delicate and of high resistance, with the result that when current is forced through it becomes incandescent owing to the heat generated, and thus gives off a brilliant light. Lamps are made for various voltages, and must only be used with the voltage for which they are constructed.

The carbon filament lamp takes $3\frac{1}{2}$ watts per candle-power (roughly). Thus the current (amperage) which a lamp will allow to pass is arrived at by multiplying the candle-power by $3\frac{1}{2}$ and dividing by the voltage of the circuit. For example, a 16 c.p. lamp on a 100-volt circuit will take $\frac{16 \times 3\frac{1}{2}}{100}$ amperes $= \frac{28}{50}$, or rather more than $\frac{1}{2}$ ampere. If such a lamp be placed in the circuit, therefore, only about $\frac{1}{2}$ ampere can pass, however small the resistance of the rest of the circuit may be. By placing a number of lamps *in series*, the current may be reduced to as small a fraction of an ampere as desired, the current equalling the voltage divided by the sum of the resistances. If the lamps are placed *in parallel* the current is equal to the sum of the currents which each of the parallel paths would transmit singly.

A metal filament lamp only takes about 1 watt per c.p. It is hence much more economical commercially, but not so generally useful for the present purpose.

A resistance composed of lamps may be used alone, as in the case of charging accumulators, or may be used in conjunction with a variable wire rheostat, for therapeutic and other purposes. It forms an easy and safe means of curtailing the current, and obviates the use of the very heavy wire resistances which would otherwise be necessary.

The modern "$\frac{1}{2}$-watt" lamp (which only takes $\frac{1}{2}$ watt per c.p.) is not very suitable for purposes of resistance.