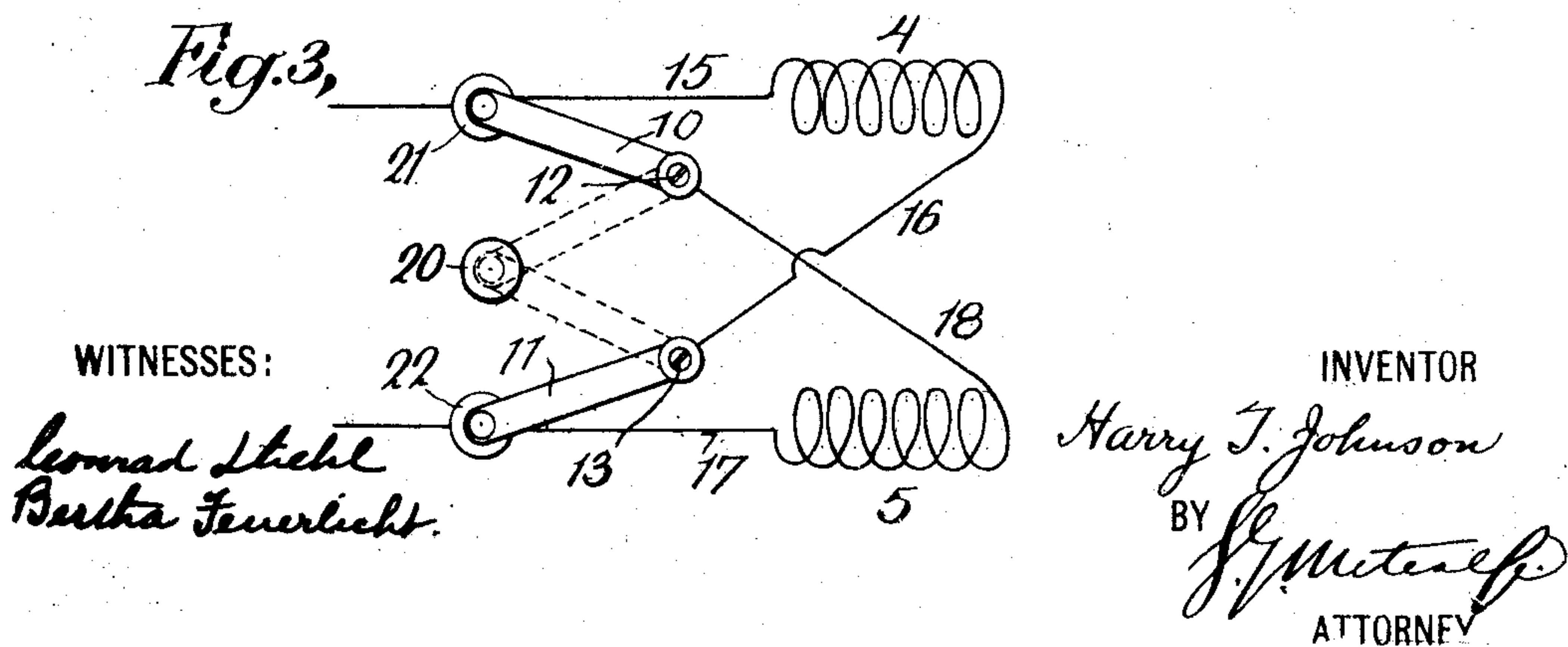
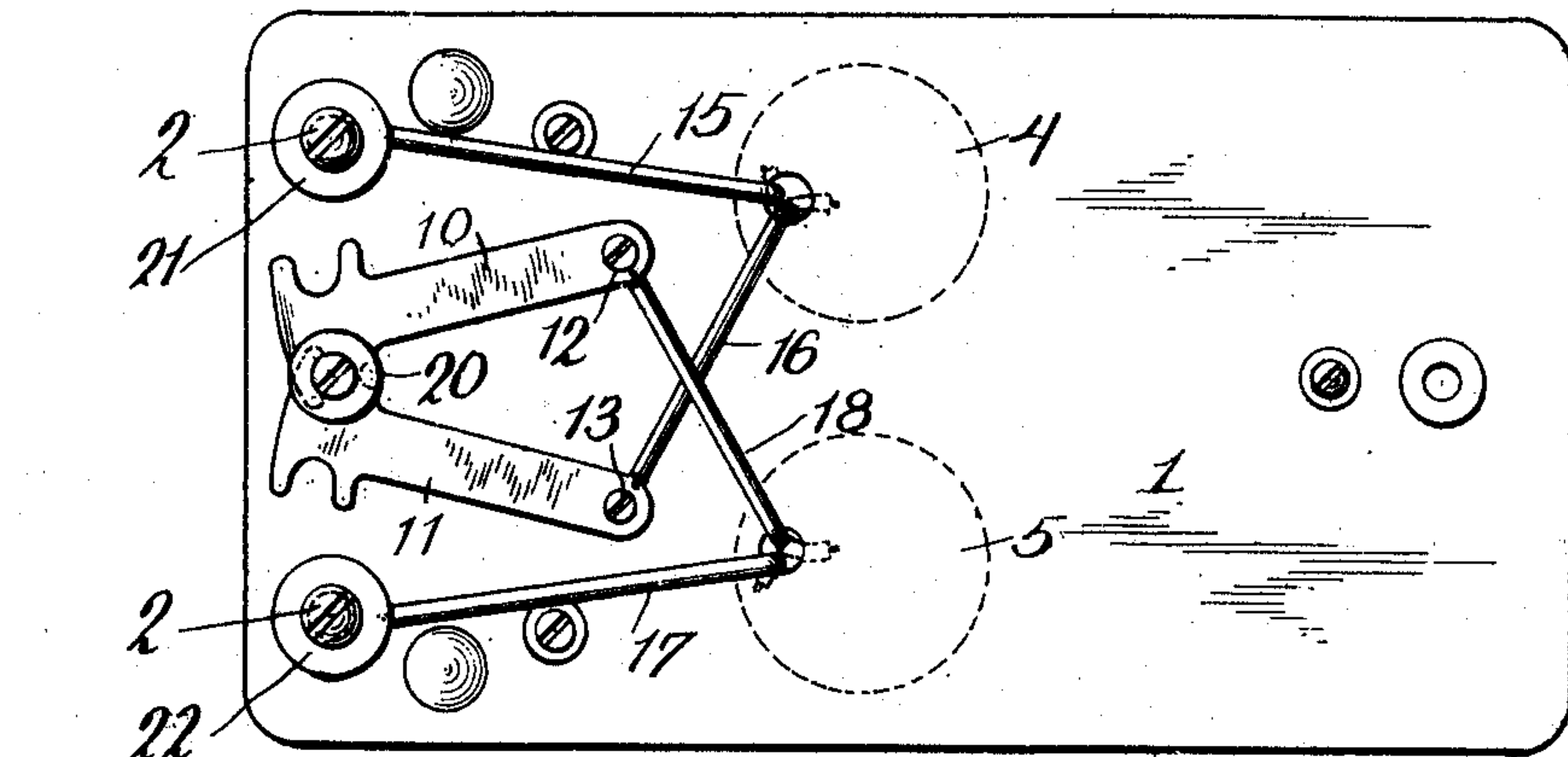
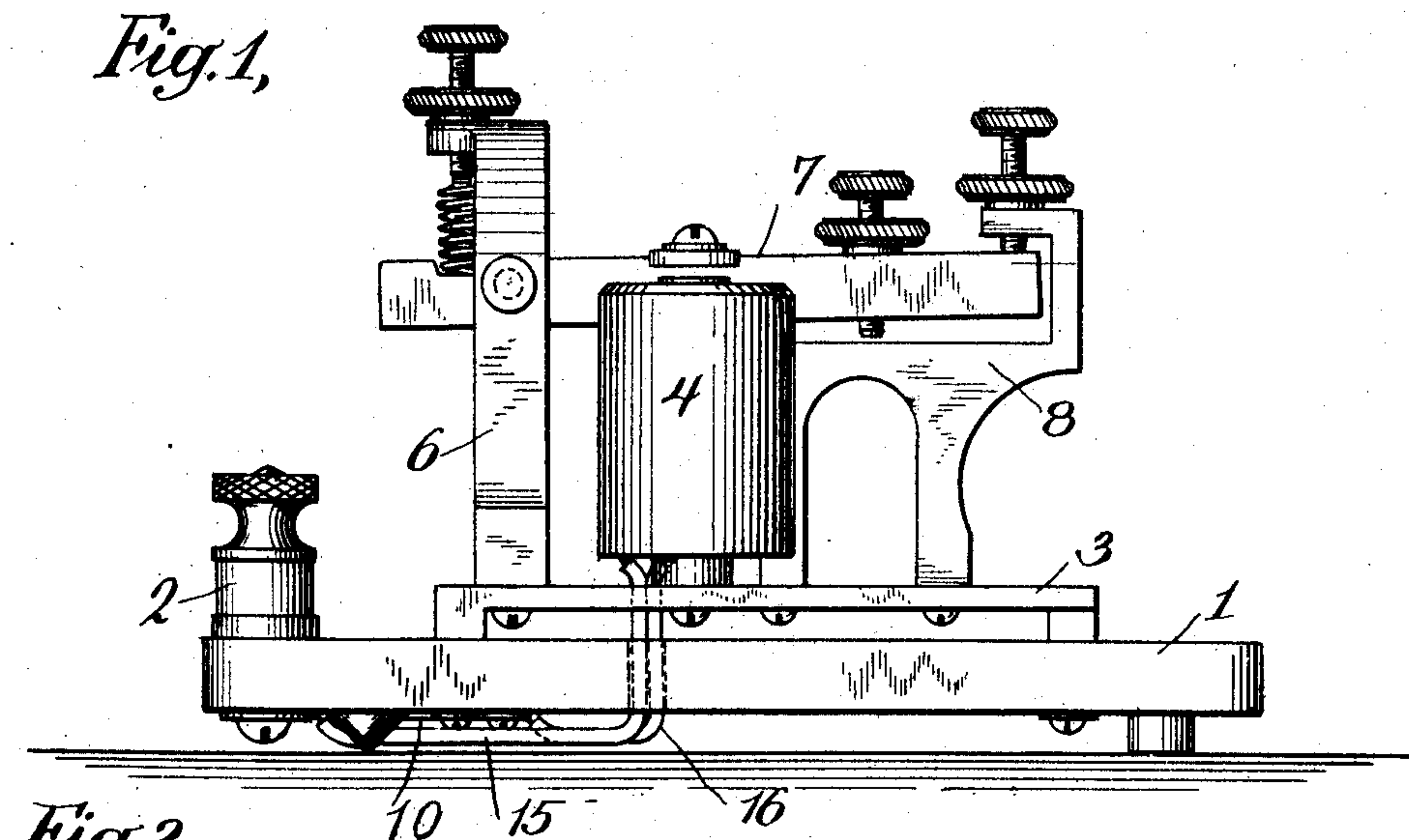


H. T. JOHNSON.
TELEGRAPH SOUNDER.
APPLICATION FILED JUNE 26, 1908.

983,905.

Patented Feb. 14, 1911.



UNITED STATES PATENT OFFICE.

HARRY T. JOHNSON, OF NEW YORK, N. Y.

TELEGRAPH-SOUNDER.

983,905.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed June 25, 1908. Serial No. 440,320.

To all whom it may concern:

Be it known that I, HARRY T. JOHNSON, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Telegraph-Sounders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to provide a telegraph sounder which is adapted for use on circuits of either high or low resistance, as for instance on local circuits, where the resistance is low, or on the line, where the resistance is relatively high, and to this end, it consists of the combination and arrangement of parts herein described and more specifically set forth in the claims.

Heretofore it has been customary to construct each sounder for use on only one type of circuit, that is to say, the magnets of sounders designed for use on local circuits in which the resistance is low, have been wound to furnish a definite resistance ordinarily of about five ohms, while the magnets of instruments to be used on the line, where the resistance is relatively high, have been wound to furnish a definite resistance ordinarily of about twenty ohms, in order to properly balance the resistance in circuit, and neither instrument could be practically used on the other type of circuits.

By means of my invention sounders may be constructed exactly alike, all having magnets of the same resistance and any one of the instruments may, without reconstruction or any change in the magnet-windings, be quickly adapted for use on circuits of either high or low resistance.

In the accompanying drawings, which represent a preferred embodiment of my invention, Figure 1 is a side elevation of a sounder; Fig. 2 is a plan of the under surface of the base, and Fig. 3 is a diagrammatic view of the circuits and connections.

Similar reference characters are employed to designate corresponding parts in all the views.

The sounder mechanism is of the ordinary type and comprises a base 1, carrying two binding posts, 2. A plate 3, is secured to the base, and upon the plate 3 are mounted a pair of electro-magnets 4 and 5, a yoke

6, in which the sounder lever 7 is journaled, and an anvil 8, in the usual manner.

The coils of the magnets are wound so that when they are connected in series, their resistance will be such as to adapt the instrument for use on a circuit of relatively high resistance, as for example, for use on the line, and for such use the resistance of both magnet coils when connected in series, may be twenty ohms, or ten ohms for each magnet coil. Heretofore the coils of both magnets have been permanently connected in series with a certain definite resistance, and the essential feature of my invention is the provision in a sounder, wound and adapted for use on circuits of a relatively high resistance, of switching devices, preferably arranged intermediate the coils and the binding posts or terminals of the sounder, whereby the connections of the coils may be readily changed from series to multiple, thus changing the effective resistance of the coils to adapt the sounder for use either on circuits of high or low resistance. The means which I preferably employ to accomplish this result comprise two switch levers 10 and 11, pivotally secured, at 12 and 13, to the under side of the base board of the sounder. The coils of the magnet 4, are connected directly to one of the binding posts by the conductor 15, (see Fig. 2), and the other terminal of the coils is connected to the pivoted end of the lever 11, by the conductor 16. The coils of the other magnet are similarly connected to the other binding post and to the pivoted end of the lever 10, by the conductors 17 and 18. The switch levers 10 and 11 are made of thin conducting metal and their free ends are adapted to be moved into and clamped in contact under the washer 20. When so connected the coils will be in series, and if the coils of each magnet have a resistance of ten ohms, the resistance of both coils will be twenty ohms, adapting the sounder for use on line circuits. If, however, it be desired to use the instrument on a local or low resistance circuit, all that is required to adapt it for such use is to release the switch levers from engagement with the washer 20, swing them apart, and clamp the end of lever 10 under the washer 21, and the end of lever 11 under washer 22, whereby each lever is connected with one of the binding posts 2, and the coils of each magnet will be connected in multiple be-

tween the binding posts or sounder terminals, as more clearly indicated in full lines in Fig. 3. When so connected, if each magnet coil has a resistance of ten ohms, the effect, so far as the action of the magnets is concerned, will be equivalent to an arrangement of the coils in series with a total resistance of five ohms, so that the instrument may be used on local circuits where a five ohm sounder, having its coils connected in series, is ordinarily employed.

I claim:

1. A telegraphic sounder provided with switch members intermediate the magnet coils and the sounder terminals, means for connecting said members with each other to connect the magnet coils in series, and means for connecting each member with one of the

sounder terminals to connect the magnet coils in multiple. 20

2. In a telegraphic sounder, the combination with the sounder terminals and a pair of electro-magnets, switch levers secured to the under side of the sounder base, a connection between each switch lever and the coils of one of the magnets, a device for holding said switch levers in contact to connect the coils in series, and means for holding said switch levers separated and each in contact with one of the sounder terminals to connect the coils in multiple, substantially as set forth. 25 30

HARRY T. JOHNSON.

Witnesses:

B. H. ELLIS,
AUGUST HARTH.