

RATES OF CHRONOMETERS

ON TRIAL

FOR PURCHASE BY THE BOARD OF ADMIRALTY,

AT THE

ROYAL OBSERVATORY, GREENWICH.

1856.

NAME OF MAKER.	Num- ber.	Whether Pocket, 1/2, or Table.	Construction of Escapement and Balance, from the description furnished by the Maker.	(L)—WEEKLY SUMS OF DAILY RATES											
				Jan. 12-19 *	Jan. 19-26 *	Jan. 26 to Feb. 2 *	Feb. 2-9 *	Feb. 9-16 *	Feb. 16-23 *	Feb. 23 to March 1 †	March 1-8 †	March 8-15 †	Mar. 15-22 †	Mar. 22-29 †	
J. Mairhead.....	2119	2	Poole's auxiliary compensation.	....	- 31	- 34	- 10	+ 44	+ 35	+ 91	+ 70	+ 81	+ 14	+ 39	
J. J. Mairhead	7053	2	With Poole's new auxiliary bar to balance.	....	- 210	- 246	- 238	- 236	- 235	- 232	- 243	- 190	- 174	- 141	
Mrs. Janet Taylor	502	2	A double action balance of original con- struction.	....	- 320	- 674	- 600	- 465	....	....	....	....	....	+ 13	
Elffe.....	442	8	Elffe's patent balance.	....	+ 212	+ 123	+ 157	+ 168	+ 125	+ 291	+ 314	+ 311	+ 249	+ 200	
Webb	5346	2	Auxiliary compensation to the balance.	....	+ 10	+ 173	....	....	....	....	- 112	- 81	+ 44	+ 84	
Elffe.....	482	2	A new construction of balance (unpub- lished).	....	- 211	- 293	- 270	....	- 327	- 248	- 320	- 186	- 339	- 360	
Frosham & Baker	6103	2	Auxiliary compensation to the balance (unpublished).	+ 360	+ 605	+ 712	+ 805	+ 943	....	....	- 15	+ 45	- 141	- 164	
Lister and Sons ...	539	2	Auxiliary compensation to the balance, as in former years.	....	- 30	- 05	- 58	- 62	- 35	- 115	- 95	- 36	+ 01	+ 30	
Reid and Sons.....	1161	2	Auxiliary compensation to the balance.	....	- 100	- 83	- 41	- 71	+ 15	- 30	- 75	- 51	+ 57	+ 119	
Hewitt and Son ...	1999	2	Elffe's auxiliary to balance, with a small original alteration.	....	- 256	- 251	- 222	- 177	- 225	- 240	- 245	- 258	- 154	- 163	
Dent	2627	2	Dent's patent balance; see pamphlet, "On the Errors of Chronometers," p. 23.	- 216	- 395	- 425	- 458	- 482	- 440	- 455	- 495	- 421	- 394	- 410	
Daniel's	573	2	[No information received.]	....	- 250	- 250	- 211	- 134	- 101	+ 21	+ 75	+ 111	- 18	- 29	
Blackie	420	2	Ordinary construction.	- 368	- 330	- 400	- 360	- 265	- 350	- 158	- 127	- 104	+ 19	+ 28	
Glover	290	2	Auxiliary compensation to the balance somewhat differing from Elffe's.	- 30	- 80	- 167	- 128	- 110	- 140	- 37	+ 17	+ 89	+ 36	+ 15	
Finer and Nowland	442	2	Ordinary construction.	....	- 215	- 301	- 324	- 390	- 427	- 163	- 135	- 117	- 16	+ 03	
Sevill	624	2	Elffe's auxiliary to balance, with an original alteration.	- 180	- 189	- 191	- 169	- 166	- 145	- 80	- 90	+ 01	- 41	- 19	
Pennington	405	2	Ordinary construction.	....	- 192	- 280	- 139	- 01	- 90	+ 150	+ 145	+ 144	+ 101	+ 92	
Poole	2156	2	Auxiliary compensation to the balance, as in former years.	....	+ 46	+ 31	- 01	- 31	- 48	- 282	- 360	- 381	- 59	- 10	
Frosham & Baker	6102	2	Auxiliary compensation to the balance (unpublished). A dead seconds' beat.	+ 421	+ 940	+ 1009	+ 1223	+ 1418	....	....	- 245	- 386	- 372	- 465	
Dell, Brothers.....	1081	2	Ordinary construction.	- 61	- 123	- 176	- 130	- 140	- 170	- 225	- 305	- 366	- 58	- 21	
				*	*	*	*		*	†	†	†			
Chronometrical Thermometer .....	...	...	.....	+ 21299	+ 16186	+ 23888	+ 17997	+ 11748	+ 16808	- 7373	- 5757	- 8669	+ 13907	+ 16319	
Extremes of Tem- perature as shown by the Self-Re- gistering Ther- mometer .....	...	...	.....	24-51	37-51	25-47	29-56	46-55	29-70	50-85	64-80	66-86	42-50	42-40	

* During these weeks the Chronometers were exposed to the external air outside a North window, excepting on the two first days of the week February 16-23, when they were placed in the stove heated to a moderate temperature.

† During these weeks the Chronometers were placed in the chamber of a stove heated by gas to a moderate temperature.

‡ During these weeks the Chronometers were placed in the chamber of a stove heated by gas to a high temperature.

The rate given by the first five days of trial is in every case omitted.

IN THE ORDER OF TIME.																			NAME OF MAKER.		Num- ber.
Mar. 29 to Apr. 5	April 5-12	April 12-19	April 19-26	April 26 to May 3	May 3-10	May 10-17	May 17-24 †	May 24-31 †	May 31 to June 7	June 7-14	June 14-21	June 21-28	June 28 to July 5	July 5-12	July 12-19	July 19-26	July 26 to Aug. 2	August 2-9			
+ 71 - 149	+ 101 - 121	+ 86 - 109	+ 107 - 114	+ 94 - 147	+ 97 - 215	+ 114 - 209	+ 61 - 216	+ 50 - 160	+ 81 - 125	+ 149 - 30	+ 125 - 05	+ 135 - 26	+ 122 - 71	+ 119 - 65	+ 133 - 58	+ 186 - 19	+ 197 - 66	+ 197 - 51	J. Mairhead	2119	
																			J. J. Mairhead	7053	
- 21	+ 85	- 22	+ 24	- 31	+ 25	+ 41	+ 40	+ 08	+ 76	+ 131	+ 149	+ 38	- 43	- 35	- 60	- 115	- 200	- 165	Mrs. Janet Taylor	502	
+ 245	+ 290	+ 291	+ 314	+ 290	+ 295	+ 333	+ 292	+ 270	+ 260	+ 320	+ 294	+ 299	+ 332	+ 335	+ 340	+ 336	+ 349	+ 370	Elffe	442	
+ 78	+ 76	+ 68	+ 91	+ 100	+ 140	+ 76	+ 79	+ 67	+ 93	+ 46	+ 64	+ 67	+ 115	+ 156	+ 158	+ 143	+ 179	+ 221	Webb	5346	
- 310	- 174	- 192	- 153	- 112	- 104	- 141	- 231	- 183	- 165	- 190	- 177	- 185	- 183	- 118	- 82	- 75	- 148	- 147	Elffe	482	
- 91	- 54	- 60	- 20	- 55	- 26	+ 31	+ 70	+ 40	+ 65	+ 45	- 13	+ 20	- 42	- 38	- 14	+ 11	- 14	+ 34	Frosham & Baker	6103	
00	+ 18	+ 12	+ 21	+ 29	+ 84	+ 21	- 161	- 169	- 158	+ 03	+ 29	+ 24	- 15	+ 07	- 04	- 16	- 30	- 19	Lister and Sons...	539	
+ 71	+ 32	+ 16	+ 41	+ 82	+ 158	+ 74	- 42	- 77	- 95	- 115	+ 45	+ 90	+ 190	+ 214	+ 201	+ 180	+ 187	+ 188	Reid and Sons ..	1161	
- 155	- 138	- 153	- 134	- 137	- 128	- 145	- 365	- 381	- 336	- 143	- 125	- 135	- 139	- 121	- 125	- 141	- 170	- 175	Hewitt and Son	1999	
- 365	- 346	- 371	- 367	- 469	- 307	- 513	- 282	- 204	- 201	- 220	- 315	- 315	- 346	- 314	- 320	- 337	- 352	- 341	Dent	2627	
+ 29	+ 60	+ 50	+ 79	+ 66	+ 60	+ 100	+ 99	+ 91	+ 125	+ 169	+ 166	+ 165	+ 166	+ 153	+ 161	+ 168	+ 186	+ 214	Daniel's	573	
- 34	+ 06	- 12	+ 07	- 21	- 08	- 31	- 179	- 274	- 249	- 01	- 03	- 24	+ 19	+ 29	+ 21	- 17	+ 29	+ 44	Blackie	420	
+ 87	+ 30	+ 12	+ 43	+ 38	+ 70	+ 30	+ 345	+ 300	+ 345	+ 203	+ 142	+ 153	+ 153	+ 172	+ 145	+ 125	+ 121	+ 141	Glover	290	
- 09	+ 33	+ 22	+ 43	+ 85	+ 82	+ 45	- 27	- 130	- 135	+ 80	+ 30	- 55	+ 44	+ 61	+ 55	+ 16	+ 26	+ 43	Finer & Nowland	442	
- 120	- 11	- 23	+ 03	+ 15	+ 41	+ 34	+ 235	+ 291	+ 344	+ 89	+ 108	+ 131	+ 82	+ 100	+ 130	+ 147	+ 135	+ 136	Sevill	624	
+ 139	+ 189	+ 170	+ 193	+ 177	+ 180	+ 203	+ 75	+ 76	+ 482	+ 324	+ 220	+ 221	+ 279	+ 275	+ 291	+ 298	+ 319	+ 342	Pennington	405	
- 65	- 46	- 79	- 49	- 10	- 19	- 64	- 307	- 315	- 288	- 123	- 50	- 67	- 130	- 106	- 92	- 110	- 125	- 111	Poole	2156	
- 447	- 340	- 245	- 189	- 211	- 181	- 104	- 172	- 41	+ 129	- 02	+ 125	+ 205	+ 83	+ 152	+ 235	+ 371	+ 391	+ 425	Frosham & Baker	6102	
+ 20	+ 30	+ 36	+ 74	+ 85	+ 115	+ 120	- 462	- 526	- 492	- 115	- 153	- 160	- 93	- 105	- 132	- 129	- 94	- 101	Dell, Brothers...	1081	
							†	†	†												
- 11765	+ 10088	+ 10207	+ 9540	+ 11727	+ 13631	+ 7762	- 22270	- 23271	- 24839	- 11660	+ 2490	- 478	- 452	+ 2561	+ 966	- 2177	- 4280	- 6010			
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
41-07	49-57	48-60	48-20	46-41	45-35	52-60	73-103	54-107	82-103	61-70	58-66	39-75	60-73	55-69	60-68	63-74	63-80	67-81			

The Chronometer Mrs. Janet Taylor 502 was deposited on January 14, but on account of the irregularity of its rate it was withdrawn on February 18; on March 17 it was returned for further trial. The rates from January 10 to February 16 are omitted in the formation of the Abstract.

The Chronometer Webb 5346 was found stopped on February 9; it was taken away for examination on February 11, and returned for further trial on February 27. The rates from January 19 to February 2 are omitted in the formation of the Abstract.

The Chronometer Elffe 482 was found stopped on February 11, the attached wander having by accident come into contact with the temporary support of the Chronometer. The rate for the week February 9-16 is in consequence deficient.

The Chronometers Frosham and Baker 6103 and Frosham and Baker 6102 were deposited on January 7, but on account of the irregularity of their rates they were withdrawn on February 18; on February 25 they were returned for further trial. The rates from January 19 to February 16 are omitted in the formation of the Abstract.

The order of arrangement of the Chronometers in these Tables is determined solely by consideration of their irregularities of rate, as expressed in the column "Difference between the Greatest and Least" and "Greatest Difference between one Week and the next," without reference to the duration of the Trial. The positions of the Chronometers Mrs. Janet Taylor 502, Webb 5346, Frosham and Baker 6103, and Frosham and Baker 6102, are therefore not successively correct.

NAME or MAKER.	Num- ber.	Construction of Escapement and Balance, from the description furnished by the Maker.	(H.)—WEEKLY SUMS OF DAILY RATES											
			Jan. 26 Feb. 2	Jan. 12-19	Feb. 2-9	Feb. 16-23	March 23-29	Jan. 19-26	March 13-22	May 3-10	Mar. 29 to April 5	Feb. 9-16	April 26 to May 3	
Mairhead	2119	2	Pool's auxiliary compensation.	— 34	...	— 10	+ 35	+ 39	— 31	+ 14	+ 97	+ 71	+ 44	+ 34
J. J. Mairhead	7035	2	With Perthouse's new auxiliary bar to balance.	— 24.6	...	— 22.8	— 23.5	— 14.1	— 21.0	— 17.4	— 21.5	— 14.9	— 23.6	— 14.7
Mrs. Janet Taylor	502	2	A double action balance of original construction.	— 67.4	...	— 60.0	...	+ 15	— 32.0	...	+ 25	— 21	— 46.5	— 31
Ediffe	442	8	Ediffe's patent balance.	+ 12.3	...	+ 15.7	+ 12.5	+ 20.0	+ 21.2	+ 24.9	+ 29.5	+ 24.5	+ 16.8	+ 2.90
Webb	5346	2	Auxiliary compensation to the balance.	+ 17.5	...	...	...	+ 8.4	+ 1.0	+ 4.4	+ 14.0	+ 24.8	...	+ 10.9
Ediffe	482	2	A new construction of balance (unpublished).	— 29.3	...	— 27.0	— 32.7	— 36.0	— 31.1	— 33.9	— 10.4	— 31.0	...	— 11.2
Frodsham & Baker	6103	2	Auxiliary compensation to the balance (unpublished).	+ 71.2	+ 36.0	+ 80.5	...	— 16.4	+ 60.3	— 14.1	— 2.6	— 91	+ 94.3	— 55
Lister and Sons	539	2	Auxiliary compensation to the balance, as in former years.	— 0.5	...	— 5.8	— 3.5	+ 3.0	— 3.0	+ 0.1	+ 8.4	0.0	— 6.2	+ 29
Rold and Sons	1161	2	Auxiliary compensation to the balance.	— 8.3	...	— 4.1	+ 1.5	+ 11.9	— 10.0	+ 5.7	+ 15.8	+ 7.1	— 7.1	+ 8.2
Hewitt and Son	1999	2	Ediffe's auxiliary to balance, with a small original alteration.	— 23.1	...	— 22.2	— 22.5	— 16.3	— 25.5	— 19.4	— 12.8	— 15.5	— 17.7	— 13.7
Dent	2627	2	Dent's patent balance; see pamphlet "On the Errors of Chronometers," p. 23.	— 42.5	— 21.6	— 45.8	— 44.0	— 44.0	— 39.5	— 39.4	— 50.7	— 36.5	— 48.2	— 46.9
Daniel's	437	2	[No information received.]	— 25.0	...	— 21.1	— 15.1	— 2.9	— 25.0	— 1.6	+ 6.0	+ 2.9	— 13.4	+ 6.6
Blackie	420	2	Ordinary construction.	— 40.0	— 36.8	— 36.0	— 35.0	+ 2.8	— 33.0	+ 1.9	— 0.8	— 3.4	— 26.5	— 21
Glover	290	2	Auxiliary compensation to the balance, somewhat differing from Ediffe's.	— 16.7	— 3.0	— 12.8	— 14.0	+ 1.5	— 8.0	+ 3.6	+ 7.0	+ 2.7	— 11.0	+ 3.8
Finer and Nowland	442	2	Ordinary construction.	— 30.1	...	— 32.4	— 42.7	+ 0.3	— 21.5	— 1.6	+ 8.2	— 0.3	— 39.0	+ 8.5
Sewill	634	2	Ediffe's auxiliary to balance, with an original alteration.	— 19.1	— 18.0	— 10.9	— 14.5	— 1.9	— 18.9	— 4.1	+ 4.1	— 2.0	— 16.6	+ 15
Pennington	405	2	Ordinary construction.	— 38.0	...	— 13.9	— 9.0	+ 9.2	— 19.2	+ 10.1	+ 18.0	+ 13.9	— 0.1	+ 17.7
Pool	2116	2	Auxiliary compensation to the balance, as in former years.	— 3.1	...	— 0.1	— 4.8	— 1.0	+ 4.6	— 5.9	+ 1.9	— 6.5	— 3.1	— 1.0
Frodsham & Baker	6102	2	Auxiliary compensation to the balance (unpublished). A dead seconds' beat.	+ 100.9	+ 42.1	+ 123.3	...	— 46.5	+ 94.0	— 37.2	— 18.1	— 44.7	+ 141.8	— 21.1
Dell, Brothers	1081	2	Ordinary construction.	— 17.6	— 6.1	— 13.0	— 17.0	— 2.1	— 12.3	— 5.8	+ 11.5	+ 2.0	— 14.0	+ 8.5
Chronometrical Thermometer	...	...	.....	+ 2388.5	+ 2129.9	+ 1759.7	+ 1680.8	+ 1631.9	+ 1618.6	+ 1390.7	+ 1363.1	+ 1176.5	+ 1174.9	+ 1127.2
Extremes of Tem- perature as shown by the Self- registering Ther- mometer	...	...	.....	25-47	24-51	29-56	29-70	42-49	37-51	42-50	45-55	41-57	46-55	46-61

* During these weeks the Chronometers were exposed to the external air outside a North window, excepting on the two first days of the week February 16-23, when they were placed in the stove heated to a moderate temperature.

† During these weeks the Chronometers were placed in the chamber of a stove heated by gas to a moderate temperature.

‡ During these weeks the Chronometers were placed in the chamber of a stove heated by gas to a high temperature.

§ The rate given by the first five days of trial is in every case omitted.

IN THE ORDER OF TEMPERATURE.																				NAME OF MAKER.		Num- ber.
April 5-12	April 12-19	April 19-26	May 10-17	July 5-12	June 14-21	July 12-19	June 28 to July 5	June 21-28	June 7-14	July 19-26	July 26 to Aug. 2	March 1-8	Aug. 2-9	Feb. 23 to Mar. 1	March 8-15	May 17-24	May 31 to June 7	May 24-31				
+10.1	+ 8.6	+107	+114	+119	+125	+133	+122	+123	+149	+186	+197	+ 70	+197	+ 51	+ 51	+ 61	+ 81	+ 50	J. Muirhead	2119		
-12.1	-10.9	-11.4	-20.9	- 6.5	- 0.5	- 5.8	- 7.1	- 2.6	- 3.0	- 1.9	- 6.6	-24.3	- 5.1	-28.2	-19.0	-21.6	-12.5	-16.0	J. J. Muirhead	7035		
+ 8.5	- 2.2	+ 2.4	+ 4.1	- 3.5	+14.9	- 6.0	- 4.3	+ 3.8	+13.1	-11.5	-20.6	....	-16.3	....	....	+ 4.0	+ 7.6	+ 0.8	Mrs. Janet Taylor	502		
+29.0	+29.1	+31.4	+33.3	+33.5	+29.4	+34.0	+33.2	+29.9	+32.0	+33.6	+4.9	+31.4	+37.0	+29.1	+31.1	+29.2	+26.0	+27.0	Ediffe	442		
+ 7.6	+ 0.8	+ 9.1	+ 7.6	+15.6	+ 6.4	+18.6	+11.5	+ 6.7	+4.3	+14.3	+17.1	-11.2	+22.1	....	- 8.1	+ 7.9	+ 0.3	+ 6.7	Webb	5346		
-17.4	-19.2	-15.3	-14.1	-11.8	-17.7	- 8.2	-18.3	-18.5	-19.0	- 7.5	-14.8	-32.0	-14.7	-24.8	-18.6	-23.1	-16.5	-18.3	Ediffe	482		
- 5.4	- 6.0	- 2.0	+ 3.1	- 3.8	- 1.3	- 1.4	- 4.2	+ 2.0	+ 4.5	+ 1.1	- 1.4	- 1.5	+ 3.4	....	+ 4.5	+ 7.0	+ 6.5	+ 4.0	Frodsham & Baker	6103		
+ 1.8	+ 1.2	+ 2.1	+ 2.1	+ 0.7	+ 2.9	- 0.4	- 1.5	+ 2.4	+ 0.3	- 1.6	- 3.0	- 9.5	- 1.9	-11.5	- 3.6	-16.1	-15.8	-16.9	Lister and Sons	539		
+ 3.2	+ 1.6	+ 4.1	+ 7.4	+21.4	+ 4.5	+20.1	+19.0	+ 9.0	-11.5	+18.0	+18.7	- 7.5	+18.8	- 3.0	- 5.1	- 4.2	+ 9.5	- 7.7	Rold and Sons	1161		
-13.8	-15.3	-13.4	-14.5	-12.1	-12.5	-12.3	-13.9	-13.5	-14.3	-14.1	-17.0	-24.3	-17.5	-24.0	-23.8	-36.5	-33.6	-38.1	Hewitt and Son	1999		
-34.6	-37.1	-36.7	-51.3	-31.4	-31.5	-32.0	-34.6	-31.5	-23.0	-33.7	-35.2	-49.3	-34.1	-45.3	-42.1	-38.2	-20.1	-29.4	Dent	2627		
+ 6.0	+ 5.0	+ 7.9	+10.0	+15.3	+16.6	+16.1	+16.6	+16.5	+16.9	+15.8	+18.6	+ 7.5	+21.4	+ 2.1	+11.4	+ 9.9	+12.5	+ 9.1	Daniel's	437		
+ 0.6	- 1.2	+ 0.7	- 3.1	+ 2.9	- 0.3	+ 2.1	+ 1.9	- 2.4	- 6.1	- 1.7	+ 2.9	-12.7	+ 4.4	-15.8	-10.4	-17.9	-24.9	-27.4	Blackie	420		
+ 3.0	+ 1.2	+ 4.3	+ 3.0	+17.2	+14.2	+14.5	+15.3	+15.5	+20.3	+12.3	+12.1	+ 1.7	+14.1	- 3.7	+ 8.9	+24.3	+34.5	+30.0	Glover	290		
+ 3.3	+ 2.2	+ 4.5	+ 4.5	+ 6.1	+ 3.0	+ 5.5	+ 4.4	+ 5.5	+ 8.0	+ 1.6	+ 2.6	-13.5	+ 4.3	-16.3	-11.7	- 2.7	-13.5	-13.0	Finer & Nowland	442		
-1.1	- 2.3	+ 0.3	+ 3.4	+10.0	+10.8	+13.0	+ 8.2	+13.1	+ 8.9	+14.7	+13.6	+2.9	+13.6	+ 8.0	+1.1	+23.5	+34.4	+29.1	Sewill	634		
+18.9	+17.0	+19.3	+20.3	+27.5	+22.0	+29.1	+27.9	+22.1	+23.4	+29.8	+19.1	+14.3	+14.2	+15.0	+14.4	+ 7.5	+ 8.2	+ 7.6	Pennington	405		
- 4.6	- 7.0	- 4.9	- 6.4	-10.6	- 5.0	- 9.2	-13.0	- 6.7	-12.5	-11.0	-12.5	-36.0	-11.1	-28.3	-38.1	-30.7	-42.8	-31.5	Pool	2116		
-24.0	-24.5	-18.9	-10.4	+15.2	+12.5	+23.5	+ 8.3	+20.5	- 0.2	+37.1	+39.1	-24.5	+42.3	....	-38.6	-17.2	+12.9	- 4.1	Frodsham & Baker	6102		
+ 3.0	+ 3.6	+ 7.4	+12.0	-10.5	-15.5	-13.2	- 9.5	-16.0	-11.5	-12.9	- 9.4	-30.5	-10.1	-22.9	-36.6	-46.2	-49.2	-52.6	Dell, Brothers	1081		
												†		†		†	†	†				
+1038.8	+1020.7	+954.0	+770.2	+256.1	+249.0	+ 96.6	- 45.2	- 47.8	-116.0	-217.7	-428.0	-575.7	-601.0	-737.3	-866.9	-2227.0	-2483.9	-2527.1				
49-07	48-60	48-59	52-60	55-69	58-66	60-68	60-73	59-75	61-70	63-74	63-80	64-80	67-81	80-83	66-86	75-103	82-103	94-107				

The Chronometer Mrs. Janet Taylor 502 was deposited on January 14, but on account of the irregularity of its rates it was withdrawn on February 18; on March 17 it was returned for further trial. The rates from January 15 to February 16 are omitted in the formation of the Abstract.

The Chronometer Webb 5346 was found stopped on February 9; it was taken away for examination on February 11, and returned for further trial on February 27. The rates from January 19 to February 2 are omitted in the formation of the Abstract.

The Chronometer Ediffe 482 was found stopped on February 11, the attached under having by accident come into contact with the temporary support of the Chronometer. The rate for the week February 9-16 is in consequence deficient.

The Chronometers Frodsham and Baker 6103 and Frodsham and Baker 6102 were deposited on January 7, but on account of the irregularity of their rates they were withdrawn on February 18; on February 25 they were returned for further trial. The rates from January 12 to February 16 are omitted in the formation of the Abstract.

The order of arrangement of the Chronometers in these Tables is determined solely by consideration of their irregularities of rate, as expressed in the columns "Difference between the Greatest and Least" and "Greatest Difference between one Week and the next," without reference to the duration of the Trial. The positions of the Chronometers Mrs. Janet Taylor 502, Webb 5346, Frodsham and Baker 6103, and Frodsham and Baker 6102, are therefore not necessarily correct.

NAME OF MAKER.	Number.	Construction of Escapement and Balance, from the description furnished by the Maker.	(III)—ABSTRACT OF THE PRINCIPAL				
			First Day of First Week of Rating.	Last Day of Last Week of Rating.	Number of Weeks.	Least Weekly Sum.	In what Week.
J. Muirhead	2119	2 Poole's auxiliary compensation.	January 19	August 9	29	- 5' 4"	January 26 to February 2*
J. J. Muirhead	7035	2 With Porthouse's new auxiliary bar to balance.	January 19	August 9	29	- 28' 2"	February 23 to March 1†
Mrs. Janet Taylor.....	502	2 A double-action balance of original construction.	March 22	August 9	20	- 20' 0"	July 26 to August 2
Eiffe	442	8 Eiffe's patent balance.	January 19	August 9	29	+ 12' 3"	January 26 to February 2*
Webb.....	5346	2 Auxiliary compensation to the balance.	March 1	August 9	23	- 11' 2"	March 1 to 8‡
Eiffe.....	482	2 A new construction of balance (unpublished).	January 19	August 9	29	- 26' 0"	March 22 to 29
Frodsham and Baker	6103	2 Auxiliary compensation to the balance (unpublished).	March 1	August 9	23	- 16' 4"	March 22 to 29
Lister and Sons	539	2 Auxiliary compensation to the balance, as in former years.	January 19	August 9	29	- 16' 9"	May 24 to 31‡
Reid and Sons	1161	2 Auxiliary compensation to the balance.	January 19	August 9	29	- 11' 5"	June 7 to 14
Hewitt and Son	1999	2 Eiffe's auxiliary to balance, with a small original alteration.	January 19	August 9	29	- 38' 1"	May 24 to 31‡
Dent	2627	2 Dent's patent balance; see pamphlet, "On the Errors of Chronometers," p. 23.	January 12	August 9	30	- 51' 3"	May 10 to 17
Daniel's	528	2 [No information received.]	January 19	August 9	29	- 25' 0"	[January 19 to 26* January 26 to February 2*]
Blackie	420	2 Ordinary construction.	January 12	August 9	30	- 40' 0"	January 26 to February 2*
Glover	290	2 Auxiliary compensation to the balance, somewhat differing from Eiffe's.	January 12	August 9	30	- 16' 7"	January 26 to February 2*
Finer and Nowland	442	2 Ordinary construction.	January 19	August 9	29	- 42' 7"	February 16 to 23*
Sewill.....	694	2 Eiffe's auxiliary to balance, with an original alteration.	January 12	August 9	30	- 19' 1"	January 26 to February 2*
Pennington	405	2 Ordinary construction.	January 19	August 9	29	- 28' 0"	January 26 to February 2*
Poole.....	2156	2 Auxiliary compensation to the balance, as in former years.	January 19	August 9	29	- 42' 8"	May 31 to June 7‡
Frodsham and Baker	6102	2 Auxiliary compensation to the balance (unpublished). A dead seconds' beat.	March 1	August 9	23	- 46' 5"	March 22 to 29
Dell, Brothers	1081	2 Ordinary construction.	January 12	August 9	30	- 52' 6"	May 24 to 31‡

* During these weeks the Chronometers were exposed to the external air outside a North window, excepting on the two first days of the week February 16-23, when they were placed in the stove heated to a moderate temperature.

† During these weeks the Chronometers were placed in the chamber of a stove heated by gas to a moderate temperature.

‡ During these weeks the Chronometers were placed in the chamber of a stove heated by gas to a high temperature.

The rate given by the first five days of trial is in every case omitted.

CHANGES OF RATE.					NAME OF MAKER.	Number.
Greatest Weekly Sum.	In what Week.	Difference between the Greatest and Least.	Greatest Difference between one Week and the next.	Before and after what Day.		
+ 15' 7"	{ July 26 to Aug. 2 Aug. 2 to Aug. 9 }	23' 1"	6' 8"	† June 7	J. Muirhead.....	2119
- 0' 5"	June 14 to 21	27' 7"	9' 5"	† June 7	J. J. Muirhead.....	7035
+ 14' 9"	June 14 to 21	34' 9"	11' 1"	June 21	Mrs. Janet Taylor.....	502
+ 37' 0"	August 2 to 9	24' 7"	16' 6"	* February 23 ‡	Eiffe.....	442
+ 22' 1"	August 2 to 9	33' 3"	12' 5"	† March 15	Webb.....	5346
- 7' 5"	July 19 to 26	28' 5"	15' 3"	† March 15	Eiffe.....	482
+ 7' 0"	May 17 to 24 ‡	23' 4"	18' 6"	† March 15	Frodsham and Baker.....	6103
+ 8' 4"	May 3 to 10	25' 3"	18' 2"	May 17 ‡	Lister and Sons	539
+ 21' 4"	July 5 to 12	32' 9"	16' 0"	June 14	Reid and Sons.....	1161
- 12' 1"	July 5 to 12	26' 0"	22' 0"	May 17 ‡	Hewitt and Son	1999
- 20' 1"	May 31 to June 7 ‡	31' 2"	23' 1"	May 17 ‡	Dent.....	2627
+ 21' 4"	August 2 to 9	46' 4"	17' 2"	* February 23 ‡	Daniel's.....	528
+ 4' 4"	August 2 to 9	44' 4"	19' 2"	* February 23 ‡	Blackie	420
+ 34' 5"	May 31 to June 7 ‡	51' 2"	21' 5"	May 17 ‡	Glover.....	290
+ 8' 5"	April 26 to May 3	51' 2"	26' 4"	* February 23 ‡	Finer and Nowland	442
+ 34' 4"	May 31 to June 7 ‡	53' 5"	25' 5"	† June 7	Sewill.....	694
+ 24' 2"	August 2 to 9	62' 2"	24' 0"	* February 23 ‡	Pennington	405
+ 4' 6"	January 19 to 26 *	47' 4"	32' 2"	† March 15	Poole.....	2156
+ 42' 5"	August 2 to 9	89' 0"	20' 7"	April 5	Frodsham and Baker	6102
+ 12' 0"	May 10 to 17	64' 6"	58' 2"	May 17 ‡	Dell, Brothers	1081

The Chronometer Mrs. Janet Taylor 502 was deposited on January 14, but on account of the irregularity of its rates, it was withdrawn on February 18; on March 17 it was returned for further trial. The rates from January 19 to February 16 are omitted in the formation of the Abstract.

The Chronometer Webb 5346 was found stopped on February 9; it was taken away for examination on February 11, and returned for further trial on February 27.

The rates from January 19 to February 2 are omitted in the formation of the Abstract.

The Chronometer Eiffe 482 was found stopped on February 11, the attached wander having by accident come into contact with the temporary support of the Chronometer. The rate for the week February 9-16 is in consequence deficient.

The Chronometers Frodsham and Baker 6103 and Frodsham and Baker 6102 were deposited on January 7, but on account of the irregularity of their rates they were withdrawn on February 18; on February 25 they were returned for further trial. The rates from January 12 to February 16 are omitted in the formation of the Abstract.

The order of arrangement of the Chronometers in these Tables is determined solely by consideration of their irregularities of rate, as expressed in the columns

"Difference between the Greatest and Least" and "Greatest Difference between one Week and the next," without reference to the duration of the Trial. The positions of the Chronometers Mrs. Janet Taylor 502, Webb 5346, Frodsham and Baker 6103, and Frodsham and Baker 6102, are therefore not necessarily correct.