

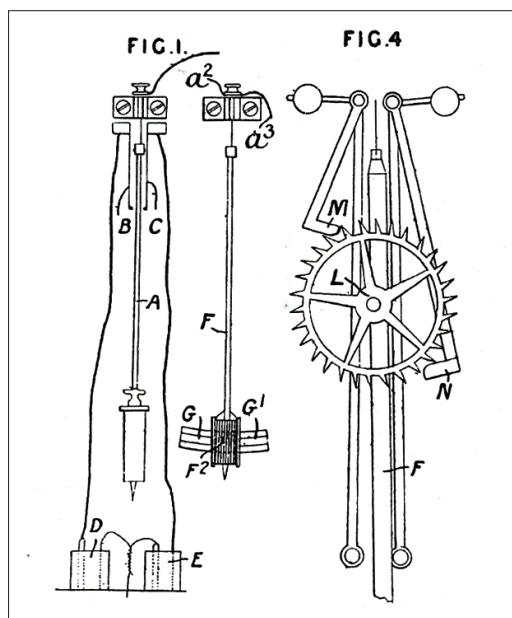
## AHS London Lecture Thursday 14 March 2024

### Edward Odell, Frederick James Ritchie, his Electrosympathetic Clocks, and the 'Edinburgh Ring'

The firm of James Ritchie and Sons dominated clockmaking in Edinburgh in the nineteenth century. Although it is now perhaps best remembered for the one o'clock gun in Edinburgh castle and the world's first floral clock in Princes Street, their main claim to fame in the 1870s was a pioneering electrical distributed time system that reached from Newcastle to Dundee.

Frederick James Ritchie, son of the founder, was an enthusiast in the electrical revolution sweeping the nation; his family friends included Alexander Bain and Alexander Graham Bell. A chance family connection led to a decades-long close working relationship with Charles Piazzi Smythe, Astronomer Royal for Scotland. Ritchie developed the RL Jones sympathetic electrical pendulum system to convert the observatory clocks to electrical control and designed a sympathetic pendulum-controlled clock to drop the time ball and fire the one o'clock gun. A small circuit of observatory and public clocks followed, made possible by the tiny current consumption for electrical control and the fact that each remote clock had a mechanical movement to provide most of the required energy.

This requirement for mechanical winding and electric control was a degree of complexity that hampered further expansion. The solution was to invent a gravity escapement that required so little energy that the need for a spring or weight was abolished, producing a completely electrical indicator dial or 'electrosympathetic clock'.



Ritchie's gravity escapement or 'propelment'

The network expanded across Edinburgh and Glasgow and observatory and public systems were sold widely, from Russia to the United States.

Despite the rapid advances in electrical timekeeping it is testament to Frederick Ritchie's vision that several of these clocks continued in use until the 1930s and at least one system was still in service after 1969. A service life of 100 years in electrical timekeeping is unparalleled, yet now almost nothing remains.

*Edward Odell is a London-based member of the AHS Electrical Horology Group and a collector specialising in electric clocks, particularly early examples, and manages content for Clockdoc, the electric clock archive website at <https://wp.clockdoc.org/>*

#### Attending London Lectures

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