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Patented Oct. 29, 1901.

H. & F. W. FALTERMAYER.
ELECTRICAL INDICATOR.

(Application filed July 19, 1900.)

(No Model.)

Fig. 3.

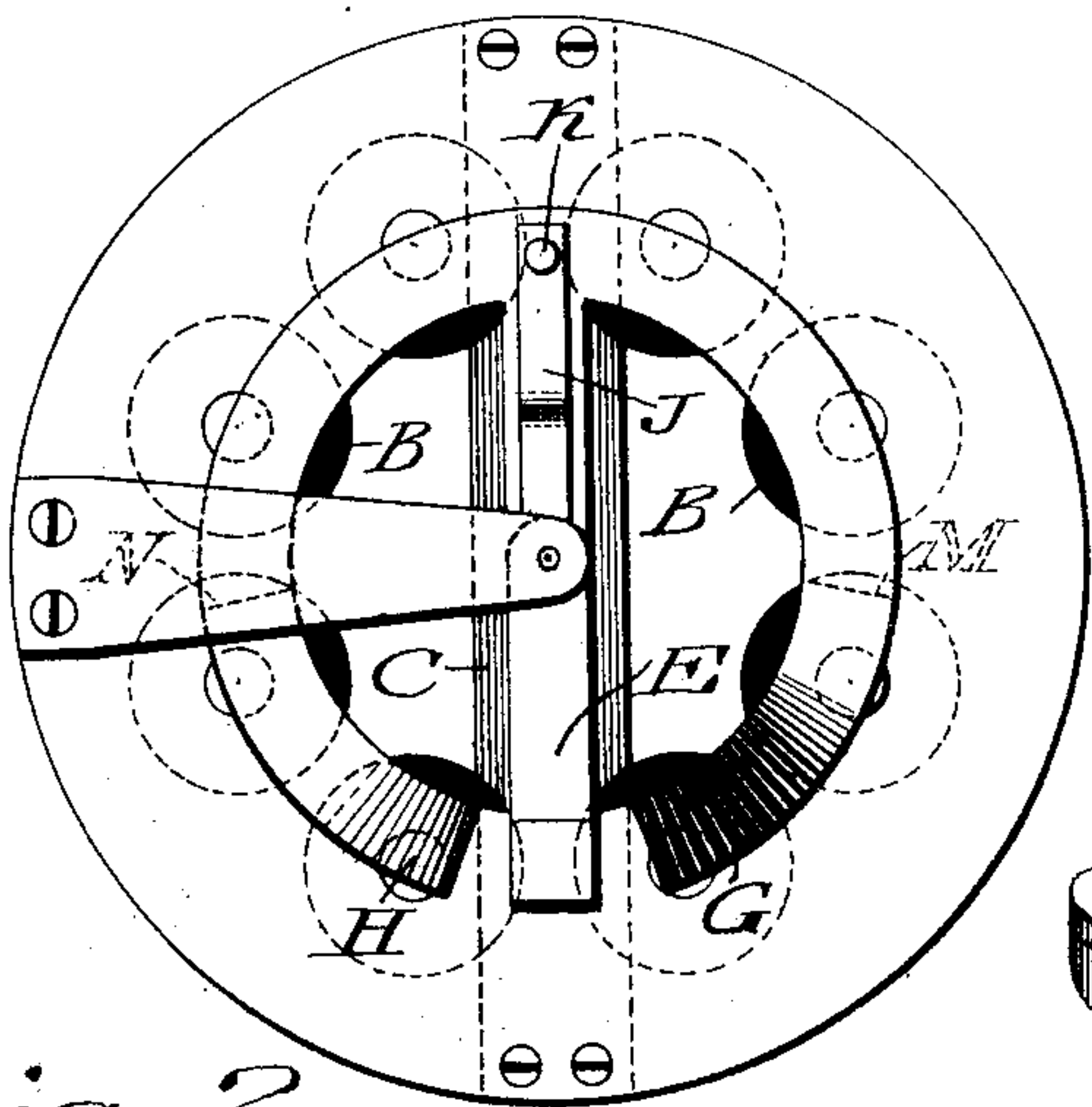
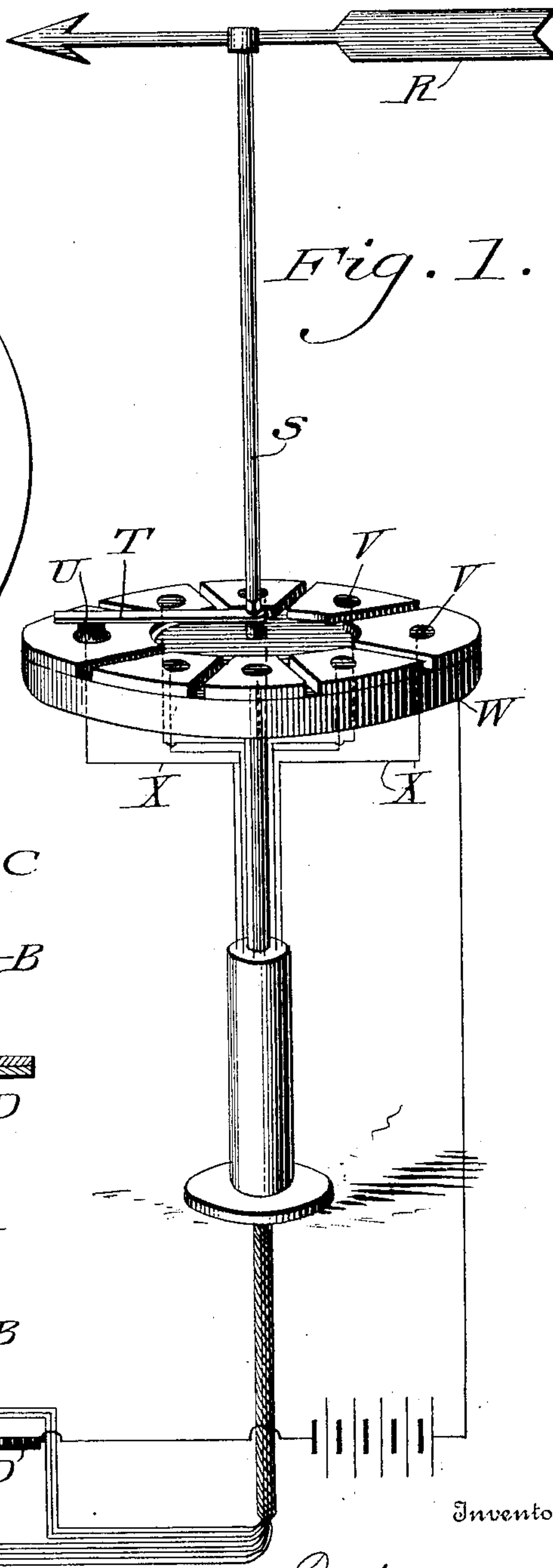
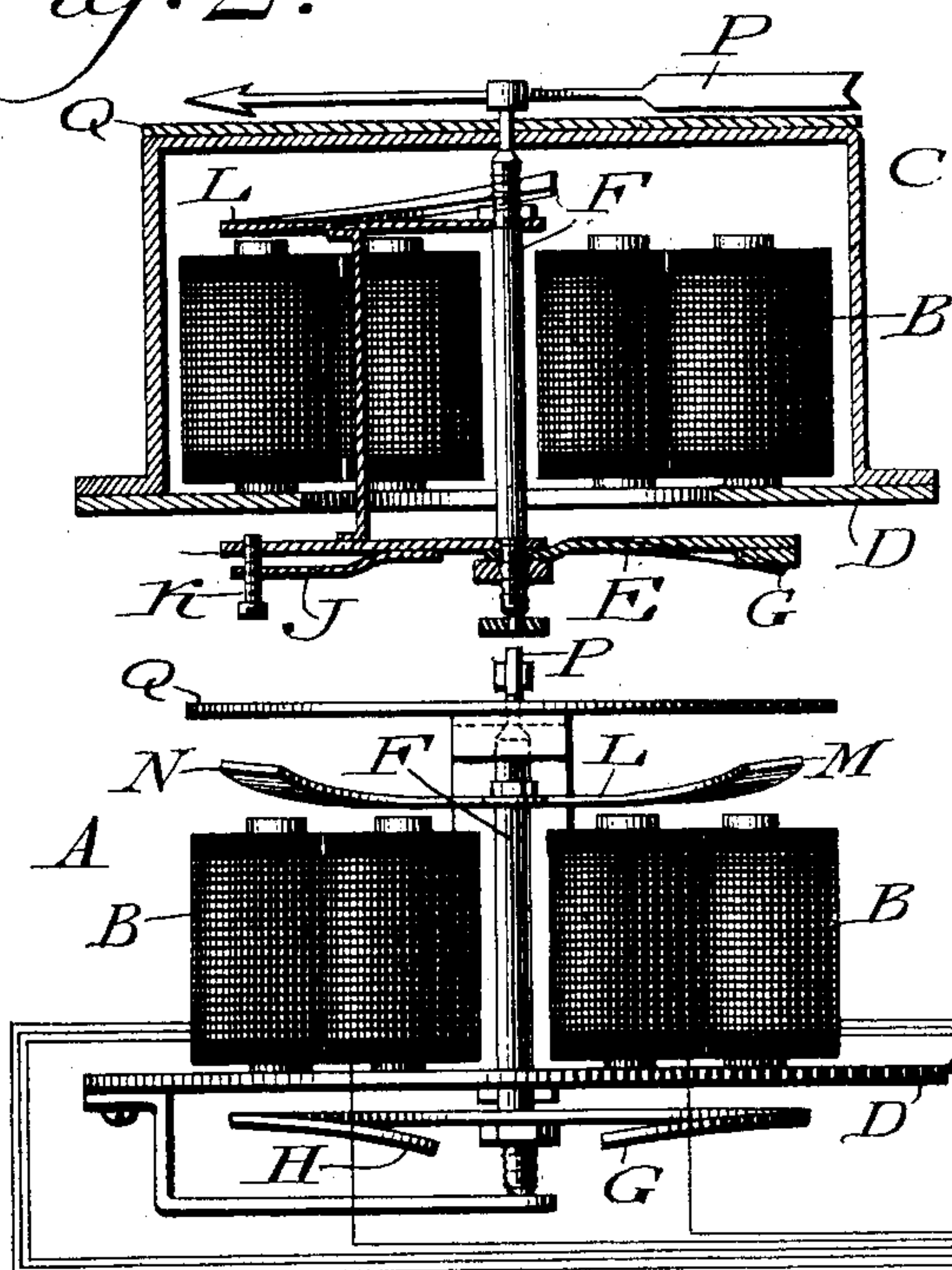


Fig. 2.



Witnesses

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ELECTRICAL INDICATOR.

SPECIFICATION forming part of Letters Patent No. 685,590, dated October 29, 1901.

Application filed July 19, 1900. Serial No. 24,155. (No model.)

To all whom it may concern:

Be it known that we, HARRY FALTERMAYER and FREDERICK W. FALTERMAYER, citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Electrical Indicators, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention consists of an improvement in electrical indicators, whereby the direction of a weather-vane or other similar device can be read at a distant point.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and specifically pointed out in the claims that follow the specification.

Figure 1 represents a partial side elevation and a partial perspective view of a portion of the device embodying our invention. Fig. 2 represents a vertical sectional view of a portion thereof. Fig. 3 represents a bottom plan view.

Similar letters of reference indicate corresponding parts in the drawings.

Referring to the drawings, A designates the electrical indicator, consisting of a series of magnets B, arranged in substantially circular position and provided with a box or cover C, said magnets being suitably supported upon a plate D. Below said magnets is an armature E, which is supported upon a shaft F, said armature E being substantially circular and having the free ends G and H, which are bent downwardly below the point of support of said armature and away from the magnets, and said armature being further provided with an arm J, carrying a pin or movable armature K, passing through a portion of the armature and capable of moving toward and away from the magnets, whereby the position of the armature K can be adjusted with respect thereto. Above the magnets is another armature L, which has its free ends M and N bent upwardly above the point of support of said armature L or away from said magnets, which latter is also carried by the shaft F and moves in conjunction with the armature E. Mounted upon the shaft F is a pointer or indicator P, beneath which is a disk or plate Q,

which is subdivided or provided with marks corresponding to the points of the compass, whereby the direction of the pointer P is indicated.

R designates a weather-vane, which is supported in any convenient place upon the rod S, which has secured thereto the bar T, which moves as the vane R turns and is always in the same position relative thereto, said bar T carrying a brush U, adapted to contact with the points V, carried by the commutator W, which is stationary, each of said points V being connected by a wire X with one of the magnets B, said commutator being suitably connected with a battery or an electrical supply which is also connected with the plate D, which supports the magnets or coils B.

The operation is as follows: As the vane R turns, depending upon the wind, the rod S turns therewith, as also the bar T, which carries with it the brush U, contacting with one of the points V. This closes the circuit with one of said magnets or coils B and the same is energized, whereby the armatures L and E are turned until the point is reached in said armatures which is the shortest magnetic path, and this is in both armatures the point nearest the magnet and the same point on each armature. As the armatures are turned the shaft F is turned therewith, and consequently the pointer or indicator P, which will thus turn a point in the same direction as that of the weather-vane R, and the direction of the wind will thus be indicated by the shaft Q.

It will be seen that by the construction of the pin or armature K the armatures E and L will be locked in position as soon as the said pin K is beneath the magnet which is energized, since said pin K will be attracted to the same and held there. For example, if the current or supply operating the indicator be cut off for a period of time and the center of the armature be at rest over a magnet there will be another magnet diametrically opposite or between the free ends. Should now upon starting the current again the last-mentioned magnet be energized, if the ends were of the same plane it would tend to cause a deadlock; but by reason of the different vertical planes in which the free ends of the arma-

tures are from the pole-pieces of the magnets that which is nearer to the energized magnet would be attracted and move until the free end of the armature at the opposite end of
 5 said magnets reaches a point near the energized magnet, when both armatures will move quickly to the proper position, when the free pin K will again be attracted and lock the parts.

10 It will be apparent that slight changes may be made in the art which may come within the scope of our invention, and we do not, therefore, desire to be limited in every instance to the exact construction we have herein shown
 15 and described.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A plurality of magnets, a ring-armature,
 20 and a secondary armature carried thereby and normally in a different plane from the armature and movable to be drawn from said plane to serve as a stop for said ring-armature.

2. A plurality of magnets, and an armature
 25 with its free ends curved toward each other and extending in different planes with respect to the pole-pieces of the magnets.

3. A plurality of magnets, contact-points, suitable connections therefor, and an armature having its free ends curved to extend to-
 30 ward each other and in a different plane with respect to the pole-pieces of the magnets.

4. In an electrical indicator, a series of magnets, a commutator, means connected with a
 35 weather-vane for contacting with points of said commutator, connections from each point on said commutator to a different magnet, and an armature having a suitable support provided with free ends which are bent away
 40 from the magnets so that the said ends are

in different planes with respect to the pole-pieces of said magnets.

5. In an electrical indicator, a series of magnets, connections therefrom to points of contact, an armature therefor and a pin, which
 45 can be adjusted with respect to said armature, to be closer to or farther away from said magnets as desired.

6. In an electrical indicator, a series of magnets, an armature at one end of said magnets
 50 and having free ends, and a second armature at the other end of said magnets having free ends which are shorter than the free ends of the first-mentioned armature.

7. In an electrical indicator, a series of magnets, an armature at one end of said magnets having free ends which curve away from said magnets, the free ends of said armature being
 55 in different planes with respect to the pole-pieces of said magnets and an armature at the other end of said magnets having free ends which curve away from said magnets.
 60

8. In an electrical indicator, a plurality of magnets, an armature therefor, and free ends on said armature, one of which is situated
 65 nearer said magnets than the other.

9. A plurality of magnets, contact-points, suitable connections therefor, a ring-armature having its free ends curved to extend in
 70 different planes with respect to the pole-pieces of the magnets, and a secondary armature movable on said ring-armature and adapted to be attracted by the magnets into a plane nearer thereto than that of said ring-armature.

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