American Mf'g & Supply Co., Limited.

Self Winding Clocks.

Main Office & Salesroom

10 & 12 Dey St.

NEW YORK.

Branch Office

38 Madison St.

Chicago, Ills.

THE JUDSON PRINTING COR., 16 BEEKMAN ST., N. Y.

ILLUSTRATED CATALOGUE

—OF—

SELF WINDING CLOCKS,

UNDER POND PATENTS.

American Manufacturing & Supply Co. (Limited),

Main Office and Salesroom:

NOS. 10 & 12 DEY ST., NEW YORK.

Branch Office, - - - 38 Madison Street, Chicago, Ill.

FOREWORD

Among the trade publications in the extensive collection of the Edward Ingraham library was located this unusually early catalog of self-winding clocks. It had not come to light for many years because it had been catalogued under the name of the firm who were marketing the clocks, the American Manufacturing & Supply Company, Ltd. Although this catalog dated August 15, 1887 alludes to earlier editions, it is surely one of the first trade publications for the Self-Winding Clock Company.

Twenty-six different models are shown in this catalog, and with the exception of three black mantel styles are all wall clocks. Three gallery styles are offered, each with a choice of three dial sizes. Prices ranged from a high of $875.00 to a low of $30.00. Some models were offered with two grades of movements and with one exception the "B" movement clocks were $35.00 more than the "C" movement ones.

These self-winding clocks were relatively expensive. One sees that the Model 16 which sold for $40.00 is in the same case as Seth Thomas' Regulator No. 9 which sold in 1888 with an 8-day weight-driven timepiece movement for $28.00. Self-Winding's Regulator No. 18 at $45.00 had the same case as Seth Thomas' Regulator No. 30 which sold for $31.50. It is interesting that the Seth Thomas Clock Company must have originally designed these cases for the Self-Winding Clock Company since they were not introduced into Seth Thomas' catalogs until 1888.

The man who invented the mechanism for these clocks was Chester Henry Pond (1844-1912) whose first patent for electro-magnetical clock movements was granted November 25, 1884. Pond was associated with Charles Pratt who formed the Self-Winding Clock Company in 1886, only a year before this catalog was issued. Pond left the clock company about 1890 and retired to rural Mississippi and apparently had no further involvement. This firm continued to prosper into the 20th century and their 1908 catalog of some 146 pages still offered some of the models shown herein and many new ones including street clocks, tall clocks, and many gallery clocks. Though the demand for self-winding clocks diminished, particularly after World War II, the firm maintained an office in New York City until about 1970.

We are grateful to the BUCKEYE CHAPTER of the National Association of Watch & Clock Collectors for their financial support of this catalog which has been produced in conjunction with their 1986 Buckeye Regional.

Chris H. Bailey, Managing Director
American Clock & Watch Museum, Inc.

January 8, 1986

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TO THE TRADE.

We take pleasure in handing you herewith our new ILLUSTRATED CATALOGUE for 1887 and 1888. Since our last issue great progress has been made both in the volume of our trade and the number of desirable styles we are prepared to offer.

The numerous testimonials and many expressions of satisfaction coming from well-known officials connected with prominent Railroads, Banks, Public Institutions, etc., as well as the even more valuable testimony received from expert watchmakers and dealers, convince us that our efforts have been appreciated. We now offer our clocks to the trade with full confidence that our claims of superior merit have been fully sustained and are now firmly established. It is well understood that we do not pretend to compete with the cheaper grade of goods in the market, but as our clocks are made by the highest skilled labor, working with the best materials we can obtain, every purchaser can rely on securing first class articles at a price based on real merit.

Our confidence is shown in the fact that we guarantee every clock sold by this Company to perform exactly as represented in Catalogue and Circulars.

August 15, 1887.

AMERICAN M'F'G & SUPPLY CO. (Limited).

TESTIMONIALS.

NEW YORK CLEARING HOUSE.

WM. A. CAMP, MANAGER.

14 Pine Street.

NEW YORK, *July* 28, 1887.

Dear Sirs:—The Self Winding Clock placed in the Bank Officers' Room of this institution last year has given the greatest satisfaction, and continues to wind and keep excellent time without any attention. Yours very truly,

W. A. CAMP, *Manager.*

THE BOSTON AND ALBANY RAILROAD COMPANY.

GENERAL SUPT.'S OFFICE.

SPRINGFIELD, MASS., *March* 15, 1887.

Dear Sirs:—The Self Winding Regulator which you placed in this office March 5, 1885 (now over one year), has given us the greatest satisfaction.

The Battery has not been renewed or touched within the year, and it appears to be in as good condition now as when first installed. Yours truly,

H. T. GALLUP, *Gen'l Supt.*

NEW YORK CENTRAL & HUDSON RIVER R. R. CO.

GENERAL SUPT.'S OFFICE, GRAND CENTRAL STATION.

NEW YORK, *Nov.* 9, 1886.

Dear Sirs:—Replying to your inquiry, would say that the large Self Winding Clock purchased of you March 10 for our Incoming Passenger Station has never failed to wind, and has proven entirely satisfactory.

The small Regulator placed in this office in June has performed equally well.

Yours truly, J. M. TOUCEY, *Gen'l Supt.*

BALTIMORE & OHIO TELEGRAPH CO.

OFFICE OF THE PRESIDENT AND GENERAL MANAGER,

63 Broadway.

NEW YORK, *Nov.* 5, 1886.

Dear Sirs:—In reply to your inquiry, the Self Winding Regulator which you kindly placed in my office on Feb. 8, 1886, has, up to date, recorded accurate time without attention, and has given satisfaction in all respects.

Yours truly, D. H. BATES,

Prest. and Gen. Manager.

NEW YORK CENTRAL & HUDSON RIVER R. R. CO.

GENERAL SUPT.'S OFFICE, GRAND CENTRAL STATION.

NEW YORK, *March* 17, 1887.

Gentlemen:—The large Self Winding Clock purchased of you over one year ago for our "Annex Station," this city, has never failed either to wind or to give us the greatest satisfaction.

The Battery for winding has neither been renewed nor required any attention of any kind whatever.

It seems to be fully good for another year's work without renewal.

Truly yours, E. G. DELANOY,

Manager Telegraph Dept., G. C. Depot.

OFFICE OF LAW TELEPHONE COMPANY.

112 Liberty Street.

NEW YORK, *March* 25, 1887.

Gentlemen:—Agreeable to your request, I have made careful and extended tests of your motor for efficiency, etc., and a determination of the battery power necessary to wind your clocks for a given period.

I find that two improved "Law Prism" cells furnish sufficient power to maintain the clocks in operation for at least two years, without renewal or attention of any kind whatever. Very truly yours,

H. L. BAILEY, *Electrician.*

Dear Sirs:—On my return, after an absence ot several weeks, I find your favor of the 20th ult. in reference to Self Winding Clock under Pond's patent.

In answer, I may say that I have thoroughly examined the Clock, and, in my opinion, it has very superior advantages over the ordinary weight and spring clocks now upon the market.

I reached this conclusion because this Clock has, through its simple winding, eliminated the drawbacks all other clocks are subject to—viz., long train work, which multiply friction and varying tensions, and, furthermore, obviates altogether the shock of winding and the temporary strain from over winding.

Having been so many years a manufacturer of clocks, it gave me great pleasure to examine a clock which I believe obviates defects that all others are subject to.

Yours very truly, E. HOWARD,

Late President E. Howard Watch and Clock Co.

COLUMBIA COLLEGE, NEW YORK CITY, *November 24th*, 1886.

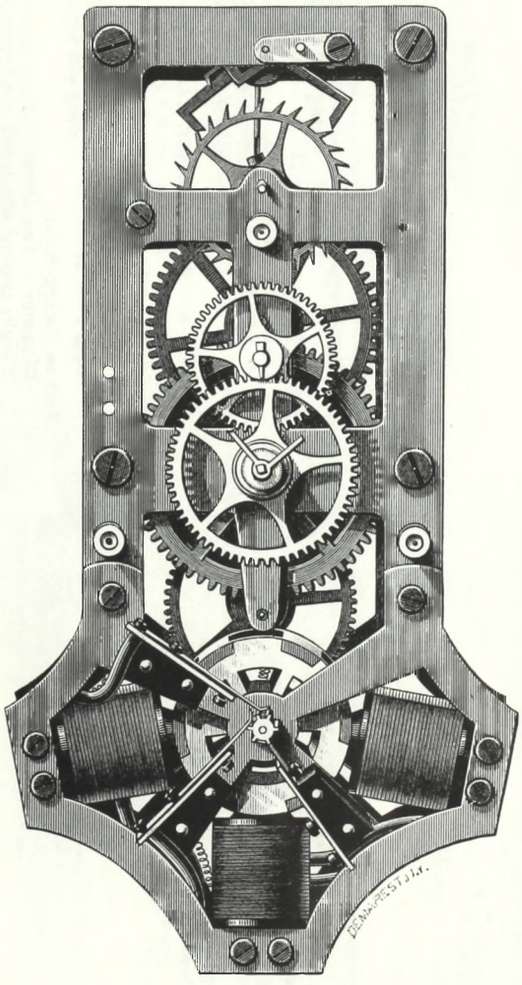
THE following table showing the result of tests made by Mr. J. H. Gerry, at my suggestion, make plain the fact that more power is delivered at the escape arbor by the Pond Regulator than by the ordinary key wound clock when very much less power is used in the driving springs.

J. K. REES, Director Observatory.

	Number of Teeth.		Diameter of Pivots.		Diam.	KEY WOUND CLOCK MOVEMENT.	Diam.	Grains.
Main Wheel	96		.177	.148		Test on Main Spring Arbors "Twins."		
" "	96		.177	.148		Diameter of Test Drum	2,468	
Intermediate Pinion		12	.064	.064		Weight applied which will wind spring		76.992
" Wheel	76		.064	.064		" " " spring will wind		56,000
						Test on Centre Arbor.		
Centre Wheel	64		.165	.065		Diameter of Test Drum	2,468	1,560
Third Pinion		8	.064	.064		Weight applied which will wind spring		1,169
" Wheel	60		.064	.064		" " " spring will wind		833
Fourth Pinion		8	.064	.064		Test on Escape Arbor.		
Escape Wheel			.064	.064	1,560	Diameter of Test Drum	1,560	
						Weight applied which will wind spring		40
						" " " spring will wind		21
						SELF-WINDING CLOCK MOVEMENT.		
Centre Wheel	64		.165	.065		Test on Main Spring Arbor.		
Third Pinion		8	.064	.064		Diameter of Test Drum	2,468	
" Wheel	60		.064	.064		Weight applied which will wind spring		1,464
Fourth Pinion		8	.064	.064		" " " Spring will wind		1,392
Escape Wheel			.064	.064	1,560	Test on Escape Arbor.		
						Diameter of Test Drum	1,560	
						Weight applied which will wind spring		48
						" " " spring will wind		26

To be more specific, we may state that the above tests show that the *key wound* eight day Spring Regulator, requiring nearly *forty-six times* the force used in the Pond movement, delivered at the point of escapement *twenty-four per cent.* less than the latter.

CUT OF MOTOR AND MOVEMENT.



DESCRIPTION OF MOVEMENT.

The wheels and arbors below the centre are removed from the clock. In their place a small electric motor is substituted. This little motor connects with a spring barrel on the center arbor, which encloses a spring six feet long, three-sixteenths of an inch in width, and six-one-thousandths of an inch in thickness. This spring, at its inner end, is attached to the arbor, and at the outer end to the periphery of the spring barrel. The spring is coiled around the arbor many times, but not so close as to produce friction between the coils; and being attached to the center arbor it follows that the inner end will unwind one turn every hour. By a simple attachment the electric circuit is made to pass into the motor already referred to, which quickly carries the spring barrel around once (being free on the arbor) and the outer end of the spring attached to its periphery with it. Upon the completion of one revolution of the spring barrel, as described, the electric circuit is broken and the motor stops. By this arrangement it will be observed that the inner end of the spring always has a motion from left to right, or in the direction the hands are moving, and the outer end of the spring a motion in the same direction when clock is being wound.

Now since the winding is done in the same direction as the unwinding of the inner end, and the spring is so wound originally as to avoid friction between the coils, it follows that the tension upon the train is absolutely uniform at all times whether the outer end of the spring is at a point of temporary rest or is being carried around the arbor at the time of winding as above described.

By actual experiment it is found that to obtain a given force at the escape wheel it is only necessary to apply a power *in this manner* at the centre arbor equal to *less than one-forty-sixth part* of *that used* in the ordinary clock. The train work is not only shortened one-half, but the *friction* on the remainder *is reduced* in the proportion stated.

The invention lies in bringing a motor and clock-work together in a time-piece, and is not limited to any particular device. Experiments prove THAT A MOTOR as constructed for this purpose can be run for one year at an expense of less than twenty-five cents; hence a clock may be sealed up and left to itself for a period of at least one year with a certainty of closer time during that period than can be secured by any other known method of giving time. In short, a common clock constructed on this principle has been found to keep as accurate time as one of the higher grades with gravity escapements, etc., run by the old methods.

The electric motor is normally out of circuit, but at stated intervals, by the operation of the clock itself, the circuit is completed and the motor is thus set in motion. But to be more exact we will give a general description of the mechanism employed in the clock. Upon the centre arbor there is placed a loose "arm" between the hour wheel and the wheel carrying the spring box. At one side of one of the "train plates" is secured an insulated spring connector, the free end of which extends to, and is within reach of, the "arm," when the same has been brought to a perpendicular position, which is done by means of a pin projecting from the hour wheel. When the hour wheel has thus brought the "arm" to an upright position and in contact with the insulated spring connector, the circuit is *completed* through the motor, which at once commences to rotate the spring box one revolution from left to right, or in the direction that the hands move. The spring box wheel also carries a projecting pin but set at a less distance from the axis than the other pin. Now as the motor continues to rotate the spring box wheel, while the spring connector is resting upon the "arm," it follows that as soon as there has been one revolution of the spring box wheel the *projecting pin* upon this wheel will press the "arm" forward and out from under the spring connector, thereby breaking the circuit and stopping the motor. This arrangement prevents the possibility of the clock's running beyond the regular limit for winding, and prevents the motor when once set in operation from performing more than the work required. The operation of the clock causes the circuit to be established, while the motor utilizes its own power to interrupt the circuit.

GERRY'S GRAVITY ESCAPEMENT.

Fig. 2.

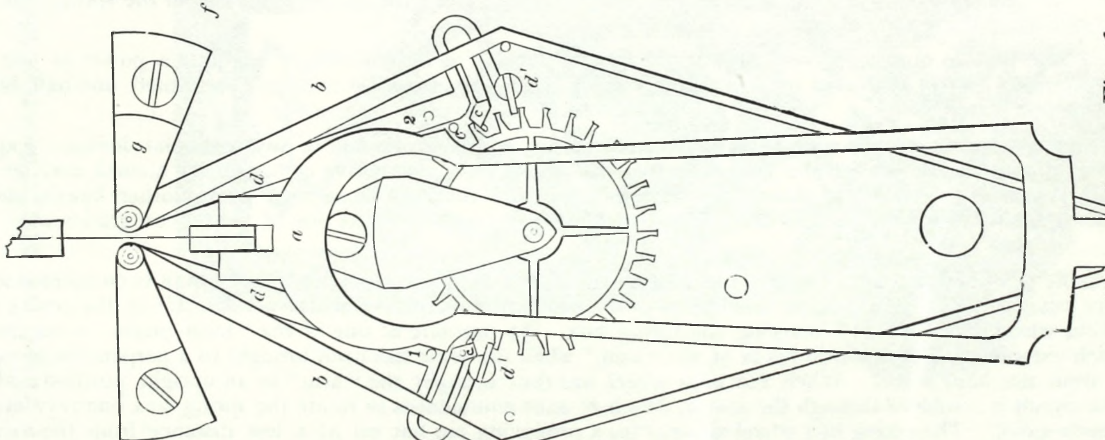


Fig. 1.

GERRY'S GRAVITY ESCAPEMENT.

We have secured the Gerry Gravity Escapement and shall apply it to our higher grade, Astronomical and Tower Clock Movements. All gravity escapements that have come into anything like general use (such as the Mudge, Bloxham and Dennison) have one feature in common; the detent or stop is on the gravity arm, and is in motion when it receives the lock; consequently even the Dennison, which behaves admirably under ordinary conditions, is liable or can be made to trip when the train is over-driven either by accident or design. The Gerry Escapement entirely overcomes this difficulty by making the detent separate from the impulse arm, and having it fall into position by gravity. It is always at rest when receiving the lock. Power enough may be applied to break the lock, but not enough to make it trip. This escapement has other advantages; the impulse arm being lifted by the escape wheel which is on the minute arbor, it requires no more power to run the clock than is used with an anchor escapement.

In the accompanying cut Fig. 1 is a front elevation showing the position of the several parts. To avoid confusion, the cut does not show the train except the escape wheel; *a* is the top of the pendulum rod made in a convenient form so as to unlock the detents *d d* at the end of each semi-oscillation by the unlocking pins 1 and 2; *b b* are the impulse arms supplied with jeweled angles at *c c;* these are lifted alternately at each successive unlocking, and, following the pendulum in its return, give it impulse by the beat pins 3 and 4; *d d* are the detent arms terminating in the jeweled detents *d d;* they are unlocked alternately at each semi-oscillation of the pendulum by the unlocking pins 1 and 2, the opposite detent being at rest in position to receive the lock, leaving the impulse arm ready to be lifted as the wheel moves forward. This drawing is made for a pendulum beating seconds. The pendulum is represented as swinging to the left and just ready to unlock the left hand detent by pin 1, and at the same time taking up the left hand impulse arm by beat pin 3, allowing the escape wheel to advance one-half space, locking on the opposite detent and raising the right hand impulse arm.

Fig. 2 is a sectional view of the plate, bridge, arbor and jewels which carry the impulse arms *b* and the detent arms *d; b* is the impulse arm fastened permanently to the sleeve *c*, which is jeweled in each end; *d* is the detent arm fastened firmly to the arbor; *f* is a section of the front plate, and *g* of the bridge, each of which has a jewel and an end piece. It will be readily seen that the arbor will end-shake between the two end pieces, and the sleeve *e* between the jewel in bridge *g*, and the hub of detent arm *d*, so in no case can there be any bind to affect the free action of the several parts.

Any kind of contact for chronograph or other electrical mechanisms can be applied to this movement without changing its rate.

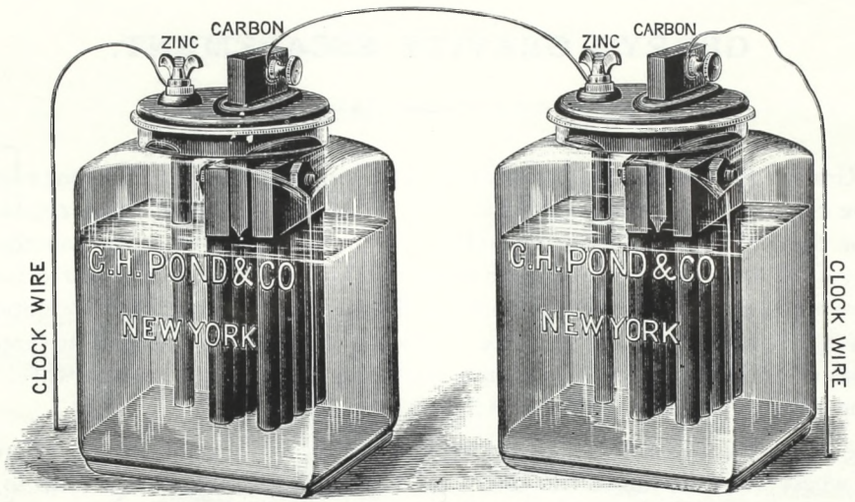


FIG. 1.—BATTERY.

DIRECTIONS.

TO BE FOLLOWED IN THE ORDER GIVEN.

1st.—Remove the wood cross piece which is under the lower end of the movement. (This may be done without disturbing the dial.)

2nd.—Hang the clock on the wall, where it is to be located, by the hanger at the top of the case.

3d.—Remove the wood clamps which hold the pendulum ball.

4th.—*The case must be plumb.*—Plumb it by the pendulum, the lower point of which must stand in front of centre of the degree scale, and the rod must be parallel with the back of the case.

5th.—When plumb, secure the lower end of the case firmly to the wall with a screw, as provided. A screw hole will be found under the scale plate.

1st.—Pour the contents of the two paper packages into the two cells—one in each.

2d.—Fill with soft water one-half full, and stir the salts carefully with a stick until nearly dissolved. Then fill with soft water to the center line of the words "Law Battery."

The greatest care must be taken not to wet the *outside* of the jars, or the *inside above the water line*, as above given.

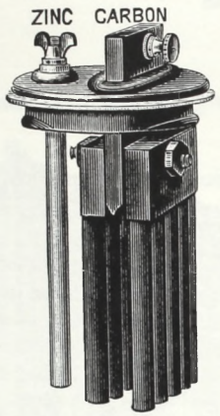


FIG. 2.

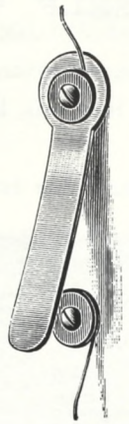


FIG. 3.

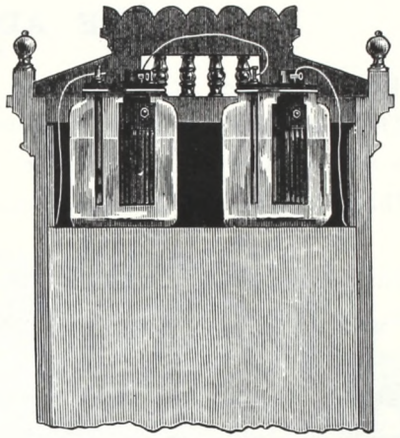


FIG. 4.

3d.—The covers carrying the soft rubber ring, carbon plates and zinc are to be assembled as shown in Fig. 2, care being taken to *bolt the carbons firmly* in order to secure good results. The small rubber washer on each zinc *must* be slipped over *the end* of the *zinc after* putting the zinc through cover, and left one-half inch from lower end. *This prevents contact between the zinc and carbon, which, if permitted, would soon exhaust the battery.*

4th.—Place the covers upon the cells as shown in Fig. 1.

The projections on the covers are made to pass *inside* and *under the neck of the cell*, and a partial turn, either to the right or left, firmly secures the cover and makes a tight joint.

5th.—Place the cells in the "pocket" at the top of the case, and connect them as shown in Fig. 1.

In making these connections (the short wire sent with each clock is for this purpose), be particular to connect the zinc of one cell with the carbon of the next, and *turn the nuts down firmly* to ensure a good contact.

The clock wires shown in Fig. 1 are the two wires protruding through the top of the case, which are to be connected as therein shown.

The clock must be wound before starting the pendulum. To do this press the *key* shown in Fig. 3, which is inside the case on the left and back of the dial. Continue the pressure until the winding ceases.

Set the hands and start the pendulum in the usual way.

NEVER PRESS the "key" while the pendulum is in motion.

Fig. 4 shows connections made and cells in pocket.

In renewing the battery note the time at which the clock winds, and after it has wound disconnect the wires, remove and clean the jars, and proceed as above described.

THE ADVANTAGES OF SELF WINDING CLOCKS

May be briefly stated as follows:

1st. These clocks are *entirely automatic*, self-winding at regular intervals, by electricity, thus obviating *all the care and attention* required in the use of key-winding clocks.

2d. This principle of frequent and regular winding not only shortens the train, but decreases the friction and strain to the lowest degree.

3d. This system does away with all necessity for use of *maintaining power*, as the spring is wound in the same direction the train is moving, thus maintaining a perfect *uniformity* of tension, which all horologists admit is of the greatest importance, and without which perfect time cannot be had.

4th. These clocks always wind to the *same degree*, and will not over-wind.

5th. *Clocks so constructed are very superior as accurate timekeepers.*

6th. Any competent watchmaker can set these clocks running by simply following the directions given.

7th. These clocks are guaranteed to run for over one year without attention.

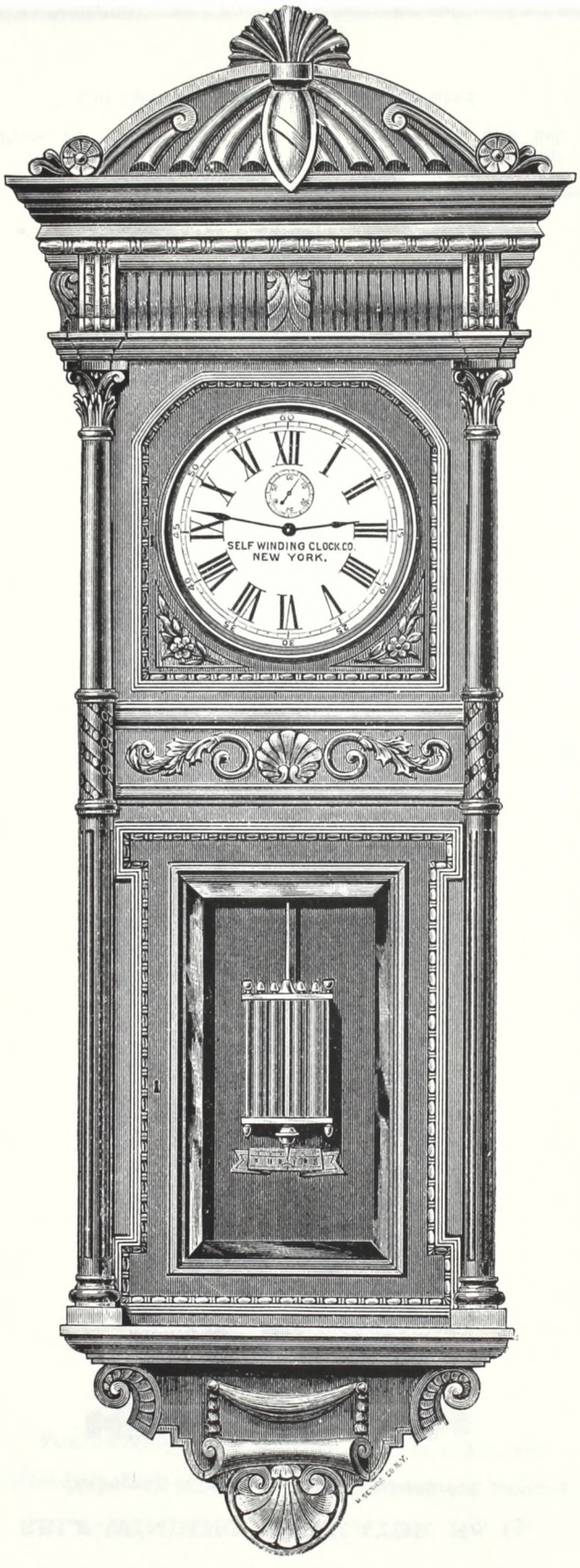
8th. These movements are made of the best material with steel cut pinions hardened and polished; the cases are finely finished and all the workmanship connected with the goods is of the highest order.

Each clock is supplied with a battery which is concealed in the case or it may be placed in any location desired. This battery is of the most simple character and is used only in winding the spring.

The action required of the battery is so slight that it performs the work of winding for over one year without renewal or attention.

The expense of renewal does not exceed twenty-five cents.

This system of winding is covered by fundamental patents, and any infringement will be prosecuted to the full extent of the law.



Height, 102 inches. Dial, 15 inches, Silvered. 14 Sapphire Jewels.
Mercurial Compensated Pendulum.

Fine Astronomical Movement. Gerry Gravity Escapement. Hand-carved Case. Extra Finish.

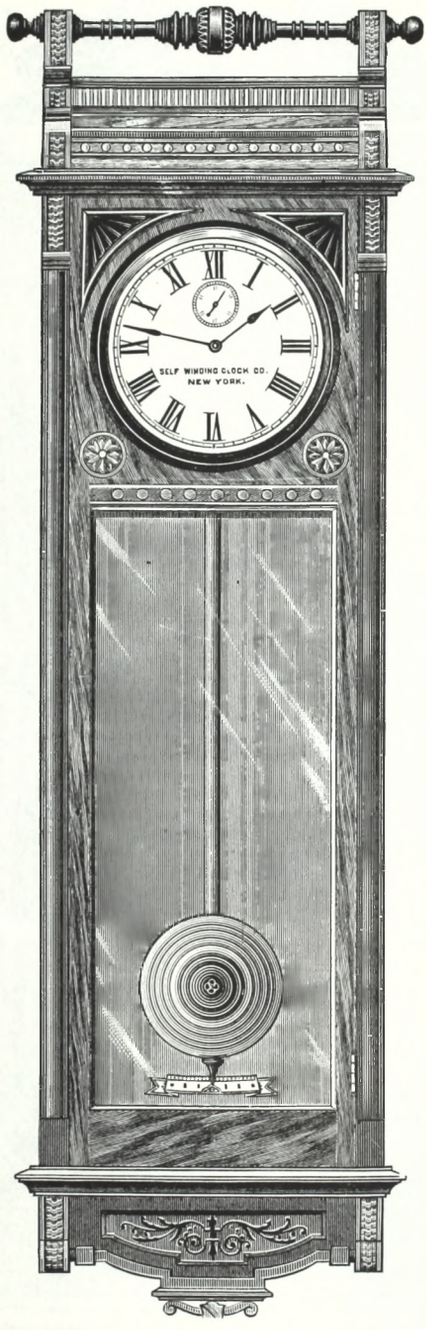
SELF WINDING REGULATOR No. 1.

Mahogany, Antique, Oak, Cherry, Ash.

$875.

SELF-WINDING REGULATOR No. 13.

Mahogany, Cherry, or Oak. Hand-carved.



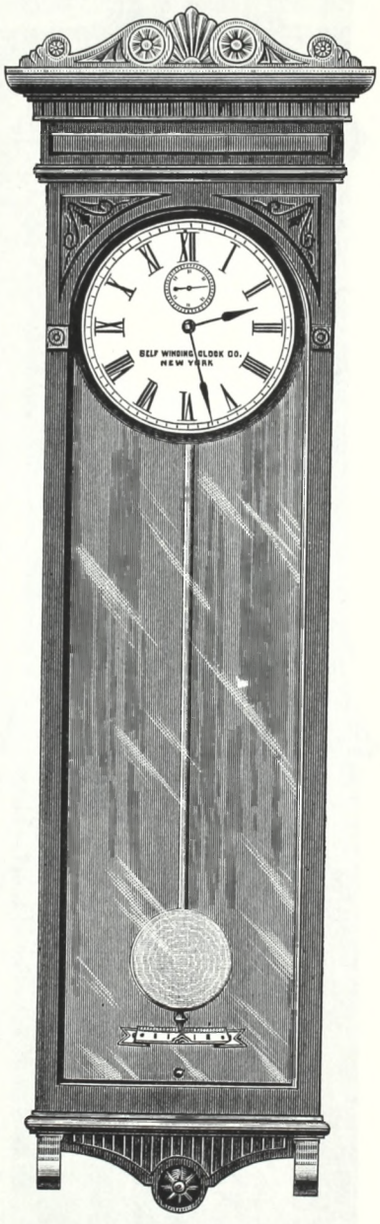
Height, 73 inches. Dial, 12 inches.

Price, B, $130. C, $95. Mahogany Case extra, $10, net.

Cut Steel Pinions, Hardened and Polished.

SELF WINDING REGULATOR No. 14.

Cased in Solid Mahogany, Cherry, Oak, or Black Walnut.



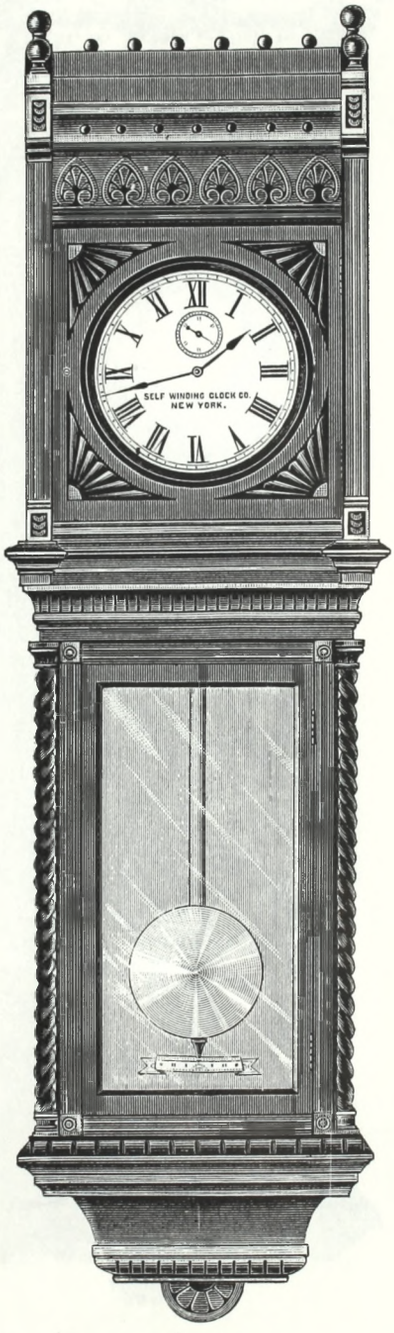
Height, 69 inches. Dial, 12 inches.

Price, B, $125. C, $90. Mahogany extra, $10, net.

Seconds Beat. Cut Steel Pinions, Hardened and Polished.

SELF WINDING REGULATOR No. 17.

Mahogany, Cherry, Oak, Antique Oak. Elegantly Hand-carved.



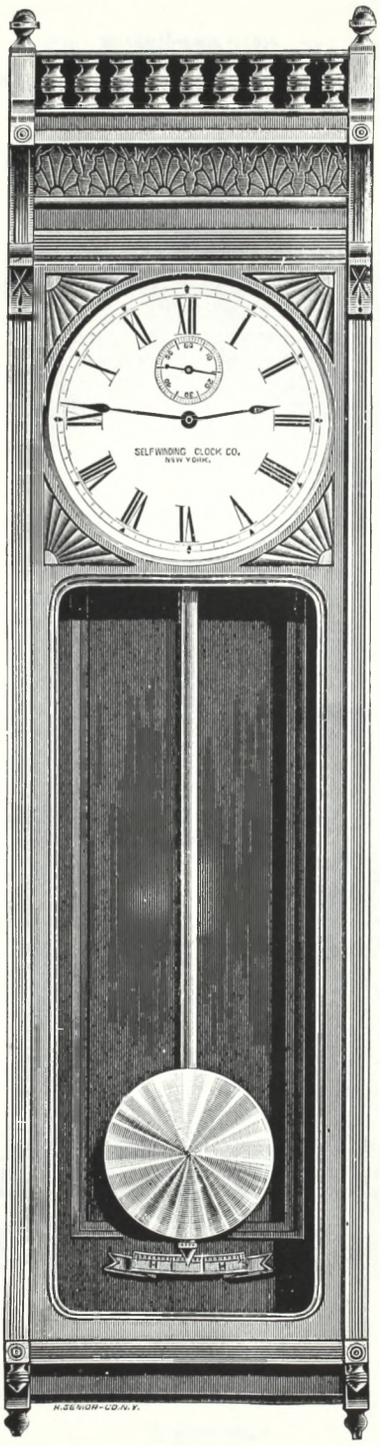
Height, 76 inches. Dial, 12 inches.

B, $180. C, $150. Mahogany Case extra, $10, net.

Fine Finished Movement.

SELF WINDING REGULATOR No. 4.

Mahogany, Oak, Cherry, or Ash. Handsomely Carved Case.



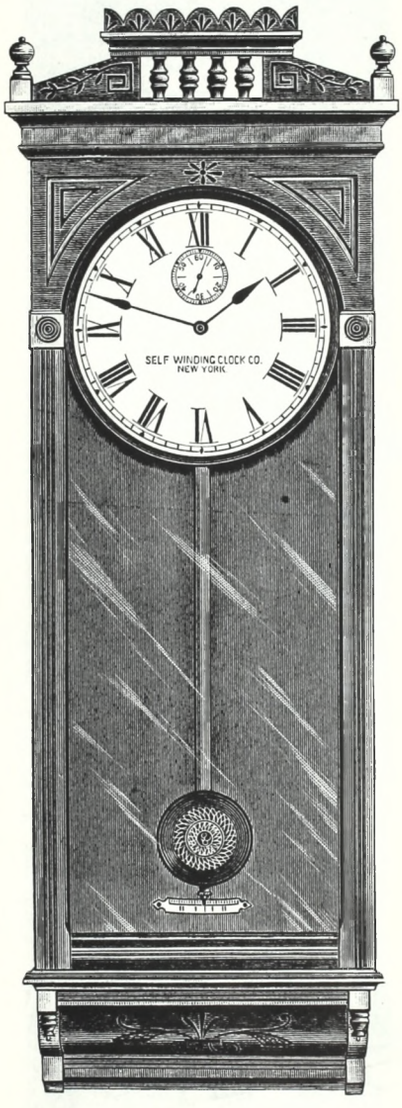
Height, 64 inches. Dial, 12 inches.

Price, B, $132.50. C, $97.50. Mahogany extra, $10, net.

Seconds Beat. Cut Steel Pinions, Hardened and Polished.

SELF WINDING No. 6.

Cherry, Walnut, Ash.



Height, 50 inches. Dial, 12 inches.

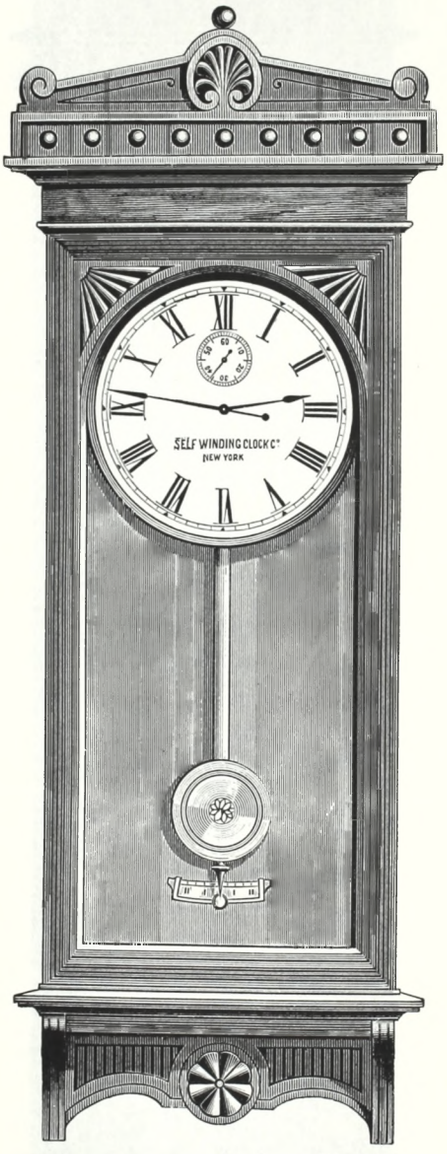
Price, $48.00.

Nickel or Gilt trimmings. Wood Rod. Cut Steel Pinions, Hardened and Polished.

Seventy-two Beat.

SELF WINDING No. 18.

Cherry, Oak, Black Walnut, and Cherry Natural. Hand-carved.



Height, 50 inches. Dial, 12 inches.

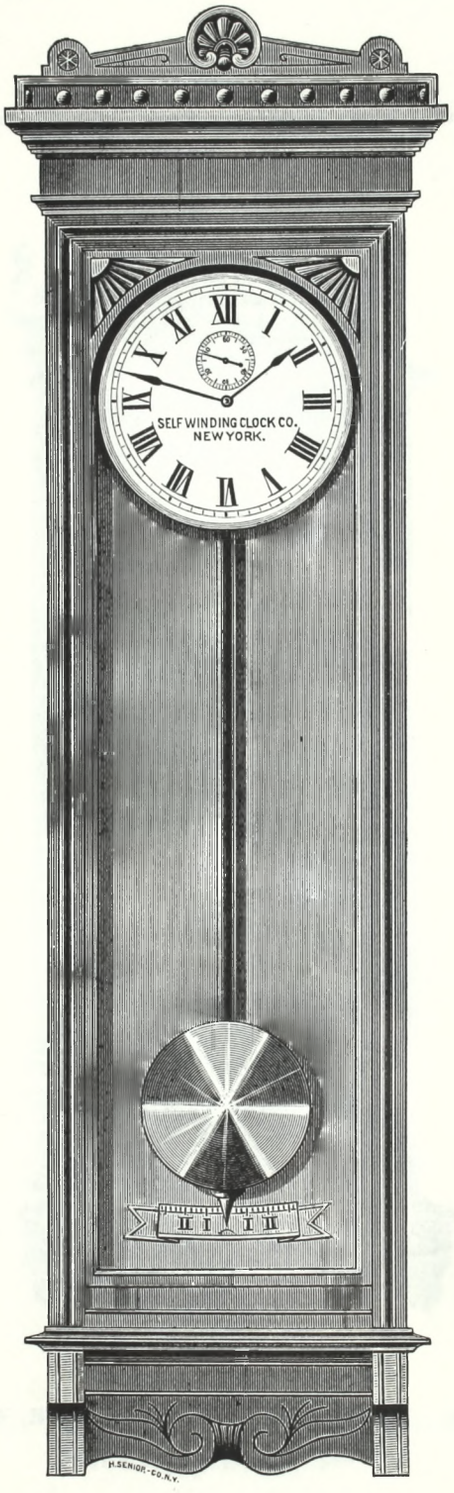
Price, $45.00.

Nickel or Gilt trimmings. Wood Rod. Cut Steel Pinions, Hardened and Polished.

Eighty Beat.

SELF-WINDING REGULATOR No. 9.

Cherry, Oak, Black Walnut, and Ash. Handsomely Carved.



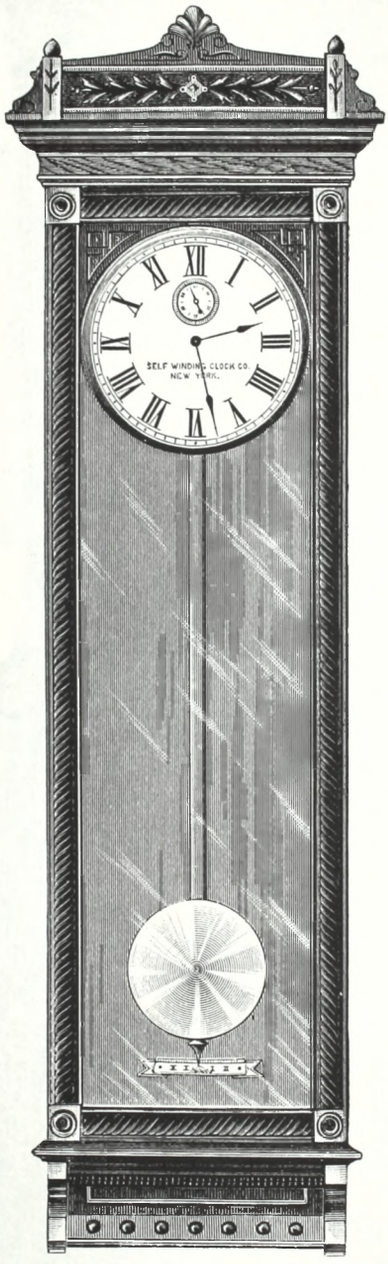
Height, 70 inches. Dial, 12 inches.

Price, B, $120. C, $85.

French Plate Glass. Seconds Beat. Cut Steel Pinions, Hardened and Polished.
Fine Movement.

SELF WINDING REGULATOR No. 21.

Mahogany, Cherry, Black Walnut, Oak. Carved Panel. Rich Molding.



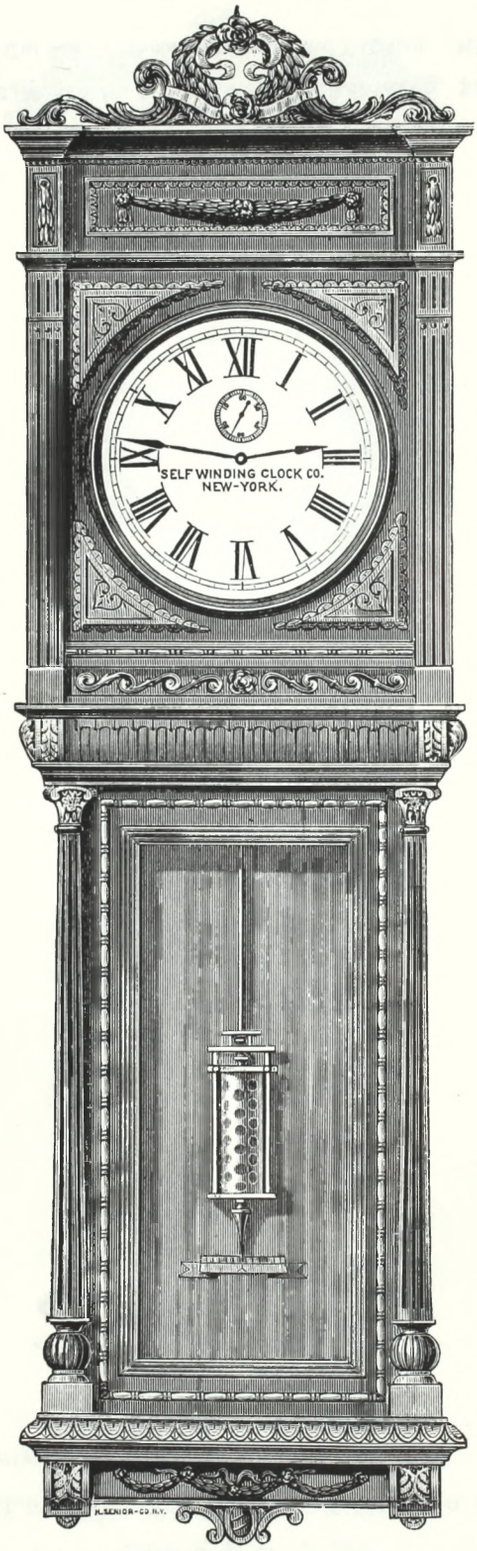
Height, 71 inches. Dial, 12 inches.

Price, B, $130. C, $95. Mahogany Case extra, $10, net.

Seconds Beat. Cut Steel Pinions, Hardened and Polished. Highly Finished.

SELF WINDING REGULATOR No. 20.

Mahogany, Oak, Cherry, or Ash.



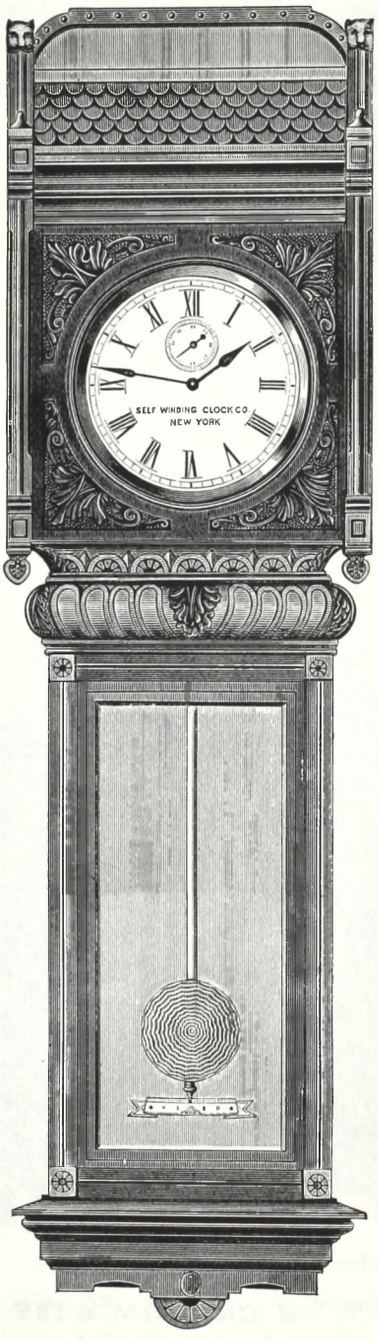
Height, 84 inches. Dial, 15 inches.

Price, $375. Mahogany Case extra, $10, net.

Extra Fine Movement. Mercurial Pendulum. Elegantly Hand-carved Case.

SELF WINDING REGULATOR No. 15.

Mahogany, Cherry, Oak. Elaborate Hand-carving.



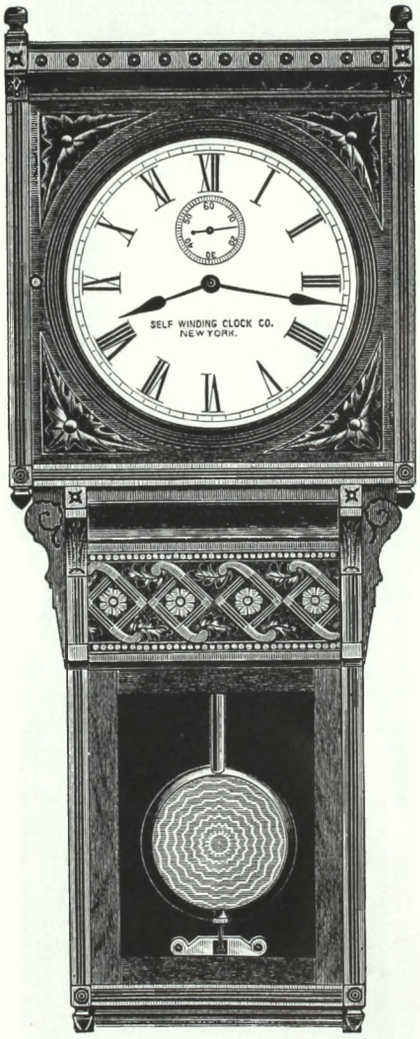
Height, 73 inches. Dial, 12 inches.

Price, B, $210. C, $175. Mahogany Case extra, $10, net.

Highly Finished Movement.

SELF WINDING No. 5.

Cased in Solid Mahogany.



Height, 43 inches. Dial, 12 inches.

Price, $137.50.

Wood Pendulum, Silvered or Gilded. Cut Steel Pinions, Hardened and Polished.

Highly Finished Movement.

Seventy-two Beat.