

(No Model.)

3 Sheets—Sheet 1.

J. HAAS, Jr.
ELECTRIC SIGNAL.

No. 427,762.

Patented May 13, 1890.

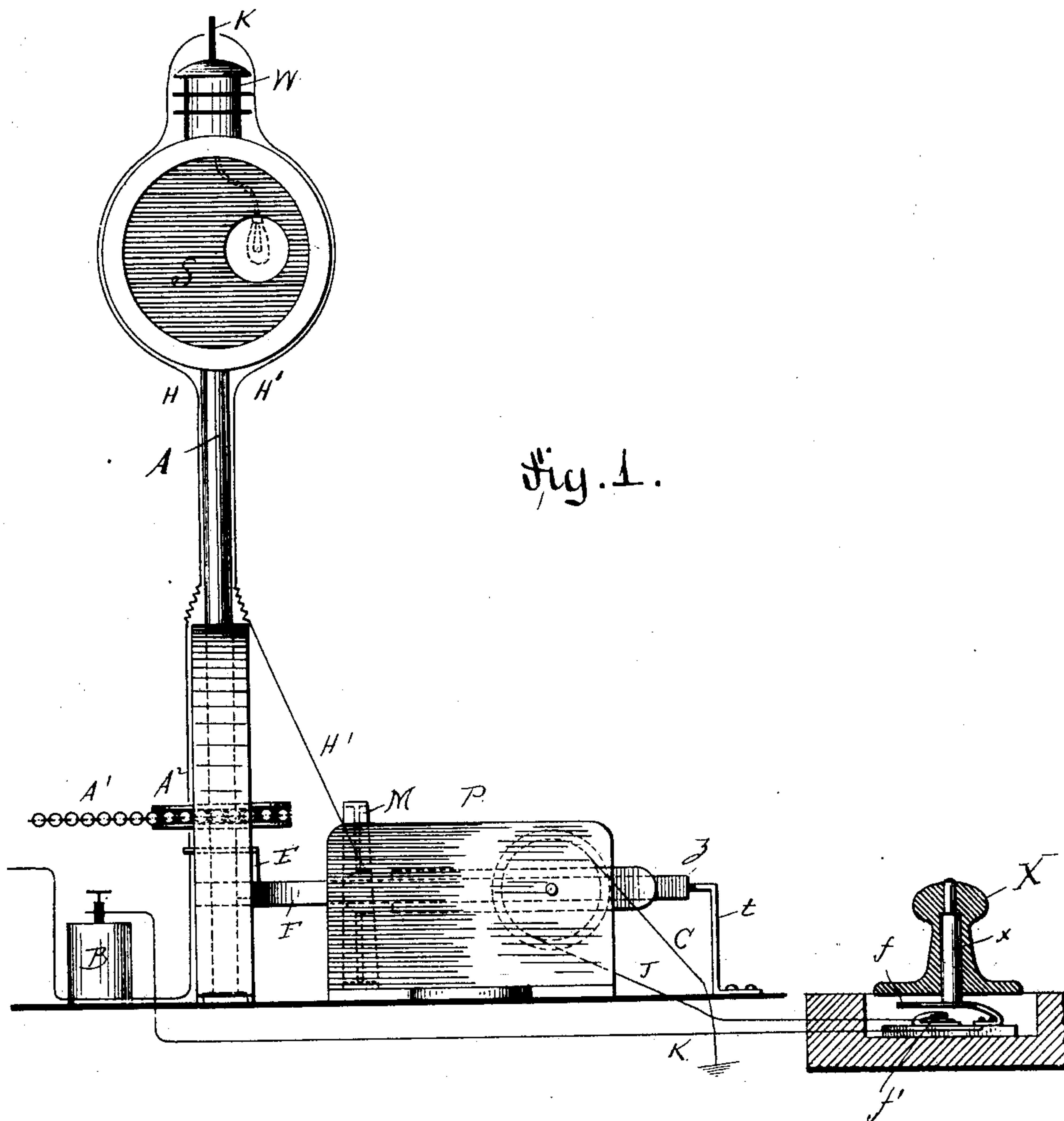


Fig. 1.

WITNESSES:

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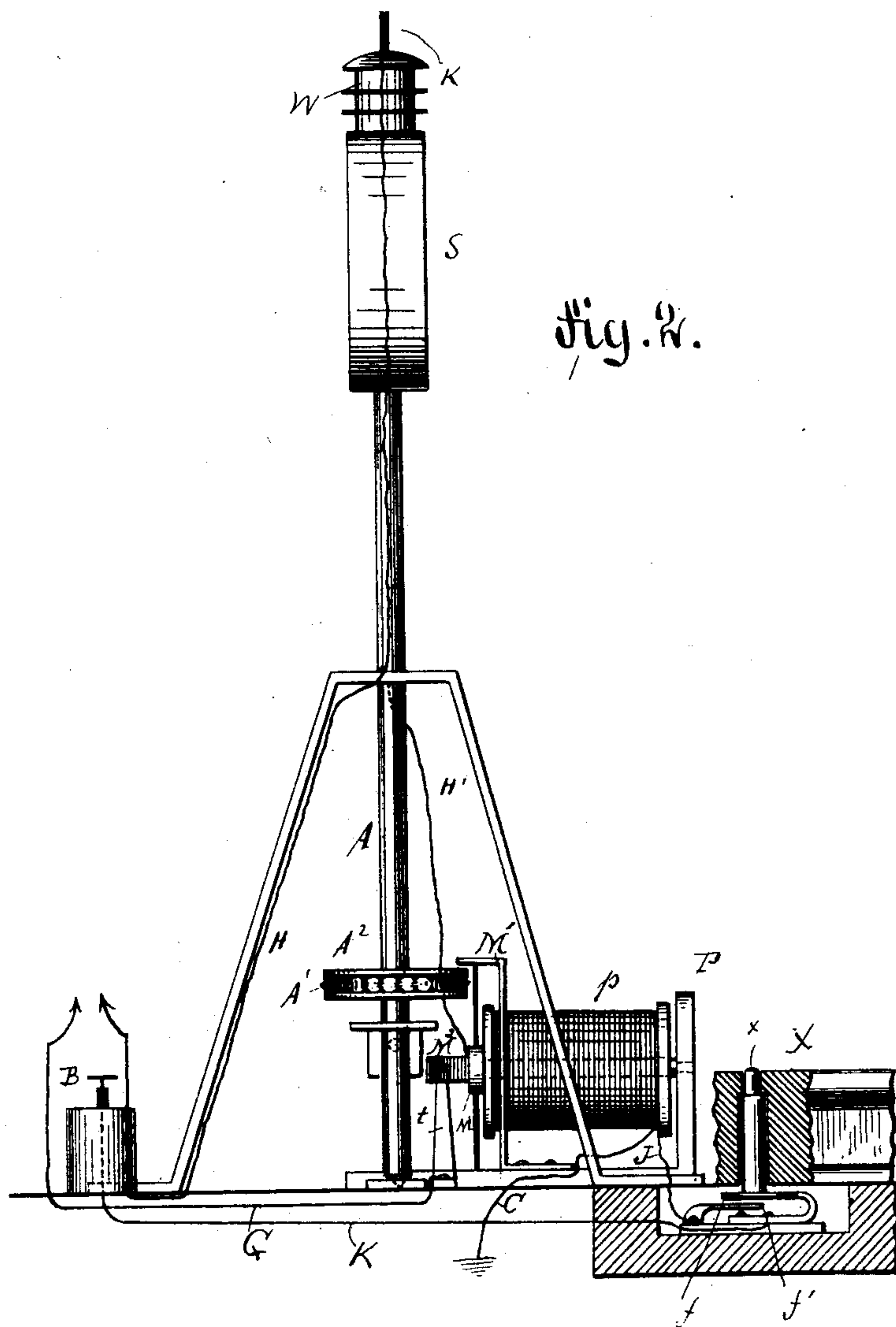
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3 Sheets—Sheet 3.

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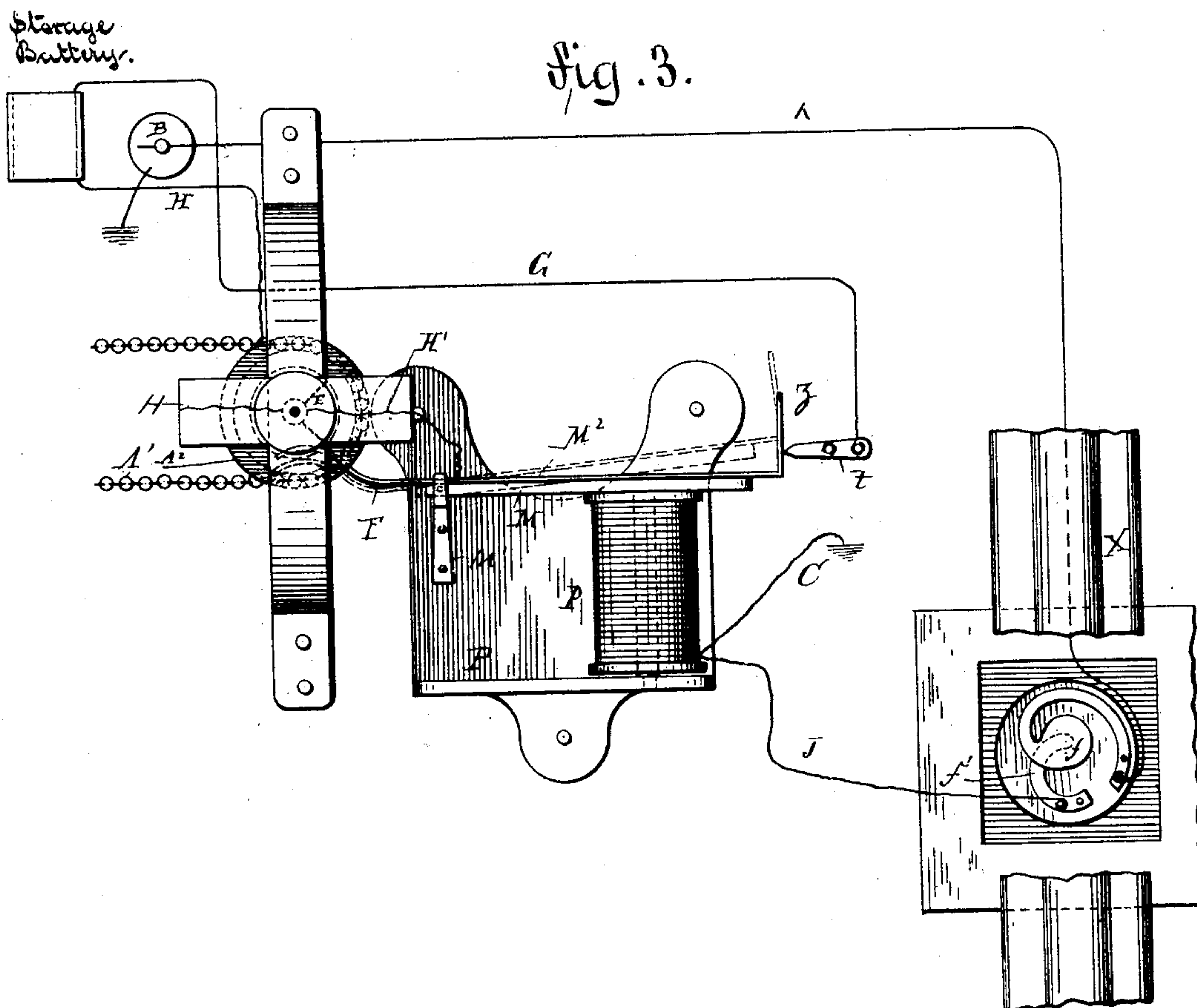
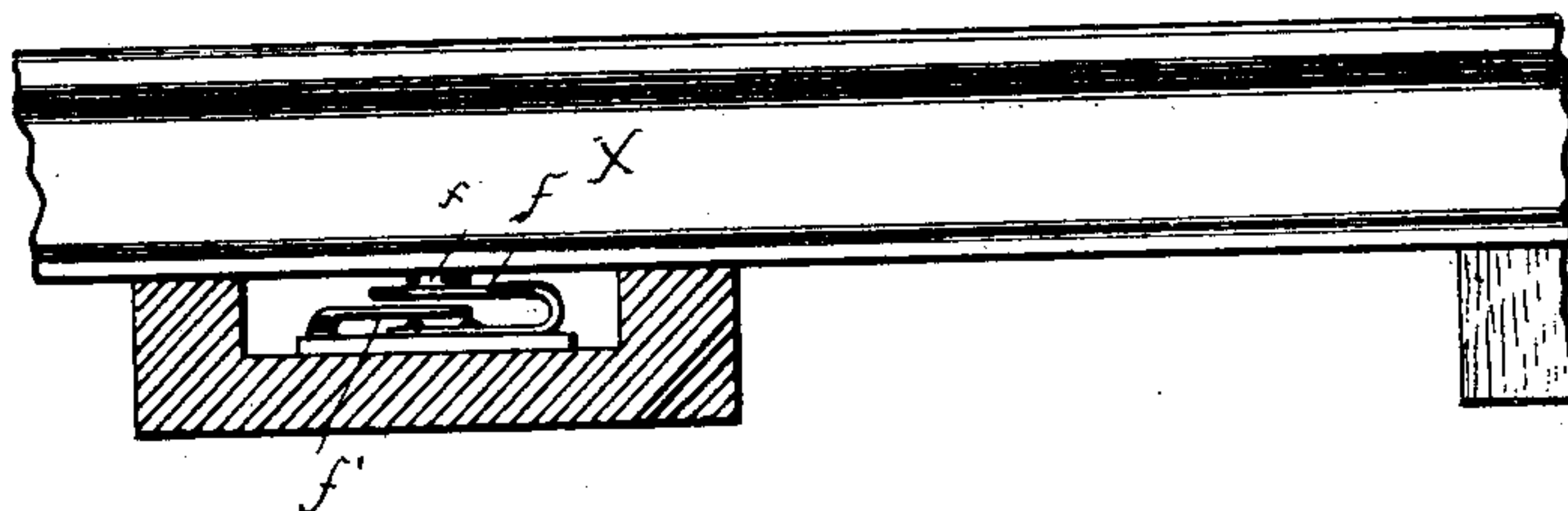


fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEF HAAS, JR., OF VIENNA, AUSTRIA-HUNGARY.

ELECTRIC SIGNAL.

SPECIFICATION forming part of Letters Patent No. 427,762, dated May 13, 1890.

Application filed July 10, 1889. Serial No. 317,101. (No model.)

To all whom it may concern:

Be it known that I, JOSEF HAAS, JR., a subject of the Emperor of Austria-Hungary, residing at Vienna, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Electric Signals; and I do declare the following to be a full, clear, and exact description of the invention.

This invention relates to an improved signaling device for railways, and especially to that class of signaling devices which are operated automatically and by a current of electricity.

The object of my invention is to provide a railway-signal of this kind which is simple in construction and reliable in use.

The invention consists in the construction and combination of parts and details, as will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation of my improved electric railway-signal, the rail being shown in cross-section. Fig. 2 is an end view of the same, parts of the rail being broken out and parts in longitudinal section. Fig. 3 is a plan view of the signal, part of the rail being broken out. Fig. 4 is a detail side view of the rail, showing the circuit-closer in section.

Similar letters of reference indicate corresponding parts.

The signal-standard A is mounted to turn in the usual manner, and can be operated by a chain A' passing over a sprocket-wheel A² on said standard. On said standard the hollow signal-disk S is mounted, which is provided with a suitable cap W, in which the electric-light mechanism is contained, the connecting rods or post K of said electric-lamp projecting from the cap W. An electro-magnet *p* is held on a vertical frame P, and adjacent to one end of the same the armature-lever M² is pivoted on a standard M', which armature-lever M² is provided on its swinging end with a contact-arm *z*, that can come in contact with an arm or contact-piece *t*. The armature M is secured on said lever M². On the opposite end of the armature-lever M² a curved spring-arm F is secured, on which a cam disk or plate E on the standard A can act. The contact-piece *t* is connected by a wire G with a storage-battery, the other

pole of said storage-battery being connected by a wire H with the binding-post K of the lamp, which binding-post is connected by the wire H' with the armature-lever M². One pole of a battery B is connected by a wire K' with one contact-point of a circuit-closer below the rail X, the other contact-piece of said circuit-closer being connected by the wire J with one end of the wire forming the electro-magnet *p*, the other end of said electro-magnet coil being connected by the wire C with the ground. The rail X is provided with a vertical aperture in which a pin *x* can work, which projects slightly from the top of the rail and rests on a spring-arm *f* of a circuit-closer below the rail, which spring-arm *f* can be pressed down and brought in contact with the other contact-piece *f'* of the circuit-closer.

The operation is as follows: The circuit-closer is located a greater or less distance from the signal, and when the first wheel of the locomotive arrives at said circuit-closer it operates the same, whereby the circuit is closed from the battery B through the wire K', the contacts *f f'*, the wire J, the electro-magnet *p*, the wire C, and the ground. Thereby the armature M, which is held by the spring-arm F in the position shown in dotted lines in Fig. 3, is attracted and brought into the position shown in full lines in Fig. 3.

The arm *z* of the armature-lever M² is brought in contact with the contact-piece *t* and the lamp-circuit is closed, as follows: From the storage-battery through the wire G to the contact-piece *t*, the arm *z*, the armature-lever M², the wire H', and the lamp in the signal-disk, and through the wire H back to the storage-battery. As the signal-disk has a suitable opening closed by colored glass, the signal is lighted up and clearly visible as soon as the train runs on the electric switch, thus indicating to the engineer when he can pass on or when he must stop. In case the signal-standard A is turned by means of the chain A' the cam-piece E, acting on the spring-arm, presses the same sidewise, whereby the armature M is swung from the end of the electro-magnet *p* and the lamp-circuit broken.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an electric signal, the combination, with a standard, of an electric lamp on the same, a storage-battery or other source of electricity having one pole connected with the electric lamp, an electro-magnet, an armature for said electro-magnet, a wire connecting the electric lamp with said armature, a contact-piece connected with the storage-battery, a local battery, conducting-wires connecting the local battery with the electro-magnet, and a circuit-closer for closing the circuit of said local battery, substantially as set forth.

2. In an electric signal, the combination, with an electro-magnet, of a local circuit for the same, a pivoted armature-lever having a spring end, a rotary signal-standard, a cam-piece on said standard adapted to act on said spring end of the armature-lever, an electric lamp on said standard, a storage-battery connected with the lamp and said armature-lever,

and a contact-piece with which the armature-lever can form contact, said contact-piece being also connected with said storage-battery, substantially as set forth.

3. In an electric signal, the combination, with a rotative signal-standard, of an electric lamp on said standard, a pivoted lever having a curved projecting end, a cam-piece on the rotative standard, which cam-piece can act on the curved end of the lever, a contact-piece that can form contact with said lever, a storage-battery connected with said contact-piece, the pivoted lever, and the electric lamp on the standard, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEF HAAS, JR.

Witnesses:

OTTO SCHIFFER,

EDWARD WINKELMAN.