

RATES OF CHRONOMETERS
ON TRIAL
FOR PURCHASE BY THE BOARD OF ADMIRALTY,
AT THE
ROYAL OBSERVATORY, GREENWICH,
FROM 1898 JULY 2 TO 1899 JANUARY 21.

The Chronometers are placed in order of merit, their respective positions being determined by consideration of the irregularities of rate exhibited in Table III.

Copyright © 2004 John Wiley & Sons, Inc.

NAME OF MAKER.			WEEKLY PAYMENTS.		CONTRACTS OF EMPOWERMENT AND BALANCE, FROM THE DESCRIPTION FURNISHED BY THE MAKER.															
			No.	Year.	Dec. 31 to Jan. 7.	Dec. 1 24-31.	Dec. 15- 24.	Jan. 7-14.	Jan. 14-21.	Oct. 10-17.	Dec. 8-10.	Oct. 8-15.	Oct. 29 Nov. 5.	Oct. 15-22.	Oct. 1-8.	Sept. 24- Oct. 1.				
Edgar & Co.	8237	2	Ordinary balance; palladium spring.	- 2	1	0	1	0	2	0	4	1	9	1	1	4	8			
Johnson & Co.	4738	2	Auxiliary to balance acting in heat; palladium spring.	- 0	5	0	1	0	2	0	7	1	4	2	0	1	1			
Johnson & Co.	4741	2	Auxiliary to balance acting in heat; palladium spring.	- 1	0	2	2	7	1	2	0	8	3	1	2	7	8			
Johnson & Co.	4715	2	Auxiliary to balance acting in heat; palladium spring.	- 1	0	2	2	7	1	2	0	8	3	1	2	7	8			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8	7	3	6	7	6	8	9	4	8	4	5			
Kullberg & Co.	6331	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 7	8	8														

The sign $+$ indicates that the rate is gaining.

† During these weeks the Chromotem were placed in the chamber of a stove heated by jets of gas, the temperature being regulated by Kullberg's automatic governor which controls the supply of gas. The gas flames are exterior to the chamber into which none of the injurious products of combustion can enter.

The Chronometrical Thermometer differs from an ordinary Chronometer only in the construction of the balance, the positions of the metals forming the compensating rims being reversed. By this arrangement the effect of temperature is much magnified.

ORDER OF TEMPERATURE AS DETERMINED GENERALLY BY THE CHRONOMETRICAL THERMOMETER

CORRECTION OF TEMPERATURE OBSERVATIONS MADE BY THE CHRONOMETER THERMOMETER.																NAME OF MAKER.		No.	
Oct. 22-29.	Nov. 1-10.	Nov. 11-20.	Nov. 21-30.	Dec. 1-10.	Dec. 11-20.	Dec. 21-30.	Jan. 1-10.	Jan. 11-20.	Jan. 21-30.	Feb. 1-10.	Feb. 11-20.	Feb. 21-30.	Mar. 1-10.	Mar. 11-20.	Mar. 21-30.	Apr. 1-10.	Apr. 11-20.	Apr. 21-30.	
+2.4	+0.3	+1.0	+2.9	+1.8	+1.8	+1.6	+1.9	+0.9	+8.9	+8.5	+8.0	+2.3	+2.2	+4.8	+3.0	+4.8	Usher & Co.	8237	
+0.0	-0.9	-1.1	-1.1	-0.9	-1.0	-1.2	-0.1	-1.1	-1.1	-0.9	+2.1	+1.1	-0.5	-2.1	-0.7	-0.5	Johannsen & Co.	4776	
-6.2	-1.8	+0.6	+2.8	+1.1	+1.1	+2.4	+5.2	+9.8	+4.0	+7.7	+6.0	+7.0	+6.0	+7.6	+5.9	+6.0	Johannsen & Co.	4778	
-0.6	-1.1	-1.6	-0.6	+0.3	-0.4	+0.1	+1.6	1.4	-7.2	-8.7	-8.7	-7.5	-0.9	-2.1	-0.2	-0.2	Johannsen & Co.	4781	
														-5.2	-4.0	-4.3		4851	
-17.5	-1.9	+0.8	-5.5	-4.8	-4.7	-1.5	-4.2	-5.5	-4.2	-4.8	-4.0	-6.9	-4.1	-9.0	-7.4	-8.4	Kullberg.	6316	
-4.9	-1.9	-0.8	-0.7	+0.8	+0.0	+1.2	-0.5	-3.8	-1.9	-2.0	+1.8	-3.2	-3.3	-2.0	-1.6	Kullberg.	2860		
+2.6	+1.8	+0.6	+2.8	+1.1	+1.1	+2.4	+5.2	+9.8	+4.0	+7.7	+6.0	+7.0	+6.0	+7.6	+5.9	+6.0	Clerks.	1786	
-0.7	-1.8	-1.6	-0.6	+0.3	-0.4	+0.1	+1.6	1.4	-7.2	-8.7	-8.7	-7.5	-0.9	-2.1	-0.2	-0.2	Johannsen & Co.	4776	
+6.4	+2.2	+7.5	+7.9	+7.9	+7.9	+7.9	+7.9	+9.6	+6.3	+2.1	+1.8	+7.6	+7.7	+4.0	+3.1	Gardner.	1786		
														-5.2	-4.0	-4.3		4851	
+3.4	-0.4	-0.8	+1.0	+2.2	-0.1	-0.2	+0.8	+0.1	+6.5	+7.2	+3.8	+8.8	+6.9	+8.0	+2.0	+2.8	Johannsen & Co.	4772	
+3.4	+0.1	+2.6	+0.7	+0.0	-1.4	-1.3	-5.0	-11.3	-8.5	-11.1	-10.2	-8.2	-6.3	-8.0	-7.4	-8.4	Johannsen & Co.	4772	
+3.4	+1.0	-0.2	-0.2	-0.9	+1.9	+2.1	+3.8	+7.8	+7.7	+12.2	+9.0	+8.1	+5.4	+4.4	+6.0	+6.0	Johannsen & Co.	4778	
+0.2	-7.8	-8.1	-1.1	+1.0	-1.8	-1.4	-2.1	-4.0	+4.9	+1.9	-1.8	-0.1	-0.1	-3.4	-1.5	-5.5	Johannsen & Co.	4774	
														-5.2	-4.0	-4.3		4851	
-9.4	-6.8	-6.5	-6.5	-6.8	-6.8	-6.8	-5.5	-5.8	-8.1	-1.6	-4.9	-5.8	-4.9	-4.1	-3.4	-4.1	Johannsen & Co.	4740	
-13.5	-6.6	-6.2	-15.4	-12.6	-12.6	-12.6	-10.9	-10.9	-19.5	-10.3	-11.8	-13.7	-11.8	-11.8	-9.8	-7.0	Reid & Sons	4136	
-10.7	-6.8	-0.7	-1.0	-1.6	-1.6	-1.6	-0.6	-1.3	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	Kullberg.	6306	
-2.4	+0.6	-0.1	+1.5	+1.6	+1.6	+1.6	+3.0	+1.8	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	Kullberg.	6306	
+1.8	-0.5	-2.5	-2.8	-2.8	-2.8	-2.8	-0.9	-0.7	-2.4	-0.9	-0.1	-0.9	-0.4	-3.8	-6.0	-6.0	J. F. Cole.	280	
-4.9	-0.3	-1.3	-4.9	+1.8	-0.6	+0.2	+0.2	-0.6	-3.1	-0.6	-1.9	-0.1	-0.9	+0.5	+2.2	Johannsen & Co.	4678		
-0.8	+2.1	-2.6	+4.9	+5.9	+5.2	+4.2	+4.8	+5.8	-3.8	-6.2	+6.8	+2.2	+8.1	+0.7	+7.8	+5.2	Kullberg.	6318	
-1.6	-0.5	-1.5	-2.4	-2.4	-2.4	-2.4	-1.1	-10.9	-9.1	-10.9	-10.2	-9.2	-9.1	-9.0	-7.7	-6.1	Johannsen & Co.	4772	
-7.8	-2.3	+1.6	-2.4	-1.2	-0.2	+2.2	-9.7	-4.1	-5.2	-1.1	-3.9	-3.6	-9.4	-2.9	-4.6	-3.6	Kullberg.	6322	
-6.5	-1.8	-1.5	-2.4	-2.6	-1.4	-1.6	-0.9	-8.0	-1.1	-1.0	-0.0	-2.9	-0.5	-4.6	-2.0	-2.8	Kullberg.	6281	
-19.8	-7.4	-8.0	-6.8	-6.8	-6.5	-8.1	-11.3	-7.0	-19.7	-14.8	-9.0	-14.4	-14.5	-12.2	-13.3	-9.3	Johannsen & Co.	4821	
+11.7	+15.6	+1.0	+18.4	+24.2	+24.8	+19.4	+20.0	+22.3	+14.8	+17.0	+12.8	+10.8	+14.3	+22.5	+11.8	+16.7	+15.8	Johannsen & Co.	4735
+11.7	+0.6	+1.8	+1.3	+2.6	+1.9	+2.0	+6.2	+4.7	+13.8	+14.5	+5.8	+12.4	+7.0	+14.5	+9.9	+7.6	Johannsen & Co.	4735	
+3.0	-0.3	+0.4	+0.7	+3.8	+1.8	+0.4	+6.8	+1.1	+0.9	-1.2	-4.4	-4.0	+2.2	-3.9	+0.7	+5.0	Gardner.	1786	
-0.8	-3.8	-3.8	+0.6	-1.0	-4.0	-1.9	+1.2	-1.0	+8.2	+6.8	+3.0	+9.1	+3.1	+9.1	+5.0	+8.1	Uhrig	6386	
+1.2	-3.0	-6.1	-3.0	-3.0	-3.0	-3.0	-4.0	-4.0	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	-3.1	Usher & Co.	8237	
-17.5	-7.8	-7.0	-8.1	-6.5	-8.1	-4.8	-6.4	-8.8	-18.0	-18.0	-4.2	-18.0	-4.5	-16.2	-4.0	-2.3	Johannsen & Co.	4828	
+6.8	+3.5	+2.1	+5.9	+4.9	+8.0	+4.0	+8.8	+15.6	+12.3	+12.2	+13.4	+14.3	+7.0	+15.9	+6.8	+7.6	Johannsen & Co.	4735	
-10.4	-1.9	-2.2	-1.5	-2.4	-0.7	0.8	0.2	-4.4	-5.3	-3.2	-1.1	-3.5	-0.9	-8.1	+1.7	-0.9	Kullberg.	6388	
+529.0	+439.8	+302.6	+265.6	+187.6	+116.8	+15.9	-914.3	-309.4	-1135.0	-1160.6	-1328.1	-1779.8	-1866.0	-2337.9	-2832.1	-3261.6	(Chronometer Thermometer.		
.83	.84	.85	.86	.87	.88	.84	.71	.68	.78	.77	.81	.85	.87	.90	.94	100.7	Mean Weekly Temperature.		
(Extreme of Temperature as shown by the Self-Registering Thermometer.)																			
88.8	88.4	88.3	87.8	87.0	86.2	86.7	71.0	67.7	65.7	71.0	67.7	68.6	71.0	67.7	64.1	71.0	67.7	68.6	

The Chromosomes are placed in order of merit, their respective positions being determined by consideration of the irregularities of rate exhibited in Table III.

Only those Chronometers have been included in this list for which δ did not exceed 12 seconds.

NAME OF MAKER.			No.	Winter 2 or 3 Dns.	Construction of Escapement and Balance, from the Description furnished by the Maker.	(II.) WEEKLY RATES IN															
						Dec. 31 to Jan. 7	Dec. 24-31	Dec. 17-24	Jan. 7-14	Jan. 14-21	Weeks 10-17	Dec. 8-15	Oct. 29 Nov. 5	Oct. 15-22	Oct. 1-8	Sept. 24 to Oct. 1					
Johannesen & Co.	4789	2	Auxiliary to balance acting in heat; palladium spring.	-6.1	-6.4	-7.6	-8.6	-8.3	-5.9	-8.2	+2.2	+0.7	-0.8	+1.3	+8.8						
Kullberg.	6307	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	-20.4	-17.8	-17.8	-18.1	-19.2	-18.7	-14.7	-11.6	-13.0	-11.9	-11.1	-8.5						
Isaac.	6308	2	Auxiliary balance; palladium spring.	-2.7	-1.4	-4.0	-4.4	-4.0	-3.1	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8						
Kullberg.	6309	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	-12.0	-11.5	-12.0	-12.6	-12.9	-11.5	-10.5	-13.7	+1.5	+4.5	+5.5	+3.8						
Johannesen & Co.	4793	2	Auxiliary to balance acting in heat; palladium spring.	-12.6	-13.8	-13.2	-12.2	-12.0	-12.8	-14.6	+11.1	+0.1	+9.2	+13.0	+13.0						
Johannesen & Co.	4792	2	Auxiliary to balance acting in heat; palladium spring.	+17.0	+18.8	+15.5	+18.5	+20.5	+18.6	+20.2	+10.4	+12.5	+15.5	+11.1	+13.4						
Johannesen & Co.	4794	2	Auxiliary to balance acting in heat; palladium spring.	-0.6	-2.0	-3.2	-3.1	-3.0	-2.9	-2.8	+2.7	-1.2	-4.8	-0.9	+3.4						
H. Dent & Co.	4800	2	Dent's balance; bright steel spring.	-1.3	-2.7	-3.0	-2.8	-2.9	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8						
Usher & Co.	8240	2	Auxiliary to balance acting in heat and cold; palladium spring.	+11.1	+10.9	+11.4	+11.1	+11.0	+11.0	+12.5	+7.9	+9.0	+12.0	+12.6	+12.6						
Usher & Co.	8238	2	Auxiliary to balance acting in heat and cold; palladium spring.	+15.8	+15.9	+15.6	+14.0	+11.6	+14.2	+14.8	+11.2	+11.0	+11.3	+12.7	+12.7						
Johannesen & Co.	4812	2	Auxiliary to balance acting in heat; palladium spring.	+2.9	+3.0	+7.8	+1.7	+0.8	+5.2	+10.9	+4.0	+3.1	+4.2	+11.0	+11.0						
Usher & Co.	8217	2	Auxiliary to balance acting in heat and cold; palladium spring.	-8.8	-10.3	-10.9	-8.8	-0.6	-11.0	-12.1	+5.6	+0.6	+8.0	+5.7	+8.7						
Kullberg.	6279	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	-12.5	-12.4	-12.1	-11.6	-12.6	-12.3	-11.7	-9.8	-9.8	-7.6	-6.9	-3.8						
Johannesen & Co.	4828	2	Auxiliary to balance acting in heat; palladium spring.	+0.8	+0.7	+2.8	+4.3	+4.3	+3.8	+0.8	+2.4	-1.8	-0.4	-2.8	-0.1						
Johannesen & Co.	4829	2	Auxiliary to balance acting in heat; palladium spring.	+0.8	+0.7	+2.8	+4.3	+4.3	+3.8	+0.8	+2.4	-1.8	-0.4	-2.8	-0.1						
H. Dent & Co.	4800	2	Dent's balance; bright steel spring.	+20.4	+21.5	+19.3	+21.2	+22.0	+20.8	+20.1	+21.3	+21.1	+23.1	+22.0	+22.2						
Webb.	5673	2	Ordinary balance; palladium spring.	+2.1	+2.0	-0.5	-0.5	-1.8	-6.2	-7.7	-2.2	-0.9	-8.9	-5.8	+2.2						
Johannesen & Co.	4829	2	Continuous auxiliary; palladium spring.	-9.8	-8.2	-6.9	-7.9	-9.1	-8.3	-7.7	+1.8	-1.5	+2.5	+4.8	+2.2						
Gardner.	8275	2	Dent's balance; bright steel spring.	+9.8	+8.7	+5.5	+5.5	+6.0	+6.9	+4.1	+3.8	+2.7	+8.0	+10.7	+10.7						
H. Dent & Co.	4802	2	Dent's balance; bright steel spring.	+20.9	+20.9	+20.0	+23.9	+21.3	+21.2	+21.5	+23.8	+20.2	+20.2	+27.5	+27.6						
J. White & Sons	5848	2	Auxiliary to balance; blue steel spring.	+0.5	+3.8	-4.0	+5.3	+2.4	+3.8	+9.1	+2.2	+6.0	+5.7	+8.7	+9.5						
Johannesen & Co.	4800	2	Auxiliary to balance acting in heat; palladium spring.	-10.9	-9.9	-8.2	-9.8	-10.0	-5.9	-0.9	-5.9	-6.6	-4.9	-1.8	-0.5						
Usher & Co.	8240	2	Lowly balance; steel spring.	-4.1	+7.2	+7.0	+6.2	+4.0	+9.7	+0.9	+7.8	+4.0	+3.4	+0.9	+10.7						
S. Smith & Sons	7988	2	Auxiliary to balance acting in heat; palladium spring.	-21.0	-23.9	-25.0	-18.2	-19.0	-20.1	-12.6	-15.8	-11.0	-13.0	-7.8	-2.9						
Johannesen & Co.	4827	2	Auxiliary to balance acting in heat; palladium spring.	-7.1	-6.0	-7.4	-8.0	-7.7	-8.7	-6.0	-11.0	-11.1	-9.2	-6.7	-2.9						
H. Dent & Co.	4802	2	Dent's balance; bright steel spring.	+12.7	+14.5	+12.9	+16.1	+16.6	+12.5	+12.0	+27.6	+24.9	+28.5	+30.8	+30.8						
Usher & Co.	8241	2	Lowly balance; steel spring.	+14.1	+13.5	+13.0	+19.1	+17.3	+19.3	+17.8	+20.8	+19.9	+20.3	+19.8	+17.0						
Kullberg.	6287	2	Ordinary balance; palladium spring.	-2.1	-3.8	-4.0	-4.7	-4.2	-3.4	-1.1	-3.0	-3.7	-4.8	-3.1	-1.9						
Usher & Co.	8242	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	-26.8	-23.8	-25.5	-17.5	-18.0	-20.9	-18.0	-19.9	-16.5	-18.7	-16.0	-16.0						
Martin & Co.	8359	2	Auxiliary to balance acting in heat and cold; palladium spring.	+13.0	+13.9	+13.6	+13.9	+13.8	+17.9	+18.7	+15.2	+14.4	+15.3	+13.4	+13.4						
Johannesen & Co.	4804	2	Auxiliary to balance acting in heat; palladium spring.	+30.8	+33.8	+34.8	+30.1	+32.1	+32.7	+34.1	+27.3	+26.8	+28.4	+28.9	+29.4						
Kullberg.	6288	2	Auxiliary to balance; steel spring.	-20.1	-20.8	-17.7	-18.8	-19.3	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8						
Kullberg.	6289	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	-23.1	-23.8	-21.1	-21.7	-23.2	-19.5	-17.6	-17.1	-7.7	-8.1	-8.4	-8.4						
Kullberg.	6290	2	Reversed detent, Kullberg's auxiliary balance; palladium spring.	-22.8	-21.1	-20.6	-22.1	-22.1	-19.0	-18.8	-18.8	-10.0	-14.1	-12.1	-9.8						
Webb.	5675	2	Ordinary balance; palladium spring.	+34.0	+31.9	+30.1	+32.9	+32.5	+32.0	+30.7	+27.3	+35.5	+44.1	+34.5	+34.1						
Johannesen & Co.	4800	2	Auxiliary to balance acting in heat; palladium spring.	-17.3	-14.5	-12.1	-18.1	-20.2	-11.0	-8.1	-6.9	-12.1	-6.1	-5.4	-6.1						
Usher & Co.	8216	2	Auxiliary to balance acting in heat and cold; palladium spring.	+14.2	+15.7	+15.1	+12.8	+16.8	+12.8	+12.2	+3.8	+4.1	+5.8	+5.8	+6.1						
Gardner.	8276	2	Compensation for extremes; palladium spring.	-31.3	-36.9	-39.0	-33.5	-36.6	-32.1	-29.8	-2.8	-12.8	-8.6	-1.0	-2.1						
Chronometrical monomer	Ther-			+1682.9	+1549.0	+1380.1	+1382.0	+1315.5	+1086.0	+896.0	+839.1	+824.2	+718.9	+602.0	+595.3						
Mean Weekly Tempera-	ture			49.8	50.5	52.4	52.8	53.2	56.1	56.6	58.9	59.0	60.6	61.7	60.4						
Extremes of Tempera-	ture as shown by the Self-Registering Thermometer			48.0-52.4	46.5-58.6	46.4-57.1	46.5-56.0	50.6-55.5	54.2-58.0	53.8-58.7	57.2-61.7	56.6-61.8	58.2-63.8	58.4-62.7	57.0-68.3						

ORDER OF TEMPERATURE AS DETERMINED GENERALLY BY THE CHRONOMETRICAL THERMOMETER.																						NAME OF MAKER.		No.
Oct. 22-29	July 9-16	July 2-9	Aug. 6-13	July 30 to Aug. 6	July 23-30	Aug. 16-23	July 13-20	Aug. 13-20	Sept. 17-24	5-12 †	Nov. 26 Dec. 3	10-17 †	Nov. 12-19	Nov. 20-27	Nov. 19-26	Aug. 27 to Sept. 3	Sept. 3 to 10							
-0.6 -12.0 +2.8	-1.4 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2							
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4789					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Kullberg.	6307					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Isaac.	6308					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4793					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4792					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4794					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	E. Dent & Co.	4800					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8240					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8238					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4812					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8217					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8217					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Wiggin & Sons.	976					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Gardner.	4566					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2							
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	E. Dent & Co.	4800					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8240					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8238					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4793					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4792					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4794					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	E. Dent & Co.	4800					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8240					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8238					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Johannesen & Co.	4812					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8217					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Usher & Co.	8217					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Wiggin & Sons.	976					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	Gardner.	4566					
-1.2 -1.8 -2.8	-1.8 -1.8 -4.6	-2.2 -1.0 -4.6	+0.2 +0.2 -0.1	+0.4 +0.5 -0.2	+0.6 +0.5 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2	+0.1 +0.1 -0.2							
-1.2 																								

NAME or MAKER	No.	Watch or days	ADDRESS or MAKER	Construction of Escapement and Balance, from the Description furnished by the Maker.	(III.) ABSTRACT OF	
					Least Weekly Sum.	Extremes of the Temperature.
Usher & Cole	8227	2	105, St. John Street Road, London, E.C.	Ordinary balance; palladium spring.	- 2.1	48.0 - 52.1
Johannsen & Co.	4786	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 1.1	58.0 - 67.3
Johannsen & Co.	4761	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 0.6	58.0 - 67.3
Johannsen & Co.	4714	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 9.1	50.8 - 55.7
Kullberg	6881	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary; palladium spring.	- 7.9	48.0 - 52.1
Kullberg	6816	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary; palladium spring.	- 9.0	83.6 - 107.2
Kullberg	6285	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary; palladium spring.	- 9.8	50.8 - 55.7
Clerke	1796	2	1, Royal Exchange, E.C.	Auxiliary to balance; palladium spring.	- 5.2	54.2 - 58.6
Johannsen & Co.	4708	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 4.5	52.0 - 59.3
Gardner	4787	2	20, Lloyd's Square, W.C.	Compensation for extreme; palladium spring.	+ 2.2	61.4 - 68.8
Kullberg	6272	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary; palladium spring.	- 3.8	46.0 - 55.8
Johannsen & Co.	4689	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	+ 2.6	63.8 - 67.3
Johannsen & Co.	4688	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 0.9	62.2 - 69.7
Johannsen & Co.	4744	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 0.1	59.3 - 67.3
Isaac	2014	2	10, Spencer Street, Clerkenwell, E.C.	Ordinary balance; palladium spring.	- 8.1	63.8 - 67.3
Johannsen & Co.	4740	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 11.4	48.0 - 52.1
Bald & Sons	4196	2	41, Grey Street, Newcastle-on-Tyne.	Auxiliary compensation; palladium spring.	- 13.6	67.3 - 69.7
Kullberg	6830	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary; palladium spring.	- 15.8	54.2 - 58.6
Kullberg	6306	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary; palladium spring.	- 10.9	52.0 - 62.1
J. F. Cole	230	2	21, Thornhill Road, N.	Auxiliary acting in heat and cold; palladium spring.	- 5.9	80.0 - 96.2
Johannsen & Co.	4678	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 4.9	60.8 - 65.0
Kullberg	6818	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary; palladium spring.	- 4.7	48.0 - 52.1
Kullberg	6292	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary; palladium spring.	- 21.4	46.0 - 57.1
Johannsen & Co.	4600	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 9.7	66.7 - 75.5
Kullberg	6821	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 10.8	54.2 - 58.6
Usher & Cole	8221	2	105, St. John Street Road, E.C.	Auxiliary to balance acting in heat and cold; palladium spring.	- 17.1	54.2 - 58.6
Gardner	4787	2	20, Lloyd's Square, W.C.	Loosey balance; steel spring.	+ 10.8	70.0 - 81.8
Johannsen & Co.	4728	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 1.0	68.8 - 67.3
Johannsen & Co.	4760	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	- 0.6	57.1 - 61.7
Gardner	4787	2	20, Lloyd's Square, W.C.	Loosey balance; steel spring.	- 4.4	70.0 - 81.8
Uhlig	696	2	8, Quadrant Road, Essex Road, N.	Uhlig's continually acting auxiliary; bright steel spring.	- 3.8	68.8 - 67.3
Usher & Cole	8214	2	105, St. John Street Road, E.C.	Auxiliary to balance acting in heat and cold; palladium spring.	- 6.1	68.8 - 67.3
Kullberg	6826	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 20.2	50.8 - 55.7
Johannsen & Co.	4656	2	149, Minorsia, E.	Auxiliary to balance acting in heat; palladium spring.	+ 2.1	63.8 - 67.3
Kullberg	6894	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 14.0	48.0 - 52.1

The sign + indicates that the rate is gaining.

THE PRINCIPAL CHANGES OF RATE DURING THE 29 WEEKS.										NAME or MAKER	No.
Mean Temperature.	Greatest Weekly Sum.	Extremes of the Temperature.	Mean Temperature.	Difference between the Greatest and Least.	Difference between one Week and the next.	Mean Temperature for these two Weeks.	Trial No. a + 20.				
49.8	+ 4.8	92.9 - 107.9	100.7	6.9	2.5	50.5 - 49.8	11.9	Usher & Cole	8227		
75.3	+ 4.6	57.0 - 63.3	60.4	5.7	4.1	60.4 - 61.7	13.9	Johannsen & Co.	4786		
68.8	+ 7.5	83.6 - 107.2	90.8	8.9	9.8	77.6 - 56.6	14.5	Johannsen & Co.	4761		
63.2	- 0.2	62.9 - 107.9	100.7	8.9	8.4	85.4 - 90.8	15.7	Johannsen & Co.	4714		
49.8	+ 1.6	66.7 - 75.5	71.6	8.9	8.9	71.6 - 87.8	17.8	Kullberg	6881		
90.8	+ 0.3	63.8 - 67.3	65.3	9.3	4.4	100.7 - 81.8	18.1	Kullberg	6816		
53.2	+ 2.8	63.5 - 74.8	68.6	12.1	3.8	59.0 - 78.7	19.7	Kullberg	6285		
56.1	+ 5.0	73.6 - 97.7	85.4	10.2	4.8	77.6 - 56.6	19.8	Clerke	1796		
53.2	+ 5.8	63.8 - 75.5	68.6	10.1	5.0	81.3 - 58.6	20.1	Johannsen & Co.	4708		
61.0	+ 13.1	71.6 - 85.4	77.6	10.9	5.6	77.6 - 56.6	22.2	Gardner	4787		
53.8	+ 8.8	75.6 - 107.7	85.4	11.6	5.4	77.6 - 56.6	22.4	Kullberg	6272		
60.3	+ 13.8	85.6 - 107.2	80.8	11.2	5.6	85.4 - 90.8	23.4	Johannsen & Co.	4689		
66.4	+ 12.2	71.4 - 88.4	77.6	13.1	4.7	77.6 - 56.6	23.5	Johannsen & Co.	4688		
65.3	+ 11.4	66.7 - 75.5	71.6	11.0	6.6	77.6 - 56.6	23.6	Johannsen & Co.	4744		
65.4	+ 1.9	67.9 - 82.2	78.7	10.0	6.4	67.6 - 68.4	20.14	Isaac	2014		
49.8	- 1.6	71.4 - 85.4	77.6	9.8	6.7	77.6 - 56.6	23.1	Johannsen & Co.	4740		
79.7	- 7.0	93.9 - 107.9	100.7	12.6	5.8	78.7 - 85.4	24.2	Bald & Sons	4196		
56.1	- 0.6	65.2 - 71.6	69.4	15.2	5.1	77.6 - 56.6	25.4	Kullberg	6830		
56.1	+ 6.0	92.9 - 107.9	100.7	15.1	5.2	77.6 - 56.6	25.5	Kullberg	6306		
87.8	+ 6.8	70.6 - 94.8	81.8	12.7	6.4	85.4 - 90.8	25.6	J. F. Cole	230		
62.8	+ 4.4	57.2 - 61.7	58.9	9.3	8.1	60.6 - 62.3	25.5	Johannsen & Co.	4678		
49.8	+ 7.8	84.0 - 106.8	94.5	12.6	6.6	59.0 - 78.7	25.7	Kullberg	6818		
52.4	- 3.1	62.2 - 68.7	66.4	13.8	4.0	59.0 - 78.7	26.3	Kullberg	6292		
71.6	+ 2.8	61.4 - 88.8	64.5	12.0	7.3	65.4 - 71.6	26.6	Johannsen & Co.	4600		
50.1	+ 0.6	80.0 - 96.2	87.8	10.8	7.9	77.6 - 56.6	26.6	Kullberg	6821		
56.1	- 4.4	57.0 - 63.3	60.4	12.7	7.0	60.6 - 62.3	26.7	Usher & Cole	8221		
81.3	+ 24.8	62.2 - 88.7	66.4	13.6	7.1	59.0 - 78.7	27.7	Gardner	4787		
65.3	+ 15.0	50.8 - 55.7	58.2	16.0	6.5	77.6 - 56.6	29.0	Johannsen & Co.	4728		
68.9	+ 9.9	62.9 - 107.9	100.7	14.6	7.6	77.6 - 56.6	29.7	Johannsen & Co.	4760		
81.3	+ 8.8	66.7 - 75.5	71.6	11.2	9.4	100.7 - 81.8	30.0	Gardner	4787		
65.9	+ 9.1	73.6 - 97.7	85.4	12.9	8.7	59.0 - 78.7	30.3	Uhlig	696		
65.9	+ 13.3	65.6 - 83.8	60.5	19.4	5.6	85.4 - 90.8	30.6	Usher & Cole	8214		
68.2	+ 2.8	56.6 - 60.7	58.2	10.0	6.6	77.6 - 56.6	30.7	Kullberg	6826		
65.3	+ 19.3	71.6 - 88.4	77.6	14.6	6.8	77.6 - 56.6	30.7	Johannsen & Co.	4656		
49.8	+ 1.7	84.0 - 106.8	94.5	15.7	7.6	77.6 - 56.6	30.7	Kullberg	6894		

The Chronometers are placed in order of merit, their respective positions being determined by consideration of the irregularities of rate exhibited in the Table above. The Trial No. a + 20 is taken as a measure of the irregularities of rate.

Only those Chronometers have been included in this list for which 3 did not exceed 12 seconds.

NAME OF MAKER.	No.	Whether on 8 days.	ADDRESS OF MAKER.	Construction of Escapement and Balance, from the Description furnished by the Maker.	(III.) ABSTRACT OF	
					Least Weekly Sum.	Extremes of Temperature.
Johannsen & Co.	4799	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 7-6	46-6 - 57-1
Kullberg	6907	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 20-4	48-0 - 52-1
Leas	6204	2	10, Spencer Street, Clerkenwell, E.C.	Auxiliary balance; palladium spring.	- 7-8	55-2 - 71-5
Kullberg	6938	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 12-9	50-8 - 55-7
Johannsen & Co.	4793	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 1-0	58-3 - 67-3
Johannsen & Co.	4762	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 2-2	53-8 - 67-3
Johannsen & Co.	4747	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 5-4	54-3 - 67-3
E. Dent & Co.	48507	2	61, Strand, W.C.	Dent's balance; bright steel spring.	+ 10-9	53-2 - 67-3
Usher & Cole	8240	2	105, St. John Street Road, E.C.	Auxiliary to balance acting in heat and cold; palladium spring.	+ 1-3	53-8 - 67-3
Usher & Cole	8236	2	105, St. John Street Road, E.C.	Auxiliary to balance acting in heat and cold; palladium spring.	- 6-2	53-8 - 67-3
Johannsen & Co.	4612	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 7-0	53-8 - 67-3
Usher & Cole	8217	2	105, St. John Street Road, E.C.	Auxiliary to balance acting in heat and cold; palladium spring.	- 5-4	53-8 - 67-3
Kullberg	6279	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 13-1	46-6 - 57-1
Wiggins & Sons	976	2	10, Tower Hill, E.	Ordinary balance with auxiliary; palladium spring.	- 7-2	52-9 - 67-3
Johannsen & Co.	4548	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 4-0	53-8 - 67-3
E. Dent & Co.	48005	2	61, Strand, W.C.	Dent's balance; bright steel spring.	+ 9-6	53-8 - 67-3
Webb	5674	2	23, Abchurch Lane, E.C.	Ordinary balance; palladium spring.	- 18-4	50-0 - 56-2
Johannsen & Co.	4723	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 9-8	48-0 - 52-1
Gardner	4771	2	20, Lloyd's Square, W.C.	Continuous auxiliary; palladium spring.	- 6-9	54-2 - 58-6
E. Dent & Co.	48034	2	61, Strand, W.C.	Dent's balance; bright steel spring.	+ 18-4	51-6 - 58-8
J. White & Sons	5348	2	Essex, County.	Auxiliary to balance; blue steel spring.	- 4-6	53-8 - 67-3
Johannsen & Co.	4659	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 10-9	48-0 - 52-1
Reid & Sons	4001	2	81, Grey Street, Newcastle-on-Tyne.	Loosey balance; steel spring.	- 2-3	56-7 - 75-5
S. Smith & Sons	7983	2	6, Strand, W.C.	Auxiliary to balance acting in heat; palladium spring.	- 71-6	60-0 - 63-8
Johannsen & Co.	4677	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 11-1	56-0 - 61-8
E. Dent & Co.	48035	2	61, Strand, W.C.	Dent's balance; bright steel spring.	+ 4-6	53-8 - 67-3
Usher & Cole	8207	2	105, St. John Street Road, E.C.	Auxiliary to balance acting in heat and cold; steel spring.	- 20-2	50-8 - 56-2
Usher & Cole	8207	2	8, Quadrant Road, Essex Road, N.	Ordinary balance; palladium spring.	- 14-0	52-9 - 67-3
Kullberg	6267	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 25-9	53-8 - 58-7
Martin & Co.	8239	2	Promenade, Cheltenham.	Auxiliary to balance acting in heat and cold; palladium spring.	- 6-4	50-0 - 56-2
Johannsen & Co.	4694	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	+ 5-7	53-8 - 67-3
Clerke	1738	2	1, Royal Exchange, E.C.	Auxiliary to balance; palladium spring.	- 20-3	46-6 - 57-1
Kullberg	6008	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 23-1	48-0 - 52-1
Kullberg	6281	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 19-1	46-0 - 52-1
Kullberg	5392	2	105, Liverpool Road, N.	Reversed detent, Kullberg's auxiliary balance; palladium spring.	- 23-2	50-8 - 55-7
Webb	5675	2	23, Abchurch Lane, E.C.	Ordinary balance; palladium spring.	+ 26-5	50-8 - 74-9
Johannsen & Co.	4400	2	149, Minories, E.	Auxiliary to balance acting in heat; palladium spring.	- 9-8	56-7 - 75-5
Usher & Cole	8216	2	105, St. John Street Road, E.C.	Auxiliary to balance acting in heat and cold; palladium spring.	- 9-8	56-7 - 75-5
Gardner	4761	2	20, Lloyd's Square, W.C.	Compensation for extreme; palladium spring.	- 38-6	50-8 - 55-7

The sign + indicates that the rate is gaining.

THE PRINCIPAL CHANGES OF RATE DURING THE 29 WEEKS.

Mean Temperature	Greatest Weekly Sum.	Extremes of Temperature.	Mean Temperature.	Difference between the Greatest and Least.	Greatest Difference between one Week and the next.	Mean Temperature for these two Weeks.	Trial No. a + 25.	NAME OF MAKER.	No.
52-4	+ 8-8	57-0 - 63-8	60-4	16-4	7-5	60-4 - 61-7	31-4	Johannsen & Co.	4789
49-8	- 1-0	53-1 - 57-3	58-8	19-4	6-1	57-6 - 56-6	31-6	Kullberg	6907
68-4	+ 7-5	67-2 - 67-8	58-9	15-3	8-2	60-6 - 62-3	31-7	Leas	6204
53-2	1-5	50-0 - 53-8	57-6	14-4	9-7	57-6 - 56-6	31-8	Kullberg	6938
65-3	+ 10-5	71-4 - 83-4	77-6	20-1	5-9	85-4 - 90-8	33-3	Johannsen & Co.	4793
65-9	+ 20-5	50-8 - 55-7	53-2	22-7	5-1	58-9 - 60-6	33-9	Johannsen & Co.	4762
56-1	+ 11-7	80-0 - 96-2	87-6	16-7	9-2	95-1 - 92-4	33-1	Johannsen & Co.	4747
55-3	+ 28-6	57-0 - 63-8	60-4	17-7	7-8	100-7 - 81-3	33-3	E. Dent & Co.	48507
64-5	+ 20-5	67-0 - 63-8	60-4	19-2	7-1	77-6 - 56-6	33-4	Usher & Cole	8240
65-3	+ 16-1	71-4 - 83-4	77-6	22-3	5-6	94-5 - 100-7	33-5	Usher & Cole	8236
65-3	+ 11-0	57-0 - 63-8	60-4	18-0	7-8	58-9 - 60-6	33-6	Johannsen & Co.	4612
65-3	+ 12-1	53-8 - 56-7	56-6	17-6	8-1	59-0 - 78-7	33-7	Usher & Cole	8217
52-4	+ 2-1	84-0 - 105-8	94-5	15-2	9-4	77-6 - 56-6	33-0	Kullberg	6279
100-7	+ 10-6	66-7 - 75-5	71-6	17-8	8-2	71-6 - 87-8	34-2	Wiggins & Sons	976
65-3	+ 16-0	57-0 - 63-8	60-4	20-0	7-2	60-4 - 61-7	34-4	Johannsen & Co.	4548
65-3	+ 23-1	58-2 - 63-8	60-6	18-5	10-6	100-7 - 81-3	34-7	E. Dent & Co.	48005
57-8	+ 2-1	48-0 - 52-1	49-8	20-5	7-5	100-7 - 81-3	35-5	Webb	5674
49-8	+ 8-5	70-6 - 81-8	81-3	18-5	8-7	77-6 - 56-6	35-7	Johannsen & Co.	4723
60-4	+ 10-1	65-2 - 71-6	68-4	17-0	9-4	77-6 - 56-6	35-8	Gardner	4771
65-3	+ 33-2	67-0 - 82-4	78-7	14-3	11-0	77-6 - 56-6	36-8	E. Dent & Co.	48034
55-3	+ 12-2	70-6 - 81-8	81-3	18-5	10-2	100-7 - 81-3	37-2	J. White & Sons	5348
49-8	+ 8-2	71-4 - 83-4	77-6	19-1	9-1	77-6 - 56-6	37-3	Johannsen & Co.	4659
65-3	+ 16-7	70-6 - 81-8	81-3	19-0	9-8	60-4 - 61-7	38-6	Reid & Sons	4001
62-8	+ 26-2	71-4 - 83-4	77-6	18-5	10-0	78-4 - 85-4	38-8	S. Smith & Sons	7983
59-0	+ 5-9	71-4 - 83-4	77-6	17-0	11-9	77-6 - 56-6	40-8	Johannsen & Co.	4677
65-3	+ 30-8	57-0 - 63-8	60-4	26-2	7-6	100-7 - 81-3	41-4	E. Dent & Co.	48035
100-7	+ 20-8	57-2 - 61-7	58-9	28-0	9-5	81-3 - 68-6	42-0	Usher & Cole	8207
65-3	+ 8-6	71-4 - 83-4	77-6	22-5	9-9	59-0 - 78-7	42-4	Usher & Cole	8207
56-6	+ 4-1	62-0 - 67-3	68-0	20-0	6-4	100-7 - 81-3	43-8	Kullberg	6267
87-8	+ 18-9	46-5 - 63-8	50-5	25-3	8-4	59-0 - 78-7	43-1	Martin & Co.	8239
65-3	+ 36-9	71-4 - 83-4	77-6	31-2	6-4	85-4 - 90-8	44-0	Johannsen & Co.	4694
50-5	+ 7-1	63-8 - 67-3	68-4	20-6	6-2	60-6 - 62-3	44-3	Clerke	1738
49-8	+ 1-9	53-1 - 71-6	68-4	25-0	9-8	77-6 - 56-6	44-6	Kullberg	6008
63-2	+ 2-0	64-0 - 105-8	94-5	21-1	12-0	77-6 - 56-6	45-1	Kullberg	6281
58-2	+ 2-0	65-2 - 71-6	68-4	22-2	10-0	77-6 - 56-6	45-2	Kullberg	5392
65-3	+ 49-0	62-0 - 63-8	65-4	22-5	11-7	81-3 - 68-6	45-9	Webb	5675
68-6	+ 5-6	67-0 - 68-6	67-3	20-7	10-7	87-8 - 85-4	46-0	Johannsen & Co.	4400
71-6	+ 16-0	60-8 - 55-7	65-2	25-8	11-7	94-5 - 100-7	48-7	Usher & Cole	8216
63-2	+ 16-0	63-8 - 67-3	65-3	54-6	10-8	77-6 - 56-6	78-2	Gardner	4761

The Chronometers are placed in order of merit, their respective positions being determined by consideration of the irregularities of rate exhibited in the Table above. The Trial No. a + 25 is taken as a measure of the irregularities of rate.

Only those Chronometers have been included in this list for which it did not exceed 12 seconds.