W. S. SIMS.

Electro-Magnets for Motors.

No. 157,299. Patented Dec. 1, 1874.

Fig 2

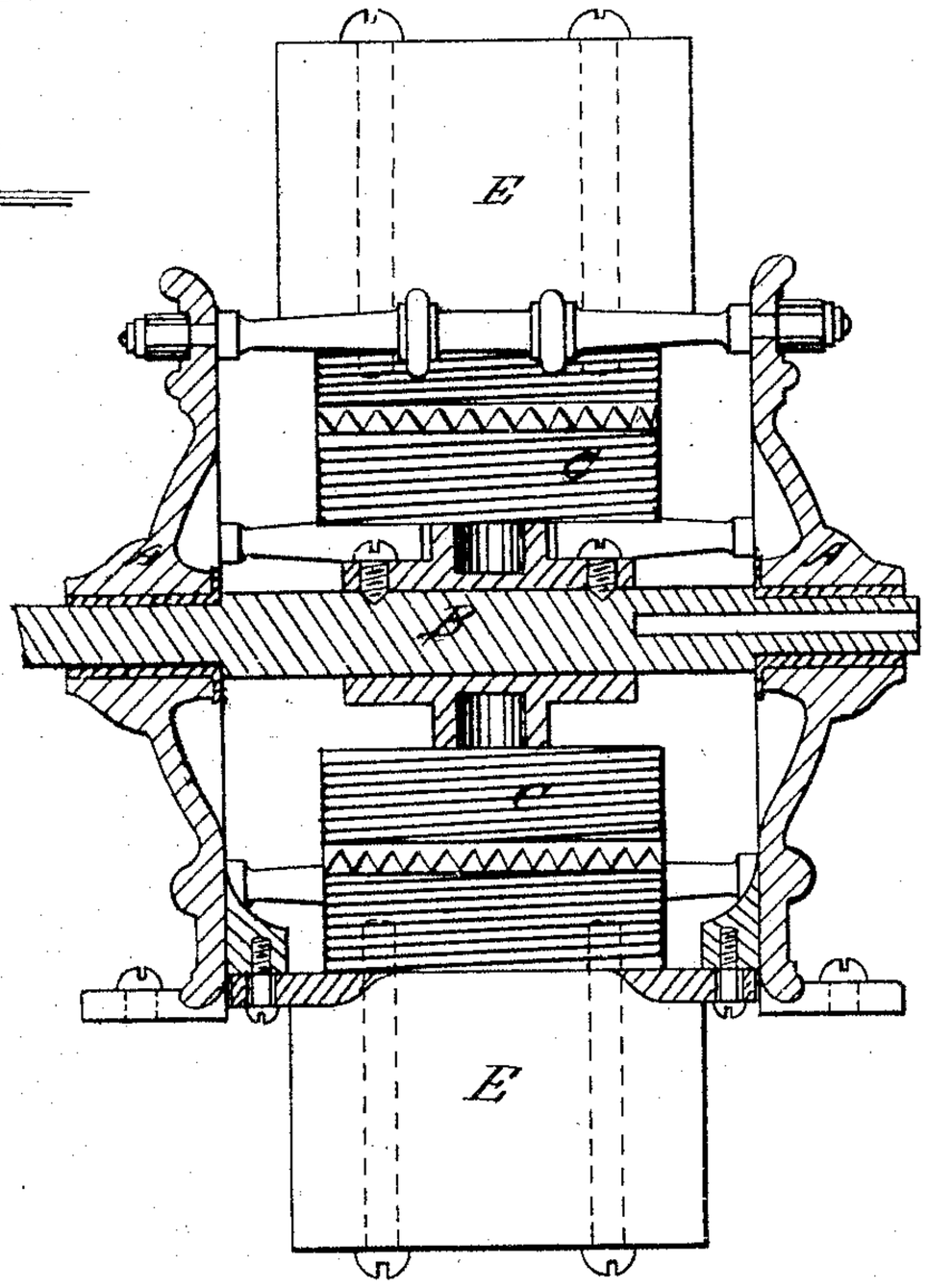
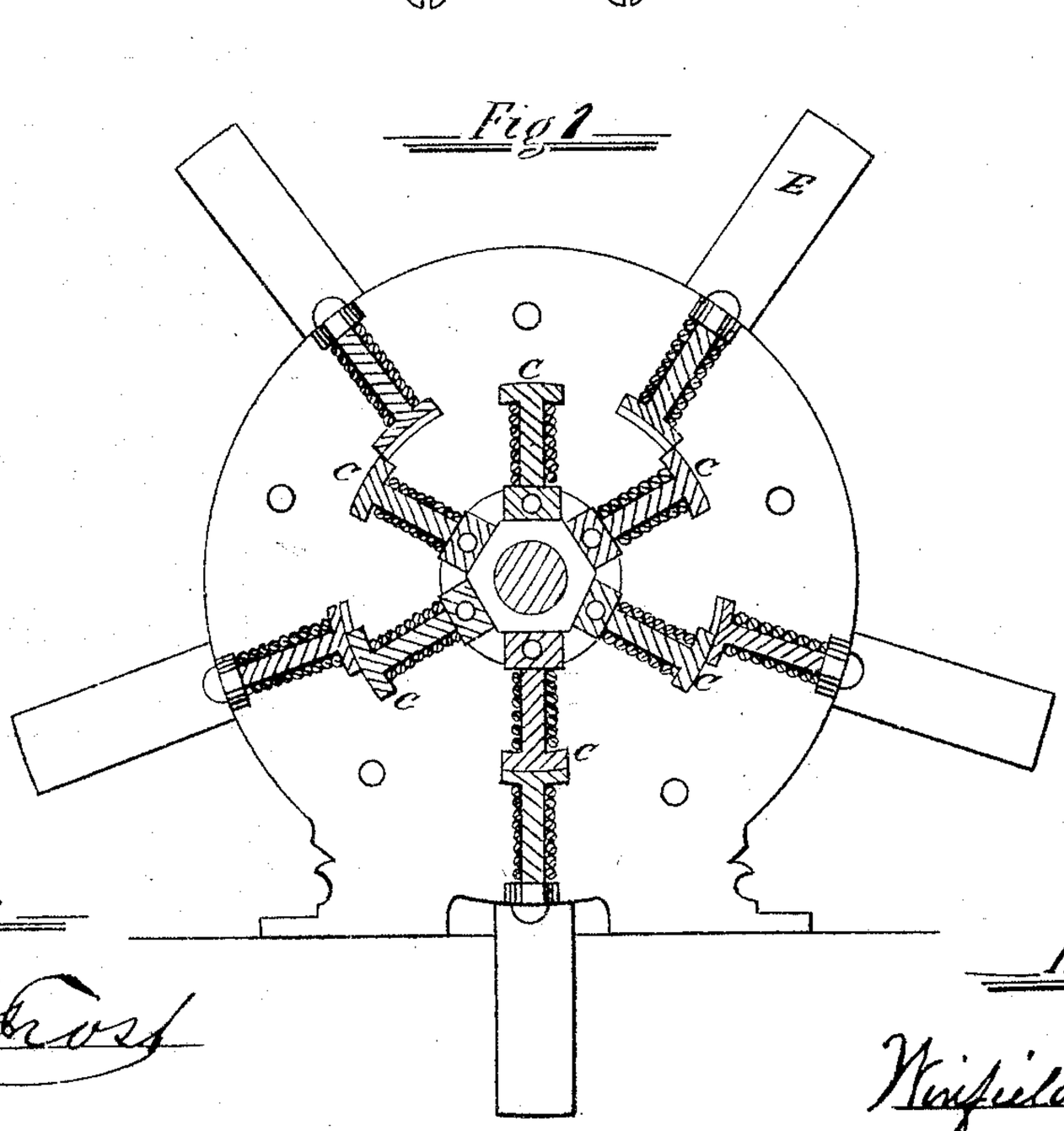


Fig 1



Witnesses

W. S. Frost

W. M. Edwards

Inventor

Winfield S. Sims

UNITED STATES PATENT OFFICE.

WINFIELD S. SIMS, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN ELECTRO-MAGNETS FOR MOTORS.

Specification forming part of Letters Patent No. **157,299**, dated December 1, 1874; application filed December 20, 1873.

CASE A.

To all whom it may concern:

Be it known that I, WINFIELD S. SIMS, of the city of Newark, Essex county, in the State of New Jersey, have invented an Improvement in Electro-Motors, of which the following is a specification:

The invention consists in combining with the core of an electro-magnet used as an electro-motor, a supplemental core or mass of metal in contact or connected with the end or pole of the core opposite to that used for attracting an armature or another magnet in the act of originating motion, whereby the magnetic force of the utilized pole is greatly augmented.

Figure 1 represents a cross-section of a motor, in which one of the stationary magnets has connected with it a supplementary core. Fig. 2 is a longitudinal section of the same.

A is a frame, upon which the working parts of the motor are mounted. B is a rotary shaft, upon which are arranged radially several rectilinear armatures electro-magnets, C, magnetically insulated from the shaft, the outer ends being used as the motor-poles. Around these are arranged and secured to the frame A, but magnetically insulated therefrom, a suitable number of stationary rectilinear electro-magnets, the inner ends being used as the motor-poles. These are surrounded in the usual way with helices and by a properly-arranged commutator. (Not shown.) The battery-current is caused to pass through the several helices in the manner and order requisite to cause the rotation of the shaft B. E indicates a supplemental core of iron, one end or edge of which is in contact or connected with the outer end of a stationary magnet, the helix not being extended beyond the true core of the magnet.

I find that the application or connection of the supplemental core or mass of iron with the core of an electro-magnet greatly increases the magnetic force of the opposite pole of the magnet to which it is applied or with which it is connected.

In the drawings I have shown the several magnets furnished with their supplemental cores.

This increase of magnetic force, due to the influence of the supplemental core may be made useful wherever an electro-motor is employed.

I claim as my invention—

An electro-magnet for an electro-magnetic motor, provided with a supplemental core or mass of iron connected therewith opposite to the pole used to generate motion, as and for the purpose specified.

Witness my hand this 18th day of December, 1873.

WINFIELD S. SIMS.

Witnesses:

BEN S. CLARK,

LOUIS REED.