

(No Model.)

4 Sheets—Sheet 1.

C. E. L. BROWN.
DYNAMO AND MOTOR.

No. 386,685.

Patented July 24, 1888.

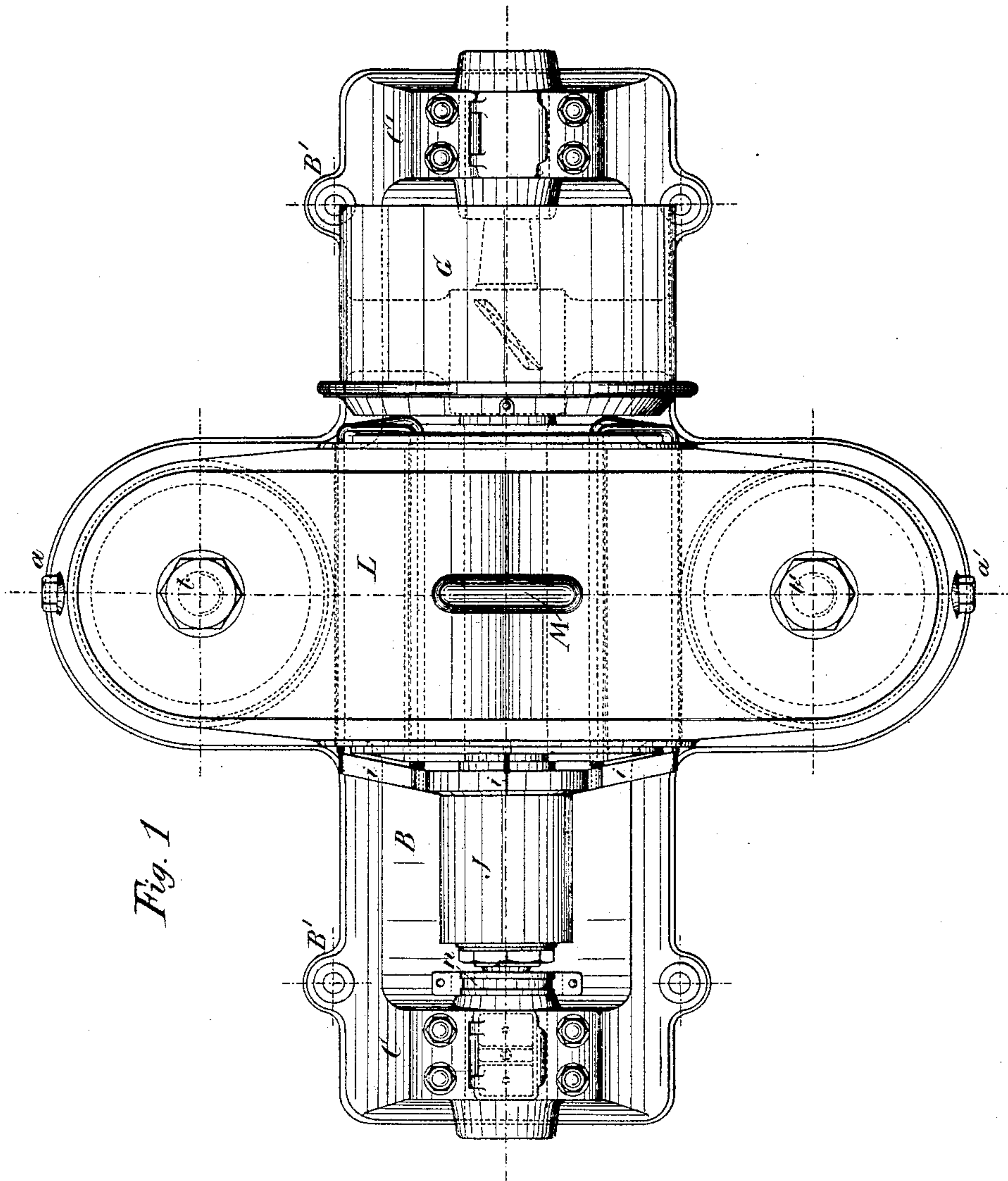


Fig. 1

Witnesses,

C. J. Bell,
M. C. Vance.

Inventor,

Charles E. L. Brown.
By Paine and Ladd,
Attys.

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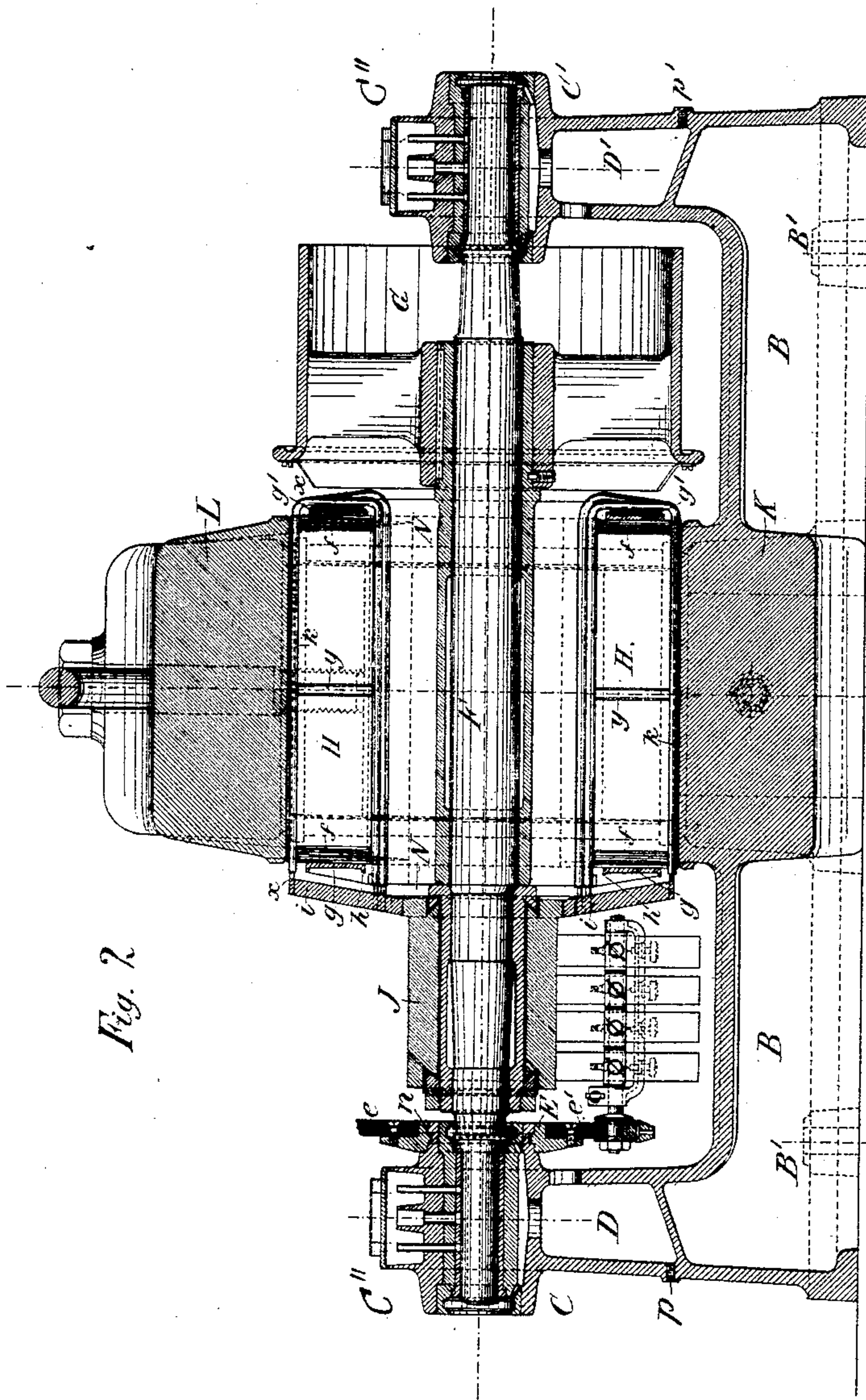


Fig. 2

Witnesses:

G. J. Bell.
M. C. Nunez.

Inventor:

By

Charles E. L. Brown.
Paine and Ladd,
Attys

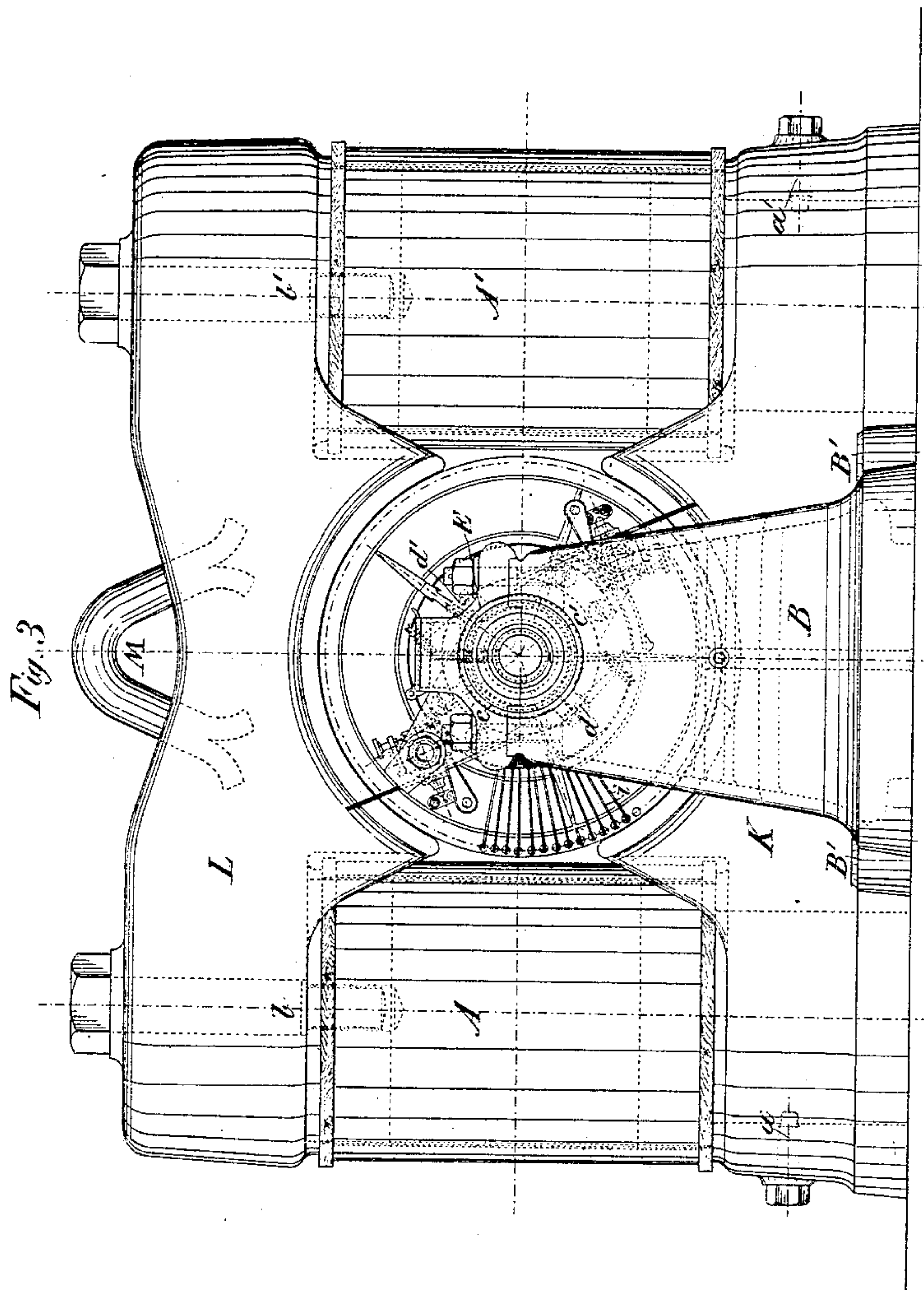
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Witnesses,

C. T. Bell,
M. C. Kane,

Inventor,

Charles E. L. Brown.

By

Paine and Ladd,
Attys.

(No Model.)

4 Sheets—Sheet 4.

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Fig. 4,

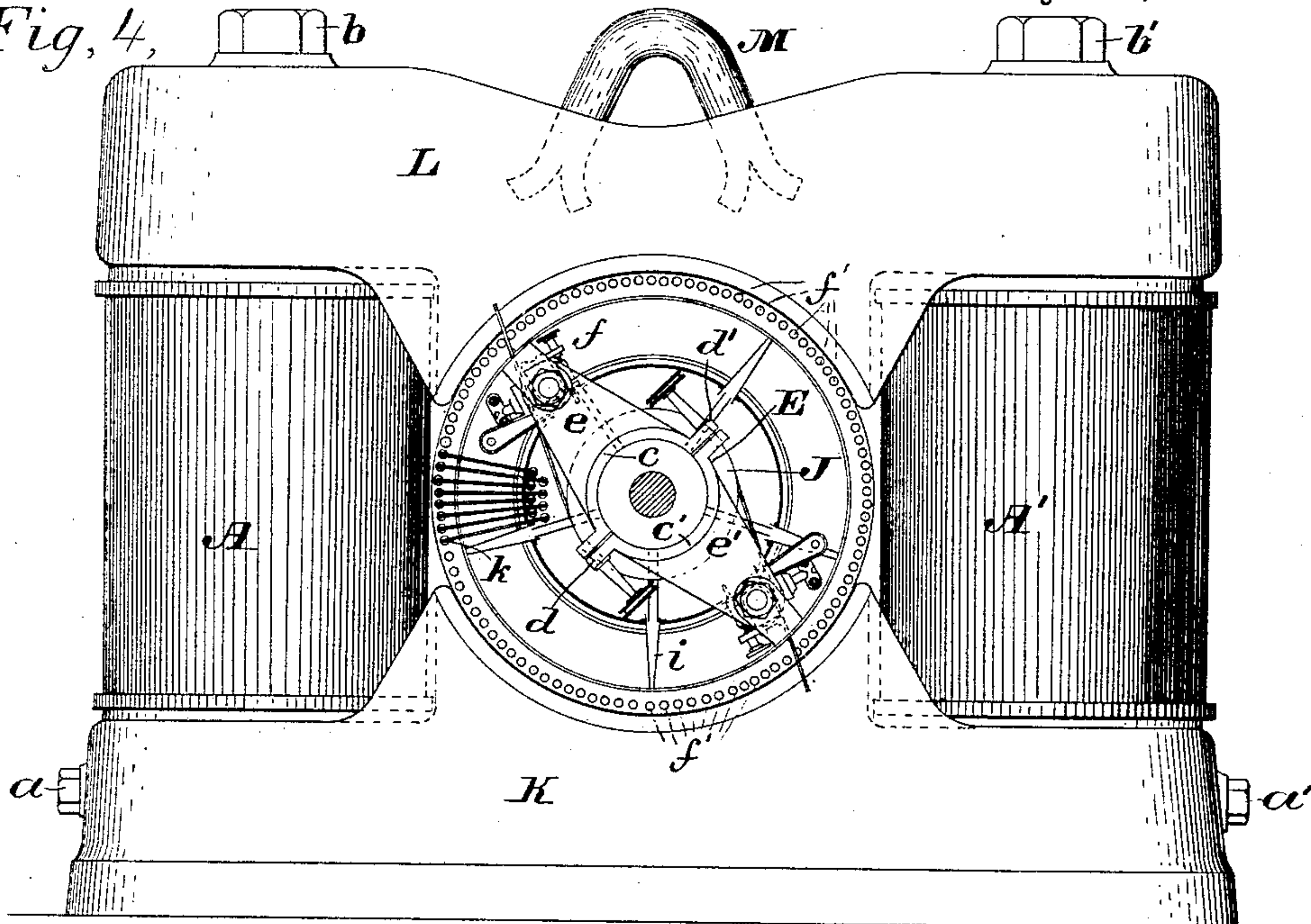
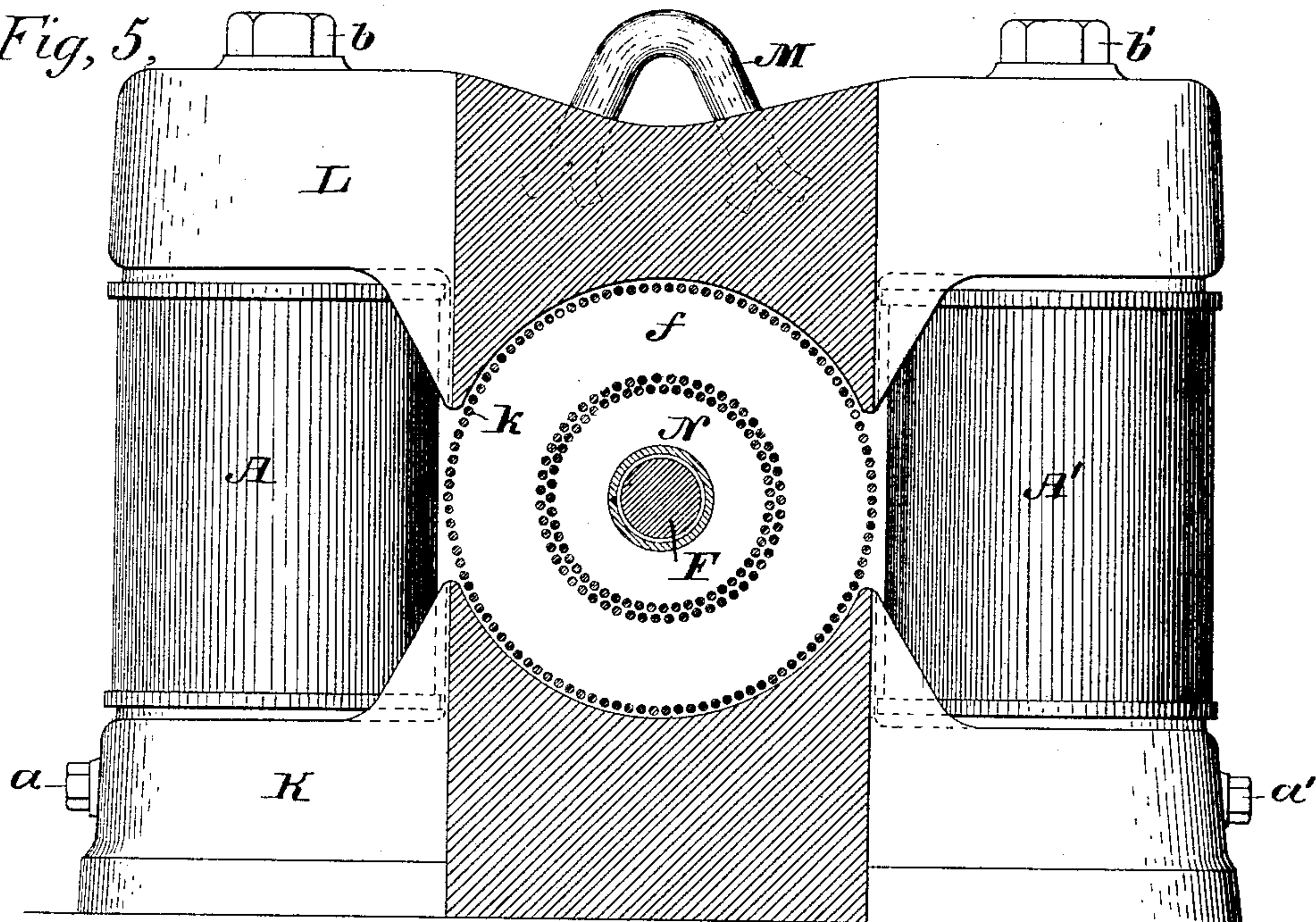


Fig. 5,



Attest.
Geo. T. Smallwood.
C. T. Beers.

Inventor:
Charles E. L. Brown.
By Paine & Load, attys.

UNITED STATES PATENT OFFICE.

CHARLES EUGEN LANCELOT BROWN, OF ZURICH, ASSIGNOR TO THE
WERKZEUG UND MASCHINENFABRIK OERLIKON, OF OERLIKON,
SWITZERLAND.

DYNAMO AND MOTOR.

SPECIFICATION forming part of Letters Patent No. 386,685, dated July 24, 1888.

Application filed November 9, 1886. Serial No. 218,386. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EUGEN LANCELOT BROWN, a citizen of England, residing at Zurich, in the canton of Zurich, Switzerland, have invented certain new and useful Improvements in Electric Generators and Motors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This new construction is shown by the annexed drawings, in which—

Figure 1 represents the plan, Fig. 2 the vertical longitudinal section. Fig. 3 the front view, Fig. 4 an end view, and Fig. 5 a sectional end view.

The dynamo is built in the following way: The pole-piece K, with the lateral adjoined pieces, directly forming the framing B, the supports of the bearings C C', and the nipples B' for the fastening of the machine, are comprised in one single piece of casting. The cores of the magnets are incased in the pole-piece K and fastened with the screws a a'. The heads of the cores bear the pole-piece L, to which they can be fastened in the same way as in the lower pole-piece, or the pole-piece sits flat on the cores and is fastened by the screws b b', as shown in Fig. 3.

For lifting off the pole-piece L and to facilitate the conveyance of the machine the pole-piece L is provided with an iron bow, M, placed in it while it is cast.

In order to facilitate the winding of the coils A A', the exciting-wire is coiled upon a cylindrical casing made of metal or an insulating material, and the whole slid over the magnetic cores. The flanges retaining the coils are made of wood or vulcanized or other fiber. The cap-pieces of the plumber-blocks C'' C'' are at the same time the grease-chambers, containing both a liquid and a solid lubricant. The axle-bearings are so disposed that the dropping oil will be collected and led into the drip-chambers D D' in the bearing-supports

C C', wherefrom it can be let off by a cock placed at p p'.

The bearing on the side of the collector J is provided with a groove, n, serving as guide to the brush-bridge E. This consists of a collar made of two parts, e e', which are held together by the screws d d'. By this means the brush-bridge can be turned, but is not movable in the direction of the axis.

On the arms of the bridge, insulated plates e e' are screwed, in which bear the spindles for the brush-holders and connectors for the current-conductors.

F refers to the steel armature-shaft; H, the armature-iron to hold the coils and plates; J, the collector or commutator, and G the driving-pulley.

The armature-iron is formed of thin insulated rings f, made of charcoal-plates. They are kept together and made fast to the shaft by the bronze wheel N, and have grooves corresponding to the arms of the wheel to prevent their twisting. They are compressed by the bronze plates g g', the ribs h of which fit into corresponding grooves in the wheel.

The disks or rings f are perforated with holes f near their periphery, as shown in Fig. 4, in which holes the insulated copper wires k, exposed to the inducing action, are pushed. By this device the resistance which the magnetism has to overcome in passing from the magnets to the armature is reduced to a minimum, and obviates the necessity for fastening of the wires of the armature to protect them against the effect of the centrifugal force. The single horseshoe-shaped wires are pushed into the ring from the side of the pulley. The projecting extremities on the other side are connected by the lamels i to the collector J, and with themselves to a closed circuit similar to the Pacinotti-Gramme ring arrangement.

The composition of the collector is visible in the drawings. The single lamels i are made of phosphor-bronze. The insulation of the single parts is produced by mica or asbestos.

The spokes of the pulley are shaped like the vanes of a ventilator. The air, according to the position of the vanes, is sucked through

the pulley and expelled through the apertures $x x$, or sucked through these latter and expelled through the pulley. To increase the ventilation, interstices y may be left open in the iron of the armature.

The pulley and collector can either be keyed directly on the shaft, or the nave of the bronze wheel may be lengthened and the above parts fastened to these projections. Fig. 2 represents the collector keyed directly to the shaft, while the pulley is fastened to the prolonged nave of the bronze wheel.

I claim in electric generators and motors—

1. The combination, with the brush-bridge E , comprising the two parts $c c'$ and screws $d d'$, of the grooved bearing n , for said brush-bridge, and the insulated plate $e e'$, in the ends of which bear the spindles for the brush hold-

ers and connectors for the current-conductors, substantially as set forth.

2. The herein-described armature, comprising the wheel N , the compressing-plates $g g'$, having ribs fitting grooves of said wheel, and the insulated rings f , held together by said wheel, substantially as set forth.

3. The combination, with the shaft F and the collector J , of the wheel N , the plates $g g'$, the insulated rings f , the horseshoe-shaped wires k , and the lamels i , substantially as set forth.

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

CHARLES EUGEN LANCELOT BROWN.

Witnesses:

JULIUS A. BOURRY,
WILLIAM SCHNEIDER.