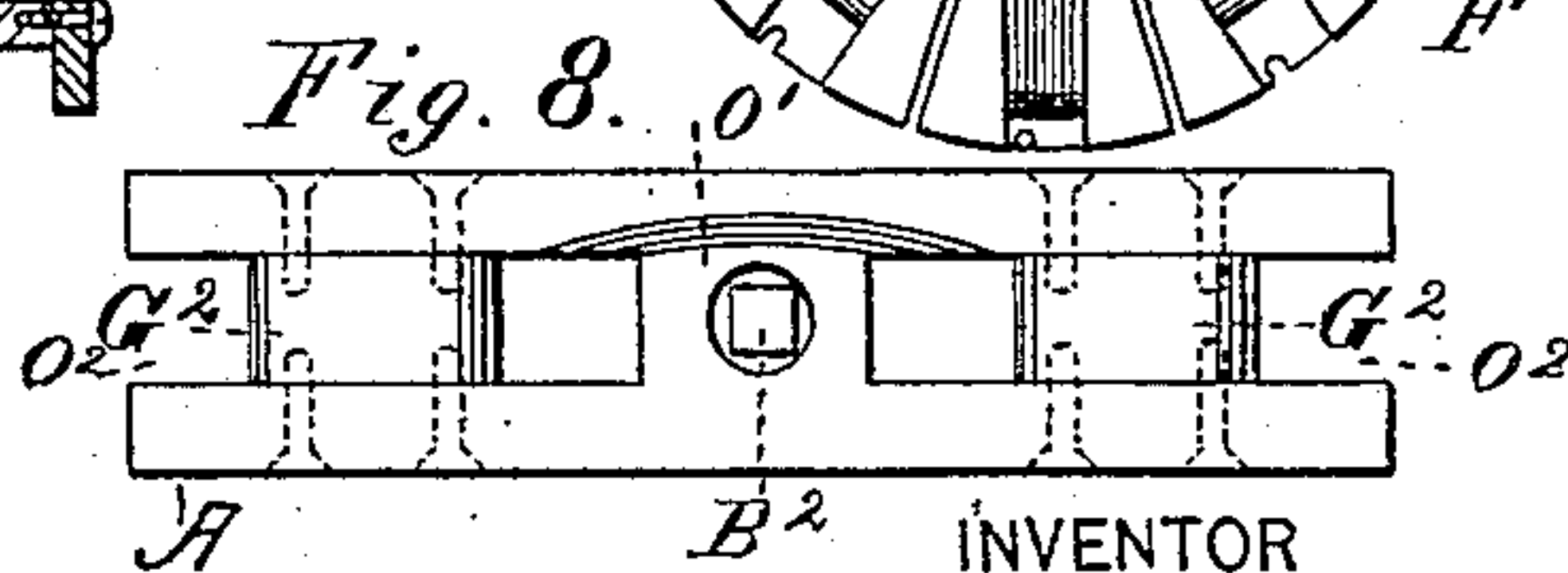
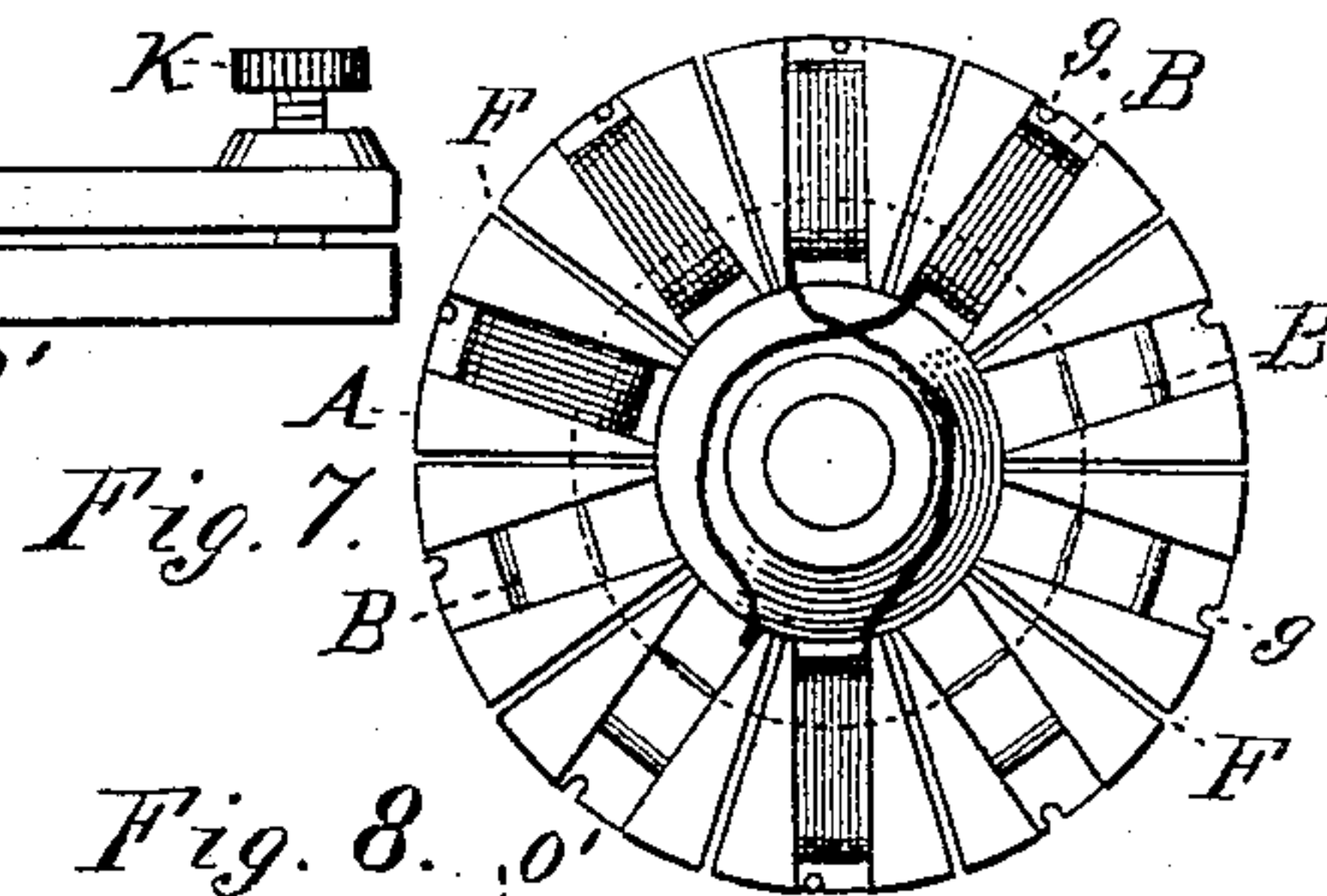
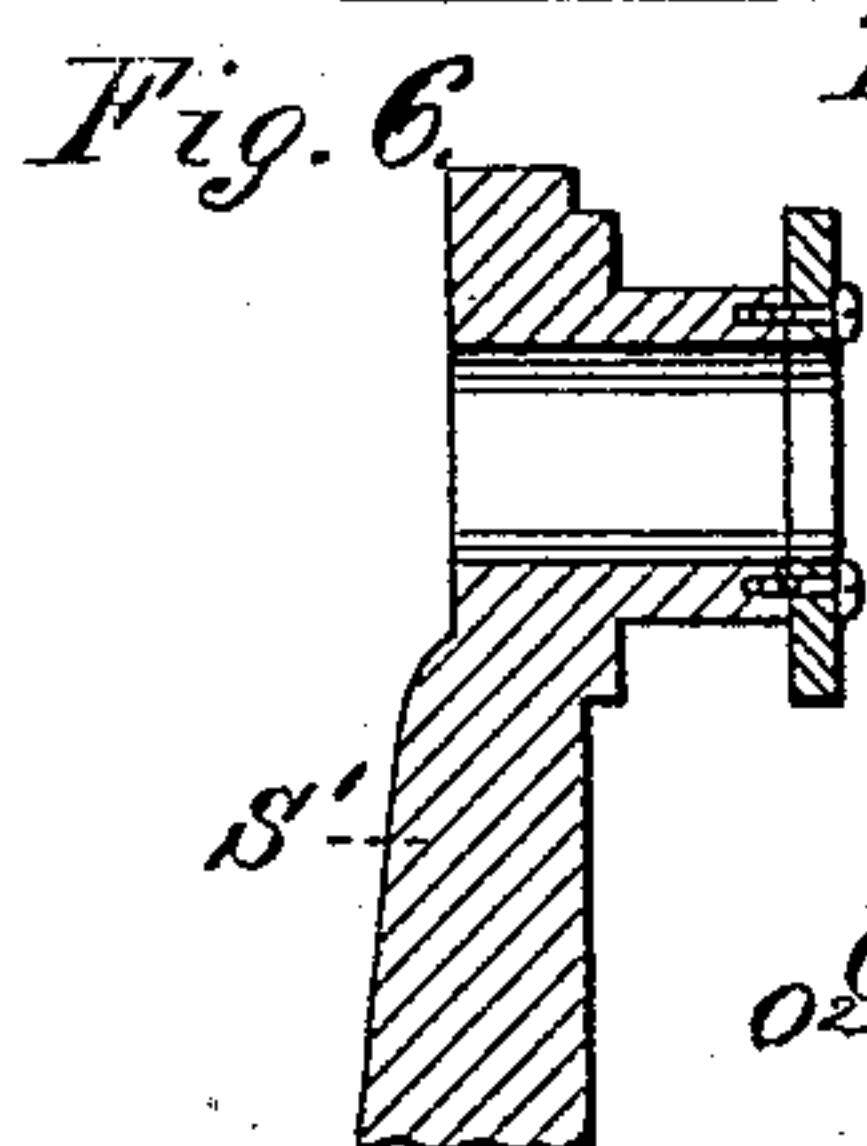
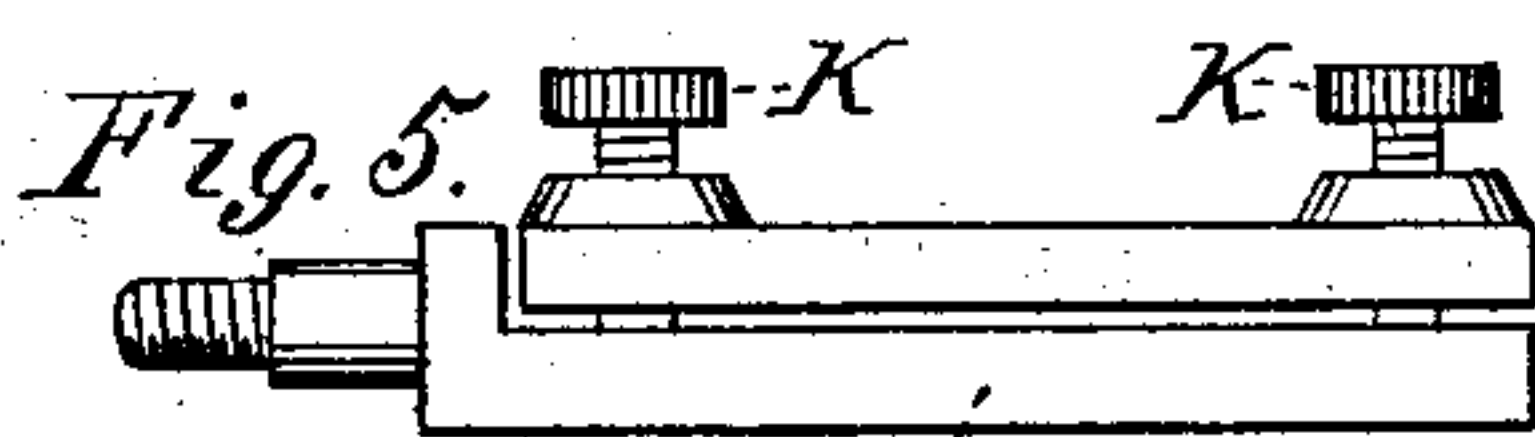
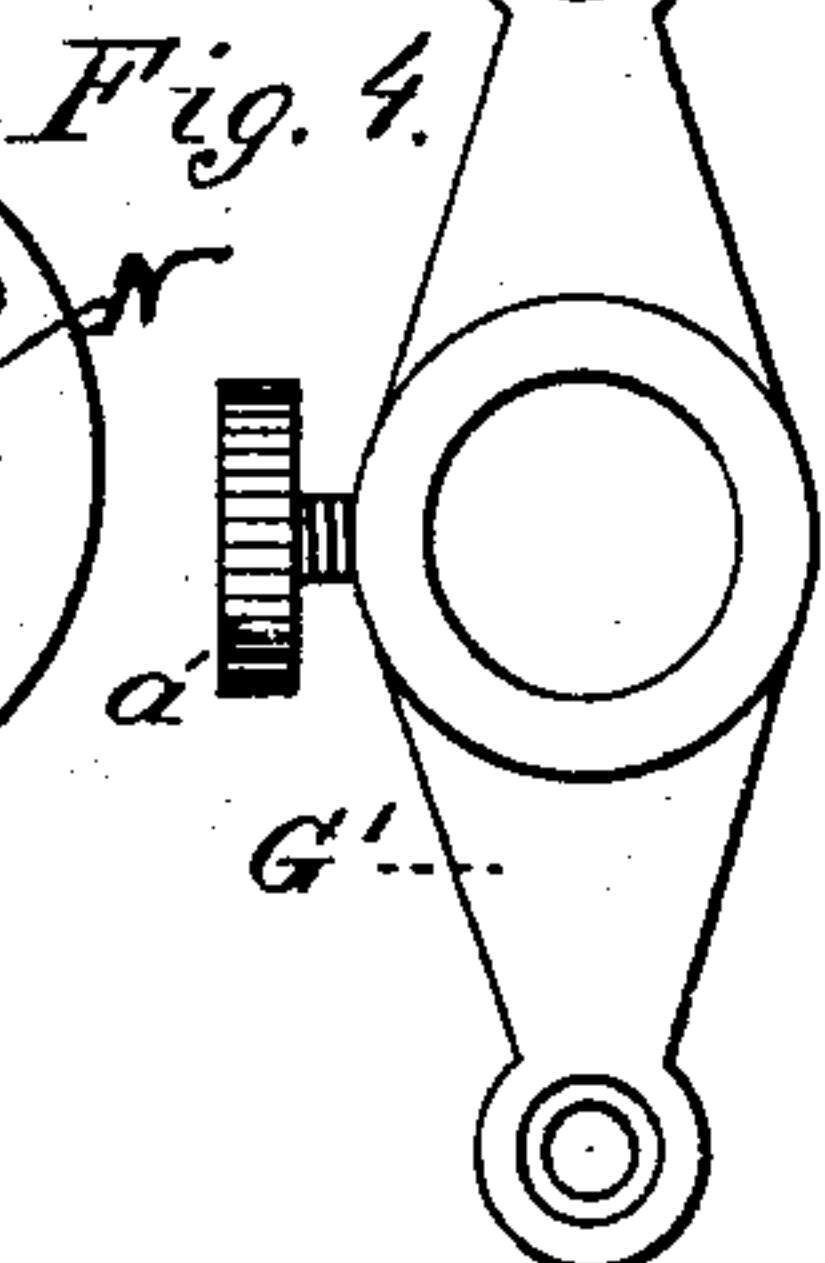
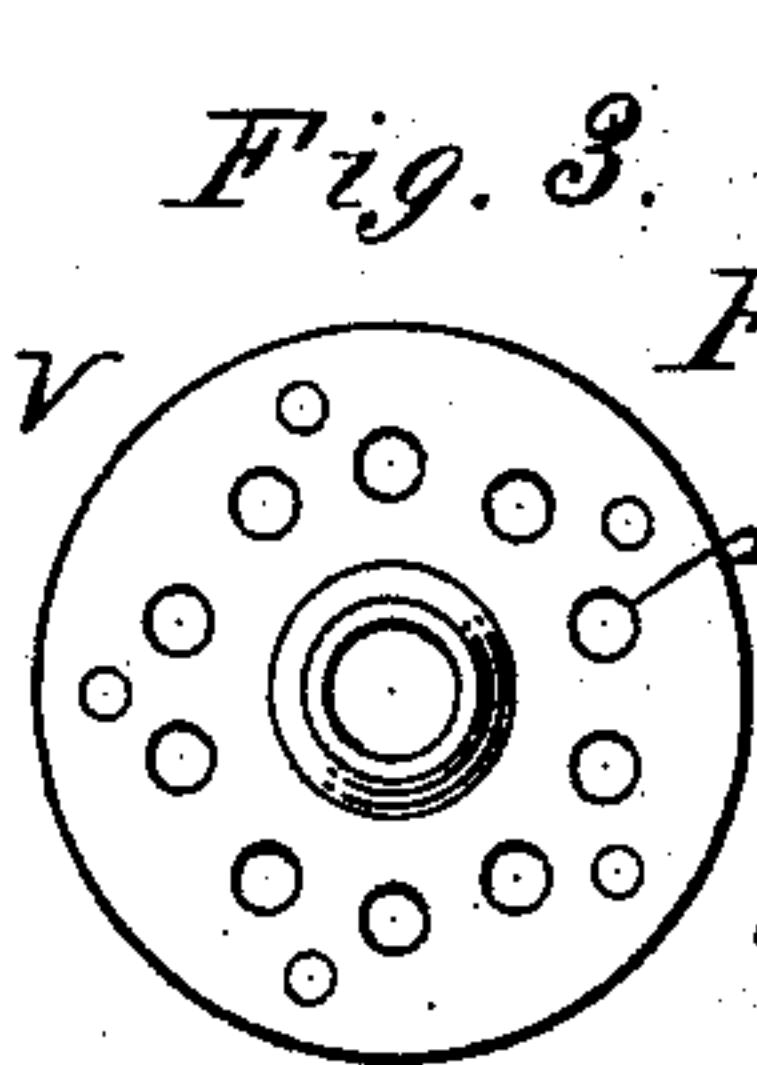
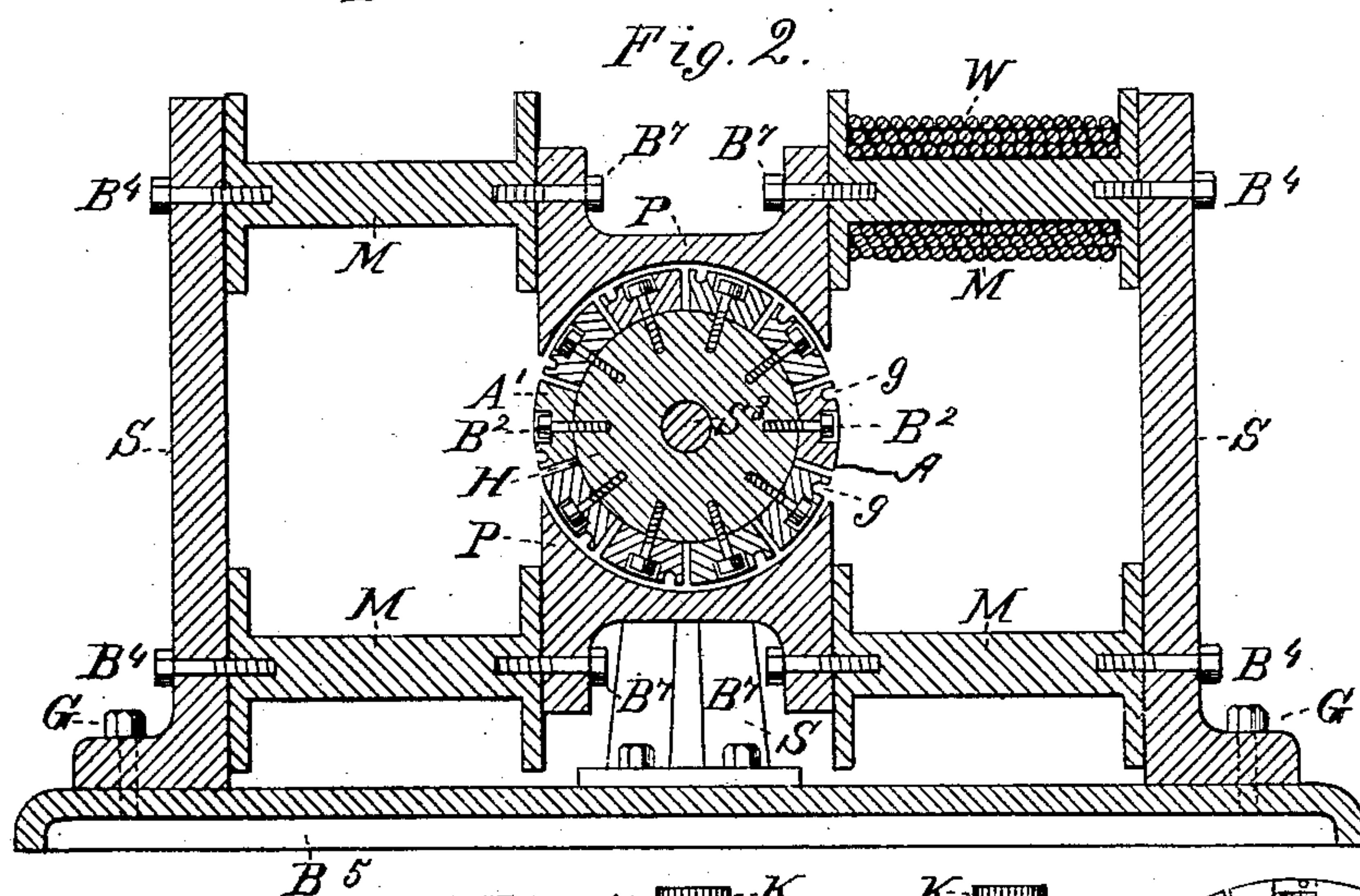
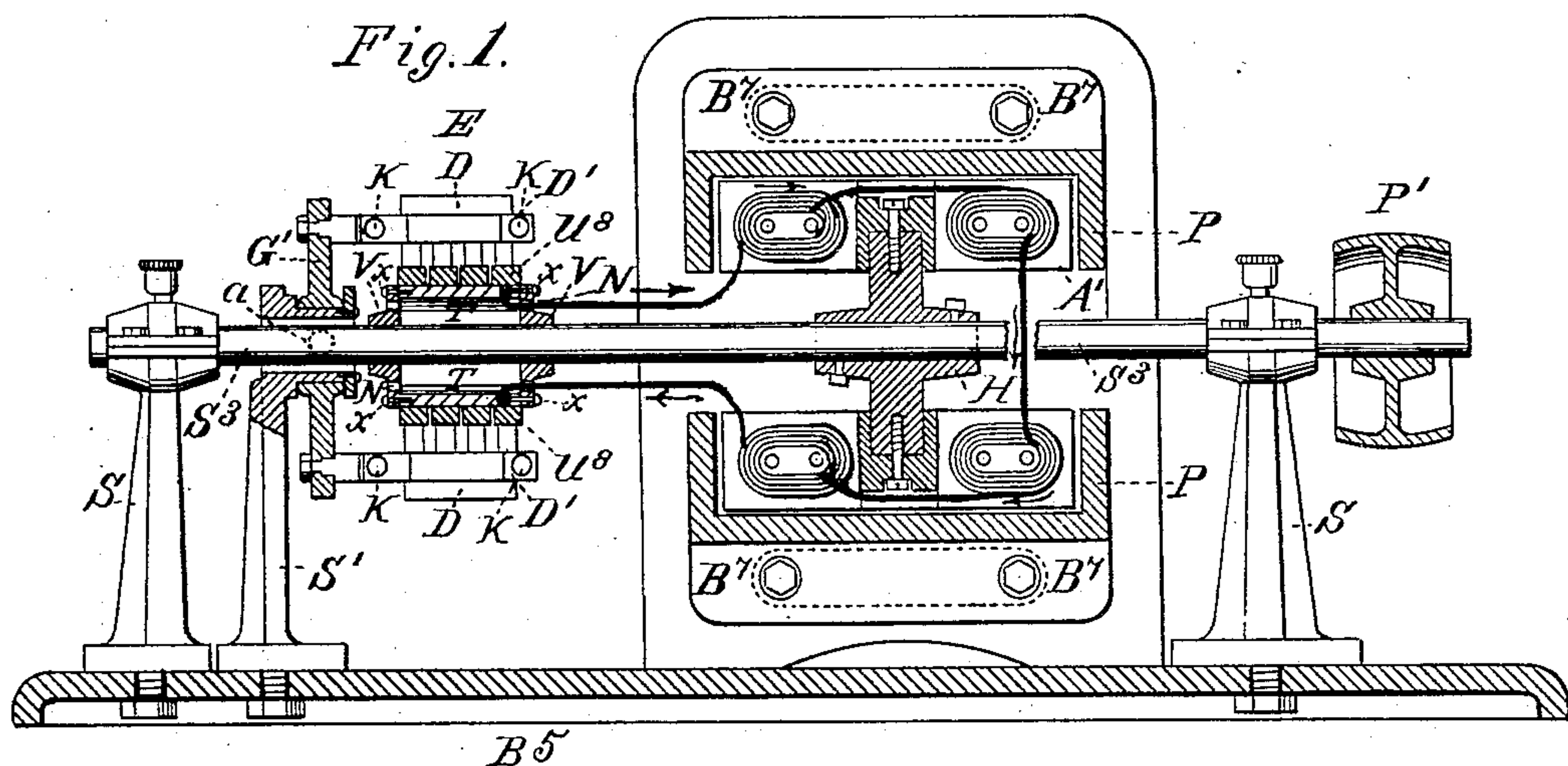


W. F. BUCKLEY.

DYNAMO ELECTRIC MACHINE.

No. 292,625.

Patented Jan. 29, 1884.



WITNESSES

Villette Anderson.
John T. Morrow

INVENTOR

William F. Buckley
by Anderson & Smith
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 9.

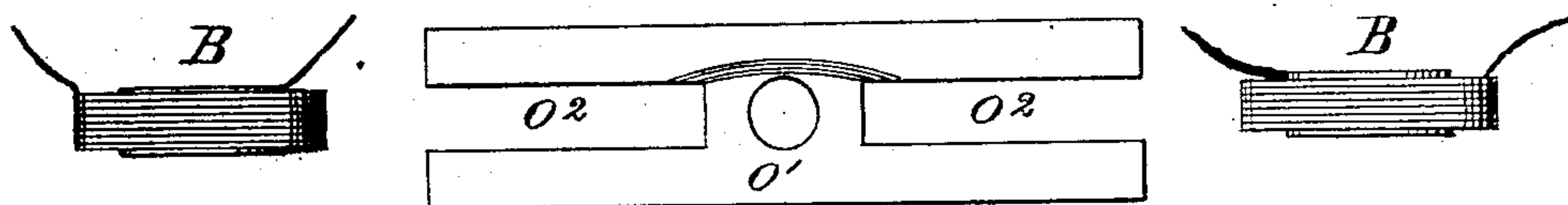
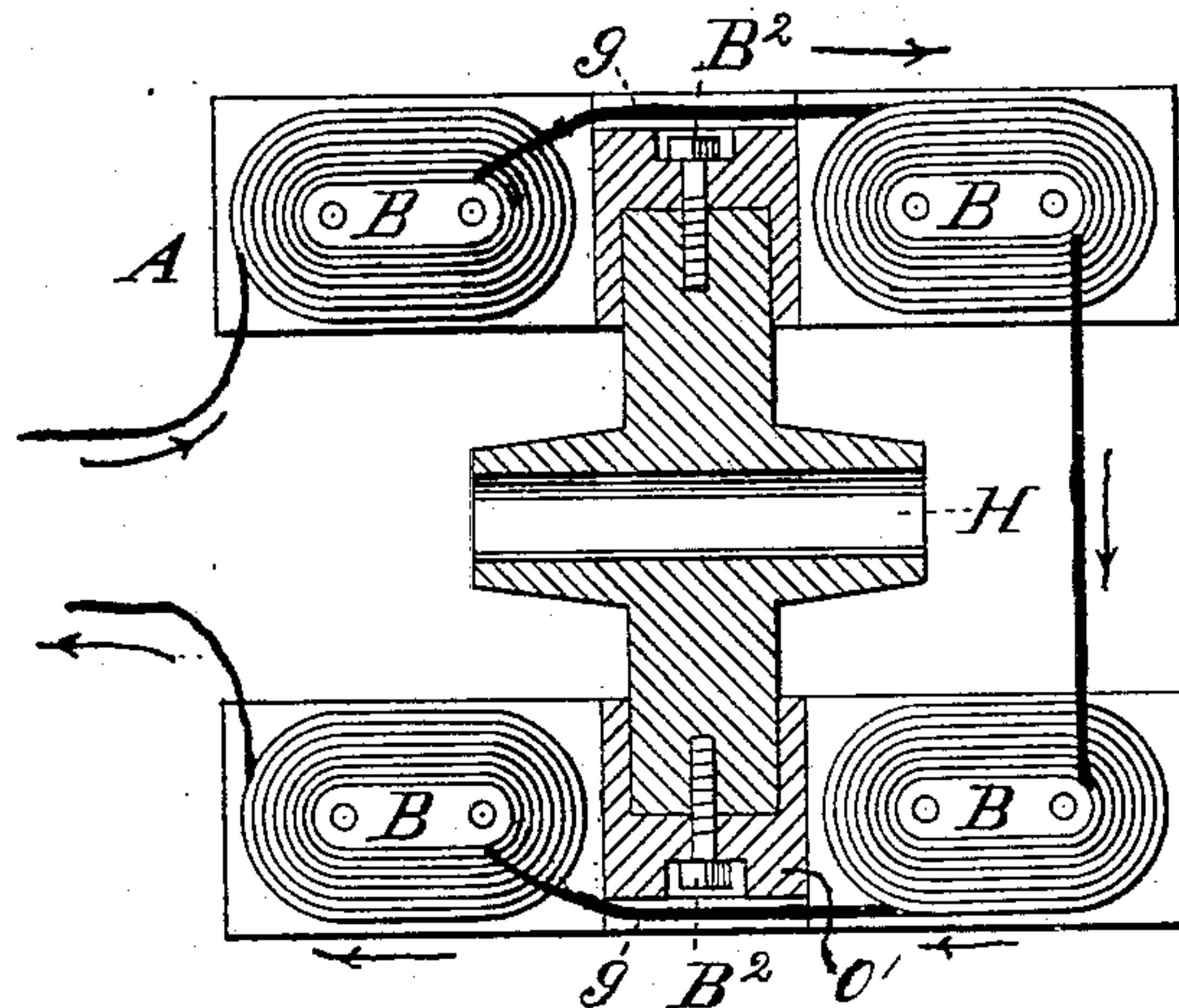


Fig. 10.



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UNITED STATES PATENT OFFICE.

WILLIAM F. BUCKLEY, OF CLEVELAND, OHIO.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 292,625, dated January 29, 1884.

Application filed August 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BUCKLEY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Dynamo-Electric Machines; and I do 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.

Figure 1 of the drawings is a representation of a longitudinal vertical sectional view of my invention. Fig. 2 is a transverse vertical sectional view of the same. Fig. 3 is a view of one of the commutator-heads. Fig. 4 is a view of the rockers for holding the brush-holders. Fig. 5 is a view of one of the brush-holders. Fig. 6 is a sectional view of a part of the standard for supporting the commutator-brushes. Fig. 7 is an end view of the armature, showing the coil-wires. Fig. 8 is a top view of one of the armature-sections. Fig. 9 is a view of one of the armature-sections with bobbins removed, and Fig. 10 is a view showing the ends of the cylinder-magnets and the armature-hub in section.

This invention has relation to dynamo-electric machines for electric lighting, electroplating, &c.; and it consists in the construction and novel arrangement of devices, as will be hereinafter fully described, and particularly pointed out in the claims appended.

Referring by letter to the accompanying drawings, A' designates the armature, and H the hub. B' are the bolts that secure the magnets M M M M to the standards or frames S S.

P P designate the pole-pieces nearly surrounding the armature.

B' are the bolts by which the pole-pieces are secured to the cores of the magnets M, all of the magnets being wound with wire, as usual, W designating the wire.

B³ designates an iron base, to which the standards are secured by bolts G G.

S³ designates the shaft, having bearings in boxes on the standards S S, and carrying the driving-pulley P' at one end, and the armature

A' intermediately of the driving-pulley and the commutator E. The pole-pieces P P extend down over the ends of the armature, and nearly encircle the armature, thus giving a strong magnetic field.

T indicates a hard-rubber tube, with two iron or brass heads, V V, secured to it by screws x x x x.

U³ are the brass segments of the commutator, and are of the usual construction. D' D' are the brush-holders, and D D the brushes, made of brass.

G' designates the rocker to which the brush-holders are secured, and insulated therefrom by hard rubber, as shown. The rocker G' is movably affixed to the standard S', through which the shaft S³ freely revolves. A screw, a, holds the rocker in position on the standard S'. The brushes are bound in the brush-holder by screws K K. The commutator-heads are provided with holes N N, through which the wires from the spools on the armature pass to corresponding segments of the commutator. These holes N N serve to keep the commutator cool by permitting a circulation of air through them.

B² B² designate the bolts that secure the armature-sections A to the hub H.

In Fig. 8 a top view of one of the armature-sections shows the cores G² G², over which wire is wound, and shows also how the cores are removably secured to the sections by screws.

g designates a groove through which the connecting-wire is passed between the spools or bobbins B.

In Fig. 9 an armature-section is shown with the bobbins removed for repairs or rewinding. The armature-sections are all of iron, and cast in the shape shown in Fig. 9, with a slot planed across their under sides, to permit them to be fitted closely to the hub and secured in place by bolts, as shown. The cores of the bobbins are made to slide into the armature-sections, and are secured in place by screws. Spaces F are left between the sections, to permit a circulation of air for the dispersion of heat, and to cut off the Foucault currents to some extent. The manner shown of securing the sections to the hub admits of a great number being employed, thereby increasing the power of the

machine. The coils of the bobbins on the armature are all wound in the same direction, and the bottom end or inside end of one coil is connected to the top or outside end of the
 5 other coil on the same armature-section, and the bottom or inside end of that coil (the one last mentioned) is connected to the bottom or inside end of the diametrically-opposite coil, so that the bobbins are connected in series,
 10 and the last two ends of the coils are soldered to the brass collars or commutators, which are insulated from the shaft S³ by hard rubber, as shown. The circuit of the armature is put into the field-circuit in the usual and well-
 15 known manner.

The manner of connecting the armature-sections A to the hub is clearly shown in Fig. 10, the bottom of the neck portion *o'* of the section being planed away, so that it will sit
 20 astride of the hub when in place. The bobbins, when in place, occupy the spaces *o*² at the sides of the neck portion *o'*.

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

1. An armature composed of the armature-

sections, having the neck portion *o'* and spaces *o*² *o*² at its sides, to receive the bobbins, which are removably secured therein by screws, the neck portion of each armature-section being
 30 planed away in its lower side to fit astride of the hub H, and secured thereto by bolts B², spaces being left between the sections, and grooves *g* provided in their faces, for the bobbin-connecting wires, substantially as specified. 35

2. An armature-section having the neck portion *o'*, the spaces *o*², and the removable bobbins B, secured in place by screws, substantially as specified.

3. A commutator for dynamo-electric machines, having two brass or iron heads, V V, secured to the hard-rubber tube T by screws, and provided with holes N, for the passage of the wires from the armature to the commutator-segments, substantially as specified. 45

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

WILLIAM F. BUCKLEY.

Witnesses:

GEORGE D. WALKER,

C. H. BABCOCK.