1897GOAMM..56I...1C

RATES OF CHRONOMETERS

ON TRIAL

FOR PURCHASE BY THE BOARD OF ADMIRALTY,

AT THE

ROYAL OBSERVATORY, GREENWICH,

FROM 1894 JULY 7 TO 1895 JANUARY 26.

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(I.) WEEKLY RATES IN ORDER OF TIME.

Name of Maker.	No.	Whether 2 or 8 Days.	Construction of Escapement and Balance, from the Description furnished by the Maker.	July 7—14	July 14—21	July 21—28	July 28 to Aug. 4	Aug. 4—11	Aug. 11—18	Aug. 18—25	Aug. 25 to Sept. 1 †	Sept. 1—8 †	Sept. 8—15 †	Sept. 15—22 †	Sept. 22—29
				s	s	s	s	s	s	s	s	s	s	s	s
Kullberg	5433	2	Kullberg's auxiliary; reversed detent.	−3·8	−4·2	−2·5	−2·8	−2·6	−2·9	−5·0	−1·6	−2·9	−2·2	−1·8	−2·1
Kullberg	5431	2	Kullberg's auxiliary; reversed detent.	+2·9	+1·9	+2·4	+2·5	+3·4	+3·1	+1·4	+1·9	+0·2	−0·2	+1·4	+1·6
Isaac	1935	2	Auxiliary to balance.	−1·6	−2·1	−4·9	−5·5	−2·1	−1·2	−1·8	−5·2	−5·9	−7·7	−6·5	−5·0
Johannsen & Co.	4498	2	Auxiliary compensation acting in heat.	−5·4	−7·7	−7·6	−8·5	−7·9	−7·6	−7·9	−4·1	−3·3	−4·0	−3·8	−6·0
Kullberg	5427	2	Kullberg's auxiliary; reversed detent.	−2·0	−2·1	−1·8	−2·4	−3·2	−3·5	−4·2	−1·4	−1·9	−3·8	−3·0	−6·9
Johannsen & Co.	4404	2	Auxiliary compensation acting in heat.	+4·5	+3·6	−1·7	−1·7	−0·1	+2·7	+2·0	+3·4	+0·4	+0·2	+2·7	+1·2
Kullberg	5443	2	Kullberg's auxiliary; reversed detent.	−2·7	−3·1	−2·7	−3·3	−3·8	−3·7	−3·8	−4·4	−3·2	+0·9	+3·4	+2·6
Isaac	1938	2	Auxiliary to balance.	+2·4	+0·8	+0·2	+0·3	+1·5	+2·1	−0·1	+2·1	+1·9	+3·4	+6·6	+7·0
E. Dent & Co.	47079	2	Dent's balance.	−10·5	−11·4	−10·6	−9·0	−8·3	−7·6	−9·5	−5·9	−2·6	−4·3	−6·1	−9·6
Johannsen & Co.	4325	2	Auxiliary compensation acting in heat.	+2·8	+3·7	+6·5	+5·8	+5·9	+6·2	+6·8	+4·5	+1·2	+0·7	+6·1	+4·5
E. Dent & Co.	46757	2	Dent's balance.	+5·4	+6·2	+7·0	+4·6	+4·6	+2·5	+2·9	+2·0	−0·6	−2·4	+4·0	+6·2
J. Bruce & Son	1218	2	Auxiliary compensation acting in heat.	+3·1	+2·2	+2·3	+1·8	+2·9	+3·7	+1·3	+2·6	+0·2	−1·6	−0·7	+4·9
E. Dent & Co.	46555	2	Dent's balance.	−12·4	−10·6	−12·2	−12·9	−11·0	−11·0	−9·3	−11·9	−12·8	−14·8	−12·3	−8·8
E. Dent & Co.	46982	2	Dent's balance.	+2·5	+3·0	+0·2	−0·1	−0·5	+2·8	+2·1	+1·1	−0·6	0·0	+6·4	+4·9
E. Dent & Co.	46168	2	Dent's balance.	−4·6	−5·8	−6·8	−6·7	−5·4	−2·9	−2·0	−3·9	−4·2	−4·5	+2·7	+1·3
Kullberg	5445	2	Kullberg's auxiliary; reversed detent.	−0·2	−2·4	−2·2	−1·8	−1·1	−1·0	−0·4	+4·5	+1·0	+0·8	+2·7	+4·4
Kullberg	5391	2	Kullberg's auxiliary; reversed detent.	−3·8	−4·4	−4·8	−4·9	−4·3	−3·1	−3·9	0·0	+1·0	+4·8	+7·4	+10·1
E. Dent & Co.	46550	2	Dent's balance.	−4·5	−5·1	−4·7	−3·8	−1·5	+0·7	+1·3	−3·9	−3·0	+2·9	+6·6	+4·8
Jefferson	922	2	Auxiliary to balance.	+3·6	+4·5	+3·2	+1·2	+2·7	+4·2	+4·5	+7·8	+1·6	+1·8	+3·7	+1·7
Johannsen & Co.	4462	2	Auxiliary compensation acting in heat.	−1·6	−0·1	−2·1	−2·7	−1·0	+0·9	+0·7	−0·6	−1·6	+2·5	+3·9	+8·8
Johannsen & Co.	4405	2	Auxiliary compensation acting in heat.	−2·3	−6·1	−7·0	−8·8	−8·7	−7·9	−6·9	−8·7	−11·0	−8·1	−8·5	−5·3
Johannsen & Co.	4456	2	Auxiliary compensation acting in heat.	−0·8	−1·8	−2·0	−2·6	−1·8	−0·6	−1·0	+3·4	+6·2	+7·7	+8·9	+8·4
Johannsen & Co.	4413	2	Auxiliary compensation acting in heat.	+3·0	+2·5	+0·4	−1·0	+0·7	+1·8	+1·6	−2·9	−4·4	−2·8	−2·0	+3·9
Johannsen & Co.	4457	2	Auxiliary compensation acting in heat.	+3·6	+4·4	+1·9	+2·7	+7·0	+11·2	+10·5	+9·0	+7·4	+10·1	+10·0	+6·4
Johannsen & Co.	4410	2	Auxiliary compensation acting in heat.	+0·2	−0·7	−1·8	−2·6	−0·8	+0·5	+1·0	+5·5	+3·6	+4·6	+7·2	+6·5
Weir	5/4008	2	Reverse detent; compensation acting [in extremes.	−13·5	−13·9	−15·0	−15·9	−15·1	−13·1	−11·9	−12·0	−12·3	−9·1	−11·0	−7·5
Haswell & Sons	2923	2	Non-magnetic balance and spring.	−20·9	−18·1	−20·2	−22·1	−20·9	−19·7	−21·0	−25·2	−27·3	−25·8	−26·1	−19·6
Webb	5650	2	Palladium balance and spring.	+14·6	+8·7	+4·9	+2·9	+4·5	+5·2	+5·1	−1·4	−2·3	+0·7	−0·1	+5·6
Johannsen & Co.	4401	2	Auxiliary compensation acting in heat.	+2·2	0·0	−4·0	−7·4	−7·1	−0·7	−1·6	−0·4	+2·3	+2·6	+2·0	+3·8
E. Dent & Co.	46551	2	Dent's balance.	+7·0	+6·8	+7·4	+9·2	+11·5	+11·4	+10·2	+12·6	+14·8	+17·7	+21·2	+16·1
Johannsen & Co.	4311	2	Auxiliary compensation acting in heat.	+2·3	−1·0	−2·4	−2·9	−2·1	+0·1	+0·9	+5·9	+7·5	+7·9	+9·1	+8·7
E. Dent & Co.	46115	2	Dent's balance.	+14·2	+13·3	+14·0	+14·4	+13·6	+14·3	+11·8	+22·0	+23·1	+23·7	+24·5	+15·8
Mercer	5739	2	Improved ordinary balance.	−27·0	−25·7	−23·4	−22·8	−20·4	−20·6	−19·7	−14·2	−20·4	−25·5	−18·2	−21·2
Isaac	1936	2	Auxiliary to balance.	+4·5	+4·1	+7·4	+9·0	+11·0	+12·2	+11·3	+15·9	+19·2	+22·6	+21·8	+19·3
E. Dent & Co.	45726	2	Dent's balance.	+9·8	+3·5	+2·5	+2·0	+2·5	+1·8	+2·9	+12·2	+13·4	+13·1	+18·8	+13·4
Chronometrical Thermometer			......	s +156·3	s +389·2	s +294·8	s +199·9	s +221·8	s +389·3	s +596·4	s −1534·0	s −2697·6	s −2708·3	s −1753·6	s +836·4
Mean Weekly Temperature			......	66·2°	63·4°	65·3°	66·7°	65·8°	64·6°	62·1°	84·2°	97·3°	97·2°	86·4°	58·6°
Extremes of Temperature as shown by the Self-Registering Thermometers			......	62·9°–70·2°	62·3°–64·5°	63·1°–68·6°	64·4°–70·2°	64·1°–67·2°	61·7°–67·9°	60·6°–63·7°	71·4°–89·0°	86·8°–106·0°	91·6°–104·6°	82·4°–89·1°	54·8°–62·4°

Name of Maker.	No.	Sept. 29 to Oct. 6	Oct. 6—13	Oct. 13—20	Oct. 20—27	Oct. 27 to Nov. 3	Nov. 3—10	Nov. 10—17 †	Nov. 17—24 †	Nov. 24 to Dec. 1 †	Dec. 1—8 †	Dec. 8—15	Dec. 15—22	Dec. 22—29	Dec. 29 to Jan. 5	Jan. 5—12	Jan. 12—19	Jan. 19—26
		s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s
Kullberg	5433	−2·4	−2·5	−2·8	−2·0	−3·8	−4·4	−1·6	−4·0	−2·7	−1·3	−2·3	−2·4	−3·8	−2·8	−2·5	−2·1	−2·4
Kullberg	5431	+0·3	+1·1	+0·4	+1·6	+0·6	+0·5	+1·1	−0·1	−1·9	−0·5	−3·2	−1·8	−4·4	−3·8	−5·3	−4·2	−2·5
Isaac	1935	−4·0	−2·2	−2·9	−5·1	−5·1	−3·7	−2·7	−2·2	−3·1	−0·3	−3·4	−2·5	−2·9	−2·5	−3·1	−3·6	−3·9
Johannsen & Co.	4498	−5·9	−5·1	−4·9	−4·8	−4·7	−4·9	−2·1	−0·4	+0·3	−1·8	−3·5	−1·6	−3·6	−3·1	−5·2	−6·0	−6·4
Kullberg	5427	−7·8	−6·1	−8·1	−6·3	−5·0	−5·4	−2·5	−3·7	−5·0	−4·0	−8·3	−7·5	−8·5	−8·3	−9·3	−8·3	−7·8
Johannsen & Co.	4404	+1·9	+3·5	+4·2	+3·7	+2·1	+0·7	+4·5	+0·4	+0·5	+2·4	+1·2	+1·8	+1·1	+2·4	+2·4	+4·0	+3·9
Kullberg	5443	+0·2	+0·4	−1·7	−1·5	+0·1	+0·1	+2·5	+1·6	+1·9	+4·5	+4·0	+1·1	−0·5	+1·2	+1·5	+1·2	+0·6
Isaac	1938	+3·9	+5·5	+4·0	+5·0	+5·0	+4·8	+8·4	+5·4	+6·8	+9·9	+9·1	+8·2	+6·0	+4·8	+3·8	+4·0	+5·9
E. Dent & Co.	47079	−10·3	−7·3	−7·7	−7·1	−10·4	−10·7	−8·4	−7·2	−8·6	−9·9	−8·1	−6·0	−10·3	−10·2	−10·0	−5·8	−6·1
Johannsen & Co.	4325	+4·0	+5·7	+6·0	+7·2	+9·2	+8·5	+8·6	+6·0	+6·8	+7·3	+5·5	+6·2	+7·6	+6·5	+6·6	+6·8	+6·9
E. Dent & Co.	46757	+4·8	+3·8	+2·5	+4·7	+4·5	+5·9	+5·1	+3·5	+5·7	+5·3	+3·5	+2·0	+2·3	−0·9	−0·0	+2·1	+4·8
J. Bruce & Son	1218	+6·3	+6·8	+8·2	+8·4	+4·2	+4·2	+7·9	+2·0	+0·1	+4·6	+7·3	+8·1	+8·0	+8·4	+8·7	+8·9	+9·2
E. Dent & Co.	46555	−5·9	−6·3	−7·3	−2·6	−6·7	−5·0	−6·6	−11·5	−11·8	−8·5	−9·9	−4·9	−10·4	−9·0	−11·0	−7·7	−8·0
E. Dent & Co.	46982	+3·6	+5·0	+3·6	+3·3	+5·7	+6·5	+9·0	+4·4	+4·4	+10·4	+6·1	+6·7	+6·1	+7·1	+8·2	+6·9	+6·0
E. Dent & Co.	46168	−2·7	−0·4	−3·2	−1·1	+0·4	−0·2	+0·7	−1·0	+1·0	+2·5	−0·3	−0·3	−3·2	−4·0	−4·6	−2·6	−3·3
Kullberg	5445	+1·7	+3·5	+1·9	+3·8	+2·8	+0·9	+2·4	−3·7	−4·4	−1·3	−5·2	−6·0	−5·6	−7·2	−8·0	−7·7	−6·5
Kullberg	5391	+7·9	+7·6	+6·9	+7·5	+6·1	+5·6	+5·5	+5·4	+7·8	+11·9	+9·8	+8·5	+7·2	+7·3	+6·6	+7·5	+5·9
E. Dent & Co.	46550	+5·9	+4·9	+6·7	+6·0	+4·0	+5·7	+3·4	−2·7	−4·0	+2·7	−0·4	+4·4	+3·2	+2·9	+3·0	+3·0	+3·0
Jefferson	922	+3·8	+1·9	+3·6	+6·7	+4·1	+3·8	+3·2	+7·0	+7·7	+8·6	+14·4	+10·9	+10·1	+11·8	+11·6	+11·5	+11·4
Johannsen & Co.	4462	+6·7	+8·1	+7·5	+8·3	+5·6	+3·1	+7·3	+5·7	+8·4	+10·9	+11·1	+13·3	+10·2	+9·4	+7·7	+6·7	+6·8
Johannsen & Co.	4405	−7·3	−3·9	−2·1	−2·4	−5·7	−6·2	−5·5	−10·6	−7·0	−4·1	+1·6	+2·6	+2·0	+4·0	+2·9	+0·4	−3·4
Johannsen & Co.	4456	+6·3	+3·4	+2·9	+2·3	+1·6	+1·8	+5·0	+11·0	+12·1	+11·7	+8·2	+6·2	+5·3	+3·5	+1·6	+2·0	+2·5
Johannsen & Co.	4413	+0·3	+1·9	+2·9	+3·3	+1·3	+0·6	+4·4	0·0	0·0	+0·7	+4·0	+4·7	+6·0	+8·3	+9·7	+10·9	+10·1
Johannsen & Co.	4457	+8·4	+12·0	+12·0	+11·1	+12·6	+12·5	+12·4	+15·9	+15·0	+16·8	+10·7	+10·2	+9·0	+6·8	+5·2	+4·5	+4·7
Johannsen & Co.	4410	+7·8	+10·0	+11·6	+9·1	+3·7	+3·6	+8·3	+8·0	+8·8	+9·7	+11·2	+13·8	+11·2	+11·2	+11·1	+11·0	+10·1
Weir	5/4008	−8·2	−9·0	−9·6	−9·0	−10·7	−10·0	−5·3	−6·2	−4·4	−3·7	−1·4	−1·9	−1·2	0·0	−0·3	+0·5	+3·0
Haswell & Sons	2923	−21·6	−25·2	−24·9	−25·7	−30·2	−31·6	−29·6	−33·0	−31·5	−30·3	−23·6	−26·1	−27·4	−24·2	−23·1	−23·8	−26·2
Webb	5650	+5·3	+3·6	+5·4	+6·3	+6·3	+8·6	+6·8	+2·9	+3·7	+5·6	+7·8	+8·2	+7·5	+9·3	+9·7	+9·0	+8·3
Johannsen & Co.	4401	+2·2	+4·1	+4·7	+5·3	+3·7	+4·9	+6·2	+5·6	+6·3	+6·3	+7·8	+7·5	+8·1	+9·1	+9·3	+10·2	+0·9
E. Dent & Co.	46551	+13·1	+14·1	+17·6	+19·7	+18·9	+15·7	+14·4	+14·1	+15·0	+17·6	+10·2	+11·1	+8·9	+11·0	+7·9	+7·7	+5·0
Johannsen & Co.	4311	+12·4	+9·9	+10·5	+9·5	+6·0	+6·0	+5·6	+7·3	+8·0	+9·9	+14·8	+16·4	+18·3	+19·7	+19·1	+17·4	+14·5
E. Dent & Co.	46115	+15·2	+13·8	+13·0	+13·2	+13·0	+13·7	+18·8	+22·4	+22·6	+22·2	+17·8	+17·8	+16·2	+14·7	+14·0	+14·1	+12·7
Mercer	5739	−15·2	−13·8	−12·0	−11·5	−13·0	−13·0	−10·9	−14·7	−12·7	−10·9	−17·4	−9·9	−10·6	−11·0	−10·5	−9·8	−8·0
Isaac	1936	+16·3	+17·7	+16·4	+17·7	+20·4	+18·8	+21·9	+26·3	+28·0	+28·3	+23·1	+24·8	+25·0	+23·3	+21·5	+24·2	+25·3
E. Dent & Co.	45726	+7·7	+6·7	+11·1	+4·9	+9·6	+8·9	+11·1	+8·2	+4·6	+6·3	+3·9	+10·5	+13·6	+14·0	+15·6	+12·1	+11·2
Chronometrical Thermometer.		s +960·7	s +883·8	s +1226·9	s +1301·9	s +883·8	s +867·9	s −391·2	s −2179·3	s −2050·8	s −1016·1	s +1309·4	s +1477·8	s +1589·8	s +1940·2	s +2048·8	s +1991·4	s +1713·4
Mean Weekly Temperature.		56·4°	57·8°	54·4°	54·3°	59·2°	59·0°	76·2°	92·5°	91·4°	79·1°	50·9°	51·3°	49·9°	46·1°	45·4°	45·9°	48·9°
Extremes of Temperature as shown by the Self-Registering Thermometers.		54·5°–57·9°	56·0°–60·2°	50·7°–60·4°	48·8°–64·4°	55·5°–62·4°	55·4°–61·8°	67·2°–90·2°	84·1°–97·6°	83·3°–96·7°	74·6°–84·5°	48·7°–53·6°	48·9°–54·0°	47·0°–52·4°	41·8°–51·2°	41·1°–53·1°	40·5°–51·1°	44·2°–54·0°

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 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.

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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(I.) WEEKLY RATES

NAME OF MAKER.	No.	Wheels 2 or 3 days.	Construction of Escapement and Balance, from the Description furnished by the Maker.	July 7—14	July 14—21	July 21—28	July 28 to Aug. 4	Aug. 4—11	Aug. 11—18	Aug. 18—25	Aug. 25 to Sept. 1 †	Sept. 1—8 †	Sept. 8—15 †	Sept. 13—22 †	Sept. 22—29
				s	s	s	s	s	s	s	s	s	s	s	s
Johannsen & Co.	4237	2	Auxiliary compensation acting in heat.	− 0·6	− 0·2	− 3·8	− 5·1	− 2·0	− 1·8	− 1·5	+ 8·2	+ 1·8	− 5·4	− 1·5	+ 2·3
Webb	5649	2	Ordinary balance.	−46·2	−45·5	−46·4	−44·9	−46·0	−43·7	−45·0	−41·3	−37·4	−33·8	−36·8	−40·1
Isaac	1890	2	Auxiliary to balance.	+ 2·5	+ 2·1	− 4·9	+ 8·1	− 6·1	− 6·2	− 8·0	−13·5	− 7·7	− 5·4	− 2·4	− 4·0
Isaac	1925	2	Auxiliary to balance.	+ 2·6	+ 3·0	+ 4·3	+ 5·1	+ 0·4	+ 6·6	+ 4·1	+10·9	+ 7·0	+ 9·0	+12·4	+ 9·2
Kendal & Dent.	5663	2	Reverse detent; short spring.	−44·0	−48·0	−50·7	−51·6	−52·1	−51·5	−51·7	−50·0	−52·6	−45·2	−48·5	−45·5
E. Dent & Co.	46755	2	Dent's balance.	−12·1	−10·7	− 8·9	−10·6	− 8·8	− 8·9	−13·5	−12·2	−12·6	−12·9	− 4·5	− 4·6
Usher & Cole	8150	2	Poole's auxiliary with an addition acting in extremes.	−15·6	−13·0	−10·4	− 9·9	− 7·3	− 7·0	− 5·8	− 3·5	+ 0·8	+ 3·7	+ 4·6	0·0
E. Dent & Co.	46756	2	Dent's balance.	+ 4·0	+ 6·4	+10·3	+ 9·8	+ 9·4	+ 6·9	+ 6·4	+ 1·3	− 3·5	− 4·0	+ 0·2	+ 8·5
Mercer	5484	2	Improved ordinary balance.	−24·8	−24·8	−25·5	−24·2	−22·7	−21·2	−22·0	−22·4	−30·5	−32·7	−27·5	−25·9
J. Bruce & Son	1217	2	Auxiliary compensation acting in heat.	− 2·0	− 2·9	− 9·4	− 8·4	− 4·5	+ 1·0	0·0	− 1·5	− 8·0	− 7·3	− 3·3	+ 4·3
Kendal & Dent.	6584	2	Auxiliary compensation acting in extremes.	+ 2·7	+ 4·3	+ 3·3	+ 2·3	+ 3·8	+ 7·2	+ 4·5	+ 5·9	+ 6·8	+ 9·3	+12·8	+ 9·2
Johannsen & Co.	4433	2	Auxiliary compensation acting in heat.	+ 4·4	+ 4·2	+ 1·6	+ 2·5	+ 3·8	+ 5·0	+ 5·2	+10·9	+ 7·5	+ 5·9	+ 9·9	+10·4
Johannsen & Co.	4497	2	Auxiliary compensation acting in heat.	+ 4·3	+ 4·4	+ 2·7	+ 3·0	+ 4·7	+ 8·5	+ 9·2	+11·6	+12·2	+21·8	+22·2	+16·4
Keys	962	2	Auxiliary compensation.	− 3·9	− 0·3	− 5·5	− 4·8	− 5·9	−11·0	− 0·1	+10·6	+ 3·2	+ 3·7	+ 8·9	+ 5·0
M. F. Dent	31047	2	Auxiliary acting in lower temperatures.	+ 6·4	+ 4·0	+ 6·9	+ 7·3	+ 6·0	+ 4·9	+ 3·4	+ 5·3	− 5·9	+ 5·9	+ 1·1	− 7·0
Haswell & Sons	2921	2	Non-magnetic balance and spring.	+21·0	+21·3	+19·0	+18·5	+19·1	+19·2	+19·7	+17·6	+19·8	+23·8	+23·8	+26·2
Johannsen & Co.	4400	2	Auxiliary compensation acting in heat.	+ 3·8	− 3·9	− 5·4	− 5·8	− 5·2	− 2·0	− 1·1	+ 3·6	+ 5·5	+12·3	+20·7	+18·5
Clerke	1736	2	Ordinary balance.	+ 2·7	− 0·9	− 1·9	− 0·4	− 0·1	+ 0·3	− 3·1	− 3·0	−14·2	−13·1	− 4·8	− 1·9
Kendal & Dent.	5664	2	Reverse detent; short spring.	+ 9·0	+ 7·8	+ 6·3	+ 3·6	+ 1·6	+ 0·9	+ 0·6	+ 9·0	+11·3	+11·5	+10·9	+ 7·1
Johannsen & Co.	4266	2	Auxiliary compensation acting in heat.	− 0·7	− 2·1	− 4·1	− 4·7	− 3·7	− 1·6	− 0·6	+ 9·1	+ 8·4	+13·2	+20·6	+21·6
Frodsham & Keen	3868	2	Improved ordinary balance.	−22·8	−26·2	−27·4	−26·9	−24·0	−22·0	−23·3	−19·8	−24·1	−24·3	−21·7	−16·9
Isaac	1930	2	Auxiliary to balance.	− 5·7	− 7·6	− 8·1	− 8·7	− 8·7	− 7·3	− 7·7	−14·8	−13·4	−10·7	− 1·7	− 2·6
Webb	5648	2	Ordinary balance.	−19·0	−20·9	−19·8	−19·2	−17·6	−15·9	−13·0	−16·4	−17·7	−16·5	−17·1	− 5·6
Kendal & Dent.	6585	2	Auxiliary compensation acting in extremes.	− 9·3	− 9·2	− 8·4	− 6·0	− 2·9	− 2·2	− 2·9	− 2·5	−11·4	−16·5	− 9·0	− 2·3
Pyott	960	2	Improved ordinary balance.	+ 7·7	+ 7·0	+ 2·0	+ 1·1	+ 3·9	+ 9·0	+11·0	+18·0	+19·4	+25·0	+30·6	+29·6
				s	s	s	s	s	s	s	s	s	s	s	s
Chronometrical Thermometer			.....	+156·3	+389·2	+294·8	+199·9	+221·8	+389·3	+596·4	−1534·0	−2697·6	−2708·3	−1768·6	+835·4
				°	°	°	°	°	°	°	°	°	°	°	°
Mean Weekly Temperature			.....	66·2	63·4	65·3	66·7	65·8	64·6	62·1	84·2	97·3	97·2	86·4	58·6
				° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °
Extremes of Temperature as shown by the Self-Registering Thermometers			.....	62·9–70·2	62·3–64·5	63·1–68·6	64·4–70·2	64·1–67·2	61·7–67·9	60·6–63·7	71·4–89·0	86·8–106·0	91·6–104·6	82·4–89·1	54·8–62·4

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 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.

IN ORDER OF TIME.

Sept. 29 to Oct. 6	Oct. 6—13	Oct. 13—20	Oct. 20—27	Oct. 27 to Nov. 3	Nov. 3—10	Nov. 10—17 †	Nov. 17—24 †	Nov. 24 to Dec. 1 †	Dec. 1—8 †	Dec. 8—15	Dec. 15—22	Dec. 22—29	Dec. 29 to Jan. 5	Jan. 5—12	Jan. 12—19	Jan. 19—26	NAME OF MAKER.	No.
s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s		
+ 4·7	+ 3·2	+ 6·8	+ 8·3	+ 6·8	+ 3·9	+ 8·1	+ 1·6	− 2·4	+ 5·3	− 4·5	− 0·8	+ 1·2	+ 3·6	+10·6	+10·2	+ 9·8	Johannsen & Co.	4237
−46·4	−38·3	−38·9	−39·1	−40·4	−41·3	−39·5	−30·2	−29·2	−29·0	−35·0	−34·4	−35·1	−34·3	−33·6	−33·5	−34·0	Webb	5649
− 6·4	− 2·5	− 1·7	− 3·3	− 3·6	− 4·3	−12·1	−13·8	−12·3	− 9·9	−15·7	−10·4	−16·7	−18·0	−16·1	−15·4	−11·9	Isaac	1890
+12·4	+13·0	+14·4	+15·5	+12·5	+11·2	+17·6	+21·2	+22·0	+22·5	+20·4	+21·6	+22·9	+23·4	+24·1	+24·3	+25·6	Isaac	1925
−44·5	−44·9	−42·8	−41·4	−44·1	−44·6	−49·2	−50·2	−47·8	−46·0	−49·2	−37·5	−35·9	−32·5	−30·5	−30·2	−30·8	Kendal & Dent.	5663
− 6·2	− 8·3	− 9·2	− 7·9	− 4·4	− 1·7	− 3·3	− 6·0	− 7·4	−10·7	+ 0·2	+ 1·7	+ 1·5	+ 2·6	+ 1·2	+ 2·4	− 0·4	E. Dent & Co.	46755
+ 1·3	+ 3·3	+ 4·3	+ 5·5	+ 5·1	+ 6·6	+ 2·1	+ 7·3	+ 5·3	+ 2·3	+ 5·5	+ 5·9	+ 6·6	+ 9·1	+11·9	+14·1	+13·5	U-her & Cole	8150
+ 7·3	+10·0	+11·0	+12·0	+ 7·0	+13·7	+10·4	+ 5·7	+ 8·2	+13·0	+15·7	+18·2	+18·5	+16·5	+10·3	+16·3	+16·3	E. Dent & Co.	46756
−26·6	−23·5	−23·2	−26·2	−21·4	−21·0	−20·3	−32·6	−34·9	−31·2	−32·3	−30·4	−31·0	−31·6	−30·9	−30·1	−29·0	Mercer	5484
+ 6·6	+ 6·0	+ 5·4	+ 6·2	+ 5·0	+ 3·6	+ 5·2	− 4·2	− 4·1	− 2·2	+ 7·0	+11·5	+ 9·1	+ 5·7	+ 6·6	+ 6·7	+ 8·6	J. Bruce & Son	1217
+13·4	+16·3	+17·9	+19·5	+17·9	+19·0	+21·9	+15·0	+22·0	+22·3	+19·8	+24·5	+25·5	+29·8	+29·7	+33·0	+31·5	Kendal & Dent.	6584
+13·4	+12·8	+16·5	+18·8	+13·6	+13·1	+15·4	+10·1	+ 7·9	+ 7·6	+10·4	+13·4	+18·6	+20·4	+19·2	+24·5	+22·5	Johannsen & Co.	4433
+16·1	+18·4	+18·8	+22·7	+20·4	+17·5	+16·7	+24·4	+26·9	+28·7	+24·9	+21·4	+22·3	+28·4	+28·4	+26·8	+26·1	Johannsen & Co.	4497
+ 4·6	+ 3·2	+ 2·7	+ 1·9	+ 1·0	+ 1·2	+ 4·5	+ 7·0	+ 6·5	+ 7·0	+ 5·4	+ 7·2	+ 9·0	+ 5·9	+ 9·6	+ 6·9	+ 7·8	Keys	962
− 5·5	− 0·5	+ 3·7	+ 6·6	+ 5·7	+ 4·5	+ 5·4	− 3·4	+ 3·7	+ 5·8	− 1·8	+ 4·6	+ 5·7	+ 9·8	+11·6	+13·2	+12·5	M. F. Dent	31047
+24·8	+22·9	+24·9	+26·4	+21·8	+21·2	+20·8	+21·4	+27·4	+31·3	+41·6	+38·3	+38·1	+41·8	+43·0	+43·1	+40·9	Haswell & Sons	2921
+15·8	+16·0	+18·4	+17·5	+15·0	+14·8	+19·7	+16·5	+19·3	+20·4	+18·8	+18·7	+19·8	+23·2	+24·0	+21·6	+20·3	Johannsen & Co.	4400
− 1·1	+ 1·9	+ 0·9	+ 1·2	+ 3·0	+ 1·1	+ 7·4	− 5·1	− 1·6	+ 7·0	− 0·2	+ 1·6	+ 0·7	− 2·8	− 3·9	− 3·4	− 0·4	Clerke	1736
+ 8·4	+ 7·1	− 5·9	+ 6·4	+ 6·6	+ 7·4	− 0·5	+17·9	+25·0	+23·8	+12·9	+11·4	+10·0	+ 9·9	+ 9·7	+ 9·6	+11·6	Kendal & Dent.	5664
+21·6	+20·3	+21·6	+24·9	+16·0	+ 7·6	+14·5	+ 8·9	+15·5	+22·3	+23·4	+20·3	+16·5	+15·4	+14·8	+14·9	+20·0	Johannsen & Co.	4266
−16·5	−16·5	−13·7	−14·0	−19·0	−19·1	−21·6	−33·6	−32·5	−27·6	−17·8	−12·8	−11·2	− 9·2	− 9·6	− 8·4	− 9·0	Frodsham & Keen	3868
+ 0·5	− 8·7	−12·6	−14·9	−14·7	−12·4	+ 2·0	+ 4·1	+ 2·4	+ 7·7	+ 7·8	+ 6·1	− 1·3	+ 1·8	+ 3·0	− 3·2	−10·8	Isaac	1930
− 5·6	− 7·5	− 8·7	− 7·5	− 5·7	− 6·1	−12·5	−17·2	−14·2	− 9·6	− 0·1	+ 4·9	+ 5·5	+ 0·1	+ 3·1	+ 6·3	+ 7·7	Webb	5648
− 9·4	− 9·1	− 4·7	+ 2·3	− 7·4	− 4·4	− 2·6	−19·1	−14·1	−12·7	+ 0·2	+ 2·3	+ 1·7	+ 6·1	+ 7·3	+ 8·6	+ 5·2	Kendal & Dent.	6585
+30·3	+29·7	+34·2	+34·9	+29·7	+27·2	+29·0	+31·0	+29·2	+32·2	+36·5	+38·4	+38·5	+41·0	+43·2	+43·0	+41·8	Pyott	960
s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s		
+960·7	+883·8	+1226·9	+1301·9	+883·8	+857·9	−391·2	−2179·3	−2050·8	−1016·1	+1309·4	+1477·8	+1589·8	+1940·2	+2048·8	+1991·4	+1713·4	Chronometrical Thermometer.	
°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	Mean Weekly Temperature.	
56·4	57·8	54·4	54·3	59·2	59·0	76·2	92·5	91·4	79·1	50·9	51·3	49·9	46·1	45·4	45·9	48·9		
° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	° °	Extremes of Temperature as shown by the Self-Registering Thermometers.	
54·5–57·9	56·0–60·2	50·7–60·4	48·8–64·4	55·5–62·4	55·4–61·8	67·2–90·2	84·1–97·6	83·3–96·7	74·6–84·5	48·7–53·6	48·9–54·0	47·0–52·4	41·8–51·2	41·1–53·1	40·5–51·4	44·2–54·0		

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 RATES IN 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. 5—12	Jan. 12—19	Dec. 29 to Jan. 5.	Jan. 19—26	Dec. 22—29	Dec. 15—22	Dec. 8—15	Oct. 20—27	Oct. 13—20	Sept. 29 to Oct. 6	Oct. 6—13	Oct. 27. to Nov. 3
				s	s	s	s	s	s	s	s	s	s	s	s
Kullberg	5433	2	Kullberg's auxiliary: reversed detent.	−2·5	−2·1	−2·8	−2·4	−3·8	−2·4	−2·3	−2·0	−2·8	−2·4	−2·5	−3·8
Kullberg	5431	2	Kullberg's auxiliary; reversed detent.	−5·3	−4·2	−3·8	−2·5	−4·4	−1·8	−3·2	+1·6	+0·4	+0·3	+1·1	+0·6
Isaac	1935	2	Auxiliary to balance.	−3·1	−3·6	−2·5	−3·9	−2·9	−2·5	−3·4	−5·1	−2·9	−4·0	−2·2	−5·1
Johannsen & Co.	4498	2	Auxiliary compensation acting in heat.	−5·2	−6·0	−3·1	−6·4	−3·6	−1·6	−3·5	−4·8	−4·9	−5·9	−5·1	−4·7
Kullberg	5427	2	Kullberg's auxiliary; reversed detent.	−9·3	−8·3	−8·3	−7·8	−8·5	−7·5	−8·3	−6·3	−8·1	−7·8	−6·1	−5·0
Johannsen & Co.	4404	2	Auxiliary compensation acting in heat.	+2·4	+4·0	+2·4	+3·9	+1·1	+1·8	+1·2	+3·7	+4·2	+1·9	+3·5	+2·1
Kullberg	5443	2	Kullberg's auxiliary; reversed detent.	+1·5	+1·2	+1·2	+0·6	−0·5	+1·1	+4·0	−1·5	−1·7	+0·2	+0·4	+0·1
Isaac	1938	2	Auxiliary to balance.	+3·8	+4·0	+4·8	+5·9	+6·0	+8·2	+9·1	+5·0	+4·0	+3·9	+5·5	+5·0
E. Dent & Co.	47079	2	Dent's balance.	−10·0	−5·8	−10·2	−6·1	−10·3	−6·0	−8·1	−7·1	−7·7	−10·3	−7·3	−10·4
Johannsen & Co.	4325	2	Auxiliary compensation acting in heat.	+6·6	+6·8	+6·5	+6·9	+7·6	+6·2	+5·5	+7·2	+6·0	+4·0	+5·7	+9·2
E. Dent & Co.	46757	2	Dent's balance.	−0·9	+2·1	−0·9	+4·8	+2·3	+2·0	+3·5	+4·7	+2·5	+4·8	+3·8	+4·5
J. Bruce & Son	1218	2	Auxiliary compensation acting in heat.	+8·7	+8·9	+8·4	+9·2	+8·0	+8·1	+7·3	+8·4	+8·2	+6·3	+6·8	+4·2
E. Dent & Co.	46555	2	Dent's balance.	−11·0	−7·7	−9·0	−8·0	−10·4	−4·9	−9·9	−2·6	−7·3	−5·9	−6·3	−6·7
E. Dent & Co.	46982	2	Dent's balance.	+8·2	+6·9	+7·1	+6·0	+6·1	+6·7	+6·1	+3·3	+3·6	+3·6	+5·0	+5·7
E. Dent & Co.	46168	2	Dent's balance.	−4·6	−2·6	−4·0	−3·3	−3·2	−0·3	−0·3	−1·1	−3·2	−2·7	−0·4	+0·4
Kullberg	5445	2	Kullberg's auxiliary: reversed detent.	−8·0	−7·7	−7·2	−6·5	−5·6	−6·0	−5·2	+3·8	+1·9	+1·7	+3·5	+2·8
Kullberg	5391	2	Kullberg's auxiliary; reversed detent.	+6·6	+7·5	+7·3	+5·9	+7·2	+8·5	+9·8	+7·5	+6·9	+7·9	+7·6	+6·1
E. Dent & Co.	46550	2	Dent's balance.	+3·0	+3·0	+2·9	+3·0	+3·2	+4·4	−0·4	+6·0	+6·7	+5·9	+4·9	+4·0
Jefferson	922	2	Auxiliary to balance.	+11·6	+11·5	+11·8	+11·4	+10·1	+10·9	+14·4	+6·7	+3·6	+3·8	+1·9	+4·1
Johannsen & Co.	4462	2	Auxiliary compensation acting in heat.	+7·7	+6·7	+9·4	+6·8	+10·2	+13·3	+11·1	+8·3	+7·5	+6·7	+8·1	+5·6
Johannsen & Co.	4405	2	Auxiliary compensation acting in heat.	+2·9	+0·4	+4·0	−3·4	+2·0	+2·6	+1·6	−2·4	−2·1	−7·3	−3·9	−5·7
Johannsen & Co.	4456	2	Auxiliary compensation acting in heat.	+1·6	+2·0	+3·5	+2·5	+5·3	+6·2	+8·2	+2·3	+2·9	+6·3	+3·4	+1·6
Johannsen & Co.	4413	2	Auxiliary compensation acting in heat.	+9·7	+10·9	+8·3	+10·1	+6·0	+4·7	+4·0	+3·3	+2·9	+0·3	+1·9	+1·3
Johannsen & Co.	4457	2	Auxiliary compensation acting in heat.	+5·2	+4·5	+6·8	+4·7	+9·0	+10·2	+10·7	+11·1	+12·0	+8·4	+12·0	+12·6
Johnansen & Co.	4410	2	Auxiliary compensation acting in heat.	+11·1	+11·0	+11·2	+10·1	+11·2	+13·8	+11·2	+9·1	+11·6	+7·8	+10·0	+3·7
Weir	5/4668	2	Reverse detent; compensation acting in [extremes.	−0·3	+0·5	0·0	+3·0	−1·2	−1·9	−1·4	−9·0	−9·6	−8·2	−9·0	−10·7
Haswell & Sons	2923	2	Non-magnetic balance and spring.	−23·1	−23·8	−24·2	−26·2	−27·4	−26·1	−23·6	−25·7	−24·9	−21·6	−25·2	−30·2
Webb	5650	2	Palladium balance and spring.	+9·7	+9·0	+9·3	+8·3	+7·5	+8·2	+7·8	+6·3	+5·4	+5·3	+3·6	+6·3
Johannsen & Co.	4401	2	Auxiliary compensation acting in heat.	+9·3	+10·2	+9·1	+9·9	+8·1	+7·5	+7·8	+5·3	+4·7	+2·2	+4·1	+3·7
E. Dent & Co.	46551	2	Dent's balance.	+7·9	+7·7	+11·0	+5·0	+8·9	+11·1	+10·2	+19·7	+17·6	+13·1	+14·1	+18·9
Johannsen & Co.	4311	2	Auxiliary compensation acting in heat.	+19·1	+17·4	+19·7	+14·5	+18·3	+16·4	+14·8	+9·5	+10·5	+12·4	+9·9	+6·0
E. Dent & Co.	46115	2	Dent's balance.	+14·0	+14·1	+14·7	+12·7	+16·2	+17·8	+17·8	+13·2	+13·0	+15·2	+13·8	+13·0
Mercer	5739	2	Improved ordinary balance.	−10·5	−9·8	−11·0	−8·0	−10·6	−9·9	−17·4	−11·5	−12·0	−15·2	−13·8	−13·0
Isaac	1936	2	Auxiliary to balance.	+21·5	+24·2	+23·3	+25·3	+25·0	+24·8	+23·1	+17·7	+16·4	+16·3	+17·7	+20·4
E. Dent & Co.	45726	2	Dent's balance.	+15·6	+12·1	+14·6	+11·2	+13·6	+10·5	+3·9	+4·9	+11·1	+7·7	+6·7	+9·6
Chronometrical Thermometer			......	s +2048·8	s +1991·4	s +1940·2	s +1713·4	s +1589·8	s +1477·8	s +1309·4	s +1301·9	s +1226·9	s +960·7	s +883·8	s +883·8
Mean Weekly Temperature			......	° 45·4	° 45·9	° 46·1	° 48·9	° 49·9	° 51·3	° 50·9	° 54·3	° 54·4	° 56·4	° 57·8	° 59·2
Extremes of Temperature as shown by the Self-Registering Thermometers			......	41·1–53·1	40·5–51·4	41·8–51·2	44·2–54·0	47·0–52·4	48·9–54·0	48·7–53·6	48·8–64·4	50·7–60·4	54·5–57·9	56·0–60·2	55·5–62·4

Nov. 3—10	Sept. 22—29	Aug. 18—25	Aug. 11—18	July 14—21	July 21—28	Aug. 4—11	July 23 to Aug. 4	July 7—14	Nov. 10—17 †	Dec. 1—8 †	Aug. 25 to Sept. 1 †	Sept. 15—22 †	Nov. 24 to Dec. 1 †	Nov. 17—24 †	Sept. 1—8 †	Sept. 8—15 †	NAME OF MAKER.	No.
s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s		
−4·4	−2·1	−5·0	−2·9	−4·2	−2·5	−2·6	−2·8	−3·8	−1·6	−1·3	−1·6	−1·8	−2·7	−4·0	−2·9	−2·2	Kullberg	5433
+0·5	+1·6	+1·4	+3·1	+1·9	+2·4	+3·4	+2·5	+2·9	+1·1	−0·5	+1·9	+1·4	−1·9	−0·1	+0·2	−0·2	Kullberg	5431
−3·7	−5·0	−1·8	−1·2	−2·1	−4·9	−2·1	−5·5	−1·6	−2·7	−0·3	−5·2	−6·5	−3·1	−2·2	−5·9	−7·7	Isaac	1935
−4·9	−6·0	−7·9	−7·6	−7·7	−7·6	−7·9	−8·5	−5·4	−2·1	−1·8	−4·1	−3·8	+0·3	−0·4	−3·3	−4·0	Johannsen & Co.	4498
−5·4	−6·9	−4·2	−3·5	−2·1	−1·8	−3·2	−2·4	−2·0	−2·5	−4·0	−1·4	−3·0	−5·0	−3·7	−1·9	−3·8	Kullberg	5427
+0·7	+1·2	+2·0	+2·7	+3·6	−1·7	−0·1	−1·7	+4·5	+4·5	+2·4	+3·4	+2·7	+0·5	+0·4	+0·4	+0·2	Johannsen & Co.	4404
+0·1	+2·6	−3·8	−3·7	−3·1	−2·7	−3·8	−3·3	−2·7	+2·5	+4·5	−4·4	+3·4	+1·9	+1·6	−3·2	+0·9	Kullberg	5443
+4·8	+7·0	−0·1	+2·1	+0·8	+0·2	+1·5	+0·3	+2·4	+8·4	+9·9	+2·1	+6·6	+6·8	+5·4	+1·9	+3·4	Isaac	1938
−10·7	−9·6	−9·5	−7·6	−11·4	−10·6	−8·3	−9·0	−10·5	−8·4	−9·9	−5·9	−6·1	−8·6	−7·2	−2·6	−4·3	E. Dent & Co.	47079
+8·5	+4·5	+6·8	+6·2	+3·7	+6·5	+5·9	+5·8	+2·8	+8·6	+7·3	+4·5	+6·1	+6·8	+6·0	+1·2	+0·7	Johannsen & Co.	4325
+5·9	+6·2	+2·9	+2·5	+6·2	+7·0	+4·6	+4·6	+5·4	+5·1	+5·3	+2·0	+4·0	+5·7	+3·5	−0·6	−2·4	E. Dent & Co.	46757
+4·2	+4·9	+1·3	+3·7	+2·2	+2·3	+2·9	+1·8	+3·1	+7·9	+4·6	+2·6	−0·7	+0·1	+2·0	+0·2	−1·6	J. Bruce & Son	1218
−5·0	−8·8	−9·3	−11·0	−10·6	−12·2	−11·0	−12·9	−12·4	−6·6	−3·5	−11·9	−12·3	−11·8	−11·5	−12·8	−14·8	E. Dent & Co.	46555
+6·5	+4·9	+2·1	+2·8	+3·0	+0·2	−0·5	−0·1	+2·5	+9·0	+10·4	+1·1	+6·4	+4·4	+4·4	−0·6	0·0	E. Dent & Co.	46982
−0·2	+1·3	−2·0	−2·9	−5·8	−6·8	−5·4	−6·7	−4·6	+0·7	+2·5	−3·9	+2·7	+1·0	−1·0	−4·2	−4·5	E. Dent & Co.	46168
+0·9	+4·4	−0·4	−1·0	−2·4	−2·2	−1·1	−1·8	−0·2	+2·4	−1·3	+4·5	+2·7	−4·4	−3·7	+1·0	+0·8	Kullberg	5445
+5·6	+10·1	−3·9	−3·1	−4·4	−4·8	−4·3	−4·9	−3·8	+5·5	+11·9	0·0	+7·4	+7·8	+5·4	+1·0	+4·8	Kullberg	5391
+5·7	+4·8	+1·3	+0·7	−5·1	−4·7	−1·5	−3·8	−4·5	+3·4	+2·7	−3·9	+6·6	−4·0	−2·7	−3·0	+2·0	E. Dent & Co.	46550
+3·8	+1·7	+4·5	+4·2	+4·5	+3·2	+2·7	+1·2	+3·6	+3·2	+8·0	+7·8	+3·7	+7·7	+7·0	+1·6	+1·8	Jefferson	922
+3·1	+8·8	+0·7	+0·9	−0·1	−2·1	−1·0	−2·7	−1·6	+7·3	+10·9	−0·6	+3·9	+8·4	+5·7	−1·6	+2·5	Johannsen & Co.	4462
−6·2	−5·3	−6·9	−7·9	−6·1	−7·0	−8·7	−8·8	−2·3	−5·5	−4·1	−8·7	−8·5	−7·0	−10·6	−11·0	−8·1	Johannsen & Co.	4405
+1·8	+8·4	−1·0	−0·6	−1·8	−2·0	−1·8	−2·6	−0·8	+5·0	+11·7	+3·4	+8·0	+12·1	+11·0	+6·2	+7·7	Johannsen & Co.	4456
+0·6	+3·9	+1·6	+1·8	+2·5	+0·4	+0·7	−1·0	+3·0	+4·4	+0·7	−2·9	−2·0	0·0	0·0	−4·4	−2·8	Johannsen & Co.	4413
+12·5	+6·4	+10·5	+11·2	+4·4	+1·9	+7·0	+2·7	+3·6	+12·4	+16·8	+9·0	+10·0	+15·0	+15·9	+7·4	+10·1	Johannsen & Co.	4457
+3·6	+6·5	+1·0	+0·5	−0·7	−1·8	−0·8	−2·6	+0·2	+8·3	+9·7	+5·5	+7·2	+8·8	+8·0	+3·6	+4·6	Johannsen & Co.	4410
−10·0	−7·5	−11·9	−13·1	−13·9	−15·0	−15·1	−15·9	−13·5	−5·3	−3·7	−12·0	−11·0	−4·4	−6·2	−12·3	−9·1	Weir	5/4668
−31·6	−19·6	−21·0	−19·7	−18·1	−20·2	−20·9	−22·1	−20·9	−29·6	−30·3	−25·2	−26·1	−31·5	−33·0	−27·3	−25·8	Haswell & Sons	2923
+8·6	+5·6	+5·1	+5·2	+8·7	+4·9	+4·5	+2·9	+14·6	+6·8	+5·6	−1·4	−0·1	+3·7	+2·9	−2·3	+0·7	Webb	5650
+4·9	+3·8	−1·6	−0·7	0·0	−4·0	−7·1	−7·4	+2·2	+6·2	+6·3	−0·4	+2·0	+6·3	+5·6	+2·3	+2·6	Johannsen & Co.	4401
+15·7	+13·1	+10·2	+11·4	+6·8	+7·4	+11·5	+9·2	+7·0	+14·4	+17·6	+12·6	+21·2	+15·0	+14·1	+14·8	+17·7	E. Dent & Co.	46551
+6·0	+8·7	+0·9	+0·1	−1·0	−2·4	−2·1	−2·9	+2·3	+5·6	+9·9	+5·9	+9·1	+8·0	+7·3	+7·5	+7·9	Johannsen & Co.	4311
+13·7	+15·8	+11·8	+14·3	+13·3	+14·0	+13·6	+14·4	+14·2	+18·8	+22·2	+22·0	+24·5	+22·6	+22·4	+23·1	+23·7	E. Dent & Co.	46115
−13·0	−21·2	−19·7	−20·6	−25·7	−23·4	−30·4	−22·8	−27·0	−10·9	−10·9	−14·2	−18·2	−12·7	−14·7	−20·4	−25·5	Mercer	5739
+18·8	+19·3	+11·3	+12·2	+4·1	+7·4	+11·0	+9·0	+4·5	+21·9	+23·3	+15·9	+21·8	+23·0	+26·3	+19·2	+22·6	Isaac	1936
+8·9	+13·4	+2·9	+1·8	+3·5	+2·5	+2·5	+2·0	+9·8	+11·1	+6·3	+12·2	+18·8	+4·6	+8·2	+13·4	+13·1	E. Dent & Co.	45726
s +867·9	s +836·4	s +593·4	s +389·3	s +389·2	s +294·8	s +221·8	s +199·9	s +156·3	s −391·2	s −1016·1	s −1534·0	s −1758·6	s −2050·8	s −2179·3	s −2697·6	s −2708·3	Chronometrical Thermometer.	
° 59·0	° 58·6	° 62·1	° 64·6	° 63·4	° 65·3	° 65·8	° 66·7	° 63·2	° 76·2	° 79·1	° 84·2	° 86·4	° 91·4	° 92·5	° 97·3	° 97·2	Mean Weekly Temperature.	
55·4–61·8	54·8–62·4	60·6–63·7	61·7–67·9	62·3–64·5	63·1–63·6	64·1–67·2	64·4–70·2	62·0–70·2	67·2–90·2	74·6–84·5	71·4–89·0	82·4–89·1	83·3–96·7	84·1–97·6	86·8–106·0	91·6–104·6	Extremes of Temperature as shown by the Self-Registering Thermometers.	

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 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.

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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(IL) WEEKLY RATES IN

NAME OF MAKER.	No.	No. of Days.	Construction of Escapement and Balance, from the Description furnished by the Maker.	Jan. 5—12	Jan. 12—19	Dec. 29 to Jan. 5	Jan. 19—26	Dec. 22—29	Dec. 15—22	Dec. 8—15	Oct. 20—27	Oct. 13—20	Sept. 29 to Oct. 6	Oct. 6—13	Oct. 27 to Nov. 3
				s	s	s	s	s	s	s	s	s	s	s	s
Johannsen & Co.	4237	2	Auxiliary compensation acting in heat.	+10·6	+10·2	+ 3·6	+ 9·8	+ 1·2	− 0·8	− 4·5	+ 3·3	+ 6·8	+ 4·7	+ 3·2	+ 6·8
Webb	5649	2	Ordinary balance.	−33·0	−33·5	−34·3	−34·0	−35·1	−34·4	−35·0	−39·1	−35·5	−40·1	−38·3	−40·4
Isaac	1890	2	Auxiliary to balance.	−16·1	−15·4	−18·0	−14·9	−16·7	−16·4	−15·7	−12·9	−11·7	−5·4	−2·5	−3·6
Isaac	1925	2	Auxiliary to balance.	+24·1	+24·3	+23·4	+25·6	+23·9	+21·6	+20·4	+15·5	+14·4	+12·4	+13·0	+12·5
Kendal & Dent.	5663	2	Reverse detent; short spring.	−30·5	−30·2	−32·5	−30·8	−35·9	−37·5	−40·2	−41·4	−42·8	−44·5	−44·9	−44·1
E. Dent & Co.	46755	2	Dent's balance. [ing in extremes.	+ 1·2	+ 2·4	+ 2·6	− 0·4	+ 1·5	+ 1·7	+ 0·2	− 7·9	− 9·2	− 6·2	− 8·3	− 4·4
Usher & Cole	8160	2	Poole's auxiliary with an addition act-	+11·9	+14·1	+ 9·1	+13·5	+ 6·6	+ 5·9	+ 5·5	+ 5·5	+ 4·3	+ 1·3	+ 3·5	+ 5·1
E. Dent & Co.	46756	2	Dent's balance.	+16·3	+16·3	+18·5	+18·3	+18·5	+18·4	+15·7	− 1·9	−11·0	− 5·4	− 9·6	+ 7·0
Mercer	5484	2	Improve ordinary balance.	−30·9	−30·1	−31·6	−28·0	−31·0	−30·4	−32·3	−26·2	−26·2	−26·6	−23·5	−21·4
J. Bruce & Son	1217	2	Auxiliary compensation acting in heat.	+ 6·6	+ 6·7	+ 5·7	+ 8·4	+ 9·1	+11·5	+ 7·0	+ 6·2	+ 5·4	+ 6·6	+ 6·0	+ 5·0
Kendal & Dent.	6584	2	Auxiliary compensation acting in ex-	+29·7	+33·0	+29·8	+31·5	+25·5	+24·5	+19·8	+19·5	+17·9	+13·4	+16·3	+17·9
Johannsen & Co.	4433	2	Auxiliary compensation acting in heat. [tremes.	+19·2	+24·5	+20·4	+22·5	+18·6	+18·4	+16·4	+18·8	+18·5	+13·4	+14·5	+13·6
Johannsen & Co.	4497	2	Auxiliary compensation acting in heat.	+28·4	+26·5	+28·4	+26·1	+22·3	+21·4	+24·9	+22·7	+18·5	+16·1	+18·4	+20·4
Keys	962	2	Auxiliary compensation.	+ 9·6	+ 6·9	+ 5·9	+ 7·8	+ 9·0	+ 7·2	+ 5·4	+ 1·9	+ 2·7	+ 4·6	+ 3·2	+ 1·0
M. F. Dent	31047	2	Auxiliary acting in lower temperatures.	+11·6	+13·2	+ 9·8	+12·5	+ 5·7	+ 4·6	− 1·8	+ 6·6	+ 3·7	− 5·5	− 0·5	+ 5·7
Haswell & Sons	2921	2	Non-magnetic balance and spring.	+43·0	+43·1	+41·8	+40·9	+38·1	+38·3	+41·6	+26·4	+24·9	+24·8	+22·9	+21·8
Johannsen & Co.	4400	2	Auxiliary compensation acting in heat.	+24·0	+21·6	+23·2	+20·3	+19·8	+18·7	+18·8	+17·5	+18·4	+18·8	+16·0	+16·0
Clerke	1735	2	Ordinary balance.	− 3·9	− 3·4	− 2·8	− 0·4	+ 0·7	+ 1·6	− 0·2	+ 1·2	+ 0·9	− 1·1	+ 1·9	+ 3·0
Kendal & Dent.	6564	2	Reverse detent; short spring.	+ 9·7	+ 9·6	+ 9·6	+11·6	+10·0	+11·4	+12·9	+ 0·4	+ 5·9	+ 8·4	+ 7·1	+ 6·6
Johannsen & Co.	4266	2	Auxiliary compensation acting in heat.	+14·8	+14·9	+15·4	+20·0	+16·5	+20·3	+23·4	+24·9	+21·6	+21·6	+20·3	+16·0
Frodsham & Kees	3868	2	Improved ordinary balance.	− 9·6	− 8·4	− 9·2	− 9·0	−11·2	−12·8	−17·8	−14·0	−13·7	−16·5	−16·5	−19·0
Isaac	1930	2	Auxiliary to balance.	+ 3·0	− 3·2	+ 1·8	−10·8	− 1·3	+ 6·1	+ 7·8	−14·9	−12·6	+ 0·5	− 8·7	−14·7
Webb	5648	2	Ordinary balance.	+ 3·1	+ 6·3	+ 0·1	+ 7·7	+ 5·5	+ 4·9	− 0·2	− 7·8	− 8·7	− 6·6	− 7·5	− 5·7
Kendal & Dent.	6585	2	Auxiliary compensation acting in ex- [tremes.	+ 7·2	+ 8·6	+ 6·5	+ 5·5	+ 1·7	+ 2·3	+ 0·2	+ 2·3	− 4·7	− 9·4	− 9·1	− 7·4
Pyott	960	2	Improved ordinary balance.	+43·2	+43·0	+41·0	+41·8	+38·5	+38·4	+36·5	+34·9	+34·2	+30·3	+29·7	+29·7
Chronometrical Thermometer			.....	s +2048·8	s +1991·4	s +1940·2	s +1713·4	s +1589·8	s +1477·8	s +1309·4	s +1301·9	s +1226·9	s +960·7	s +883·8	s +883·8
Mean Weekly Temperature			....	° 45·4	° 45·9	° 46·1	° 48·9	° 49·9	° 51·3	° 50·9	° 54·3	° 54·4	° 56·4	° 57·8	° 59·2
Extremes of Temperature as shown by the Self-Registering Thermometers			.....	° 41·1–53·1	° 40·5–51·4	° 41·8–51·2	° 44·2–54·0	° 47·0–52·4	° 48·9–54·0	° 48·7–53·6	° 48·8–54·4	° 50·7–60·4	° 54·5–57·9	° 56·0–60·2	° 55·5–62·4

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 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.

NAME OF MAKER.	No.	Nov. 3—10	Sept. 22—29	Aug. 18—25	Aug. 11—18	July 14—21	July 21—28	Aug. 4—11	July 28 to Aug. 4 †	July 7—14	Nov. 10—17 †	Dec. 1—8 †	Aug 25 to Sept. 1 †	Sept. 15—22 †	Nov. 24 to Dec. 1 †	Nov. 17—24 †	Sept. 1—8 †	Sept. 8—15 †
		s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s
Johannsen & Co.	4237	+ 3·9	+ 2·3	− 1·5	− 1·8	− 0·2	− 3·8	− 2·0	− 5·1	− 0·6	+ 8·1	+ 4·3	+ 8·2	− 1·5	− 2·4	+ 1·6	+ 1·8	− 5·4
Webb	5649	−41·3	−40·1	−45·0	−43·7	−45·5	−46·4	−46·0	−44·0	−46·2	−39·6	−29·0	−41·3	−36·8	−29·2	−30·2	−37·4	−33·8
Isaac	1890	− 4·3	− 4·0	− 7·7	− 6·2	+ 2·1	− 4·9	− 6·1	− 8·1	+ 2·5	−12·1	− 9·8	− 8·0	− 5·4	−12·3	−13·8	−13·0	− 7·7
Isaac	1925	+11·2	+ 9·3	+ 4·1	+ 6·6	+ 3·0	+ 4·3	+ 6·4	+ 5·1	+ 2·5	+17·6	+29·3	+10·9	+13·4	+22·3	+21·2	+ 7·0	+ 9·0
Kendal & Dent.	5663	−44·6	−45·5	−51·7	−51·5	−48·0	−50·7	−52·1	−51·6	−44·0	−49·2	−16·0	−50·0	−48·5	−47·8	−50·2	−52·6	−45·2
E. Dent & Co.	46755	− 1·7	− 4·6	−13·5	− 8·9	−10·7	− 8·9	− 8·8	−10·6	−12·1	− 3·3	−10·7	−12·2	− 4·5	− 7·4	− 6·0	−12·6	−12·9
Usher & Cole	8160	+ 6·6	0·0	− 5·8	− 7·9	−13·0	−10·4	− 7·3	− 9·9	−15·6	+ 3·1	+ 3·3	− 3·5	+ 4·6	+ 5·3	+ 7·3	+ 0·8	+ 3·7
E. Dent & Co.	46756	+13·7	+ 8·5	+ 6·4	+ 7·9	+ 6·4	+10·3	+ 9·4	+ 9·8	+ 4·0	+10·4	+18·0	+ 1·3	+ 0·2	+ 8·2	+ 5·7	− 2·5	− 4·0
Mercer	5484	−21·0	−26·9	−22·9	−21·2	−24·8	−25·5	−22·7	−24·2	−24·8	−20·3	−31·2	−22·4	−27·5	−24·9	−23·6	−30·6	−32·7
J. Bruce & Son	1217	+ 3·6	+ 4·3	0·0	+ 1·9	− 2·9	− 9·4	− 4·5	− 8·4	− 2·0	+ 5·2	− 2·2	− 1·5	− 3·3	− 4·1	− 4·2	− 8·0	− 7·3
Kendal & Dent.	6584	+19·0	+ 9·2	+ 4·5	+ 7·2	+ 4·3	+ 3·3	+ 3·8	+ 2·3	+ 2·7	+21·9	+22·3	+ 5·9	+12·8	+22·0	+18·0	+ 6·8	+ 0·3
Johannsen & Co.	4433	+13·1	+10·4	+ 5·2	+ 5·0	+ 4·2	+ 1·6	+ 3·8	+ 2·5	+ 4·4	+15·4	+ 7·6	+10·0	+ 9·9	+ 7·9	+10·1	+ 7·5	+ 5·9
Johannsen & Co.	4497	+17·5	+16·4	+ 9·2	+ 8·5	+ 4·4	+ 2·7	+ 4·7	+ 3·0	+ 4·3	+16·7	+28·7	+11·5	+22·2	+23·9	+24·4	+13·2	+21·8
Keys	962	+ 1·2	+ 5·0	− 0·1	−11·0	− 0·3	− 5·2	− 6·9	− 4·8	− 3·9	+ 4·2	+ 7·0	+10·6	+ 8·9	+ 6·5	+ 7·0	+ 3·2	+ 3·7
M. F. Dent	31047	+ 4·5	− 7·0	+ 3·4	+ 4·0	+ 4·0	+ 6·9	+ 6·0	+ 7·3	+ 6·4	+ 5·4	+ 5·8	+ 5·3	+ 1·1	+ 3·7	− 3·4	− 8·9	+ 5·9
Haswell & Sons	2921	+21·2	+26·2	+19·7	+19·2	+21·3	+19·0	+19·1	+18·5	+21·0	+20·8	+31·3	+17·6	+23·8	+27·4	+21·4	+19·8	+23·8
Johannsen & Co.	4400	+14·8	+18·5	− 1·1	− 2·0	− 3·9	− 5·4	− 5·2	− 5·8	+ 3·8	+19·7	+20·4	+ 3·6	+20·7	+19·3	+16·5	+ 5·5	+12·3
Clerke	1735	+ 1·1	− 1·0	− 3·1	+ 0·3	− 0·9	− 1·2	− 0·1	− 0·4	+ 2·7	+ 7·4	+ 7·0	− 3·0	− 4·8	− 1·6	− 5·1	−14·2	−13·1
Kendal & Dent.	6564	+ 7·4	+ 7·1	+ 0·6	+ 0·0	+ 7·8	+ 6·3	+ 1·6	+ 3·6	+ 9·0	+ 9·5	+23·8	+ 9·0	+10·9	+25·0	+17·2	+11·3	+11·5
Johannsen & Co.	4266	+ 7·6	+21·6	− 0·6	− 1·6	− 2·1	− 4·1	− 3·7	− 5·7	− 0·7	+14·5	+22·3	+ 9·1	+20·6	+15·5	+ 8·0	+ 8·4	+13·2
Frodsham & Kees	3868	−19·1	−16·9	−23·3	−22·0	−26·2	−27·4	−21·0	−26·0	−22·8	−21·6	−27·6	−19·8	−21·7	−32·5	−33·6	−24·1	−24·3
Isaac	1930	−12·4	− 2·5	− 7·7	− 7·3	− 7·6	− 8·1	− 8·7	− 8·7	− 5·7	+ 2·0	+ 7·7	−14·8	− 1·7	+ 2·4	+ 4·1	−12·4	−10·7
Webb	5648	− 6·1	− 5·6	−13·0	−15·9	−20·9	−19·8	−17·6	−19·2	−19·0	−12·5	− 9·6	−16·4	−17·1	−14·2	−17·2	−17·7	−16·5
Kendal & Dent.	6585	− 4·4	− 2·3	− 2·9	− 2·2	− 9·2	− 8·4	− 2·9	− 6·0	− 9·3	− 5·6	−12·7	− 2·5	− 9·0	−14·1	−19·1	−11·4	−15·5
Pyott	960	+27·2	+29·6	+11·0	+ 9·0	+ 7·0	+ 2·0	+ 3·9	+ 1·1	+ 7·7	+29·0	+32·2	+18·0	+30·6	+29·2	+31·0	+19·4	+25·0
Chronometrical Thermometer		s +867·9	s +836·4	s +596·4	s +389·3	s +389·2	s +294·8	s +221·8	s +199·9	s +156·3	s −391·2	s −1016·1	s −1534·0	s −1758·6	s −2050·8	s −2179·3	s −2397·6	s −2708·3
Mean Weekly Temperature		° 59·0	° 58·6	° 62·1	° 64·6	° 63·4	° 65·3	° 65·8	° 66·7	° 66·2	° 76·2	° 79·1	° 84·2	° 86·4	° 91·4	° 92·5	° 97·3	° 97·2
Extremes of Temperature as shown by the Self-Registering Thermometers		° 55·4–61·6	° 54·8–62·4	° 60·6–63·7	° 61·7–67·9	° 62·3–64·6	° 63·1–68·6	° 64·1–67·2	° 64·4–70·2	° 62·9–70·2	° 57·2–90·2	° 74·6–84·5	° 71·4–89·0	° 82·4–89·1	° 83·3–96·7	° 84·1–97·6	° 86·8–106·0	° 91·6–104·6

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 DURING THE 29 WEEKS.

NAME OF MAKER.	No.	Weather 2 or 3 Days.	ADDRESS OF MAKER.	Construction of Escapement and Balance, from the Description furnished by the Maker.	Least Weekly Sum.	Extremes of Temperature.	Mean Temperature.	Greatest Weekly Sum.	Extremes of Temperature.	Mean Temperature.	Difference between the Greatest and Least. (a)	Greatest Difference between one Week and the next. (b)	Mean Temperature for these two Weeks.	Trial No. $a + 2b$.
					s	° °	°	s	° °	°	s	s	°	
Kullberg	5433	2	105, Liverpool Road, N.	Kullberg's auxiliary; reversed detent.	− 5·0	66·0 — 63·7	62·1	− 1·3	74·6 — 84·5	79·1	3·7	3·4	62·1 — 84·2	10·5
Kullberg	5431	2	105, Liverpool Road, N.	Kullberg's auxiliary; reversed detent.	− 5·3	41·1 — 53·1	45·4	+ 3·4	64·1 — 67·2	65·8	8·7	2·7	79·1 — 50·9	14·1
Isaac	1935	2	10, Spencer Street, Clerkenwell, E.C.	Auxiliary to balance.	− 7·7	91·6 —104·6	97·2	− 0·3	74·6 — 84·5	79·1	7·4	3·4	66·7 — 95·8 / 62·1 — 84·2	14·2
Johannsen & Co.	4498	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 8·5	64·4 — 70·2	66·7	+ 0·3	83·3 — 96·7	91·4	8·8	3·8	62·1 — 84·2	16·4
Kullberg	5427	2	105, Liverpool Road, N.	Kullberg's auxiliary; reversed detent.	− 9·3	41·1 — 53·1	45·4	+ 1·4	71·4 — 89·0	84·2	7·9	4·3	79·1 — 50·9	16·5
Johannsen & Co.	4404	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 1·7	63·1 — 68·6 / 64·4 — 70·2	65·3 / 66·7	+ 4·5	62·9 — 70·2 / 67·2 — 90·2	66·2 / 76·2	6·2	5·3	63·4 — 65·3	16·8
Kullberg	5443	2	105, Liverpool Road, N.	Kullberg's auxiliary; reversed detent.	− 4·4	71·4 — 89·0	84·2	+ 4·5	74·6 — 84·5	79·1	8·9	4·1	97·3 — 97·2	17·1
Isaac	1938	2	10, Spencer Street, Clerkenwell, E.C.	Auxiliary to balance.	− 0·1	60·6 — 63·7	62·1	+ 9·9	74·6 — 84·5	79·1	10·0	3·6	59·0 — 76·2	17·2
E. Dent & Co.	47079	2	61, Strand, W.C.	Dent's balance.	− 11·4	62·3 — 64·5	63·4	+ 2·0	86·8 — 106·0	97·3	8·8	4·3	51·3 — 49·9	17·4
Johannsen & Co	4325	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	+ 0·7	91·6 — 104·6	97·2	+ 9·2	55·5 — 62·4	59·2	8·5	5·4	97·2 — 86·4	19·3
E. Dent & Co.	46757	2	61, Strand, W.C.	Dent's balance.	− 2·4	91·6 — 104·6	97·2	+ 7·0	63·1 — 68·6	65·3	9·4	6·4	97·2 — 86·4	22·2
J. Bruce & Son	1218	2	27, Wapping, Liverpool.	Auxiliary compensation acting in heat.	− 1·6	91·6 — 104·6	97·2	+ 9·2	44·2 — 54·0	48·9	10·8	5·9	76·2 — 92·5	22·6
E. Dent & Co.	46555	2	61, Strand, W.C.	Dent's balance.	− 14·8	91·6 — 104·6	97·2	+ 2·6	48·8 — 64·4	54·3	12·2	5·5	51·3 — 49·9	23·2
E. Dent & Co.	46982	2	61, Strand, W.C.	Dent's balance.	− 0·6	86·8 —106·0	97·3	+ 10·4	74·6 — 84·5	79·1	11·0	6·4	97·2 — 83·4	23·8
E. Dent & Co.	46168	2	61, Strand, W.C.	Dent's balance.	− 6·8	63·1 — 68·6	65·3	+ 2·7	82·4 — 89·1	86·4	9·5	7·2	97·2 — 86·4	23·9
Kullberg	5445	2	105, Liverpool Road, N.	Kullberg's auxiliary; reversed detent.	− 8·0	41·1 — 53·1	45·4	+ 4·5	71·4 — 89·0	84·2	12·5	6·1	76·2 — 92·5	24·7
Kullberg	5391	2	105, Liverpool Road, N.	Kullberg's auxiliary; reversed detent.	− 4·9	64·4 — 70·2	66·7	+ 11·9	74·6 — 84·5	79·1	16·8	4·1	91·4 — 79·1	25·0
E. Dent & Co.	46550	2	61, Strand, W.C.	Dent's balance.	− 5·1	62·3 — 64·5	63·4	+ 6·7	50·7 — 60·4	54·4	11·8	6·7	91·4 — 79·1	25·2
Jefferson	922	2	33, Hopwood Street, Hull.	Auxiliary to balance.	+ 1·2	64·4 — 70·2	66·7	+ 14·4	48·7 — 53·6	50·9	13·2	6·2	84·2 — 97·2	25·6
Johannsen & Co	4462	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 2·7	64·4 — 70·2	66·7	+ 13·3	48·9 — 54·0	51·3	16·0	4·9	86·4 — 68·6	25·8
Johannsen & Co.	4405	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 11·0	86·8 —106·0	97·3	+ 4·0	41·8 — 51·2	46·1	15·0	5·7	79·1 — 50·9	26·4
Johannsen & Co.	4456	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 2·6	64·4 — 70·2	66·7	+ 12·1	83·3 — 93·7	91·4	14·7	6·0	76·2 — 92·5	26·7
Johannsen & Co.	4413	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 4·4	86·8 —106·0	97·3	+ 10·9	40·5 — 51·4	45·9	15·3	5·9	86·4 — 88·6	27·1
Johannsen & Co.	4457	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	+ 1·9	63·1 — 68·6	65·3	+ 16·8	74·6 — 84·5	79·1	14·9	6·1	79·1 — 50·9	27·1
Johannsen & Co.	4410	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 2·6	64·4 — 70·2	66·7	+ 13·8	48·9 — 54·0	51·3	16·4	5·4	54·3 — 59·2	27·2
Weir	3/1000	2	66, Buchanan Street, Glasgow.	Reverse detent; compensation acting in extremes.	− 15·9	64·4 — 70·2	66·7	+ 3·0	44·2 — 54·0	48·9	18·9	4·7	59·0 — 76·2	28·3
Haswell & Sons	2923	2	49 & 50, Spencer Street, Clerkenwell, E.C.	Non-magnetic balance and spring.	− 33·0	84·1 — 97·0	92·5	− 18·1	62·3 — 64·5	63·4	14·0	6·7	79·1 — 50·9	33·3
Webb	5650	2	90, High Street, Islington, N.	Palladium balance and spring.	− 2·3	86·8 —106·0	97·3	+ 14·6	62·9 — 70·2	66·2	16·9	6·5	62·1 — 84·2	39·9
Johannsen & Co.	4401	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 7·4	64·4 — 70·2	66·7	+ 20·2	40·5 — 51·4	45·9	17·6	6·4	65·8 — 64·6	50·4
E. Dent & Co.	46551	2	61, Strand, W.C.	Dent's balance.	+ 5·0	44·2 — 54·0	48·9	+ 21·2	82·4 — 89·1	86·4	16·2	7·4	79·1 — 50·9	31·0
Johannsen & Co.	4311	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 2·9	64·4 — 70·2	66·7	+ 19·7	41·8 — 51·2	46·1	22·6	5·0	62·1 — 84·2	32·6
E. Dent & Co.	46115	2	61, Strand, W.C.	Dent's balance.	+ 11·8	60·6 — 63·7	62·1	+ 24·5	82·4 — 89·1	86·4	12·7	10·2	62·1 — 84·2	33·1
Mercer	5739	2	Prospect Road, St. Albans, Herts.	Improved ordinary balance.	+ 27·0	62·9 — 70·2	66·2	− 8·0	44·2 — 54·0	48·9	19·0	7·5	50·9 — 61·3	34·0
Isaac	1936	2	10, Spencer Street, Clerkenwell, E.C.	Auxiliary to balance.	+ 4·1	62·3 — 64·5	63·4	+ 28·3	74·6 — 84·5	79·1	24·2	5·2	79·1 — 50·9	34·6
E. Dent & Co.	45726	2	61, Strand, W.C.	Dent's balance.	+ 1·8	61·7 — 67·9	64·6	+ 18·8	82·4 — 89·1	86·4	17·0	9·3	62·1 — 84·2	35·6
Johannsen & Co.	4237	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 5·4	91·6 —104·6	97·2	+ 10·6	41·1 — 53·1	45·4	16·0	9·8	79·1 — 50·9	35·6
Webb	5649	2	90, High Street, Islington, N.	Auxiliary balance.	− 46·4	63·1 — 68·6	65·3	− 29·0	74·6 — 84·5	79·1	17·4	9·3	76·2 — 92·5	36·0
Isaac	1890	2	10, Spencer Street, Clerkenwell, E.C.	Auxiliary to balance.	− 18·0	41·8 — 51·2	46·1	+ 2·5	62·9 — 70·2	66·2	20·5	7·8	59·0 — 76·2	33·1
Isaac	1925	2	10, Spencer Street, Clerkenwell, E.C.	Auxiliary to balance.	+ 2·6	62·9 — 70·2	66·2	+ 25·6	44·2 — 54·0	48·9	23·0	6·8	62·1 — 84·2	36·6
Kendal & Dent	5663	2	106, Cheapside, E.C.	Reverse detent; short spring.	− 52·6	86·8 —106·0	97·3	− 30·2	40·5 — 51·4	45·9	22·4	7·4	97·3 — 97·2	37·2
E. Dent & Co.	46755	2	61, Strand, W.C.	Dent's balance. [extremes.	− 13·5	60·6 — 63·7	62·1	+ 2·6	41·8 — 51·2	46·1	16·1	10·9	79·1 — 50·9	37·9
Usher & Cole	3150	2	105, St. John Street Road, E.C.	Poole's auxiliary with an addition acting in	− 15·6	62·9 — 70·2	66·2	+ 14·1	40·5 — 51·4	45·9	20·7	4·6	86·4 — 88·6	38·9
E. Dent & Co.	46756	2	61, Strand, W.C.	Dent's balance.	− 4·0	91·6 —104·6	97·2	+ 18·6	47·0 — 52·4	49·9	22·5	8·3	86·4 — 88·6	39·1
Mercer	5484	2	Prospect Road, St. Albans, Herts.	Improved ordinary balance.	− 34·9	83·6 — 90·7	87·1	+ 30·3	62·9 — 90·2	76·2	14·6	12·3	76·2 — 92·5	39·2
J. Bruce & Son	1217	2	27, Wapping, Liverpool.	Auxiliary compensation acting in heat.	− 9·4	63·1 — 68·6	65·3	+ 11·5	48·9 — 54·0	51·3	23·9	9·4	76·2 — 92·5	39·7
Kendal & Dent	6584	2	106, Cheapside, E.C.	Auxiliary compensation acting in extremes.	+ 2·3	64·4 — 70·2	66·7	+ 33·0	40·5 — 51·4	45·9	30·7	4·7	50·9 — 51·3	40·1
Johannsen & Co.	4433	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	+ 1·6	63·1 — 68·6	65·3	+ 24·5	40·5 — 51·4	45·9	22·9	8·8	79·1 — 50·9	40·5
Johannsen & Co.	4497	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	+ 2·7	63·1 — 68·6	65·3	+ 23·7	74·6 — 84·5	79·1	23·0	8·6	07·3 — 97·2	43·2
Keys	962	2	91, Piccadilly, W.	Auxiliary compensation acting in heat.	− 11·0	61·7 — 67·9	64·6	+ 21·6	71·4 — 89·0	84·2	21·6	10·9	64·6 — 62·1	43·4
M. F. Dent	31047	2	33, Cockspur Street, S.W.	Auxiliary acting in lower temperatures.	− 7·0	54·8 — 62·4	58·6	+ 13·2	40·5 — 51·4	45·9	20·2	11·8	97·3 — 97·2	43·8
Haswell & Sons	2921	2	49 & 50, Spencer Street, Clerkenwell, E.C.	Non-magnetic balance and spring.	+ 17·6	71·4 — 89·0	84·2	+ 43·1	40·5 — 51·4	45·9	25·5	10·3	79·1 — 50·9	46·1
Johannsen & Co.	4400	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 5·8	64·4 — 70·2	66·7	+ 24·0	41·1 — 53·1	45·4	23·8	8·4	07·2 — 83·4	46·0
Clerke	1735	2	1, Royal Exchange, E.C.	Ordinary balance.	− 14·2	86·8 —106·0	97·3	+ 7·4	67·2 — 90·2	76·2	21·6	12·5	76·2 — 92·5	46·0
Kendal & Dent	5604	2	106, Cheapside, E.C.	Reverse detent; short spring.	+ 0·6	60·6 — 63·7	62·1	+ 33·9	83·3 — 93·7	91·4	25·3	10·9	79·1 — 50·9	47·1
Johannsen & Co.	4266	2	149, Minories, E.C.	Auxiliary compensation acting in heat.	− 4·7	64·4 — 70·2	66·7	+ 24·9	48·8 — 64·4	54·3	29·6	9·7	62·1 — 84·2	49·0
Frodsham & Keen	3868	2	81, South Castle Street, Liverpool.	Improved ordinary balance.	− 33·6	84·1 — 97·0	92·5	− 8·4	40·5 — 51·4	45·9	25·2	12·0	76·2 — 92·5	49·2
Isaac	1930	2	10, Spencer Street, Clerkenwell, E.C.	Auxiliary to balance.	− 14·9	48·8 — 64·4	54·3	+ 7·8	48·7 — 53·6	50·9	22·7	14·4	59·0 — 76·2	51·8
Webb	5648	2	90, High Street, Islington, N.	Ordinary balance.	− 20·9	62·3 — 64·5	63·4	+ 7·7	44·2 — 54·0	48·9	28·6	11·5	86·4 — 88·6	51·6
Kendal & Dent	6585	2	106, Cheapside, E.C.	Auxiliary compensation acting in extremes.	− 19·1	84·1 — 97·0	92·5	+ 8·6	40·5 — 51·4	45·9	27·7	13·5	76·2 — 92·5	54·7
Pyott	960	2	74, West India Dock Road, E.	Improved ordinary balance.	+ 1·1	64·4 — 70·2	66·7	+ 43·2	41·1 — 53·1	45·4	42·1	7·0	62·1 — 84·2	56·1

The sign + indicates that the rate is gaining.

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. $a + 2b$ is taken as a measure of the irregularities of rate.

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