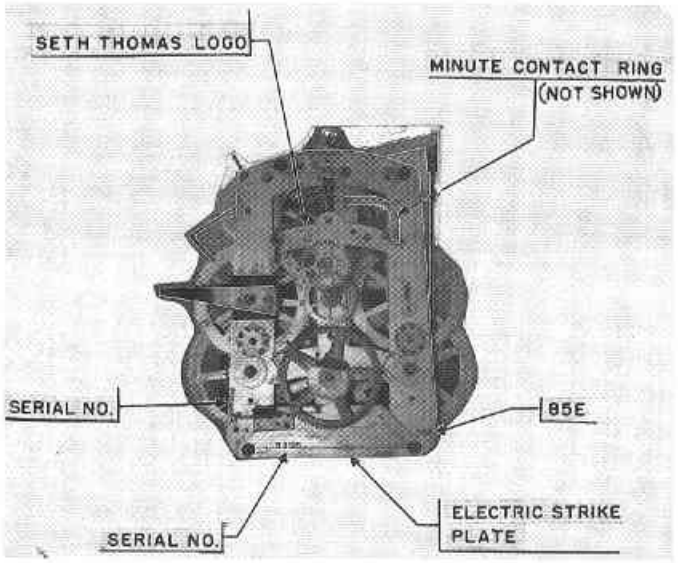
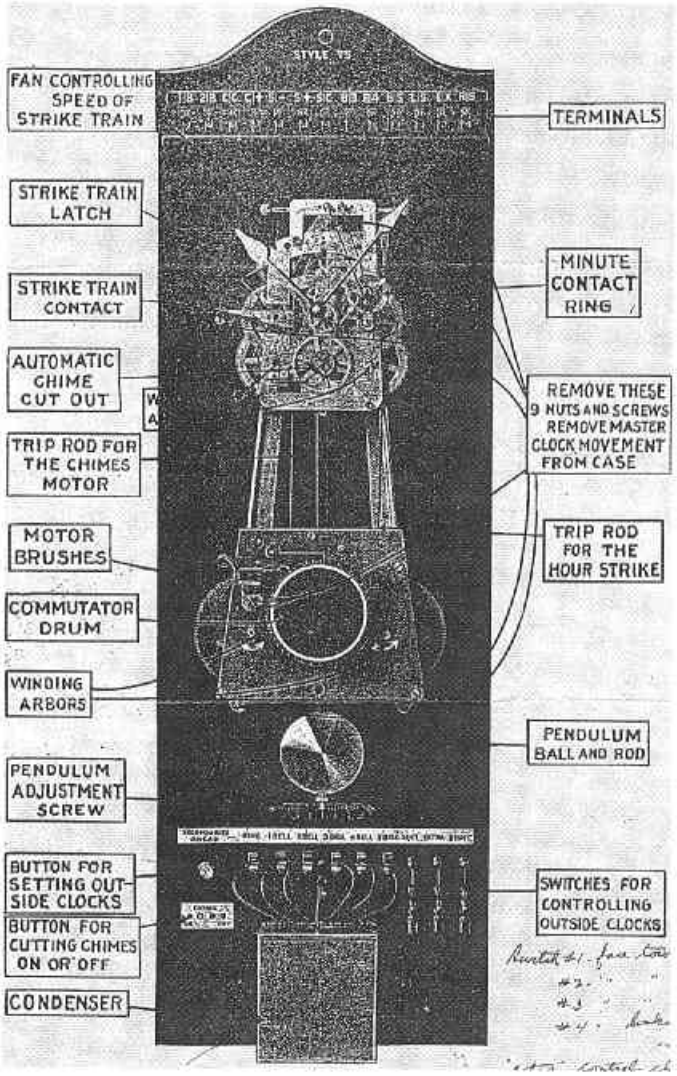


Figure 29. Close-up of the modified 85E movement.

Figure 30. Schematic style 75 master clock.



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is 21-5/16" with a wooden rod and a 3-11/16" diameter ball. The movement is a deadbeat.

"The transformer to take the place of batteries is mounted in a recess in top of the case; spark eliminator is in the lower case. Weight is 8 lbs. . . .

The combined weight of the master clock case and contents is nearly 200 lbs."

The O. B. McClintock Master Clock-Style 75

The O. B. McClintock Company used the style 75 master clock (Figure 30) which was an improvement over the McClintock-Loomis master clock. A commutator drum replaced the strike train movement and the spider-type commutator. The master clock cases for the Model 75 were unchanged from the previous McClintock-Loomis master clock cases.

Every bank was lent an instruction book upon completion of the installations of the master and outside clocks. In the Foreword, the company stated:

"Because of your sound business judgement and vision, the people of your community are now provided with a highly dignified and beautiful timepiece.

The clock system will render faithful service day in and day out, year after year. Your pride in its dependability will increase as time goes on. Every part of the system has been tested and carefully inspected. Like any electrical or mechanical device, however, it requires a certain amount of regular attention.

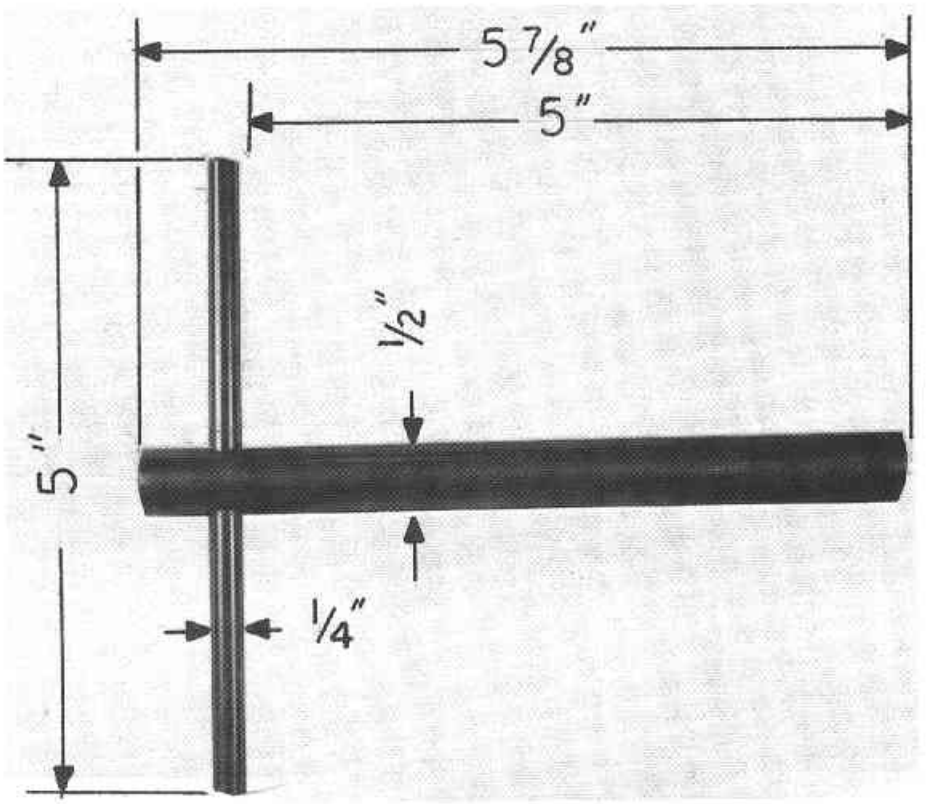


Figure 32. Winding key for master clock.

The performance of your clock depends upon the interest and attention given it by the persons in your organization assigned to its care.

Attend to the winding—and the battery. These two simple things done regularly are all that is required to provide a dependable and constant time service."

An additional warning was issued at the bottom of the page: "This book is the property of the O. B. McClintock Company, Minneapolis, Minn. and is to be returned on demand. A charge of $25.00 will be made if not returned on demand."

The master clock consists of the clock movement at the top, and the chimes motor below it, both on the cast frame. The entire clock and chime system depends on the clock movement at the top for proper operation.

The master clock dial (style 75) (Figure 31) measures 14" square. Most are porcelain but others are German silver or painted. There is a 6" hole in the center. This facilitates winding the time movement by allowing the elongated key (Figure 32) to get to the winding posts more easily. The chapter ring is 11-3/4" in diameter and has recessed Arabic numerals,

Figure 31. Master clock dial—style 75.

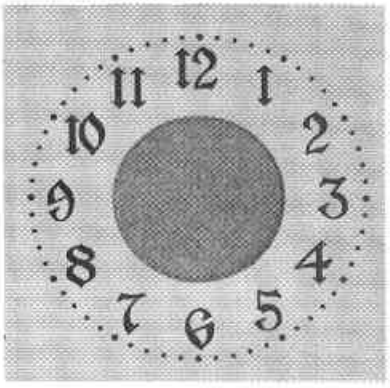
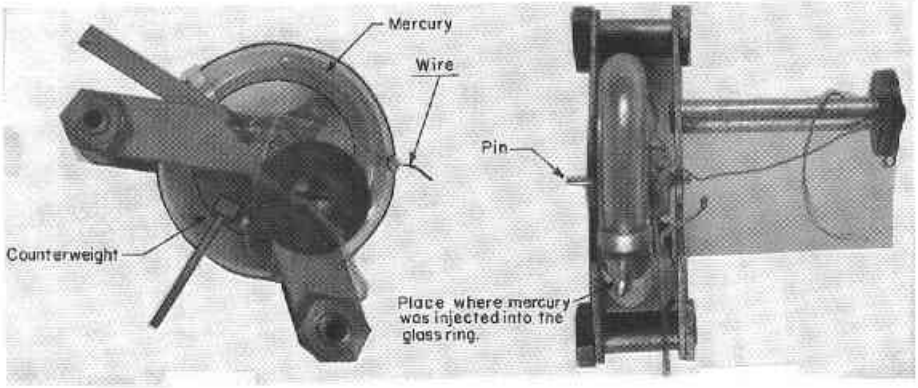


Figure 33. Mercury contact ring, front and side views.



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1-1/4" high. The hour marks are 1/4" in diameter while the remaining minute marks are 3/16" in diameter. All the marks are recessed.

The hands are spade shaped. The minute hand measures 5-3/4" in length, measured from the center hole to the tip, while the hour hand is 4-5/8" long.

There is only one mercury contact ring in the Model 75 master clock. Figure 33 is the famous McClintock mercury ring. When the ring rocks to the right once each minute, it is pulled back by a small weight fastened to the brass arm. Each time it rocks, an electrical contact is formed inside the glass ring. This momentary contact allows the electrical current to send the outside clocks ahead by one minute. The two wires to the ring are shown in Figure 34.

McClintock's patented mercury switch was also used in railroad signal work where thousands of lives depended upon its operation. (Figure 35 and 36.) The mercury ring was not used on any other electrical clock system then.

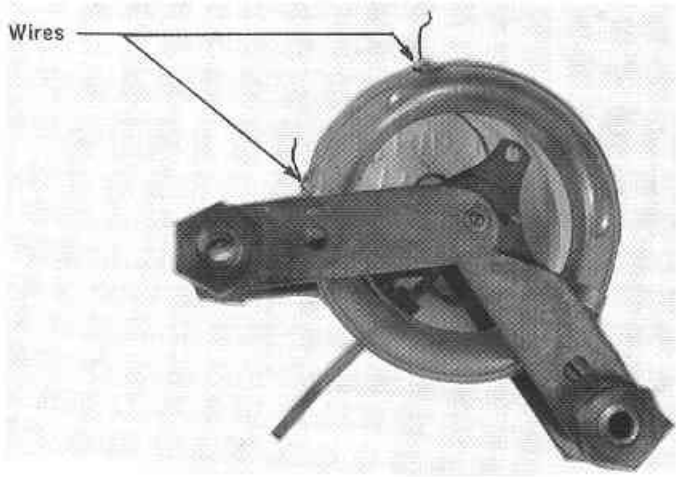


Figure 34. Mercury contact ring—rear view.

Figure 35. Railroad control cabinet.

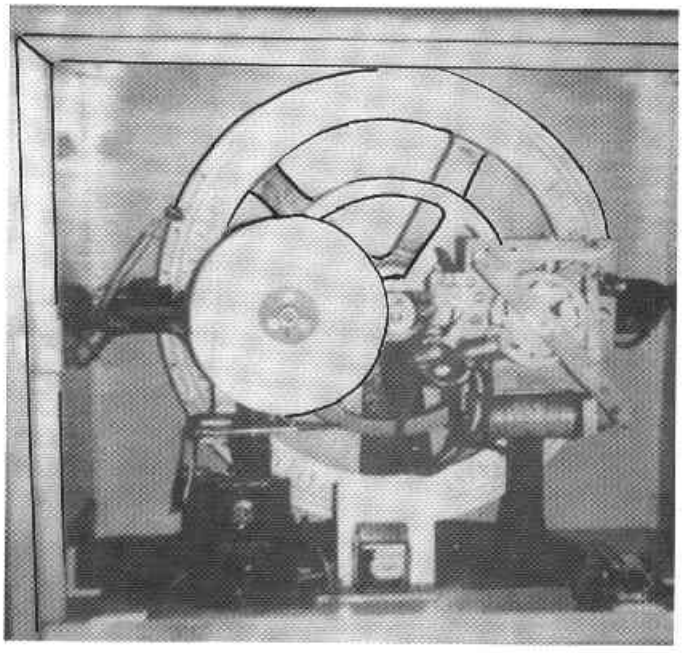
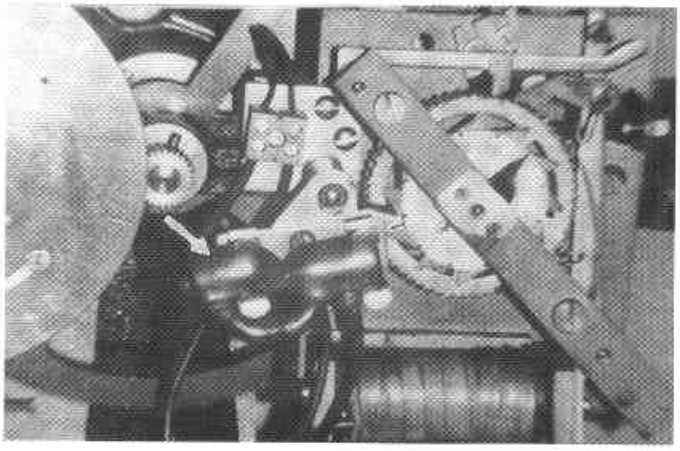


Figure 36. Arrow points to the mercury switch on the movement in the railroad cabinet.



The Unusual Chime Sequence

In Hagen's description of the AWI clock, he says, "There are five chime tubes, 2 in. in diameter, and they measure in length from 4 ft. 8 in. down to 3 ft. 2-1/2 in. Magnet and hammer measure 26-3/8 in.; chime rack 26-3/8 in.; and 50 ft. heavy insulated wire cable. The complete chime assembly weighs 101 lbs."

The case for the chime assembly was made in Cincinnati and is solid cherry wood with plexiglass front and back. (Note: This case was special-made and does not have secondary clock movements.)

"During the June 1977 meeting in Cincinnati at the AWI Museum, attended by over ninety members and their spouses, a number of people commented that the chimes did not 'sound' right, so let us explain the unusual chiming sequence. Note the chime chart shown [Figure 37]—quarter hour, Cathedral Peal Westminister; half hour, Reveille Peal Wellington; three quarter hour, Whittington; hour, Westminister. With this explanation we hope those present now feel relieved to know the Curator did not make an error in setting up the chimes; they were built that way."

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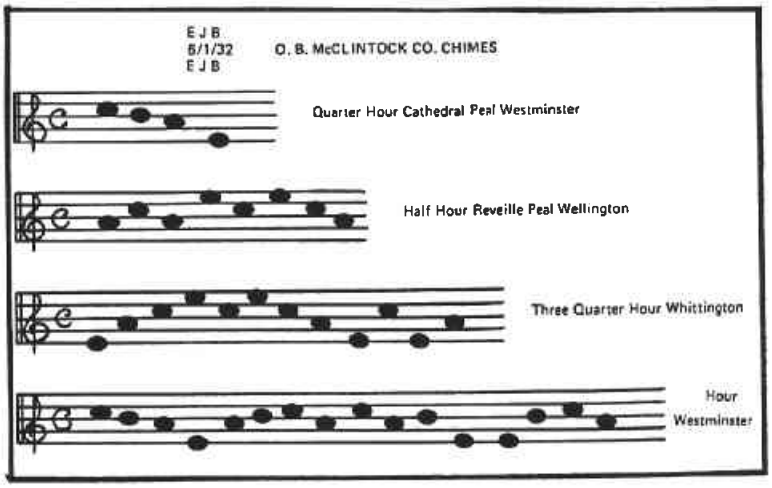


Figure 37. Chime chart.

Figure 38. Chime motor.

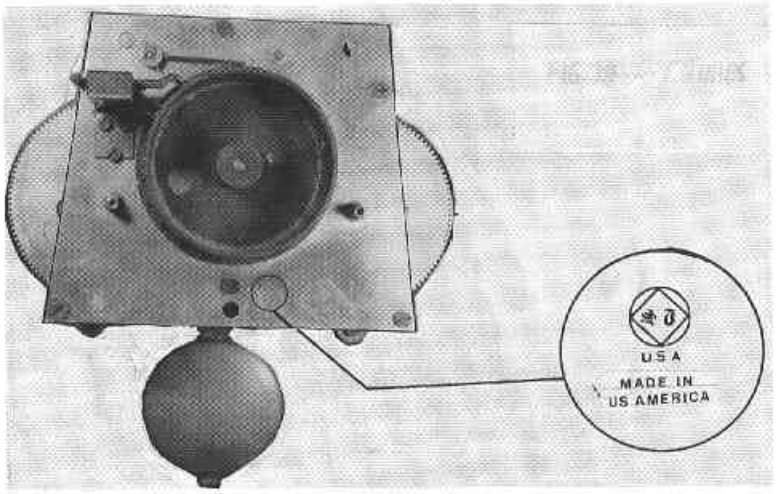
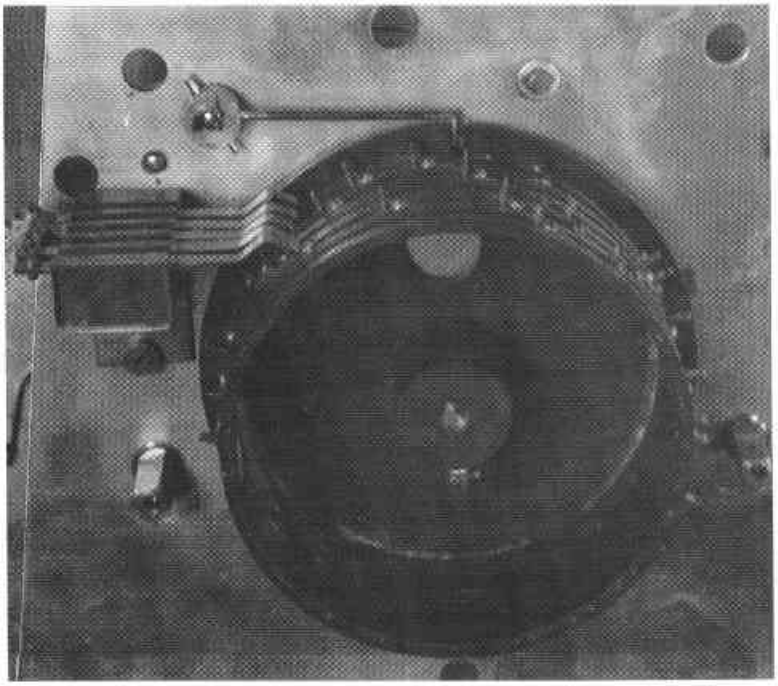


Figure 39. Electrical contacts on drum.



The trip rod for the chimes motor is pulled up by a cam in the clock movement each quarter hour. The commutator drum (Figure 38) is thus released and turns to the right, ringing the chimes, then stops automatically until again tripped by the clock movement. The electrical contacts on the drum is shown in Figure 39 and the pin locations on the commutator drum in Figure 40.

The trip rod for the hour strike is pulled down by a cam behind the commutator drum just after the full 16 hours have been struck at the hour period. This lifts up the strike train latch (index pointer) releasing the strike train. Each complete revolution of the small disc on front of strike train causes the pin to touch the strike train contact brush tolling the hour bell. The number of strokes is governed by the strike train latch in connection with the index wheel.

The automatic chime cut-out consists of a notched cam operating two contact fingers. When the upper finger rides in part of the cam that is notched out and colored black, the fingers are out of contact and on night space. Ringing of the chimes is stopped and remains so until the upper finger is pressed down into contact with the lower finger by the brass-colored part of the cam. This is day space. The chimes cut-out is arranged to ring the chimes from 7 a.m. to 10 p.m.

Figure 41 is the Model 75 master clock wiring scheme, from the front, with a storage battery supply. This was redrawn from a McClintock drawing G-59, dated 11-27-22.

For more detailed instructions on the Model 75 master clock and secondary clocks, a copy of the instruction book is available from the NAWCC Library.

World War II and After

I wrote the Oscar T. Lange Chapter #20 of the NAWCC in Minneapolis about possible help on the study of the O. B. McClintock clocks. The response was gratifying. Little did I realize the role that McClintock played during World War II and in the few years after the war. The following excerpt is from a letter received from Ben Joubert of Minneapolis, Minnesota:

"It was about 45 years ago that I worked for the McClintock Company, not in bank clocks but in their new line of electric clocks. They got into this business by buying out an electric clock company

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(the Waltham Electric Clock Division of the Waltham Watch Company) in 1948. It was purchased by McClintock to keep their crews working after the end of World War II. He had shifts of ladies working for him that did war work, such as making amp meters, ohm meters and volt meters. He didn't want them to be laid off and be put on unemployment.

"This work seemed to fit the bill for them. I was an assembly line foreman. We put together the movements and other assembly lines and put them into the cases. We made mantle clocks, kitchen clocks, and bedroom alarm clocks. These were sold in jewelry stores. We also made movements for a company in St. Paul, that cased them and sold them as a kitchen wall clock under the name 'UNIVERSITY.'

"My boss's name was Dallas Landin and he was from the original eastern clock company.

"McClintock had a hard time getting enough money from their clocks. Many trips were made to Washington to the offices of the OPA (Office of Price Administration) to try to get a price increase."

Apparently the failure to get the price increase led to the demise of this venture by McClintock in 1949. Also, 1949 was the last listing for the O. B. McClintock Company in the *Thomas' Register of American Manufacturers* and the *Minneapolis City Directory.*

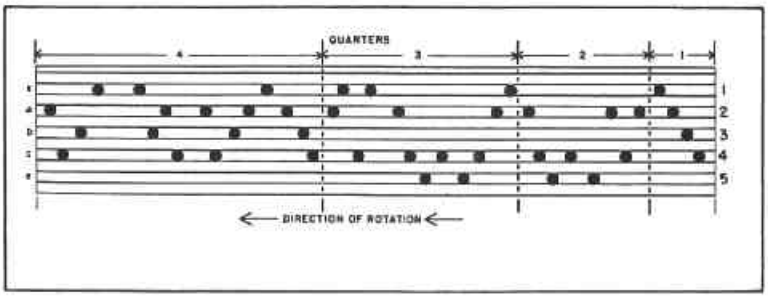

Figure 40. Pin location on commutator drum of chime motor.

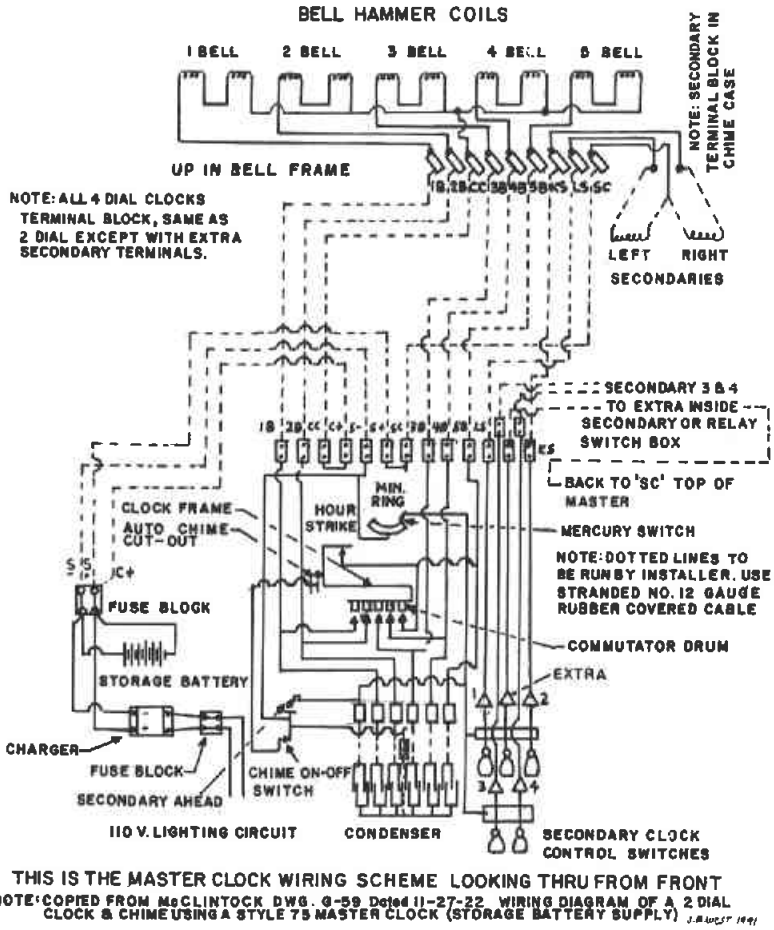

Figure 41. Electrical wiring diagram—style 75.

Acknowledgements

I wish to thank the following for their help in preparing this article: the Balzer family, Freeport, ME; Michele Banner, AWI, Administrator director, Cincinnati, OH; Jim Bryant, Wayne, ME; Andy Dubois, Queensbury, NY; Joe Gaido, Ruston, LA; Phil Gilbert, Hendersonville, NC; Charles Griehar, Houston, TX; Mrs Orville R. Hagens, Denver, CO; Benjamin H. Joubert, Minneapolis, MN; J. M. Kinabrew, Jr, New Orleans, LA; Donn Haven Lathrop, West Lebanon, NH; David Lee, Delanson, NY; Kathy Marquis, Reference associate, Minnesota Historical Society, St. Paul, MN; NAWCC Library, Columbia, PA; Chuck Sturgis, (retired), Diebold, Inc.; Richard Warburton, Skykomish, WA; Bryon White, Arlington, TX.

I wish to also thank all the banks and other businesses and those whom I may have omitted unwittingly in Arkansas, Louisiana, and Texas where I photographed clocks and sought information.

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Sweet's Catalogs, 1926–27, 1928.

About the Author

Jim B. West, is a frequent contributor to Timely Voices and an avid O. B. McClintock student. Mr. West says he knows this article is by no means a complete look at O. B. McClintock and the associated companies that followed. Perhaps there are members who have information to contribute after reading this article.