

V. POULSEN.

WIRELESS SIGNALING SYSTEM.

APPLICATION FILED DEC. 24, 1906. RENEWED MAY 25, 1909.

929,487.

Patented July 27, 1909.

Fig. 1.

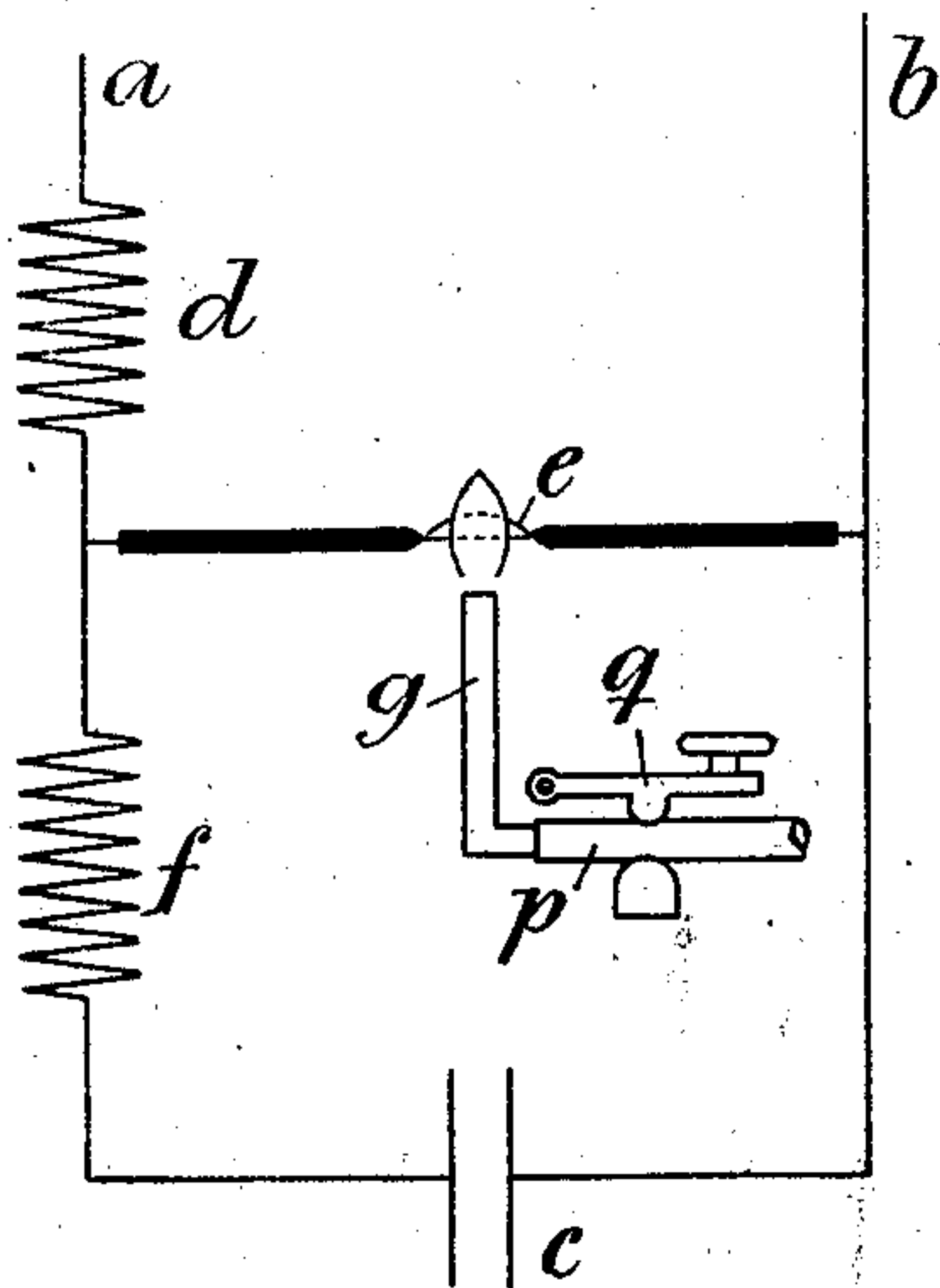


Fig. 2.

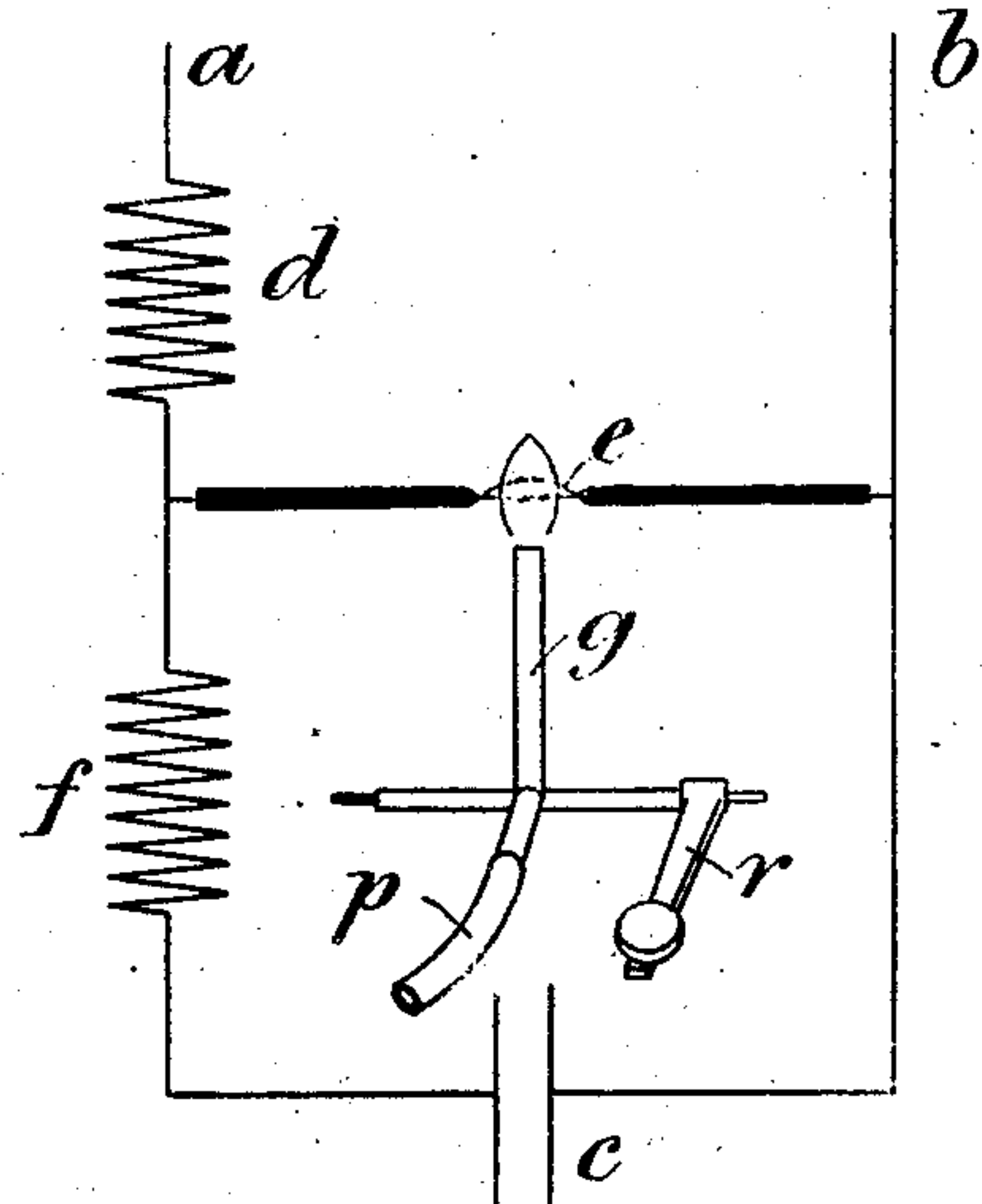


Fig. 3.

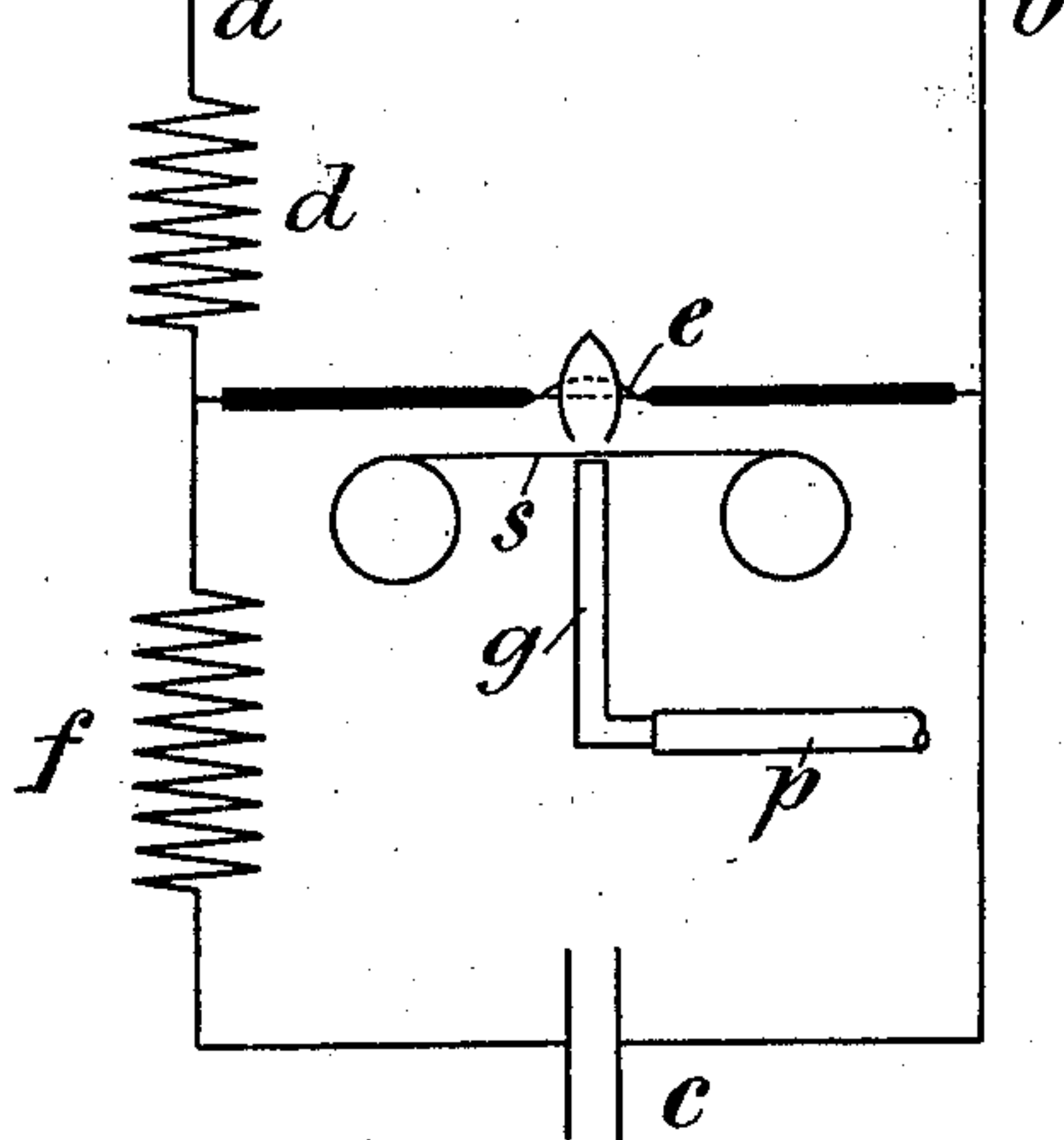
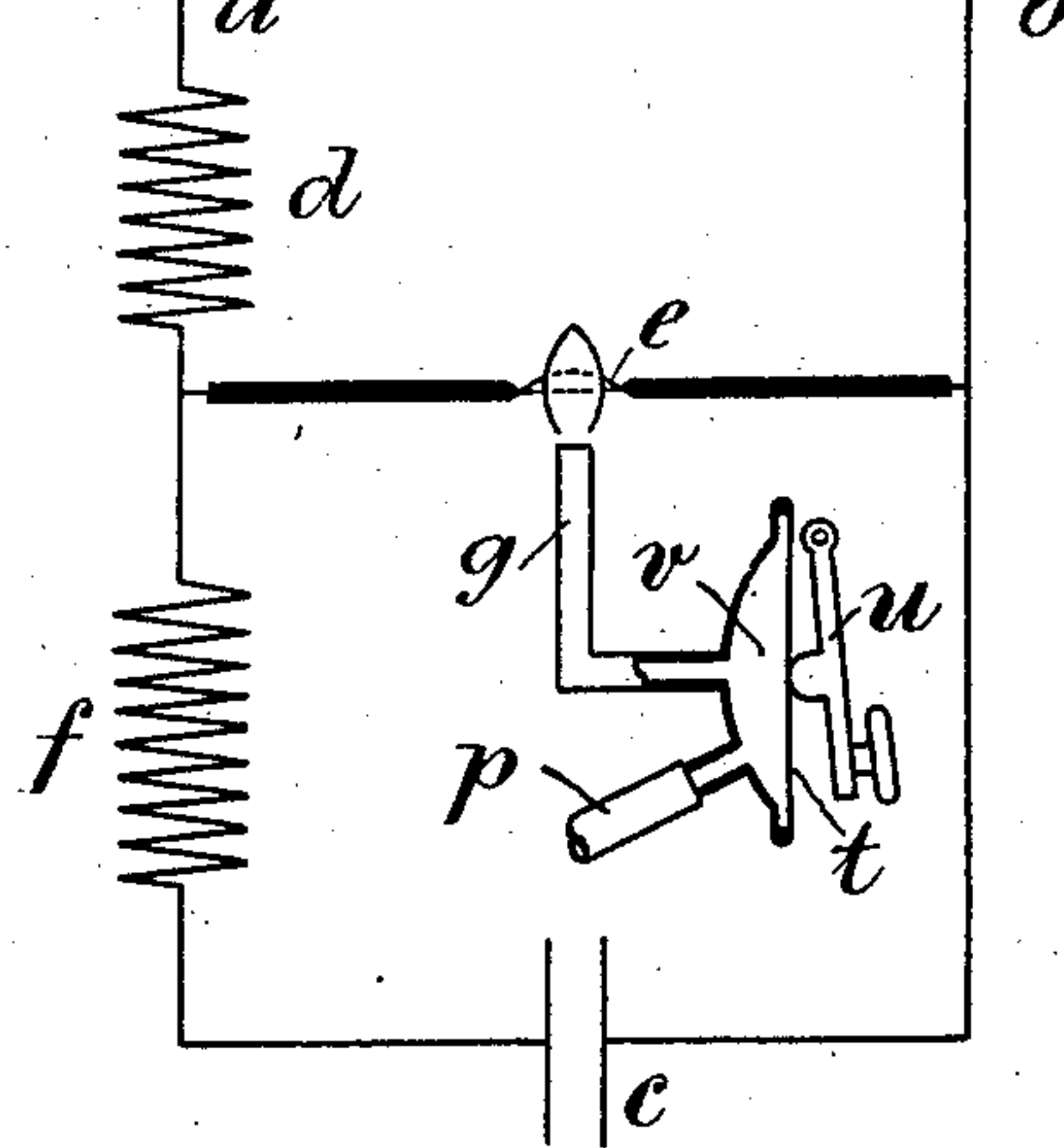


Fig. 4.



Witnesses:

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WIRELESS SIGNALING SYSTEM.

No. 929,487.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed December 24, 1906, Serial No. 349,674. Renewed May 25, 1909. Serial No. 498,372.

To all whom it may concern:

Be it known that I, VALDEMAR POULSEN, a subject of the King of Denmark, residing at Copenhagen, Denmark, have invented certain new and useful Improvements in Wireless Signaling Systems, of which the following is a full, clear, and exact description.

My invention relates to a transmitting device for wireless signaling.

10 In my prior patent No. 793,608, I have described an apparatus in which the current interruptions for the purpose of obtaining the electric waves, are secured by maintaining an electric arc in an atmosphere of hydrogen or other gas. In the present application the same general method is used, but the signals are made by varying the condition of the atmosphere in which the electric arc is produced, so that the vibrations are 20 emanated in interrupted periods in producing the desired signals.

Figure 1 shows an arrangement of circuits embodying the principles of my invention; Fig. 2 is a similar view showing a slightly 25 modified arrangement; Fig. 3 is a still further modified form of the invention; Fig. 4 shows a still further modification.

a and *b* indicate conductors for the supply current.

30 *d* is an inductance coil.

e denotes the electric arc, and *f* is an inductance winding in the vibration circuit, which also includes the usual condenser *c*.

35 *g* is a pipe through which flows hydrogen or a gas containing hydrogen. Ordinary illuminating gas may be supplied in place of the hydrogen or gas containing hydrogen, if desired.

40 *p* denotes a rubber hose connected to the pipe *g*, and *q* indicates a key by which the rubber hose *p* may be intermittently compressed so as to stop the flow of gas there-through. In operation it is merely necessary to operate the key *q* in the manner of an

ordinary telegraph key so as to intermittently arrest the flow of the gas in the pipe *g*. The variations in the atmosphere of the arc *e* will produce corresponding variations in the periods of current interruptions and in the signals transmitted. This is because the system ceases to send out vibrations if the supply of hydrogen or gas containing hydrogen is cut off.

In Fig. 2 a form of the invention is shown in which the pipe *g* is moved with relation to the arc *e* so as to vary the atmosphere thereof. *r* indicates a key by which the pipe *g* can be conveniently moved in this way. 55

In Fig. 3, *s* indicates a perforated strip which is adapted to move across the opening 60 in the pipe *g*, through which the atmosphere containing hydrogen flows. If the strip is perforated with dots and dashes corresponding to a telegraph code, it is evident that a high speed of transmission may be secured, 65 in the same way as with the mechanical or automatic transmitters used with ordinary telegraphy.

In Fig. 4 the intermittent flow of hydrogen or gas containing hydrogen is secured 70 by moving a diaphragm or membrane of a chamber through which such gas flows. *v* indicates this chamber, having a diaphragm *t*, which can be moved by the key *u*.

What I claim, is:— 75

In an apparatus for the wireless transmission of signals, a circuit including an arc, means for supplying an atmosphere containing hydrogen to said arc, and means for varying such supply according to the signals 80 to be transmitted.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

VALDEMAR POULSEN.

Witnesses:

VIGGO BLOM,

CECIL VILHELM SCHON.