1877GOAMM..37I...1A

RATES OF CHRONOMETERS

ON TRIAL

FOR PURCHASE BY THE BOARD OF ADMIRALTY,

AT THE

ROYAL OBSERVATORY, GREENWICH.

1876.

A

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(I.) WEEKLY SUMS OF DAILY RATES IN THE ORDER OF TIME.

NAME OF MAKER.	No.	Whether 2 or 8 Days.	Construction of Escapement and Balance, from the Description furnished by the Maker.	Jan. 15—22	Jan. 22—29	Jan. 29 to Feb. 5	Feb. 5—12	Feb. 12—19	Feb. 19—26	Feb. 26 to Mar. 4	March 4—11 †	March 11—18 †	March 18—25 †	Mar. 25 to Apr. 1 †
				s	s	s	s	s	s	s	s	s	s	s
Graham and Parkes	1283/21493	2	Poole's auxiliary to balance.	− 11·9	− 11·7	− 10·5	− 7·6	− 8·6	− 11·3	− 11·0	− 12·0	− 10·5	− 11·5	− 11·5
Langford	1788	2	No information received.	− 1·8	− 3·5	− 3·5	− 3·0	− 4·3	− 4·7	− 3·2	+ 0·7	+ 0·8	+ 1·4	+ 2·8
Campbell	1047	2	Ordinary balance with slight alteration.	− 5·5	− 6·4	− 6·2	− 8·6	− 6·9	− 4·5	− 3·5	− 5·0	− 9·4	− 11·4	− 10·2
Keys	377	2	Ordinary balance with slight alteration.	− 2·7	− 3·4	− 2·0	− 1·6	− 2·5	− 5·0	− 3·4	− 0·6	− 1·9	+ 1·4	+ 3·0
Isaac	1188	2	Balance without auxiliary.	− 8·6	− 8·9	− 8·4	− 7·0	− 6·7	− 9·5	− 7·5	− 4·7	− 6·1	− 4·6	− 3·4
Walker	7645	2	Auxiliary compensation.	+ 5.4	+ 6·0	+ 4·0	+ 7·8	+ 7·4	+ 4·3	+ 4·1	+ 0·4	+ 2·5	+ 2·5	+ 5·0
Hennessy	4949	2	Auxiliary compensation to balance.	+ 1·1	0·0	− 1·5	+ 1·5	+ 2·1	− 0·6	+ 0·5	− 0·6	− 1·5	+ 1·1	+ 0·6
Fletcher	3369	2	Auxiliary compensation.	+ 1·5	+ 4·3	+ 6·9	+ 5·0	+ 4·1	+ 6·8	+ 8·7	+ 5·3	+ 5·7	+ 4·0	+ 2·0
Isaac	1172	2	Auxiliary compensation.	− 11·2	− 12·4	− 11·0	− 7·0	− 9·8	− 12·2	− 9·5	− 5·3	− 9·0	− 6·7	− 7·4
Gowland	2300	2	Auxiliary compensation.	− 4·1	− 7·5	− 5·1	− 1·8	− 4·6	− 6·5	− 6·5	− 8·4	− 8·1	− 10·9	− 7·6
Evans	1781	2	Auxiliary acting in low temperature, varnished pendulum spring.	+ 1·1	+ 1·2	+ 3·8	+ 6·6	+ 6·0	+ 4·4	+ 5·7	+ 10·8	+ 11·0	+ 13·6	+ 11·4
Reid and Sons	2555	2	Auxiliary compensation.	+ 5·4	+ 4·7	+ 3·3	+ 6·0	+ 6·6	+ 3·9	+ 5·5	+ 3·5	+ 4·3	+ 0·7	+ 1·1
Penlington and Hutton	2137	2	Auxiliary compensation.	+ 0·4	+ 6·9	+ 4·6	+ 2·3	+ 4·3	+ 6·3	+ 9·0	+ 13·1	+ 13·4	+ 12·5	+ 13·6
Langford	1828	2	No information received.	+ 2·9	+ 6·0	+ 11·0	+ 12·3	+ 8·1	+ 10·5	+ 14·6	+ 9·1	+ 10·9	+ 9·6	+ 10·4
Sewill	4662	2	Auxiliary compensation.	− 6·1	− 5·5	− 7·0	− 4·0	− 5·0	− 6·5	− 7·0	− 5·2	− 8·8	− 6·5	− 10·0
Edward and Son	2138	2	Improved ordinary balance.	− 3·8	− 4·5	− 3·5	− 1·0	− 2·0	− 3·5	− 2·5	+ 5·6	+ 5·4	+ 7·0	+ 5·6
Keys	398	2	Ordinary balance with slight alteration.	− 1·1	+ 0·4	+ 2·0	+ 0·6	+ 1·5	+ 2·9	+ 5·0	+ 1·6	+ 3·4	+ 1·5	+ 5·5
Shepherd and Son	1804	2	Auxiliary acting in cold.	− 4·6	− 4·5	− 2·0	− 1·0	+ 0·5	+ 1·5	+ 4·0	+ 11·2	+ 8·8	+ 9·6	+ 9·9
Pyott	398	2	Auxiliary compensation.	+ 3·7	+ 5·7	+ 6·6	+ 5·6	+ 8·1	+ 8·0	+ 10·9	+ 13·3	+ 10·8	+ 14·8	+ 14·9
Williams	1127	2	Auxiliary compensation.	− 3·6	− 5·1	− 6·9	− 1·5	− 4·5	− 8·5	− 7·8	+ 0·8	+ 1.3	+ 2·7	+ 3·0
McGregor and Co.	5002	2	Auxiliary acting in high temperature.	+ 0·9	+ 1·5	+ 5·5	+ 8·6	+ 8·6	+ 6·4	+ 7·9	+ 6·5	+ 3·5	+ 4.0	+ 3·9
McGregor and Co.	M/5003	2	Auxiliary acting in extremes.	+ 1·4	+ 4·0	+ 5·5	+ 4·5	+ 6·1	+ 6·5	+ 8·9	− 2·0	− 1·9	+ 0·2	+ 4.7
Sewill	4869	2	Auxiliary compensation.	− 2·7	− 2·2	− 1·8	+ 5·0	+ 4·5	− 1·0	− 1·0	− 6·0	− 6·9	− 6·2	− 5·9
Lowry	1789	2	A safe auxiliary to ordinary balance.	− 11·2	− 12·5	− 12·0	− 6·5	− 9·0	− 10·3	− 10·1	− 0·5	− 3·4	− 4·7	− 3·5
Penlington	2136	2	Auxiliary compensation.	+ 2·4	+ 3·5	+ 4·0	+ 4·5	+ 6·0	+ 5·5	+ 6·1	− 5·6	− 4·5	− 6·3	− 8·4
Shepherd and Son	1810	2	Auxiliary acting in cold.	− 2·6	+ 0·9	+ 3·2	+ 1·3	+ 2·7	+ 0·3	+ 2·0	+ 9·1	+ 7·1	+ 6·1	+ 4·1
M. F. Dent	24848	2	Auxiliary to balance.	− 13·4	+ 13·0	+ 13·4	+ 15·6	+ 15·5	+ 15·0	+ 15·5	+ 15·1	+ 16·3	+ 16·1	+ 12·5
Williams	1173	2	Auxiliary compensation.	+ 1·9	− 1·8	− 2·7	+ 3·5	+ 0·5	− 4·4	− 4·1	− 0·5	+ 4·1	+ 5·4	+ 7·7
Poole and Co.	5680	2	Auxiliary compensation.	+ 14·4	+ 11·5	+ 8·1	+ 13·9	+ 12·5	+ 8·1	+ 8·6	+ 0·3	− 1·0	+ 1·9	+ 0·6
Lowry	1799	2	A safe auxiliary to ordinary balance.	− 9·5	− 14·0	− 15·2	− 6·7	− 10·6	− 16·0	− 16·0	− 2·0	− 2·8	− 2·2	− 2·5
Gowland	1336	2	Ordinary construction with slight alteration.	− 2·1	− 0·5	− 0·5	+ 2.6	+ 4·4	+ 4·1	+ 4·4	− 5·5	− 0·8	+ 5·3	+ 8·0
Evans	1783	2	Auxiliary acting in low temperature, varnished pendulum spring.	− 2·0	− 7·5	− 6·6	+ 3·0	+ 5·0	− 5·9	− 5·6	− 3·0	+ 4·0	+ 3·5	+ 7·1
Crisp	3348	2	New balance without attachments.	+ 2·3	+ 2·4	+ 4·5	+ 5·5	+ 6·1	+ 7·4	+ 9·2	+ 5·7	+ 6·3	+ 8·4	+ 10·4
Aitchison	9/487	2	Auxiliary balance.	− 11·7	− 11·0	− 11·0	− 6·5	− 9·7	− 10·4	− 8·0	− 6·4	− 5·0	− 5·4	− 6·6
Poole and Co.	5677	2	Auxiliary compensation.	+ 3·2	+ 4·4	+ 3·5	+ 7·4	+ 8·3	+ 4·0	+ 7·8	+ 3·5	+ 9·7	+ 9·2	+ 5·6
Walker	7632	2	Auxiliary compensation.	+ 16·9	+ 12·0	+ 10·3	+ 22·3	+ 15·4	+ 9·5	+ 9·5	+ 11·0	+ 13·6	+ 12·4	+ 8·0
Aitchison	9/487	2	Auxiliary balance.	+ 11·9	+ 2·2	− 0·2	+ 12·0	+ 7·0	0·0	+ 2·6	+ 9·8	+ 5·6	+ 6·6	+ 6·0
Johannsen and Co.	1883	2	Auxiliary balance.	+ 7·6	+ 6·2	+ 5·9	+ 12·3	+ 12·5	+ 13·5	+ 18·5	+ 1·4	+ 0·5	− 1·6	− 2·3
Davison	4445	2	Auxiliary balance.	− 2·1	− 4·0	− 5·5	− 0·5	− 2·5	− 6·0	− 5·6	− 23·4	− 14·8	− 19·0	− 16·7
Cornell	5658	2	Auxiliary to balance.	− 2·6	− 4·3	− 3·7	+ 0·5	− 1·5	− 4·0	− 2·5	− 1·2	+ 5·6	+ 8·1	+ 9·5
Crisp	3252	2	Hartnup balance.	− 52·6	− 48·0	− 46·0	− 46·6	− 47·3	− 43·0	− 39·6	− 26·0	− 29·5	− 27·0	− 23·5
Gabriel	1708	2	Auxiliary compensation.	+ 2·4	+ 1.8	+ 7·0	+ 12·0	+ 13·2	+ 12·3	+ 15·5	+ 19·6	+ 24·1	+ 25·3	+ 25·5
Quilliam and Sons	20074	2	Ordinary balance with new auxiliary acting in heat and cold.	− 7·6	− 4·4	+ 0·4	+ 1·2	− 0·7	+ 2·2	+ 2·3	+ 19·6	+ 19·4	+ 21·8	+ 21·7
Davison	4374	2	Auxiliary balance.	− 16·1	− 14·0	− 13·9	− 19·1	− 19·4	− 15·0	− 11·6	+ 15·5	+ 10·8	+ 17·8	+ 21·9
Quilliam and Sons	20073	2	Ordinary balance with new auxiliary acting in heat and cold.	− 16·6	− 13·1	− 11·5	− 5·2	− 16·3	− 14·0	− 14·0	− 18·5	− 15·0	− 19·5	− 29.5
Graham and Parkes	1062	2	Hartnup balance.	− 24·2	− 26·8	− 27·7	− 25·5	− 25·4	− 26·5	− 25·9	+ 3·4	+ 11·4	+ 21·5	+ 25·0
Johannsen and Co.	1866	2	Auxiliary compensation.	− 47·1	− 43·1	− 41·6	− 29·0	− 41·7	− 46·1	− 43·5	− 18·3	− 18·7	− 13·5	− 11·5
											†	†	†	†
				s	s	s	s	s	s	s	s	s	s	s
Chronometrical Thermometer.			......	+1700·4	+1450·0	+1193·0	+1635·5	+1414·5	+971·5	+838·6	−1547·1	−904·5	1583·5	−1996·5
Extremes of Temperature as shown by the Self-Registering Thermometers			......	37°—49°	43°—50°	45°—59°	39°—56°	39°—54°	48°—56°	49°—59°	71°—90°	49°—85°	62°—86°	69°—92°

April 1—8	April 8—15	April 15—22	April 22—29	April 29 to May 6	May 6—13	May 13—20	May 20—27	May 27 to June 3	June 3—10	June 10—17 †	June 17—24 †	June 24 to July 1 †	July 1—8 †	July 8—15	July 15—22	July 22—29	July 29 to Aug. 5	NAME OF MAKER.	No.
s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s		
−10·5	− 9·0	− 8·1	− 9.4	− 9·9	− 9·4	− 8·6	− 9·7	− 11·9	− 12·9	− 11·1	− 12·5	− 11·5	−11·5	− 9·4	− 7·1	− 5·9	− 6.6	Graham and Parkes	1283/21493
+ 1·7	+ 2·0	+ 0·9	+ 0·1	+ 0·4	+ 0·9	+ 2·5	+ 1·2	+ 0·3	+ 3·0	+ 3·1	+ 1·4	+ 1·0	+ 1·0	+ 3·9	+ 3·1	+ 3·1	+ 4·9	Langford	1788
−11·5	− 11·0	− 9·2	− 9·3	− 9·5	− 8·8	− 8·2	− 6·8	− 6·7	− 7·0	− 6·0	− 7·0	− 7·5	− 6·8	−10·7	−12·8	−10·7	− 7·5	Campbell	1047
− 2·9	− 1·1	− 0·5	− 0·9	− 0·9	+ 1·2	+ 1·6	+ 1·8	+ 2·7	+ 2·5	+ 2·7	+ 1·5	+ 0·7	+ 2·6	+ 2·6	+ 0·9	+ 2·9	+ 4·1	Keys	377
− 8·7	− 8·0	− 6·9	− 9·6	− 7·8	− 7·0	− 6·2	− 5·0	− 6·5	− 6·0	− 3·3	− 3·7	− 2·5	− 2·9	− 3·1	− 3·0	− 1·0	+ 1·7	Isaac	1188
+ 5·5	+ 8·5	+ 9·5	+ 5·5	+ 7·6	+ 7·5	+ 8·4	+ 6·6	+ 4·9	+ 4·5	+ 5·5	− 0·5	+ 1·0	+ 3·1	+ 5·4	+ 4·5	+ 5·5	+ 7·7	Walker	7645
− 2·6	− 1·6	+ 1·6	+ 3·4	+ 2·1	+ 3·5	+ 3·0	+ 4·0	+ 5·5	+ 5·8	− 1·8	− 1·4	− 0·1	+ 0·5	+ 4·4	+ 4·1	+ 4·5	+ 5·5	Hennessy	4949
+ 6·0	+ 6·7	+ 7·9	+ 9·9	+ 10·5	+ 10·5	+ 11·5	+ 11·5	+ 11·5	+ 12·5	+ 6·7	+ 5·9	+ 4·1	+ 5·3	+ 5·0	+ 3·5	+ 2·5	0·0	Fletcher	3369
−13·4	− 11·1	− 10·1	− 13·5	− 10·5	− 11·5	− 10·5	− 11·5	− 14·0	− 13·4	− 6·6	− 6·0	− 2·9	− 4·6	−10·5	− 4·0	− 4·5	− 6·5	Isaac	1172
−11·0	− 9·5	− 3·5	− 3·0	− 1·5	− 0·9	+ 0·4	+ 1·5	0·0	+ 0·5	− 6·0	− 4·5	− 8·8	− 8·2	− 6·3	− 0·2	+ 1·1	+ 1·4	Gowland	2300
+10·1	+ 13·4	+ 14·0	+ 13·0	+ 14·5	+ 15·0	+ 15·5	+ 16·0	+ 15·0	+ 13·5	+ 10·7	+ 9·5	+ 10·3	+11·0	+14·6	+ 9·9	+12·0	+ 16·8	Evans	1781
− 4·6	+ 3·0	+ 2·5	+ 1·3	+ 0·2	+ 1·6	+ 2·9	+ 6·0	+ 8·0	+ 8·0	+ 6·5	+ 7·2	+ 6·3	+ 7·0	+ 6·6	+ 8·4	+10.5	+ 11·0	Reid and Sons	2555
+10·6	+ 10·8	+ 12·6	+ 11·4	+ 12·0	+ 12·0	+ 10·5	+ 13·0	+ 13·0	+ 15·0	+ 11·9	+ 9·7	+ 9·4	+11·0	+ 8·7	+13·3	+11·5	+ 11·5	Penlington and Hutton	2137
+10·6	+ 15·0	+ 14·4	+ 15·3	+ 15·7	+ 13·4	+ 17·1	+ 17·5	+ 13·5	+ 17·5	+ 10·6	+ 12·4	+ 8·5	+13·5	+ 9·1	+ 9·4	+16·5	+ 17·7	Langford	1828
−16·0	− 13·5	− 13·1	− 15·9	− 13·0	− 15·0	− 13·0	− 13·9	− 14·1	− 11·0	− 13·3	− 17·6	− 16·9	−16·1	−11·1	− 5·5	− 1·0	− 0·3	Sewill	4662
+ 2·6	+ 3·4	+ 5·4	+ 3·0	+ 3.5	+ 3·7	+ 4·3	+ 4·5	+ 3·5	+ 4·1	+ 5·7	+ 4·2	+ 5·7	+ 6·8	+ 7·5	+ 8·6	+ 9·4	+ 9·5	Edward and Son	2138
+ 4·0	+ 5·5	+ 12·3	+ 13·2	+ 13·5	+ 14·0	+ 14·5	+ 15·7	+ 15·8	+ 16·5	+ 9·5	+ 7·5	+ 8·0	+ 8·0	+ 5·5	+ 7·5	+ 8·6	+ 11·9	Keys	398
+ 2·0	+ 1·2	+ 2·3	+ 4·5	+ 3·6	+ 4·9	+ 5·0	+ 7·5	+ 7·0	+ 8·1	+ 1·4	− 0·3	+ 1·0	+ 1·8	+ 4·0	+ 5·0	+ 6·5	+ 8·2	Shepherd and Son	1804
+12·4	+ 11·4	+ 13·1	+ 16·9	+ 15·0	+ 17·0	+ 18·0	+ 18·5	+ 19·5	+ 20·2	+ 18·1	+ 14·5	+ 17·4	+21·3	+25·5	+28·5	+28·5	+ 28·7	Pyott	398
− 2·0	+ 3·2	+ 0·9	− 2·0	+ 1·9	+ 1.5	+ 2·0	+ 1·1	+ 0·9	+ 0·5	+ 3·8	+ 3·2	+ 2·5	+ 6·5	+ 1·0	+ 3·5	+ 5·3	+ 7·7	Williams	1127
+ 0·6	+ 6·0	+ 11·5	+ 7·5	+ 6·0	+ 5·5	+ 7·5	+ 7·7	+ 6·3	+ 7·0	− 1·8	− 3·7	− 4·0	− 5·0	− 4·5	− 4·0	− 4·0	− 3·0	McGregor and Co.	5002
+ 1·2	+ 4·8	+ 7·1	+ 7·9	+ 8·6	+ 8·5	+ 9·4	+ 9·5	+ 9·0	+ 10·4	+ 10·1	+ 10·5	+ 11·0	+11·2	+ 3·8	+ 6·0	+ 6·5	+ 6·5	McGregor and Co.	M/5003
− 7·0	+ 0·8	− 0·3	− 4·9	− 2·1	− 6·5	− 6·5	− 6·5	− 8·0	− 11·5	− 14·9	− 14·9	− 12·7	−11·0	−14·0	−11·0	−13·0	− 13·0	Sewill	4869
− 6·0	− 3·5	− 4·5	− 5·4	− 5·6	− 5·0	− 4·5	− 4·0	− 4·0	− 1·4	− 0·1	− 0·5	+ 1·5	+ 1·5	+ 2·0	+ 4·0	+ 4·5	+ 5·7	Lowry	1789
− 2·3	+ 2·5	+ 6·5	+ 4·5	+ 6·0	+ 5·5	+ 6·5	+ 6·1	+ 2·9	+ 3·5	− 6·0	− 7·5	− 7·5	− 5·4	+ 1·9	+ 6·0	+ 7·5	+ 8·0	Penlington	2136
− 0·9	+ 3·1	+ 4·1	+ 4·4	+ 0·9	+ 0·9	+ 0·9	+ 1·9	+ 0·6	+ 2·1	− 8·1	− 10·8	− 9·7	−10·0	− 4·0	− 5·5	− 3·5	− 1·3	Shepherd and Son	1810
+13·0	+ 14·5	+ 15·0	+ 10·5	+ 12·0	+ 12·0	+ 13·5	+ 10·5	+ 9·0	+ 8·6	+ 21·9	+ 14·2	+ 13·9	+10·9	+ 8·0	+ 9·5	+11·1	+ 13·4	M. F. Dent	24848
+ 7·3	+ 9·1	+ 12·0	+ 10·9	+ 13·3	+ 8·5	+ 3·7	+ 2·0	+ 1·5	− 2·5	+ 9·0	+ 5·0	+ 4·2	+ 2·0	− 3·1	− 3·6	− 2·5	− 3·3	Williams	1173
+ 7·1	+ 13·9	+ 17·0	+ 12·0	+ 15·5	+ 15·1	+ 17·9	+ 20·5	+ 17·7	+ 15·3	+ 10·4	+ 10·2	+ 12·8	+14·6	+22·5	+19·5	+20·5	+ 23·7	Poole and Co.	5680
− 2·5	0·0	0·0	− 3·5	− 3·0	− 4·3	− 3·7	− 3·0	− 6·0	− 6·6	− 4·4	− 4·5	− 3·4	− 2·4	− 3·1	− 2·6	− 3·5	− 1·7	Lowry	1799
+14·5	+ 16·5	+ 18·0	+ 11·5	+ 19·0	+ 17·5	+ 15·5	+ 14·4	+ 12·6	+ 12·5	+ 12·0	+ 12·0	+ 9·2	+11·8	+10·0	+10·5	+ 3·5	− 5·8	Gowland	1336
+11·5	+ 16·1	+ 15·3	+ 10·0	+ 14·0	+ 13·5	+ 15·0	+ 12·2	+ 7·3	+ 6·5	+ 8·0	+ 8·2	+ 10·3	+10·0	+ 8·5	+ 7·0	+ 8·0	+ 10·0	Evans	1783
+ 9·0	+ 12·5	+ 11·0	+ 10·0	+ 10·1	+ 11·6	+ 12·3	+ 11·5	+ 11·5	+ 12·1	+ 0·9	+ 2·0	+ 7·5	+ 9·6	+19·9	+20·0	+24·0	+ 25·5	Crisp	3348
− 1·5	+ 1·0	+ 1·8	+ 1·2	+ 1·1	+ 0·6	− 0·7	+ 0·4	+ 3·6	+ 4·0	− 9·5	− 9·0	− 5·2	− 3·8	+ 5·9	+ 4·6	+ 6·5	+ 9·0	Aitchison	9/487
+14·5	+ 17·8	+ 18·0	+ 13·9	+ 18·3	+ 16·5	+ 17·5	+ 19·5	+ 20·2	+ 22·3	+ 11·5	+ 11·5	+ 16·0	+15·5	+23·5	+24·5	+26·0	+ 32·0	Poole and Co.	5677
+20·5	+ 32·0	+ 31·0	+ 25·0	+ 29·0	+ 29·0	+ 30·0	+ 27·0	+ 23·5	+ 23·5	+ 9·5	+ 8·0	+ 8·0	+ 8·7	+13·5	+ 9·3	+12·5	+ 21·5	Walker	7632
− 1·1	+ 1·6	− 0·3	+ 2·3	+ 1·4	+ 2·5	+ 2·0	+ 5·5	+ 9·5	+ 9·5	+ 3·0	+ 2·6	+ 4·3	+ 4·2	+ 8·0	+ 9·4	+12·0	+ 15·7	Aitchison	9/487
− 0·8	+ 5·4	+ 6·4	+ 4·6	+ 7·4	+ 7·9	+ 8·6	+ 7·3	+ 4·7	+ 5·5	− 1·5	− 3·0	− 3·2	− 3·3	− 1·4	− 1·6	+ 0·5	+ 2·5	Johannsen and Co.	1883
− 3·5	− 1·0	+ 1·0	− 3·9	− 2·1	− 3·5	− 2·5	− 4·5	− 7·5	− 8·5	− 7·4	− 4·1	− 5·3	− 2·9	− 7·3	−15·5	−11·5	− 6·0	Davison	4445
+17·5	+ 21·5	+ 20·5	+ 19·0	+ 18·6	+ 19·4	+ 19·5	+ 18·6	+ 17·2	+ 15·4	+ 9·3	+ 14·1	+ 21·6	+24·0	+33·4	+36·9	+38·5	+ 38·5	Cornell	5658
−31·5	− 33·5	− 34·0	− 30·5	− 32·0	− 31·6	− 29·9	− 27·9	− 28·1	− 27·5	− 18·4	− 19·0	− 18·6	−21·0	−21·0	−16·0	−17·7	− 19·3	Crisp	3252
+29·3	+ 31·2	+ 33·0	+ 30·4	+ 32·6	+ 33·4	+ 32·6	+ 34·9	+ 34·1	+ 34·1	+ 29·9	+ 32·5	+ 35·5	+37·5	+35·0	+44·5	+48·0	+ 50·5	Gabriel	1708
+27·5	+ 25·7	+ 25·8	+ 25·7	+ 25·8	+ 27·0	+ 28·0	+ 27·0	+ 25·5	+ 24·5	+ 22·0	+ 22·0	+ 26·2	+27·3	+35·5	+30·5	+30·0	+ 29·5	Quilliam and Sons	20074
+ 8·0	+ 11·0	+ 11·2	+ 11·6	+ 11·2	+ 15·6	+ 15·4	+ 19·0	+ 20·5	+ 21·0	+ 25·7	+ 22·5	+ 20·0	+27·0	+20·8	+26·0	+29·5	+ 27·0	Davison	4374
+ 1·5	+ 4·1	− 2·1	− 6·6	− 0·9	− 5·4	− 4·1	− 2·3	− 9·2	− 8·5	− 40·4	− 39·0	− 26·6	−27·1	+ 0·1	− 9·8	− 3·7	+ 2·0	Quilliam and Sons	20073
+16·5	+ 14·6	+ 10·9	+ 11·0	+ 3·0	+ 4·3	+ 7·7	+ 8·1	+ 7·4	+ 8·4	+ 17·8	+ 17·4	+ 21·9	+16·9	+ 9·1	+ 3·0	+ 4.0	+ 10·5	Graham and Parkes	1062
−14·5	− 13·6	− 20·5	− 27·9	− 20·8	− 21·1	− 18·6	− 17·5	− 19·5	− 12·5	+ 5·0	+ 7·0	+ 13·5	+16·0	+14·0	+ 3·5	+10·6	+ 12·4	Johannsen and Co.	1866
										†	†	†	†						
		s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s		
...	...	+832·5	+388·5	+634·1	+490·6	+508·8	+273·0	− 20·0	−126·0	...	...	−2387·0	−2530·0	−762·1	−1261·4	−1029·0	−688·0	Chronometrical Thermometer.	
51°—62°	45°—63°	47°—56°	52°—60°	50°—60°	53°—63°	53°—64°	54°—62°	55°—66°	60°—67°	73°—99°	82°—103°	82°—98°	82°—95°	65°—75°	72°—79°	68°—79°	66°—75°	Extremes of Temperature as shown by the Self-Registering Thermometers.	

The sign + signifies that the rate is gaining.

† During these weeks the Chronometers were placed in the chamber of a stove heated by jets of gas. The gas flames are exterior to the chamber, into which none of the injurious products of combustion can enter. The jets were extinguished on March 13 and 14.

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. By inadvertence the Chronometrical Thermometer was not placed with the Chronometers in the stove from June 10 to 24; its rates for the included fortnight are in consequence deficient.

During the weeks of April 1—8 and April 8—15 the Chronometrical Thermometer was in the hands of the maker for repair.

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

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(II.) WEEKLY SUMS OF DAILY RATES IN THE ORDER OF TEMPERATURE, AS DETERMINED GENERALLY BY THE CHRONOMETRICAL THERMOMETER.

NAME OF MAKER.	No.	Whether 2 or 8 Days.	Construction of Escapement and Balance, from the Description furnished by the Maker.	Jan. 15—22	Feb. 5—12	Jan. 22—29	Feb. 12—19	Jan. 29 to Feb. 5	Feb. 19—26	Feb. 26 to Mar. 4	April 15—22	April 8—15	Apr. 29 to May 6	May 13—20
				s	s	s	s	s	s	s	s	s	s	s
Graham and Parkes	1283/21493	2	Poole's auxiliary to balance.	− 11·9	− 7·6	− 11·7	− 8·6	− 10·5	− 11·3	− 11·0	− 8·1	− 9·0	− 9·9	− 8·6
Langford	1788	2	No information received.	− 1·8	− 3·0	− 3·5	− 4·3	− 3·5	− 4·7	− 3·2	+ 0·9	+ 2·0	+ 0·4	+ 2·5
Campbell	1047	2	Ordinary balance with slight alteration.	− 5·5	− 8·6	− 6·4	− 6·9	− 6·2	− 4·5	− 3·5	− 9·2	− 11·0	− 9·5	− 8·2
Keys	377	2	Ordinary balance with slight alteration.	− 2·7	− 1·6	− 3·4	− 2·5	− 2·0	− 5·0	− 3·4	− 0·5	− 1·1	− 0·9	+ 1·6
Isaac	1188	2	Balance without auxiliary.	− 8·6	− 7·0	− 8·9	− 6·7	− 8·4	− 9·5	− 7·5	− 6·9	− 8·0	− 7·8	− 6·2
Walker	7645	2	Auxiliary compensation.	+ 5·4	+ 7·8	+ 6·0	+ 7·4	+ 4·0	+ 4·3	+ 4·1	+ 9·5	+ 8·5	+ 7·6	+ 8·4
Hennessy	4949	2	Auxiliary compensation to balance.	+ 1·1	+ 1·5	0·0	+ 2·1	− 1·5	− 0·6	+ 0·5	+ 1·6	− 1·6	+ 2·1	+ 3·0
Fletcher	3369	2	Auxiliary compensation.	+ 1·5	+ 5·0	+ 4·3	+ 4·1	+ 6·9	+ 6·8	+ 8·7	+ 7·9	+ 6·7	+ 10·5	+ 11·5
Isaac	1172	2	Auxiliary compensation.	− 11·2	− 7·0	− 12·4	− 9·8	− 11·0	− 12·2	− 9·5	− 10·1	− 11·1	− 10·5	− 10·5
Gowland	2300	2	Auxiliary compensation.	− 4·1	− 1·8	− 7·5	− 4·6	− 5·1	− 6·5	− 6·5	− 3·5	− 9·5	− 1·5	+ 0·4
Evans	1781	2	Auxiliary acting in low temperature; varnished pendulum spring.	+ 1·1	+ 6·6	+ 1·2	+ 6·0	+ 3·8	+ 4·4	+ 5·7	+ 14·0	+ 13·4	+ 14·5	+ 15·5
Reid and Sons	2555	2	Auxiliary compensation.	+ 5·4	+ 6·0	+ 4·7	+ 6·6	+ 3·3	+ 3·9	+ 5·5	+ 2·5	+ 3·0	+ 0·2	+ 2·9
Penlington and Hutton	2137	2	Auxiliary compensation.	+ 0·4	+ 2·3	+ 6·9	+ 4·3	+ 4·6	+ 6·3	+ 9·0	+ 12·6	+ 10·8	+ 12·0	+ 10·5
Langford	1828	2	No information received.	+ 2·9	+ 12·3	+ 6·0	+ 8·1	+ 11·0	+ 10·5	+ 14·6	+ 14·4	+ 15·0	+ 15·7	+ 17·1
Sewill	4662	2	Auxiliary compensation.	− 6·1	− 4·0	− 5·5	− 5·0	− 7·0	− 6·5	− 7·0	− 13·1	− 13·5	− 13·0	− 13·0
Edward and Son	2138	2	Improved ordinary balance.	− 3·8	− 1·0	− 4·5	− 2·0	− 3·5	− 3·5	− 2·5	+ 5·4	+ 3·4	+ 3·5	+ 4·3
Keys	398	2	Ordinary balance with slight alteration.	− 1·1	+ 0·6	+ 0·4	+ 1·5	+ 2·0	+ 2·9	+ 5·0	+ 12·3	+ 5·5	+ 13·5	+ 14·5
Shepherd and Son	1804	2	Auxiliary acting in cold.	− 4·6	− 1·0	− 4·5	+ 0·5	− 2·0	+ 1·5	+ 4·0	+ 2·3	+ 1·2	+ 3·6	+ 5·0
Pyott	398	2	Auxiliary compensation.	+ 3·7	+ 5·6	+ 5·7	+ 8·1	+ 6·6	+ 8·0	+ 10·9	+ 13·1	+ 11·4	+ 15·0	+ 18·0
Williams	1127	2	Auxiliary compensation.	− 3·6	− 1·5	− 5·1	− 4·5	− 6·9	− 8·5	− 7·8	+ 0·9	+ 3·2	+ 1·9	+ 2·0
McGregor and Co.	5002	2	Auxiliary acting in high temperature.	+ 0·9	+ 8·6	+ 1·5	+ 8·6	+ 5·5	+ 6·4	+ 7·9	+ 11·5	+ 6·0	+ 6·0	+ 7·5
McGregor and Co.	M/5003	2	Auxiliary acting in extremes.	+ 1·4	+ 4·5	+ 4·0	+ 6·1	+ 5·5	+ 6·5	+ 8·9	+ 7·1	+ 4·8	+ 8·6	+ 9·4
Sewill	4869	2	Auxiliary compensation.	− 2·7	+ 5·0	− 2·2	+ 4·5	− 1·8	− 1·0	− 1·0	− 0·3	+ 0·8	− 2·1	− 6·5
Lowry	1789	2	A safe auxiliary to ordinary balance.	− 11·2	− 6·5	− 12·5	− 9·0	− 12·0	− 10·3	− 10·1	− 4·5	− 3·5	− 5·6	− 4·5
Penlington	2136	2	Auxiliary compensation.	+ 2·4	+ 4·5	+ 3·5	+ 6·0	+ 4·0	+ 5·5	+ 6·1	+ 6·5	+ 2·5	+ 6·0	+ 6·5
Shepherd and Son	1810	2	Auxiliary acting in cold.	− 2·6	+ 1·3	+ 0·9	+ 2·7	+ 3·2	+ 0·3	+ 2·0	+ 4·1	+ 3·1	+ 0·9	+ 0·9
M. F. Dent	24848	2	Auxiliary to balance.	+ 13·4	+ 15·6	+ 13·0	+ 15·5	+ 13·4	+ 15·0	+ 15·5	+ 15·0	+ 14·5	+ 12·0	+ 13·5
Williams	1173	2	Auxiliary compensation.	+ 1·9	+ 3·5	− 1·8	+ 0·5	− 2·7	− 4·4	− 4·1	+ 12·0	+ 9·1	+ 13·3	+ 3·7
Poole and Co.	5680	2	Auxiliary compensation.	+ 14·4	+ 13·9	+ 11·5	+ 12·5	+ 8·1	+ 8·1	+ 8·6	+ 17·0	+ 13·9	+ 15·5	+ 17·9
Lowry	1799	2	A safe auxiliary to ordinary balance.	− 9·5	− 6·7	− 14·0	− 10·6	− 15·2	− 16·0	− 16·0	0·0	0·0	− 3·0	− 3·7
Gowland	1336	2	Ordinary construction with slight alteration.	− 2·1	+ 2·6	− 0·5	+ 4·4	− 0·5	+ 4·1	+ 4·4	+ 18·0	+ 16·5	+ 19·0	+ 15·5
Evans	1783	2	Auxiliary acting in low temperature; varnished pendulum spring.	− 2·0	+ 3·0	− 7·5	+ 5·0	− 6·6	− 5·9	− 5·6	+ 15·3	+ 16·1	+ 14·0	+ 15·0
Crisp	3348	2	New balance without attachments.	+ 2·3	+ 5·5	+ 2·4	+ 6·1	+ 4·5	+ 7·4	+ 9·2	+ 11·0	+ 12·5	+ 10·1	+ 12·3
Aitchison	9/487	2	Auxiliary balance.	− 11·7	− 6·5	− 11·0	− 9·7	− 11·0	− 10·4	− 8·0	+ 1·8	+ 1·0	+ 1·1	− 0·7
Poole and Co.	5677	2	Auxiliary compensation.	+ 3·2	+ 7·4	+ 4·4	+ 8·3	+ 3·5	+ 4·0	+ 7·8	+ 18·0	+ 17·8	+ 18·3	+ 17·5
Walker	7632	2	Auxiliary compensation.	+ 16·9	+ 22·3	+ 12·0	+ 15·4	+ 10·3	+ 9·5	+ 9·5	+ 31·0	+ 32·0	+ 29·0	+ 30·0
Aitchison	9/487	2	Auxiliary balance.	+ 11·9	+ 12·0	+ 2·2	+ 7·0	− 0·2	0·0	+ 2·6	− 0·3	+ 1·6	+ 1·4	+ 2·0
Johannsen and Co.	1883	2	Auxiliary balance.	+ 7·6	+ 12·3	+ 6·2	+ 12·5	+ 5·9	+ 13·5	+ 18·5	+ 6·4	+ 5·4	+ 7·4	+ 8·6
Davison	4445	2	Auxiliary balance.	− 2·1	− 0·5	− 4·0	− 2·5	− 5·5	− 6·0	− 5·6	+ 1·0	− 1·0	− 2·1	− 2·5
Cornell	5658	2	Auxiliary to balance.	− 2·6	+ 0·5	− 4·3	− 1·5	− 3·7	− 4·0	− 2·5	+ 20·5	+ 21·5	+ 18·6	+ 19·5
Crisp	3252	2	Hartnup balance.	− 52·6	− 46·6	− 48·0	− 47·3	− 46·0	− 43·0	− 39·6	− 34·0	− 33·5	− 32·0	− 29·9
Gabriel	1708	2	Auxiliary compensation.	+ 2·4	+ 12·0	+ 1·8	+ 13·2	+ 7·0	+ 12·3	+ 15·5	+ 33·0	+ 31·2	+ 32·6	+ 32·6
Quilliam and Sons	20074	2	Ordinary balance with new auxiliary acting in heat and cold.	− 7·6	+ 1·2	− 4·4	− 0·7	+ 0·4	+ 2·2	+ 2·3	+ 25·8	+ 25·7	+ 25·8	+ 28·0
Davison	4374	2	Auxilary balance.	− 16·1	− 19·1	− 14·0	− 19·4	− 13·9	− 15·0	− 11·6	+ 11·2	+ 11·0	+ 11·2	+ 15·4
Quilliam and Sons	20073	2	Ordinary balance with new auxiliary acting in heat and cold.	− 16·6	− 5·2	− 13·1	− 16·3	− 11·5	− 14·0	− 14·0	− 2·1	+ 4·1	− 0·9	− 4·1
Graham and Parkes	1062	2	Hartnup balance.	− 24·2	− 25·5	− 26·8	− 25·4	− 27·7	− 26·5	− 25·9	+ 10·9	+ 14·6	+ 3·0	+ 7·7
Johannsen and Co.	1866	2	Auxiliary compensation.	− 47·1	− 29·0	− 43·1	− 41·7	− 41·6	− 46·1	− 43·5	− 20·5	− 13·6	− 20·8	− 18·6
Chronometrical Thermometer.			......	+1700·4	+1635·5	+1450·0	+1414·5	+1193·0	+971·5	+838·6	+832·5	...	+634·1	+508·8
Extremes of Temperature as shown by the Self-Registering Thermometers			......	37°—49°	39°—56°	43°—50°	39°—54°	45°—59°	48°—56°	49°—59°	47°—56°	45°—63°	50°—60°	53°—64°

May 6—13	April 1—8	April 22—29	May 20—27	May 27 to June 3	June 3—10	July 29 to Aug. 5	July 8—15	March 11—18 †	July 22—29	July 15—22	March 4—11 †	March 18—25 †	Mar. 25 to Apr. 1 †	June 10—17 †	June 24 to July 1 †	July 1—8 †	June 17—24 †	NAME OF MAKER.	No.
s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s		
− 9·4	− 10·5	− 9·4	− 9·7	− 11·9	− 12·9	− 6·6	− 9·4	− 10·5	− 5·9	− 7·1	− 12·0	− 11·5	− 11·5	− 11·1	− 11·5	− 11·5	− 12·5	Graham and Parkes	1283/21493
+ 0·9	+ 1·7	+ 0·1	+ 1·2	+ 0·3	+ 3·0	+ 4·9	+ 3·9	+ 0·8	+ 3·1	+ 3·1	+ 0·7	+ 1·4	+ 2·8	+ 3·1	+ 1·0	+ 1·0	+ 1·4	Langford	1788
− 8·8	− 11·5	− 9·3	− 6·8	− 6·7	− 7·0	− 7·5	− 10·7	− 9·4	− 10·7	− 12·8	− 5·0	− 11·4	− 10·2	− 6·0	− 7·5	− 6·8	− 7·0	Campbell	1047
+ 1·2	− 2·9	− 0·9	+ 1·8	+ 2·7	+ 2·5	+ 4·1	+ 2·6	− 1·9	+ 2·9	+ 0·9	− 0·6	+ 1·4	+ 3·0	+ 2·7	+ 0·7	+ 2·6	+ 1·5	Keys	377
− 7·0	− 8·7	− 9·6	− 5·0	− 6·5	− 6·0	+ 1·7	− 3·1	− 6·1	− 1·0	− 3·0	− 4·7	− 4·6	− 3·4	− 3·3	− 2·5	− 2·9	− 3·7	Isaac	1188
+ 7·5	+ 5·5	+ 5·5	+ 6·6	+ 4·9	+ 4·5	+ 7·7	+ 5·4	+ 2·5	+ 5·5	+ 4·5	+ 0·4	+ 2·5	+ 5·0	+ 5·5	+ 1·0	+ 3·1	− 0·5	Walker	7645
+ 3·5	− 2·6	+ 3·4	+ 4·0	+ 5·5	+ 5·8	+ 5·5	+ 4·4	− 1·5	+ 4·5	+ 4·1	− 0·6	+ 1·1	+ 0·6	− 1·8	− 0·1	+ 0·5	− 1·4	Hennessy	4949
+ 10·5	+ 6·0	+ 9·9	+ 11·5	+ 11·5	+ 12·5	0·0	+ 5·0	+ 5·7	+ 2·5	+ 3·5	+ 5·3	+ 4·0	+ 2·0	+ 6·7	+ 4·1	+ 5·3	+ 5·9	Fletcher	3369
− 11·5	− 13·4	− 13·5	− 11·5	− 14·0	− 13·4	− 6·5	− 10·5	− 9·0	− 4·5	− 4·0	− 5·3	− 6·7	− 7·4	− 6·6	− 2·9	− 4·6	− 6·0	Isaac	1172
− 0·9	− 11·0	− 3·0	+ 1·5	0·0	+ 0·5	+ 1·4	− 6·3	− 8·1	+ 1·1	− 0·2	− 8·4	− 10·9	− 7·6	− 6·0	− 8·8	− 8·2	− 4·5	Gowland	2300
+ 15·0	+ 10·1	+ 13·0	+ 16·0	+ 15·0	+ 13·5	+ 16·8	+ 14·6	+ 11·0	+ 12·0	+ 9·9	+ 10·8	+ 13·6	+ 11·4	+ 10·7	+ 10·3	+ 11·0	+ 9·5	Evans	1781
+ 1·6	− 4·6	+ 1·3	+ 6·0	+ 8·0	+ 8·0	+ 11·0	+ 6·6	+ 4·3	+ 10·5	+ 8·4	+ 3·5	+ 0·7	+ 1·1	+ 6·5	+ 6·3	+ 7·0	+ 7·2	Reid and Sons	2555
+ 12·0	+ 10·6	+ 11·4	+ 13·0	+ 13·0	+ 15·0	+ 11·5	+ 8·7	+ 13·4	+ 11·5	+ 13·3	+ 13·1	+ 12·5	+ 13·6	+ 11·9	+ 9·4	+ 11·0	+ 9·7	Penlington and Hutton	2137
+ 13·4	+ 10·6	+ 15·3	+ 17·5	+ 13·5	+ 17·5	+ 17·7	+ 9·1	+ 10·9	+ 16·5	+ 9·4	+ 9·1	+ 9·6	+ 10·4	+ 10·6	+ 8·5	+ 13·5	+ 12·4	Langford	1828
− 15·0	− 16·0	− 15·9	− 13·9	− 14·1	− 11·0	− 0·3	− 11·1	− 8·8	− 1·0	− 5·5	− 5·2	− 6·5	− 10·0	− 13·3	− 16·9	− 16·1	− 17·6	Sewill	4662
+ 3·7	+ 2·6	+ 3·0	+ 4·5	+ 3·5	+ 4·1	+ 9·5	+ 7·5	+ 5·4	+ 9·4	+ 8·6	+ 5·6	+ 7·0	+ 5·6	+ 5·7	+ 5·7	+ 6·8	+ 4·2	Edward and Son	2138
+ 14·0	+ 4·0	+ 13·2	+ 15·7	+ 15·8	+ 16·5	+ 11·9	+ 5·5	+ 3·4	+ 8·6	+ 7·5	+ 1·6	+ 1·5	+ 5·5	+ 9·5	+ 8·0	+ 8·0	+ 7·5	Keys	398
+ 4·9	+ 2·0	+ 4·5	+ 7·5	+ 7·0	+ 8·1	+ 8·2	+ 4·0	+ 8·8	+ 6·5	+ 5·0	+ 11·2	+ 9·6	+ 9·9	+ 1·4	+ 1·0	+ 1·8	− 0·3	Shepherd and Son	1804
+ 17·0	+ 12·4	+ 16·9	+ 18·5	+ 19·5	+ 20·2	+ 28·7	+ 25·5	+ 10·8	+ 28·5	+ 28·5	+ 13·3	+ 14·8	+ 14·9	+ 18·1	+ 17·4	+ 21·3	+ 14·5	Pyott	398
+ 1·5	− 2·0	− 2·0	+ 1·1	+ 0·9	+ 0·5	+ 7·7	+ 1·0	+ 1·3	+ 5·3	+ 3·5	+ 0·8	+ 2·7	+ 3·0	+ 3·8	+ 2·5	+ 6·5	+ 3·2	Williams	1127
+ 5·5	+ 0·6	+ 7·5	+ 7·7	+ 6·3	+ 7·0	− 3·0	− 4·5	+ 3·5	− 4·0	− 4·0	+ 6·5	+ 4·0	+ 3·9	− 1·8	− 4·0	− 5·0	− 3·7	McGregor and Co.	5002
+ 8·5	+ 1·2	+ 7·9	+ 9·5	+ 9·0	+ 10·4	+ 6·5	+ 3·8	− 1·9	+ 6·5	+ 6·0	− 2·0	+ 0·2	+ 4·7	+ 10·1	+ 11·0	+ 11·2	+ 10·5	McGregor and Co.	M/5003
− 6·5	− 7·0	− 4·9	− 6·5	− 8·0	− 11·5	− 13·0	− 14·0	− 6·9	− 13·0	− 11·0	− 6·0	− 6·2	− 5·9	− 14·9	− 12·7	− 11·0	− 14·9	Sewill	4869
− 5·0	− 6·0	− 5·4	− 4·0	− 4·0	− 1·4	+ 5·7	+ 2·0	− 3·4	+ 4·5	+ 4·0	− 0·5	− 4·7	− 3·5	− 0·1	+ 1·5	+ 1·5	− 0·5	Lowry	1789
+ 5·5	− 2·3	+ 4·5	+ 6·1	+ 2·9	+ 3·5	+ 8·0	+ 1·9	− 4·5	+ 7·5	+ 6·0	− 5·6	− 6·3	− 8·4	− 6·0	− 7·5	− 5·4	− 7·5	Penlington	2136
+ 0·9	− 0·9	+ 4·4	+ 1·9	+ 0·6	+ 2·1	− 1·3	− 4·0	+ 7·1	− 3·5	− 5·5	+ 9·1	+ 6·1	+ 4·1	− 8·1	− 9·7	− 10·0	− 10·8	Shepherd and Son	1810
+ 12·0	+ 13·0	+ 10·5	+ 10·5	+ 9·0	+ 8·6	+ 13.4	+ 8·0	+ 16·3	+ 11·1	+ 9·5	+ 15·1	+ 16·1	+ 12·5	+ 21·9	+ 13·9	+ 10·9	+ 14·2	M. F. Dent	24848
+ 8·5	+ 7·3	+ 10·9	+ 2·0	+ 1·5	− 2·5	− 3·3	− 3·1	+ 4·1	− 2·5	− 3·6	− 0·5	+ 5·4	+ 7·7	+ 9·0	+ 4·2	+ 2·0	+ 5·0	Williams	1173
+ 15·1	+ 7·1	+ 12·0	+ 20·5	+ 17·7	+ 15·3	+ 23·7	+ 22·5	− 1·0	+ 20·5	+ 19·5	+ 0·3	+ 1·9	+ 0·6	+ 10·4	+ 12·8	+ 14·6	+ 10·2	Poole and Co.	5680
− 4·3	− 2·5	− 3·5	− 3·0	− 6·0	− 6·6	− 1·7	− 3·1	− 2·8	− 3·5	− 2·6	− 2·0	− 2·2	− 2·5	− 4·4	− 3·4	− 2·4	− 4·5	Lowry	1799
+ 17·5	+ 14·5	+ 11·5	+ 14·4	+ 12·6	+ 12·5	− 5·8	+ 10·0	− 0·8	+ 3·5	+ 10·5	− 5·5	+ 5·3	+ 8·0	+ 12·0	+ 9·2	+ 11·8	+ 12·0	Gowland	1336
+ 13·5	+ 11·5	+ 10·0	+ 12·2	+ 7·3	+ 6·5	+ 10·0	+ 8·5	+ 4·0	+ 8·0	+ 7·0	− 3·0	+ 3·5	+ 7·1	+ 8·0	+ 10·3	+ 10·0	+ 8·2	Evans	1783
+ 11·6	+ 9·0	+ 10·0	+ 11·5	+ 11·5	+ 12·1	+ 25·5	+ 19·9	+ 6·3	+ 24·0	+ 20·0	+ 5·7	+ 8·4	+ 10·4	+ 0·9	+ 7·5	+ 9·6	+ 2·0	Crisp	3348
+ 0·6	− 1·5	+ 1·2	+ 0·4	+ 3·6	+ 4·0	+ 9·0	+ 5·9	− 5·0	+ 6·5	+ 4·6	− 6·4	− 5·4	− 6·6	− 9·5	− 5·2	− 3·8	− 9·0	Aitchison	9/487
+ 16·5	+ 14·5	+ 13·9	+ 19·5	+ 20·2	+ 22·3	+ 32·0	+ 23·5	+ 9·7	+ 26·0	+ 24·5	+ 3·5	+ 9·2	+ 5·6	+ 11·5	+ 16·0	+ 15·5	+ 11·5	Poole and Co.	5677
+ 29·0	+ 20·5	+ 25·0	+ 27·0	+ 23·5	+ 23·5	+ 21·5	+ 13·5	+ 13·6	+ 12·5	+ 9·3	+ 11·0	+ 12·4	+ 8·0	+ 9·5	+ 8·0	+ 8·7	+ 8·0	Walker	7632
+ 2·5	− 1·1	+ 2·3	+ 5·5	+ 9·5	+ 9·5	+ 15·7	+ 8·0	+ 5·6	+ 12·0	+ 9·4	+ 9·8	+ 6·6	+ 6·0	+ 3·0	+ 4·3	+ 4·2	+ 2·6	Aitchison	9/487
+ 7·9	− 0·8	+ 4·6	+ 7·3	+ 4·7	+ 5·5	+ 2·5	− 1·4	+ 0·5	+ 0·5	− 1·6	+ 1·4	− 1·6	− 2·3	− 1·5	− 3·2	− 3·3	− 3·0	Johannsen and Co.	1883
− 3·5	− 3·5	− 3·9	− 4·5	− 7·5	− 8·5	− 6·0	− 7·3	− 14·8	− 11·5	− 15·5	− 23·4	− 19·0	− 16·7	− 7·4	− 5·3	− 2·9	− 4·1	Davison	4445
+ 19·4	+ 17·5	+ 19·0	+ 18·6	+ 17·2	+ 15·4	+ 38·5	+ 33·4	+ 5·6	+ 38·5	+ 36·9	− 1·2	+ 8·1	+ 9·5	+ 9·3	+ 21·6	+ 24·0	+ 14·1	Cornell	5658
− 31·6	− 31·5	− 30·5	− 27·9	− 28·1	− 27·5	− 19·3	− 21·0	− 29·5	− 17·7	− 16·0	− 26·0	− 27·0	− 23·5	− 18·4	− 18·6	− 21·0	− 19·0	Crisp	3252
+ 33·4	+ 29·3	+ 30·4	+ 34·9	+ 34·1	+ 34·1	+ 50·5	+ 35·0	+ 24·1	+ 48·0	+ 44·5	+ 19·6	+ 25·3	+ 25·5	+ 29·9	+ 35·5	+ 37·5	+ 32·5	Gabriel	1708
+ 27·0	+ 27·5	+ 25·7	+ 27·0	+ 25·5	+ 24·5	+ 29·5	+ 35·5	+ 19·4	+ 30·0	+ 30·5	+ 19·6	+ 21·8	+ 21·7	+ 22·0	+ 26·2	+ 27·3	+ 22·0	Quilliam	20074
+ 15·6	+ 8·0	+ 11·6	+ 19·0	+ 20·5	+ 21·0	+ 27·0	+ 20·8	+ 10·8	+ 29·5	+ 26·0	+ 15·5	+ 17·8	+ 21·9	+ 25·7	+ 20·0	+ 27·0	+ 22·5	Davison	4374
− 5·4	+ 1·5	− 6·6	− 2·3	− 9·2	− 8·5	+ 2·0	+ 0·1	− 15·0	− 3·7	− 9·8	− 18·5	− 19·5	− 29·5	− 40·4	− 26·6	− 27·1	− 39·0	Quilliam	20073
+ 4·3	+ 16·5	+ 11·0	+ 8·1	+ 7·4	+ 8·4	+ 10·5	+ 9·1	+ 11·4	+ 4·0	+ 3·0	+ 3·4	+ 21·5	+ 25·0	+ 17·8	+ 21·9	+ 16·9	+ 17·4	Graham and Parkes	1062
− 21·1	− 14·5	− 27·9	− 17·5	− 19·5	− 12·5	+ 12·4	+ 14·0	− 18·7	+ 10·6	+ 3·5	− 18·3	− 13·5	− 11·5	+ 5·0	+ 13·5	+ 16·0	+ 7·0	Johannsen and Co.	1866
								†			†	†	†	†	†	†	†		
+490·6	...	+388·5	+273·0	− 20·0	−126·0	− 688·0	− 762·1	− 904·5	−1029·0	−1261·4	−1547·1	−1583·5	−1996·5	...	−2387·0	−2530·0	...	Chronometrical Thermometer.	
53°—63°	51°—62°	52°—60°	54°—62°	55°—66°	60°—67°	66°—75°	65°—75°	49°—85°	68°—79°	72°—79°	71°—90°	62°—86°	69°—92°	73°—99°	82°—98°	82°—95°	82°—103°	Extremes of Temperature as shown by the Self-Registering Thermometers.	

The sign + signifies that the rate is gaining.

† During these weeks the Chronometers were placed in the chamber of a stove heated by jets of gas. The gas flames are exterior to the chamber, into which none of the injurious products of combustion can enter. The jets were extinguished on March 13 and 14.

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. By inadvertence, the Chronometrical Thermometer was not placed with the Chronometers in the stove from June 10 to 24; its rates for the included fortnight are in consequence deficient.

During the weeks of April 1–8 and April 8–15 the Chronometrical Thermometer was in the hands of the maker for repair.

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

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(III.)—ABSTRACT OF THE PRINCIPAL CHANGES OF RATE.

NAME OF MAKER.	No.	Whether 2 or 8 Days.	ADDRESS OF MAKER.	Construction of Escapement and Balance, from the Description furnished by the Maker.	First Day of Rating.	Last Day of Rating.	Number of Weeks.	Least Weekly Sum. (s)
Graham and Parkes	$\frac{1283}{21493}$	2	43, Canning Place, Liverpool.	Poole's auxiliary to balance.	January 15	August 5	29	−12·9
Langford	1788	2	53, Broad Quay, Bristol.	No information received.	January 15	August 5	29	− 4·7
Campbell	1047	2	7, South Castle Street, Liverpool.	Ordinary balance, with slight alteration.	January 15	August 5	29	−12·8
Keys	377	2	15, Craven Street, Strand, W.C.	Ordinary balance, with slight alteration.	January 15	August 5	29	− 5·0
Isaac	1188	2	10, Spencer Street, Clerkenwell, E.C.	Balance without auxiliary.	January 15	August 5	29	− 9·6
Walker	7645	2	8, Cecil Place, Paisley Road, Glasgow.	Auxiliary compensation.	January 15	August 5	29	− 0·5
Hennessy	4949	2	5, Wind Street, Swansea.	Auxiliary compensation to balance.	January 15	August 5	29	− 2·6
Fletcher	3369	2	95, Leadenhall Street, E.C.	Auxiliary compensation.	January 15	August 5	29	0·0
Isaac	1172	2	10, Spencer Street, Clerkenwell, E.C.	Auxiliary compensation.	January 15	August 5	29	−13·5
Gowland	2300	2	178, High Street West, Sunderland.	Auxiliary compensation.	January 15	August 5	29	−11·0
Evans	1781	2	1, Sandhill, Quayside, Newcastle-on-Tyne.	Auxiliary acting in low temperature; varnished [pendulum spring.	January 15	August 5	29	+ 1·1
Reid and Sons	2555	2	41, Grey Street, Newcastle-on-Tyne.	Auxiliary compensation.	January 15	August 5	29	− 4·6
Penlington and Hutton	2137	2	2 & 3, St. George's Crescent, Liverpool.	Auxiliary compensation.	January 15	August 5	29	+ 0·4
Langford	1828	2	53, Broad Quay, Bristol.	No information received.	January 15	August 5	29	+ 2·9
Sewill	4662	2	61, South Castle St., Liverpool, & 30, Corn- [hill, E.C.	Auxiliary compensation.	January 15	August 5	29	−17·6
Edward and Son	2138	2	92, Buchanan Street, Glasgow.	Improved ordinary balance.	January 15	August 5	29	− 4·5
Keys }	398	2	15, Craven Street, Strand, W.C.	Ordinary balance, with slight alteration.	January 15	August 5	29	− 1·1
Shepherd and Son }	1804	2	53, Leadenhall Street, E.C.	Auxiliary acting in cold.	January 15	August 5	29	− 4·6
Pyott	398	2	7, Jamaica Terrace, West India Dock Road, [London.	Auxiliary compensation.	January 15	August 5	29	+ 3·7
Williams	1127	2	2, Bute Dock, Cardiff.	Auxiliary compensation.	January 15	August 5	29	− 8·5
McGregor and Co.	5002	2	Greenock.	Auxiliary acting in high temperature.	January 15	August 5	29	− 5·0
McGregor and Co.	$\frac{M}{5003}$	2	45, Clyde Place, Glasgow.	Auxiliary acting in extremes.	January 15	August 5	29	− 2·0
Sewill	4869	2	30, Cornhill, E.C.	Auxiliary compensation.	January 15	August 5	29	−14·9
Lowry	1789	2	66, High Street, Belfast.	A safe auxiliary to ordinary balance.	January 15	August 5	29	−12·5
Penlington	2136	2	2 & 3, St. George's Crescent, Liverpool.	Auxiliary compensation.	January 15	August 5	29	− 8·4
Shepherd and Son	1810	2	53, Leadenhall Street, E.C.	Auxiliary acting in cold.	January 15	August 5	29	−10·8
M. F. Dent	24848	2	33, Cockspur Street, W.C.	Auxiliary to balance.	January 15	August 5	29	+ 8·0
Williams	1173	2	2, Bute Dock, Cardiff.	Auxiliary compensation.	January 15	August 5	29	− 4·4
Poole and Co.	5680	2	33, Spencer Street, Clerkenwell, E.C.	Auxiliary compensation.	January 15	August 5	29	− 1·0
Lowry	1799	2	66, High Street, Belfast.	A safe auxiliary to ordinary balance.	January 15	August 5	29	−16·0
Gowland	1336	2	178, High Street West, Sunderland.	Ordinary construction, with slight alteration.	January 15	August 5	29	− 5·8
Evans	1783	2	1, Sandhill, Quayside, Newcastle-on-Tyne.	Auxiliary acting in low temperature; varnished [pen. spring.	January 15	August 5	29	− 7·5
Crisp	3348	2	174, St. John's Street Road, E.C.	New balance without attachments.	January 15	August 5	29	+ 0·9
Aitchison	$\frac{9}{497}$	2	15, Bank Street, Edinburgh.	Auxiliary balance.	January 15	August 5	29	−11·7
Poole and Co.	5677	2	33, Spencer Street, Clerkenwell, E.C.	Auxiliary compensation.	January 15	August 5	29	+ 3·2
Walker	7632	2	8, Cecil Place, Paisley Road, Glasgow.	Auxiliary compensation.	January 15	August 5	29	+ 8·0
Aitchison	$\frac{9}{487}$	2	15, Bank Street, Edinburgh.	Auxiliary balance.	January 15	August 5	29	− 1·1
Johannsen and Co.	1883	2	149, Minories, E.C.	Auxiliary balance.	January 15	August 5	29	− 3·3
Davison	4445	2	6, Side, Newcastle-on-Tyne.	Auxiliary balance.	January 15	August 5	29	−23·4
Cornell	5658	2	74, Bank Street, Maidstone.	Auxiliary to balance.	January 15	August 5	29	− 4·3
Crisp	3252	2	174, St. John's Street Road, E.C.	Hartnup balance.	January 15	August 5	29	−52·6
Gabriel	1708	2	24, Bishopsgate Street Within, E.C.	Auxiliary compensation.	January 15	August 5	29	+ 1·8
Quilliam and Sons	20074	2	32, Elizabeth Street, Liverpool.	Ordinary balance, with new auxiliary acting in [heat and cold.	January 15	August 5	29	− 7·6
Davison	4374	2	6, Side, Newcastle-on-Tyne.	Auxiliary balance.	January 15	August 5	29	−19·4
Quilliam and Sons	20073	2	32, Elizabeth Street, Liverpool.	Ordinary balance, with new auxiliary acting in [heat and cold.	January 15	August 5	29	−40·4
Graham and Parkes	1062	2	43, Canning Place, Liverpool.	Hartnup balance.	January 15	August 5	29	−27·7
Johannsen and Co.	1866	2	69, Linton Street, New North Road, N.	Auxiliary compensation.	January 15	August 5	29	−47·1

In what Week.	Greatest Weekly Sum. (s)	In what Week.	Difference between the Greatest and Least. (s)	Greatest Difference between one Week and the next. (s)	Before and after what Day.	NAME OF MAKER.	No.
June 3 to 10	− 5·9	July 22 to 29	7·0	2·9	February 5	Graham and Parkes	$\frac{1283}{21493}$
February 19 to 26	+ 4·9	July 29 to Aug. 5	9·6	3·9	March 4†	Langford	1788
July 15 to 22	− 3·5	Feb. 26 to Mar. 4	9·3	4·4	† March 11†	Campbell	1047
February 19 to 26	+ 4·1	July 29 to Aug. 5	9·1	5·9	† April 1	Keys	377
April 22 to 29	+ 1·7	July 29 to Aug. 5	11·3	5·3	† April 1	Isaac	1188
June 17 to 24†	+ 9·5	April 15 to 22	10·0	6·0	† June 17†	Walker	7645
April 1 to 8	+ 5·8	June 3 to 10	8·4	7·6	June 10†	Hennessy	4949
July 29 to August 5	+ 12·5	June 3 to 10	12·5	5·8	June 10†	Fletcher	3369
April 22 to 29	− 2·9	June 24 to July 1 †	10·6	6·8	June 10†	Isaac	1172
April 1 to 8	+ 1·5	May 20 to 27	12·5	6·5	June 10†	Gowland	2300
January 15 to 22	+ 16·8	July 29 to Aug. 5	15·7	5·1	March 4†	Evans	1781
April 1 to 8	+ 11·0	July 29 to Aug. 5	15·6	5·7	† April 1	Reid and Sons	2555
January 15 to 22	+ 15·0	June 3 to 10	14·6	6·5	January 22	Penlington and Hutton	2137
January 15 to 22	+ 17·7	July 29 to Aug. 5	14·8	6·9	June 10†	Langford	1828
June 17 to 24†	− 0·3	July 29 to Aug. 5	17·3	6·0	† April 1	Sewill	4662
January 22 to 29	+ 9·5	July 29 to Aug. 5	14·0	8·1	March 4†	Edward and Son	2138
January 15 to 22	+ 16·5	June 3 to 10	17·6	7·0	June 10†	Keys }	398
January 15 to 22	+ 11·2	March 4 to 11†	15·8	7·9	† April 1	Shepherd and Son }	1804
January 15 to 22	+ 28·7	July 29 to Aug. 5	25·0	4·2	† July 8	Pyott	398
February 19 to 26	+ 7·8	Feb. 26 to Mar. 4	16·3	8·6	March 4†	Williams	1127
July 1 to 8†	+ 11·5	April 15 to 22	16·5	8·8	June 10†	McGregor and Co.	5002
March 4 to 11†	+ 11·2	July 1 to 8†	13·2	10·9	March 4†	McGregor and Co.	$\frac{M}{5003}$
{ June 10 to 17†; June 17 to 24† }	+ 5·0	February 5 to 12	19·9	7·8	April 8	Sewill	4869
January 22 to 29	+ 5·7	July 29 to Aug. 5	18·2	9·6	March 4†	Lowry	1789
March 25 to April 1†	+ 8·0	July 29 to Aug. 5	16·4	11·7	March 4†	Penlington	2136
June 17 to 24†	+ 9·1	March 4 to 11†	19·9	10·2	June 10†	Shepherd and Son	1810
July 8 to 15	+ 21·9	June 10 to 17†	13·9	13·3	June 10†	M. F. Dent	24848
February 19 to 26	+ 13·3	April 29 to May 6	17·7	11·5	June 10†	Williams	1173
March 11 to 18†	+ 23·7	July 29 to Aug. 5	24·7	8·3	March 4†	Poole and Co.	5680
{ February 19 to 26; February 26 to Mar. 4 }	0·0	April 8 to 15; April 15 to 22	16·0	14·0	March 4†	Lowry	1799
July 29 to August 5	+ 19·0	April 29 to May 6	24·8	9·9	March 4†	Gowland	1336
January 22 to 29	+ 16·1	April 8 to 15	23·6	10·9	February 19	Evans	1783
June 10 to 17†	+ 25·5	July 29 to Aug. 5	24·6	11·2	June 10†	Crisp	3348
January 15 to 22	+ 9·0	July 29 to Aug. 5	20·7	13·5	June 10†	Aitchison	$\frac{9}{497}$
January 15 to 22	+ 32·0	July 29 to Aug. 5	28·8	10·8	June 10†	Poole and Co.	5677
{ March 25 to April 1†; June 17 to 24†; June 24 to July 1† }	+ 32·0	April 8 to 15	24·0	14·0	June 10†	Walker	7632
April 1 to 8	+ 15·7	July 29 to Aug. 5	16·8	19·0	February 12	Aitchison	$\frac{9}{487}$
July 1 to 8†	+ 18·5	Feb. 26 to Mar. 4	21·8	17·1	March 4†	Johannsen and Co.	1883
March 4 to 11†	+ 1·0	April 15 to 22	24·4	17·8	March 4†	Davison	4445
January 22 to 29	+ 38·5	July 22 to 29; July 29 to Aug. 5	42·8	9·4	† July 8	Cornell	5658
January 15 to 22	− 16·0	July 15 to 22	36·6	13·6	March 4†	Crisp	3252
January 22 to 29	+ 50·5	July 29 to Aug. 5	48·7	9·5	July 15	Gabriel	1708
January 15 to 22	+ 35·5	July 8 to 15	43·1	17·3	March 4†	Quilliam and Sons	20074
February 12 to 19	+ 29·5	July 22 to 29	48·9	27·1	March 4†	Davison	4374
June 10 to 17†	+ 4·1	April 8 to 15	44·5	31·9	June 10†	Quilliam and Sons	20073
January 29 to Feb. 5	+ 25·0	March 25 to April 1†	52·7	29·3	March 4†	Graham and Parkes	1062
January 15 to 22	+ 16·0	July 1 to 8†	63·1	25·2	March 4†	Johannsen and Co.	1866

The sign + indicates that the rate is gaining.

† During these weeks the Chronometers were placed in the chamber of a stove heated by jets of gas. The gas flames are exterior to the chamber, into which none of the injurious products of combustion can enter. The jets were extinguished on March 13 and 14. In the column "Before and after what Day" the positions of the symbol (†), before or after the date, indicate respectively exposure to heat in the week immediately preceding, or in the week immediately following.

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

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