

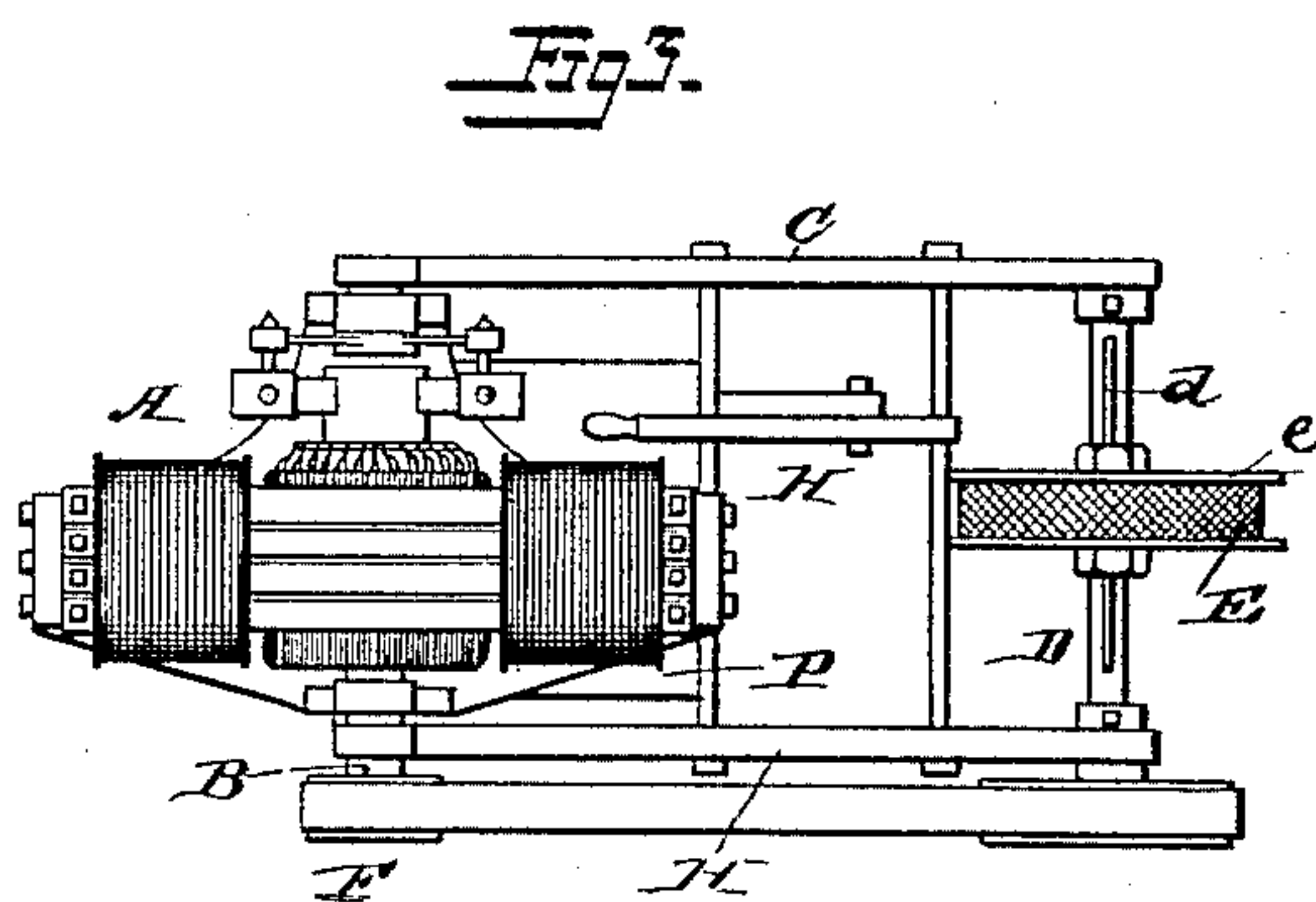
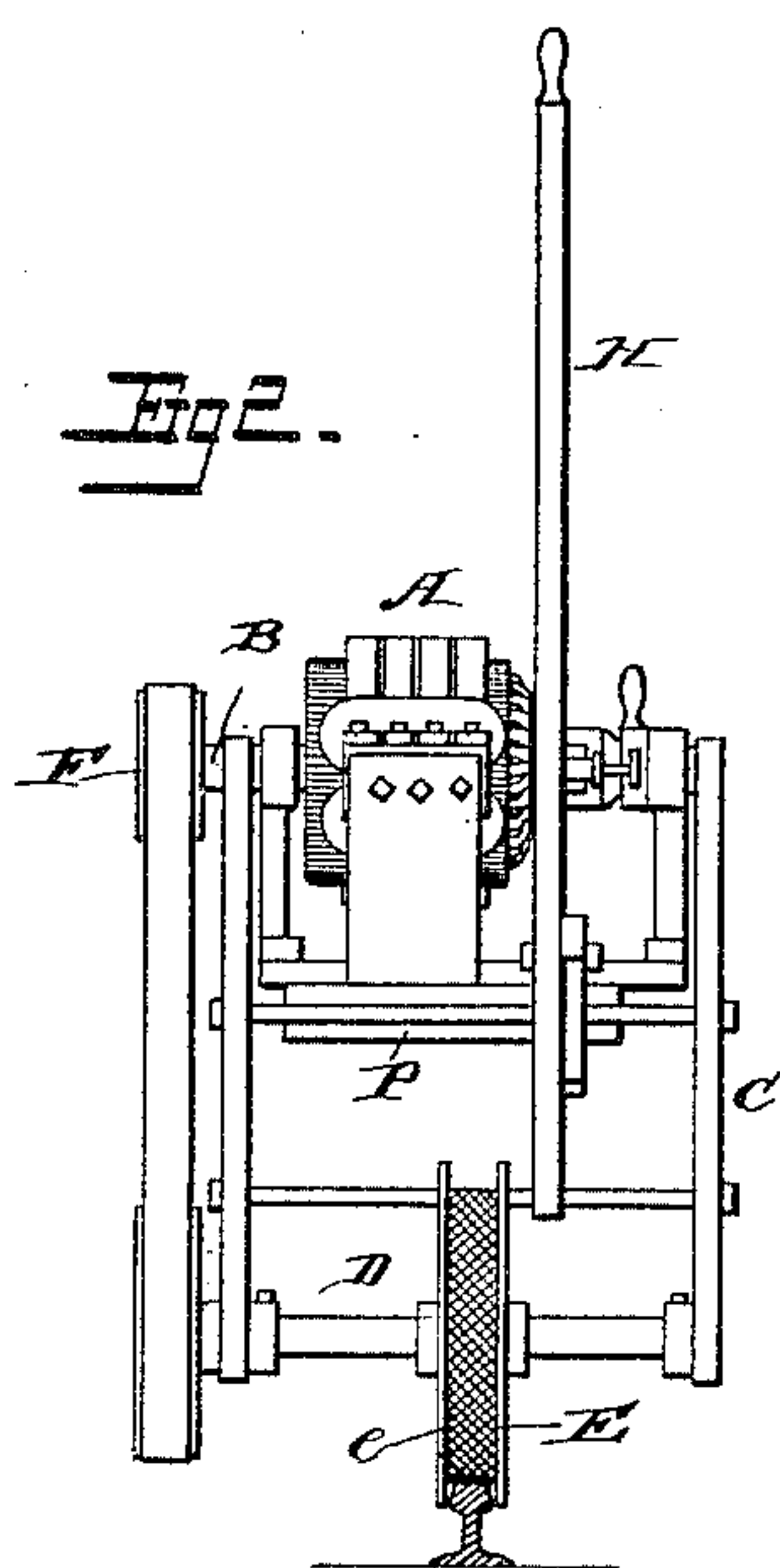
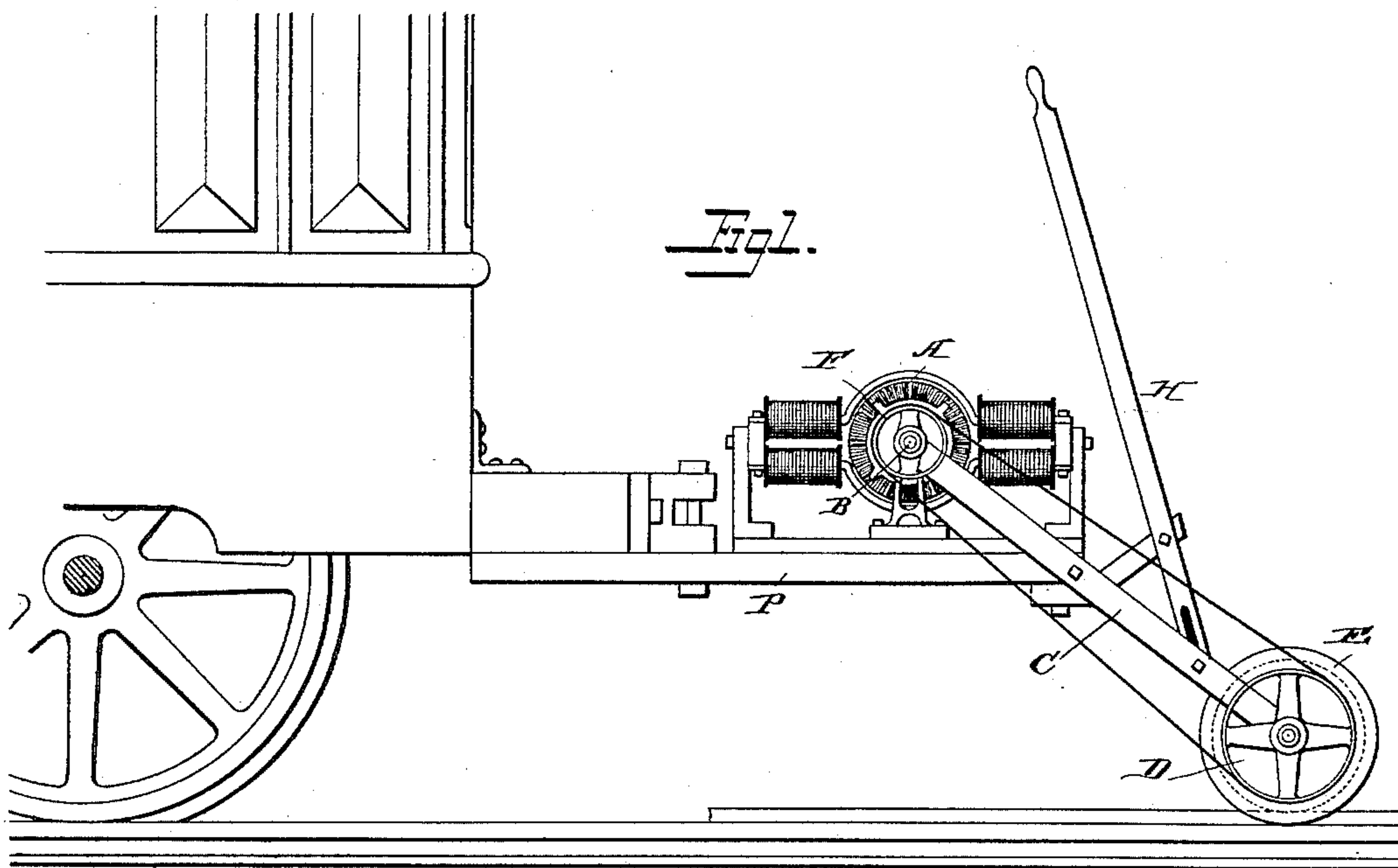
(No Model.)

L. DAFT.

APPARATUS FOR REMOVING SCALE FROM ELECTRIC CONDUCTORS.

No. 394,062.

Patented Dec. 4, 1888.



Attests:
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UNITED STATES PATENT OFFICE.

LEO DAFT, OF PLAINFIELD, NEW JERSEY.

APPARATUS FOR REMOVING SCALE FROM ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 394,062, dated December 4, 1888.

Application filed September 5, 1885. Renewed May 4, 1888. Serial No. 272,857. (No model.)

To all whom it may concern:

Be it known that I, LEO DAFT, a subject of the Queen of Great Britain, residing at Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Removing Scale from Electric Conductors, of which the following is a specification.

In electric railways as generally constructed the electric current is conveyed to the electrodynamic motor on the locomotive through the medium of a metallic conductor of some sort placed in proximity to the track. This conductor may be one of the bearing-rails upon which the locomotive runs, or an independent conducting-rail laid between or outside the bearing-rails, and may be slightly elevated above or depressed below the surface of the road-bed in trenches, or otherwise. Whatever its position, it is usually exposed to the elements, and often becomes rusty, dirty, or covered with a scale, which interferes with its conducting qualities and renders imperfect the electrical contact therewith of the usual brush, roller, or wheel through which the current is transmitted to the motor, and increasing the resistance to the passage of the current, so that its full force and effect cannot be advantageously applied in propelling the locomotive.

It is the object of my invention to provide an apparatus for removing the dirt, rust, or scale from the surface of the rail or conductor that shall be simple, cheap, and effective, and that will enable the surface of the conductor to be kept bright and smooth, so that good electrical contact therewith may be effected.

In the accompanying drawings, forming part of the specification, Figure 1 is a side view of an apparatus embodying my invention. Fig. 2 is an end view. Fig. 3 is a plan.

Connected to the platform of an electric locomotive, P, in any suitable manner is a small electric motor. This motor A may be driven in any desired manner; but I have found a convenient way to be to include the motor in a shunt-circuit taken from the terminal wires of the motor which drives the locomotive, and by interposing suitable resistance and commutator arrangements, well understood by those skilled in the art, the direction and

speed of rotation of the armature of the motor may be easily controlled. Loosely connected to the ends of the armature-shaft B are connecting-rods C, supporting at their outer ends a shaft, D, upon which is secured a suitable emery-wheel or other polishing device, E.

Some means of connecting the armature-shaft with the shaft D, so that the latter may be driven by the former, must be provided, and I have shown a band-pulley, F, attached to the armature-shaft, and a similar pulley secured to the shaft D, with a belt connecting the two pulleys; and it will be observed that the connecting-rods may be raised and lowered at any angle without interfering with the motion of the revolving shaft carrying the polishing-wheel, and the wheel may follow the undulations of the conducting-rail or the track without loss of efficiency.

In order that the polishing device may be properly applied to and maintained upon the rails when located in various positions with relation to the railway, notwithstanding the slight lateral motion of the locomotive due to irregularities in the track, as well as rounding curves, the motor or its connected polisher must be capable of adjustment laterally, and this may be done by pivotally connecting the support upon which the motor is mounted to the platform A of the locomotive, or by connecting the polishing-wheel to the shaft D by a long spline, *d*.

I find it convenient to provide the polishing-wheel E with side flanges, *e*, projecting beyond the polishing-surface, as this seems to keep the wheel in position upon the rail or conductor.

Some means, as a hand-lever, H, should be attached to the connecting-rods C, so that the polisher can be easily raised or lowered into or out of operative position.

It is evident that while I have described my invention as applied to polishing and cleaning the surface of the conductor of an electric railway it may be used for various other purposes, and that the details of construction may be varied to suit the requirements of the work to be done without departing from my invention. It is also evident that in place of the small electric motor the polishing or grinding wheel could be operated directly from the

motor which propels the locomotive, or by other motors arranged on the locomotive.

What I claim is—

5 1. The combination, with an electric locomotive, of an emery-wheel carried by the locomotive and moving on the rail to grind and polish the same, whereby rust and scale are removed and the metallic surface is maintained and continually exposed, substantially
10 as described.

2. The combination, with an electric motor carried on a car, of connecting-bars loosely mounted on the armature-shaft, a polishing
15 device connected to the bars, and means, substantially as described, for raising and lowering the polisher, for the purpose set forth.

3. The combination, with an electric motor mounted on a car, of connecting-bars loosely journaled upon the armature-shaft of the motor, a splined shaft mounted in the bars carrying a polishing device, and driving-gear connecting said shaft with the armature-shaft, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two
25 scribing witnesses.

LEO DAFT.

Witnesses:

JNO. N. BRUNS,

F. HOLLY REED.