

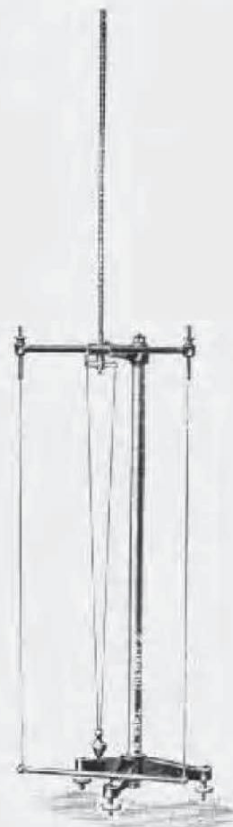
53519. 1:8.



53521. 1:8.



53522. 1:8.



53523. 1:12.

Max Kohl A. G. Chemnitz, Germany.

53,517. **10 Resonators for preceding**, after Helmholtz, Figure, spherical, in perfect tone, for fundamental tone $c_0 = 128$ compound vibrations ($ut_2 = 256$ v. s.) and its first nine overtones, on board, with wood pegs £ s. d.
5. 0. 0

In this set of resonators the fundamental tone c_0 (ut_2) (first partial tone) is not included.

53,518. **14 Universal Resonators** after König, Figure, consisting of two cylinders sliding one in the other, with graduation, to be employed for all tones from g_{-1} (sol_1) to c_3 (mi_3), the tones of the chromatic scale being indicated singly 18. 0. 0

The compass of the individual resonators is as follows: (1) g_{-1} to b_{-1} (sol_1 to si_1); (2) b_{-1} to d^+_0 (si_1 to re^+_2); (3) d^+_0 to f^+_0 (re^+_2 to fa^+_2); (4) f^+_0 to a_0 (fa^+_2 to la_2); (5) a_0 to c_1 (la_2 to ut_3); (6) c_1 to e_1 (ut_3 to mi_3); (7) e_1 to a_1 (mi_3 to la_3); (8) ais_1 to d_0 (la^+_2 to re_1); (9) c_2 to e_2 (ut_4 to mi_4); (10) d_2 to f_2 (re_4 to fa_4); (11) e_2 to g^+_2 (mi_4 to sol^+_4); (12) f_2 to a_2 (fa_4 to la_4); (13) g^+_2 to c_3 (sol^+_4 to ut_5); (14) c_3 to c_3 (ut_5 to mi_5).

Demonstration of Lissajous Curves.

* 53,519. **Apparatus for Demonstrating the Lissajous Curves** by Crank Motion, Figure, for projection as well as for drawing the curves on blackened glass plates [Fr. phys. Techn. I, 2, Fig. 3393 [I, 494]; W. D. Fig. 234, 220), with wheels for obtaining the ratios 20, 24, 30, 36, 40, 48, 50, 59 and 60:60 4. 4. 0

53,520. **Kaleidophone** after Wheatstone, simple, one steel bar with spherical mirror on metal base (M. P. I., Fig. 704, 728) 0. 10. 0

53,521. **Kaleidophone** (Wheatstone's), Figure, with 6 rods having spherical metal mirrors, on iron stand with levelling screw, for producing 6 phases (M. P. I., Fig. 706 [730]) 2. 10. 0

When struck, the differently shaped rods give directly the corresponding Lissajous curves. The figures shine well and large on the ceiling under incident light.

53,522. **Universal Kaleidophone**, after Melde, Figure, with adjustable metal strips and spherical metal mirror (M. P. I., Fig. 707 [731]), with screw clamp 1. 10. 0

52,124. **Double Pendulum** after Airy, Fig. 52,124A and B, pp. 296 and 297 1. 0. 0

53,523. **Pendulum Apparatus** for obtaining the vibration curves of Wheatstone and Lissajous, Figure (Eisenlohr, Lehrb. d. Phys., Fig. 181) 1. 16. 0

* Can be used with the Projection Apparatus.